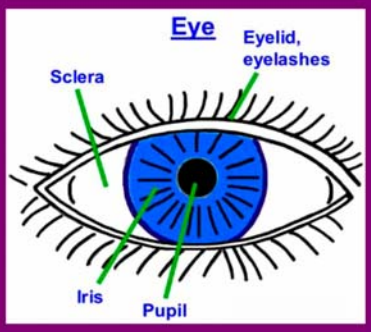
USE YOUR OWN EYES,
NORMAL SIGHT WITHOUT GLASSES,
& STRENGTHENING THE EYES

BY

William B. MacCracken, M. D.,
Bernarr MacFadden
& Ophthalmologist William H. Bates



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Better Eyesight Magazine Included

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+ Stories From The Clinic by Emily C. A. Lierman/Bates. (Dr. Bates Clinic Assistant, Wife.)
+ Use Your Own Eyes by Dr. William B. MacCracken M.D. (Trained with Dr. Bates.)
+ Normal Sight Without Glasses by Dr. William B. MacCracken M.D.
+ Strengthening The Eyes by Bernarr MacFadden & Dr. Bates - with Pictures and Modern Training. (Trained with Dr. Bates. One of the First Physical Fitness Teachers.)
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Berkeley, California
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William B. MacCracken, M. D.

Dr. MacCracken obtained Natural Eyesight Improvement Training from Ophthalmologist William H. Bates and applied the Bates Method to cure his patient's eyesight.

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THIS book is dedicated to the memory of W. H. Bates, M. D. It was his discovery, and his lifework, that founded and established the system which can prevent the impending degeneration of the eyes of civilized humans. His genius and his fine courage made it possible for him to bequeath this magnificent gift to the race.

■

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Our lives are modified, more than we know, by these constant, active influences. Not only are our minds molded, obeying unconsciously these silent orders; but our bodies and organs. There are serious chronic nervous diseases which have no found cause in any change of tissue structure, and which are modified or cured by emotions and impulses. Emotions and impulses are actually only automatic reactions to impressions which are often not even possible to discover. It is established that emotions cause specific changes in many of the body functions: the action of the heart and lungs, the tension of the blood vessels, the conduct of muscles and even tendons. In normal healthy bodies muscular tremors have been demonstrated by laboratory instruments, produced by arousing mental conditions such as curiosity, or fear, or anger. And it is common to find tendon reflexes modified by similar emotions, or even by ordinary excitement. And just such mental conditions are present as the cause of many abnormal physical conditions such as constant eyestrain, indigestion, insomnia, and even distinct diseases with muscle spasms and mental disturbances. And above all, the brain itself with all its nerves, is dominated by the same impressions from the world it lives in, and is molded like the sofest clay.

Suppressions, conscious or unconscious, increase these abnormal conditions of tension, and we are constantly suppressing. And worst of all, we are thoughtlessly allowing abnormal and harmful influences to suppress the natural normal functions of our subconscious mind, and mislead us into complexes that are the causes of many diseased conditions.

It is possible to relieve these abnormal conditions by the simple expedient of securing a state of relaxation of the muscles of the body. Without muscular relaxation there never is mental relaxation. And when the muscles are relaxed mental relaxation is always present. There are different methods and varieties of technique by which this muscular relaxation may be secured. But they all must depend upon the same laws of psychology and physiology. It is necessary to enlist the cooperation of the subconscious mind. This can be accomplished by occupying the conscious mind so completely with some carefully chosen impression that the subconscious mind is also fully occupied with the same thought and purpose for a period of time. This method has been proved. It is scientific and successful. It requires, however, that the patient be receptive, earnest, and confident.

The story in this book is founded on these truths. Vision is the most precious of the senses which feed the life and the happiness of the human. That vision should be allowed to degenerate into a crippled dependent upon a mechanical device is an ominous threat to the future of the race. If the mind can be roused into a consciousness of its loss, the recovery of the natural power of the eye will be the smallest of the glorious achievements that will come with the new life.

It has been interesting to try to imagine the mighty spirits of the past contemplating the modern hosts that are helpless without their pieces of glass. How could those independent souls understand this new habit? How long will it be before the minds of children, who are beginning their lives, will be taught to use their own eyes, with the freedom and the power which belongs to them, and which will give them a new fullness of life?

W. B. M.

Berkeley, California
February 1937

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Dr. Bates discovered how to correct abnormal vision by natural method — Dr. Bates not academician but practicing eye specialist — His work known and used around the world — Schools for such correct treatment of eyes now growing in Germany and England — My acquaintance with work commenced by discarding my own spectacles — Then transferred to treatment of patients — Children generally learn quickly to correct disorders of eye functions — Young life has that quality — Minds and bodies are plastic — Often correct abnormal functions spontaneously — Minds must be interested, not neglected — Claim no help for abnormal vision not true — Series of cases which illustrate different types of abnormal mechanism of vision in children — Method described by which normal vision without glass accomplished.

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It was his discovery and his lifework that founded and established the system which can prevent the impending degeneration of the eyes of civilized humans. His genius and his fine courage made it possible for him to bequeath this magnificent gift to the race.

INTRODUCTION

THE mighty silence of the great open spaces, the soft warm calm under the palms out on the sands, the cold stillness of the silent frozen worlds, the majestic grandeur of the sunset in the West, the weird influence of the soft light of the moon, the story of the ages in the cold gleaming of the star worlds in the sky, the lure of the lonely vastness of the sea, the soothing cadence of the melody of music in the ears, the silent touch of tender memories, the thrill of a soul in the presence of love—these and kindred of the great primal forces are the real influences guiding the motives and powers of human life.

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It has been interesting to try to imagine the mighty spirits of the past contemplating the modern hosts that are helpless without their pieces of glass. How could those independent souls understand this new habit? How long will it be before the minds of children, who are beginning their lives, will be taught to use their own eyes, with the freedom and the power which belongs to them, and which will give them a new fullness of life?

W. B. M.

Berkeley, California
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CHAPTER I

THE PROBLEM

WHEN the human eye begins to falter, whether in adults or in the youngest children, the conventional method of treatment is to call in the assistance of compensating lenses. The claim that is made for these lenses is that they neutralize the effects or symptoms of the conditions which are present as the cause of the failing function.

If it is necessary for men, women, and children who are wearing glasses to continue to wear them, let us hope they will all secure the best possible fit. But if it is possible to correct the fault that is interfering with normal vision, why do we not relieve the abnormal condition, instead of ignoring the eye, and using glass lenses instead? During hundreds of thousands of years the human eye developed into the most marvelous and the most necessary of the sense organs. Upon what grounds has it come to be an accepted belief that there is no possible way to cure an abnormal function in the mechanism of vision, even though abnormal functions and diseased conditions are being cured in every other part of the body?

There is a prevalent impression in the public mind that when any difficulty in seeing becomes apparent, there is no other help available but wearing of artificial lenses. This vague consciousness might be spoken of as a belief. But it is not a belief that is founded on any knowledge of the subject. The public mind knows very little of the factors or the mechanism of vision; it asks no questions, and it does not even consider the plain facts which are generally known. Just a little consideration of the many simple, established, obvious aspects of this most vital question arouses an astonishing reaction to a situation which is of national importance.

Whence comes this vast ignorance about the impending calamity to the power of vision? Why is the United States fast becoming a nation helpless in its daily life unless it has a pair of artificial lenses attached to its eyes? Why have the people come to believe this anomalous misinformation, as though it were the very truth?

Where there is a great cloud of smoke one knows there is a fire. This habit of wearing glasses, in this country of ours, out of all proportion greater and worse than in any other country, is growing like the size of a large ball of snow rolling down a hill. There are many factors at work in this strange development. But the chief factor is the activity of a vast modern sales organization, which is using all the devices of psychological salesmanship to persuade the population of the country that the only relief they can hope for, when their eyes begin to falter, is the life-long dependence upon artificial lenses. This propaganda even goes beyond that and warns now that those whose eyes are showing no signs of failure, should hurry and put on glasses anyhow—even though it is well known that eyes always grow more dependent after glasses are imposed on them, and they rarely ever relinquish them once they are attached.

But if it has been decided by the medical profession that this artificial aid is the only known method of relief, would it not be wise to consider the import of this final answer from the men upon whom we must rely for whatever help is to come in this most serious extremity?

If further search for relief is to cease, the situation is a promise certainly of the progressive degeneration of the human eye. That is the law. The glass lens will become the master of the lens in the eye. Just as the wearer is to become the property of the lens maker, so the eye is to become the slave of the glass lens. We are beginning already to see the warrant for such a statement in the rapidly increasing use of artificial lenses. In our own country this custom of wearing lenses is becoming a contagious habit. Furnishing the glasses has become a tremendous enterprise.

In the Great War it was found necessary to lower by half, the standards for vision required of soldiers. These standards were already well below those required for average normal vision. Having allowed for the use of lenses, the United States Army found it necessary to accept men with only one-fifth normal vision without lenses, if one eye could be brought up to one-half normal vision with glasses.

Some have estimated that of those in civilized life today over twenty-one years of age, only one in ten has normal sight. Personally I have met many, mostly children, however, who can read readily at fifteen or twenty feet the line required to be read at ten. At forty years of age there are very few without visual defects.

This problem of defective vision has been disturbing the medical profession for a century. In Germany the Imperial Government tried for years to stop the increase of the use of glasses. The effort failed completely. But in Germany today many are having success with their eyes, in an organized system of schools for the improvement of vision. In a translation into English of an article in a German medical magazine published in Leipzig, the principles upon which their work is founded are credited specifically to the discoveries of Dr. Bates.

As illustrations of their success, it is stated that a class of young men was received in the army who were nearsighted (unclear distant vision) because their eyes had been habituated to functioning with work which demanded nearsighted vision. (Demanded clear close vision? Unclear at distant while their vision is clear at close? Misprint? Nearsighted means unclear distant vision. Does this sentence mean that the men had clear close vision but unclear distant vision due to using the eyes most of the time at only close distances? Nearsighted people have unclear distant vision while often in early stages the close vision is imperfect but clearer than the distant vision. At first they could not adjust their eyes to distant objects. It very soon developed, however, that the danger involved by that so impressed their minds that their eyes learned to see what was necessary. A soldier was such a good marksman that he was detailed as a sharpshooter. This involved an examination of his eyes by a specialist, who fitted him with glasses. Wearing the glasses, his marksmanship became very poor, and he was dropped from the corps. He was taken charge of by a vision school, his glasses were removed, his skill returned, and be was reinstated as a sharpshooter.

England, also, now has the beginning of a similar movement, and gives notice of a School of Eyesight Training in London. It is taking up the work of Dr. Bates in a practical way, on the principles established by him. The children especially are to have the advantage of a training in the scientific and humane use and development of their eyes, instead of being afflicted and obstructed, in their early developing years, with a pair of artificial lenses as an endowment for life.

Commenting on the use of artificial lenses, an ophthalmologist recognized as an international authority, Dr. Sidler-Huguenin of Zurich, Switzerland, writing in 1916, expressed the opinion that lenses and all methods now at our command are of but little avail in preventing either the progress of the error of refraction, or the development of further complications. This commentary was given as the confirmed judgment of a specialist who, during a lifetime of private and clinical practice, was interested especially in finding an answer to the problem of the efficacy of lenses. He reported particularly that with one class of patients, connected with the educational institutions of Zurich, the methods that he prescribed failed to correct the faults in the functioning of their eyes, despite their earnest, faithful, and constant adherence to his instructions.

Those who find it necessary to seek the assistance of glasses seem to take it as a natural thing that their eyes should fail to function in the beginning of life. They rarely have interest enough in the calamity to ask why it happened. If they ask, they are generally told that the cause is what is called eyestrain. No one seems to ask what eyestrain is. No cure is offered for it. So they put on glasses, and generally they seem to feel quite proud about it. It has become so fashionable! As a rule their eyes get weaker, of course, and sooner or later they get a stronger pair of glasses. In many cases the glasses are quite satisfactory, until the eyes get so much worse, and then it is a simple thing to buy another pair in the series of glasses they are going to need. But in many cases the eyes refuse to agree with the glasses, and there is a constant conflict. So what is there to do?

In a recent article describing the very fine course of training, mental and physical, which is given the Naval Academy students during their four years at Annapolis, it is reported that last year the honor man could not be commissioned to the line. He was rejected, after four years of perfect record, because his eyesight had failed slightly in his senior year.

There are those who write that human eyes have not sufficiently evolved, because nature did not intend they should, to meet the situations encountered in the ordinary life of today. If such preposterous assertions were true, consistently all of the naval cadets would suffer the same defeat as that honor man was impaled upon—just because there occurred a temporary faltering of his vision, due plainly to a continued physical and mental stress—which is not necessary. It is a fair question to ask why the eyes of that perfect specimen failed him. It is of vital importance to ask what, if any, deliberate attention is given, in that meticulous curriculum, to the mechanism and the care of the eyes of the cadets.

Dr. W. H. Bates of New York City, many years ago conceived an original idea. Why not cure the abnormal condition of the eye? Why not treat it as the medical profession treats an abnormal condition of any other part of the body? To find the cause and then to devise some means of relief involved research work which led him into fields never explored before. What he discovered will be explained. The system he originated will be described. By following his directions it is possible to correct the faltering function of the eye, and recover normal vision.

CHAPTER II

THE BACKGROUND

THE principles of this new method of treatment, which was discovered by Dr. Bates, are founded upon facts that are plainly in sight, but have heretofore been ignored. It is established that in most of those cases where artificial lenses are being used as a help to seeing, there is no change in the tissue structures of the eye itself. The fault, as diagnosed, is principally an abnormal functioning of the nerve and muscle mechanism. This is a condition quite common in the conduct of other functions of the human body. In every similar condition the expectation of the physician is to correct the fault and develop the normal function.

Nervous indigestion, a condition called nerve tire, the well-known unexplained insomnia, neuralgias for which no cause can be found, various habitual muscular twitchings, are all illustrations of conditions in which the abnormal conduct is owing primarily to some disturbance in the mechanism of the nerve control. Such abnormal functioning can generally be corrected. In many cases the only found cause of the abnormal nerve impulses is an abnormal functioning of the control center in the brain.

Psychologists and psychiatrists have been insisting for years that a large percentage of the above cases should be treated exclusively by mental suggestion. Reports are being made to scientific conventions of cures effected by mental treatment only, after reported failure to cure the given cases by the use of drugs. In what are called spontaneous cures, the patient reports symptoms have ceased, and the patient does not know, and the doctor does not know either, what caused the symptoms or why the disturbances ceased.

A young woman afflicted for years with irregular and distressing twitching of the arms and of the muscles of the face, uncured during some years of medical attention, stopped it all suddenly, and stayed cured. There are many who stutter badly under certain conditions of nerve tension, and do not stutter at all when there is no mental stress. In the offices of nerve specialists are found many varieties of painful or disturbing dysfunction for which no cause can be discovered. It is generally believed by the medical profession that these conditions, classified and treated according to indications, are the results of some abnormal functioning of the centers in the brain which control every part of the mechanism of the human system.

The different kinds of disturbances of vision vary greatly in the degree of trouble that is present at different times. A woman who was deaf for years, and could not secure relief, was shocked mentally by her sensations in a falling airship, and during the emotion her hearing returned. A man who for many years could not manage at all without glasses, broke them while on a trip up in the mountains. He had no others with him, and he got along so well without them that he has never worn them again during the several years that have passed.

Failures in sight, and illusions in sight are so common, that an authority among ophthalmologists coined a phrase "seeing is deceiving." In a large percentage of cases of abnormal vision the principal fault is not a matter of physics or physiology, it is primarily psychology. That fact is really the foundation of the method of treatment originated by Dr. Bates.

A man of twenty years, who always found it impossible to see work or printed matter except at very close range, was permanently cured of the fault in one hour by this method of Dr. Bates. Encouraged by that success, his brother, two years older,

presented his right eye, which had been blind from birth. He had consulted only an optometrist, years before, and had been told that the eye was undeveloped. Before treatment was begun I sent him to get the complete information from a medical specialist in the clinic of a large hospital. He was told there that his only chance was to cover the good eye whenever he could, and thus encourage the undeveloped eye to develop. He was told also that it would be two or three years before he might expect any improvement. Under treatment by the Bates method, however, in a few days he could read the upper lines on the Snellen Chart three feet away, and he continued to improve rapidly.

A young woman of twenty-two years reported that her brother's right eye had been crossed from earliest years; but that it was her left eye which had been crossed from her earliest recollection. About ten years before her visit to my office the strabismus (crossing of the eye) shifted, and the right eye turned outward while the left eye became straight. She had worn glasses for several years, and could not see her work in a large office without them. In two hours her right eye was perfectly straight, and has remained so for three years now; and she has never worn her glasses since. This was not a miracle. In the standard textbooks it is explained that crossed eyes may change spontaneously from one oblique direction to any different oblique position, or the strabismus may transfer itself spontaneously from one eye to the other, just as had happened to this patient while under my treatment for two hours.

A child of eight, thrown down by what is called a police dog, received as the immediate result of the mental shock a pair of crossed eyes. Most histories of crossed eyes originate as a consequence of an attack of measles or scarlet fever or some other acute or chronic disease. Since such a condition may come in an instant, may change spontaneously, often varies greatly, and in some cases disappears spontaneously, why should it be considered unreasonable to expect that the condition can be cured in the same manner that other conditions of the same nature are being cured?

The cases selected from my records are illuminating examples of the effects which can be secured in the treatment of abnormal conduct of the eye by developing an interested attention to the condition on the part of the mind. For years this has been the method used by medical men in the treatment of similar dysfunctions of other parts of the body. These selected cases of mine, and others just as remarkable, are in evidence today, and the given records are correct.

Eyes which develop noticeable abnormal function misbehave in many different ways. The misconduct of such eyes varies constantly in degree and even in kind. In many cases those eyes cease to act abnormally. Where glasses have been worn, they are discarded, and the conduct of the eyes continues to be quite satisfactory without them. In the majority of eyes an abnormal function continues. The wearing of glasses never corrects the abnormal condition. When eyes recover normal sight, in any case, the change is produced through the internal mechanism controlling the eye. That eyes do recover normal function cannot be questioned. This certainly proves that such a power is inherent in the eye. It remains only to discover how best to help those eyes which can regain their natural power.

In many cases it is quite practicable to teach a patient who is having trouble with eyesight how to correct the abnormal function and regain good normal vision. There are different techniques, or procedures, in the method originated by Dr. Bates. They are all very simple, and they are varied so that they are adaptable to every kind of condition, and temperament and opportunity. In this book all of these practices will be described so that it will be possible to learn definitely from the text how to carry them out.

These practices sometimes produce most gratifying results in a few minutes. But in other cases, even with the best of intentions, progress is slow. It is not always possible to discover why a patient cannot secure the same success, even when the difficulty is less in degree. But whenever there is an earnestness of purpose, some proof of dormant power will come in flashes of normal vision. Words or letters will be seen vividly for an instant, and sink back again into the haze, as though a bright light had flashed, and then gone out. I have at times impressed the mind of a patient by bringing back the vividness that came and went, when I threw onto the letters the radiance of a 1000-watt light, or took the patient to a spot where the strong sun shone directly on the page or the test card.

The game is worth the candle. Those who have worked the hardest are generally the best pleased with their success. The mind that has become adjusted to the impairment of vision that is more or less crippled or dependent, is satisfied, if not content. But those who have said "Now is the winter of our discontent turned into glorious summer," are the ones who have realized the happiness of having won back the pleasure by their own efforts.

CHAPTER III

THE CAUSE

SIGHT is the most precious of the senses. In the last ten years of my practice as a physician, during which I have been especially interested in patients with various defects of vision, I have come to realize that very few have any real consciousness of the situation. Most people are distinctly less conscious of the work of their eyes than they are of almost any other of the organs and functions of their bodies. An abnormal functioning of the stomach, causing more or less distress, attracts very prompt attention. The mere consciousness of the beating of the heart arouses immediate concern. But it is possible for their vision gradually to lose its power to a considerable degree before their inattentive observation remarks the failure of their eyes to discern objects with the same acuteness and ease that they formerly had. When they find themselves obliged to seek relief, they realize that the only help they know of is the use of artificial lenses for the remainder of their lives.

From sources which are not only most interesting, but are of the most vital importance, there has been developed and fostered in recent years a new and prevalent psychology. It does not relate primarily to the human eye. The eye itself seems to be like the "forgotten man." This psychology relates to the wearing of artificial lenses. The atmosphere is so pervaded with glasses, with new and changing styles of lenses and frames, that there is plenty of proof of the claims of a large corporation that it is rapidly making the people of the United States what it calls "eye conscious." The condition might certainly be better designated as eye unconscious. People seem to forget, for themselves and for their children, what it means to put on glasses for the remainder of life. They do not seem even to ask why no other help is possible, and do not seem to care. I have known those who have argued against the removal of plainly diseased tonsils, and even a diseased appendix, to use the slightest kind of a fault in vision as an excuse for joining the procession and appearing proudly with a pair of glasses.

My purpose here is to paint in plain words some pictures that are rather obscure to most of those whom doctors call the laity. Even those who do not wear glasses now, or those whose children are not bespectacled yet, may do well to step out of the procession long enough to look at the prospect I am going to describe and ask themselves if they are interested.

Over forty years in the practice of general medicine have given me opportunity to observe the functioning of the organs of the human body, and likewise, opportunity to observe the conduct of the human mind in its relation to these organs. The fact that I was not, until recent years, engaged in treating the eye itself, has made it easier, perhaps, for me to record whatever impressions I gathered about eyes and vision without any prejudices. Moreover, the peculiar experiences I have had with my own eyes have prepared me for the reception of personal impressions with more open-mindedness than if I had never worn glasses. It has some significance, too, that **I have now used my eyes for ten years without glasses after having worn them constantly for thirty-seven years.** The experience I have had with my own eyes is a rather extreme illustration, but it is in kind quite similar to the common course of conduct that is the story of eyes which cause trouble because they do not behave in a normal manner.

My vision was quite good until I was twenty years old. The change came with a crash. A severe and remarkable mental shock introduced a long record of peculiar and variable astigmatism. One summer day I dived into the Hudson River on the water-front of New York City. With a group of strong swimmers I joined in a race to an iron freighter and back. It was a quarter of a mile each way. On the way back my strength gave out and I fell behind. Soon I was alone, in forty feet of water, and unable to swim farther. I can remember, as though it were yesterday, the startling vividness of the picture of the brick barge I must get back to. It was as small as a hat and seemed miles away. The others saw my danger and came back to me. In their company my courage returned and my strength came back. That incident made such an unconscious impression on my inner mind that some hours later **I suddenly found myself blind**. Sometimes I could see nothing, and then there would be a film, and then it was dark again. In an hour my eyes were clear, but they were not normal. It became necessary for me to wear glasses constantly, and I continued to wear them for thirty-seven years.

My father was a physician, and the first eye specialist he took me to was very kind for some weeks, but my eyes were helped very little. I soon realized that my sight was quite variable. There was indistinctness, sometimes less, sometimes more, there was blurring, there was discomfort. The variableness was noticeable whether the glasses were on or off. We tried a second specialist, and finally a third. The last doctor fitted me with glasses that were much more satisfactory, and I wore them for three years before they had to be changed.

It was only after I learned the fundamental meaning of the discovery of Dr. Bates that I came to understand why those lenses suited my eyes so much better one time than they did another. It was so simple after all. The conduct of the eyes was varying constantly, but the pieces of glass never changed. My condition was diagnosed as astigmatism. That word has a bad case of astigmatism itself! The explanations are contradictory. We are told that it is incurable, but many cases of cures are on record, that recovered without any doctor's help. Apparently the cause of the trouble dissolves out of the picture. In some cases the condition varies constantly, and in others it disappears and probably sooner or later returns. I was told that my astigmatism was congenital; that I was born with it; but it came in an instant, and it was caused by the strange mental condition that I crashed into three hours before, when my eyes shocked my mind.

The experience with which my own years of astigmatism and nearsightedness was inaugurated is named in the textbooks a psychic amaurosis. **That means a blindness in which there is no apparent change in the eye tissues. There is a similar condition called amblyopia, in which there is a dimness in any degree up to blindness.** Either of these conditions may be temporary or permanent. Try to realize the significance of such conduct in an eye which shows no cause, in the eye itself, for the terrible calamity. The same conditions are found even when there is no apparent change any place in the body that might be a cause. Both of these conditions therefore, may come without any apparent cause. This means that certainly they must be caused by some condition in the mind; and that is why they are described as psychic. They often disappear as they came, without any warning and without any explanation except that their conduct is determined by the mind. Does this not make it plain that the simpler, common dysfunctions of the mechanism of vision are also caused by abnormal conditions in the visual center in the brain?

CHAPTER IV

THE PSYCHOLOGY OF SPECTACLES

A CUSTOM which evidently originated with the Chinese ages ago when nothing was known of the physiology or the intimate mechanism of the eye, has now grown into a sort of unwritten law. The new law is that no cure is possible for an eye with a faulty function. Such a law ignores the obvious truth that there are always cases in evidence of spontaneous cures of the different conditions for which artificial lenses are prescribed. **Since eyes with faltering vision do recover normal function without any assistance,** why should it be thought unreasonable to expect that other eyes in the same abnormal condition can be assisted successfully into a normal conduct?

When one wanders away from countries which are known as civilized, it is found that the great mass of the race is getting on very well without the help of the glass lenses of ancient China. Uncivilized people need their eyes. In the day and in the night good eyesight is necessary for the preservation of life. They have found no necessity for glasses.

Suppose we consider in a simple direct way, some of the plain and obvious factors in this vital and serious problem. Those of us who are older will have a better realization of the significance of the new conditions which have developed so rapidly. Many are remarking the large percentage of the population of our cities now wearing glasses. The same people remember that some years ago it was quite different. These people, because they are conscious of this feature of public life, are impressed with some of the special aspects of it. The number who are wearing glasses is growing with a rapidly increasing ratio. Like any new style or fad which pleases the popular fancy, the wearing of glasses is rapidly becoming a national habit. Healthy young persons who have fine natural vigor in every other way, suddenly realize that their eyes are helpless, and proceed to secure a pair of becoming spectacles.

Not so many years ago one felt like apologizing for such a confession. There is no thought of that now. The lifelong expense, and the hampering restrictions of glasses are commonly accepted as an unavoidable nuisance. But often, on the other hand, the opportunity to parade them is sought with an apparent eagerness. How far will this new habit lead the American public? What will be the consequences to the nation? Young people used to shrink from the taunt of "four-eyes." Now the only concern seems to be how to select the most ornamental and becoming spectacles that the budget can pay for. Why is this true, and what are the causes, or the influences, or the selfish purposes which are producing and developing this breaking down and degenerating of the priceless necessity of daily life—the power and reliability of the human eye?

What will be the penalty paid for the ultimate success of a program and a campaign which boasts in public print that it made everybody at the Chicago World Fair "eye conscious", and has established a nationwide campaign to make everyone in the United States "eye conscious"? What does "eye conscious" mean? When the organization with such a tremendous program and propaganda represents an industry with a gigantic plant for the manufacture and sale of artificial lenses, it is in evidence that people are to be made eye conscious so that they will protect their eyes from harm by buying the glasses which the organization makes.

In accordance with this ambitious project there is a vast network of commercial agencies and high pressure sales devices. There are more and more optometrists, and there are new and most attractive window displays of dainty frames for exquisite new lenses for which wonderful mechanical improvements are claimed. There is a new line of engraved mottoes in which the public is told that the storekeeper is a vision scientist. Again it is explained that the eye is a work of extreme complexity, and the optometrist must have a complete understanding of its functions and its deficiencies. But he, and you, we are told, must depend upon lenses to carry out precisely the correction that is necessary. There are even gaudy lithographs of eye specialists long dead, who are on dress parade, and are supposed to add their benediction to the purchases.

There are other gorgeously colored pictures with quaintly typed explanations under them telling that in China, five hundred years before the Christian Era, the wise men of that country wore spectacles, and in the picture they have imaginary spectacles on, remarkably like the ones worn here until the new style of the last few years began the series of changes, which now are just like the changes in the style of hats. Again we are shown the fops and "socialites" of Europe, overdressed just as the Mandarins are in the Chinese pictures, with showy spectacles on their faces. There is again an explanatory text. It tells us that from the fourteenth to the seventeenth century many wore spectacles for adornment, as it is written, and as an aid to vision. Are the coming generations of the United States to wear spectacles for adornment because it was a fad some centuries ago, and so wreck their own eyes for life? Are the defective eyes of today to be treated only with glass lenses because no other help was known in what has been called the dark ages?

But in all this the eye itself is absolutely ignored as a living, vital end organ of a human being. It is treated like a hopeless wreck that cannot do its own work, and can never function again except under the orders of a piece of ground glass. The only light rays it is to receive are to be the ones refracted through the precise correction determined by a vision scientist. In medical literature there is constant reference made to lenses that are not correctly fitted. In those cases the eye must labor constantly against an obstruction which never changes. There are many things to say against this system which offers no relief to an eye in distress except the crutch which is called an artificial lens. But there is always one stern challenge to this system. The lenses must be changed again and again, made stronger, we are told, because the eyes are growing weaker. These propagandists warn the public to remember that their eyes are their most precious possession, and plead with them to take good care of them. No doubt they are positive that there is no other care to be given for a faltering eye function except a pair of spectacles.

If there were no known remedy for the relief or cure of defects of vision, one might simply find amusement in the frantic concern which is exhibited by vendors of glass lenses. One might feel that it was really a kindness to spend enormous sums of money in advertising to millions who are unconscious of any difficulty with their vision, the danger of not having their eyes examined so that they will be sure to save them! One might still wonder what is in the minds of campaigners who are determined to make everyone in the United States eye conscious. There are many millions who can see better with their unaided eyes than most of the spectacle wearers with their glasses on. Since the wearing of glasses generally makes the eye progressively more helpless without them, where is the danger of waiting until they are needed? The artificial lenses certainly do not prevent the eyes from growing poorer and poorer in function. The wearers are told that they must buy stronger glasses because their eyes are growing weaker. Suppose we stipulate, as the attorneys say, that the campaign is prompted by the belief that all those who are not wearing glasses are in danger of losing their vision. Let us then, on the other hand, consider the possible effect on the public mind of this vast and intimate network of subtle advertising by window displays and magazine articles and radio broadcasts.

None will question that the millions which have been spent advertising cigarettes, for instance, have been repaid through the psychological effect of the beautiful lithographs. In other words, "it pays to advertise." And also, perhaps, the end justifies the means. But how many are there who will deny that millions of eyes have been fitted with glasses, that could have functioned without them if the owners had not been persuaded that they had better get eye conscious and save their vision from future calamity?

In this field two incidents, quite recent, are most remarkable. In the public press there was a notice of a reported patent, secured for a machine which is to measure the degree of inferiority of an eye in its relation to ordinary sunlight. It is to tell just how defective the given eye is in contact with its best friend, the light of day. The number on the scale which is registered by the new machine will tell the salesman what specific color the particular eye is to wear when it goes out in the daylight, where the rest of the race walk up and down on the earth unconscious of the enemy, the sun. With the colored glasses on, everything the inferior eye looks at will be of the same color, blue, or smoky, or orange, or whatever shade the salesman decides on. As the glasses now are made stronger, probably the glasses of the future will change color each time the eyes go to the store, and the world will change from straw color to blue or mauve. What the brain will be thinking of, and how it will be embarrassed, as it deciphers out the deception—well, that surely takes us into the domain of the psychologist.

The second incident is certainly food for thought. Instead of wearing glasses in front of the eye, it is proposed, as a kindness to a crippled eye, that the artificial lens be fastened to the eyeball, held by suction, between the eye and the eyelid. What an inspiration! Even the crudest conception of the eye itself must surely be impressed by the possibilities involved in such an intimate contact of an enveloping foreign substance clinging constantly to the sensitive covering of the eyeball. (Contact Lenses)

Contact Lenses cause cornea, eye injury, infection, scars, blindness, loss of eye.

The coating of the eye is kept constantly moist as well as clean by a suitable fluid secreted, (tears) and this fluid is spread carefully over the surface of the eye every time the eyelids close automatically, as they wink (blink) all day long. Just what interference with that provided protection would be accomplished by such a remarkable paraphernalia, only experience can reveal. Deprived of its necessary lubrication, a dry eye is a troubled eye. Tiny particles of dust captured between the sensitive covering of the eye and its new underwear might possibly arouse new ideas. Such an unceasing suction on that sensitive membrane might develop complications on the surface which would demand attention. But the deeper effects might be more important. It is established beyond question that the most trivial irritations, even in distant parts of the body, may cause a considerable disturbance in the conduct of the refraction of the eye and of the vision centers. What should one reasonably expect from such a constant impression, made by an unceasing interference with the natural conduct of the eye? It is hard enough for one to try to imagine carrying all the time a piece of foreign tissue stuck to the eyeball so tight that the lens built into it would always match perfectly the margins, and the movements of the lens of the eye. How could the best qualified specialist estimate the serious secondary conditions that almost certainly would complicate such an interference with the mechanism which has been evolved during eons of time by the development of the human eye?

Notwithstanding, however, that the discovery is not generally known, it has now been established for many years that the eye is not different from every other part or function in the human body. It is not a hopeless and helpless wreck just because its marvelous mechanism has faltered in its function. The eye is quite near to the brain which controls it. It is quite responsive to the correcting influence of the vision center in the brain. It is so accessible to conscious effort on the part of an interested attention, that it is easier to constrain the misbehaving eye to act in a normal manner than it is to correct abnormal function in almost every other organ or sense organ in the body.

Whatever may be the belief of those who have glasses to sell; or whatever may be the individual attitude toward the question of wearing or not wearing spectacles, there still remains a problem which has a most vital public interest. Those who are concerned in the future of the United States will do well to analyze the situation. Every thoughtful American should consider the promise there is in this avowed purpose to make every citizen of his country helpless without a pair of artificial lenses on his face. It is certain that the longer glasses are worn the more helpless the wearer becomes if he is obliged to see without them. The vast number who are already in that condition is not so serious a question as is the fact that in recent years this number has been increasing at a rate which multiplies itself each year.

The strange and ironical and dangerous aspect of this subject which has a tremendous national interest, is that if and when the eye is taught to be itself, the salvation of the eye will involve an interference with the merciless greed of commercialism.

CHAPTER V

TO BE OR NOT TO BE

IN THIS chapter I shall undertake, in a simple and deliberate manner, to consider an abstract question. The question is whether an endeavor should be made to recuperate the faltering eye and use it, or whether the eye itself should continue to be neglected, more and more each succeeding generation, and be denied the help which is being given to every other part and function of the body. I ask the reader to lay aside all personal feeling, and follow, without any prejudice or any mental reservation, the lines of thought presented.

In the standard textbooks we are told that sight is a psychic function. In other words, it is in the brain that we actually see, just as it is in the brain that we feel, and hear, and taste and smell. Marvelous as it is in itself, the eye is only an end organ, a receptor. It receives and transmits a physical force to a nerve which carries that force like an electric current up to a special receiving center in the brain.

If we are to have some practical understanding of the issues which are involved in this controversy, it is necessary that we have some knowledge of certain facts, which are being ignored entirely, and are realized by very few of those whose vital interests are at stake. We will need to learn something of the known mechanism of the human eye. **Even a normal eye varies constantly in its efficiency, and an abnormal eye varies considerably.** We must remember that radical changes take place in its conduct, even extreme discrepancies in an abnormal eye, when no least change is found in the tissue of the eye itself.

In the past few decades the record of the work of the medical profession has been the story of a new science and art, entirely different from the old methods of treatment. In the centuries of the past, medicine developed like every other science. Now and again a genius arose out of the ranks that moved slowly along-when they did not remain stationary for a lifetime. These men of vision generally battled with the rest of the army while they lived, because the minds of their colleagues continued to function with the fixed habits which were their mental life. That was the experience of Harvey when he insisted that the blood vessels contained blood, and not air. When Lister offered his theory that infected wounds were caused by bacteria, not even the proof he offered, made any impression on the fixed beliefs of the surgeons with whom he was working. Notwithstanding the fact that their own explanations were negative and empty, they refused to consider his. He cut the infections in his own surgical wards from seventy to seven; but for a long time the only recognition he received was ridicule. Pasteur was not even a doctor of medicine, and so the discoveries he made, instead of being received with reverence, were met with bitter, vicious persecution.

But the practice of medicine is guided now by different principles and different men. New discoveries are frequent, and methods are improving constantly. There are many evidences of this. The legions of death, that moved silently and without any opposition for so long, are now seen and met and conquered. The plagues of the past are guarded against successfully. Cancer killed many in every thousand; its victims are daily numbering less and less. Tuberculosis was a universal scourge, but the ninety per cent of infections in childhood are now a thing of the past. Malaria and typhoid fever now are generally not cured, they are prevented. The early deaths of infants are provided against and increasingly they do not occur. The cause of all these changes can be explained by what the doctors call preventive medicine.

The causes of tuberculosis were searched for and found. Then a defense was organized. The children were protected, and their natural defenses were strengthened. The enemy in cancer is still unseen, but so much has been discovered about his plan of attack, that he is met with a new resistance, and the number of his victories grows smaller by degrees and beautifully less. The mosquitoes of malaria, which were caught in their acts, are killed now in advance of danger. The drainage which carried the typhoid poisoner into the water and into the milk, is prevented now from polluting the liquids that used to carry death. In short, instead of only trying to cure the body which has been attacked, the doctor begins now by meeting the enemy as he comes on. The doctor has learned that the best defensive is an offensive. That is true of the whole field of medicine, except in the care of the precious sense of sight. No effort is being made to prevent the deterioration of the human eye. No effort is being made to find out why it is failing. No effort is being made to cure it. The situation today is just where it was twenty years ago when Dr. Sidler-Huguenin, an acknowledged international authority in this field, wrote that: "Glasses and all methods now at our command are of but little avail in preventing either the progress of the error of refraction, or the development of the very serious complications with which it is often associated."

What is the answer to the conclusion of Dr. Sidler-Huguenin? Is there no answer? The answer is here. The answer has been here. The answer is scientific. The answer was given by a physician who was a genius ranking with the leaders in other fields of medicine. The answer was proved during many years. The answer can be proved now by any who care to repeat the scientific investigation of Dr. Bates, or to test the results by using his method in cases of faltering eyesight. Notwithstanding all these truths, the human eye today seems to be treated like a commodity for barter and sale.

Since artificial lenses are ground to correct an exact degree of refractive error, it is necessary for the eye to produce constantly that exact degree of error in order to see clearly with the glass lenses in front of the eye. But no degree of refractive error in an eye is constantly present. The abnormal conduct of the eye is a fault which varies in degree. Many who wear glasses report that they find more or less difficulty with them, even after they "get used to them." Those who find their eyes adjusted for a period, are obliged to change the lenses because they have gradually become a hindrance instead of a help. It has been demonstrated by many who wear glasses that if they make a test by laying their spectacles aside for an hour, or a longer period, their sight improves, and they can see better without the glasses an hour after removing them than they see when they first take them off.

It is true that a great many who are wearing glasses would not be interested in trying to get along without them. As long as there is either difficulty or discomfort without them, and there is relief while wearing them, their answer will be "spectacles"—and that is their own affair. There are others who would like to be freed from dependence upon spectacles, but would not care to take the trouble, or are afraid the effort would end in failure.

In this short chapter we are not concerned with those. But many of them would still be interested in the question under consideration. They would be glad to know that thousands who are not wearing glasses yet, but are going to wear them, need not put them on. They would be interested, if they could realize it, to know that it is more possible to be saved from weak and unhappy eyes than it is to be saved from other damaging weaknesses which are now anticipated and prevented. The finest, spiritual interest they can have in this vital problem is an enthusiastic desire for the correction of a serious mistake, and the elimination of a menace which involves millions of humans, and endangers the welfare of this country.

"To Be or Not To Be", in this chapter, means just what Shakespeare, not Hamlet, said it always means:

To be, or not to be, that is the question.
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous fortune;
Or to take arms against a sea of troubles,
And, by opposing, end them?

The slings and arrows of an outrageous fortune, in this discussion, are artificial lenses—the most domineering and dominating impediments to personal freedom that this particular land of the free is being subjected to in this generation.

Whatever we automatically decide to do about our own lenses, and whatever indifference we may feel about what the remainder of the adults are doing, have we not, every one of us, a battling interest in the sea of troubles that is being launched upon the children, in this deluge of spectacles with which they are being overwhelmed? Do we not want to know whether or not it is possible to give them back their own eyes, free and strong and independent? If it is possible, and that is being proved every day, do we not want to know why the eyes of the children are being denied what every other faculty and function of their minds and bodies are being given—the care and education which is their right?

CHAPTER VI

THE PHYSIOLOGY OF THE EYE

ORDINARILY we think of the eye in very simple terms. We realize a difficulty in seeing things, and we ask ourselves what we must do. The only remedy offered is to get what help we can from a pair of glasses. Very few ask any further questions. If they have heard of the Bates method, and inquire about it, they are informed, in a regular stock phrase that: "Dr. Bates has been discredited." There is a growing rebellion against that reply, which is not an answer. But only a few have access to the answer that is found in the success of those who have carried out the techniques of that method.

In a book by a psychologist of high standing it is pointed out and proved that physicians do not any longer try to make the distinctions that used to be made between organic and functional diseases. Conditions that were thought to be caused by a change in tissue structure, are now known to be caused by a fault in function, consequent upon improper nerve impulses, prompted by a disordered mechanism in the central control.

A famous biologist, in a recent book, writes that the illusions of the mechanists, and the childish physico-chemical conceptions of the human being, in which so many physiologists and physicians still believe, must be definitely abandoned. That the mind, hidden within the living matter, is completely neglected by physiologists, and almost unnoticed by physicians.

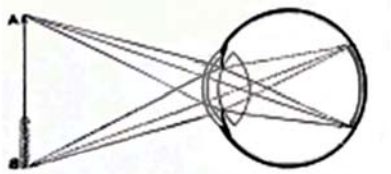
The use of spectacles is often a necessity. But a claim that such a mechanical device has any value as a correcting influence upon the mechanism of vision is surely the theory of a mechanist. There is no claim made that the glass lenses have any influence upon the abnormal conduct of the visual center. The only claim is that they help some to see by using the glass lens instead of using the lens of the eye.

Everyone knows that there is a constant mental activity which is outside the circle of our awareness. This storehouse of endowment and life-long development is the power-house which impels every function of life. It provides the energy for conscious thought and conscious action, and dominates every vital process of the body. The mechanism of vision is part of its dominion. The muscles which change the shape of the eyeball, and the nerves which carry the force sent in by radiant energy, and the impressions which are made upon the brain cells of the visual center, comprise the mechanism of vision. The mind interprets images. The mind includes memory, experience, judgment, imagination. All of these are involved, and are vitally active, and upon them depend the power of vision, and the truth of the impressions and the conceptions of which we are conscious by reason of the images that the eyes receive.

A well known professor of psychology carried out a most ingenious experiment which has a direct bearing on the subject matter of this chapter. His remarkable demonstration illustrates how much of the function of vision is carried out by that part of the brain

which is called the visual center. It shows also, very clearly, the complexity of the question of the value of artificial lenses. It explains how they frequently hinder the effort to see instead of helping the difficulty.

The picture thrown upon the retina of the eye is always reversed perpendicularly and laterally. In order to realize the significance of this statement, it must be remembered that the light rays reflected from the upper part of the object looked at slant downward so that they are delivered onto the lower part of the retina, which is the receiving film of the eye; and the light reflected from the lower part of the object is likewise delivered onto the upper part of the retina. Objects on the right side would be represented as on the left, and vice versa. This is partially realized by looking into a mirror.



It is easy enough to imagine the disturbance and confusion which would be caused by such a complicated misrepresentation of everything, in the complete reversal of the positions of every object seen. But the human visual receiving apparatus corrects this perfectly. In what manner that wonderful transformation is accomplished, the mind of man has not learned how to explain.

This professor of psychology prepared a pair of glass lenses which so refracted the light rays that the image was already inverted before it reached the lens of the eye. The lens of the eye refracted the rays received just as it had always done. This had the effect of delivering the image onto the retina right side up, and laterally also without being inverted. As a result, all objects at first were seen by the mind inverted perpendicularly and laterally. This was because the habit of the mechanism of vision treated the seen objects in the accustomed automatic manner, and re-inverted the images received. Wearing the deceptive lenses all day, the eyes were covered at night. The wearer at first had a unique experience. He would collide, for instance, with objects which seemed to be on the right, but were on the left. But in the course of a week a new mechanism of adjustment had been built up, by changing, somehow, the various reactions of the brain cells in the visual center. Then things seen were again presented as they had been before, despite the complete reversal still presented by the glass lenses.

This necessitated some new functioning of the different parts of the complex higher visual mechanism. Something was done which the brain and the mind had never done before. Something of a nature essentially different from the mere physics or optics of lenses—glass or flesh. The brain, might we say, working for the mind, met the emergency as just another one of the discrepancies which are constantly being imposed upon our different organs, and generally compensated with success.

When the brain—or shall we say, the subconscious mind had fully accomplished the necessary readjustment, and images were again habitually seen correctly, the trick lenses were removed. The mechanism of vision continued for a time to follow the newly devised method or system, and things were again in confusion. This time however, the new condition lasted only a few hours. The old, natural habits promptly dismissed the strange interlude, and went to work again in the inherent, accustomed way.

Suppose we consider for a moment, deliberately, something of the plain import of this most ingenious experiment. It has taken us up into the higher, more vital functioning of the mechanism of vision. But it has also made plain some most important direct considerations. **When rays of light fall upon the retina, they produce chemical changes which alter what is called radiant energy into some different form of energy, some different kind of nerve stimulus.** It is this new force which acts upon the brain cells. When a person is nearsighted—so-called—all light rays do not fall exactly upon the retina, because the eyeball is too long, and the rays reflected from farther objects meet too soon. In a far-sighted person it is just the opposite. The eyeball is too short, and rays focus behind the retina, which acts like a film. When the eye is impaired with astigmatism, the eyeball is more or less out of shape, instead of being a perfect sphere, and that influences in an abnormal manner the direction of the different rays of light. This is the explanation given in the text books.

Now, in the experiment just described, the rays of light received upon-the given retina were not imperfectly focused; they had been so completely changed in their directions that the image received was exactly reversed in detail from what should have been received, and always had been received as a picture of a given object. That part of the mechanism of vision which is beyond the retina interpreted, deciphered, corrected the deception, and acquired the necessary visional information in such manner that the impressions were the same as if the lenses described had not been used at all.

This experiment demonstrated, therefore, that the subconscious mind can accommodate itself perfectly to an experience not only strange, but actually a misrepresentation, compared to the manner in which the information had hitherto been presented.

The pair of eyes used for this demonstration by a famous psychologist were governed by a visual center in the brain which was working normally. Aroused to an alert attention by such a remarkable challenge, the mentality of the subject rallied its trained resources of memory and imagination, and judgment, and learned the answer. The mind knew that things were not upside down. In that experiment the mind knew that the false lenses caused the trouble. It was the mind that taught the mechanism of vision how to change its habit of the ages. The mind ordered that mechanism not to re-invert the strange images received on the retina. The unconscious part of the mind knew how that function was performed, although the conscious part of the mind did not. It was the unconscious part of the mind that accomplished the victory over the false lenses. This was possible because the conscious mind was aware of the interference and willed to overcome it.

That wonderful demonstration is surely worth some consideration on the part of those who offer lenses as the only possible relief for eyes that are troubled with some slight abnormal function on the part of the same mechanism. A doctor who had worn glasses for years on account of astigmatism, asked if I really claimed that the Bates method would cure astigmatism. I am sure he did not accept my explanation, because it did not agree with his own ideas. The explanation will be given fully later. I wondered what he might have said about the report of this psychologist, who has a high standing in this field. I did not ask him, however. I did not think it worth while.

A young man of twenty who had been troubled from early life by a peculiar astigmatism was freed from it in an hour by the Bates method. He could not fuse a single one of the stereoscopic pictures when we began treatment, but he fused all of them before we stopped. The simple technique employed involved the same attentive co-operation of the vision center as was aroused in the experimental case cited above. The stage was set, however, by what I regard as an attitude of mind. His mind had been deeply impressed before he met me, by a close friend of his who had personal knowledge of cures effected by the Bates method. He had no mental reservations, and his mind responded promptly to the suggestions offered in practice during the hour.

Astigmatism is a most interesting subject. We are told that it may be hereditary or acquired. The elaborate explanations regarding its infinity of varieties, its development, its changes in conduct, the different factors which may be involved and so forth, are all very confusing, and are largely theoretical. The array of plain facts, meaning the actual experiences of those who have had it for years, are often contradictory to the imagination and the hypotheses of those who claim that the condition is not curable, and can be helped only by the use of glass lenses.

My own experience is not unusual. During thirty-seven years there was often an extreme variation in the conduct of my eyes. For months they would behave very well. Sometimes they would tire easily, become more nearsighted, receive blurred images. Those periods might last an hour or several days. Occasionally there were brief periods during which I would have astonishing optical illusions. More than once an automobile would appear to be coming toward me on my own side, although I was sure it was not. I have seen distorted images of persons and things, sections of objects missing, impossible motions. These were not delusions or hallucinations. I was perfectly aware that they were misrepresentations. The glass lenses, usually helpful, had no influence over these distortions.

One aspect is certain, and vital in relation to the treatment of such a condition. Many of the illusions were not caused by errors of refraction, and were not influenced by the artificial lenses I was wearing. **The fault was in the conduct of the visual center. The treatment, therefore, must influence the mentality of the patient, and not merely modify the refraction of light rays.** In my own case the proof of this is the absence of those symptoms since I have used the Bates method. There is nothing uncommon in such experiences. Witnesses on the stand, students in psychological tests, report similar aberrations of vision-and not alone those wearing glasses. In auto accidents a driver with a perfect record has declared that he simply did not see the other car, although it was right in front of him. It will not be questioned that **a mental shock momentarily disturbs seriously the ordinary vision,** producing the same results as are found in the condition called astigmatism. We are told in the text books that astigmatism is a common defect. But the explanations offered as causes do not begin to account for the symptoms that are in evidence. Its performances, including its frequent disappearance, temporarily or permanently, can be fully accounted for only when we consider it psychologically. The same explanation applies to most of the functional disturbances complained of by those who seek artificial lenses.

The muscular element in the mechanism of vision is certainly dominated by the nerve center. Modern medicine knows that even where changes have occurred which seem to be permanent, and where symptoms seem to indicate some change in tissue structure, the abnormal condition will sometimes revert to normal. It is a simple thing for nerve controlled muscles to cease acting in an abnormal manner when an abnormal nerve impulse is changed into a normal nerve impulse. The reactions in the nerve headquarters of the eye, the visual center, are still very much of a mystery. When they act normally, perceptions are coherent. Sometimes visual perceptions are quite incoherent. To see an object or a picture which is not present is an illusion, and is due to misconduct in the visual center, and is not to be blamed on the eye. The common, trivial illusions, with which all are familiar, are caused by some degree of dysfunction in the visual center.

When a picture becomes blurred it is probably simply an improper nerve impulse, compelling the muscles to change the shape of the eyeball, so the light rays cannot focus clearly on the retina. When the eye suddenly becomes nearsighted, or a constant nearsightedness becomes more marked or less marked for a period, the changes are caused by a different nerve impulse.
+**When an <u>eye crossed</u> in one direction spontaneously changes the direction of the squint, or the squint leaves one eye and appears in the other, it cannot be denied that the muscles which held it one way have allowed a change in muscle conduct to hold it in a different way, and certainly those muscles obeyed a new nerve impulse.**

All of these specific changes are in evidence, and are to be found recorded in the text books. Every one of them is either a nerve center process, or a nerve current from the center, or a muscle taking an order from a nerve. Is it not clear therefore, and absolute, **that to correct these faults it is necessary to arouse the attention, and influence the conduct of the master mind in control, which is the visual center?** The proof of this theory, or claim, is its success in operation, which is now a story forty years old.

The fascinating interest of these plain established facts is not simply academic. It is strange, surely, that in all the work, and all the knowledge of the specialists, this simple truth has been ignored. It is more remarkable, that in all the wonderings of the psychologists, and the experiments of the psychiatrists, this field has been neglected. What was in the mind of the psychologist who proved with his trick lenses how infinitely more the visual center can accomplish than is required by the simple effort to cure automatically as astigmatic eye? Would he say that an eye troubled with astigmatism must be resigned to the domination of a pair

of glasses? The biologist who has described the intimate physiology and psychology of the body with a vividness never pictured before, puts on his glasses or lays them aside, as he talks, very much like the man with the monocle. He accepts without question the arbitrary, unfounded statements about the eyes, that have been current since first they were proposed. Someday it may occur to him to research the physiology and the psychology of the eye. It is a rich field, and of vital and practical and immediate importance to the race.

CHAPTER VII

THE EYE ITSELF

MY EXPERIENCE has been that the average person has very little interest in a technical and detailed description of the anatomy and physiology of all the parts of the mechanism of the sense of sight.

Everyone knows that the eye is round. Not many have inquired much further. Some could tell us that the round eye lies cushioned in soft tissue which lines the cave-like round hollows of bone that carry the eyes, right under the floor of the skull, which contains the brain. Some know that there are **six muscles attached to the outside covering of the eye**. At one end they are attached to the edge of the round hole in the rear of the cavity through which the optic nerve passes on its way back to the brain. Four muscles pass forward and are imbedded in the outer walls of the eye, near the front: one on top, one on the bottom, and one on each side. The other two are attached to the side-walls of the cavity, and are wrapped around the middle of the eye like belts, one passing over, and the other passing under the eye.

The four muscles called the recti, passing forward on all four aspects of the walls, serve to move the eye in different directions. Working in harmony they change the position of the eye in the socket, and point it, unconsciously, wherever the owner wants to look.
+**When they all contract equally, it is possible for them to change the shape of the eye and make it flatter on each end—that is, make the distance shorter between the front and the rear walls than it properly should be. Such an abnormal condition is present when an eye is what is called farsighted.**
+**The two so-called oblique muscles serve to compress the eye in the middle, and flatten it there, so that it becomes longer horizontally. In this condition the distance is longer between the front and the rear walls of the eye. Such a longer focal distance is necessary when the eye is focused upon nearby objects.**
+If the muscles become tense and make the eye too long, unclear distant vision occurs – nearsighted.
Extreme abnormal eye lengthening results in unclear distant and close vision.

The inside of the eye is divided into two compartments. Immediately behind the anterior wall of the eye is a small chamber, filled with a thin fluid which separates the front of the eye from the lens. The lens is fastened to the inner walls of the eye by a ribbon-like circular band of tendon. Behind the lens, filling the remainder of the eyeball, is a different liquid which resembles a jelly in consistency. The spherical shape of the eye is sustained by the pressure outward of the fluids with which it is filled. The crystalline lens consists of an elastic capsule holding in an oval shape its fluid-like contents.

The walls of the eye are opaque, and light can enter only through the transparent lens in the middle of the front wall. The colored circle just inside the front of the eye is called the iris, and the opening in the center of that circle is called the pupil. This opening constantly varies in diameter. It is furnished with a diaphragm, of which the diaphragm in a camera is something of an imitation. Its function is to control the amount of light which is permitted to enter through the lens. In a poor light it enlarges, and in a strong light it contracts. The outer walls of the eye are composed of a dense, firm tissue, with a lining of opaque pigment, and contain vessels which supply the nutriment required. The inner membrane, lining the eyeball, is called the retina. This membrane, although it is thinner than the finest paper, consists of ten distinct layers. In its surface are spread out the nerve terminations, which are the microscopic endings of the nerves that receive and carry the impressions made upon the surface of the retina by the rays of light. We have some understanding of this when we remember the film in a camera, which also is acted upon, although in a very different way, by rays of light.

The terminations of the nerve tendrils in the retina are of two kinds. They are distinguished as rods and cones, and there is some difference in their exact functions. The most sensitive part of the retina is a small area at the very hack of the eye in the center, which is called the macula. Here form and color and very sharp definition are registered. In this area there are no rods, which are nerve endings plainer and less highly specialized than the cones. Beyond this spot cones and rods mingle, but toward the front edges of the retina no cones are found. The rods seem to be more sensitive to the presence of simple light than are the cones. The rods continue to function in almost complete darkness.

When light rays contact the surface of the retina a chemical transformation takes place. The force called radiant energy is changed into another form of energy. This new force is carried by the nerve fibres which terminate in the cones and rods, back through the collection of fibres called the optic nerve. In order that light rays coming into either eye, from right or from left, may be registered harmoniously, there is a switch in the course of the optic nerves from both eyes. This switch is called the optic commissure. The optic nerve of each side continues on until it ultimately reaches an area in the brain called the visual center, where the fibrils composing the cord are distributed to cells of the brain. This is the beginning of the mechanism of sight: the comparatively simple reception and absorption and assimilation of those rays of light which are reflected from external objects and come into contact with the retina.

Vision is classified as a psychic function. The eye does not see. It is the brain that sees. The force or energy which courses up through the optic nerves to the vision center in the brain creates a transformation in those brain cells. Just how those impressions are registered so that they become conscious conceptions, has not yet been discovered. The process is a brain function, and part of the mind. **Previous similar impressions upon brain cells make it possible for a harmonious co-operation of memories to interpret the newly registered images. This involves memory, imagination, and every element of the intellect.**

Does not this brief description impress the tremendous significance of the prevailing custom of neglecting all this marvelous mechanism? The electric light companies, aroused to their own neglect of an opportunity to sell light, are beginning to give the eye light it has been deprived of, and that help is being gladly received. This however is simply physics. The mechanism of vision quickly leaves the field of organic chemistry, passes from the retina to the optic nerve, on to the cells of the brain, and into the realm of memory and mentality. There, in the higher field of the mind, is waiting the problem which the physician, who is interested in the rapidly failing function of human vision, must solve.

CHAPTER VIII

ACCOMMODATION

WHEN the word "accommodation" is used by an eye specialist he means by it the changes which take place in the eye when it is focusing. That is, the eye is accommodating itself to the distance of the object at which it is looking. Just what muscular changes occur in the eye during the act of accommodation has been a subject of most fascinating interest for centuries. There have been different theories as to how this is accomplished.

+Some supposed a change in the position of the lens.

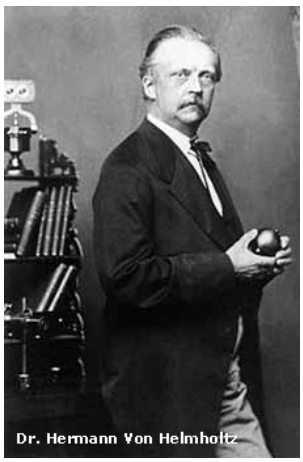
+Another theory was that the eyeball was lengthened. That idea would imply that a change had been made in the horizontal inside length of the eye. Such a change would increase the distance between the lens and the most sensitive part of the retina, at the rear of the eyeball. A change in the horizontal length of the eyeball could be accomplished only by the external muscles of the eye.

+Some believed accommodation was accomplished by the contraction of the pupil.

+There were those who discarded all of these theories, claiming that no change of focus took place.

Accommodation – close vision – about 20 ft. and closer – occurs with convergence.
Un-accommodation- distant vision - 20 ft. and farther into the distance – occurs with divergence.

In 1614 a theory was advanced that a change of focus could be brought about by a change in the shape of the lens, but it was more than a century later before any investigation was begun to find some support for that supposition. The only investigations made were efforts to prove that an image of the flame of a candle seen on the front surface of the lens became smaller when the eye was accommodating. Since an image reflected from a convex surface becomes smaller in proportion to the increased convexity of the surface, if the image on the lens surface really did become smaller, it would imply that the surface of the lens did increase its convexity during accommodation.


Dr. Hermann Von Helmholtz

Although it was never proved that the image did get smaller, this theory gradually came to be accepted in a general way as the solution of the problem. The man whose statements are offered as the most plausible support for this claim was **Dr. Hermann Von Helmholtz**, who died in 1894. But Dr. Helmholtz never did make a positive assertion to that effect. He said, as did others who favored this theory, that they found the said tiny image usually so blurred that the form of the flame could not be definitely distinguished. Different expedients were adopted to assist the human eye in clearing up that obscure picture of the tiny image on the lens, but they all depended on the perception of the observing human eye. Dr. Helmholtz stated that he found nothing but the ciliary muscle to which he believed accommodation could be attributed. This tiny muscle has already been described. He, therefore, concluded that the changes which it seemed to him occurred in the curvature of the lens must be effected by the action of this muscle. He stated explicitly that his suggestion possessed only the character of probability. He offered no single established fact to support his guess. He simply ignored the only other possible factor in the eye which could accomplish accommodation, namely: the external muscles of the eye.

Helmholtz invented instruments to see inside the eye and many other beneficial inventions.
Scientists state that modern instruments have proved that the lens can change shape.
IF this is fact, the Bates Method still works by relaxing, returning to normal function, all the eye muscles; outer muscles - oblique, recti, and muscles for blinking, tears… and the inner muscles – ciliary for lens, iris…resulting in clear vision.

When the eye muscles relax, function correct: eye movement: shifting, central fixation… are normal, accommodation/convergence, un-accommodation/divergence is normal, the lens, iris, tear glands… function correct and fluids flow normally, circulation throughout the eye is normal, the eye is in normal shape and light rays focus correct on the retina, vision is clear.

The theory that accommodation is accomplished entirely by an increase in the convexity of the anterior surface of the lens is supported only by the claim that an image reflected on the surface of the lens seemed to become smaller when the eye is accommodating. Dr. Bates refused to accept this theory, and undertook to make a real test of the truth of it.

To appreciate the significance of the factors in the problem it is necessary to remember what the actual question is. **Rays passing through the lens are refracted. Shorter rays reflected from objects close to the eye, must either be bent in a more abrupt refraction, or must have a long enough focal distance from the front of the lens before they reach the retina, if they are to come to a focal point on the retina.** Suppose that the lens be removed, and it is found that even in its absence the eye can accommodate. Would that not seem to prove that a change in the convexity of the lens is not the factor which determines the accommodating power of the eye?

Eye accommodates without lens

It is established, in the experience of practicing eye specialists, that frequently **when the lens has been removed surgically, as a relief from cataract, the eye learns to accommodate without its lens.** Corroborating proof of the truth of that statement is found in the records of the medical profession. Over a century ago a number of such cases were reported to the British Ophthalmological Society. In 1892 Prof. Forster of Breslau reported a series of twenty-two cases of apparent accommodation in eyes from which the lens had been removed surgically on account of cataracts. The subjects ranged in age from eleven to seventy-four years, and the younger ones had more accommodative power than the older ones. A year later Wainow of Moscow reported eleven similar cases, the subjects being from twelve to sixty years of age. In 1869 and 1870 respectively, Loring reported to the New York Ophthalmological Society and the American Ophthalmological Society the case of a young woman whose lens had been removed, and who, without any change in her glasses, read the twenty-foot line on the Snellen Test Chart at twenty feet, and also read diamond type at from five to twenty inches. The lenses she used would not help her lensless eye to accommodate. On October 8, 1894, a patient of Dr. A. E. Davis who appeared to accommodate perfectly after the lens in his eye had been removed, consented to appear before the New York Ophthalmological Society. Dr. Davis reported that the members of the society were divided in their opinions as to how the patient was able to accommodate for the near point with his distance glasses on; but the fact that he could see at this point without any change in his glasses was not, and could not, be disputed. This report, which gives a review of the whole subject, was printed in Reports of the Manhattan Eye and Ear Hospital, January, 1895, and was entitled, Davis: Accommodation in the Lensless Eye. The patient was forty-two years old. Eight months after his lens had been removed the patient returned because he had a problem. He had discarded the reading glasses given him and read with the glasses given for distance only. This meant that he was accommodating, or focusing, with his lensless eye. The distance glasses would not focus to meet the near print. He wanted to be sure this practice would not strain his eye. Dr. Davis found that with his lensless eye and the distance lens he could read the ten-foot line at twenty feet, and could also read fine print at from fourteen to eighteen inches. As this was his first experience with such a case, Dr. Davis presented it to the Ophthalmological Society. Four months later the patient had improved his near vision—that is, he was accommodating better, and read diamond type at from eight to twenty-two and a half inches. There are other cases on record just as convincing.

Impressed with this specific demonstration, Dr. Davis subjected the patient to various tests, and recorded some most significant observations. He made on that lensless eye, the same tests reported by Dr. Donders long years before, which had satisfied Dr. Donders that the lensless eye could not accommodate. The findings of Dr. Davis were so different from those reported by Dr. Donders that Dr. Davis decided the tests specified by Dr. Donders were wholly inadequate to decide the question at issue.

Shape of the eye and cornea changes to produce accommodation

During his experiments Dr. Davis found that the curve of the cornea, which is the covering on the front end of the eye, was changed and was moved forward a little. This would indicate that the eyeball had been made longer. These changes were demonstrated by the use of an ophthalmometer, which is an instrument for measuring the curvature of the cornea. He therefore felt himself bound to conclude that these changes must have been produced by the action of the external muscles of the eye. No other mechanism in the eyeball could do this.

The above recorded objective proofs are commonly ignored, or some specious explanation is offered for them. It is stated by some that the shape of the eyeball cannot be changed and made longer. But it is admitted in standard text books that the external muscles of the eye may change its shape. It is established that astigmatism involves a change in the shape of the eyeball. In astigmatism the abnormal shape of the eye varies. Cases are on record of the voluntary production of astigmatism. In one case, a house surgeon in the Manhattan Eye and Ear Hospital in New York frequently increased the abnormal curvature of each of his eyes considerably, in the presence of a number of members of the staff of the hospital. Dr. Davis, who knew this house surgeon, concluded that the changes in his case were brought about mainly by the external muscles of the eye.

The findings and tests given above, which are reported by many competent observers of good professional standing, are all independent of any statement by Dr. Bates. Unless they are disproved, they demonstrate that the lens is not the factor in the eye which accomplishes accommodation. These findings, on the other hand, offer no proof that the external muscles of the eye do not change the shape of the eyeball. Those muscles are the only other factor which could accommodate the eye. If those muscles can make the eyeball longer, lengthening the focal distance between the anterior surface of the lens and the surface of the retina, no other answer is possible—the external eye muscles accomplish accommodation. That was the conclusion forced upon Dr. Bates, and instead of simply denying the possibility of such a function, he undertook the only known experiments to find out the truth.

Dr Bates Eye Muscle Experiments

The six external muscles of the eye obviously serve to turn the eye in different directions according to need. Their further function has always been a subject of discussion. Dr. Bates was the first to undertake a scientific examination of their powers and functions on a living eye. Having decided that the lens could not be the accommodating factor, he surmised that the two oblique muscles accomplished it by compressing the round eyeball in the middle and making it longer horizontally. He cut those muscles in the eyes of fishes and rabbits and cats and dogs. When they were cut, the eye could not accommodate; and when he injected them properly with a drug that paralyzed them, the eye could not accommodate. When he sutured the severed muscles so they could contract again, the eye did accommodate. When he washed away the paralyzing drug, the muscles recovered their power, and the eye accommodated. The proof of the accommodation was demonstrated by the retinoscope, an instrument used by ophthalmologists for that purpose. This procedure he repeated several times in the presence of professional specialists, and they verified his findings.

Modern Scientists state that the shape of the eye, cornea and lens may work together, all change shape to produce accommodation. The size of the pupil, iris also affects light rays entering the eye.

This discovery of Dr. Bates explains why eyes can accommodate when the lens of the eye has been removed. It does not conflict with what is known of the structure and function of the tendon and the tiny ciliary muscle that sustain or modify the convexity of the lens. His discovery explains many apparent discrepancies in the theories which are held, or discussed, by eye specialists. It shows why and how it is possible to prevent and to cure the various abnormal function conditions which are such a distressing problem to the men whose work is to care for and to help the increasing number of victims of defective vision.

It is established that the normal eye at rest is adjusted only for rays coming from a distance, (Parallel rays =) not for divergent rays reflected from objects nearby. Rays from nearby objects would come to a focus behind the retina. But the myopic eye, that is the nearsighted eye, does constantly focus the rays reflected from near objects. It is accepted that the myopic eye is always longer horizontally that the normal eye at rest, when it is not focused—that is, accommodated—for nearby objects. When, however, an object is brought nearer to the normal eye, which is not nearsighted, not accommodating, there must be an adjustment made to perfectly meet and focus upon the retina those **nearby rays which are more divergent** as they reach the lens.

Ophthalmologists have noted that a change is felt to take place in the normal eye when the adjustment just described is being made. They accept this as proof that an effort is being made by the eye involving a sufficient muscular contraction to be appreciated as a sensation. Also, it has been noted that when the object is moved farther from the eye, there is a sensation of relaxation, and it is concluded that this denotes a relaxation of the contracted muscle. It is implied that these sensations of contraction and relaxation are produced by the action of the tiny ciliary muscle. The idea that such sensation would be caused by the action of the incomparably larger external eye muscles does not seem to have been considered at all. This seems the more remarkable since it is established that the eye is longer when nearsighted, and such a change in shape would necessitate the contraction of the external muscles. There is a double indication in this muscular feeling. First, such a sensation might reasonably be attributed to the contraction of the two oblique muscles on the outside of the eye. Second, it cannot be questioned that the nearsighted eyes vary in the degree of nearsightedness, and even quite frequently cease to be nearsighted. Dr. Bates claims that this variability is caused by the contraction and relaxation of the oblique muscles.
Contraction of the oblique muscles lengthens the eye for close vision. Relaxation, un-contraction of the muscles returns the eye to a round shape for distant vision. Tension in the recti muscles pulls the eye into a 'too short' shape.
Tense oblique muscles squeeze the eye into a 'too long' shape.
Convergence, divergence can also be felt.

The theory offered by Dr. Helmholtz was that the tiny ciliary muscle served to diminish the tension of the tendon which held the lens in a flattened oval shape. This would result in the lens, by its own elasticity, assuming a more curved shape. That is the explanation attributed to him in a standard textbook. But in the same section of the book it is pointed out that Dr. Tscherning, who agrees that accommodation is accomplished by an increase in the convexity of the anterior surface of the lens, disagrees with Dr. Helmholtz as to how this convexity is produced. He claims, in opposition to Helmholtz, that contraction of the ciliary muscle causes a tightening and not a relaxing, of the tendinous fibres of the zonula of zinn, and that the bulging of the lens in accommodation is produced by an active compression instead of by a passive dilatation. The text book also points out carefully that the theory of the lens being the factor which accommodates does not harmonize with other accepted theories in optics. The book cites the theory of presbyopia as one which does not harmonize. Presbyopia is a supposed condition in which the lens begins to harden when one is forty years or older. A lens too hard to change its shape could not accomplish the exquisite lightning-like changes in shape necessitated by the theory of Dr. Helmholtz.

The statement in the text-book is a reminder that, according to the theory of presbyopia, in later life the lens is hardened, and could not contract and expand. If the lens does so harden, and cannot expand and contract, this would render worthless the theory of Dr. Helmholtz and Dr. Tscherning. The text-book right there apparently points out that the theory of accommodation being accomplished by the changing in shape of the lens cannot be true. That text-book is a standard. Its statement is very plain. **There is sufficient evidence, in plain sight and not to be denied, that many eyes continue to accommodate even when very old.**

In a case of my own, a **man of eighty-five had worn glasses constantly for over forty years, and was both nearsighted and astigmatic. He was able in a short time to read Snellen Test Chart at the proper distances, and to read any ordinary print or writing at the customary distance from his eyes. He did that in the presence of others besides his family, and never wore his glasses during the two years before his death.**

In considering the same mechanism, these two men of genius conceived two contradictory interpretations of the way the mechanism worked. Suppose we try to imagine what is involved. To meet the conditions of their propositions, the curvature of the lens must change quicker than thought itself, constantly, with a perfect infinitesimal precision. It is not easy to imagine a fluid mass doing that. To conform to the theory of Dr. Helmholtz, the ciliary muscle would have to pull on the tension of the tendon and loosen it. This would permit the capsule holding the lens in shape to relax, and the lens could then push itself into a more spherical shape, and present instantly the exact curvature required, and with the moving fluid mass at rest.
According to Dr. Tscherning, instead of a softening capsule, and a released fluid changing its shape, there would be a tightening of the capsule, producing an active compression of the lens, which, however, instead of squeezing its fluid elastic contents flatter, would somehow force the contents into a more spherical shape. Which is the more reasonable of the two guesses? Before one makes his own guess on that question, memory puts on the scales the confusing recollection that the **medical record is full of instances, not to be denied, in which the eye has accommodated after the lens has been removed.**

In a standard medical book on the eye, we are reminded that the eye has been justly likened to the camera. An explanation is then offered to show why the eye is like a camera. In that comparison it is explained that the camera has opaque sides, a diaphragm in the front of the lens to keep out the peripheral rays, and an adjusting mechanism to accomplish the necessary process of focusing the rays of light so they will meet properly on the film. We are told that the eye also has opaque sides, and an adjustable diaphragm, and that the lens of the eye is itself the adjusting mechanism to secure the proper focus for the retina.

In reality the human eye is not like a camera, but a camera is like the human eye inasmuch as its film records images chemically. The mechanism of the camera is governed by the same natural laws as are exemplified in the functions of the eye. But the human eye has a range of vision which is incomparably greater than the powers of the camera.

Those who devised the camera, (as well as the telescope and the microscope,) found that the way to focus the refracted rays of light correctly upon the camera film was to arrange an adjusting mechanism that would move the lens back and forth, so as to place it at the proper distance from the film. In other words, the only changes that take place through the adjusting mechanism of a camera are changes in the focal distance between the lens and the film. **Eons before this was discovered the human eye was focusing the rays of light upon the retina in just that way.**

In the analogy referred to above it is stated that in the eye the lens itself is the adjusting mechanism which focuses, or accommodates. If that were true, it would destroy the analogy. The lens in a camera is not itself an adjusting mechanism. It is a constant factor. It does not accommodate. Its only function is to refract the rays as they are received, and the result depends only upon its position in relation to the recording film. The lens in a camera is a piece of glass, and cannot change its shape.

The changes which take place in a camera accomplish an increase or decrease in the distance between the lens and the film. In that it imitates the human eyeball. The text-books explain that when the human eye is nearsighted, which means that it is focused so as to see nearby objects, it is longer than its normal resting condition, and the retina is farther from the lens. Those who devised the camera found it necessary to arrange for just such a change in its length. **In taking a photograph, when the object is near, the lens is pulled farther from the film. Whenever the human eye accommodates so as to be focused properly for nearby objects, it accomplishes the accommodation by lengthening the eye horizontally, and increasing the distance between the lens and the retina.**

The eyeball, in changing the distance between the lens and the retina, changes its shape. Its walls are curved. When the rear end recedes from the lens, the curvature of the walls changes as the eyeball is made longer horizontally. The lens is placed a short distance back from the inner side of the front end. Its substance is not an unchanging solid. Its capsule, the flexible envelope which holds the contents in shape, is fastened to the curved inner sides of the eyeball by the tendon which controls its shape. Any change in the shape of those walls may modify the convexity of the anterior surface of the lens. This relationship makes it necessary for the exact shape of the lens to perfectly conform to any change made in the curvature of the anterior end of the eyeball. This is necessary because the outer covering there, **the cornea, is also a refracting medium**, and the lens must conform to any changes that may occur in the refraction which takes place in the cornea. It is necessary also for the convexity of the lens to conform perfectly to whatever changes occur in its relationship with the retina consequent upon the changes in the shape of the eyeball. The same impulse or nerve control which issues from the visual center in the brain harmonizes the co-operation of the external muscles and the ciliary muscle of the lens.

The lens serves as an auxiliary adjustment, secondary and compensatory to whatever changes are produced by the action of the two external oblique muscles of the eye.

The explanation offered here accounts for the varying and unsatisfactory findings of Dr. Helmholtz. He reported that the images he saw were varied and blurred and so inconstant that he was puzzled, and was not willing to make a positive statement about them. This illustrates his meticulous honesty. The text-book already quoted, points out that his hypothesis must have been wrong. The explanation offered here also accounts for the scientific findings reported by Dr. Bates. He secured photographs of the tiny images formed on the lens by a powerful electric light delivered by a series of adjustments through a constant aperture. These tiny images varied under external conditions which were exactly the same. The reasons are to be found in the varying slight changes taking place in the convexity of the surface of the lens, consequent upon different degrees of change taking place in the shape of the eyeball.

The import of these facts, in their relation to the Bates method for treatment of difficult and abnormal conduct in the mechanism of vision, is that in most cases of astigmatism and many cases of nearsightedness, the principal fault is the abnormal action of the external eye muscles. In astigmatism the shape of the eye is changed from its natural form of a perfect sphere. The deformity is so different in each case, and so variable from time to time, that, apparently, the changes must be caused by the varying tension of the muscles which are attached to the walls of the eyeball, and bring pressure upon those walls when they contract. Those who are nearsighted experience the same difference in the degree of trouble. Their power of vision varies constantly. In many cases the defect disappears spontaneously, even after being present many years. No other theory has been offered to explain this variable conduct. This explanation of Dr. Bates makes clear why the changes occur. **His claim that the eye sees perfectly when it is perfectly relaxed covers the nerve controlled action of the muscles, and the tension in the visual centers. He insists that in order to have a normal relaxation in the eye muscles there must be first a normal condition, free from tension, in the centers in the brain.** Such a condition returns spontaneously when disturbed vision becomes normal without any outside help. That is the explanation of those cases which get well. Obviously, then, it is possible to influence those factors which control such changes. During forty years of successful work Dr. Bates proved the truth of this simple law.

CHAPTER IX

EYESTRAIN

IN THIS chapter we will leave the field of the technical specialist, and come out among facts that are familiar to people of general intelligence. I hope the reader will deliberately put aside for the moment the vague, thoughtless attitude of mind which is so common on this subject. I ask that the reader remember eyes as they were a few years ago, when most plain people did not think of wearing glasses. It is worth while to let the mind dwell on the fact that, among those we see around us today, the majority live unconscious of their eyes, because they never have any trouble with them. It will make it easier to grasp the meaning of the facts, if one will ponder the description of the man with the three story intellect, which is quoted from Dr. Oliver Wendell Holmes in the August, 1936, Readers Digest, and let a little illumination come in, right through the skylight, and light up the imagination.

A specialist of high standing, at an annual convention of ophthalmologists, made a very interesting official speech. In that speech he declared that the word "eyestrain" is a great asset to eye specialists. He went on to say that to the patient it has a definite and satisfying meaning, but to the doctor employing it, the word—"strain", applied to the eye or any part of the eye, is almost, if not quite, meaningless, so that by its use he does not really commit himself in any way.

Coming from an eye specialist that is a remarkable declaration. Such a statement might easily be misunderstood. Certainly it could not be considered scientific. It is not a fair accusation against the men who specialize in the treatment of the eye, and who are constantly offering that explanation to their patients, as the speaker himself pointed out.

This speaker explained also that a knowledge of psychology is useful to the ophthalmologist in many ways, both in the making of a diagnosis and in the making of an explanation to the patient.

That statement is also interesting, and could form the basis for profitable discussion. If psychology is so important in the diagnosis of the condition, and also of such importance in explaining the condition to the patient, why is it that psychology is allowed no part in the treatment of the abnormal condition the physician finds affecting the eyes of the patient?

The same speaker further gave it as his opinion that the importance of errors of refraction has been, and still is, greatly exaggerated by ophthalmologists. He even pointed out that the opinions of ophthalmologists themselves are responsible for the prevalent belief that incorrectly fitted glasses are a menace to the integrity of the eyes.

That incorrectly fitted glasses are often prescribed for patients is a claim constantly found in articles written by specialists on the eye. They mean that the doctor, or optometrist who fitted them made a faulty computation in estimating the degree of refraction that would suit the defect in the eye. Because such glasses would make functioning even harder for the eye which is already having difficulty in seeing, the ophthalmologists believe that glasses which do not suit those eyes are likely to damage them. The speaker seemed to assert that such a statement is not true.

In a small booklet, one of a series of popular health instructions written by recognized medical specialists, an ophthalmologist makes a very different comment on the affection called eyestrain. He describes the condition as one causing suffering, and claims that other numerous reflex disturbances arise from it. He emphasizes, as an established fact, that the great relief which correctly fitted glasses give to those suffering from eyestrain, and from the numerous reflex disturbances that arise from it, is a matter of daily experience in the work of ophthalmologists. It is his opinion that eyes suffering from eyestrain are physically unfitted for their work, and that properly fitted lenses are the only corrective measure.

One might wonder what would be the outcome of a debate between these two men who are medical specialists in the same field. They express what are apparently two different and contradictory views upon a fundamental principle in their profession. It is probable that between them they each would neutralize the others contentions. Such a solution is often the result when two opinions meet that are at the extreme opposite ends of any subject upon which there is such a wide difference of opinion.

In a book which has perhaps the highest rating as a standard text-book of ophthalmology, the word "asthenopia" is defined as a sense of strain and weariness in the eyes and head, incurred by the use of the eyes. The patient feels that the eyes give out. This may be accompanied by actual pain in the eyes and in the head, and even in various parts of the body, by irritation, redness, or burning of the eyes and lids. In some eases there may be muscular spasms, digestive disturbances, nausea, and interference with general nutrition. The condition, as is explained in the book, may be caused by refractive errors; or the symptoms may be caused by abnormal functioning of the muscles of the eye; or by some specific nervous condition, as neurasthenia, or hysteria; or by unsuitable light; or produced by morbid conditions of other organs, for example, the nose and teeth. Or again, these symptoms may be produced by attendance at a theatre, or a game, in shopping, motoring, train riding, or walking on a street—so occasioned by moving objects. As other symptoms of which the patient may complain, the book mentions blurred vision, which may be temporary or permanent. The object seen may be blurred, or several objects seen, where there is only one. Print may run together and separate again. There may be great inequality of vision in the two eyes. There may be flashes of light, or floating specks before the eyes.

We are told in that article in the text book that asthenopia is the most common of all eye symptoms, and the one that is most readily relieved by proper treatment, which treatment, it is stated, consists essentially in the removal of the cause.

Upon the substance of that accepted statement in the text book, the system of Dr. Bates is founded. The symptoms described in that text book are those which Dr. Bates constantly discussed. His explanation also is that those symptoms are to be relieved by removing the cause.

In the text book some specific conditions in the system are named as the causes, as, for instance, nasal or teeth conditions, or some plain and definite conditions of the general nervous system. The meaning is that these other conditions of the system, through an abnormal nervous reaction, produce the disturbances in the conduct of the eyes. No doubt that is often true. But in many cases, if not in most cases, of abnormal visual function, no other abnormal condition in the system is apparent. Most of those patients who are told by the ophthalmologists that their disturbed vision is due to eyestrain are otherwise in apparently good health.

It is explained in the text-book that the symptoms, the sense of strain and weariness, and so forth, set up by the use of the eyes, may be caused by the errors of refraction, or by abnormal functioning of the muscles of the eye. But both of those abnormal conditions are themselves caused by abnormal nerve reflexes. They are themselves symptoms caused by an abnormal condition. They are absolutely nerve-controlled muscle functions.

The specific contention of Dr. Bates is that these different kinds of abnormal vision, including the described sense of strain and weariness, and the abnormal functioning of the eye muscles and the consequent errors of refraction, are all and several caused primarily by an abnormal condition of unnatural tension in the central nerve control of the brain.

This claim furnishes a reasonable and a satisfactory explanation for all the various aspects and considerations involved in this question. This vital problem has been discussed and disputed as long as the mechanism of the eye has been investigated. That it is still being discussed and disputed, is well illustrated by the opposing views held by ophthalmologists of today, as already quoted.

When a camera film receives a picture which is "out of focus", the rays of light were so directed that they did not meet properly on the film. There was an error in refraction. This was done by the brain of the camera—that is, by the hand of the photographer.

The human eye is not as simple as the camera, but its muscles and its consequent refraction are likewise dominated by a force which determines exactly what those muscles will do. We do not blame the camera when the lens is placed at the wrong spot on the slide. When the eye muscles function so that the rays are improperly refracted, the muscles are not at fault. The impulse that was produced through the current in the nerve gave the muscles a wrong command.

Sometimes such an order simply makes the muscles fix a wrong focus. The difficulty then is that the rays do not meet where they should, and a clear image cannot be perceived. Many who are nearsighted, or farsighted, or astigmatic, have no discomfort. Often, however, there are different kinds of sensations with vision, and there may be pain present even when the power to see is at the same time very good. These different symptoms are caused by varying abnormal impulses from the nerve centers of the brain.

What is called eyestrain, or asthenopia, is the same kind of a condition as the various abnormal conditions of the nervous system, which physicians refer to as nerve tension. We all have experienced some kind of a feeling which could be described as tense. Perhaps a feeling of straining in the mind, or perhaps an actual fixed tension of the muscles of the body.

It is very easy to produce such a condition in the eyes by a deliberate effort. If we do this with a strong enough will it is possible with normal eyes to produce blurring and an indistinctness of objects, and even to develop severe pain.

Thus far it is quite simple. No one knows what tension is, or what relaxation is, or what sleep is. But we all have experienced these different feelings. We all understand that tense muscles do not box well, or play tennis well; and this helps us to realize that when eye muscles behave likewise, they have the same success in refracting rays of light as the muscles of a tennis player have when his mind is in a state of "jitters". Just as tennis players have their goad days and bad days, have brilliant plays and wretched flunks, so the work of the eye varies, too. A nervous, uneven, unreliable athlete can be relaxed and developed into a fine, consistent performer. Even more so, an eye which is poor and unreliable, only because there is an abnormal tension in the visual center in the brain, will function with a new power when the controlling mechanism in the brain has recovered a condition of normal relaxation.

It is difficult to describe a condition which is recognized only as an experience. But it is possible to discuss its presence, and to consider results that are apparently caused by its influence. The offices of specialists in the diseases and dysfunctions of the nervous system are not filled with patients suffering from organic conditions with structure changes. The majority of those they are treating are afflicted with many varieties of abnormal sensations and functions for which no cause can be found except an unusual conduct of the central control of the nerves of the body. As examples, consider those who suffer from nervous indigestion, insomnia, neuralgia, nerve-tire, spasmodic contractions of various muscles, extreme irritability and even remarkable mental attitudes. The majority of those who are wearing artificial lenses are simply examples of the same type of dysfunction, affecting the visual center and disturbing the normal function of the eyes. Their variable symptoms, changeable conduct, sensitiveness to environment, unaccountable occurrence, and frequent spontaneous disappearance, all classify them as only one, and perhaps the most frequent, of the conditions commonly spoken of as nervous disturbances.

When one considers the extremely complicated mechanism of vision, its uninterrupted ceaseless functioning, the very different and constantly changing environment and diversity of its work, one wonders, not that it so often falters, but that the visual center resists so well, and fails so seldom to sustain a perfect equilibrium. This consideration is surely most typically exemplified under the stress the human eye has to meet in the environment of those who live in the places where the multitude of wearers of artificial lenses is found. We know very little about the astigmatism and errors of refraction of those who do not live convenient to the office of the eye specialist. But it is not hard to realize that the great mass of the population of the globe seems to have no difficulty with its eyes. This is true of the uncivilized man, whose life constantly depends upon good vision; and it is true of the civilized man who must have good normal sight for figures, or print, or operating machines, or fine detail discrimination. It is easy to accumulate incidents which apparently support this conception of a tension in the visual center as being the cause of eyestrain. It is just as easy to support the claim that it is possible, in a simple manner to relieve the strain, so that the eyes will again function in a normal manner.

Examining twelve hundred scholars in a large school, Dr. Bates demonstrated normal vision in a boy who was known to be quite nearsighted. The doctor's explanation that he read the ten-foot line at ten feet meant nothing to his teacher, because she knew he had not been able to read the words on the blackboard, nor the figures on the face of the clock. But when the boy presently succeeded in reading the clock and reading whatever she wrote on the board, she was astonished to see such a change in one minute, and she was interested enough to ask for a Snellen Chart to hang in the school room. The change in the power of the boy's vision was accomplished by the influence Dr. Bates had been able to exert upon the tension in the boy's mind. The tension was an abnormal reaction, produced by some stress consequent upon difficulties the boy found in his work. The presence of a new personality, impressing his mind with encouraging information, changed the attitude of apprehension, and permitted the normal function to return. Such mental reactions are seen constantly in children. Why should it seem unreasonable to have them occur where the eyes are concerned?

In my own work, a similar case was a boy of nine whose parents had been told by an optometrist that the reason he had constantly poor vision as well as pain, was because his eyes had not developed, and he was nearly blind. That diagnosis by an optometrist seemed so serious that they took him to a certain eye specialist in San Francisco, and he agreed with the diagnosis of the optometrist. Some weeks later, when I first saw the boy, he read without glasses, at a ten-foot distance, the forty-foot line on the Snellen Chart. This demonstrated that the diagnosis was certainly wrong. His vision was not even very poor, and there was no warrant for the claim that his eyes were undeveloped. He had nearsighted eyes with astigmatism. Having relieved the distress of his mothers mind by this proof that his eyes were not undeveloped, I directed a system of daily practices for the purpose of relaxing the tension which was so seriously disturbing the functions of the muscles of his eyes. The condition was relieved so rapidly that in ten days he was reading, at ten feet, the ten-foot line. He kept on improving and has had fine normal vision ever since. His mother was a great help by interesting his mind constantly in the Bates method of practicing relaxation.

A boy who stuttered was brought to me, and he stuttered badly when we began to talk to each other. I could see he was quite embarrassed by the evident annoyance of his parents. When I found that he was the best basket-ball player in the school, I told him some stories of the days when I played center, many years before he was born, and told him why and how the Y. M. C. A. started the game. It was most gratifying to listen to him talk and question, with flashing eyes, for fifteen minutes, and never a stutter. When presently I asked him why he stuttered when he played basket-ball, he replied, in an astonished voice and without a falter, "I never stutter when I play basket-ball." And I answered, "I knew you didn't," and told him why I knew it. He began right there to shed the tension that had hampered his speech, and his greatest help was to think of his basket-ball game. It was exactly the same mental process which relieved the tension that caused the astigmatism in the case of the younger boy with the defective vision.

A man of forty-two came to me with the explanation that he had had better than average eyes until he was thirty-five. During seven years he had tried three specialists. They agreed that his condition was a compound astigmatism caused by eyestrain, and that nothing could be done but continue to try new lenses. When he came to me he was quite concerned about his condition. I agreed that eyestrain was the cause of the trouble, and he was apparently quite disappointed. But when I followed with the remark, that this itself was really caused by a mental tension, he was surprised and then amused. He said he had nothing to worry about; that everything with him was "hunkydory." He couldn't believe his brain had anything to do with it, and could hardly get the distinction between worry and mental tension. When I asked him what it could be that worried the children who are being suddenly fitted with glasses for the remainder of their lives, because they have eyestrain only, he began to see the light. He was so much concerned about the discouraging condition of his eyes, and so much interested in the entirely different kind of treatment proposed, that he kept the subject in mind all day long, and he reserved three or four hours a day for the practice that was directed. In a few days he had personal evidence of the truth of the explanation he had been given, and in a few weeks his eyes were in a normal condition, with no unpleasant symptoms. He was seeing without glasses, and was quite well pleased with his success.

A young woman of twenty was brought to me by the young man she was engaged to marry, and gave a most interesting history. She was working in a home where there were three young children. Both the parents had been employed for years, leaving the children largely to the care of the young woman.

Some weeks previously a strange trouble had disturbed the vision of her left eye, and had gradually grown worse. I found that she had normal vision with the right eye, and could see just as well with the left eye the letters on the right hand end of the top five lines on the Snellen Chart. But she could not see with the left eye, any of the letters to the left of the last letter on any line, although she could see the large two-hundred-foot letter in the middle of the card at the top. There was no abnormal sensation in either eye, but there were increasing recurrences of vague, unpleasant sensations in her head.

She had gone to an optometrist to learn if glasses would relieve the difficulty, but he had refused to consider lenses, and had urged her to consult an ophthalmologist, explaining that the condition was serious.

The couple agreed to return to my office in the evening, when there would be quiet and time for deliberate inquiry. By careful questioning it was developed that the mother of the children was agreeable enough to contact, but the father was a peculiar type who encouraged and seemed to enjoy open insubordination on the part of the children to the girl's management while he was present. He would then comment cynically, in their presence, upon her handling of the situation. She was an earnest and evidently capable girl, and was very anxious not to lose the position during the next few summer months. There was no apparent abnormal condition of health. The ophthalmoscope showed no apparent abnormality in the left eye.
The presence of abusive, unpleasant people causes mental, emotional, physical strain, tension, eye muscle tension and unclear vision.

Having explained that I believed the condition of her eye was caused entirely by a mental tension, and given some of the reasons which seemed to warrant such a diagnosis, I began an effort to correct the fault. Seating the patient comfortably, I turned out the lights, and for half an hour we three remained in quiet darkness while I endeavored with suitable conversation to impress on her mind such ideas as I felt would influence her own train of thought and produce a condition of mental relaxation to displace the abnormal strained condition of tension.

When I then turned on a strong reflected light, which left the room in darkness except the Snellen Test Chart ten feet from her left eye, with a patch covering the good right eye, and helped her with some encouraging directions, she soon was able to read all the letters on all the lines of the card. The condition which had been developing for some weeks was relieved in one hour, and was a fine demonstration of the usefulness of the method of Dr. Bates in curing imperfect sight by relieving the tension which controls the whole mechanism of the perception of visible objects.

Temporary errors of refraction caused by straining to see are certainly quite common, and are dysfunctions resulting from some temporary condition of the mind. It would be easy to recall illustrations of this. For instance, the well-known classroom experiment with students in psychology, where they are warned to use their eyes well when an incident is suddenly introduced a few moments later. Perhaps a young man, or a young women coming suddenly into the room, goes through a series of startling movements and disappears in some unique way. Generally, no one out of a number of students will see the incident precisely as any other student sees it. Frequently some of them report the same incident differing from any other account, and there will be several divergent statements.

It is a common experience in a court room to have several disinterested and sincere witnesses leave out, or contradict, details which were easily and plainly visible to other witnesses. If it is contended that some of these illustrations are not proved errors of refraction, the answer is: first, we do not know whether they are or not; and further, the fault is in the mechanism of sight perception, and it proves a defective functioning by some eyes which would not have occurred under ordinary conditions of deliberate observation. It is not unusual for a spectator at a football game to miss entirely a movement that was plainly seen by others on the same spot, although the one who missed it had just as good, or even better, eyesight than the others. Some patients report such imperfect perceptions as recurrent experiences, and can even designate certain circumstances under which they will occur.

In those cases where there is fixed and constant error of refraction, the common experience is that a condition of abnormal sight begins imperceptibly, without any cause or influence or sensations of which the patient is conscious, and develops to a degree which necessitates relief.

In children, an unconscious tension is often developed by the false, and almost worthless methods of driving young minds as operators in a line of piece-work machinery are driven to keep the pace mechanically set by the machine. That experience commonly stultifies the other faculties of the workers; and, of course, similar treatment has the same effect on the children, and in some of them it originates the unconscious urge which makes the mental tension that reacts against their eyes. There are mental tensions developed in some children even before they go to school. Possibly there is some inherent nervous tendency. In one case under my observation it was obviously **a thoughtless mother who "got on the child's nerves."** When adults ask me how and why it happened that **some unconscious strain came into their mind and gave them chronic poor eyes,** I answer that it is not necessary to know the cause of the tension. The evidence of it is enough. No thoughtful person questions the common occurrence of some kind of a mental tension. It is reasonable enough to accept this specific and only tangible and positive cause that has ever been given as the background of these cases.

Releasing past/present thoughts, emotions and replacing them with positive, constructive ways of thinking, feeling about a event, situation will relax the mind, body, eyes and bring clear vision. Shifting and other Bates method practices will improve the vision and help to release negative, unhappy thoughts, emotions from the mind.
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See Books ; Rational Recovery and The Small Book by Jack Trimpey – Rational-Emotive Therapy
http://www.rational.org/?gclid=CMrItOie24qCFQQRQQodKQhv

The real question is whether or not the patient is interested in a simple and practicable course of effort to secure the priceless faculty of a pair of fine, happy eyes with which to go on through life.

When one is told that there is no apparent change in the structure of the eye, but that it simply does not work properly now, and the cause of the dysfunction is eyestrain, and there is no further explanation available, one is left with the natural and simple question in his mind: Can this condition be cured, and if so, what must I do to regain a pair of ordinary good eyes that will remain normal and see things the way the eyes of other people around me are seeing?

The answer, the same as the answer given by the nerve specialist in other similar conditions, is that the details of treatment in different cases are as varied as the differences in the details found in each case. Certainly eyes differ in power. But **it is as natural for eyes to work in a normal way as it is for lungs to inhale and exhale air.**

The cause is a strain. The purpose of the Bates method of treatment is to relax the strain. The eye with normal sight never tries to see. Its function is simply to receive the rays of light. At rest, it is adjusted to all but the rays from nearby objects. To meet those it makes a simple adjustment. The light rays do the work. The adjustment is an unconscious automatic function. Any conscious urge serves to disturb and strain that function. When a tension exists unconsciously the effect is the same. To correct that fault, it is necessary, therefore, only to have that tension cease. Practice shifting, central fixation.., then let the eyes alone, let the eyes shift... automatically, on their own.

The method of Dr. Bates will be described. It involves essentially that the subconscious mind be interested and impressed through the medium of ideas in the conscious mind. There are many simple practices which serve to enlist the attention of the visual center in the brain by directed conduct of the eyes. These practices will be fully explained.

CHAPTER X

THE MECHANISM OF VISION

IN THIS chapter I would like to remind the reader again of some of the facts concerning the mechanism of vision. Only a very small part of that function is yet understood. The really important factors are beyond the present range of human knowledge. But many facts and aspects are established which give light enough on the problem to make clear the lines of approach for those who are interested—interested in an endeavor to correct whatever visual dysfunctions with which they may be afflicted.

It is known that a force called radiant energy, contacts the human chemistry in the recording retina of the eye. The transformation which follows that reaction sends on a force which so acts on cells in both of the visual centers in the brain, that a conception is formed in the mind. Without the mind the eyes could not function. The mind gives all the orders, receives the incoming messages, and makes all the decisions.

It is true that the mind must work with the images that are received on the retina. But in the great majority of difficulties with vision, the fault is that the external muscles of the eye act in an abnormal manner and misdirect the rays of light after they enter the eye. This certainly is the fault of the control center in the brain. On the other hand, there is sufficient evidence that the brain can work effectively with retinal images that are impressed on the retina under conditions which are quite abnormal.

Cornea Scar

For instance, **a woman of fifty-eight, with a thin scar on the surface of one eye, which spread in front of the lens, secured a most remarkable improvement in vision in a short time.** The scar was the result of an infection in early life. The first day I saw it, she looked straight into the noon-day sun with that eye, and said it looked light; across the street it was dark. **She had not seen anything with that eye for over thirty years.** Her other eye had very poor sight. In a few weeks she could see three lines on the Snellen Test Chart, right through the scar; and she could not look into the sun. (Scar decreasing, light of the sun is now felt, seen by the eye) The improvement continued and the sight of the other eye, also, was much improved. It would seem that the confirmed habit of the mind was changed, because it became interested in a new way, and in the exercise of its power. Whatever messages it received from the retina were now utilized as they had not been for over thirty years.

Detached Retina

A man of fifty-three came to me with a condition of what is called detached retina, in both eyes. That condition was consequent upon an extreme degree of near-sightedness, which had been growing worse for over thirty years. The retina is held closely against the inner surface of the eyeball walls by the pressure outward of the fluid contained in the eyeball. There are different ways in which that membrane may be pulled or pushed away from the walls, so that it is separated in rolls or patches, as one sees old wallpaper sometimes separated from the wall. **He wore constantly a pair of prisms, and when he wanted to read, he added a second pair of glasses, in front of the first pair.** He had been informed by two specialists that he would ultimately be unable to see, even with artificial lenses. When he tried to see, he had to look below or above the lines he wanted, in order to catch the rays of light on the folds of the displaced retina. That man became able to read without any lenses, and at times he could see with very little change in the direction of his eyes. The measure which helped him most, perhaps, was the use of a Kromayer ultra violet ray lamp directed right through the lens of the eye. When he ceased coming to me he was quite happy with the fine improvement in his vision.

Cataracts

It would be beside the point, and of no value here, to offer any explanation of the conduct of the different factors involved in the detachment of the retinas, the failure of sight, and the wonderful improvement secured by the treatment. It is not a question of veracity—nor need it be. There are those who have opacities in the lens, called cataracts, and the rays of light are so hindered that the patient is capable of very little sight. Such conditions often improve, and the patient may even be blessed with a return of normal vision, without any treatment. A patient of mine, who was afflicted with cataracts for many years, and finally, in her own words, was almost blind, secured a wonderful improvement in two weeks, and soon had very good vision. The opacities continued, easily seen at all times, but variable, however, in size and in density. Although always helped by sunlight and methods of relaxation, there was a **constant undercurrent of a special tension in her mind which would often hamper and disturb the vision, and was relieved, sometimes in a moment, when the morbid attitude of the mind was overcome by some simple expedient which secured relaxation.**

Even a very little deliberation impresses one with the large part the mind has in the process, when a conception is registered from an impression coming into the conscious mind. Very much depends upon custom and familiarity. A technical worker sees constantly, almost automatically, what a stranger to that work can hardly see, and must actually learn to visualize. But that stranger can see quicker and better than the worker, the details in a picture which is familiar to his own mind.

We often seem to see an object as it generally is, when actually a detail is changed—she has had her hair cut, he has no watch chain on, or has a belt he never wore before, the old cover is gone from the spare tire, there is a new rug on the floor-and we must admit, "Oh, yes, I hadn't noticed it." We are familiar with the word "extraordinary," and read it without noticing the letters, but when we come to the word "mechanist," which we never saw before, the mind commands "wait—attention." Women, late in life, can thread a fine needle, even when they cannot read ordinary print, or write without glasses. The previous knowledge, the habit of the mind, its degree of attention at the moment, have much to do with what we see when we are looking. In other words, past impressions, habits of the mind, attention, imagination, all of these even modify the orders of the mind to the eye-muscles that perform the automatic function of accommodation.

Often I have enabled a patient to improve the sight so much in half an hour that the eyes could read three or four lines more (lower) on the Snellen Test Chart. This by simply securing an alert and attentive interest on the part of the mind. There are many ways of doing that, of course. But it is necessary, absolutely, that the mind be freed from constraint or inhibition, either mental habits or any distracting influences. Notwithstanding the difference in minds and their habits, I have learned that eyes which are different in every way respond with a fine increase in the power of vision whenever the conscious effort is strong enough to enlist the co-operation of the part of the mind which commonly takes charge of the automatic functioning of all the factors involved in vision.

It is often difficult to secure that necessary attitude of mind. The subconscious part of the mind does not always yield readily its habit of taking complete charge. Under abnormal conditions it frequently constrains the visual centers, and the subordinate muscles of accommodation, to reflect in their conduct the same state of tension which is present in the mind. Often, when a patient is sure there is an absolute compliance with instructions, it is evident that the will of the patient has made no real impression upon the working part of the mind. Commonly, children respond more readily. That is to be expected. Their minds are more flexible—less confined in fixed attitudes and habits. There must be back of the endeavor, that which I have learned to think of as an emotion. The child I cannot interest is very hard to improve. **On the other hand, when an adult, even an elderly person, is impressed with a conviction which is an emotion, the change will always come, and sometimes it begins instantly.**

Astigmatism

In a case referred to briefly in an earlier chapter, a man of forty-two, with a record of fine eyes for thirty-five years, reported a **serious progressive condition of astigmatism for seven years.** The three different specialists, and the many pairs of glasses he had tried, had failed to restrain the development of the malady. He came to me only because the third specialist had refused even to try a new set of lenses at the moment; and the patient responded, in a perfunctory way, to a friend's suggestion that he try the method which had helped the friend's own similar condition. His consciousness of his extremity prepared his strong, practical mind for a conception new and different from anything he had ever heard before. He only raised his eyebrows when told that his trouble was caused by eyestrain. He had been told that before. He was amused when told that **mental tension was the cause of the eyestrain.** But when it was made clear to him that there certainly was a center in the mind which controlled the automatic conduct of the eyes, just as every other function in the body is likewise controlled, he grasped the significance of the new explanation. His mind had already realized that his vision was even more important to him than his business. When asked how many hours a day he could give to the new endeavor, instead of explaining what a busy man he was, he deliberated a moment and then answered that he could devote four hours each day to the trial. The improvement began at once. The emotion which moved him insisted, through his will, and secured the co-operation of every part of his mind, and the orders to the eyes were changed.

This case is one of those which make it seem so clear to me that every factor in the complicated act of seeing is part of a complex, inseparable mechanism. The brain is the engineer. The mind is the captain. When the captain is mindful of his duty, every part of the mechanism will perform in order, and there will be no conflict.

In a current book, which is now a classic, written by one who has been a life-long physician as well as a biologist, it is emphasized that it is necessary to have an accurate knowledge of the physiological and mental functions of man, and of his adaptive functions. The author asserts that the atrophy of mans adaptive functions, consequent upon the habits of modern life, is a chief cause of the weakness of human beings. But it is the very existence of these functions, he points out, that permits us to intervene victoriously against the declining powers of the race, and put the race back on the road to physical salvation.

That conception is an exact explanation of what is wrong with the human eye today. It is failing to use its adaptive function. There are those who offer the preposterous assertion that the eye is being called on for work nature never intended it should do, and for which it is not adapted, and which it cannot do. Those who make this claim seem to be unconscious of the fact that many millions are meeting today the conditions named specifically as impossible, and are living proofs of the present power, ready for any need, of the adaptive function which that author claims is the salvation of those who want it. Their assertion, and that is all they could claim for such a statement, leaves out of account the adaptive function which is one of the obvious qualities in the history of the eye.
Cave men/women drew pictures in the rock walls of their caves – Beginning form of written language, use of the eyes at the near point.

In all but one of the fields of medicine there is a sustained effort to practice earnestly what the author of that book has so powerfully preached. The eye alone is being neglected. There is no least effort being made to study, and nurture, and develop and save the functions and power of the mechanism of vision. The higher mental elements of the faculty of vision are being deliberately ignored.

The prevailing method of treating visual dysfunctions apparently takes it for granted that the human lens has not the power to use its adaptive function—in other words, that it cannot refract the rays of light properly, and that it cannot recover what power it has lost. The prevailing method ignores the human lens, and gives the eye an artificial glass lens to refract the light rays right through it back to the retina.

Two of my cases, brothers, are most interesting from the point of view of this chapter. The first one, twenty years old, came about a slight injury, but spoke incidentally about his eyesight. He asked about a good "eye doctor". His report was that from his earliest recollection he had been near-sighted. He remembered that when he began to read, he had to "stick his face in the book"; and he kept that up, in spite of the remonstrance of his father. During the years, his trouble had continued, and now he was so near-sighted at his work in the shop, that he had decided to get a pair of glasses.
Is this paragraph a misprint? Nearsighted means unclear distant vision but the person states trouble reading close up. Does he mean to say far-sighted or both nearsight and farsight?

Fusion

My first surprise was when I found he could read the ten-foot line at twelve feet—although he had never seen the Snellen Test Chart before. I then tried his eyes on some stereoscopic pictures which are arranged for testing the focusing power of the eyes. The two pictures on the cards are duplicates, one on each half of the card. The test is for the eyes to fuse both pictures into one—just as the normal eyes fuse into a single image the objects which are seen differently with each eye. When the eyes are at fault, the pictures on the cards will not be seen as one. They may show to the mind different aspects. They may partly merge in different combinations. They may fuse perfectly and then separate. They may change when the picture is moved to different inches away from or nearer to the eyes. One picture may seem to be above the other. It often happens that the eyes being tested will seem to see the picture which is on the left half of the card as though it was on the right half. For instance, on one card the picture on the left half is the two letters ON, and on the right half the two letters NE. When the eyes fuse in a normal manner, the four letters fuse into the word ONE. Often I have had a patient apparently see on the right half the two letters ON, and on the left half the two letters NE. Since the eyes cannot see, with the right eye the letters on the left half of the card, nor with the left eye the letters on the right half of the card, such a transposition cannot be effected by the eyes. The fault in the fusion must be in the section of the vision mechanism which is behind the retina. The fault must be in the fusion center. In those cases fusion is in confusion. I have always succeeded in having the patient correct the fault, and see the pictures as the normal eyes see them.

This patient could not fuse a single picture. His eyes were not noticeably near-sighted. What he saw he could see very clearly at the far end of the slide on which the card moved back and forth. By suitable encouragement I was able to help him relax the tension which was causing the confusion. I succeeded in having his mind stop trying anxiously to see the picture in a normal manner. As he gradually became passive to the idea that his eyes would act in a normal manner if he ceased to have that urge in his mind, the different pictures began to look more like the correct single picture the normal eye would see. He finally saw most of the pictures just as the normal eye would see them. The parrot on one side of a picture went into the cage on the opposite half of the card. If the parrots head or his tail stuck out of the cage, we talked it over, and polly was coaxed back into the cage again. I found with this patient, as I find with most, that he could fuse more easily duplicate photos of landscapes, than he could the puzzle pictures. This probably is because the mind is accustomed to fusing what is seen in daily life, and finds it harder to fuse two pictures it has never seen before, like an empty parrot cage floating in the air, and a parrot standing in the air without any support.

The study of that patient during the hour we worked with the stereoscopic cards demonstrated to me that what he had been troubled with for so many years was a **peculiar type of astigmatism.** The reason he thought he was near-sighted, was because his astigmatism had found its own peculiar way of seeing things coherently when it could not see them in the normal way. The abnormal conduct of the eyes was corrected in that first hour I saw him. There was some remnant of the astigmatism left the first night. The next evening it was cleared up, and the patient saw clearly and fused every stereoscopic picture I showed him. His eyes were normal for his work, and have remained so ever since.

Because of his own success, he asked me if I thought the Bates method would help his brother's right eye. **That eye had been sightless from birth,** as near as was known. Ten years before, when the brother was twelve years old, he had asked an optometrist if he could give him a lens that would enable him to see with the sightless eye. The optometrist had examined the eye, and told him it had never developed, and it never would develop. Whereupon he never made any further inquiry of anyone. He came to me himself. Although I could find nothing abnormal with the eye when I used the ophthalmoscope, I found he could see very little more than light and shadow. I suggested that he have the eye examined by a medical practitioner who was an eye

specialist. He replied that he had no money. I gave him a note to the clinic of a university in San Francisco. They reported to me that he had an Amblyopia Ex Anopsia—which meant that his eye could not see because it had not ever had the habit of seeing. They examined his eye fully, he reported to me, and told him the only treatment of value would be a constant habit of shutting off the good left eye, and making the blind right eye learn to see, whenever he could practice that way. He reported that they informed him it would take two or three years before he would be able to see anything worth while.

The patient was "out of a job" at that time, and occupied himself much of the day with the practices I described to him. He lay for several periods of the day so that the strong sun was shining directly on his closed eyelids. He kept his mind attentive while he looked, without any strain, but with an alert attention, at some specific object, generally the letters on the Snellen Test Chart. He was instructed to confine his mind to the imagination of a small spot on the letter or whatever he was looking at, remembering it as he saw it with his good eye. He relaxed by lying down and listening for periods to some music or suitable program on the radio, his eyes closed, and his mind on the picture he was imagining, never thinking of his eye, always thinking of something objectively, so as to keep all other ideas out of mind. I did not examine his eye for eight days. He had been learning to see the letters on the Snellen Test Chart. I found that he could read the top three lines on that card. He would name any letter I pointed to. He could also see the equivalent of that in other objects—large letters or figures near his eye, a book, an ink well, a watch, a telephone, etc. His eye continued to improve, so that one Sunday evening when I met him on a ferry boat he was able to read, with his good eye closed, large type letters on the back of a small magazine which I am sure he never saw before.

There was nothing miraculous in the result secured in this case. A case which came under my care consequent upon her knowledge of this case, a woman of thirty-five who had been blind from birth, had an experience very similar, and in as short a time. In all of these cases there was no difference in the underlying principles of the practice directed by the eye specialist in the clinic and the specific instructions I gave.

It was not until a few months after the treatment of the two young men that I learned the secret of their very fine success. It developed that a young woman who knew of the success some other cases had secured with the Bates method under my care, was very well acquainted with both of the young men. She had so impressed their minds with the confidence that the astigmatism could be cured in the case of the younger brother, that when he came to my office his mind was already convinced, and ready for action. That is the reason, as I believe, that his eyes were able to record clearly the images of the letters at a distance of twelve feet. The stereoscope was a new and strange experience; but the new attitude of his mind was alert, and the orders from the visual center directed a normal conduct on the part of every element in his mechanism of vision.

There is fine food for thought in the consideration of the conduct of the minds of both of these patients, not only at the time of treatment, but during the previous years. Although the two young men had each a serious trouble with his vision, for the fifteen years that they both were conscious of it, one had sought no relief, and the other had made only one effort about his blind eye, and then accepted from an optometrist, without any review, a statement which condemned him to a sightless eye for life. Why then such a complete reversal of attitude? Why such a wonderful response to treatment? Any effort to explain and describe the mentality and reactions of these patients would be, of course, largely a matter of personal opinion. The aspect of the subject I am trying to call attention to is what seems to me the very plain proof that **it was the mind, and not the eyes, which was responsible for the abnormal vision that troubled all three of these patients, and ceased when their minds became interested in an emotion which was new and earnest.**

CHAPTER XI

THE WARRANT FOR THE WORK

IT IS strange that there should be opposition, on the part of any physician, to the endeavor which is involved in the Bates method for the relief of abnormal function in the mechanism of the faculty of vision. It is easy to realize that anyone whose only calling is to sell lenses will be confirmed in the mental attitude consequent upon the conviction that artificial lenses are the right and the only relief for such conditions.

Physicians, however, are constantly relieving other abnormal conditions which are certainly analogous. The procedure in those similar conditions is to discover the cause and remove it. Cases of nervous indigestion; idiopathic insomnia; nerve-tire in a patient otherwise normal; neuralgic pains where no cause is apparent; a complaint called by the patient "nervous," sometimes extreme and distressing, are part of the cases of every physician engaged in general practice.

In such conditions the physician knows that the cause, or causes, of the trouble is a dysfunction in some part of that complex, interlocking mechanism of organs and nerves and chemistry, which is beyond the consciousness of the patient. Whatever success he may have must be through the influence of the conscious mind upon that mechanism. Commonly that mechanism is the dominating force of the organism. This is a truth by which the medical profession is being more and more influenced in the practice of what is an art as well as a science.

It is worth while to follow this line of thought as far as it may be of help to the mind of the patient who is trying to learn just why, and just how, the method we are discussing can serve to correct difficulties in the function of vision. With that purpose in mind, I will call the attention of the reader to a few most important facts.

There are many functional conditions which are discussed by physicians as "psychic". To designate a condition as such is to say that it is caused by the direct interference of the mind. It may be that such interference of the mind produces an abnormal conduct of some function, or the interference may serve to correct a dysfunction.

Hearing Cured

Authentic cases are of record where an unexplained deafness suddenly disappears. There may be in evidence some specific outside influence. A woman who had been deaf for years, without any perceptible change in the visible mechanism of hearing, was shocked by the fear of death in a falling airplane. Her hearing was normal when the fright was relieved. One could multiply similar incidents.

Amblyopia is a condition in which there is poor vision up to the degree where there is no vision, when it is called amaurosis. These names are given only when no change is apparent in the structure of the tissues of the eye. In many of these cases there is no discoverable cause in any other part of the system. These conditions are sometimes explained by the statement that they are the symptoms of hysteria. But the definitions given for hysteria are only descriptions of abnormal functions—in other words, a recital of symptoms. The abnormal condition comes on usually without any apparent cause. It may even be present from earliest life. Sometimes it is relieved by the specific efforts of a physician. Often it disappears as it came—and it is not apparent why it came, or why it went.

Delving further into the field one finds records of positive results from specific efforts on the part of the patient, either under instructions or acting independently. A young woman, or an older man or woman, disturbed by some extreme emotion, may suffer as a result, most marked and plainly apparent symptoms of mind or of body. The manifestations of hysteria are manifold, and in many cases are quite serious. They may simulate the symptoms that are typical of some specific disease, which is not present. There may be an apparent paralysis of one or more limbs. There may be some phobia—that is, some fear of a condition or a presence which is believed to be real. Such conditions may continue and become chronic and uncured for long periods. They are often cleared up entirely, under the treatment of a physician, or in some unknown manner.

One of my patients had an uncle in France who owned an inn. He was afflicted for months with a condition diagnosed as **arthritis**. He was often in bed, but was sometimes able to get down-stairs and sit in a big chair in front of his inn. It was always necessary, however, that he be assisted by two helpers. One day he was sitting in the sunlight as usual when a neighbor rode up with the information that a vicious bull was loose in the road nearby. Everyone else sought safety in a hurry. When he found himself deserted, he promptly left the chair and bolted up the stairs.

Blondin, a world-famous tight-rope walker, found himself crippled with a similar condition of his **lumbar (back) muscles** a few days previous to a most important public exhibition. He engaged a physician, but the doctor was unable to relieve the condition, and even warned him on the day of the feat that he would risk his life if he attempted to carry out his contract. But Blondin had so much at stake that he dismissed the physician and, with the pain undiminished in his back, determined to carry on. His performance was to **wheel a barrow across a cable stretched over Niagara Falls**. According to Blondin's own statement, he felt the pain until he had actually taken hold of his wheelbarrow and his balancing pole. He did not feel any pain when crossing the turmoil of waters raging below, while he was reversing, or while he was returning. But as soon as he had finished the marvelous stunt the pain returned, and he was again a cripple.

Suppose we consider for a moment the analogy between this most remarkable incident, and the report I have recorded elsewhere of a man fifty-five who broke by chance the glasses he had worn for nearsightedness for many years, and went without his glasses after the accident, and had vision that was perfectly satisfactory without lenses.

Blondin was a strong, self-reliant man. He had none of those sensory inhibitions which restrain most of us from considering the feats he had schooled himself to do. But he was confronted with a dilemma which was unlike any other he had met. The faulty chemistry in the muscles of his back produced an irritation which registered as pain in the specific receiving center in his brain. For help he took his sick muscles to a physician; but he received no relief. It thus became his necessity to make a decision. He knew the physician was right in his remonstrance that such pain might overcome his customary power over those muscles, and might even cost his life. But there was an emotion in Blondin's mind that the concerned physician did not realize. Failure to keep his contract meant so much to Blondin that, like the dying gladiator, who had to consent to death, "but conquered agony," Blondin brushed aside the intruder in his back, and marched straight on to victory. In other words, **the emotion in his conscious mind was strong enough to suppress all other impressions. The pain could not register while his mind was filled with that thought.** But when the triumph was accomplished, and the necessity had passed, the pain registered again, because the new, strong emotion was no longer in charge.

In the case of the man who lost his glasses up in the mountains, the mechanism was similar. He had planned with his friend for two years to spend those weeks together up in the grandeur of the wild hills. The lure of that quest was so strong that it would not be silenced. His emotion was different, but it was similar in kind to Blondin's. They were both "wants". His want was so strong that it likewise suppressed any question about discretion. **His will demanded of his eyes, and that order changed the chronic habit of the visual centers. The power of his vision returned; and once he knew it, the truth was so strong that he held it fast, and his mind gave back to him the natural, normal sight which had been suppressed.**

It is easy to see why these spontaneous cures are illustrations of the same psychological and physiological mechanisms as are exemplified in the method of Dr. Bates. The mind in one case acted spontaneously, outside of the consciousness; and in the other case—the Bates method—it was commanded by the determined wish and conduct of the conscious mind.

Among other reports found in medical books I remember that of a chronic invalid, an old woman who needed the constant help of a nurse because she could not move without assistance. One afternoon when the nurse had left her alone for a time in a country hotel, the building caught fire. When she found herself alone, and realized that she must get out without help or be burned, she walked out unaided.

These cases are illustrations of an emotion causing an impulse from the central control in the brain to take charge of an abnormal condition and correct the fault in the mechanism—and this has been done even where there have been changes in tissue structure, or a nerve or muscle habit for years. There used to be a sharp line drawn between organic conditions and functional conditions. The first involves some change in tissue structure. The second does not. It was written that though a functional derangement could be corrected, tissue which had changed into an abnormal state could not be changed back into its normal structure. The ground is broken there. The leading thinkers in the medical profession began by pointing out that functional derangements sometimes merge into tissue changes. It cannot any longer be denied that tissue changes do reverse, and change back to normal.

A patient, a graduate of a German university, told me that as a boy he had a bunch of warts on his hand, and they disappeared after he followed the instructions of a "Frau" in the village. An aged mother was being buried. The church bell tolled for half an hour, during which time he was to recite to himself, continuously, four lines of doggerel which proclaimed that his warts would accompany the spirit of the departed.

He remembers that he was faithful to her instructions. He did not lose a wart that day, and cannot give an exact report; but he is sure the warts were gone in a few days.

In answer to an inquiry, an official medical journal recently made a statement fully confirming such a claim. The procedure is described as a mental suggestion. The statement reported that men of high standing in the profession had in that way rid their own skin, and that of others, from warts, and that this had been done after medical treatment had failed. The statement explained that in order to be successful, it was necessary for the operator to have a conviction that the effort would succeed, and the patient, also, must have a distinct emotional attitude of mind, which would make him susceptible to the suggestion.

Over two years ago a report was submitted to the annual convention of the American Association for the Advancement of Science which was signed by four physicians who were on the medical staff of a foremost Eastern university. One of their number had been afflicted with a gastric ulcer that seventeen years of medical treatment had failed to cure. They decided to treat the ulcer by mental suggestion. In six weeks there was a complete cure that had, at the time of the report, lasted two years.

Following their success with the chronic condition of their colleague, the four medical men selected thirty cases of ulcers of the stomach, and treated them exclusively with mental suggestion. They reported a complete success in every case.

It is not hard to imagine how such a proceeding operates. In the stomach, meat is digested. The lining of the stomach is meat. That lining is not digested because a physiological function acts to protect it from such a process. That specific function is principally, perhaps, the presence of what are called hormones in the tissue, and is directed by the central control of the brain. When an ulcer is allowed to develop, one or more functions in that field act in an abnormal manner. Stomach ulcers commonly act in the manner called recurrent. They come and go; get worse and then improve; are present for a short time, or a long time. In typical cases the history indicates some internal cause or causes for the onset and the spontaneous recovery. The symptoms, like those of the doctor in this case, are often beyond the control of any medical treatment. But when some change occurs in the conduct of the central control, the effect is an onset of the ulcer, or return of the normal function, and cure of the ulcer. These four physicians gave their thirty selected patients instructive talks, in sessions, on the normal functions of the stomach. They had them relax in periods, with closed eyes, keeping their minds occupied with thoughts which impressed on the central control in the brain their confident expectation that it would correct the abnormal impulses sent out to the stomach walls. Since that central control dominates the mechanism, it is necessary only to command its service. Success in that depends almost entirely upon the strength of the feeling in the conscious mind.

Certainly the beliefs of unusual healing, which have been held in all ages and all countries, are not based only on morbid imagination. There are many authentic records of such cures in our own day. A biologist who is a world authority on cancer reports the cure, by faith alone, of most serious functional and organic conditions. He cites the immediate closing of chronic wounds, the repair of diseased bones, the complete disappearance, in a few days, of lesions caused by tuberculosis, and even the deadly ravages of cancer. What he speaks of as records, are cases he has personally investigated, with the care of a veteran research worker.

Is it necessary to call attention to more illustrations, or more varieties of examples of the cures of abnormal organic as well as of serious functional conditions? At Van Nuys in California, a man with special talent has succeeded in piling up two thousand records of cases of **many kinds of paralysis**. Most of them came to him helpless after a trial of customary methods of treating such cases had ended in failure. He has given them new power, many of them with full normal function. His work is actually mental suggestion, carried out in a simple, direct fashion of personal instructions, which he calls education.

The writer referred to above, in offering his explanation of the cause and mechanism of those cures which are spoken of as miraculous, classes them as extreme cases of natural repair. He claims that the only condition which must be present is prayer. Even the prayer of someone who is present can effect the cure. **"Prayer is the soul's sincere desire, uttered or unexpressed; The essence of a hidden fire that smoulders in the breast."** But he speaks as a scientist when he states that such facts are of profound significance, because they show the reality of certain relations. The nature of those relations are still

unknown, he points out. They are the relations between psychological and organic processes. They prove the objective importance of the spiritual activities. The study of those activities, he believes, has not yet begun. They will open to man a new world.

In this chapter I have tried to show that in the presence of all these established facts, it is a most reasonable procedure to endeavor to influence the visual centers in the brain. They are influenced to act in a normal manner when the mind has a normal attitude toward them. That is what is going on with most of the race—with all those whose eyes are acting is a normal manner. When the eyes act in an abnormal manner, the fault is with the same central control. It is not uncommon for dysfunctions of the faculty of vision to spontaneously recover from the fault. Since it is in evidence that the mind can cure a shriveled, paralyzed muscle, and rout out of the body a tubercular or cancerous condition, what an incomparably simple proceeding it is to so influence that same mind that an order will issue for the mechanism of vision to behave in a normal way.

CHAPTER XII

SOME CASES THAT ILLUSTRATE

Cataract Cured

PICTURES sometimes help more than words to make clear a new and strange subject. The illustrations that follow are chosen because they are representative of different types of cases.

A. P., 15 years old, suffered an attack from poison oak which swelled his face so that both eyes were closed for some days. When the swelling disappeared, and his eyes opened, there was a dense, white opacity filling entirely the lens of the right eye. Four months later his parents brought him to me. His family physician had treated him for several weeks, and then referred him to an eye specialist. Four months of treatment, with drops in the eye and a bandage over it, had made no apparent improvement in the condition.

I was asked to remove the bandage and look at the eye, and say if I could cure it. Having explained that I could not do that while the patient was under the care of another physician, I suggested that they might have some special ophthalmologist give them an expert opinion on the unusual case, and then, if they were not encouraged by his conclusions, they might return and let me endeavor to relieve the condition by treatment with the Bates method. They did consult two eye specialists in San Francisco. Both doctors reported that no treatment would help the lens; and their only suggestion was to have it removed by operation.

Thereupon, we began at once to **treat the cataract**. It was October, and Arthur had not returned to school, so he had the entire day to practice. He was encouraged into an active mental campaign of his own, instead of a helpless, passive state of mind. He was given a **Snellen Letter Test Chart** with instructions to **spend time every day blinking softly at the different letters in accordance with the practice described. He was to lie quietly with the strong sun shining directly on his closed eyelids. He was told how to swing softly in a hammock; how to lie with closed eyes and listen to soft music. He was urged to have always in his mind a confidence that his eye would return to normal, but not to think of his eye. He was to occupy his mind with the techniques he was practicing, and forget himself, just as a violinist loses thought of himself when he gives his mind to his practice.** No doubt his own work had much to do with his success. But it was obvious that the **greatest help in his case was the sun**. The first day he could look directly into the sun and did not even see light. I began at once to use a **convex sun glass on the white of his eye**. **He learned quickly how to protect the lens by covering it with the lower lid. I focused the glass so it showed a small round spot on the white of the eye, and passed it rapidly back and forth for perhaps half a minute at a time. He then closed that eye while I used the same technique on his normal eye. This treatment with the glass I continued for several minutes each day. In a very few days he could not look into the sun at all because the opacity was rapidly becoming less dense. It not only lost the dense appearance, but also began to show spots on the margins of the lens where the opacity had disappeared entirely and the normal lens was plainly seen.**

In three weeks, three-quarters of the lens was clear. The quarter which then remained became quite a study. It varied in density, it had a ragged edge, and it would always disappear entirely when treated with the sun glass—that never failed. It might return in five minutes, or it might not return for a much longer period. But there was another phenomenon which, to me, was even more remarkable. His family knew that often, when he awakened, there was no remnant of the cataract visible. It might be absent for half an hour or longer. But any unusual incident, or least excitement—for instance, the refusal of a permission, an undesirable errand, teasing by his younger sister—would flash it back. We had begun treatment in October. Arthur returned to school in January. There was only a small trace of the cataract left then, which could not be seen without a close inspection. For weeks he had been able to see as well with that eye as with the other. The remnant gradually disappeared entirely. Over six years have passed, now, and the lens is normal.

When I asked a friend of mine, who is an ophthalmologist, for a personal comment on this case, he replied that cataracts do clear up, without treatment, and more especially in children. Because such is an established fact, it seems to me quite reasonable, also, to expect cataracts to clear up under some method of suitable treatment. **There can be no reasonable doubt that the use of the sun glass cured the cataract in Arthur's eye.**

After four months under treatment without any change, the opacity in Arthur's eye began immediately to show an improvement under the method I used. It was not a mere coincidence. There was no bandage over his eye, as there had been before, and his family watched the progress daily. The consistent temporary disappearance of the lingering remnant of the opacity, whenever I used the concentrated sunlight, and its frequent temporary disappearance during the night, sustained the claim of Dr. Bates that **cataracts can be caused by a mental reaction upon the muscles of the eye**. The ultimate and permanent disappearance of the opacity was consequent upon the **complete relief of the mind from such an unconscious tension. The tension itself was produced by the toxemia developed during the invasion of the system by the poison oak.**

Dr. Bates described a demonstration, which he suggested could be carried out as well by any other research worker. He explained that if the eye of a freshly killed steer is held softly between the fingers the clearness of the lens can be seen at a distance of twenty feet. If the eyeball is compressed firmly between the fingers, an opacity will be plainly apparent. The lens will be clear, or opaque, accordingly as the pressure is released or applied.

Personally, I have had the same success in enabling other patients to secure great improvement in vision when their sight has been very much impaired by cataracts. But this case of a young boy was quite unique. It was obviously caused by an attack of poison oak. It showed an immediate change. The remnant would disappear completely, and stay away for half an hour or for a few minutes, and finally stayed away—for over six years now. It must not be forgotten, however, that there are authentic records of cataracts which have disappeared spontaneously.

Nystagmus

V. R., 18 years old, had been troubled for several months with a distressing condition technically known as nystagmus. Her eyes rocked back and forth horizontally, in unison, rapidly and continuously. Her vision was poor. There was no pain, but there was a depressing, general nervous condition. Glasses had been prescribed for her by a well-known eye specialist in San Francisco months before she came to me, but no other suggestion had been offered by him. When the glasses secured no improvement, he protested that at least they freed her from pain. When reminded that she had never had any pain, he replied that if it were not for the glasses she would have had pain. Their family physician knew of the Bates method, and when the ophthalmologist failed entirely, he referred the case to me.

The causes assigned in the text books for such a condition are constant straining of the eyes, use of the eyes in poor light, disease or poison in the system. The theory offered is that there is a perversion of the center controlling parallel or parallel-rotary motion of the eyes; and there is no lesion of the muscles or the nerves controlling them. There is, however, no unanimity of opinion as to the way in which the perversion is produced. The duration of such a condition is uncertain. It is dependent probably upon the continuance of the cause of excitation. The treatment suggested, therefore, is the cure of any known abnormal condition, and more commonly, the use of some kind of lenses. There was no abnormal condition apparent, except the state of her nervous system.

This girl lived out of town, so it was agreed that her mother would bring her to Berkeley for one week as a trial, to see what improvement could be effected in that time. There was such a marked improvement that the case remained in my care.

My first procedure was to remove the spectacles, with the understanding that they would not be worn again. The treatment consisted of various Bates practices. **She was occupied much of the day lying down with closed eyes, listening to suitable radio music, or phonograph records. She lay with her closed eyes directly in the sun, beginning with periods of a few minutes and gradually increasing the time. She was taught how to practice palming, and swinging, and the use of the Snellen Test Chart. It was not easy to change the extremely, abnormal condition of tension in the mind, and the strange habits that had grown on the nerves. But there was a consistent, progressive improvement in her eyes, and her nervous system also relaxed into a very good normal condition.**

For many weeks after this patient's eyes had become habitually quiet, and her nervous system was relaxed and apparently normal, the old habit of the eyes would assert itself, frequently without warning. Sometimes the rocking would be mild and slow, and would soon cease. At another time the reaction would be more noticeable. I had opportunities to study her lapses myself, and also heard the comments of some who were familiar with her case, and with the manifestations of the condition. To me, it seemed quite apparent that the outbreak was always a reaction from a tension in the mind; and sometimes a connection was plain between some trivial shock and the immediate recurrence of the abnormal conduct of the eyes.

For instance, one day when she was in my waiting room, another eye patient came in, who had been quite familiar with the course of her recovery. The two had not met for several weeks, and they had a little visit together for, perhaps, twenty minutes. When I saw the second patient alone, after the eye patient had been in my office and left, she gave me quite a clear description of a slight reaction that had come and gone in the eyes of the young woman with nystagmus, bringing on gradually a slight, but apparent, return of the old abnormal conduct of the eyes. The rocking had continued for ten minutes before ceasing.

This second patient reported that when they met, her friend's eyes were quite normal, and she had been received with a cordial greeting, and for a few minutes there was no change. In a short time there came over the first patient an apparent slight constraint, which was recurrent, being noticeable when the second patient was talking and being lost when the young woman was responding.

The second patient, being an old friend of the young woman, was so well acquainted with her affairs that she was able to interest her in personal matters. This relaxed the tension which had come unconsciously into the mind of the young woman, by arousing

thoughts that brought pleasant memories and interesting ideas. The mind of the young woman had been dominated for a few minutes by a return of the old habit of mind, aroused by the shock caused by the appearance of the second eye patient. The new habit of the mind was strong enough to overcome the lapse, when it was assisted by the conversation of her friend.

A friend of mine, a physician, discussing this case, countered with the statement that there must have been a predisposition in the mind before it could react in such an abnormal manner to any cause of tension. The reply is, that every mind has its own predispositions. A predisposition is an attitude of mind. It is possible to change an attitude of mind. Most attitudes of mind are unconscious. Generally it does not help much to battle with them. In the statement of this case there was no discussion or reference to the cause of the abnormal condition. The mind was interested in a variety of thoughts, always objective and impersonal and pleasant and interesting, and always appropriately and helpfully opposing the abnormal attitude of mind which caused the strange conduct of the eyes.

If one is inclined to think lightly of this explanation of the mechanism of the onset and the course and the cure of this case, my answer is, that a renowned eye specialist failed to make the least change in the condition, and the method which I used corrected it. Whatever his understanding of the mechanism may have been, he did nothing but impose a pair of lenses, which, after a fair trial, proved worthless. It would be interesting to hear his explanation of the mechanism by which the cure was effected.

Cross/Wandering Eyes

A young lady of twenty-two came into my office, for the first time, one day, at four o'clock. **Her left eye had been crossed since her earliest knowledge.** Her older brother had a crossed right eye; she had never seen him otherwise; and there were three other relations with crossed eyes. About ten years before her visit, a change had occurred, and her left eye became straight, while the right eye, instead, turned out in a marked degree. She was employed in the office of a large store in San Francisco, and is employed there now. She had worn glasses for several years, and could not do her work without them. She had recently secured a new pair of lenses, and though they made the figures clearer, there was a constant feeling of discomfort while she wore them, and her eyes seemed to resent them in various ways—for instance, in looking at objects not quite close up. She could not describe exactly how the change from one eye to the other had taken place—it just happened.

During the two hours she was in my office, I was not with her continuously. Sometimes she sat in another room and read some designated chapter, or explanation by Dr. Bates, or some thing I had written. I consulted her occasionally, or had her look at a 1,000 watt light. At six o'clock I saw that her eye was straight. The change had occurred while she was alone in the other room for about half an hour. The eye has remained straight during the intervening three years, and she has never worn her glasses since. Her vision is good, both eyes are about even in power, and she has not paid any attention to them since the first few weeks after she came to me for treatment.

There is nothing miraculous about her case. **In the standard textbooks on the eye it is reported that a crossed eye may change its position without any outside interference, or that just such a change may take place as occurred with this patient—the crossed eye becoming normal while the normal eye becomes crossed. Eyes may be crossed while open and straight when closed, or vice versa.** In the books, just how and why that happens is left to conjecture. Why should it be thought remarkable that an influence can be brought on the mind in a deliberate, reasonable way to secure a result which the mind accomplishes itself, when it so determines, without any order from the conscious mind? That young woman had developed an attitude of mind before I talked to her. A close friend knew of cures effected, and had so impressed her mind that when she came to me there was a perfect confidence, and an actual expectancy, and all that was needed to consummate the change was the specific directions she must carry out.

W. C. S., a boy of 18, had worn glasses for eight years, could not do his high school work without them. With very little practice his glasses were permanently removed in a few weeks. He relaxed by lying with closed eyes and his mind at attention, occupied as continuously as possible with some designated idea, or series of ideas, thus excluding aimless trains of thought. He let the strong sunlight shine on his closed eyelids for an increasing period of time each clear day. He practiced blinking at the Snellen Test Chart, as will be described in a later chapter. During the intervening eight years he has taken his degree at Stanford University, had a scholarship in post graduate work, and for two years has held a position in the research department of a corporation laboratory. His sight is at least as good as the average normal, and he has never thought of wearing glasses since.

A boy came to me for treatment because he had seen the above-mentioned boy for two years with glasses on, and then for one year with them off. This boy was a very different type. I soon demonstrated to him that his eyes could be improved. He was able to see clearly at a distance, objects that could not be seen before, without his spectacles. One day, out in the open sunlight, his sight improved in a half hour, from seeing only the one hundred-foot line at a two-foot distance, to seeing the forty-foot line at a distance of ten feet. He complained, however, that he could not retain this improvement. He reported that when he practiced alone, he was not able to accomplish with his eyes the success he frankly admitted he had whenever he practiced under my supervision. The outcome was that his father refused to pay for my services, claiming that I was not curing the condition. The attitude of his father was a breach of faith, and I resented his statement that I was taking advantage of him, and claiming to be able to accomplish something which it was not possible to do. To my reminder about the cure of the boy that his son had seen daily for a year without glasses, he had only an evasive answer. I determined to see what would happen if I took his father into the small claims court in an effort to collect my fee.

The father appeared, fortified with a letter from an eye specialist who claimed that what I declared could be accomplished was an impossibility. My rejoinder was to submit to the judge seven letters from known, responsible persons, all of whom had been successful in the endeavor to secure good normal vision after having been obliged to wear glasses for years.

Of the writers of those letters, one man had worn glasses on account of nearsightedness for forty-five years. Another, a well-known educator, had worn her glasses for fifteen years, and took them off permanently with very little help. Another well-known teacher had worn glasses for twenty-five years, and like the previous case, began by leaving them off absolutely at once, and was able after three weeks of practice to go without them and without any further practice. The judge knew three of the writers personally, and when he had communicated with them, he concluded that I was warranted in claiming that it was not impossible to secure the improvement I had promised. He decided that my charges should be paid.

My purpose in recounting these two cases is to point out the importance of some effort on the part of the patient. The first boy was interested and faithful in his efforts to carry out the instructions given him. The second boy was the opposite. Just what practicing he did was problematical. His replies to inquiries concerning it were principally excuses. He was not reliable. Having secured his assurance that it was safe for him to go without his glasses generally, even in traffic, I secured also his promise to leave them off on the street. But I saw him more than once on the street with them on. One day when he forgot to take them off before he came into my office, I told him this. He promptly put them into the case, and put the case significantly into his pocket. When he departed it occurred to my nurse to look out of the window and watch him on the street. She saw him take his glasses out and put them on when he left the building. Few persons so deliberately break faith. But I have learned that a number do not give to the endeavor the consistent earnestness which the cause is worth. They are willing to accept a fine normal vision, but they have not a clear and strong conception of the necessity in their minds of an emotion strong enough to dominate their conduct and be an active force.

Mary S., 18 years, a high school girl, came at the close of school. She had been very near-sighted for several years. I saw her five times during seven weeks. There was a fine improvement in her sight from the first lesson. She told me there were several other girls interested, and they would come to me if she was successful. None of them came. Nearly two years later two sisters came to me. The example of Mary had finally impressed them enough to make a try themselves.

They lasted through three lessons. One had worn glasses for some years. The other one had warnings that she would soon need them. The spectacle wearer was a slave to perfect marks, and quickly decided that she would not let a small matter like good eye-sight for life interfere with her ambition to keep her place on the imaginary line in the class. Her sister decided to leave her eyes to their fate—just because her mind never realized the meaning of what she was doing. So they both have their poor eyes for life—and one has, or had, the "credits". But Mary has fine eyes for life. Worth more to her mind, infinitely, through life, than the foolish, and so often worthless, accumulation of dead marks.

A patient of mine, who had been a graduate nurse for years before she was married, had worn glasses for many years continuously. We relieved her of the spectacles between us, and her eyes have given perfect satisfaction without them for several years now. Without any help from me she taught her husband to discard his glasses, after he had worn them for forty-five years. **He had begun to be near-sighted following a severe illness from scarlet fever** when he was sixteen years old. His eyes became progressively worse, and for the previous ten years he had been unable to go safely in any traffic without the glasses on, although he could read the smallest type close to his eyes without the lenses. His relief came in a few days, and he did not practice any further care or method with them, but simply used his eyes freely.

He was a busy man of affairs, with long hours and much work with fine figures, and there was the common concern that most business men were having during the first years of depression, and after one year his eyes faltered again, and he gradually resumed the wearing of artificial lenses. He wore them constantly again for one year. But his mind was never at rest. He could not cease thinking about his eyes. It happened then that we were together at the seashore for one week. He had to relieve his mind of the complex, and I listened for half an hour to a recital of statements which were more or less true, and which he was confusing into arguments against the use of the unaided eye if it had any difficulty in seeing. His principal obsession was the glaring light of the sun. He had never thought of the sun in that way before. He even dragged in accounts of accidents caused by glaring headlights at night.

I refused to argue with him, but secured his promise to spend a few hours daily, during the five days we had left at the shore, in the practice of the simple techniques directed by Dr. Bates. He was an earnest and fair-minded man. From the first hour that he gave himself freely to the purpose of testing again the value of the method, there began a return of his confidence in his eyes. He was like a swimmer in the water again after a lapse of years. Perhaps you have felt that feeling, as I have, and have lost all consciousness of the liquid you were in, and have reveled in the buoyancy of floating on your back, carried by the strong water. In that five days all the power of vision he had lost came back again, and more. It is seven years since those five days, and his vision today is strong and free.

Mrs. W. C., forty-five years, had been afflicted for over a year with a condition known as **Iritis**. It is a serious inflammation of the eye, which generally diminishes the power of vision, as well as being very painful. She had been under the care of a well-known eye specialist in San Francisco. The condition of her eyes had grown steadily worse, so that when she came to my office—because, to use her own words, he had "let me out"—she was so nearly blind that she could not leave her own rooms without being led. In that disease lenses are of no service.

Besides the customary practices of the Bates method, I used on her eyes a treatment that I have used on other eyes, a careful exposure to ultra violet rays. She practiced a great deal of exposure to the sunlight, generally with her eyes closed. I was able to secure such a fine improvement in the condition that in a few weeks she had very good sight, so that she did not need assistance, and could even read fine print.

+Modern teachers use Full Spectrum Sunlight.

+Color treatment – Exposes the eyes to different colors, all colors for balanced light exposure.

+If one area of the brain is not functioning well, certain colors that activate/improve that area of the brain are used more than

other colors to bring that area of the brain into full function with the rest of the brain. Then all colors are again used equally to keep the brain hemispheres… balanced.

She ceased to come to my office, and neglected the other practices which had been of such benefit to her, and was disturbed constantly by serious mental concerns, and this resulted, after a few months, in a return of the symptoms, but in a much milder form. In a few weeks her eyes were normal again. It seemed that the improvement was due to the treatment, because it began at once with the resumption of the same method. She moved to San Francisco, and her eyes were in a perfectly satisfactory condition before she left. I am confident she would have returned for treatment if the symptoms had ever recurred.

Children should have an important place in this chapter, but I will not write about them here, because it is my belief that the salvation of their eyes is so important that I have devoted a chapter to the discussion of what is being done for their eyes, and what is not being done, and what can be done for them.

85 Year Old Man Cures Vision, Sees Clear Close and Distant

There are those at the other end of life, also, who have a claim. Some who are getting along very well with the help of glasses, might still be interested, like the fine old gentleman whose case I will now describe. He was eighty-five when his granddaughter told him what she knew about the work I was doing with the Bates method; and especially about a Mrs. Kinley, who came to me when she was eighty-three, with **cataracts** which hampered her sight so much that she was fast becoming helpless, and spectacles gave her very little assistance. She discarded the glasses at once, and had such fine success with the Bates method that she wrote me more than once, months later, that she could read and write, and could see to do whatever she wanted to, and was quite happy.

The gentleman, Mr. Burns, of Oakland, had **worn glasses constantly for forty years.** He was **near-sighted**, and was also troubled with **astigmatism**. He was getting along well enough, but when he heard of this opportunity he determined to see if he could correct the faults in his eyes. He began in a systematic manner to study the principles of the method, and to carry out instructions for hours every day. It was most interesting to watch him consider deliberately a statement which was new, and then question or comment, and then proceed to carry out the technique. It was his way of working with flowers, and the other interests which occupied his days. He was so absorbed in the mechanism of vision that he was not inhibited at all by a consciousness of his eyes. He very soon discarded the glasses entirely, and relieved himself of the dysfunction which had interfered with his sight for so many years.

This patient lived for two years after the return of normal power to his eyes. He never used his glasses again. His experience was a fine illustration of the control of the mind over the function of vision. His case is a contradiction also, of the theory of **presbyopia**, which claims that the lens of the eye begins to harden and lose its power in middle life, and even claims that for this reason the eye cannot focus on nearby objects when it is old. Mr. Burns could see small type closeup as well as he could see objects at a distance.

There was nothing remarkable in that. Such strong eyes at eighty and at ninety are in constant evidence. Some of the great artists of history accomplished their finest work when they were over eighty.

The different types of visual dysfunction have been offered as proof of the power of the mind to correct abnormal function in the mechanism of vision. The underlying principle of the method of Dr. Bates is the necessity of securing the alert and interested attention of the mind, when the eyes are not doing their work correctly, and the visual centers are at fault, instead of ignoring the mind and simply giving the eyes a pair of artificial lenses to work with.

CHAPTER XIII

FIRST PRINCIPLES OF CURE

DURING the ten years that I have been using this method, as part of my occupation in the routine of a general practitioner, I have found it the most fascinating part of my work. Generally it is gratifying. Sometimes it is quite disappointing. In a number of cases the results have been thrilling. There is nothing mysterious in the method or the techniques of the system. The reactions, like every other human experience, are determined by the different mental responses.

The principal combat is against the universal impression that the eye is a helpless thing—like a tooth, for instance. Skin can heal, an enflamed joint can become normal again, even a broken bone can unite by its own effort. But who ever heard of a tooth doing anything to get well, once the hard covering has softened and the toothache has registered a call for help? So naturally, when the eye begins to fail, and something must be done—well, who ever heard of doing anything to help the eye itself? Just buy it a pair of windows. No other idea registers in the conscious mind. As a sign of progressive, modernistic enterprise, the atmosphere now is full of warnings to beat the eye to it, and get a pair of windows before anything does go wrong—because naturally one ought to take it for granted that ones eyes, which are all right now, will certainly go bad pretty soon—and, besides, one looks more in the vogue these days with the latest model spectacles on display.

As a result of all this, when someone presents the strange and astounding proposition that it is actually possible for the ailing eye to get well, that is, to recover normal vision once it has faltered at all, the natural reaction, as I have found it, is to wonder how

any sensible person could become possessed of such an idea. In other words: "a crank is an expert on a subject we are not interested in." To put it differently, even when the response is cordial enough, one is balked by the well-known human failing called inertia.

If it is possible to convince the patient of the simple truth that the eye, like every other part of the body, can get well—recuperate, recover normal function, get over a bad habit, see just as well as ever or better, under the same kind of treatment as the doctor gives to every other part of the body—beginning with that conviction impressed on the mind, the subject has already made a fine running start.

Next, it is good to develop in the mind a simple and clear idea that vision is a mechanism which consists, in part, of muscles that act on the eye, just like other muscles which control other functions of the body, controlling the heart and the stomach and even the blood vessels. Beyond the muscles is a system of tiny nerves which carry orders to them from the mind. In charge of all is a central control in the brain, which ordinarily acts in a normal manner, but acts sometimes in an abnormal way, just as the central management in any organization may usually act with good judgment, but sometimes acts in a way that creates disorder in the whole system.

With such a foundation, one has an attitude of mind which can realize that it is within one's own power to "comeback" to the old habit of seeing things right, and even to develop a new power of better vision than ever. This understanding helps the patient to think of the mechanism of vision in an objective way. One can lose the mental obstruction which is produced by the consciousness of an eye which is crippled. The attention can become so completely absorbed in the practice of the technique that all self-consciousness will be lost. **One sees that best in the children. They forget themselves as completely as they do in playing house, or cops and robbers.** When the letters they could not see begin to appear, they just thrill with the pleasure of it. One boy who had been to school some months, but did not know the names of the letters—by the modern system of education—could identify them, as he learned to see them one after another, and in three lessons could name the letters as well as see them! I trust I did not interfere with the process of his education; but we just had to name the letters for him, because he was being retarded with his eyesight by the confusion of trying to prove that he really saw the letters. The D was "Daddy", and the M was "Mama", and the C was "Cat"—but the R and the W and the rest were things he could not name.

Practice the Bates Method Relaxed, no Effort

Assuming that there is an active interest, it is necessary to guard against an added tension, caused by the concern to accomplish the unaccustomed endeavor. The techniques directed develop a relaxed state of mind and of muscles, when they are carried out correctly. But the patient must learn to practice them as a game. In learning to swim one must first learn to trust the water. I saw a fine swimming teacher start with forty young girls who had never been in the water, and on the third day I saw all but eight of them jump into the nine-foot end of the tank, four at a time, and ply their way across and back without the least fear. They each had a different technique, but they all reached an arm away forward, and grabbed a lot of water, and pushed it back behind them, and just kept on going. The remainder of eight girls could not get their minds off the fact that the water was water. In working with the eyes, one must succeed in distracting the mind from the acquired abnormal habit, by engaging the attention, and impressing the mind at the same time with the necessity for working objectively-that is, thinking only of the details to be attended to. **Above all, it must be repeated again and again, so that it influences the mind, that every practice in the method has the primary purpose of developing a relaxed mental condition.**

Palming

A very effective way to develop a general feeling of restful relaxation is to have the patient practice a specific, habitual daily custom of lying with closed eyes for half an hour, and keeping the mind constantly occupied with specific selected thoughts that are pleasant and impersonal. One may imagine, make believe, that there is a soft and heavy and liquid feeling in the eyes, or in the muscle on the front of the arm, or in the back of the neck. Or if there is a symphony or organ recital or other relaxing program on the radio, one may imagine the performers or the orchestra leader or whatever the picture may be. That should not be a concentration, the better word is an exclusive contemplation. When carried out with care, this procedure produces a soft restfulness of all the muscles, and a feeling of languor in the mind. Unless it is in a dark room, it may be better to cover the eyes to shut out the light.

It is possible to secure some measure of the same feeling by closing the eyes at any time or in any situation. It requires always a complete exclusion of the customary automatic trains of thought—which dominate and interfere. For whatever period the mind is occupied with any chosen picture or series of pictures, the subconscious mind is kept standing at attention; and it will soon become a help, instead of a hindrance, in securing the relaxation that is sought. A young woman, lying on a couch in the dark, with no music, and no one present but her mother and myself, was kept constantly mindful by the soft repetition of the injunction to keep her mind on the muscle on the front of her arm. She was to make believe it had a soft, heavy liquid feeling. In fifteen minutes there was a silence for five minutes, and then she was asked to tell how she felt. She answered: "I feel just like a jellyfish. I don't know how a jellyfish feels, but that is how I feel." Her eyes felt soft, too. There was an improvement that evening in her near-sightedness which encouraged her so much, that in a few days her vision was normal.

Walking – Body and Eye Muscle Relaxation

It is a very worth while practice to make a habit of commanding a soft, relaxation of the muscles when walking on the street. The softness of the muscles, in ordinary walking, indicates always a relaxation of the mind, and this involves a relaxation of the tension in the eyes. When the mind is relaxed the muscles are relaxed; and when the muscles are relaxed, the mind has been relaxed first. If there is any difficulty in securing a feeling of relaxation in the muscles, it is a good practice to demonstrate on one leg by making believe it feels as though it were a rubber leg filled with water, and has to be swung helplessly in motion. From one limb the same feeling can be passed on to other limbs. These are illustrations of ways in which relaxation can be secured deliberately and specifically. Other expedients will occur to a mind that is interested. Relaxation is an absolute fundamental in this

endeavor. The only further essential requirement is that the central control in the mind be interested, and so impressed, that it is constrained to give the necessary impulse to the visual centers in the brain.
Relax, Positive thinking, practice Correct Vision Habits/Normal Eye Function.

All the treatments used in this ingenious system of methods are based on very simple principles. The simpler the directions, the clearer the mechanism is registered by one who is learning about a subject never heard of before. But if the new ideas are to really make any lasting and effective impression on the inner mind, the details that are necessary must be hammered home. The erudite and the ignorant each have inhibitions and inertias. There is a spot to shoot at in an elephant or a rhinoceros. I have sometimes found I have been aiming at the wrong spot; and even had my game get away, and had to register a lost case, because I had fired with bad judgment at the mental makeup of the patient. It is a unique situation after all, and I am still trying to learn how to estimate what there is in each mind that may be my helper, and what there is that I must battle.

To illustrate, a young woman who had an apparently unconscious aversion to any sunlight treatment, had me puzzled until one day she volunteered the information that the Negroes at the equator have cancer because of the hot sun. This is quite untrue, but her idea acted as a serious inhibition nevertheless. A man just would not try the practice of "swinging", and I found out later, by chance, that he had fallen off a swing when a boy, and went to bed sick for several days. 'The fear of a swing had remained so strong all his life, that he still fears even the word, and connects it even with the soft swinging which is done on the feet.

There are always inhibitions. The customary ones are expected; but the peculiar ones are generally not apparent, and are always more of an obstruction. My training as a physician has taught me that it is difficult, generally, to get an accurate record from a patient. So I ask questions of each eye patient. When the patient, in this procedure, is to be the doctor also, the patient should read the chapters in the book which will teach the mind the questions to ask itself. A deliberate and honest analysis of the existing conception of the subject, as of the past, should be followed by a personal questionnaire on the attitude of the mind, now that the endeavor is about to begin.

Having recorded the above previous record and diagnosis, it is vital for the patient to study carefully the intent and the special details of practice in every specific technique that is undertaken. Commonly, for instance, a patient who is "blinking" at a letter to develop a relaxed condition of the mind, forgets the purpose of the practice, and blinks in such a constrained manner that a new tension is added to the old one; or swings with so much concern that the muscles are hard instead of soft. This will not happen if the patient has read and reread some of the previous chapters, and realized the simple facts under consideration. I am writing this, at great length it may seem, in an effort to anticipate and prevent mistakes I have observed. Working without a teacher, some will fail to remark discrepancies, and come short of, or delay, success.

CHAPTER XIV

THE CASE FOR THE CHILDREN

A FORWARD looking eye doctor, writing in an official magazine, offers a demand which makes a plain man wonder. His proposition, plainly stated, is to the effect that every infant should have its eyes examined. He implies that most of them have defects. He asserts that if these defects are not corrected in the first few years of early life, the eye will degenerate into a chronic incurable condition. His bold, bald finality is that, if glasses should be settled upon the eyes of infants when they are eighteen months old, well, then, it is the thing to do.

That writer protests against what he calls eye exercises as a substitute for glasses. He does not explain what he means by eye exercises. It would seem that his plan would deprive the eye of its inborn right to exercise its own function, and yield itself passively to the domination of the artificial lens. As he offers no corrective treatment for the eye of a child which is acting in an abnormal manner, and condemns the efforts of those who undertake to correct the dysfunction, his pronunciamento has the effect of offering an obstruction to even the thought of some constructive effort for the cure of the condition.

Suppose we consider deliberately some established facts which concern such a remarkable contention. The first fact that suggests itself is the impossibility of proving that any infant's eyes should have artificial lenses, or would be benefited by them. At that time of life there is nothing to be found in the eye that could determine its inability to develop a natural function. The text books offer several different theories as to the varying changes which seem to take place in the growing child's eye. These differing theories are all more or less contradictory. But there are some significant statements. One statement is that the changes in the growing eyes cannot be estimated in advance. These changes are so variable, so uncertain, so irregular, that it is plainly indicated there is no fixed rule as to what will take place, or when it will happen. Apparently the course of the progress, like that of every other human function or faculty, is dependent upon circumstances.

We are told that five per cent of children are born nearsighted. At six years of age there are nine per cent. At sixteen there is a larger number. During the period of rapid body growth, more and more cases develop along the road. Besides that, those who are myopic get more and more so all the time. But the developing myopia, so it is explained, will often change its rate, increase more slowly, or stop increasing for some years, and then start a new rate of increase. Moreover, the progress in one eye may differ from that in the other. That stated fact is most significant. The books explain that the development of myopia in children is the net result of two opposing forces going on simultaneously. The excessively curved infantile lens keeps flattening, and the eyeball continuously grows longer. By the time full growth is reached, so we are told, the eye has a normal optical system, but is absolutely too long. This excess of length is blamed for almost all of the refractive error. In some cases, so one ophthalmologist

claims, the front end of the eye is distended, and not the rear end, as most research workers claim. Such a radical difference of opinion necessitates some explanation of the different theories; but it is not offered. Meanwhile, one cannot help asking an explanation for the development of those eyes, which after all compose the great majority, that certainly do not grow more and more nearsighted, but do develop in a manner which eventuates in a good normal eye. Certainly environment, variable, suitable or the contrary, has to do with the great variations recorded. Is it reasonable to pay no least attention to that proved necessity in the consideration of the "wherefore" in this question of what to do for a developing eye?

The writer of the article referred to offers as a saving grace for his cases of defective eyes, nothing but glass lenses. But what warrant has he for saying that his glasses will persuade the defects in the eyes to reform? How many children who have glasses put on them ever have them taken off? One would not say there are none. But who would say there are more than a very few? That writer says nothing as to when his glasses will have saved the young eyes sufficiently so the artificial lenses can be permanently discarded. That is very discreet on his part. The common experience in those cases is that the glasses are changed periodically for different ones, with the explanation that 'stronger lenses' are required.

Why should one expect glasses to correct any defective functioning of the mechanism of vision? Especially in a developing organ, why should one expect any artificial substitute for the function of the organ to develop the function of the organ itself? Such a proposition is contrary to all the science and art of modern medicine. It is exactly opposite in conception to the basic principles of the modern methods of education. The fact is that no claim is made by the ophthalmologists that glasses do correct the abnormal function of the eyes.

The artificial lenses are put on to assist the eyes. But when the artificial lenses refract the rays of light they do so with an unvarying precision. Meanwhile every dysfunction of vision varies constantly in degree. This means that there must be submission by the lens in the eye to meet the refraction made by the glass lens. Often there is conflict. In some cases it is serious. In any case there is a situation which is unnatural, and there are inevitable secondary effects consequent upon the submission of a human faculty to a constant outside interference. Some children show this plainly in their conduct. Very few of the laity seem to have any consciousness of this most important truth.

Madame Montessori conceived a method of developing the mental deficiencies of subnormal children which surprised the world. In her wonderful work she cured extremely abnormal mental conditions by encouraging the subnormal qualities of the mind to develop along natural lines into normal efficiency. It is by chosen impressions carefully made upon the subnormal minds of mentally defective children that the Montessori system secures such wonderful changes in the working of their minds. The incomparably simpler changes required to correct mere visual dysfunctions are easily accomplished by the same natural method of treatment. Very few would undertake to deny that statement. It is in accordance with the known physiology and psychology of the function of vision. It has been amply proved during many years. It is questioned only by those who have never tried it.

If one has interest enough to consider deliberately the case for those children who are having difficulty with their eyes, it will be necessary to lay aside whatever beliefs or prejudices or predispositions one has, for otherwise one cannot examine the evidence with an open mind. The unquestioning compliance of parents in placing spectacles on their children is sufficient proof of the impressions which have been produced on the public mind in the last few years. This strange new mental attitude is the result of the practice which has developed so rapidly in a short time. It is growing to seem natural to meet every trifling difficulty that children have with their eyes by the simple procedure of fitting them with spectacles.

We have gradually grown accustomed to seeing children with glasses on. As the ranks increased there began to appear very little ones among the small army. The relative number of children wearing glasses is trifling, as compared with those who do not. What about those children's' eyes which refuse, as they develop, to follow the rules laid down in some of the literature on the subject? I mean those eyes which do not grow more and more near-sighted. Why the difference between the few who develop some dysfunction, and the great majority who do not? The theory of an inevitable progressive maladjustment, predicated upon some unexplained distortion of the parts of the eye, takes no notice, and offers no explanation, of the eyes which develop into a normal maturity. Even more than that, the theory is contradicted by any eye which develops into a near-sighted eye, and later ceases to be nearsighted. There are plenty of such eyes in evidence. **In my own practice there was a man who developed myopia at sixteen years, following an attack of scarlet fever**. He wore glasses, stronger and stronger, until he was sixty-one. He then took them off for two years. After that he gradually assumed again the constant use of them. He took them off again, however, after a year, and has not worn them for the last five years. He knows that it is the attitude of his mind which determines the conduct of his eyes.

The problem involves the foundation of the method of Dr. Bates for the correction of abnormal vision and the education of the eye in the normal conduct of the mechanism of sight. This problem is discussed fully in other chapters.

The specific, practical, positive, and vital conception that is the theme of this chapter, and the thought which I hope to leave as an impression on the minds of all who read it, is that the eyes of children should not be left to the management of optometrists. They should be protected from the raw commercialism of any campaign which boasts openly that its purpose is to put lenses on every one of them. It is not true that for the faults of vision which many children have, there is no other known help than a pair of artificial lenses. It is not true that those eyes must develop into a permanently abnormal condition. The eyes of the great mass of children still develop normally. It has been fully proved that the different abnormal conditions are only dysfunctions, and can be corrected easily and permanently. We protect children, naturally and positively, from impositions upon their helplessness: how long will it be before we protect them from this imposition?

The developing eyes of growing children should not be left to any management which offers their eyes no other help than the domination of a pair of artificial lenses. Such lenses displace the natural function of the lens of the eye. That is obvious. The natural effects of such a substitution must be very plain. The eyes are not something apart from the remainder of the body. They should not be examined and diagnosed by the mere testing of what they can see, at the moment, at a certain distance. The foremost standard text book on the eye, the work of a world-famous Viennese eye specialist, explains with great detail that there is a close and absolute cooperation of the sense of vision with the other functions of the body. It explains that the functioning of the eyes is often impaired when the other functions or organs of the body are not conducting themselves normally. It explains that those other dysfunctions are the cause of the abnormal conduct of the eyes, and that when those other dysfunctions are corrected, the abnormal conduct of the eyes will cease. It is obvious that such an examination, and diagnosis, and treatment of the human eye should be carried out by one who is trained in the science and art of medicine. The problem should not be stated and dismissed by the mere routine procedure of having the patient look at some letters on a card, without any consideration of the real cause of the abnormal conduct of the eye, and without any consideration of the visual center in the brain which directs and controls the eye.

Although I realize the danger of repetition on this subject of spectacles on children, I am conscious also of a specific necessity. During ten years of this work I have been deeply impressed by the remarkable lack of attention given to the matter by the parents whose children are sentenced to the handicap of wearing glasses for the remainder of their lives.

My point is the thoughtlessness with which they accept, without the least question, the verdict that because the child now finds some difficulty in seeing things clearly, there is absolutely no other procedure in the premises but the adoption of artificial lenses. They are familiar with classes, private and public, for children who have different kinds of impairment of mental functions, and are familiar with the giving of medical attention to various organic and glandular dysfunctions, like asthma and diabetes and anemia. They are aware of the wonderful advances made in modern scientific medical treatment of every other part of the body. But they seem, in a strange manner, to be unconscious of the part that the eyes play for the brain. They walk into a store and let a man put a pair of glasses on their child, for the remainder of the child's life, and think no more about it, then or later, than when they buy the child a pair of shoes which are to protect his feet for a few months. If the reader thinks that this is not a fair statement, let the reader try to prove, by simple personal deliberation, just what is untrue or unfair about it.

As a typical illustration of the contrasting attitudes of mind on the part of parents when their children are having difficulties with their vision, the following record is worth considering.

A girl from a small town in Oregon, with a relative living in Berkeley who was quite familiar with the success of the Bates method, was brought to my office by her mother two years ago last summer. When she was about four years old her parents discovered that her vision was at fault. Finally she was examined by an eye specialist, and was fitted with glasses for near-sightedness and astigmatism, before she was six years old. She had been wearing the spectacles continuously for eight years when she came to me, because without them she not only had **difficulty in seeing**, but also was subject to symptoms of discomfort, even **nausea** and **headache.** Her mother also had been wearing glasses for several years.

They remained in Berkeley two weeks, and that was the only period during which I had personal supervision of her. She discarded her spectacles at the first treatment, and has never worn them again. Her mother worked with her, and she, also, discarded her glasses immediately and permanently. In several cases I have noticed that a mother wearing glasses, while she was trying to make the child discard her glasses, has realized an embarrassment in the situation. I appreciated the spirit of that mother, and I am sure her attitude was a great help to her daughter.

Dr. Bates felt that it was not a helpful example to a roomful of young children to face constantly a teacher wearing spectacles. In my own work I have been told by a parent, more than once, that the child's teacher, wearing spectacles, was quite impatient with any indications of difficult vision on the part of any child in her class and that this attitude made the children quite self-conscious.

This girl was determined to be free of glasses permanently if possible. She improved from the first hour. Upon returning home, on vacation for some weeks, she practiced a great deal, **exposing her closed eyelids to the direct rays of the sun**. She found that this treatment was very helpful, and feels that this procedure was perhaps the most valuable of the techniques she used. She had been seen so long wearing glasses, that her appearance without them attracted real attention. Her vision was entirely satisfactory.

After she had been in evidence daily without glasses for over two years, a boy of her own age, who had seen her with spectacles for eight years, and was having trouble with his own glasses, finally decided that he also wanted to be free, and asked his father for permission to undertake the same treatment, pleading the example of his friend. His father refused to allow this, and the boy is now carrying on as best he can with the obstructing spectacles. I submit this story without any personal comment. It is just a rather extreme and conspicuous example of a mental attitude which is not uncommon. Instead of being indifferent to the truth that is evident in the success of the method of Dr. Bates, the parents of the girl determined to make the endeavor. They realized that no possible harm could come to the child's eyes, and their minds were open to the opportunity. In the three years that have followed those two weeks, the fruit of the endeavor has ripened.

It is not only that the girl has fine normal eyes, instead of weak eyes, helpless without spectacles. Her keen eyes are a help to her mind. There is no mental inhibition from the certain constraint which dependence upon glasses always causes. Besides this, there is another reward, one which is a source of real happiness to the young lady herself, and to her parents and her friends. There are those who are persuaded, by the blandishments of sales-talk advertisements, to add a pair of modish spectacles to their

adornments. They fancy it must be true that the glasses add to their attractiveness. In the words of the "ad", beauty puts on its glasses. In this particular case, there is a remarkable improvement in the appearance of the eyes themselves, and there is a new charm in the happy face which is not obscured.

Because of my interest in this field, I can hear, in the atmosphere of spectacles, the whisperings of revolt against the propaganda which plans, with open frankness, to fit all children with glasses. These whisperings can be heard in the medical profession. They are also among the voices in the popular magazines. A prominent member of the medical profession made a brief statement recently which is louder and plainer than usual. He said that he did not agree with those who expected the use of glasses to keep on increasing. He said he believed that the practice had reached its climax, and would soon begin to diminish. But such a radical reformation can come only through the efforts of the medical profession. It is not reasonable to expect it to originate with any element which believes that glasses are the only possible relief for all defective vision.

I have had more than one surprise recently, aroused by specific indications of the personal interest of practicing physicians. These men are beginning to realize that this most vital field of the work of the healers of the race has not received the critical, unprejudiced analysis which original workers in the other fields have given to their research work. Research means marching over again, examining the decisions that were made by other men. Strong men they may have been, leaders and pathfinders, but they had less knowledge to work with. They made mistakes, too, some of them vital. In every other field of medical science such mistakes have been discovered, and they are still being discovered. In the field discussed in this book Dr. Bates was a research worker. He made discoveries; he found mistakes; he proved that the eyes of children can be taught to act in a normal manner. He showed that the way to help them to use their eyes in a natural manner is to have them try to use them right, and not to stop them from using their own eyes by making them use glass lenses instead.

It must be remembered that Dr. Bates was not an academician. He was a clinician. His laboratory was the constant procession of human eyes that he studied in a lifetime of daily work, in private practice, and in hospitals and clinics. For years he worked even in special Sunday clinics, to treat those who could not come during their working hours. It was in this work that he discovered the specific causes of the common dysfunctions of the mechanism of sight. He demonstrated the truths of his beliefs daily by saving children from being obliged to wear spectacles. He relieved children who were wearing them, so that they had fine normal vision without them. His patients came even from distant parts of the world. His system is being practiced now in South Africa, and in Australia, and in India as well as in Europe. In Germany there is an organization today which is spreading what is called vision schools. They are practicing the method of Dr. Bates, and give the credit for the discovery to him, and the published success of their efforts is arousing national interest there.

More recently this same work has been organized in England. The published statement, issued by the chief of the movement, from its headquarters in London, announces frankly that the principles of the method they are using are founded on the original discoveries of Dr. Bates. As usual, what originates in our own United States, is again being made use of in other countries, while it is being ignored, in a large way, by our own people. Such things must have happened in those early years. It was written: "A prophet is not without honor, save in his own country."

My acquaintance with Dr. Bates' work began when I read his book and put it into practice by freeing my own eyes from glasses, after wearing them for thirty-seven years. It is ten years now since I have worn them. A large part of my practice with the Bates method is with children. I have found it quite easy, as a rule, to relieve the difficulties children have when they are beginning. Many cases require only a few lessons. Children learn the method quickly when they are interested. If their parents have an active interest it makes the children happy, and it is a pleasure to watch their young eyes sparkle, and their minds thrill, as they find the letters coming out plainly, which they could not see a few minutes before.

Even those children who have worn glasses for years generally respond promptly to instructions, and very soon their eyes give perfect satisfaction without the use of the glasses they were wearing. Young life has a natural tendency to correct any dysfunction. Its tendency is to be normal physically and mentally. It often corrects automatically different kinds of abnormal functioning. Young minds are plastic. Their imaginations are vivid and direct. They have the power to make believe so that things become real. Their receptive and acceptive qualities are not yet burdened with the false conceptions and fixed mental habits which inhibit free will and free mental and physical conduct in their parents. If one can interest their alert minds, it is easy to induce autosuggestions. They are eager, not indifferent. To have watched their response to the new delight of seeing things again with a vision that was lost, is to have an experience which is a perfect proof that the method of Dr. Bates is not a theory, but a reality.

It is untrue that for the faults of vision which many children are now developing, there is no known help but a pair of artificial lenses. It is not true that their eyes cannot be prevented from developing a permanently abnormal condition, dependent upon glasses. The eyes of those unfortunate ones can be taught to develop with the same power as the mass of their playmates. We protect children, naturally and positively, from impositions upon their helplessness. How long will it be before we protect them from such a serious imposition?

In support of the statement I have made, and to show how really simple a proceeding it is to teach most children how to use their eyes so they will behave in a normal manner, I will report here a few typical cases in which that has been accomplished. Each record is a specific report, and every case is in evidence today.

Little Jimmie D., eight years old, was having such trouble seeing the letters on the board, and even seeing the words in the book, that the school nurse finally called in the evening on Jimmie's widowed mother, who was at work all day. She explained that he must have glasses if he was to keep up with his class. His mother had heard of the Bates method, and brought him to me one

evening at eight o'clock, all the way from West Oakland. His bright little mind was interested in the **Snellen Test Card** at once. Even with a 200 watt light, over his head, through a translucent shade and ceiling reflection, he could not see the letters on the fifty-foot line at ten feet. But when I used a 340 watt light in front of a reflector, placed close to the card, the same letters became clear, and smaller letters began to appear.

This discovery aroused him into an animated attention. By questions and suggestions he was led to imagine the letters he was trying to see, and presently one after another new ones took shape and became real. It was a pleasure to see the thrill with which he looked up into his mother's face, as he stood with his back against her knees, when he became possessed of each new letter. In half an hour he owned three new lines. This was accomplished by the simple procedure of giving him a strong light, and getting his own imagination interested.

Specific directions were given for home work. He was to let strong sun shine on his closed eyelids for ten or fifteen minutes daily. There was to be half an hour of soft relaxation in the evening, lying with closed eyes while the radio gave soft music, and mother talked with him about his eye practice. He had a small card for near work, and a large card to be placed ten feet away. He blinked softly at the different letters, in the special way I showed him. He had practices for the school room, blinking at the writing on the board; and he had practices for objects in the street to and from school. Simple techniques, no straining, but a job to perform, like a game, which kept his mind in an attitude of attention to the power of his eyes. His eyes improved so rapidly that he had no further trouble in school; and soon his sight was a very good normal. I saw him in my office only seven times during a period of five weeks.

Albert C., ten years old, a different type, rather nervous. Three months before, because he was blinking and complaining of poor sight for some weeks, his father took him to an optometrist who gave him a pair of glasses. After a month with no relief, his mother went back with her complaint. This seemed to annoy the optometrist, who explained that she must realize the condition of her boy. He then told her that she must be patient for a long time, because her son's eyes had never developed, and he was nearly blind. Frightened, she had her husband take him to an ophthalmologist in San Francisco. That specialist claimed that the discomfort, and the poor sight, had developed because his lower eyelashes turned in, and this condition must be corrected first. He used a cautery on the skin a few times, to produce scars which he promised would contract the skin, and pull down the edge of the lower lid. This scheme was a failure, of course. There was no change after the treatments. The specialist had promised to give the boy more suitable lenses, after correcting the eyelashes; but when his father made a final inquiry about the vision and the glasses, he received the reply that the local optometrist was correct, and there would be no advantage in giving the boy any different lenses.

The parents had been waiting for this final reply before bringing the boy to my office. They had delayed the decision for a month. They felt that the eye specialist should be relied upon until they had his final answer. That is the history given to me.

An examination with the ophthalmoscope showed nothing unusual in his eyes. At his first attempt he read at ten feet the line he should have read at forty feet. He could not distinguish any smaller letters at that distance. In other words, he was really near-sighted. But he was not badly nearsighted. I did not concern myself about the diagnosis of undeveloped eyes. There was no excuse for such a statement. It was simply brutal.

That boy did not show much interest in the effort to cure his eyes. But fortunately his parents did. His mother was a great help. She made him practice daily. It quickly developed that the tragic situation conceived by the optometrist, and indorsed by the ophthalmologist, had no foundation in fact. What they may have thought is their affair. There was an improvement in his vision even during the first lesson. In three weeks he could read the ten-foot line at a distance of more than ten feet.

School closed then, and he went with his mother and his sister to the ranch of his uncle. For more than a month his mother secured a great deal of sunlight treatment, and insisted upon a regular practice daily of the different directed techniques with the Snellen cards, and other methods.

Two weeks after he had returned to school in the Fall his mother came to the office and reported that he could always read the ten foot line at fourteen feet, and he was having no least trouble with his eyes. This result was secured with a very poor interest on the part of the little patient. His intelligent mother demanded his attention, and that secured the result. Such an improvement might be called a development of the eyes. In the Bates treatments we think of it as a simple education of the eyes.

Max S., twelve years old, was told by the school nurse that he must get glasses. He was having some difficulty with the board, but not much. Finally his mother had a talk with the nurse, and she insisted that he must be fitted with glasses. That was when his parents decided to see if such a course could be prevented. After a few treatments, and about three weeks of practice Max was able to read the ten-foot line on the card in the sun at the full length of their front porch, which was fourteen feet. His mother then arranged with the school nurse to have a test of his eyes while she was present. Tested in the school room, at a distance of ten feet, Max was able to read all the letters on the ten-foot line, but one. Grasping at that one straw, the nurse maintained that she had now proved that his eyes certainly needed glasses. She even volunteered the warning that if he persisted in trying to get along without them, he would ruin his eyes.

At the request of his mother I called at the house that afternoon and made our usual test at the distance of fourteen feet. He had no difficulty in reading all the letters. Relieved of the tension caused by the plain opposition of the school nurse, his eyes worked normally. When school opened again in the Fall he had no difficulty with his vision, and I have not heard of him since.

The case of E. M., now a fifteen-year-old girl, is interesting and instructive. When she was about three years old, it was noticed that she was nearsighted. Before she went to school at six years, it was necessary to have her fitted with lenses. The glasses enabled her to see things better, but were so unsatisfactory that a different ophthalmologist was tried. The new glasses proved even less satisfactory, so her parents tried again with the eye specialist who gave her the first pair.

When this first ophthalmologist took charge of her case a second time, he informed her parents that she would have increasing difficulty with her eyes until she was eighteen years old. They understood this to mean that she would require new lenses frequently. In five years she had four new pairs of glasses. The last new pair were to replace a pair broken on her face by a basket-ball.

She never was able to see, with any glasses, the difference between a man and a woman at the distance of a short block. She was uncertain often, even about nearby objects, and was limited in playing, and in school exercises. This developed a noticeable embarrassment in other ways, even in familiar personal contacts, caused by the realization of her difficulties in seeing persons and things.

When she came to me three years ago, she was wearing the glasses prescribed after the ball broke the ones she had on, a short time before. She complained that these glasses always felt heavy, especially the right lens. They were much stronger than the previous lenses, and tired her eyes. She was very cordial to a proposition that she find out whether she could learn to go without them. At the end of a week, during which she alternately wore the lenses and went without them, of her own choice she discarded the spectacles. She soon found that she could read and play with much less difficulty than she had experienced while wearing the lenses. For a few months she was favored with a front seat in the classroom. Her vision steadily improved in every way, and before long she could read everything on the blackboard from any part of the room, without any difficulty.

During the three years she has had the glasses off, her vision has steadily improved. She has no difficulty in seeing everything. Besides this, her mental attitude is quite different. It now has become evident that during the years she was wearing the spectacles her outlook upon everything was cramped and unhappy. From a pessimist she has developed into an optimist. Her relatives, and her friends have all remarked this. Her teacher was quite frankly interested in the novel experiment. She is now quite positive in her statement that her scholar improved in her vision, and in her work, and in her attitude toward social contacts and toward every aspect of her environment.

In this case the efforts of two prominent eye specialists were of little help, even in refracting the rays of light so that the child could see clearly. On the other hand, the glasses, so it seemed, quite disturbed her mental attitude. The promise of the ophthalmologist, that she would have increasing difficulty in seeing until she was eighteen years old was in keeping with some of the explanations recorded in books on that subject. She is now only fifteen years old. The future is still unknown. But in this case it seems fair to quote the words of Patrick Henry: "I can only judge the future by the past."

D. L., twelve years old, daughter of a physician in a town across San Francisco Bay, came to my office with her mother one year ago. Last spring her sight was normal. When she returned to school in the Fall she found difficulty in seeing the letters on the board. After a few weeks it became apparent that she must have some help. Her father sent her to an eye specialist in San Francisco, and she returned with a diagnosis that she was quite near-sighted, and must have glasses.

It happened that her music teacher was the sister of a librarian who had had difficulty with her eyes, and came to me for treatment. The sisters both knew of others who also had tried the Bates method with success. So the music teacher suggested that her young pupil come with her mother, and try the Bates method before she put on glasses.

The girl had an alert mind, and did not want to wear glasses. The first day I tested her eyes on the Snellen card, in a sunny room at ten feet, and found she could read, with either eye or with both eyes, the line that should be read at seventy feet. The line below, which should be read at fifty feet, she could not read at all. There were some other minor unpleasant symptoms.

After some conversation, I began by having the pupil look continuously at a 1000 watt electric light. She blinked softly, most of the time, and the light was placed three feet from her eyes. Following that she closed her eyes for five minutes, while I talked with her about the Bates method. When she opened her eyes she began to see the lower letters, finding them gradually, one at a time. I impressed upon her mind the **necessity for eliminating the urge to see the letters.** By sustaining an alert interest in her mind, with her eyes closed, or while she was looking at a letter she could not see, we managed between us to make her visual center respond to her wishes, and presently a letter which she could have seen perfectly a few months before, but had lost as an acquaintance, became visible again, because she had been encouraged to relax the strain in her mind. In twenty minutes she could read easily the letters on the thirty-foot line, instead of balking at the letters on the seventy-foot line. (Balking = staring, staying on one object, not moving the eyes, mind to other parts, other letters, things…) Her mother, a college woman and a doctor's wife, said: "That is a miracle." I answered: "No, it is simple physiology and psychology."

She did not return for over two weeks. She had been ill, and had not been able to practice. She could read the same letters, but had made no improvement. That day she captured the remaining four lines on the card.

Her home work was to let the strong sun shine directly on her closed eyelids for ten minutes twice a day, the time to be increased gradually, according to her experience and improvement. She was instructed how to practice on the letters of the large and the small Snellen Test Cards she was given. There were specific directions for practices to be

carried out in the school room and on the street. There was a half hour in the evening, lying with closed eyes and listening to soft music. There were other special reminders.

I saw her once again, in a few weeks. She was quite happy, her sight was entirely satisfactory, and she enjoyed the practice. Her mother was grateful. Just another simple case. **Relax the tension, interest the mind, encourage the spirit, show them what the eyes will do**—if you treat them the way any other deliquent function of the system is being treated daily by the medical profession.

The last record I will mention, in this chapter, which is **"The Case for the Children,**" has a vivid significance as an illustration of the menace to their freedom. There is a family of six. One parent and three of the four children, wear spectacles. The children are in their late teens; there is no prospect that they will ever be freed from the "windows". The second parent is disturbed by an apprehension. It is not that there is any want of good vision yet. It is that a fear is forming in the mind—a fear engendered by four spectacle wearers in a family of six. The latter half of that sentence is just my guess, of course. But the fear is acknowledged—the fear that there will soon be a fifth member in the circle. With five in the house wearing glasses, what chance will the youngest child have? Already the sixth vision had become so poor when school closed this summer, that the eyes could not read any letters on the fifty-foot line placed ten feet away. The spectacles were just as near to the eyes as that.

During the first hour in my office a considerable improvement in vision was secured. There were a few more visits, and one day the sight was good enough to read the ten-foot line at ten feet. There is no doubt that this child could have good normal vision, free from spectacles, with very little further effort. But the case has passed out of my charge. All that is left to me is the interest I have, which is to hope for the best, and I shall continue to hope. There is a further hope I cannot refrain from expressing. When I think of the wrong that is being done to these children, I can hear the echo of a plaint wrung out of a spirit that lived in the days of the Prophets: "How long, Oh Lord, how long?"

CHAPTER XV

THE SUN AND THE EYE

Sunglasses – Harmful to the Eyes

THERE is a strange, new public habit which is remarkable as a freak, but is no longer something to smile about. If it fastens itself upon us as a custom peculiar to Americans, it will become another new menace to the American eye. I am referring to the fad which is being indulged in by those who are wearing colored lenses to protect their eyes from the ordinary sunlight, in which they have always lived. Until now they have been unconscious of any painful or damaging effects. It is still the same old sunlight, without which they could not live, and without which their eyes would be useless. Whence comes this epidemic of, shall we say "sun-weakness", which is tagging a rapidly increasing number of victims, and how contagious is it, and what is to be the end? The source of the infection is not far to seek.

We used to see a few dark glasses on the street. They were worn by those who had some temporary or some chronic ailment of the eye. But now there is a flock of many-colored lenses, and not one of the wearers would claim any ailment. They all probably would resent such an imputation. Somehow they have become conscious of a soft voice telling them they must wear the colored spectacles. The plain everyday sunshine never hurt their eyes before. The word photophobia is the technical term for the condition; and that word means fear of light. This apparently is the explanation in most of the cases; because no other cause is to be found. In the standard text books on the eye, warning is given to allow colored lenses to be used only when necessary. **It is further specifically pointed out that the use of colored glasses may easily become a habit, and such a habit would certainly be harmful to the eye.**

Gradually the environment has accumulated a mass of high-powered sales devices. Windows and counters are piled with colored glasses. Everywhere are pictures which apparently are lithographed photographs. Those who are posing are divided into those who are wearing tinted glasses and those who are not. All who wear tinted glasses have soft, happy faces; the unfortunates without them always have a distressed squint, as they try to see things right, in the ordinary sunlight without any colored protection for their eyes. One would like to ask the advertising manager how he explains the conduct of the rest of the race-meaning all those who are not included in his hand-picked posers.

One wonders where the claim originated that the normal eye is no longer able to look at a horse race, or a ball game, or a procession without distress unless it is protected from the sun by some tint of colored glass. Its origin is shrouded in mystery. But those who believe the claim are welcomed with a profuse assistance. The preposterous pretence is contrary to the known truth. The plain contradiction of it is the fact that almost everyone, old or young, is free from the delusion. An eye specialist, writing in an official medical journal, makes an emphatic comment on the **harmful effects of shutting out the rays of sunlight from the eye, except on occasions when there is a rare, extreme glare. Those who use colored glasses commonly wear them in the evening, and wear them indoors. It becomes a mental habit; and, as that writer protests, it lowers the natural receptivity of the eye for sunlight, and injures the mechanism of vision.**

The eye began, we are told, as a piece of specialized tissue which was responsive to light. That may have been millions of years ago. Always under the care of the sun, the eye has evolved into a mechanism which is so wonderful that its secrets are still beyond the knowledge of the human race. The sun is to the eye what air is to the lung. The sun, which is such a life-giving necessity to every other part of the human body, is not really the enemy of the eye.

We know that the race goes today without this new device. Those who fancy that their eyes have a new weakness might ask themselves why they must deny their eyes the privilege which is the life of the other eyes around them. They will be wise to ask themselves if they are resigned to wearing colors over their eyes for the remaining years of their lives. Perhaps a little deliberate thought will make them conscious of the price they are going to pay for the light-hearted modishness they are indulging in as a fad. The strange, new pretense that the human eye must now be protected from ordinary sunlight, is so contrary to the truth, that one must seek for the reason, or the excuse, or the purpose, upon which the astonishing propaganda is founded.

The assortment of cheap, many colored, gaudy rimmed eye protectors rival the varieties of lipstick, and face paint, and cigarettes. The displays of the costlier lines illustrate the art of the commercial producer who knows that there are always victims who will pay ten times a reasonable price for the privilege of feeling that the glasses they are wearing are in the class called exclusive.

We are so accustomed to fresh air that we forget we are breathing it. There are those who do not get as much of the air as they might. Many are paying a tragic price for their neglect of the privilege of breathing all the fresh air they could, during the day and during the night. How many who are following the procession of wearers of colored glasses have ever realized in their lives that their eyes would be worthless without the sun they are keeping out of their eyes now? Soon they will be able to have their eyes tested by a new device which is to decide exactly how unfit to go out into the light of day their own particular eyes are; and to be told by the same machine just which color they must wear, whether that is their favorite color or not.

Suppose we look at some established facts. It is natural to expect, from the history of the race, not only that the eye should live free and unhindered in the daily sunlight, but that when the eye is sick the kindly sun will help it to get well. Dr. Bates proved that this is true.

Those who work among the children in the poorer districts of London, lament the fact that the eyes of the children are suffering because of the many days they have there when very little free and clear sunlight is in their homes or even in the streets. The children of the countries where a real strong sun shines most of the year do not wear colored lenses; and there is no evidence that their eyes have lost any vigor or power because of exposure to the sun. The few that we see around us wearing colored lenses have no more actual need to wear them than those of us who have never thought of doing so. **The specialists who know, and who are interested in the welfare of the eyes, are saying that everyone who goes around daily with colored lenses covering the eyes is injuring, more or less, the health and power of the eye.**

There is a further, and a very fine, value which the sun has, but is not commonly realized. Strangely enough it is recognized in every other field of the healing art. If it is properly used, the sun is a great help to any troubled eye—and absolutely in accordance with the laws that govern the health of the race. Civilized humans are becoming conscious again of a knowledge which seems to have been lost soon after the days of the Greeks and the Romans. They knew the value of the rays of the sun. Special exposures to the sunlight was a constant custom with them. It never occurred to them to protect their eyes from its harmful effects. But then, in their ignorance, they did not even know that it was necessary to conserve their sight by fitting their eyes with artificial lenses. It was only Nero, with his degenerated body and toxic chemistry, that used a little artificial lens to see better the butchery of the unfortunates which was provided for the amusement of the masses of morons who paid his bills. There is no evidence that any of the real men in those days needed any artificial help with their eyes, in their reading, or on the battle field.

Perhaps, to Finsen, more than to anyone else, is due the beginning of the new knowledge of the value of the sun in so many conditions of impaired organic function and specific disease. It was Dr. Bates who directed attention to its very fine value in the care of the eye, and as a help in relieving conditions of eyestrain and dysfunctions.

Sunning

We know that the men who live out in the open, on the land and on the sea, commonly look into the sun freely. It is natural for them, because it is a natural thing to do in a natural habit of life. Sailors and plainsmen and mountaineers, Indians and Africans and Eskimos have not yet been informed that the sun is an enemy of their eyes. The little Indian papoose, riding backward on mama's back, generally finds the sun shining right in its eyes when it opens them to see its new world. In the years I have met over a dozen, right among the common people like myself, who astonished me (that is, the first few) by looking at the sun with the same ease and directness and comfort as they looked at the ground. Those who do that are not freaks. Those who cannot do it, have simply learned—or should we say inherited—bad habits.

Sunning and Sunglass

My own eyes were as sensitive to the sun as any eyes could be. I do not even now look freely into the sun. But I do often look directly at it when it is high and strong, and continue for several seconds, while the glare softens, and the sun gradually shows to me its edges, until it has the same rounded appearance we see when we look at the moon. I have often demonstrated that when I hold up the upper lid of my eye, and keep the lens of the eye covered with the lower lid, and concentrate the sunlight with a convex glass held near the eyeball so that there is a small round spot of strong light showing on the white of the eye, I can flash it back and forth rapidly for a number of seconds at a time, and repeat the process a number of times without the least discomfort.

When I do that exactly right, the shadows of the tiny blood-filled vessels in the walls of the eyeball cast the daintiest interesting shadows on the retina. The terminating fibrils of the last branches of the vessels are the smallest lines the retina can register on the mind. I have demonstrated that following such a treatment my eyes—and the eyes of others so treated—have keener sight—or register better on the visual center. Such a treatment, carefully carried out, if it is repeated daily, very soon demonstrates a fine improvement in the power of vision.

To reply to this report with a blunt assertion that such treatment of the eye must be harmful, is not only an unscientific statement. Consciously or unconsciously, it is an actual obstruction placed on the pathway of progress in a field of research that is of the most vital interest to the race. Personally, I have used this treatment in many different cases for over ten years without a single unpleasant reaction. Dr. Bates reported using it for many years before I heard of it.

Sunglass Directions

It is not difficult to learn how to use the sunglass on the eyeball in a safe and proper way. It must be held so that the concentrated rays from the sun strike at right angle on the surface of the eyeball. The distance of the glass from the eye must be suited to each different case. There should never be any least unpleasant feeling. There will not be, if the glass is moved rapidly back and forth. The time on each eye should be only a few seconds without interruption. But some eyes may be treated for a duration of several minutes several times a day; and it may be found that the gradual increase in the total time of treatment will show an increasing degree of improvement. When held close to the eye, showing a small, dense ball of light, there is, of course, a stronger reaction on the part of the eye. Some eyes seem to take kindlier to a larger and softer circle, produced by holding the glass a few inches farther from the eye. It may be done, in especially sensitive cases, when the sun is not high and strong; but generally there are better results when the sun is strong and the glass is held near the eye.

In my experience a number have learned to use the glass on their own eyes, and this of course is sometimes an advantage, and makes one independent. Most will find it easier to have it done by another. The results seem to be prompter and better when the upper eyelid is held well raised softly while the glass is being used. But it is often more agreeable to the patient, especially in the beginning, to allow the lid to remain closed. Closed or open, always the patient must learn to hold the lens low under the lower lid. When practicing with the lid closed, when the lens is covered, one should see the shadows of the blood vessels, just as when the lids are open, only not so clearly. When one is conscious of a glare, instead of the blood vessels, it indicates that the lens is not in the proper position, and is receiving the light through the upper lid.
Sunlight through the glass must not shine into the pupil. It can be risky to trust anyone to shine the light on the eye. Even if the other person is trust-worthy and experienced, he will not know if the eye becomes irritated and moves unexpectedly. It is best to find a experienced Bates Method Ophthalmologist if you cannot be sure of doing it correct, safely yourself. (When lifting the eyelid and shining the light onto the white of the eye, always do both left and right eyes, one eye at a time.)

Although it is a fine practice, and always satisfactory, it is not necessary to use the sun on the eye through the sun glass. It can always be used with more or less advantage in other ways. Whether with the glass or without it, one must never forget that the purpose of the treatment is always relaxation. There must always be a correct position of the body, and a relaxed condition of all the muscles; so one must never sit so that the neck must be twisted in order to permit the sun-light to strike the eyes at a right-angle. Usually one should lie down, or lie on a chair or a couch with a slant.

One can sun the eyes by simply allowing the rays to strike directly on the softly closed eyelids, for a few minutes at first, and gradually for as much as an hour or longer at a time. This may be done more than once a day. It soon will be found that after a period of exposure with the lids closed, the lids may be opened for an instant, and the eyes allowed to look for a good flash, first into the sky toward the sun, and later on even right into the strong sun. The streak of color seen immediately after the lids are closed is never unpleasant, and the after-effect is an increasing feeling of relaxation, and an improvement in the power of vision.

It is a good plan to test the effects of sunlight in different ways. If one is free of prejudice and apprehension, the proof will be evident very soon. Make a careful trial or test of the eyes on the Snellen Test Card in a light room, measuring the exact distance at which one reads easily and clearly a certain line on the card. Compare immediately by hanging the chart outside in the strong sun, and then test the eyes on the same line at the same distance. Commonly one reads the same line some feet farther away, and a lower line at the same distance. And another time make a similar test, either indoors or out in the sun, before submitting the eyes to a sun treatment, and after the sun treatment lie quietly a few minutes in a quiet, dark spot, and then make the test again, under exactly the same conditions, and with an attitude of mind that is not anxious at all, but is free of inhibitions of any nature. The sun is a

true and kindly friend to the eye. It has been so for eons of time, and those who test it now will find that it is not the sun which has changed.

In a small book which is devoted to the subject of the conservation of vision, some of the methods which those classes are using are carefully described. In that book we are told that the constantly changing light emanating from a southern exposure to the sunlight is most trying to afflicted eyes, and that the light must be as nearly constant as possible. The answer in that book is a picture on the next page. It is a schoolroom with the sunlight carefully shut out. The shutters on one side of the room are closed tightly. There is no constantly changing southern sunlight in that room. But instead there is a positive element in the shadows plainly shown in the picture. The book recommends artificial light, indirect or semi-direct. When the book speaks of afflicted eyes it refers to eyes with nearsightedness or astigmatism. To deprive such eyes of the natural sunlight is contrary to the teaching of the text books on the eye. To oblige them to read with the poor light shown in the picture in that book is certainly making it harder for any eye which already is in difficulty. That book explains that by its system these children, so treated, need a year's special care in what it calls a sight-saving class. I have treated by the Bates method quite a number of children "afflicted" with astigmatism and nearsightedness. The children I have seen were never embarrassed by plenty of sunlight. On the contrary, they always could see better in good light; and if the light is improved by taking them out into the open sunlight, they almost always see the letters more clearly, and generally see two or three lines down the chart, smaller letters, than they were able to see a minute before in a well-lighted room. One would expect that more light would help a troubled eye even more than it helps a normal eye; and there are very few who do not see better in a better light, even with fine eyes. Anyone who will take the trouble to try the effect of better light, sunlight or artificial light, on eyes that have difficulty in seeing, will find that those eyes will find it easier to see, and that the more they use their eyes in good light, the sooner the eyes will develop an improvement in vision. In short, in the face of modern practices, in every human field, it is not likely anyone would undertake to defend the practice of depriving the human eye of good light—and the ordinary sunlight is just the same good light it has always been.

CHAPTER XVI

PALMING

THIS is a practice in which the hands are used to softly cover the eyes. The cheek bones rest on the heels of the hands, and the fingers cross above the eyes, with the eyes resting softly on the palms. The hands shut out all light. It is difficult to carry out this practice with a satisfactory result unless the elbows rest on a table in such a manner that all the muscles of the body are relaxed. The further effect is that such a deliberate and unusual gesture impresses the mind. To complete the procedure it is necessary to engage the mind continuously in some specific line of thought and not let it wander as it usually does.

Even with all light shut out, there will be the appearance of lights and colors and fragments, which seem to be seen by the eyes. These are illusions. They are produced in the visual center of the brain itself. To put it more simply, it is just imagination, since there is no light admitted to the eyes. Sometimes these appearances are persistent. Occasionally they are quite vivid. In other cases they are not pronounced, and they may fade promptly. When there is no least stimulation of the optic nerve by light rays, the visual center of the brain should show no reaction, and there should be a perfect blackness.

When there is no tension in the mind, the field will be black. One can command the mind by keeping it attentive to the field that appears, and expecting the blackness to come, which is proof that the mind is in a normal condition of relaxation. If one has an urge to eliminate the fragments in the field, the effect is to prevent relaxation. But there must be a firm, earnest confidence, and a specific desire which keeps the mind intent.

The more habitual tension there is in the mechanism of vision, the more intense will be the illusions which appear and persist. When there is some unusual disturbance of mind or body at the moment, there is even more difficulty in securing the required relaxation. It is true, however, that some persons, even with extreme abnormal conditions of vision, secure a most satisfactory relaxation quite easily. That is because they occupy the mind so completely with the practice they are carrying out, that all other thoughts are thus prevented from intruding and distracting. Want of success is always caused by the fixed habits of the mind. Consciously or unconsciously the patient is allowing an intrusion of thoughts to distract the attention. This distraction is a direct interference. If the mind is earnest enough in purpose, it will become conscious of the interference and brush it aside.

One sees a perfect black only when the mind is completely at rest. The more at rest the mind is, the deeper the black. When one sees an area of black in the field, it is likely to in crease. With proper technique one may improve the blackness until the field is completely black. There may be floating spots of pure black. There may be dull gray areas. There may appear different colors instead of black—just the fancy of the mind. If one continues to see red, or yellow, or other colors sharply marked, it is better to be satisfied with these colors as they come, instead of combating that picture, and to keep the mind occupied watching the different colors. A good plan is to imagine in the field a small patch of white, such as a piece of white paper. If such a white patch is seen, when secured intentionally, the background of the field will probably show quite black. Proceeding further, one may imagine in the white spot a black letter, for instance, an O. When one can imagine a black letter in a white spot already imagined, the letter will be blacker than the background on which one imagines the white spot.

When there is special difficulty in clearing the field which is seen when the eyes are covered, some other practice will probably be helpful in attaining the degree of relaxation necessary in order to see a black field. For instance, one may use the memory of a black object to assist. Blink softly at some familiar black object placed where the color is most pronounced, then close the eyes and watch for the image to appear. By looking at the object for some minutes, and then keeping the mind on it for some minutes

with the eyes closed, alternately, sooner or later the object will appear clearly when the eyes are closed. This is called an after-image. The successful outcome may take quite a while, or it may develop promptly; the result depends upon the exactness with which the mind carries on the process. When the object is seen, black and clear, with the eyes closed, one may proceed to palm as directed above, and the field will probably appear black.

There are two factors operating in such a practice. There is the impression of black on the mind, and the relaxation which has been secured by the game one has played with the black spot. It will hasten the success if one uses what is called central fixation, and imagines one spot on the black object to be blacker than the rest of the surface, ignoring with the mind the remainder of the object, One can practice changing the spot on the object to another area, or even changing the contemplation from one black object to another black object. To change is sometimes a relief from monotony; but the longer one practices with the same spot, or the same object, without losing an alert interest, the more vivid the reaction, that is, the more perfect the after-image. This is true of any practice in this method. To continue the technique longer, if it is properly carried out, will develop a progressive increase in the degree of the result. Thinking of black is not mandatory. Any pleasant thoughts, objects can be remembered, imagined when palming. See objects in the mind clear, in color, and like a real life movie in the mind. See people, objects move in the scene, grass blowing in the wind, sun sparkling on the water…

This technique, or practice, called **palming**, is one of the clearest and most impressive illustrations of the mechanism and the value of this method for relieving the abnormal condition commonly called eyestrain. One must realize that palming consists essentially of an attitude of mind, and that the details of the procedure are simply expedients which facilitate the shutting out of distractions from the mind. It is ok to let the mind drift from one pleasant thought to another.

It becomes more than a negative procedure as soon as one calls upon the mind to imagine, or make believe, the various conceptions which can be used in the practice. It is a very simple idea to impress upon the mind that one wants to see a small white patch. In the technique of psychologists it is a common practice to persuade a patient to develop in a muscle a sensation of soft languor, and then to have a feeling that the arm is so heavy it cannot be lifted. It is just as easy to have the same mind order the vision center to picture a patch of white, and then to make believe that there is a black O on the white spot. A designer of dresses, an architect, an artist, a leader in any field, is seeing things in his mind, just as literally, as a common habit.

A patient whose eyes were almost useless because of three different types of defects in vision, was distressed by the prospect of inability to retain his position. The **developing cataracts** were the culminating interference with his vision. He had been told there could be no relief until they were what is called "ripe" enough to be removed, and his lenses replaced by glass lenses. Having been instructed how to palm, he practiced it intensively for many hours with little interruption. His earnestness and persistence so influenced the condition of his mind that his sight became a very good normal in twenty-four hours, and continued normal. This case reported by Dr. Bates, was unusual, but I can report many cases of improvement that are equivalent. The commonest difficulty is the want of a vivid conception of the simple mechanism of the process involved, and the next in order, perhaps, is a lack of the fine determination that constrained that man to keep on demanding success, hour after hour, until his courage and patience were rewarded.

The practice of palming was designed by Dr. Bates as an expedient which is simple and easily carried out, and has a direct effect on the vision center in the brain. He believed it to be, perhaps, the most effective of all the techniques he suggested. I have found that even children can understand what it is necessary to do, and they often have fine success in seeing a very black field when their eyes are closed. Dr. Bates even suggested that the measure and the degree of the blackness which is imagined when the eyes are closed may be used as a test of the degree of relaxation secured.

When a sufficient degree of relaxation has been secured, it will be found that the eyesight has been improved accordingly. There may be flashes of clear vision which are replaced by the same old want of sight, or there may be a progressive improvement in the conduct of the eyes. I have personally experienced some fine thrills when lines of letters have appeared with a vivid clearness that was startling. Others have reported being astonished by the same revelations of power in their eyes, which they could not have imagined. Letters and words appeared blacker than the ink, and they stood out with a vividness never realized before.

There is nothing unreal or unnatural or miraculous in such an experience. It is simply the result of interesting the active and sympathetic attention and cooperation of that part of the brain which has charge of the mechanism of vision. There can be no doubt that **millions have a constant power and vividness of eyesight that is unknown to most of us. This is true of the savage, and the plainsman, and the man of the sea, who see plainly what most of us cannot see at all. The same is true of the artist who reads the lines of the face and the form, and the color and beauty of the picture which his sight enables him to reproduce so the rest of us can be helped to imagine something of that which to him, is an open book.**

In the practice of palming, several factors serve to assist the endeavor to secure a special condition of mind. We speak of the condition as a relaxation. It is, however, a positive mental attitude. But it must be impersonal and objective-some pleasant contemplation which enlists the interested attention so completely that one forgets self entirely and becomes absorbed in the subject. This unusual gesture facilitates, as well as the darkness; but the paramount element is the complete domination of the mind by the idea in charge.

Each mind finds its own natural line of thought, and some will try very different imaginary pictures. Since the vital element in the techniques is the degree of exclusive attention which is given to the specific idea that is to occupy the mind, it is imperative that no other thought be allowed to merge into the process. It is easy to think that one is giving complete and undivided attention,

when actually the mind is only half-hearted in its effort, and the greater part of the opportunity is lost.
It is ok to let the mind drift from thought to thought, image to image as long as the thoughts, images are pleasant, happy.

Suppose we undertake to make believe we are swinging in a hammock. I have questioned some who agreed to that expedient, and found they could not tell a detail of the proceeding. They could answer only that they just made believe they were swinging in a hammock. Those who really do it, can describe the hammock, the short rope that held it to the house at one end and the long rope that held it to the tree some feet away. They can describe the pillow, and the cord they pulled on to keep up the slow swinging which produced the soft drowsiness that was so restful. I have even been told how they climbed into the hammock, and how they later woke up and were amused to find that they had fallen asleep.

Suppose we imagine, make believe, we are going to drift down the stream in a canoe. Let us begin at the float by looking the canoe over and deciding just how we will lie. Let us then carry out the proceeding by stepping carefully into the canoe, with the same deliberate care one should always use. No one familiar with the conduct of a canoe would share the close attention necessary to every move, with any other thought. I have seen a few incidents where even one familiar with the requirements of balance and movement have failed to give the attention the canoe demands, and have demonstrated their carelessness by a spill.

Now let us lie quietly and float lightly down the stream. If the mind forgets the canoe, and wanders to some other subject, at that moment it stops carrying out instructions. The conscious part of the mind, I mean, stops obeying instructions and allows itself to be misled; and right then it forfeits the advantage of having the subconscious part of the mind help in the proceeding, instead of hindering, as it commonly does. But if one watches the water, and the shore, and the sky, one keeps the mind intent and active on the side of the endeavor. One imagines the details of the scenery, observing specifically a house, a boat, a rock, a tree, the hill, the sky, the turn in the stream, the opposite end of the canoe. If one answers that it is not possible to do this, I know that one has not really tried. One has not held the idea. One has not been earnest enough in purpose. One has not learned what his own mind will do for him, even in his first efforts. If the feeling is strong enough to persist continuously for thirty minutes, with a quiet determination, the subconscious part of the mind will become interested in the new adventure, and will reveal to the adventurer something of its power. I have explored a little into that new country myself, and others who went farther and found more, have confided in me. As long as one keeps the conscious mired occupied with any impersonal, objective idea, the unconscious mind is at the command of the purpose implied in the idea.

It is a great help to remember the way a little girl plays alone with her dolls. As well as she knows that it is all make-believe, her conversation proves how perfectly the autosuggestion works. Her mind is not hampered with confirmed mental habits. It is simple and direct. With a strong, primitive impulse she gives her whole mind to the idea, and no hampering doubts or reminders interfere with what she is doing. That is the subtle meaning in the sentence: **"Unless ye come as little children, ye cannot enter the kingdom of heaven."** The cures I have seen occur in a few minutes have all been accomplished by a profound and positive conviction acting on the control center in the mind.

It is necessary to forget the eyes entirely, or to think of them objectively, as one thinks, for instance, of a sprained ankle, or a cut finger. There are no mental reservations with those. We think of them as we would of some other person's cut finger, or somebody else's sprained ankle—just do this or do that with it, as one does this or does that with any other predicament.

There are many different lines of thought with which one can interest the mind in an endeavor to secure an abstract condition of mental relaxation. Each mind has its own predispositions and aptitudes. As illustrations, the following practices may encourage original ideas better suited, perhaps, to individual students.

While palming, imagine the soft rolls of water lapping the sand on the seashore. When the water is seen, picture a large rubber ball, black or red, bobbing on the rippling rolls. Always in motion, the ball will slowly recede from the shore. As you see it in your mind, it must recede farther and grow smaller, until finally it is lost in the hollows of the swells, and you do not see it any more. If the mind is given with feeling to this interesting experiment, the ball will seem very real, and all other thoughts will be excluded from the field.

Imagine a dog romping and swerving on a large lawn. See him stand, with head up, facing you, asking you what you think of his speed and grace. Make believe a fly is crawling over a large pane of glass in front of you, reaching a corner and starting over again to find a path with no obstruction. Picture a cat racing up a tree trunk to a low limb, and standing there with back and tail and hair raised, daring the dog to come up and see which eye she will put her claws into. Look from the cat to the fool dog, trying to stand on his hind legs, and yelping "coward" at the cat for not staying on the ground, even if he is four times as big as she is.

If any of these suggested techniques, practices, efforts of the imagination, are to be of value, they must be carried out with a will to win. Beginning with a conscious feeling of soft relaxation in all the muscles, put into them by the will of the mind, the same purpose must pay close attention to each detail in the procedure, and not be satisfied until some specific success rewards the close devotion and enthusiastic expectation which will be aroused if the spirit is right. When one really works that way, the conscious mind is actually demanding, and it will secure, the help of the inner mind. All these simple requests, the ceaseless activity of that inner mind can grant in marvelous fullness, if only the spirit of the worker dominates the mechanism.

CHAPTER XVII

CENTRAL FIXATION

THERE is in the retina, the film of the eye, a spot which is the area of maximum sensitiveness. That spot is right at the center. It is a small circular elevation which is known as the "macula lutea" (yellow spot.) In the center of that spot is the "fovea centralis', a depression of darker color. You will remember the cones, nerve endings which have a much different and more complex function of registering than the rods. The cones occupy this spot to the exclusion of the rods, and they are longer here and closer. When rays of light fall on this spot they are contacting the most acutely receptive area of the retina. When rays contact the retina outside this spot, the objects from which those rays are refracted are not so exactly perceived. The farther from this spot the rays are contacted, the more the sharpness of the visual perception decreases. This means that an eye with normal vision sees best at only one small spot. (Center of the Visual Field) Whatever is outside of that small spot (in the Peripheral Field) is not seen as exactly, and the farther outside that tiny area any spot is, the poorer the impression is on the retina.
This faculty is known as "central fixation."

This habit of the normal eye has several advantages. First, it is easier for the eye to focus on and pay attention to a very small area, instead of trying to see equally well a large surface in the same instant. Second, when the eye gives its undivided attention to a point instead of a large area, it sees the point so perfectly that it is ready instantly to leave for another point. Working that way the eye does not tire. When it does not work that way, and neglects to have a point of central fixation, it is called eccentric fixation. In this abnormal condition, the vision is very poor, and no single spot of the retina is uniformly employed to fix with, so that fixation is uncertain and unreliable. The normal area of most sensitiveness is lost, and the power of vision is impaired, sometimes quite seriously.

It is not easy to realize how infinitely quicker than thought the images are transmitted to the brain through the retina and the optic nerve. To see even a small letter, the eye must see all the outlines of the letter, and likewise all the letters in a word, and so every word on a line, as one reads rapidly down the page. The child begins by making the letters each time into a word. The mechanism of sight soon learns to adjust and save effort. There are those who can see and register so fast that they read a whole page, seeing every word, in a period of seconds. Such eyes have perfect central fixation.

The significance of this is that the loss of central fixation, in any degree, means loss of power of sight, and this loss is present in every condition of abnormal vision. This abnormal conduct of the eye is caused by a tension in the visual center in the brain. By relaxing that central tension, the central fixation of the retina is renewed. The relaxation is secured by the attainment of a condition of central fixation of the mind. This is accomplished by realizing the fault in the mechanism, and enlisting the mind in the effort to correct the dysfunction.

If one would impress on the mind the effects of a marked degree of eccentric fixation, it will be worth while to make a specific effort to see every part of an inch square close to the eye. Such an experiment, if one does it carefully, demonstrates how unnatural it is not to confine the focus of the eye to one tiny spot. If carried out earnestly the experiment will cause actual pain. The endeavor to effect a cure of the abnormal condition is to do just the opposite to the above. Ascertain first how fine, or how poor, a definition your eye makes when you test it for central fixation. When the central spot has lost something of its finer sensitiveness, it will be found that one can look at a point and find that he sees another point just as well, or even better, than he sees the point he is trying to confine his focus to. Some other spot on the retina sees better than the normally most sensitive spot. But this always means, not that the other spot has improved power, but that the retina has lost power in all of its surface, and is disturbed in its functioning.

The remedy is to carry out a series of tests, calling upon the central fixation function of the eye to recover its power. One can select two objects, for instance, two red balls or two black balls, or two lighted candles, or two objects, one round and one square, and make exact comparisons. Confining the glance to one, study how clearly, or not, the other object is apparent. Test also with a letter of good size at reading distance, and with a large letter at ten feet. Confine the focus to one side of the letter, and study the appearance of the other side. One will probably be surprised to find, if the vision is imperfect, when looking at the top of the big C on the Snellen Test Card at ten feet, that the bottom is actually clearer than the top of the letter.
+This is seen if the vision is unclear; the area of the letter the eyes are not looking directly at appears clearer than the part the eyes are looking directly at =peripheral field is clearer than central field when the vision is imperfect.
+When the vision is clear, perfect: the part of the letter the eyes are looking directly at, center of the visual field, is clearest. The other parts not looking directly at, peripheral field are less clear.

If the vision is unclear: It can happen that one will look at the top of a capital C on the page, and find that the bottom is certainly clearer, and reverse so as to look at the bottom of the C and find the top clearer.

If one will keep the mind attentive, and continue the practice as a game, it will gradually develop that the point focused at will displace the other point more and more until the conditions are reversed, and the eye is working normally. (Seeing the point, part the eyes are looking directly at, center of the visual field, clearest. Example; look at the top of the C and see the top clearest. Look at the bottom, then the bottom is clearest.)This may occur in a few minutes, or it may require considerable attention. The result depends entirely on the conduct of the mind. Central fixation of the mind means an attention which is so close and exclusive that no other thought is allowed to distract. Emerson understood such a conduct clearly when he said: "The hero is the man who is immovably centered." He meant that the man's mind was so impressed with the conception he had of the endeavor he was about to make, that not even the most intimate emotions of his heart could find a place beside that consciousness. With

the proper degree of purpose, and an alert attention to the demonstration, one develops an auto suggestion in the mind, the mechanism involved in the function of central fixation is stimulated back to its normal conduct, and the vision is improved.

Eccentric fixation is a symptom caused by strain. It is only a symptom. Whatever procedure relieves the strain will correct the fault. Naturally the most direct method is to work with the function concerned. **Having first demonstrated that one can look a certain distance away from a spot and see it better than when the attention is focused on it, one can gradually reduce that distance, until finally the eye will see the spot best when looking right at it. Beginning with the different sides of a large letter, the practice should be directed at a smaller letter, and finally a period can be selected, and it can be demonstrated that whichever side of the period is focused on, the opposite side will be less clear. When that is accomplished it always can be demonstrated that the vision has improved.** Such an improvement may be only temporary at first; but with interest and patience, it will be found that an improvement in the function of central fixation is a most necessary and a most satisfactory procedure in the recovery of good normal vision. Above all, the faculty of central fixation protects the eye from abnormal fatigue, and from other sensations which develop when the eye is in use, even when there is sufficient power to work successfully without the use of glasses. Central fixation is fundamental and the most important quality of vision. When the eye has perfect central fixation, it has perfect sight.

Notice that a child can be so deeply into their thoughts, mind, completely relaxed deep or dynamic/active that a adult must repeat their name a few times before gaining their attention. Learning to relax in this way is healthy, can detach the mind from worry, unpleasant situations.

CHAPTER XVIII

SHIFTING THE CENTRAL FIXATION

Shifting and Central Fixation are Combined

SHIFTING is the name given to a technique which is of great value in the effort to relieve any unnatural tension in the mechanism of vision. The practice is based on the habit of the eyes. When acting normally the eyes are shifting, (moving) constantly and instantaneously, the point of central fixation. That means that the eyeball itself is in constant motion. The attention of the visual center likewise is shifting to meet each change in the focus of the eyes.

To visualize even a small letter, the eyes must receive rays of light refracted from all the parts of the letter. It is plain that one cannot know the shape of any object, its angles, and curves, and colors until one has focused on its outlines. This necessitates the constant motion of the eyeball in vertical and horizontal directions. That motion is so slight, as a rule, that one is entirely unconscious of it. Generally it can be demonstrated by the ophthalmoscope, because that instrument covers the eye being observed, and the other eye is moving, and the ophthalmoscope shows that the covered eye is moving in unison with it.

A letter, or a word, or any point, may appear to move in different directions; and with a normal eye this can be observed sometimes, with just a little attention. That is because the eye is moving in the opposite direction from that in which the point seems to move. It is worth while to fix the eyes on a letter, and then shift the focus abruptly to the left or the right side, or to the top or the bottom. The letter will seem to move in the opposite direction. This can be demonstrated with a word, or with a line, or with any small object. In a dark room with a soft light on a small object, it is easier to prove the truth of this. Sometimes the demonstration is facilitated by moving the head back and forth in a short range, while looking straight ahead, and finding that very soon the object seems to be moving, and not the head. Conversely, if one selects a point and demands of the eye that it continue to hold the focus unmoving, there develops what is called a stare. A strain is quickly felt, and if the focus is not shifted, the point will blur or even disappear. If the conduct of the eye is not normal, it may not move so rapidly. With the ophthalmoscope, the movements are seen to be slower and more noticeable.

On the bottom line of a Snellen Test Card there are fourteen letters. At a distance of ten feet, one seems to see the fourteen letters at one glance. But it is necessary for the eye to make four shifts to each letter. In a mere fragment of a second there are seventy shifts, and the eye and mind are unconscious of them. When one looks at a moving picture for instance, to encompass the flashing changes over the area of the screen involves a number of movements on the part of the eye, which it is not possible for the mind to realize. When the mind and the eye are functioning normally, all of this is accomplished with ease.

Eye Muscle Function

To consider for a moment, in passing, the constant motion of the eye muscles which is involved in this necessary changing of the position of the eyes, is to realize the falseness of any method, or claim, which involves practices designed to strengthen the eye muscles. From birth, those muscles have been in constant action and do not need any extra work. Further, the eye muscles act automatically, under specific impulses from the mind. What is called imbalance of the eye muscles, meaning a want of coordinated contractions, can have only one explanation—it must mean disordered nerve impulses. Whatever the procedure, to correct abnormal impulses sent to muscles, it is necessary to exert an influence on the control center in the brain.

Shifting/Eye Movement Verses Staring/Eye Immobility

Constant, minute, instantaneous shifting of the eyeball is a necessity for normal sight. The visual center must likewise function, outside of our knowledge, quicker than thought. The received impressions must be considered, thousands of them—in a moment of time. Each conception must be interpreted, sometimes deciphered and an adjustment made. When the eye, or the mind, does not match the necessary speed, the function of vision falters. The eye "stalls"—we might say—it hesitates, and instead

of shifting, it stares, continues to look at the same spot. That causes more or less blurring of the image, or failure to see. But the fault, in these cases of eyestrain, is not in the eye. The eye is only an end organ, and the eye muscles likewise, are only automatic instruments taking orders. It is the orders which are wrong. It is the central control in the visual center which is at fault. When one realizes that established fact clearly, it helps very much as a beginning of the endeavor to correct the dysfunction. The process of correction is essentially very simple. It is necessary, however, to enlist the earnest and undivided attention of the central control of the whole mechanism. In other words, one must get the mind to give the practice at least as much undivided attention, for instance, as is given by sixty or eighty thousand football fans watching the twenty-two demi-gods who, for three months, are having their "place in the sun."

To make the conscious mind aware of the presence and the value of this habit of the mind, different practices are offered, and individual patients may find some more helpful, in their particular case, than others. A simple procedure is to draw a small circle on a large square of white paper, and fill it in with black ink, except one tiny spot where the white paper is not covered and stands out in contrast as a white period. Throw a good light on the period, and keep the mind occupied exclusively with that period. Blink softly at the period for half a minute, then close the eyes for half a minute and keep the mind on the white spot. Soon an after-image will appear when the eyes are closed. If one can do this in a dark room, with a 300 watt light backed with a reflector ten inches in diameter throwing a spot light, while the eyes are behind in the dark, it will facilitate the result in many ways.

When the visual center has become familiarized with the white period, it will be well to make a circle three inches in diameter, and have two such white periods in it, two inches apart. Focus on one of the periods, and ascertain whether the other period is less clear, or just as clearly seen, or seen more clearly. Close the eyes for a minute and then focus on the other period. If the period focused on is always seen better than the other, the central fixation is normal. With proper care, it is possible to demonstrate whether such is, or is not, the case.

Whether the above be demonstrated or not, **it will improve the sight to imitate consciously the unconscious shifting that the normal eye performs.** (This is the basic method of Natural Eyesight Improvement.) Such a practice rests the eye, and encourages a normal function. If the period shifted from is seen better than the period shifted to, it will be necessary to practice with two periods more widely separated. Ink periods on white paper will serve for this. When the distance is found at which one of the periods is lost when focusing on the other, it is a good practice to flash the glance back and forth rapidly until the eyes feel rested, and one gets the illusion of a swinging on the part of the periods. The distance between the periods can then be reduced gradually. One guide for this is the fact that the illusion of a swinging on the part of the periods is still in evidence. As the improvement in sight continues, the test can be used finally between the sides of even a small letter. It will be in order then, to see a swinging or pulsating movement of the letter when there is no conscious shifting of the eyes.
(The eyes will be shifting subconsciously, automatically, on their own just as the lungs and heart function without conscious direction.)

In difficult cases, it may be necessary to use two lights for the practice, or two different objects, a sufficient distance apart. In some cases, it facilitates the improvement to practice on points close to the eye, and gradually increase the distance from the eye. It is always helpful to palm the eyes for a few minutes or longer at first, and then palm a short time frequently during the practice. It is not well to shift the focus too rapidly at first, and the shift should never be more rapid than two or three times in one second.

It is a good practice to select two letters on a line and shift the focus back and forth between them. When the eyes have demonstrated, for a few minutes, that the letter being focused is always clearer than the other letter, it will be found that the letter focused will be clearer than it was at first, and the letters will each seem to move, as the eyes change, in the direction opposite to the movement of the eyes. Following that practice, one can work on a single letter, and demonstrate that when focusing at the top of the letter, the bottom is not as clear, and vice versa. If one looks at a spot above the top, or below the bottom, the whole letter will appear less clear, because it is out of focus, thus impressing that a correct focus is normal. When the eye becomes accustomed to such a practice, the letter will appear to swing in the opposite direction, as continuously as the movement of the eye, and the letter will be seen clearly during the movements. The ink of the letter will soon appear to be blacker, and to stand out more boldly.

When any letter, perhaps a larger and heavier one, is easier seen than some other one, rest the eyes and encourage them, by focusing the plainer letter, and then shift to the letter which is not so clear. Alternating for a few minutes, the obscure letter will generally become clearer. When a large letter at a distance is not clear, it will help to focus on a clear letter nearer the eye, and then look at the distant one. Such an alternation will soon enable the eye to see clearly the obscure distant letter.

The eye is relaxed at infinity, meaning that it stops straining often when it simply looks at some object at a great distance, and does not try to distinguish. It is possible to do this, and still focus on some point. The corner of a building, the top of a hill, the large letters of a sign, a distant automobile in motion, all will serve to rest the eye, and at the same time hold an attitude of central fixation in the mind. But there is to be shifting, between distant objects or from distant points to close points.
When looking at any object, distant or close, the eye shifts part to part (point to point) on it. When looking at a small part of a object, the eyes still shift from point to point.

The object of shifting is to imitate the habit of a normal eye, and secure rest by changing from point to point, instead of staring at one spot. When any particular practice does not produce rest and improvement, it is because the strain is not being relieved, and some other practice should be tried. In addition to the rest secured, the action involved calls for a positive attitude on the part of the visual center.

Shift, Central Fixation on a Period

When one has proceeded successfully from a comparison of larger letters, or objects, or lights, and from distant to nearby points, the mind has become interested and aroused, and it will begin to assert itself on the positive side. The imagination will be quickened by the memories that is, the deep impressions secured by the alert attention of the mind itself. It is possible to develop an improvement which will enable the visual center to demonstrate that focusing on one side of an ordinary period will make it appear clearer than the other side of the period, and even shifting from one side to the other will make the period appear to move in the opposite direction each time the glance is changed. Even if such results are not secured, or before they are secured, any deliberate and thoughtful effort to follow the instructions given for various practices will promptly demonstrate an improvement in vision. Improvement may be immediate, or come more slowly. It may be permanent at once, but it is more likely to attain that condition after repeated efforts.

CHAPTER XIX

SWINGING TO RELAX

The Long Swing

WHEN I explain to patients that swinging the body gently in a half-circle, with the eyes closed, is generally a very effective way to relax, they almost always are surprised at the idea that such a practice will help the eyes to see better. Some find it a great help, and always begin any period of practice with ten or fifteen minutes of swinging.

The first requirement of any successful technique is that the attention be completely occupied with the thought of what is being done. The very act of swinging, when it is correctly performed, involves that specific objective attitude of mind. The tension in the eyes and the mind is relieved because a condition of relaxation is produced in all the muscles of the body.

Standing with the heels well apart, and the toes turned out, and the eyes closed softly, the body is rotated with an easy rhythm in semi-circles from right to left and back from left to right. It must be a soft, even roll, with the idea in the mind that all the muscles are as soft as cloth. The position of the feet insures an easy and perfect balance of the body, and the curve in the swing keeps the weight poised over the feet, so no effort is required to correct the balance. The head and neck work in perfect unison with the body, so that the head may swing only a few inches in each direction, or may swing so far to each side that the face will point fully to the right and then fully to the left, and the body will time its motion to meet the movements of the head.

When the head goes to the right, if the muscles are to remain relaxed, the left heel must be allowed to leave the floor, because the left line from floor to neck will be longer; and when the head turns to the left, the right heel leaves the floor to match the position of the head. It is a further help to allow the arms to swing around while hanging limply at the sides. **There must be a soft feeling in the muscles of the neck, and the head must roll as if limp on the body.** The eyes are to take an intimate part in the movement by rolling softly to the outer limits of the orbit in each direction. This free roll of the eyes is easier to acquire if they are kept open at first, until a consciousness is established, and the sensation registered and remembered, so one will know that the eyes are in action and are relaxed.

To secure the full effects of this practice, the whole body must be dominated and coordinated by an attitude of mind. This can be accomplished by giving undivided attention to the conduct of all the muscles, including the muscles of the eyes. But it must be an objective attitude. A concern about correctness induces a tension instead of a soft relaxation. A violinist, or an organist, or any expert performer, is not any more concerned with observation of the muscles than the runner or the gymnast. The whole body of those experts is dominated and stimulated and educated by the enthusiasm of the mind. If one is walking leisurely toward a point, and suddenly remembers that the car is due at the corner, there comes to the conscious mind no thought of the feet, but the muscles all change their conduct, and instantly the limbs are propelling the body in a run.

I once saw a picture of an operator showing a cripple with a paralyzed limb how he was to try to move the limb. He demonstrated with his own limb. He was communicating a conception to the mind of the cripple. The perfect unison with which two partners in a waltz move in rhythm, is controlled by the thoughts of each. All very simple. But I have found that most of those who begin to practice a swing for relaxation, are obstructed by their bewilderment of mind, which causes a stiffness of their muscles. I found this reaction in myself, and conceived the idea of humming softly, as one dances to music. The melody that suited me best was a few bars of the "Merry Widow Waltz" tune. Gradually, I learned to soften the timbre of my voice until it was almost imperceptible, and I found that this relaxed the vocal cords, so that with a few minutes of practice, I was frequently able to carry a note an octave higher than I could reach when I began.

Swinging with the eyes closed, slowly and in perfect balance, for fifteen or twenty minutes, will develop a feeling of softness, and is found by some to be their best method of relaxing the eyes. It is possible to add to the swinging the very helpful addition of shifting. Facing a corner of the room, with small objects or pictures along each side, blinking the eyes slowly, and looking always straight ahead, the eyes will shift in passing from one object to another. There must be a fixed idea that the mind is not paying attention to the objects as they pass the eyes, but that the eyes are looking softly into the distance. Another method, when there is a long distance outlook from a window, is to look softly at the scenery while swinging and blinking, and let the eyes shift constantly from the different points in view.

There is a method of swinging the head, while seated comfortably, and blinking the eyes softly. One may hold the first finger of the right hand six inches in front of the face and six inches to the right of the eye. Close the left eye (Do not close the eye. Modern teachers state to cover it with a patch and keep it open under the patch) and blink the right eye, and rock the head back and forth, looking always straight ahead. After one or two minutes, close the eye and hold the head still. Repeat, alternating, until an afterimage appears, of the finger and the hand swinging back and forth in the opposite direction to the rocking of the head. Practice the same way with the left hand and the left eye, the right eye closed (Not closed. Yes covered). Continue for fifteen or twenty minutes. Then practice with both eyes together, uncovered, finger between left and right eyes. This sometimes gives a better result if one is facing a window, or sits facing a good light in the evening. Strong contrasts are more impressive on the eyes. A method that has a similar effect, is to look softly ahead, blinking the eyes and holding the head still, while the elbows rest on the body, and the hands, closed except the first finger straight up, are rocked back and forth in front of the face, so that they cross each other and return.

In that procedure, the fingers are shifting across the line of vision, and the effect is to relax the eyes by the passive change of central fixation. The eyes in that procedure are shifting with the moving fingers. One can use any small object the same way, a pen handle or a ring, by passing it across the line of vision rhythmically, while the eyes blink softly and look directly ahead. A helpful practice is to roll the head back and forth across the partitions of a window, especially the small panes of a leaded window, while blinking the eyes. A good test of the success of any of these practices is the appearance of the after-images when the eyes are closed after a few minutes with them open.

It is helpful to remember that swinging or swaying, when the eyes are open, is another way of shifting, that is, moving the central fixation from one spot to another, with an added value in the relaxing effect of the soft swaying movement. There are different techniques which can be practiced, to secure these two effects. One can devise individual efforts. A piece of chain, or rope, or cord, or ribbon, hanging at a given distance, less or more, in front of the eyes, with a background of light, or a background selected—a Snellen Test Card, a picture, a window frame, a white sheet or a black cloth, likewise placed at any given distance back of the hanging cord, or what not, or back of a tall thin object placed on a table half way between.

One can place three Snellen Test Cards, three, six and nine feet in front of the eyes, or use home-made cards say twelve by sixteen inches, and paint on black letters of similar sizes. **They should be suspended on upright strips or hung on strings stretched across the room, and placed so that they almost overlap.** Stand so that when the head is swayed with slow rhythm back and forth, the eyes softly blinking, the cards will seem to overlap and to show the clear between them, according to the direction the head moves in. Pick the same letter on each of the cards, and watch for it, and ignore the other letters. That will facilitate the **apparent movements of the letters in the direction opposite to the way the head is moving.** Close the eyes in periods, but continue to sway, and watch for the letters to appear as after-images. (Use the Memory and Imagination) Practice with either eye closed, or with both open. Practice while sitting, and using a pen or pencil with a book for a background, holding it still while the head moves, or moving it while the head is still. Whatever the details of these practices involving swinging or swaying, the effort is to have the object under observation move back and forth across the line of vision so that it is alternately seen and then not seen, as it goes in a direction toward the right and then back toward the left and out of sight. If, with the eyes closed, an after-image is not produced, there is some fault in the technique.

CHAPTER XX

HOW MEMORY HELPS VISION

MEMORY is an aid to vision. There are many reasons for this. An impression on the retina is interpreted when it reaches the brain. The correctness of the interpretation depends very much on memory. Trained inspectors, in any field, are skilled largely out of their experience, which is their memory. It is important to keep this in mind always. For one reason, such a habit will develop an attitude of attention, and lack of alert attention is responsible for a great deal of impairment of vision.

It will be instructive to make a personal test of this statement. For one week make a continual effort to look, with care and thought, at every object of interest. Study for a moment some one of the features on any face you select—just an eyebrow, or a chin, or the point of the nose—or go over the different lines on the face and search for some revealing characteristic. Select a small spot on the garment. Always pay attention to a small spot only. Follow the observation with a minute of deliberate consideration of what you saw. In looking at a large letter, let the eye follow the lines of the letter, instead of looking at the mere bulk of the letter. (Trace on/along the edges of the letter with the eyes, center of the visual field.) Upon occasion do the same with a small letter. If you are near-sighted, select spots just within your easy vision; if you see easier at a distance, work at that limit. Forget your eyes—just as you forget your ears when you listen. Use your mind. Be attentive, and fair minded, and ponder the results. "You'll be surprised."

But there is a further consideration which is specific and most important. **When the memory is able to recall impressions of any kind, it indicates a certain degree of mental relaxation. The more perfect the recollection, the more perfect the relaxation.** That this relationship exists, can be positively demonstrated. If the eyes are closed and covered, so that all light is excluded, (Palming) and one can recall perfectly a melody, or a fragrance, or a taste, or a sensation of touch, it will be found that in the visual center there is a picture of perfect blackness. When no light rays enter the eye, the visual field should be black, because it is empty; that is because no stimulus is coming in through the optic nerve. If, however, the field is occupied with fragments of coloring, it will be found that the memory does not recall past impressions. The mind must be perfectly relaxed if it

is to have a perfect memory—one of these conditions is a test of the other.
Modern teachers state it is not necessary to see black. Just relax and think, imagine pleasant things.

The memory is not dependable as a test, except for the degree of blackness. This is why memory of black can be used as a test, and as a method for improving the vision. There is what is called muscle memory. It is a nerve habit, by which a muscle is given a suitable impulse or order at exactly the right moment for some special co-coordinated movement. This is absolutely a mental reaction. Muscle memory is what enables dancers, and acrobats, trapeze performers and others to develop the ability to accomplish their marvelous performances; and enables the various technicians to become so skillful.

Developed mental habits are kindred psychological reactions. Likewise, a developed memory for black, when called upon, can produce specific reactions, in the mechanism of vision. One can learn how to recall, with closed eyes, a memory of black in the visual center. When this becomes a habit, it is possible to estimate the degree of mental relaxation, by considering the blackness which becomes apparent when the eyes are closed. One can improve the judgment as to the actual blackness seen when the eyes are closed, by comparing that blackness with the blackness of a small spot as seen on something black. A large black letter is a good model, but any real black object, or a soft real black cloth, or a black shoe will serve for comparison.

One can learn to carry the memory, for instance, of an ordinary period. The smaller the area the better. But it may be easier to begin by using for practice a larger circular black spot, and proceed systematically, by sewing a piece of a black letter, half an inch in diameter, onto a large square piece of soft white sheeting, and blinking at it as practice, in a soft light. For half an hour, less or more, one should blink softly at the mark for twenty or thirty seconds, then close the eyes for thirty seconds, and simply expect to see the period, while the eyes are closed; so continuing the alternating practice.

The significance of black, when the mind has learned to see it as a small period, is mainly as a help to relaxation. Thought of in the way the eye sees black, such a developed habit becomes an attitude of the mind which has a favorable effect on the mechanism of vision. In the chapter on palming, the value of the black field is described. If one practices intensively the technique of palming, it will facilitate the accomplishment of learning how to see a period in the mind while the eyes are open. Such a thought is so new that it is hard to realize. It is all very simple however, and of a kind exactly with mental processes which are of common practice. The black period is seen in the mind. The simple technician, and the finest expert are doing just the same thing in their field. The typist who is reading her notes while she touches the different keys quicker than thought, is carrying in her mind the exact motion that is necessary to make the particular letter strike the paper. The diagnostician that I saw demonstrate to a group of physicians his power of passing his hands softly over the chest walls of a new patient and then describing the changes that had taken place in the tissues, was carrying vividly in his mind several mental images that were just as real, and just the same in kind, as the image of a small period. All of these mental habits represent impressions made on the brain cells, and recalled, just like a name or a date or a fact, whenever the mind needs them.

In any system of memory some such expedient is always involved. One of the practices suggested as a help to remembering names, is a habit of visualizing, when the name is given, some imaginary peculiar appearance of the person named. If one at the moment the name is heard will attach some mental image to the person, if the effort is earnest enough, that unusual and peculiar memory will serve as what is called a reminder; but the main advantage will be the better impression made at the time because of the alert attention of the mind. To recall the name by remembering the special mental picture utilized at the moment, is a process similar to recalling a mental picture of a period when one wants to produce a relaxed condition of the visual center in the mind. We are all familiar with association of ideas. But it takes a little deliberate thought to realize and remember that we see in our brain, and that seeing a period is a mental process, just the same as seeing any of those mental images we are so familiar with.

Flashes of Clarity

This developed memory of a period sometimes leads to a trifling confusion in the beginning. There are cases where the relaxation secured improves the sight so unexpectedly that the surprise instantly disturbs the new relaxation, and the letter which came vividly into view is lost again in a flash. One must be reassured promptly by the proof received that the eye can learn to see the letter always, because it has given evidence that it has the power to see it clearly once. A little deliberate thought will prevent such an incident from interfering with a progressive improvement. I have never found any difficulty in convincing a patient that such a flash is a warrant, and a promise given the eye. I mention it here, because it has been the cause of confusion until the unusual phenomena was explained. It is not easy for one not familiar with the mechanism of vision to realize how or why an eye can have a flash of unaccustomed fine vision, and slip right back again into the old condition. I have had a fine surgeon, who prides himself on his physiology, ask me in astonishment why he suddenly saw several words at a time, on a test card with very small type, and then his customary poor vision took charge again, and he could hardly see the lines of type. He had never really thought of the subject, except in the perfunctory way that most doctors do. A year before, in his early forties, his eyes had begun to falter, and he followed without question the beaten path. It was just another case of that condition called presbyopia. The statements in the books about such cases contradict themselves; and I made him admit it. He was very much interested in the new idea of **coaxing his eyes back to a normal conduct.** That state of mind lasted for about three weeks. But he was a busy surgeon, and he never found the time to spend on his eyes, and so he soon decided that he would rather use glasses, and save himself that time. The point here is not that the doctor decided to wear spectacles for the remainder of his life. That is his own affair. My point is his attitude toward the subject. Although he accepted every explanation concerning the problem, his mind was not really aroused out of the remarkable, but customary mental inertia which is typical of most physicians in regard to the condition and the outlook today of the human eye. The outlook is the failure of the eye specialists to even consider any effort to save their patients from the consequences of an absolute neglect of the simple rules of health which are being used in every other branch of the medical profession.

Imagine a black dot (period) is a small part (point) of a black letter

Another way to learn to connect the image of a period with improved vision, is to blink softly and rhythmically at a large black letter, and make believe there is a spot on the bottom roll of the letter (O or C or G) which is only as big as a period and is blacker than the remainder of the letter. Generally, even when the letter is not clearly seen at the beginning of the practice, it soon becomes very clear. The reason is that the eye stops straining, because the letter is placed near enough to see it easily, and all tension in the eye, and all concern in the mind is gone as the interest is centered in the game of **making believe that there is a period blacker than the black roll of the letter.**

In this practice the letter is a part of the picture from the first, and is always imprinting itself on the mind. It is quite common for an eye to begin in a few minutes to see a letter which in the beginning was almost invisible. The letter does not always continue to remain clear. The improvement in vision may be only temporary. But the memory of that success is not lost, and coming easier each time, and lasting longer, the improvement for that letter, becomes permanent. This always means improvement in vision for every purpose. In this practice, as in every technique of the Bates method, the essential requirement is that the mind be given without reserve. **The conception of what is commonly called "concentration should be left out of the work. Instead of tension, there is to be a whole-hearted, enthusiastic attention, a pleasurable emotion, which is so strong and alert that no other distracting thought can intrude to interfere.**

A German specialist replying to a letter of inquiry from me, explains in his personal letter a conception of the mechanism of vision that illustrates the different ways in which different minds interpret the same facts. That same writer has an open minded attitude, and is very careful in his observations, and very fair in his conclusions. Helmholtz and Tscherning agreed about the function of the ciliary muscle in the eye, but Helmholtz believed that the muscle acted to relax the tension of the capsule containing the lens, and Tscherning believed that when it contracted it increased that tension. In his meticulous interpretations of the meaning of established phenomena, my correspondent seems to forget, at times, the psychologic element. Sometimes he leaves out of his considerations the evident functioning of that part of the mechanism of vision which is beyond the knowledge of the conscious mind.

My correspondent reminds me, however, that our entire life is a sight school. He points out that one born in the country can see and describe the differences in the conduct of different birds. Looking at them in the air, the country boy recognizes instantly a difference between the sizes and the flying habits of the dove, for instance, and the woodpecker, et cetera. It is such a simple affair to him, that he is puzzled by the failure of the city boy to follow his descriptions; but the city boy had not yet **stored up mental/visual pictures of birds, and registered impressions.** The writer explains that the picture on the retina of the city boy is the same as the one on the retina of the country boy. In other words, the writer accentuates the part that memory plays in vision; in this illustration, a memory which is simply an exercise of vision in a field to which it is habituated.

The same writer tells of **the newly enlisted soldiers whose vision had been habituated to book figures, and were "nearsighted" at first to distant objects in their new surroundings. Whose recruits soon stored up a new register of those distant objects; and because their picture memory of the camp and the fields aroused their visual centers to an unaccustomed necessity, they perceived the objects which at first were not apparent to the conscious mind. That writer calls attention also to the spontaneous manner in which a veteran of a camp or garrison recognizes and identifies instantly the different marks of troops and of rank—simply because his memory prompts the visual center.** In a like manner, the writer reminds me, we disregard much of the detail in customary pictures on the retina, as for instance, when we ignore the figures on the face of a clock and simply look at the position of the hands. That writer recalls that Cuvier was able to draw a complete picture of the skeleton of a prehistoric animal after seeing only one bone. His memory recalled the visual images he had registered during the years of research, and enabled him to actually see the picture of the skeleton, in his brain, just as clearly or more so, as a person without that memory would see the skeleton when looking at it.

Just the conception of these facts, if they are carried in the memory, and taken out habitually, and looked at, with the mind's eye, is a fine help and a most reliable expedient or technique in practicing the Bates method. The memory is such a large part of vision, that the neglect of it is a main factor in the faltering of normal sight. On the other hand, an alert attention to the picture in view, and a deliberate purpose to occupy the mind entirely with the performance of looking at it, will reveal to the consciousness of the adventurer an unexpected power in the mechanism of his own vision.

CHAPTER XXI

HOW IMAGINATION HELPS VISION

THE idea of this chapter is to call attention to the part imagination plays in the mechanism of vision, an idea which has no place in a system that ignores the mental part of the perception and interpretation of objects.

From my conception of this work, gained in ten years' experience, it is not possible for me to draw any line separating imagination from memory, in their relation to the mechanism of vision. There can be no imagination in the visual center without memory, and no memory without imagination. In other words, there is a real sense in which these two faculties act to supplement each other. It is helpful to keep this fact in mind always, as this will encourage both factors to enlist with a new power, because of the notice that is given to them.

Whatever impression is made upon the retina is of no value until it has been interpreted by the mind. That interpretation depends upon memory, which is knowledge, which, in turn, is previous experience of other impressions. It depends very much, also, upon imagination. In the medical dictionary an image is defined as a picture or a conception with more or less likeness to an objective reality. An illusion is defined as a false or misinterpreted sensory image; a false interpretation of a sensory image. In Webster, the word imagination is defined as "… That power or function of the mind whereby we have ideal experience; primarily the power or process of having mental images; broadly the power or process of forming ideal constructions from images, concepts, and feelings with relative freedom from objective restraint... mental images, especially visual images... mental images of things suggested, but not previously seen."

In simple language, **memory then is what the mind has to work with, and imagination is what the mind can produce**. What conception of the power of the eye and of the mind is in the consciousness of a treatment of an eye which is simply faltering in its function, when the treatment neglects entirely all that is involved in the statements quoted above, from the medical dictionary and Webster's Dictionary? Without referring to the damage glasses do, as explained in previous chapters, it is plain that the treatment with artificial lenses begins by forfeiting much of the constructive power there is in a given mechanism of vision, as shown in the quotations given from the two dictionaries. That is the negative side. For the positive side, even the beginning that Dr. Bates proved, makes it plain that the possibilities, available to any ordinary mind that is interested, are beyond the imagination.

In normal vision, the memory and the imagination are always involved. That is the reason why two pairs of eyes, with apparently equal power of sight, will give the mind different visual impressions. This is constantly true, and depends upon the interpretation, as described above. The same pair of eyes, even when an average normal, will vary in the impressions received, because the mind varies in its conduct, and this influences the whole mechanism of vision. Even a want of attention will result in failure to see an important detail, just as a want of attention is the cause of a failure to remark an important detail in some project under consideration.

In discussing the power of a personality, when his imagination is realized, one says that he has "vision". Often it is quite plain that **the difference between vision and lack of vision, in mental power, is an alert and discriminating attention.** We unconsciously use the word vision in that relation. But when we think of the eye itself, the foundation of the figure of speech—well, is it not a fair statement to say that when the eye itself is specifically the subject, the imagination remains dormant and we do not actually think at all, not even enough to ask a few simple questions? How many parents, when they have mechanically put a pair of spectacles on their pretty, bright little girl for life, or their healthy, manly boy, have allowed their imagination to call their attention to the plain considerations involved?

In this method, it is necessary to take advantage of the imagination. **In those cases where a remarkable cure takes place in a few lessons, or in a single hour, it is the imagination which accomplishes the "miracle".** When someone who has automatically accepted some visual dysfunction as a natural occurrence, gets a normal eye back in an hour, something has happened—much like the report given to me as a wisecrack by a patient describing a feeling in his heart. He said "You know, Doc, my heart just stopped beating and began to beat the other way."

When one makes a decision which positively determines some conduct, the emotion which controlled the will is often so far in the background that the person is not conscious of its presence. The patient I reported, who had been blind in his right eye from birth, was told by a well-known eye specialist that if the directions he gave, taught the eye to begin to function, it would be two or three years before there would be any improvement, but the patient was seeing three lines of letters on the Snellen Chart in eight days. That was not because of his memory. His memory had held him back as long as he had had one. The continual consciousness of the blind eye was a continual reminder and a constant inhibition. It was a strange, new truth that aroused his imagination. The vision that came into his mind through his ears was a mental picture. The shock aroused dormant functions.

A famous Italian artist was taken into an art gallery when he was a boy. Something within him made him say: "I, too, am an artist." Without that imagination which was aroused suddenly in that patient at twenty-two years, the dormant mechanism of his visual center would have remained inactive.

There is no imagination without interest. It is because children have an open-minded interest in seeing letters and pictures that their eager attention creates imagination. There is always an immediate improvement in their vision. It is only when a child lacks this universal child's interest, that there is difficulty in arousing the imagination. An adult without a real desire to recover normal vision is naturally without any imagination on the subject, and there is no mental reaction to overcome the acquired inertia regarding the disability. But, on the other hand, when an adult is interested, there is a power in the adult imagination which is entirely stronger than the simple impulsiveness of the child.

Two young women, strangers, came to me on the same evening, and took their first lesson together. They both were quite near-sighted. One, whom we will call A, had heard of the Bates method only indirectly. The other, whom we will call B, had learned of it from an acquaintance who, herself, had received a remarkable and lasting cure in one hour, came several times, and had some interesting experiences. But her mind was never really interested. She had been impressed by the easy success of her friend, and probably thought it was necessary only to visit the office a few times in order to discard her spectacles. She always had a new alibi, and her evenings were full of other things, and soon she decided she was no longer interested. A was a different type. Her earnest mind was full of questions about the work. She reported different ways in which she put into practice the ideas she was gathering about the mechanism of her vision. The third evening she was so enthusiastic about her experiences, that I suggested she make a contract with herself. She had already discarded her glasses except at her work. She was to continue without them for the first fifteen minutes in the office the next morning—regardless of whether she could see her work or not. She was to put them on at the end of a quarter of an hour, even though she was seeing her work easily. She saw everything without difficulty,

and she kept faith by putting on the glasses. But the glasses had lost the fight, as she discovered that she saw better without them. When she returned in a week, she had not worn her glasses for three days. That was some months ago. Since then, she has not worn her glasses at all, has not thought of doing so, and for months has not even given any special attention to her eyes—they are taking such good care of themselves that she does not have to think of them. Her mind, from the first evening, was continually imagining, and carrying out the new ideas; and she says now that she cannot imagine ever wearing glasses again.

That case illustrates the manner in which imagination carries on in the Bates method. A little incident in my own experience illustrates a different aspect of it. Recently, while waiting for a delayed appointment, I placed a 300 watt light with an aluminum reflector about three feet from my eyes, and began blinking at a spot on the bulb for half a minute, then closing my eyes for a minute or so and watching the afterimages which followed each other in the visual center. There would be a crimson moon, which changed its size, back and forth, and then would be replaced by a green moon which might lose its outline and develop an irregular margin of gold or crimson or pink. The image would fade and be replaced by some vague patches of color, or by no specific picture. Sometimes, when the eyes were closed, the images would remain half a minute only, and not return. Again, when I persisted in silently coaxing them to come back from some place, they would respond. They might be quite vivid, or quite faint. Several times, instead of the variable after-image of the light itself, there would be a perfect ring, which was the edge of the reflector, sharp and bright as though it were itself a light, and the circular field inside was a softer and less bright mass of varying color. In about ten minutes, I changed the practice, and placed a large Snellen Test Card three feet in front of my eyes, with the large 200 foot C on the same level, and threw the reflected light on the large C. I put a spot of black ink, as big as a large period, in the middle of the lower roll of the letter. Blinking at that period for thirty seconds, or sometimes longer, I kept my mind occupied with the thought that the period could be distinguished even on the inky blackness of the letter. The third or fourth time that I closed my ' eyes, the large C stood out vividly, with rolled edges like a big doughnut, and curved ends where the lines broke sharply on the right hand side. The letter was as white as a glazed electric bulb, and the white card was a bold black, and the three-inch flat post that carried the card, and was painted white, was also black. At first there appeared no spot where the ink period was. But in later images there was sometimes an empty space where that period was, which was much larger than the period.

When I had seen, as an after-image, several letters and the card and the post quite clearly many times, appearing a few seconds after I closed my eyes, remaining a few seconds, disappearing and returning, sometimes just as clear and sometimes fainter, and sometimes returning three or four times, a remarkable thing occurred. While I was seeing the vivid white C and seeing also, more or less clearly, about three lines of letters below it, the moon that previously had appeared as either crimson or green when I was practicing with the 300 watt light shining on my eyes, now inserted itself into the picture as white, and covered up the images of the letters I was seeing. I reasoned with the moon, during some seconds, and it disappeared. But it had damaged the clear images of the letters, although they did try to reappear. While I waited and watched, the moon came back, as one picture is substituted for another sometimes in the moving pictures. This behavior was repeated, in varying ways, several times, as I continued the practice of blinking at the spot on the large C, with the reflector throwing a spot-light on the letter. I have had various experiences of the same nature with the light and the card, but this vision was different, and more vivid, and more specific, and more significant than any other.

That particular incident, characteristic of the kind of reactions which are experienced in this work, is to me a sort of parable. The later after-image of the light was the recurring memory of the recent impression made on the visual center by the strong light. It was a kindly impression, but it was evidently a bold impression. My later effort, with the letter, was working likewise with the visual center—the mental part of the mechanism of vision. The stimulus given by the letter, acting as an association of ideas, aroused the memory of the deep impression made by the light, and it automatically came back into the effort to help the visual center. To me it all seems so clear. That is the way every function in the body tries automatically—outside of our consciousness—to help every other function, when the functions are working normally. In this case there was no conflict. I saw the letters vividly, before and after the vision of light. It was the visual center itself, responding to my wish, and the memory (the after-image of the light), and the imagination, aroused into action, all working in harmony. I have proved the relaxing effect of the practice by picking up the telephone book and reading easily any name I put my finger on.

In other chapters, I have described in detail, procedures and practices which give the imagination an opportunity to "Carry On." We all have in our imagination, a power that we scarcely know. The revelations in these simple techniques comprise experiences which open a door that all may enter.

CHAPTER XXII

THE SNELLEN TEST CARD

THE Snellen Test Card was devised by Dr. Herman Snellen, a Dutch ophthalmologist, who died in 1908. It was designed as a routine test of visual acuity. The largest letter should be easily read at two hundred feet by a normal eye, and the smallest letters at ten feet. Many can read the small letters at even twenty feet. There are those who do not feel the need of spectacles and yet cannot read even the forty-foot line at ten feet. The explanation of this, perhaps, is that their eyes falter when called upon to do something which is unusual. I have seen cards, offered as test cards, which would almost make one believe they were arranged with a deliberate purpose of making it harder to read the letters. The combinations are remarkable, but more unfair, the letters are so closely packed that there is not enough white space around them to give the eyes a necessary contrast.

Dr. Bates found a new use for the Snellen Card. When the letters are properly arranged, it is a great help and encouragement to the eye in an effort to recover the normal power of vision. Care is required in the approach that is made. Dr. Bates tells of a boy who could not see the large figures on a clock in the classroom, nor even see large writing on the board, who promptly read the ten-foot line at ten feet, and then was able to see the clock and the board which he could not see a few minutes before. A patient of his, a physician who had worn glasses for near-sightedness for many years, and had improved by the method Dr. Bates had taught him, until he had **telescopic vision**, **retained and improved his power of sight by the simple practice of reviewing the letters on the Snellen Card every day.**

Snellen Test Card Improves Children's Vision – Optical Industry, Doctors Force Schools to Stop Use of the Test Card.
Doctors Prefer to Sell Eyeglasses, Surgery.

Consequent upon a protracted discussion between Dr. Bates and some skeptical ophthalmologists in a meeting of a New York society, which was followed by another such discussion before a different New York City society of ophthalmologists, the Board of Education of New York City asked Dr. Bates to consult with them. The outcome of that consultation was that Snellen Cards were hung in the class rooms of the public schools. It was found, **during the several years that the cards were in use, there was a great general improvement in the eyes of the children.** Dr. Bates gives the figures. There was a constant undercurrent of opposition however, to the use of the card, and Dr. Bates writes that finally on the insistence of some physicians, the card was removed from the school rooms. Of course no doctor would admit responsibility for such a proceeding. How could the presence of the standard test card, in plain sight, have any unfavorable effect on the eyes of growing children? It is a matter of record however, that it was there for several years, and ultimately it was eliminated. During ten years, I have learned the value of it, as a special opportunity, and as a routine practice. I have taken many children who had been unable, during an examination, to read the fifty-foot line at ten feet, and enabled them in half an hour to read three or four lines which at first they could not see.

Although all reading involves seeing letters, the mind very soon learns to see in terms of words. The letters are not consciously scanned. The words are recognized so much quicker than thought, that the conscious mind pays little attention to the letters. But the memory of all the letters is the foundation of the consciousness of the words. **This familiarity is the foundation of the value of the Snellen Test Card in practicing to improve the vision.** The interested attention arouses the co-operation of the mind. I have demonstrated this many times. A patient looks at a letter but cannot see it. **I direct the drawing, mentally with the eyes closed, of the lines of the letter.** Make believe that you are drawing a perpendicular line; across the top draw a horizontal line, shorter, with a small part to the left and the remainder to the right; at the right hand end drop a very short perpendicular. Draw a shorter line to the right from the middle of the first perpendicular. Draw a short line across the bottom of the perpendicular. Repeat the drawing six or ten times, still with the eyes closed. Now open the eyes and look at the F. Often it is plain at once. Always it becomes clear very soon. Knowing the letter you are looking at, but do not see, draw the letter mentally, several times and very deliberately, then open the eyes. Repeat this procedure until you see the letter when you look at it. If the mind really is interested, the consciousness of any first failure is lost in the objective attitude that absorbs the mind, the tension is relaxed, and the visual center recovers its normal function. The straining ceases, the rays of light are properly received, and sight becomes normal. Whether or not my explanation is correct, it is true that many times I have watched the above expedient enable a patient to see clearly, one letter after another, which a few minutes before, the patient could not see.

Often enough, when the letter in the mind becomes clear, the whole line of letters flashes vividly on the sight. It may happen that the picture will fade, and the dimness of sight will return; or the clearness of that line may be permanent at once. Sooner or later, the power of the eyes returns and the patient can read all the letters on the card at the given distance. That normal vision almost always remains permanently. Sometimes it falters again, because of neglect of the learned habit of using the eyes correctly, or because of mental stress depressing the mechanism of vision. Any such recurrence can always be relieved, if the patient is willing to take charge of the situation.

To one who has no other idea about the mechanism of vision than the current attitude toward it, such conduct of the eyes seems incredible. One who has never given the subject any deliberate thought, but has simply accepted the carefully nurtured representation that any abnormal conduct of the eye implies an absolute loss of its power, has no foundation in the mind for the imagination to work with. There is commonly an incredulity. One does not believe something which is different from what one seems to see as natural behavior. The prevalent attitude of mind is that there is nothing to do for a faltering eye but ignore its own power, and put on spectacles. But why not remember that the great mass, still and yet, continues to get along without glasses, under the same environment and conditions? Why not ask why and how so many experience some difficulties, but get over them without outside help, and numbers of others, young and old, wear glasses for a time, and then discard them permanently?+

When one has seen many cases of impaired vision, in adults as well as in children, recover normal sight, and retain it, by simply giving to the eye itself an earnest attention, one gradually learns to realize the causes for the condition, and the reasons for the cure. These eyes of ours have been developing so long, under environment which has meant necessity for power and adaptation, that they have inherent qualities and versatility to which we are thoughtlessly and stupidly indifferent. When life and happiness depend upon good vision, and there is no knowledge of such an artificial help as a piece of glass, the vision remains as strong and reliable as is necessary—**it adapts itself to the burning sands of the Sahara, or the ice fields of the Arctic, or the far distances of the ocean or the plains.** The claim that vision has not evolved to meet the requirements of modern complexities is preposterous. Many millions of eyes are cheerfully and satisfactorily contradicting such a pronunciamento by doing all the things that such a claim would have us believe it is not possible or natural to do. In most of the cases where the eye is failing, its natural power is very near the surface, ready for normal action. Half an hour will rouse its dormant functions, and the marvelous mechanism of vision will give a startling demonstration of how easy it is to have as good sight as those around us, if only we care to take the trouble to use what is born in us, and still is ready, if only we command it.

Snellen Test Cards can be secured through a bookseller. Optical supply houses used to sell them, but several I know of have refused to do so, under the excuse that they should be used only under orders from a physician or optometrist, and can be had from them.

There are a number of different techniques or practices, and some are more satisfactory with a given patient than others. The simplest practice is always good, either for a beginning, or to use as a daily routine for a longer period of time. It is called **FLASHING**, because one looks at each letter only once, and practices on all or most of the letters on the card one after the other, during each period. Seated comfortably, with the card in a good light and about ten feet from the eyes, blink softly and with a regular rhythm at a tiny spot on the letter being used, quietly ignoring every other spot on the card. Having blinked automatically for twenty or thirty seconds, close the eyes for twenty or thirty seconds, but do not allow the mind to think of anything other than the specific spot on that letter. When the eyes are opened, select a spot on the next letter, and repeat the same procedure, letter after letter. Do not forget that the purpose is to relax the mind, and the eyes, and all the muscles of the body, and if this condition is not produced, analyze the situation deliberately, and ascertain what it is in your technique that is preventing, instead of helping you relax. Let the eyes shift on the spot, avoid staring. Looking at only one spot, limits eye movement/shifting. It can be more relaxing to shift from small part to small part, spot to spot on the letter. Blink. If looking at one spot, shift on it, point to point. Blink. Avoid staring, eye immobility.

Sometimes during the first period of practice one will get a proof of relaxation in the appearance, while the eyes are closed, of the letter one was blinking at. Generally, that vision does not appear until one has repeated the practice a few times, either at one sitting, or at some other time. When the letter is seen, it will be in white, not black, and if the card is seen, it will be black, not white. In later practice, when more relaxed, the real colors will be seen at first, but they will gradually fade into the reverse. In further practice, it will generally happen that the letter will be present a few seconds and fade, and then return, while the mind waits in confidence, perhaps two or three times. As the practice is perfected, it will develop that four or five lines will appear, as vivid as a fine Neon light. These are after-images, and indicate an impression made on the mind so strongly that it remains intense enough to prevent other impressions from being perceived. This is because the mind is alert and interested, and free from any abnormal tension. When these results have been secured, it will always be found that the vision has been improved. The daily practice of flashing the card is a very fine help in securing and retaining good normal vision.
Use the memory and imagination to remember, imagine the letters the correct color and clear when the eyes are open and when closed. Shift on the letters when the eyes are open and in the imagination when the eyes are closed.

It is a good practice to select some large letter, and to blink at a tiny angle on it for half a minute, and then close the eyes and keep in mind the spot that was blinked at. Continue that specific practice of blinking and then closing the eyes, for fifteen or thirty minutes. Remember to shift point to point on the small part. No staring. Blinking helps the eyes to shift automatically. Modern Teachers prefer the student to shift point to point on the part and about the letter, and from letter to letter. Eye movement produces relaxation and clear vision.

There are several practices which encourage particularly the imagination. Sitting so that the letter O on the fourth line of the Snellen Card is seen clearly, blink rhythmically at a small spot in the white circle inside the letter, and make believe the tiny spot seems whiter than the white card. Close the eyes, and keep the mind thinking of the make-believe tiny white period. After this alternating practice has continued for twenty minutes, the white circle will appear to be a raised disk, whiter than the card itself. After a few such practices, that white circle will appear whiter, and raised above the rest of the card, whenever it is looked at, and whenever it is seen in that way, the vision will be good.

Using the lower curve of the big C in the same way, make believe there is a tiny period at some spot on the curve, which is blacker than the rest of the letter. If it is found difficult to make such a spot appear, put one on with black ink, and work with it. The blackness of the new ink will soon be lost, but the memory of it will have the effect of continuing the appearance, and it will be found that such a tiny spot can always be seen when the letter is looked at—just as we can recall the memory of any other impression made strongly enough on the mind. It may serve as an even better introduction, to put a tiny black period on the white card, just under the center of the lower curve of the C, and blink at it in the same way. When properly done, the proof of relaxation will soon appear in a vivid picture of the letter C, seen when the eyes are closed. It will be found then, that the other letters looked at will be clearer in outline.
Imagine the C is composed of many tiny black dots and shift from dot to dot on the black ink. Use Central Fixation; seeing one small dot clearest at a time as the eyes, center of the visual field move from dot to dot.

It is a good practice to blink consistently at the card, just under a letter, and pay no attention to the letter itself. It is not possible to strain to see a white card, and when the mind is kept attentive to a spot on the card, it ceases to try to see. The letter above the spot will soon appear and become clearer to the sight, even though the eye is not paying attention to it. The relaxation produced has again made the mind more receptive, and more conscious of the impression made by the rays reflected from the letter. When the mind, eyes are relaxed: then look directly at the letter to see it clear – Central Fixation.

A very good technique, more especially, perhaps, for near-sightedness, is to place the card near enough to the eyes, so that a line of letters which cannot be seen at the distance set for normal eyes is easily seen, and then blink at the letters, or under them, one after another, for twenty or thirty minutes. Because is it not necessary to try to see them, the continued attention to them quiets and relaxes the eye, and the vision improves. It will be found that soon the card can be moved progressively farther from the eyes, and the letters will still be seen clearly at a distance where, at first, they could not be seen at all. If the large card is placed ten feet from the eyes, and the duplicate card with smaller letters is placed near the eyes, it is a good practice to blink at the C on the small card, which is marked to be seen at fifty feet, and then blink at the large C which is ten feet away. Each letter is easy to see. The eyes relax, the vision improves, the mind is confident, and the smaller letters on the large card, which could not be seen previously, will gradually show clearly.

During the deliberate, confident and earnest practice of an hour, it has frequently happened that eyes which could not read the seventy-foot line at ten feet, will improve sufficiently to read the thirty- or twenty-foot line without any difficulty. This is not an idle theory-it is a fact demonstrated repeatedly.

As a unique technique which is sometimes very gratifying, one may put a heavy black ink period on the thumbnail, and place the large C ten feet from the eyes. Blink softly at the ink period while holding it as near the eyes as it can be seen clearly. Alternate by blinking with the same rhythm at a small spot on the big C ten feet away. Soon it will be found that the thumb can be brought nearer to the eyes, and the period seen just as clearly. Occupied continuously with the interesting game, which consists of a practice in accommodating the eyes from the nearest possible distance, to the card at ten feet, one will find that the eyes gradually can be lowered on the card, and see clearly, letters which, at first, could not be seen at all. If the interest is sustained by an earnest desire, an hour will pass quickly at this practice. If the light is good, and one is careful not to try to see any letters which are not clear, in an hour a degree of relaxation will develop that will show a most gratifying improvement in vision.

Another method is to close the eyes for fifteen or twenty minutes, and **imagine that there is a specific feeling of restfulness and lethargy in the different muscles of the body—putting the mind on the muscles of the neck, and then on the muscle on the front of each arm, and then on the muscles of the legs.** Then open the eyes and look at a small section of some large letter on the Snellen Card, and make believe that section is blacker than the rest of the letter. Continue to look at it, blinking softly occasionally, for thirty or forty seconds; then close the eyes and keep the mind on that portion of the letter, remembering the idea that it was blacker than the rest of the letter. After practicing in such fashion for a few minutes on that particular spot, select a different spot, and repeat the procedure. Although this is only a game, it involves the keen attention of the mind; there must not be the least concern or tension. The visual center is being called upon, in a normal way, to function as the mind directs. When the eyes again are closed the deeper impressions, made because of the alert attention of the faculties, are brought to the attention of the mind in what are called afterimages. The effect of such a practice is to stimulate the mechanism of vision into a better function. The vision is improved. All the letters on the card are seen more clearly.
When looking at one spot (part) continue to shift the eyes, visual attention from small point to small point on that spot.

If someone will swing the card back and forth in a short range, while the patient looks straight ahead and pays attention to only one small letter as it crosses the line of vision, it will be easy to learn to imagine that letter moving, as it was seen, when the eyes are closed. When one can imagine a small letter, moving back and forth in a short range, it will be found that the eyes are relaxed and the sight is improved. Half an hour devoted to that practice will be sure to give most satisfactory results.

A good practice, previously described, is to swing the head in a short range back and forth, across a small letter near the eyes, which then appears to be moving in a direction opposite to the motion of the head. (Oppositional Movement) Soon it will be possible to imagine that the letter is moving, while the head is still, and the eyes are open and looking at, shifting on it. (This movement occurs due to the eyes shifting, moving.) It will also be possible to hold the head still, and keep the eyes closed, and imagine the letter moving in the same direction that it seemed to be moving when the eyes were open. (Eyes shifting on the letter in the mind/imagination.) One must lose all thought of the eyes, and occupy the mind with the technique, in the same objective way that one gives an impersonal attention to any piece of work, or pleasure, or technique in which one is actively interested.

When one is interested, and has comprehended the mechanism which is involved in these practices, other techniques may be devised that are helpful to their own way of thinking.
It must be remembered however, that any effort to imagine a picture which is unnatural, will produce an abnormal reaction in the automatic functioning of the mechanism of vision.

There are many objects which will serve as the subject of such practices as I have described. Some of these will be suggested in another chapter. But the life-long familiarity of the mind with letters, and the fact that the mind is working with them, and dependent upon them all day long, are reasons why they facilitate, better perhaps than any other objective opportunity, whatever effort is being made to encourage the mechanism of vision to correct the dysfunctions which may be present, and to insist upon the recovery of normal sight.

CHAPTER XXIII

RELAXATION

THE word "Relaxation" is much in evidence in these later days. Often it is used in earnest, but more commonly as a by word or a jest. Even a very little reading produces the consciousness that different writers have varying concepts of what it is, and how it may be produced. A medical dictionary says that relaxation is "a lessening of tension." The same book defines tension as "The condition of being stretched or strained." Again it speaks of "intra-ocular tension," for instance, as a normal condition. It defines the word Tense, as "Drawn tight; rigid." There is a difference therefore, between tense and tension, in that book. Commonly when a layman speaks of "tension", as it applies to the human body, he means a tenseness which is of the nature of the "Drawn tight; rigid" condition—not the "tension" which may be a normal condition. But dealing with such terse and technical definitions does not explain even as much as we ourselves know about the condition called "tension" because all of us have experienced the feeling of tension, as we also have experienced the feeling of relaxation. In Webster's Dictionary, tension is defined as "… straining or tensing; stretched to stiffness." And "Figuratively: extreme strain of mind;-as, the tension of suspense." It is easy to explain the condition of a tense muscle. How can a tense condition of the mind be explained? Relaxation is defined as "… abatement or remission, as of, tension …"

In short, the tension we are discussing is an improper or abnormal condition; the relaxation we are discussing is not an abnormal weakness, but is the proper condition, or what the doctors call normal. To remember this is vital to a comprehension of the purpose of this endeavor, and a clear understanding of the mechanism of the technique. It is necessary only to release a function from the domination of an unnatural constraint; to encourage it to act in the manner which is in its power, ready at command. Much has been written about the process of relaxation, and the different ways in which it can be carried out. This book is concerned only with the method and the special techniques discovered and taught by Dr. Bates. To make it clear, I will cite some established facts which support the explanations he has given of his own work.

Relaxation does not necessarily mean rest, which is physiological; but it certainly does involve psychological reactions. To correct abnormal function, it is necessary to utilize the **power of autosuggestion**. Those who succeed in this endeavor, do so because their minds accept and act upon the given suggestion. This means that in the conscious mind there is a feeling which acts as an order to the "unconscious" mechanism, of which the conscious mind is unaware. This is the process, referred to before, which has been described by a famous biologist as the relationship which exists between psychological and physiological processes. These relations are real, but their exact nature is unknown. They are of profound significance. They prove the objective importance of the spiritual activities which that biologist believes the research workers have failed to study. It is his belief that a knowledge of these processes will open a new world to the race.

The method of Dr. Bates is founded upon this established principle of conduct. It is of the same nature as procedures long used by psychologists and now being used by psychiatrists. It is an endeavor to divert some central control function from the abnormal habit which it has developed, and occupy itself in performing in its inherent normal manner. Such Procedures are in principle very simple. They are in common use in daily life by thoughtful people, consciously or unconsciously. One often sees some interested party trying to meet and offset the various kinds of abnormal central control reactions.

Perhaps it will help, in some measure, to make clear the factors involved in the Bates method, if we consider the theories underlying the ideas and the methods of approach of other workers in this field. One writer on the subject of relaxation, has analyzed and commented so frankly upon his own conception of the knowledge of other medical men concerning it, and their methods in treatment, that his exposition may be taken as an illustration of the possible explanation of the mechanism involved.

Dr. Weir-Mitchell was one of the leaders in medical practice in the latter part of the last century. He developed a system of rest, and relaxation, and special diet, which resulted in the recovery of normal health by debilitated patients who could not be cured in any other way. The before-mentioned writer's criticism of the work of Dr. Weir-Mitchell, and those medical men who followed his successful method, is that in their work there was a strange neglect of the underlying physiology. He makes a further comment, which is a truth well known to medical men, although he apparently thinks that it is not. That truth is, that a patient may be "relaxed" in the popular sense, or in what the above writer calls the sense of Dr. Weir-Mitchell, and may still remain tense in certain parts. The condition called eye-strain is a typical and quite prevalent illustration of what he refers to. That writer also asserts that laymen, and even neurologists, mistakenly believe that rest, change of scene, physical culture or various pleasures, may mean the same thing as relaxation.

That writer further maintains that in his own specific method of securing what he calls progressive relaxation, no suggestion is used. He claims that he trains the patient to use his own initiative. He calls his system a nervous re-education. His work involves the patient in an intricate and complicated experience and training, requiring a great deal of time and instruction. There must be developed a consciousness of the conditions of the various muscles of the body, and a trained judgment, able to estimate and control tension and relaxation. He claims that this education of the patient will ultimately develop into a trained condition of the muscles, in which they will automatically be kept in a correct state of relaxation. They will be managed by an automatic supervision of the central control, but there will be what is called an unconsciousness, or unawareness, of the process. He is confident that the condition which he describes may become permanent, and the patient can sustain a continual condition of normal relaxation. I believe that this is a fair description of that system, and full enough to make it clear. I offer it as a contrast to the method of Dr. Bates. I believe that a deliberate consideration of the technique and practice of such a method will help a patient to understand the mechanism of the method of Dr. Bates, which method is simple and direct, and free from such an intensive multiplication of intricate detail. It deals directly with the central control, by suggestion and autosuggestion, and is readily available, at any time and in an instant. It is in keeping with the principles of the work of medical men who are correcting and curing the different abnormal nerve tension conditions.

The special aim of this chapter is to make as clear as possible the meaning of the word "relaxation" as it applies to the mechanism of vision, and how the method of Dr. Bates functions in securing that specific condition.

The writer quoted above describes one of the effects which his method produces as a certain toneless appearance of the eyelids, in which they do not wink during a prolonged period, and there is no motion of the eyeball. Such a condition, artificially secured, is a direct interference with the normal automatic function of both the eyelid and the eyeball. Both of them, when normal, are in constant, automatic motion, of which there is no awareness in a normal individual. He describes a technique by which he teaches what he calls partial ocular relaxation. The patient is taught to stare, with open eyes, and let the eyes go so that they are not looking in any direction, but develop what that writer calls an extreme degree of relaxation. This extreme relaxation of the eyes, he writes, is soon terminated by a burning sensation, due to absence of normal winking, lack of eye movement and an unnatural dryness of the eyes. The patient is then directed to permit his eyes to wander about to a slight degree, and not to relax them so extremely. Winking (blinking and shifting) follows, discomfort disappears and a relative rest is secured. The conclusion of that writer's description of this specific relaxation of the eyes, is a warning, which he thinks may be necessary, that this proceeding of his represents no attempt to help the patient to throw away his glasses. He then proceeds to put Dr. Bates in his "dog house", along with Dr. Weir-Mitchell and the psychologists who apparently do not understand his conception of the physiology and the psychology of relaxation-and probably could not understand why the procedure he has just described is not what most

psychologists would call technical psychological suggestion. The above method of relaxation that resulted in eye discomfort is not the normal, perfect relaxation as Dr. Bates describes. Normal, perfect relaxation allows the eyes to move, blink, and is very comfortable.

The method described by the writer quoted above, involves an elaborate and difficult and extended course of nervous re-education. The patient must learn to localize tensions, when they occur during nervous irritability and excitement, and to relax them away. He must be trained to use his own initiative in this intricate and involved process.

The method of Dr. Bates is not an unproved theory, open to a mere academic discussion, or to be condemned as unwarranted and incorrect, and dismissed by the simple say-so of somebody's personal opinion. During twenty-five years of practical use, the value and power of this theory has been demonstrated. It is a simple method, which is founded on established principles in daily use by psychologists and psychiatrists. It has never been challenged, except by such unwarranted assertions as the one quoted above—merely unsupported, incredulous personal opinion.

By the method of Dr. Bates, relaxation is secured by directly influencing the central control which gives orders to every function in the body, and determines whether the conduct of those functions is to be normal or abnormal. It does not involve an argument with that central control. It is an initiative of the patient which constrains abnormal tension at its source, and diverts the attention of the controlling force, so that the organism is absorbed in some specific contemplation. This has the effect of displacing the improper functioning. The tension is thus removed, and the normal function asserts itself—that is relaxation.

Suggestion is defined as - "The presentation of an idea, especially indirectly, as through association of ideas; a bringing before the mind for consideration, action, solution, or the like."

Psychological suggestion is defined as: "The action of one idea upon another, resulting in the connected appearance in consciousness, as in the processes of association. The entrance into the mind of an idea or intimation, originated by some external fact or word, which tends to produce an automatic response or reaction."

In the medical dictionary, autosuggestion is defined as: "The spontaneous occurrence to the mind of ideas derived from impressions received in the hypnotic state. Also the peculiar mental state often occurring after accidents, in which suggestions are easily received, so that the slightest injury to a part induces an hysterical paralysis or other disability. The latter state is also called traumatic suggestion."

In Webster's dictionary, autosuggestion is defined as: "Self-suggestion, as distinguished from suggestion coming from another. Autosuggestion is characteristic of certain mental conditions in which expectant belief tends to produce disturbances of function of one or more organs."

It will be noted that the medical dictionary confines its explanation to a hypnotic autosuggestion. It states specifically however, that the spontaneous occurrence in the mind of the idea is derived from impressions received. **It also states that suggestions can influence the mind when it is in the peculiar mental state often occurring after accidents, and can produce an hysterical paralysis or other disabilities. (Unclear Vision, Wandering eye...)**

Webster's dictionary makes the distinction that an autosuggestion does not come from another. It then goes on to say that the autosuggestion may be a characteristic of certain mental conditions.

Both of the dictionaries explain that an autosuggestion has the power "to produce disturbances of function of one or more organs, hysterical paralysis or other disability." It does not seem to have occurred to either of them that the same influence might he used to correct the said "functional disturbances, hysterical paralysis or other disability." But the medical profession knows that the mental conditions which both of the dictionaries describe, have been deliberately produced, and have been used by medical men for long years. They are being used to counteract and correct the described "disturbances of function of one or more organs, hysterical paralysis and other disability." It is well known in the medical profession that in certain cases there is an actual hysterical paralysis, and an actual disturbance of function, which disappears when a damage suit is decided. Some of those cases could not be cured in any other way. Some of them are cured when the suspense is ended, even when the decision is a disappointment. The mental condition which produced the dysfunction, is displaced by the new mental attitude, and the result is a different reaction, which permits the return of normal function.

May I diverge for a specific purpose? **Westinghouse**, whose genius devised the airbrake which is used on trains all over the world, was prompted by an autosuggestion when a boy. The train he was traveling on was stopped. Two freight trains had had a head-on collision on the track. It was explained to him that both engineers had seen the impending collision, but there had not been time for the brakemen to climb from car to car and put on by hand, the separate brakes on each car. The idea which was aroused in his mind, was that the engineer should have at his control an automatic brake which would act on all the cars at the same instant. His efforts to devise an automatic mechanical brake, or a brake worked by steam, proved to him that he must find something else. One day he read that the drills used to burrow the tunnels in the Swiss Alps were operated by the power of compressed air.

His genius told him that this would suit his purpose. His father was an inventor. But nothing that young Westinghouse said, to his father, or to anyone else, aroused an autosuggestion kindred to the one that was dominating his own mind. Commodore

Vanderbilt, himself an executive genius, declared: "Young man, I have no time for fools." Westinghouse finally secured the money to equip one train with brakes operated by compressed air. The first time they were used on a passenger train, the train stopped so suddenly that the people were thrown from their seats.

Besides the illustration here of the operation of an autosuggestion, there occurs to me what seems like a fair analogy. The great mass of those who are wearing spectacles, are analogous to the trains that had to get along with hand brakes. Most of them would be helpless without the artificial device which they are using instead of using their own eyes—just as the engineer was helplessly dependent upon the separate brakes on each different car in the train.

Autosuggestion is a mental reaction which is in constant operation. Generally the process goes on entirely outside of our own awareness. It is "Why We Behave Like Human Beings." It has been expressed differently in the words, "The highest intellectual function is simply a response to stimuli." Unconsciously we react to something in our environment, and the result is a decision formulated in our consciousness. When that happens, it is called autosuggestion. Coué explained clearly that most of the suggestions constantly being received from our environment are simply merged into our mentality, and produce no apparent specific reaction. In order to influence the current automatic mental conduct, it is necessary to make a specific impression on the mind, strong enough to modify its behavior.

This is accomplished by the method of Dr. Bates, when the condition of eyestrain is relieved. The dysfunction has been replaced by a normal function, because a strong enough impression has been made on the mind to prevent the continuance of the wrong *habit* that was present. The whole includes the parts. When the mind has been relaxed, in relieving eyestrain, every other part and function of the body is relaxed also.

In a previous chapter, there is a reference to a report presented to a scientific association, signed by four medical practitioners of high standing. They had cured one of their number of a gastric ulcer, uncured by seventeen years of medical treatment. The cure was accomplished by suggestion. They had then cured thirty-two other cases by the same means. The treatment used was similar to the practices of the Bates method.

In my own practice, I have records of the cure of two cases of epilepsy, each of over five years' standing, and both have been free from attacks for over a year now. They were both using luminal continuously, when they came, and having constant attacks. The luminal was discontinued, at once and permanently. The treatment was principally relaxation with the use of phonograph music and directed mental attitudes in the office, with similar practices regularly at home. The same success was secured in several cases of extreme nervous disturbances, and one case of extreme chronic **stuttering**. The point here is, that these different abnormal conditions of the nervous system were cured by relaxing the tension which was present in the mind, and by the methods used for the cure of eyestrain.

It is not possible to correct any abnormal function by individual effort without enlisting the co-operation of the control center in the brain. We cannot direct the functions of our organisms. We do not even understand their mechanisms. **We can secure results only by influencing the conduct of the control center through the impulses of our emotions.** For the purpose of securing relaxation of the tension commonly called eyestrain, the emotion necessary is an earnest desire for normal vision, and a confidence in the method suggested. With that conviction in the mind, we have begun the autosuggestion which will effect the realization of our desire.

Relaxation is not to be secured by demanding it. In other words, it is not possible to make an astigmatic eye see clearly by simply ordering it to do so. In practice, such an effort increases the dysfunction. By trying to force the eye to see, a conflict is introduced between the will and the automatic mechanism which the will does not even understand. One does not expect to slow the fast beating of the heart by giving it an order. A thoughtful person does not try to relax and quiet an excited individual by simply commanding silence. We endeavor to divert and persuade these abnormal reactions. The practices which have been described in previous chapters serve to relax the mind in just the same manner—by securing the compliance, and the spontaneous support, of the mechanism which has been at fault.

Emile Coué had success beyond all others in teaching those who were troubled by functional disturbances to cure themselves. His work was founded on the realization that our thoughts control our will. He may have learned it from Proverbs, where it is written: "As he thinketh in his heart, so is he." Wherefore, if the thought in our mind is that we cannot see, our will cannot overcome that domination. **Coué taught his patients to replace wrong thoughts with right thoughts.** Instead of being sure that the ailment could not get well, he persuaded their minds to believe that there was power in their bodies to correct the fault. From various sources the knowledge is accumulating, that disordered functions are consequent upon some lack in the mind of that normal conduct which is what Dr. Bates meant, and what psychologists mean, when they use the word relaxation.

There is in psychology and in physiology, just as truly as there is in the spiritual life, a state of mind which has been called "the peace that passeth all understanding." We can possess this peace, even though our conscious minds do not know how our subconscious minds can give it to us. If we want it earnestly, we can surely have it. **With that perfect relaxation, there is always perfect vision.** The millions around us who have constantly fine sight, owe it to their relaxation. In previous chapters I have described specific practices which will enable those who are interested, to learn how to relax their minds, and relieve the eyestrain that is disturbing their vision. They must have the individual initiative, and having put their hand to the plow, they must work with that faith, without which man accomplishes nothing. Those who carry on that way, always succeed. I know this, because I have been over that road myself; and I have seen in my work many wonderful cases, which were not miracles, but were manifestations of the power of the nature that is in us, and is ready to work.

CHAPTER XXIV

ILLUSIONS OF VISION

EYES with normal sight have different illusions, as well as eyes with abnormal sight. An illusion is not caused by the same strain that causes an error of refraction. To imagine that one is looking at something which has no existence is different essentially from a distortion of the rays of light received on the lens. To be unable, at any time, to distinguish between two colors, differs from a reaction which makes a black letter seem some other color, and perhaps a color that is quite variable. There are illusions as to size and form; and these may relate only to the object when it is at various distances from the eye. These illusions may be influenced by environment, or by circumstances. There are illusions as to numbers, two or several objects being seen when only one is present; and the relative arrangements may be different. The illusions may vary when only one eye is used; and differ with one eye from the illusion seen with the other. Letters in words may change places, and the changes may vary. These actual illusions are not errors in refraction, but are caused by some abnormal function in the visual center in the brain—in other words, they are conceived by the mind.

An unique illustration of these illusions is the experience of some persons when practicing the eyes on the special cards made for use with the stereoscope. There is one card with the letters **O N** on the left half of the card, and the letters **N E** on the right half. It has happened with several patients that with both eyes open, they have imagined that they saw the letters **N E** with the left eye, and the letters **O N** with the right eye. They could not possibly have seen the letters that way. The transposition therefore must have been made in the mind.

It must have been imagined. It was distinctly an illusion. That is not hard to realize; although, of course, it cannot be explained. In every case the patient has succeeded in fusing the letters, so that **one letter N forms a perfect union with the other N**, so there appears to be only one **N**, and when thus fused they see the word **ONE.** This is accomplished by relaxing the abnormal tension in the mind, so that the fusion function works normally. (Same as the 'Three Cups' Exercise on the Internet)

ON **NE**

This fusion is done by placing the index finger upright, between the left and right eyes, eye level, just below the letters and looking at the finger, moving it closer and farther from the eyes until the two **N**'s merge into one **N** and the word **ONE** appears. Then, remove the finger and hold the fusion/maintain the word **ONE**.
This exercise must not be overdone. It can strain the mind, eyes and eye muscles. Notice that the eyes are not truly looking at the N's or the word ONE. The eyes are focusing between the letters on the white page and at a distance closer to the eyes than the page. This is not normal eye function to see clear. It is not central fixation and normal eye movement is disrupted. The eyes, vision are not merged, fused directly on the object of visual attention and are not fused, converged on/at the correct distance where the object is.
Bates teachers prefer to have the student practice plain old shifting, central fixation directly on the object: practicing on objects at close, middle, far distances as the normal eyes do and allow fusion, merging to occur normally when looking at a object.

Floating Specks

There is an interesting variety of illusion which is quite common. Many explanations are given for it. The technical Latin name for the condition means **"flying flies."** There seem to be floating specks which are generally dark or black, but may look like air bubbles, or have different colors, and often are connected in chains. They generally appear to be in motion, but do not change their positions. They seem to be going, but do not go. They are present more or less constantly in the different kinds of abnormal vision; but may be present at times when the eyes have normal sight.

These strange things are only illusions, and are caused by some tension in the mind. I can speak personally on this subject, because I was troubled with them for years. They were quite variable, in their presence and absence, and in their conduct. Sometimes I have studied them, with my eyes closed, and it has happened often that in the midst of my observations they would simply disappear. I soon observed that they were not accompanied by any symptoms except the interference with vision, and I realized early that they must be some kind of a nervous disturbance.

Patients have described the same experience. I asked one patient, a woman of forty, who came with a chronic inflammation of the iris—a condition which was very painful and made her almost blind—if she had such specks in her eyes. She said: "Yes, I have flocks of them in both eyes, and there are some big grandfathers among them that seem to shut out the light." The iritis was cured by the Bates Treatments, and the specks disappeared also. My own specks still appear sometimes, for short periods only, but are never annoying, as they used to be.

There are many differing illusions of color. Looking at a black or white or colored surface, or at a strong light, as a 300 watt or a 1000 watt electric light, and then closing the eyes, one will see various colored after-images, and generally these images will change colors. I have looked into the noonday sun and seen most interesting after-images—streaks of brilliant colors, generally perpendicular, followed by vague blocks of varying colors. I have found that my sight is always improved in a few minutes, after the effects of the stimulation have subsided, so that I can see small letters at a greater distance. Looking at the sun, until one becomes accustomed to it, may cause an unpleasant reaction, and even lower the vision for a time. These after-effects are all illusions. They are not seen by the eyes, because the eyes are closed. They are caused by some tension in the mind—the same as abnormal reactions in other parts of the nervous system, which are quite common, are known to be caused by tension. Since most of these illusions are apparent when the eyes are closed, it is obvious that they are produced in the mind, in the same way

that an illusion appears when the eye is open, and seems to see an object which is not present. Various illusions can be produced by deliberate efforts of straining the eyes. It is worth while to make such an experiment, simply staring hard, for instance, at a short line of heavy large letters. The distinct benefit in such a procedure is that it impresses on the mind a new knowledge of the mechanism of one's function of vision, and is helpful in working out the cure.

CHAPTER XXV

TECHNIQUES

IN the different special chapters various techniques have been described. This chapter is intended as a summary, or review. It is first, a reminder that all of the practices are only expedients to secure the relaxation which will not come unless the mind is wholly interested in some objective mental occupation. This very simple explanation is not easy to realize at first. I have seen this difficulty many times in the conduct of patients quite in earnest. They believe they are carrying out the directions perfectly, when actually their mechanical obedience is leaving out the spirit and the mental co-operation without which the visual center will not respond. Much can be accomplished by simply blinking at an ink spot on the thumbnail, with a soft feeling in the muscles, if the mind is completely occupied with that proceeding. In my own beginning, I blinked at the big C on the Snellen Card very earnestly, for as much as an hour, for several days, before I was favored with any after-image. I was conscious of my eyes, and full of questions and expectations. It was only when I finally lost all self-consciousness in the contemplation of a darker spot on the C, which I made believe was there, that the C stayed with me when I closed my eyes, and my mind showed me the most vivid letter I had ever seen. I afterward realized that I had been thinking of statements in Dr. Bates' book, and considering personal questions, when I thought my mind was entirely occupied with the technique I was practicing. There must be a loss of all personal feeling just as one has no self consciousness when one is intensely absorbed in any consideration which is strong enough to keep out of the mind any other thought. Bates teachers state to never stare at an object, do not keep the eyes immobile on one point. The eyes must move, shift to function normally, for clear vision. The normal eye will continue to shift point to point even when looking at a small object or one small part of an object. Let the eyes shift. When the eyes blinks, it causes the eyes to move, shift automatically. This is beneficial.

Having chosen a practice which seems attractive, if it is properly carried out, the longer one can continue it without its becoming tiresome, the more one will find that the degree of improvement increases as the time of practice is extended. This is true of every practice. **The man Dr. Bates wrote about, who practiced for hours continuously, and only stopped to sleep, was permanently relieved in thirty-six hours of several abnormal conditions of vision, including cataracts in both eyes.** If one continues to deliberate thoughtfully upon any proposition, the mind finds itself being assisted by new ideas on the subject. The unconscious part of the mind is joining the endeavor, and giving aid from its storehouse of accumulated impressions. One who blinks long enough, in such an impersonal and objective way, at a small black period underneath the big C, will find the vividness of the after-images increasing and lasting longer in accordance with the time spent on the period.
Blink and shift on the period.

If the interest in such an endeavor is sufficient to eliminate the consciousness of the eyes themselves, keeping the mind absorbed in the objective procedure of carrying out the practice, an hour spent on any attractive technique will pass unnoticed. A business man of standing came to me because the glasses he had been given did not suit his eyes, and the only encouragement he was offered was the reply that he must be patient until his eyes became accustomed to them. When I asked him how much time he could spare each day for practice, he did not tell me what a busy man he was. He realized that the glasses were not helping him, and was determined to give this entirely different treatment a fair trial. He said he would give an hour before leaving home in the morning, an hour at eleven, another at four in his office, and an hour every evening.

He began by discarding his artificial lenses at once. The attitude of his conscious mind pushed aside things he considered of less importance to him than the helpless condition of his eyes, and he secured a prompt recovery.

There are few who cannot give one or two hours daily to the proper practice of some techniques that seem the most attractive to them. The positive idea of denying some amusement for an evening, and getting up early after a good night's sleep, in order to use that time for the recovery of fine normal vision, of itself creates new reactions in that part of the brain which has charge of the conduct of the eyes. Mental reactions are a dominating influence over the functions of the body. That established realization is a guiding factor today in the treatment of every other functional and organic disorder in the body. Why is it ignored and neglected in the treatment of the faltering functions of the eyes?
Modern Bates Teachers have the student practice Correct Vision Habits (normal eye function): shifting, central fixation, blinking, correct breathing…all the time as a easy, automatic habit. With practice normal eye functions occur on their own, without practicing.

The more often an extended period of time is given in exclusive attention to the care of the eyes, the more prompt and more surprising will be the response that the mechanism of vision will give to that attention. We are being told now, from every kind of loud speaker, that our eyes are our most precious possession, and we should take good care of them. That is true. Can anyone imagine what the result would be if the conditions were reversed? Suppose the public was being reminded, from every direction, that when artificial lenses are fitted to the eyes, it rarely happens that the eyes are ever relieved of them. Being reminded, also, that the general experience is a progressive weakening of vision, with the imposition of stronger glasses, and an increasing helplessness of the eyes without the assistance of spectacles. It is being too optimistic to imagine that the public would gradually

come to realize that taking good care of the eyes would be to treat them as we are treating the other functions of the body; and that doing nothing to correct the faltering in the mechanism of vision is not taking good care of them?

It is not necessary, however, to give long periods to practice. Even short periods are effective. Many of the cases that I have treated with success have been so occupied that they were obliged to take time out, from their work, in short periods. Personally, I found that an hour in the morning was always possible, and that period made such a lasting impression on my mind, that the subject was constantly recalled to my attention during the day. The mere conscious mindfulness, recurring at intervals, was an indication of an under-current in my visual center which was attentive and interested, and so **I was really doing Bates work all day long.** It is possible so to be mindful of the endeavor, and even to use the incidents of daily occupation as expedients in the practice of the Bates method.

Children readily grasp the idea of looking at the letters and figures on the black-board in the proper way. They make a game of not trying to see them—as I have shown them how to look at the letters on the **Snellen Test Card** in my office. **They have found that a letter which they could not see at first, suddenly pops into view after they have practiced for a few minutes the technique of looking directly at it for only an instant, and closing their eyes when they do not see it. Sometimes I tell them the letter and have them draw it mentally with the eyes closed.** They often see a letter in a few minutes of the above practice even when they do not know which letter it is. One boy of seven found letters that way, without being told the letter—in school he had not been taught the names of letters. When he pulled a D out of the atmosphere, he called it "Daddy", because that was the only name he knew for it. So I drew a big M and S and B for him, because he knew Mama and Sister and Boy. Then we taught him the names of the letters on the Snellen Card, just so that we could use them.

Children have practiced that way with the letters on the board, and have blinked at other points in the room—a pupil's ear, a corner of the window pane, a spot on the wall. But above all, they learn quickly, when they are interested, to look softly at everything, never trying to see, and it helps them to do this when they have learned to be conscious of a feeling of soft relaxation in the muscles on the body. They are instructed to practice looking at distant objects when out of doors. It is explained that their eyes are resting when looking at any object in the distance, even better, perhaps, when quite far away, if they just look at it and pay attention to it, but have no idea of trying to distinguish it. They are taught to develop the habit of occupying the mind, when walking on the street or when at leisure indoors, with the practice of **looking deliberately from one specific small spot to another and ignoring every other point, and observing each spot for only an instant.** (Shifting and Central Fixation) **They are reminded to blink softly, without any timed regularity, whenever they think of it, especially when walking on the street. Such habits help to relax the mind and the eyes while they are being practiced.** They also serve to sustain an undercurrent of association of ideas which keeps the consciousness of the purpose and the method in mind, more or less constantly.
Blinked – Blink and shift on the object.

With adults the same practices can be used, in the office as well as at home. The time on the way to work, and on the way home, can also be used for these practices. The relaxation produced in this way adds to mental efficiency, and is a fine preparation for the work of the day, and the best kind of a rest after the day's work. This is not merely a theory. I could refer to different cases in which exactly those effects were secured. In a case of **severe nervous indigestion**, a business man used the morning and evening hours in that way and this served to relieve him, for two years now, of a condition uncured during eighteen months while he was under the care of three physicians. Where diet and medicine and hospitalization failed to relieve the subconscious tension which disturbed the stomach function, the use of his own mind on the subject effected a cure. A badly near-sighted girl, who had very little time except on her way to and from work, not only was enabled to discard her spectacles, but improved in general health from a condition of nervous unrest to a quiet, normal, and enthusiastic mental attitude.

Some are impatient about such use of the common incidents of daily life. They feel that only strange and mysterious procedures can be of any value in treating abnormal conditions. In several previous chapters, I have described specific practices that are directed by Dr. Bates, and that I have learned and used myself. I will add more such practices in this chapter. But my own experience has been, that in most cases those specific practices serve only as a beginning of improvement. Like any other mental or physical mechanism, the improvement in vision must be increased and developed, by constant repetition and consciously continuing until it becomes automatic. The suggestions above are offered with this idea in mind. I have found that the patients who carry them out are the ones who succeed; and those who simply interrupt the customary mechanical conduct of the day for an occasional period, and forget the Bates work entirely when they are not actually practicing, secure improvement very slowly, or even lose patience and interest and so fail to succeed.

In the chapters on **Palming, the Sun and the Eye, Shifting and Swinging, The Snellen Card,** and elsewhere in the book, I have already described specific practices suggested. It may be well to refer again to some of those suggestions. I trust it will not arouse any impatient reaction, on the part of any readers, when I continue to remind them of the purpose and the mechanism involved. In any field of mental effort, repetition is an acknowledged essential of acquisition.

Palming is perhaps the simplest and most effective of the techniques suggested. It rarely gives results at first. How many correct a bad habit at once? The developed misconduct of the visual center is much more inaccessible than the habit of talking when one should listen, or arguing on a subject upon which one is not informed, and such trivial misbehaviors. But how many are cured at once of such a habit when they realize it and decide to desist? Success in such an endeavor depends upon the degree of earnestness in the conscious mind. The proofs demonstrated as the result of Palming generally begin to appear very soon in any earnest effort. But if one will be fair enough to read the chapter twice before undertaking any effort, the first half hour, or hour, of practice will give more satisfying results; and if one will take the trouble to read it again before starting the next several practices with the techniques, that reader will very soon have most gratifying proofs of improved vision, and will develop relaxation, and have a warm appreciation of the labor and gift of Dr. Bates.

The sun is perhaps second in importance. The eye belongs to the sun. It has developed under the kindly benefits of the sun. It would be worthless without the sun. All life depends upon the sun. Why then is it not to be expected that the sun will help the eye, when the eye needs help, since its help is sought by physicians in every other functional or organic abnormal condition of the human system?

Not to repeat what is already written, I feel that it is worth while to remind the reader that plenty of light is like plenty of fresh air. Many must depend most of the time upon artificial light. A number who have discarded their glasses, always read now with a 300-watt light. Some have the idea that such a practice would make it harder to read with a poor light. On the contrary, **those who do use the 300-watt light have found that their vision has improved so much that they can see better with poor light than they could before**; just as the man who has fresh outdoor air all day, is better prepared to withstand poor air than the man who spends his days in a poorly-ventilated office, and has very little fresh air during his sleep. It is a good practice to blink into a 300-watt light and watch the interesting after-images that come when the eyes are closed for a few seconds after blinking for half a minute. If one will occupy the mind entirely in contemplating deliberately the different tiny spots on the wires in the bulb, and then in considering carefully the varying after-images with an active interest, there will develop an immediate temporary improvement in vision. This is an excellent half-hour practice for general use.
Shift, move the eyes when looking at the light.

Although there is much discussion now about stronger bulbs, it is difficult to get shades that do not direct the light rays so that one is obliged to sit directly under the lamp in order to get the full value of the light. When a lamp is placed in the middle of a table, or behind a davenport, with the slant of most shades, the rays of light are directed into so nearly a perpendicular angle, that unless the book is placed on the table, or one sits sidewise close to the back of the davenport, the book will be outside the margin of the shade.

For the purposes of Dr. Bates' work I am in the habit of suggesting that one use a **300-watt light**, with a good opaque reflector, so hinged that the rays can be directed, like a spot light, onto the object being observed. This gives a diffused light where it is needed, when it is needed, for the special purpose of the method. The light which is thrown up on the ceiling and reflected, may serve the purpose for which it is intended. In many tests I have demonstrated that the 200-watt ceiling light in my office, which is a clear bulb with a dull white reflector, does not suit my purpose of specific illumination. When a patient tests the sight on a Snellen Card at ten feet, using the office ceiling light, and then makes the same test with my 300-watt lamp, thrown on the card from an opaque reflector, the patient is almost always able to read, for instance, the 30—or the 20-foot line, quite easily, when with the office ceiling light the patient could hardly read the 50-foot line.

The use of the Snellen Test Card has proved to be a very helpful practice for patients of all ages. In the public schools of New York City and other cities, during the years in which the Snellen Card was allowed to hang in the classrooms, the pupils were always interested in it, and their vision was improved, according to periodic tests, and the testimony of teachers. Some of the teachers, by the use of the Snellen Card, discarded their own spectacles. This is according to the published specific testimony of Dr. Bates.

The Snellen Card should always be used according to the established principles of central fixation and shifting. The attention must be restricted to selected small spots, as described in detail in this book. The spot being observed must be easy to see, and all tension, or trying to see, must be deliberately eliminated from the practice.

The specific directions given in the chapter on the Snellen card will serve as suggestions for other practices of the same nature, which will occur to the imagination of the patient. It is a worth-while plan to practice with the card every day, even if only to blink as directed at every letter once a day—perhaps half the lines at one time, and the remainder at another sitting.

A patient of mine in Berkeley, a well-known woman, who discarded her own glasses with only a little help from me, talked with a Vassar graduate who went to Dr. Bates because her near-sighted eyes were getting worse. After one hour in his office in New York City, that Vassar girl went out and walked up and down Sixth Avenue for two hours. When she began she could not read one of the signs on the opposite side of the street. At the end of the two hours she was reading all of them. She had what I have learned to think of as an attitude of mind—an abiding confidence had been developed by that one hour of instruction. When I read the book of Dr. Bates I realized the simple, proved truth of his claim. Anything and everything in it confirmed my experience with my own eyes. It was the first reasonable explanation I had found for the variable conduct of my own eyes. My eyes would behave or misbehave regardless of whether or not I was wearing glasses. They had done that for many years. I did not accomplish my own cure in two hours, nor in two weeks. But I had a foundation of absolute confidence, based on experience and demonstrated facts. That young college woman began by wanting her own eyes. She had a responsive mind. She had confidence in herself, she knew that one learns to swim in the water, and learns to dance by dancing, and learns to play a violin by playing it, and she was a woman of action, so she promptly tested out her new discovery, and she won. The technique which cured her high degree of myopia was simply looking at signs which she could not see, one after another, with an attitude of mind which was confident, and determined to succeed, and persisted until the visual center responded to the demand she made upon it.

A patient of mine made a habit of looking for numbers on every house. She would walk half an hour, and not overlook a house. She never made an effort to see a number. That thought which she carried in her mind aroused her visual center, so that very soon she was able to read any number without the least effort. In carrying out that practice, she learned the sensation, mentally, of having her eyes "relaxed at infinity"—just as the shopper is relaxed mentally when she also is "just looking"—and has no least feeling of constraint. If it is possible to look out over the housetops, that is an especially good opportunity—looking softly at the many distant points in the picture. I have spent half an hour looking and blinking at the evening star, on a clear dark night, and kept my mind on the star by wondering about the power that keeps those light waves flashing through the ether for a period of time that we cannot comprehend.

For nearer work there are many opportunities. A type writer keyboard is often at hand. With a spotlight on it, the eyes behind any opaque reflector, one can select a spot on any letter, and in a short period of alternate blinking and closing the eyes there will appear some interesting after-images. There are highly-colored pictures in magazines, and different colored letters. There are lead pencils and penholders of different colors, plain or with periods made on them with black ink—single periods or rows of periods. There are figures on wall paper, and on picture frames—large frames or small frames. There are the angles or the dots of squares or diamond shapes, of various colors, on linoleum. Even in daylight these spots are good to practice with, and with a strong light at night, especially a spot-light, they make excellent opportunities for interesting after-images, and are very effective in securing relaxation, and a certain improvement in vision.

It is not in a multiplicity of techniques nor in working with strange figures that one must look for the best results. The familiar objects of daily life have a value due to the advantage of long acquaintance. Results are dependent upon the degree of interest and confidence, and the thoughtfulness with which the practices are carried out. The power is in the eyes. It is only necessary to have an earnest purpose, and a deliberate comprehension of the meaning of the directions, and a faithful devotion to the purpose. This has been proved for many years, and in thousands of cases. If these qualities are not in the endeavor, it is not reasonable to expect success, and it is wiser not to undertake it. It has been my experience, however, that almost all of those who have sufficient interest to undertake this work are rewarded with success.

CHAPTER XXVI

ASTIGMATISM

ASTIGMATISM is the commonest of the dysfunctions of vision. Probably almost everyone has more or less of this fault. The symptoms are often very different. It generally accompanies some other abnormal condition of the eyes. Of itself it will produce blurring of the image, even to extremeness of failure to see. It produces the sense of straining in the eyes, with perhaps pain in the eyes, and in the head, and may be the cause of reflex nervous disturbances. The symptoms may be quite variable in the same individual. Sometimes, in mild cases, it is not always present; and it may be that certain specific situations apparently cause the onset of the condition; or conversely, they may serve to relieve it.

Astigmatism is defined as a refractive condition of the eye in which the parallel rays falling upon it are not at any spot brought to a common focus. Instead of a single point, they are spread into a diffused area on the retina. There are a number of types of this condition, which is referred to as an aberration. They are classified as latitudinal or longitudinal, regular or irregular, direct or inverse or oblique, simple or compound or mixed, myopic or hyperopic, and these classes are again compounded. These classifications are based upon an elaborate and meticulous study of the many various and complicated ways in which an astigmatic eye may, or may not, conduct itself. The variegated combinations of abnormal refraction which are described are all ascribed to one or two causes. The lens may be too near to, or too far from, the receiving screen, the retina; or the refracting surfaces of the eye, (that is, the covering of the anterior end of the eyeball, and the lens) are curved too much or curved too little. The surface covering also may have the correct curvature, but may be too dense or not dense enough. Astigmatism, it is stated, may be congenital or acquired. Modern Scientists state that astigmatism is caused by an abnormal, irregular shape of the eye, cornea, lens. Outer and inner eye muscle tension can cause this.

The vision of an astigmatic eye is not simply indistinct; it often presents different and remarkable peculiarities. Shapes may be changed, the parts of an object seen are not equally indistinct, the image seen may be multiplied, or distorted, or take forms which are actually illusions—inasmuch as they are misrepresentations. In short, impressions are registered on the conscious mind which can be accounted for only by the realization that the visual center itself is acting in an abnormal manner. The text books explain that the visual center may enter into the abnormal situation, when an object is not seen clearly, but often with the result that a further confusion is added. The imagination may try to correct a distorted image, and sometimes, in this way, a new dilemma is produced in the conflict between the insistence of the incorrectly refracted rays and the efforts of the memory and the imagination to register what those faculties believe to be the true image.

The above is perhaps a sufficient explanation, and enough of a technical description, of what occurs in astigmatism. To put the picture simply, it means that the eyeball normally should be perfectly round, and when it is not, a condition is present which is the cause of unequal refractive areas. The uneven external surface of the eyeball sends the light rays in wrong directions, and the result is very much like a photograph taken while the camera was moving.

Why does this happen? After reading many pages of erudite discussion, one finds his mind very much like his hand when he tries to hold water in it. The voluminous and exquisitely perfect descriptions of the manifold findings do not give any conclusive evidence of the cause, and do not offer any method for the correction of the abnormal condition. Such an abnormal condition is inherited, or it is acquired, early in life or late in life. The relief offered, consists in artificial lenses, with the frank admission that where the conditions are extreme, no relief need be expected from the lenses. Two strange ideas have been offered by named specialists, which propose to press the eyeball back into a round shape by devices for subjecting it to periodical external pressure. Very harmful treatment. Causes cornea, eye injury.

Out of the fog of confusion, it can be gathered that the round eyeball has changed its shape. The changes in shape are not constant, and the irregularity is itself irregular. In many cases the condition grows worse, in many cases it does not. In many severe cases the condition improves, even after many years. There are many cases where it varies, some to a remarkable extent,

better and worse. There are many cases in which it disappears—simply ceases from troubling—which, in medicine, is called a spontaneous cure.

The explanation of the cause which is given by Dr. Bates, accounts for all of these varieties and variations. There are six muscles fastened into the walls of the eyeball. When these muscles move with the perfect co-ordination which is their normal function, there is no astigmatism. **When they impose an abnormal, irregular, and uncoordinated pressure upon the eyeball, some parts of the surface are subjected to a greater or to a lesser compression than is normal. That causes the flatness in one meridian, and permits a fuller curve in another meridian. When the abnormal pressure is released the fault is corrected.** That seems so simple that in the text books it has been entirely overlooked. So was Newton's law, for a long time. When Dr. Bates conceived this explanation, and realized how it solved all the unanswered questions, he undertook the very simple procedure of testing out his theory by stimulating the external muscles of the eye in different animals, and cutting them, and reuniting them. His research experiments proved the truth of the new proposition which his wonderful mind had conceived. It is very easy to confirm his findings. Strangely enough, no other worker has yet tried to do this. That is often the history of a discovery. Some independent spirit is going to do it. The mills of the gods grind slowly. **The eye muscles in those cases act in an abnormal way, because they receive abnormal nerve impulses. There is an abnormal tension in the visual center.** It is possible to create, or to increase, an astigmatism, by voluntary effort. It has been done, and is a matter of record. It is a very simple matter to stare so hard at a point that the image of the object becomes blurred and distorted. Anyone can do this, and thereby demonstrate tension and astigmatism.

The remedy which Dr. Bates pointed out in his method, is just as simple as his explanation of the cause. Relax the abnormal tension in the control center in the brain. That occurs spontaneously when there is a spontaneous improvement or cure of the condition. There is a natural law involved. The same law controls tension reactions in other functions of the body. Psychologists and psychiatrists have for years been treating in that manner, conditions which are analogous. Why deprive the eyes of the same benefit? The method of Dr. Bates uses the same kind of treatment, with techniques that are especially suited to the mechanism of vision.

A patient of mine, when he came to me at twenty years of age, had been troubled from early childhood with a condition which he said was near-sightedness. Having satisfied myself that it really was astigmatism, principally because he could not fuse the simplest of the stereoscopic photographs, I showed him how to relax. He responded so promptly, that with one hour's treatment, he was fusing most of the stereoscopic pictures. He was confident, and in earnest, and I had him so thoroughly interested in the technique, that he forgot his eyes. He just kept looking softly at the pictures, with an absolute expectation, and his visual center was roused into an interest in the procedure, and a normal conduct of the eyes and the mind was the result. The normal conduct of the factors involved, which developed in one hour, after years of abnormal behavior, has continued now, without faltering, for six years. The young man is in evidence here in Berkeley. There are others on my record with corrections just as remarkable.

The set of stereoscopic pictures is made for the purpose of encouraging eyes which do not focus in a normal manner, to become interested in an objective way. The proper way to practice with them is to use only the plain glasses furnished with the stereoscope. There should be no effort to make the eyes fuse the two pictures into one. With the eyes blinking softly at the pictures as they are seen, the card should be moved slowly back and forth on the slide. The pictures will endeavor to fuse, no matter how imperfect the fusing powers of the eyes are, if the mind is attentive and not concerned. If necessary, it is helpful for the mind to be made to visualize what the picture is when correctly fused. Seeing a parrot perched quietly on nothing but air is not startling; nor looking at a cage hanging without any support. But when they are seen on the same card, the memory and the imagination soon become so conscious of "what is wrong with the picture" that the fusion center receives an impulse. If the mind strains, consciously, it hinders the automatic readjustment. If it waits confidently, and prevents any other thought from distracting a perfect attention, the co-operation of the powers of the mind and the fusion center will result in a perfect conception. This may occur promptly, or only after a series of trials. It is quite common for eyes with good vision to fail to fuse some pictures and succeed with others. The parrot, for instance, may go into the cage perfectly, and then move in and out, and possibly conclude by staying out.

The first essential in the effort to cure astigmatism is to impress the mind with the conviction that the misconduct of the eyes is due fundamentally to a disturbed mechanism. The muscles are getting improper orders. Because they are not working with normal co-ordination, the shape of the eyeball is more or less slightly altered. The conscious mind cannot give specific orders to these muscles. That mechanism is automatic,—and outside the awareness of the conscious mind. To combat the abnormal condition by seeking the help of an artificial device is to ignore the inherent functions of the mind. Education is a training of the physical, as well as the mental functions. **Madame Montessori developed a similar system of education for children with abnormal mental reactions. The practice of medicine has been using such systems constantly for years. Such a system is being used successfully to educate shriveled and helpless paralyzed muscles, so that in many cases the muscles recover their normal power.** In order to correct the dysfunction called astigmatism, one must take advantage of the same laws. It is no impediment to success that Dr. Bates was an original and independent pioneer in this work.

He was successful, and others are successful today. To simply deny this truth is not a scientific gesture. If one dares not undertake to test out the method, one should not obstruct, nor suppress knowledge of the facts.

If one will put out of the mind for a moment any actual experiences of failures, and proceed to carry out some of the expedients described in previous chapters, one will soon demonstrate the success which generally rewards the effort. **Palming**, thoughtfully and earnestly, but with the same impersonal alert interest that one gives to a favorite game, the mental relaxation which is the objective purpose of this practice, will impress a normal relaxed attitude upon the visual center, and there will be a distinct improvement in vision. This is not a theory any more than similar successes, in analogous fields of medical work, that are now established and constantly in evidence.

Proper following of the directions in the chapter on "The Sun and the Eye", will have an almost immediate effect that sometimes is astonishing. I have found, in several cases, that the treatment of the trunk or even a limb, with an infra-red ray lamp, has produced a fine specific improvement in vision, and relieved a blurring, because of the general relaxation produced.

Different techniques suit the various specific symptoms of individuals. Often it is sufficient to rely upon simple mental relaxation. The chapters upon "Memory" and "Imagination" describe suitable practices. There is often some degree of myopia, and special methods for treating that element are found in the chapter on "Near-sightedness".

My own custom is to demonstrate the specific difficulties apparent in the case under consideration. The commonest trouble is more or less blurring of letters or pictures. This always varies, and may occur only after considerable reading, or under unfavorable conditions of light or print.

It is a good practice to begin by closing the eyes and impressing the mind, for a few minutes, with the idea that there is a soft feeling in the muscles. It is easier to secure this feeling in separate muscles, one after the other. There is no difficulty in securing such a sensation, if the mind is controlled so that distracting ideas are not allowed to interfere. It is often better to keep all thoughts of the eyes out of the mind. But it may be helpful to think of the eyes, in a specific and positive way, as having a soft and heavy and restful feeling. If one has read the preceding chapters in this book, the knowledge of the method will be of the same value in the effort, as is any knowledge on any subject. The chapters should be read more than once.

Flashing Letters

An excellent general practice is with the Snellen Test Card of letters. The different ways of using the card have been described in a special chapter. To practice reading, when there has been blurring, or indistinctness, allow the eyes to flash open just long enough to see the first word, or perhaps only the first letter of a word at the beginning of a line. Do not allow the eyes to pay attention to more than that, and close the eyes instantly and note what was seen. If it was clear, flash the eyes at the next word the same way, and close them instantly. It often helps if the eyes are kept closed long enough between the flashes to recall some color that comes easily and rests the eyes. If the first word, or the first letter, is not clear, continue to practice on the first letter until it shows clearly. If not successful with this practice, instead of looking at the letter, look under the letter, at the spot of white paper. It is not necessary to stare to see a spot of white paper, and the eyes will relax. Keep recalling the fact that in order to see, it is only necessary for the eyes to remain passive, and allow the rays of light to do the work. That consciousness is very helpful in relaxing the tension which is causing the trouble. By looking at a letter, or a small word, for an instant only, and then closing the eyes for a few seconds, while the mind keeps all other thoughts out, it will very soon develop that the letters will be sharp and clear, and appear blacker than the other letters in that area. When one word has been cleared up so that it remains sharp and black, even when looked at for a good part of a second, it will be found that other words will readily be seen the same way. That is because the eyes are working better. It is worth while to be patient and insistent with one letter, or one word, until a satisfactory result is secured. A confident attitude of mind almost always accomplishes this in a few minutes.

Thin White Line

Another good practice is to begin at the left end of a line and allow the eye to travel across while looking only at the paper immediately underneath the print, blinking the eyes softly, and not trying to read the words. The value of this is the schooled effort of the mind not to try to see. The rays of light, at the same time, are reflected into the eyes, while they are relaxed. A more advanced practice of this technique is easily learned, and is generally very gratifying in results. While blinking softly, and directing the eyes from left to right, imagine, **make-believe, there is the finest thread of a line, whiter than the white of the paper, running across close under the printed line of letters.** Pay no attention to the print. Keep the mind on the white line. Then close the eyes for a few seconds, and continue to think of the white line only. Repeat by blinking across under the line of letters, and making believe the white line is there, and closing the eyes and waiting for it to appear. Very soon, some letters or some words, will stand out, here and there, apparently plainer and blacker and more widely spaced, than the words around them. This is because they have been more deeply impressed on the visual center, while it was relaxed and attentive; and it will be found that the vision has improved. Much depends upon the degree in which the mind is absorbed in the technique, and all thought of any difficulty in vision is forgotten in carrying out the practice. Each flash of new power in the eye is a proof of what can be accomplished, and the proofs come very soon.

When the print flashes clear, look directly at the print to read it - Central Fixation.

It is surprising, to one not familiar with the conduct of the eyes, to find the marked effects that are sometimes produced by the simplest kind of practices. One cannot realize, in a moment, the factors at work in a mechanism of which one has had no previous knowledge. To blink softly at a blank wall, of any color, or at a white sheet, or at a large dull black cloth, seems to some, a strange and trivial procedure. But when the trouble with the eyes is nothing more than a tension in the muscles, caused by a tension in the visual center, that very simple technique, when it is done carefully as directed, has a very relaxing effect. It is very easy for one to demonstrate that.

Let the strong sun shine on the closed eyelids for a period, with the body comfortable, and the mind entirely engaged with some pleasant prospect, and find how all the muscles feel soft and liquid. Then open the eyes and notice how much clearer everything appears. But do not demand, just expect, and do not let other thoughts intrude and distract.

Close the eyes and make believe that there is a familiar hill-top in sight, or a tree, or some other picture that comes readily into the mind. Float down the stream in a canoe. Swing in a hammock. Picture a new hat or pretty dress, or better, some most familiar face. Imagine a perfect pair of eyes—not your own eyes—just a pair of eyes that are normal and fine that can see the tiny spots, and carry colors in the mind, and distinguish things in the distance and never get tired.

Do not treat the matter like a strange and ominous and incurable disease. Think of astigmatism as the established facts prove it to be—a dysfunction, a misbehavior on the part of the eyes, a condition which constantly varies in its degree, as everyone who has it knows, and often disappears, one might say, without any help. There is so much accumulated evidence of the power of the mind over abnormal conditions of the body, even in the tissue changes of disease—authentic records accepted by the medical profession as proved cures, that it is no longer possible to disprove the reports of cured cases of astigmatism by merely dismissing them as a matter of personal opinion.

Those who have only slight disturbances of vision will be wise to remember that generally the different varieties of those disturbances begin that way. Severe conditions are found in eyes that had fine vision for many years. It is a simple matter to correct slight dysfunctions. When the habit is confirmed and one has become accustomed to dependence on spectacles, it still is often an accomplishment easily possible. Your vision is a very precious possession, take good care of it, but do not desert it, by enslaving it to a pair of glasses, and probably paying a life penalty for the neglect of a little simple care.

CHAPTER XXVII

PRESBYOPIA

WHAT is Presbyopia? That is a hard question to answer. The Medical Dictionary explains that it is not a disease, but that it is the physiology of vision due to advancing years, or to old age. It is also stated that the condition is dependent on diminution of the power of accommodation from loss of elasticity of the crystalline lens, causing the near-point of distant vision to be removed farther from the eye. Loss of elasticity of the crystalline lens means a hardening of the fluid content of which the lens is composed. This condition of old age of the lens is supposed to begin at about forty years. It is explained that it may begin prematurely, that is before forty years, and it is stated that in those cases the cause is unknown. These statements are very simple, but there are many questions which they do not answer. Although this is not an uncommon condition, it cannot be questioned that the great mass of people is not afflicted with presbyopia. **All those that have no difficulty with their eyes, at sixty, and seventy, and eighty, and ninety years of age constitute very plain exceptions to that which is offered as a sort of law.**

Those who have had the symptoms of presbyopia for a number of years, and then had a return of good normal vision, would seem to constitute some kind of a contradiction to the explanation that their lenses had degenerated into a hardened condition. There is no doubt that there are many such cases in evidence. In "The Autocrat of the Breakfast Table," Dr. Oliver Wendell Holmes refers to such a case in the following words:—"There is now living in New York State an old gentleman who, perceiving his sight to fail, immediately took to exercising it on the finest print, and in this way fairly bullied nature out of her foolish habit of taking liberties at five-and-forty, or thereabout. And now the old gentleman performs the most extraordinary feats with his pen, showing that his eyes must be a pair of microscopes. I should be afraid to say how much he writes in the compass of a half-dime—whether the Psalms or the Gospels, or the Psalms and the Gospels, I won't be positive."

Dr. Holmes had a fine sense of humor in his writings, but always a subtle keenness which was never trivial. Above all, he was a practicing physician, and it is unthinkable that he would publish a statement as full of vital human interest as that, and mean it only as a cheap and misleading joke.

In my own practice, Mr. Burns, previously referred to, for forty years had all the symptoms of what is called presbyopia—in brief, poor vision; he also had the symptoms of astigmatism, which are often indistinguishable; and certainly a positive near-sightedness. His sight was poor for distance, and he could not see to read without glasses. In a few weeks, his sight improved for distant vision, and he could accommodate to read quite small print a few inches from his eyes. This vision, which he recovered at eighty-five, he retained until his death at eighty-seven. Whatever was the condition of his lens, a wonderful improvement was secured by his own alert and enthusiastic attention. Mind over matter, if you like. But mind certainly—his eighty-five-year-old mind; and **eighty-five-year-old eyes.**

The common experience is that eyes gradually lose power in the later years of life. This is true of eyes as it is true of every human function. But there are those who retain their organic vitality until they have exceeded by many years, the "three score and ten" which was allowed them by that self-constituted authority in the Old Testament. We are told in the text books that some develop what is called presbyopia, prematurely, and the reason cannot be explained. Likewise, for those who advance to the end of a long life without developing any presbyopia, no explanation is offered in the text books.

"Presbyopia", according to the text books, is a condition of physiology, but it omits to remark that it must be an abnormal physiology. It may develop "prematurely", in early life. It may develop with the onset of "old age", at forty. It may develop forty years later. **It generally does not develop at all—according to accepted authorities, thousands of millions never have had it.** It may be present for many years, and then disappear as it came, without any apparent reason. There are many who have very poor vision for reading, for example, but who take off their glasses, and accommodate perfectly even in threading a needle. If it was caused by a physiological and inevitable hardening of the lens, Helmholtz must have been wrong, because every aged lens which accommodates disproves his theory. That is what a standard international text book means when it says that the Helmholtz Theory does not explain all the phenomena of presbyopia. The text book first approves of the theory of Helmholtz—which was that the lens accommodated by changing its shape, and which he offered only as a theory—and then points out that either he was wrong, or the theory of presbyopia is wrong. The conduct of the eye, in these cases under discussion, is physiological, as is claimed. But the physiology is dominated by the psychology. That is why the records are so different and so

variable. For the same reason, the condition is not a hopeless prospect. The correction of presbyopia involves the same treatment as is indicated in the cure of other physiological dysfunctions.

Eyes grow old, as do hearts and livers. But when vision begins to falter before the body is twenty years old and every other function is normal, it is not "a normal result of growing old." It is a manifestation of the infinite variety of the moods of astigmatism. When the old gentleman whom Dr. Holmes reported, cured his presbyopia at an advanced age, he responded to some impulses which aroused his conscious mind into action, and that which he demanded of his eyes, the visual center granted. There is a change in the power of vision which is spoken of as second sight. That old gentleman secured it. Who can say that the possibility of such an accomplishment was not aroused in his mind by some positive knowledge of the occurrence of what he demanded for himself? A simple denial that this happens, is not an answer to the question, when it is known that it does. To offer a contradictory explanation of the situation is not a scientific reaction. The practical interest in the discussion is the answer to the question as to the possibility of the cure of presbyopia and the procedure to employ. The same laws apply as are concerned in other abnormal visual functions. Correct the physiological dysfunction. Order the mind to constrain the mechanism of vision to function in a normal manner. This book contains all the directions that are necessary. For different cases, various practices are suitable. The results will not always be the same. It was the spirit of the old gentleman, not the method, that produced the result in his case. **Any case of presbyopia can be improved or cured.** That is the law.

CHAPTER XXVIII

MYOPIA AND HYPEROPIA

MYOPIA—near-sightedness—is described in the text books as the condition in which the retina is beyond the principal focus of the eye, so that the refracted rays emanating from a distant object, come together before they reach the retina. It is explained that this may be caused by an increase in the convexity of the cornea (the membrane covering the front of the eye), or of the lens, or by the pushing forward of the lens in a diseased condition. Or it may be caused by the rear end of the eye being pushed back, either as a result of a diseased condition, or by what is called an overacting developmental process. It is explained that the lens of an infant is excessively curved, and gradually flattens, and that the eyeball naturally grows longer to match the lesser curvature in the lens. In other words, in order to focus nearby objects, either the lens must be round enough, or the eye must be longer. The text books explain that in an eye which is near-sighted, generally the fault is that the lens has a proper curvature, but the eye is absolutely too long. The text books state that this excess of length, in fact, accounts for all, or nearly all, of the refractive errors, so that from the refracted error found, the length of the eye may be computed. The text books also state that this length is a variable factor. It may be extreme, even in youth, and continue to increase; or it may show only a very moderate degree. In advanced myopia this excessive length may diminish or disappear, or it may increase.

The books explain further that myopia occurs in school life, and among those who use their eyes on fine print or close work. On the other hand, it is not found in savages. Hence the inference is drawn that myopia is caused, essentially, by overstraining the eyes for near work. There are other facts offered, however, in the text books, for which further explanations were considered necessary. For instance, it is pointed out that only a fraction of those who are subjected to the strains mentioned become near-sighted. Various possible factors or influences are discussed as the causes of a predisposition in that fraction so affected. Hereditary tendencies are assumed—of various kinds and different degrees.

Some very interesting findings are recorded. Moderately near-sighted eyes, we are told, do not need glasses. In myopia of high degree, on the other hand, it is explained, satisfactory distant vision is not attained even by glasses. Also, in this class, even closeup vision is frequently defective. Further, those eyes with a high degree of myopia tire rapidly, are sensitive to light, and prone to see the specks called "**flying flies**". Changes in tissue structure, and changes in the fluids of the eye, are found. In eyes with the higher degrees of myopia, changes in shape may be found; then, again, they are not found. We are told, also, that an astigmatic, in trying to see, accommodates so that he can see objects clearly and, by so doing, often makes himself temporarily myopic; and by continuing such efforts he may make himself permanently myopic. But the books point out that in these cases, it is not possible to say that the myopia would not have developed anyhow, for the various suggested reasons. Besides the use of glasses, the books direct good light, always having objects as far removed as they can be seen, and strict limitation of the use of the eyes, even to the dropping of all studies, et cetera, for a long time, or a change of occupation. It is significant that resting the eyes frequently by looking at a distance, is pointed out as very advantageous treatment.

It is frankly declared in the book that the work with which many students have to struggle should be reduced to the proper standard. The way they are taxed, both in school and at home, is detrimental, not only to their eyes, but certainly to the mental and physical development of unfolding powers. Suitable physical exercises should be made part of the curriculum, and should constitute an intermission between hours of mental application. Work should be done under favorable conditions. Proper ventilation is very important. Seats suitable to each individual child should be provided. Children should be taught correct posture. These precautions are to prevent the occurrence of any abnormal tension. It is stressed that illumination should be of sufficient intensity—generally in the past the light has not been sufficient. There should be no glare, and no contrasting shadows. The light should be diffused, as the sunlight is diffused; and it should not be directed into the face. The above suggestions are contained in text books on the eye. I have referred before to a book which directs the use of very poor light. It proposes to shut out the sunlight, and pictures a room with shadows on everything, and a dim light from semi-indirect illumination by poor lamps on the ceiling.

"Truth is like the spokes in the hub of a wheel." There are many spokes. Who would think of building a wheel and leaving out one spoke? Crécy wrote that the fate of a battle might depend upon a cotter-pin (meaning that one wheel coming off a cannon carriage might turn the victory into defeat). Oliver Wendell Holmes reminded his hearers that when a discussion had been decided, it had happened that a member who then threw a fact into the ring like a bomb, changed the minds of the other members. Columbus believed, from known facts, that the world must be round, and on the way to India he found America. In the text books on the eye many specific facts are recorded with meticulous exactness. But one does not find that any scientific research has been made to enlist the power of the visual center in correcting an abnormal function on the part of this mechanism described as psychic.

The doctor who called Dr. Bates a quack, because Dr. Bates had already enabled medical men to discard their spectacles after that doctor had fitted them, deliberately ignored the known fact that many have discarded their spectacles because they had discovered that their eyes had ceased to be near-sighted, and they could see better without the spectacles. Spectacles are being discarded today for the same reason. The text books record data which plainly implies that patients under observation could also discard their spectacles. But it does not seem to have occurred to these students of the eye to follow the path taken by research workers in the other fields of medical science, and investigate the cause and the significance of the phenomena which are strewn all along the pathway of their own field.

Dr. Bates made his discoveries because he had a mind which could not help investigating those phenomena. It was not hard after that. Compared to some other fields it was very simple. The facts are spread out in plain view. All his work was right in the clinic—his problems, his discoveries, and his success.

The principal treatment for near-sightedness recommended in the text books is artificial lenses. Best there is no promise that the spectacles will correct the fault in vision which causes the near-sightedness. Sidler-Huguenin, a recognized international authority in this field, stated frankly that glasses are "of but little avail to prevent either the progress of the error of refraction (near-sightedness), or the development of the very serious complications with which it is often associated." He wrote that of the thousands of myopes treated by him the majority grew progressively worse, despite his skill in fitting their glasses. He disagreed too, with some conventional suggestions. For instance, he believed that using the near-sighted eye was better than sparing it, and recommended that it be used.

Artificial glasses, therefore, are never a remedy; they are only an expedient, and are, in fact, an assertion that there is no treatment which will cure, instead of increasing, the defective function of vision. The near-sighted eye, under the care of the best men who are fitting glasses, commonly becomes more and more near-sighted, and needs to have new, stronger glasses constantly. There is no apparent effort, or even consideration of any investigation looking toward the correction of the abnormal functioning of the mechanism that is involved. This sounds like an extreme statement, but the situation is obvious. All the preventive measures cited in the books have been in use, and at the same time the artificial lenses are rapidly increasing, and are still being given the first place as the relief suggestion. In Germany, they were tried for years in vain. They were used by Sidler-Huguenin for a life-time and pronounced of no avail. The men in this field claim that near-sightedness is caused, primarily and principally by inherited tendencies. They consider that the various unfavorable influences, such as faulty lighting, extreme or prolonged use of the eyes at near work or minute detail, improper postures, et cetera, are secondary influences; and the record seems to support such a contention.

The implied verdict that myopia is incurable is untenable. Allowing for all the possible inherited tendencies, and the aggravating influences in the environment, such an attitude is still out of step with the march of progress in the science and art of the practice of medicine. Alone, the work of Madame Montessori is an answer which silences it.

The German professor previously referred to, in his letter to me, claims that in what he calls a true case of near-sightedness, which he says is always inherited, the condition cannot be cured. But he also writes that so-called near-sightedness can disappear. He refers to a case with which he is familiar—a man who had been near-sighted until he was twenty. His condition varied considerably. **He found his sight very much improved when he was at sea**; but always quite poor when he was in Munich. When that specialist examined his eyes, at the age of thirty-three, he found him far-sighted instead of nearsighted. The Professor accounts for the history of those eyes by explaining that the near-sightedness had been caused by an accommodation muscle tension of increasing severity and exceptionally long duration. The far-sightedness which had displaced the near-sightedness, he would probably account for as a new and different muscle tension. The significance of his explanation is that it explains the myopia and the hyperopia in the same way as Dr. Bates does. The professor classifies the record of this case as a psychological disturbance. If any condition is due to an inherited tendency and an unfavorable environment, insanity is a specific example. It likewise was treated as a hopeless and incurable misfortune. It now is being cured, and the methods and the success in this work, are both increasing. Strange to say—or is it really strange?—the methods are actually very simple—just as simple as the method of Columbus. Like Newton's discovery of the law of gravitation, the cause and the cure of myopia, likewise are to be revealed by a study of the apparent phenomena. In this field they are in plain sight, and their significance is clear.

It is not necessary to discuss the complicated cases of myopia, in which there may be tissue changes, that probably were produced by continued abnormal function, and which might possibly be changed back to normal by proper treatment. Such tissue changes, cured by corrected function, are in evidence. Ulcer of the stomach is a specific and a common illustration—it comes and it disappears, spontaneously, and may be habitually recurrent. Cures of that condition have been reported by competent specialists who used, in one series of thirty cases, nothing but mental treatment. The majority of myopes have no tissue changes in their eyes. The degree of myopia varies considerably in most cases. Often the condition disappears spontaneously, in young and in old—after it has been present a few weeks, or after it has been present for many years. That has happened without the conscious knowledge of the owner of the eyes. It is being relieved too, in young and old, sometimes very promptly, by influencing the subconscious mind to do deliberately, upon an order, what it often does spontaneously, or without any conscious order.

It may be that too much is being written here, about the background and the psychology and the mechanism involved in this question of curing myopia. Often I have been asked, impatiently, "but what do you do?" Some "first visit cures" have occurred with very little explanation or effort. The attitude of the mind of such patients is already set, or changes in a moment to a receptive attention, which is not hindered by the conscious or unconscious impression that nothing else but glasses can help their eyes. This book is intended as a teacher, and must meet in advance the questions that naturally arise under the conditions. I have tried to anticipate the difficulties that the patients may meet, by giving their minds assurance in the substance of things hoped for, the evidence of things not seen.

Everyone is familiar with the mental experience of having held a belief, about a person or a subject, which seemed to be warranted by apparent facts, and discovering, sometimes, that the facts were misinformation, or that their judgment and conclusions were unwarranted. The prevalent conception about myopia is a hardened-in-cement mental attitude that the only answer is spectacles. The first step toward a cure must be to become conscious of that conception, reason it out, and then obliterate it, and forget it.

Professor Herrmann of Breslau, reporting upon his observations of over ten thousand children in German schools, found in the village schools one per cent of myopia, twenty to forty per cent in the higher schools, thirty to thirty-five per cent in the gymnasia, and fifty-three to sixty-four per cent in the professional schools. Similar investigations in other countries confirm his findings. Only a few of these cases were obliged to wear glasses. The strain of near work was blamed for the conditions. The explanations offered are contradictory. Tscherning, a noted authority, wrote that: "A satisfactory explanation of the mechanism by which near work produces myopia, has not yet been given." Everbusch wrote: "It is not yet determined how near work changes the longitudinal structure of the eye." But it is established that myopia is found in those who never went through the stress of near work. Myopes are therefore divided into two classes, one caused by near work, and one not caused by it. But a comparative analysis of the statistics reveals that often the higher percentage of myopia is found under most favorable conditions. Also, the heredity factor is not sustained by some findings. For instance, **the Indians at Carlisle are quite subject to myopia, although their heredity would not warrant that expectation. The constant near work of ancient needle women, and the marvelous gem carving of artisans who spent their lives at it in the early centuries, as their fathers had done, did not develop myopia, or pass it on as a heritage.**

If one will accept the explanation that myopia is caused by a tension in the visual center in the brain, that law can be taken as an interpretation of every situation found in the discussion. The savage can become tense, as well as the student. The child favored with every mechanical advantage, may still have a mental concern, conscious or unconscious. The myopia may appear in adult life because of a new situation. The increase, or decrease, or disappearance, or reappearance, or any variation, will also be explained by the condition in the control center. That is the answer of Dr. Bates.

In the endeavor to cure **myopia**, the purpose is the same as with every other dysfunction. It is never an effort to teach the eye how to function correctly. That mechanism knows how to function, and no man knows how it is accomplished. The only purpose is to relax the abnormal tension in the visual center. This simple conception should be fully realized. I have often found that a patient is unconsciously oppressed with vague idea that it is necessary to teach the eye all over again, how to perform in the right way. **When the visual center has been relaxed—relieved from the stress that is constraining it, the normal function returns to the mechanism, and sight is normal.** Those who have success in a short time, are not inhibited by disturbing impressions that are founded on misinformation. So let us begin with the encouraging confidence that the eye knows what to do, and it will help very much toward a better understanding of how the practices operate.

It is helpful to remember that many have ceased to be near-sighted. This experience is so common that it cannot be questioned. Often this happens late in life, the patients finding that they have secured what is called second sight. Oliver Wendell Holmes wrote of such a man. Again, many women in later life are near-sighted for reading and other purposes, but can thread the eye of a fine needle without difficulty. In previous chapters I have reported some typical cases in which myopes have recovered good normal sight after being nearsighted for years. These cases are in evidence, and were secured by the method of Dr. Bates. In special chapters the details of practices are given.

When relaxation is secured, whatever special technique is used, myopia is relieved just as other tension conditions are. There are some practices however, which are more suited to this particular variety of abnormal vision. The specific fault is a failure to adjust the focus to objects that are not near to the eye. Dr. Bates claimed that the myopes cannot see objects that are not nearby because the eye is straining to see them. When the eye stops straining, the light rays reflected from those objects are permitted to focus on the retina. It is helpful to remember, and to remind the eyes constantly, that when the rays of light are permitted to register properly, the difficulty disappears. This means that the rays produce the impulse, and the normal eye acts automatically, outside of the consciousness. The process is essentially different from a voluntary muscular effort. The trouble is caused when the eye tries to see—instead of allowing the rays of light to enter the eye like the sound waves enter the ear, and the fragrance of a rose impresses the sense of smell. Therefore, the first idea to impress and retain, is that **one must stop trying,** and adopt an objective attitude of mind which occupies the undivided attention with the practice one is carrying out. Such an attitude of mind engenders relaxation in the visual center and that is all the practice is intended to accomplish. When a myopic eye improves in vision, as it does to some degree constantly during the day, some measure of relaxation has been produced spontaneously. When the abnormal tension recurs, it hinders the eye again. When one ceases to be near-sighted, spontaneously or under treatment, the tension has been eliminated. It is idle to ask, quizzically, how such a serious condition of eyesight can be produced so easily, and cured in such a simple manner. The facts are in evidence, outside of any knowledge of the method of Dr. Bates. The explanation is in accord with other similar recorded reactions in other fields of psychologic research.

The condition called **hyperopia** is essentially similar to myopia. The effect on the eyesight is just the opposite from the effect of myopia. It is called far-sightedness, because there is less difficulty in seeing objects at a distance than in seeing when they are nearby. But actually, sight is poorer at any distance than with the normal eye. Although the effects on eyesight are so different, the causes of the condition, as given in the text books are the same as the causes given for myopia, and the dysfunction of vision is of the same nature.

Hyperopia, commonly spoken of as far-sightedness, is described in the text books as a condition in which the retina lies in front of the principal focus. The ordinary hyperopia of young persons and adults is an axial hyperopia, due to the fact that the eye, which was primarily too short, has not, in the process of growth, elongated to the point of producing emmetropia (an eyeball of proper normal length). It is stated that a very large proportion of adults have a hyperopia of this sort, which may, therefore, be regarded as a normal condition. Other forms of hyperopia are described. For instance, when the eyeball is not too short, but there are changes in the curvature, density, or position of the lens, or in the curvature of the cornea, or there are abnormalities of development, or even conditions of tissue change. Different irregularities in the condition and the conduct of these eyes are described. In this chapter a case report has been quoted, from a German specialist who found a patient far-sighted at thirty-three, who gave a history of having been near-sighted until twenty. The degree of the near-sightedness was variable. **At sea he was not near-sighted, but in town the near-sightedness returned. At thirty-three, examined in town, instead of being near-sighted, he was far-sighted—just the opposite condition. In other words, that young man's eyes must have been longer, changed their shape back and forth, according to circumstances, and at thirty-three were found to have an entirely different shape.** The German professor did not report any tissue changes in the eyes, he said that the conditions were caused by an extreme and long continued muscle tension, and the changing shapes were due to psychological disturbances. In the text books it is explained that so-called far-sighted persons do not necessarily see better at a distance than others, and may not see even as well. The difficulty is in seeing objects at a close range, and this sometimes is quite marked.

If the four muscles which pass forward on the four sides of the eyeball, contract sufficiently and in unison the eyeball is made shorter in a horizontal direction, producing the condition described in text books as an axial hyperopia. Considering the case reported by the German specialist, and his explanation that the changing lengths of the patient's eyes were caused by abnormal muscle tension, the situation can be interpreted by the explanation of Dr. Bates that **the two muscles wrapped around the middle of the eye sometimes made the eyeball too long, and later the four muscles on the sides made, it too short.** For that reason, the treatment for hyperopia would be the same as for myopia.

CHAPTER XXIX

STRABISMUS

SQUINT, which technically is called strabismus, is an abnormal condition in which one eye deviates, or both eyes deviate, instead of pointing directly toward an object being looked at. The customary observation of such conditions is so casual that very few have any knowledge of the different forms in which squint is recorded. The abnormal deviation may be toward the nose, or outward, up or down, or in some oblique direction. When both eyes squint, they may assume similar abnormal directions, or may deviate in directions that are dissimilar. In some cases both eyes may look straight at the same object when both are uncovered, but when covered, either eye may deviate in any direction. That specific type of abnormal action is spoken of as insufficiency.

Deviations may be constant, always present; or intermittent, not always present. They may be continuous—when the degree of deviation is the same during distant and near vision; or they may be periodic—when the degree is greater for near objects than for distant ones, or the reverse. They may be concomitant—when the amount of deviation is constant; or non-comitant when the degree changes, as the eyes move in different directions. These different conditions are often mixed, and the various combinations have specific names. Deviations always confined to one eye, when eyes are open, are known as monocular (one eye), right or left; and are called alternating, if sometimes one eye deviates, when both eyes are open, and sometimes the other eye deviates. There are other details described, some of them very intricate. There may be good vision in both eyes, but the refraction may be unequal. This inequality of vision may vary, one eye or the other having the better vision, and that variation may be irregular. When only one eye deviates, it may have very little vision.

The reasons given in the text books for the development of squint involve so much intricate description and explanation that they would have no place in a book like this, which makes no pretense of being a text book. The predominating fundamental cause is an inherited predisposition. Inequalities in the two eyes, involving their refracting powers, and excesses or deficiencies in functioning, are discussed at great length. The poorer sight of one eye, because of some of these abnormal factors, is sometimes an apparent causative influence. It is explained that through different kinds and degrees of faltering co-ordination, there is a lack of development in the fusion-faculty. The fusion-faculty is a function of the mind. It acts, so it is explained, by means of a cerebral nerve center, called the fusion center, the site of which is undetermined. When both eyes are normal, and both look, there is solid or stereoscopic vision. That faculty of the mind fuses the two retinal images, so that an object appears single and clear. When a clear single image is not seen, different abnormal reactions are produced. These reactions have different effects on the mechanism of vision as a whole, and specifically on the variable conduct of the eyeball.

In standard text books some of these abnormal functions are attributed to hysteria, traumatic neuroses, neurasthenia, anemia, and debilitated conditions however caused; and it is stated that they occur even in those who are apparently healthy. It is common knowledge that the **beginning of a squint is often noted following some sickness, generally in childhood. It may follow a mental shock. A girl of seven was thrown down by a big dog, and the result was an instantaneous**

squint involving both eyes. The text books state that certain causative factors are not located in the muscles that move and may hold the eyes in abnormal positions. The books point out that until very late in the development of most cases of squint, the rotations of the eyes are normal, indicating that the power of the muscles is neither impaired nor excessive. The books conclude therefore, that the changes which take place are doubtless central, due to excessive stimulation of the center for one movement producing inhibitions for the center of the opposing movement, and vice versa. It is only late in the course of the condition, so it is explained, that there is developed an hypertrophy, or contracture, of one muscle, and atrophy or stretching of its opponents. The effects of such unequal developments are the causes assigned for the various abnormal positions found in cases of squint. We are told that a moderate proportion of cases of squint do, however, develop from a true muscular defect. Sometimes abnormal conditions of the tissues of the eye interfere with the fusion-faculty, and a complicated mechanism forces the affected eye to conduct itself in an abnormal manner. The accumulation of findings which have been recorded with infinite care has not yet enabled the text books to offer any specific course of treatment that is aimed at the admitted fundamental central cause of the disorder.

We are told that the many abnormal functions, on the part of the different factors involved, are only secondary conditions. In the ultimate analysis, the books explain, the primary fault is in the conduct of the central control. That central control is responsible for the various and complicated interlocking abnormal stimulations and inhibitions. The earlier practice of cutting the muscles attached to the outside of the eyeball proved so unsatisfactory that it is not being offered as the remedy to be used at first. It is stated specifically that whether an operative procedure does, or does not, make the eyeball stop pointing in the wrong direction, the operation has no curative effect on the sight of that eye. Often any correction secured in the position of the eyeball is lost, sooner or later, or it is replaced by some other abnormal position. The hope for the relief of this specific disorder in the mechanism of vision is based primarily and principally upon whatever correction may be secured by treatment with artificial lenses. It is stated that when there is an "out-growing" of the squint, the defective vision of the formerly squinting eye remains, and real vision, with normal co-operation by that eye, is rarely restored. That word rarely, in the standard text book, is a pregnant word. It is not explained. Why not try to account for those admittedly rare cases? Some of the grandest discoveries in the field of medicine have been made, and relief from epidemics has been secured, on phenomena less obvious and more obscure.

Thus far, I have described briefly, the explanations one finds in a standard text book regarding the many different forms of squint, and the theories which are offered to account for the abnormal conduct of the different factors involved. I will now present the conception of Dr. Bates which recognizes that the fault in the mechanism of vision originates in the center in the brain, and endeavors to correct that fault by influencing the conduct of that center. Since it is established that some eyes afflicted with squint, as reported in the text books, not only become straight, but recover normal vision, there is, then, a way to actually cure them. That way is the way by which they cure themselves. The laws of that way are not known. But the symptoms are quite evident, and the causes are indicated in what is known of the mechanism. The established facts would seem to point out the line of endeavor. It is that line of endeavor which is the foundation of the successful methods of Dr. Bates.

Suppose we consider some plain facts by recalling for examination some examples of what occurs. For instance, that girl of seven years, who was knocked down by a big dog. In that moment, both of her eyes became crossed—she had a typical case of strabismus. This was not the result of a continued straining at nearby, or at far-off objects (which is given as the commonest cause of strabismus). It was an instantaneous result caused by an extreme mental shock.

A case of my own illustrates a different aspect of the subject. A boy of six who was bright and reliable mentally, had a peculiar, alert, tense, mental attitude. Both of his eyes were constantly crossed, pointing inward. The degree of squint varied, and any excitement would so stimulate the convergent obliquities of the two eyes, that they would jerk around without any order. I have frequently stopped that turmoil of his eyeballs in a moment by distracting his mind from some disturbing thought, and interesting it in some pleasant idea. Several times I had only to say quietly, with a friendly smile: "Put on the brakes little man, your front wheels are shimmying." By different practices of the Bates method his eyes gradually became straight. The vision of both of his eyes also is normal. If it is objected that the practices used did not influence the cure of the condition, there are two answers. First: an unsupported contradiction like that is not a scientific statement. Second: if he is one of those cases which secure a spontaneous correction of the squint and also recover good normal vision, what explanation is offered by the objector for the recovery to normal, or rather, why is some explanation not sought?

A young woman of twenty-two came with the following record. Her left eye had been crossed from earliest childhood. At twelve years of age the left eye became straight, and the squint was transferred to the right eye. She had worn glasses for ten years. During two hours of treatment in my office the squint in the right eye disappeared entirely. She discarded her glasses at once. It is two years now since that treatment. Her eyes have remained straight, and she has good normal vision. That record is correct to date. The patient is employed as an accountant with a well known San Francisco firm.

Her brother had a right eye crossed for a lifetime, and it is so crossed now. There are three other cases of squint in near relatives, so an obviously hereditary tendency is a factor in this case. Her cure was a plain illustration of an autosuggestion. She was convinced and confident, and ready for action before she came to me, through the reports she heard from an intimate friend, and her own mind cured her.

An illustration of the opposite influence of mind was a case of mine in which a girl of ten had first one eye crossed before the age of two, and the transfer of the squint to the other eye during the next year, while wearing spectacles under the direction of an eye specialist. The years of treatment, and the attitude of her parents, constrained by fears of arousing an inferiority complex in the child's mind, had gradually developed an antagonistic feeling toward any further effort, and she was not in the least degree responsive. Any effort she made was either under protest, or without any confident and interested attention, and the part of her mind which could have cured the condition never entered into the endeavor. There was no success, and the undertaking was discontinued.

A similar case was a boy of ten, stupid and cantankerous, and blocked by a natural mental inertia. A considerable improvement was secured in his near-sighted and astigmatic vision. But he would relapse, and lose entirely some of the lines on the Snellen Card, which he had seen clearly a few days before. In response to enthusiastic encouragement in practice, he would show a deliberate indifference, or even resentment. He demonstrated, unconsciously, by his own personal feeling, the antagonistic part that the mind can play in a correction of the abnormal function.

Squint Treatment

A girl of eight, whose father and mother each had a squint in one eye, had an inward squint in her left eye since earliest childhood. They were patients of mine before I knew of the method of Dr. Bates. The girl's mother brought her to my office to see if any improvement could be accomplished in the position of her eye. The crossed eye could see as well as the normal eye when the normal eye was closed. After interesting the child in general conversation so that she was amused, and had no thought of her eye, I suggested a new game. She was to keep her eyes closed until I asked her to open them, and expect to see things I would tell her were in front of her. At first I suggested some grotesque objects, for instance, a tame bear on roller skates, a very red dog with a very black tail, and a chair that had a kettle of boiling water on it, with red steam corning out of the spout. We had some good laughs, and I kept warning her that if she opened her eyes, the game would be off. Soon I asked her to draw a line in front of her face, about six inches long, from left to right. When we had succeeded in that, I called for a line starting at the right end of the horizontal line and slanting downward toward the left, so that when it was finished it would be directly under the left end of the horizontal line. It did not take long to teach her to draw the two lines in the air promptly when asked. Then she was encouraged to tell us what the two lines made her think of. When she was asked to make believe that she was in school, she instantly replied that it was a seven. After some persistent assertions that if she would keep looking she would see something to the left of where she had drawn the seven, there finally came a joyful exclamation that she saw a six. By the same method, and making her point to the seven, and point to the six, and then point to the right of the seven, she was encouraged until she exclaimed triumphantly that she saw an eight. I kept reminding her that she must not open her eyes.

Leaving the figures, I told her there was something black in front of her eyes. She insisted there was not. But suddenly she said: "Yes, there it is—it is my dog." When I asked for something red, it was harder, but I promised her a twenty-five cent piece if she saw something red, and finally she replied gladly that it was there. This time it was a camp fire, and her dog was there, and some people. Her mother sat facing her, and I warned the girl I would ask her to, open her eyes in a moment, and directed her to look first at her mothers face. When she opened her eyes, the crossed eye was perfectly straight. Her mother looked at the straightened eye for almost a minute and the eye remained straight, in the laughing face of the child. But then the mother faltered, and looked at me with a smothered exclamation. Instantly the eye popped back to its old abnormal position.

There have been some skeptical comments on the possibility of the child actually seeing the figures, and the dog and the fire. Those critics have not realized that all sight is some thing which happens in the brain. They have not realized either, the flashing of fresh young minds, which are not yet hardened into the automatic habits of later life. They have not tried to imagine the mind of a young girl telling her doll about the new baby, and carrying on a conversation which shows that her mind distinguishes between the live baby, and the make-believe doll, but still, somehow, makes the doll a thing which understands and responds, and makes of herself a little mother. That is why a wise man once said that a little child can teach us, if we try to read what is in the picture. The parents of that child had their last quarrel soon after that first lesson, and separated, and the mother took the girl away from Berkeley. I have told this story because it illustrates how the visual center controls the squint in an eye. The boy I reported, who still lives here, showed in a graphic way what an added mental tension can do to an eye that is squinting. This girl demonstrated how a condition of mental relaxation can relax the tension and correct the abnormal position of the eye.

Few have not experienced the rigid tension in the body muscles caused by some shock or some fear, and the soft relaxation which followed when the cause disappeared. Why refuse to admit that the eye muscles can likewise be stiffened by a mental tension, and likewise be relaxed when the mental tension is relieved—especially when there is abundant proof that it is frequently happening? **Such a shock caused a psychic blindness in my own eyes, two hours after I felt myself drowning.** It was an hour before my sight was clear again. But that fearful shock left such a tension in my visual center that for thirty-seven years one pair of glasses after another did not restore my sight so that I could do my work without the lenses: I have had better vision without them now for ten years—even after the prolonged subjection to an artificial control—because my mind learned the cause and the cure for the condition. In the text books the same disorder in the mechanism of vision is assigned for astigmatism as that assigned for strabismus.

Produce Squint to Learn how to Avoid it, to Cure it.

Many can produce a strabismus in one eye, or both eyes, at will. I saw a man make his eyes roll in unison like a moving figure eight; and he could hold them wherever he wished. A famous German movie star, in Hollywood, acted realistic parts in some very tragic scenes. Several times in the performance, at a very tense moment, his eyes showed an extreme strabismus which disappeared instantly when he had finished that specific portrayal. Such well-established facts are the warrant for a technique in the Bates method that is to be used in the treatment of strabismus. **In some cases, when a patient demonstrates that it is possible to make the eyes squint more, or squint differently, the realization is forced on the conscious mind that the abnormal condition is not unchangeable, and is even within the control of the mind. When such a new state of mind is secured, a fine beginning is already established**. The new mental attitude not only develops a new hope, but soon finds new experiences with the eye through the co-operation of the visual center in the brain. Dr. Bates reported one case of a woman brought to him by an ophthalmologist, because her squint was so complicated that the other specialist was puzzled concerning treatment. She was taught to change the degree of the squinting eyes, and with that beginning the fault was soon corrected.

In the text book it is explained that all the different forms of strabismus are caused by some specific strain or strains, and that the strains all originate in the control center in the brain. This explanation warrants a claim that relaxation—which is a release from abnormal tension—removes the cause of the disorder in the function. **If the squint is caused by poor vision in one or both eyes—which poor vision itself is caused by some abnormal tension—relaxation improves the poor vision, and the squint is relieved.**

Another technique requires the patient to learn how to see two lights when looking at one. This is not hard to learn. It is sufficient to stare hard with the eyes, while looking at the light, and imagine there are two lights. It is easier to accomplish this when the light is a candle, as the flickering flame facilitates the illusion. If the sight of one eye is better, it will help if a blue glass is placed before it, so as to interfere with the vision of that eye. When such an illusion has been produced, the eyes should be gradually relaxed in the manner directed before, by alternate palming or swinging, and the mind will have been instructed by a helpful new experience. **A variation of this technique is to imagine the two lights when the eyes are closed**. This requires a closer attention, but is a proof, when accomplished, that the visual center is giving more co-operation.

With quite young children a most effective method is to swing them around so their whole body leaves the floor, holding them by the arms, and having them look into the face of the adult swinging them. The exhilaration produced has a most relaxing effect. Another excellent practice with children is to use a number of small objects of different colors and sizes. They can be taught the names of the objects, and the names of the colors, as they see them nearby. The objects should then be gradually removed farther from their eyes, as they are able still to see them clearly. If care for all the details is observed, and a daily practice is continued, the mind will be interested, the vision improved, and the squint gradually corrected.

These specific suggestions are illustrations of practices especially adapted to the treatment of squint. Each case, naturally, has to be studied individually, and the practices selected which seem to suit the specific condition present, and the individual mind and temperament. In the several chapters devoted to detailed descriptions of techniques, there will be found practices suitable for every type of strabismus.
Modern Bates Teachers apply left and right brain hemisphere activation, integration, body movement, color treatment and additional methods to cure Squint.

CHAPTER XXX

CATARACTS

CATARACT is the name given to an abnormal condition of the eye in which there is some opacity in the lens. This happens so frequently in later life that many are familiar with the story of the affliction. Very few however, have any knowledge of the many diverse manifestations of changes in the lens which produce different kinds and degrees of opacities, in young as well as in old. There are so many different types of cataracts that one ophthalmologist jokingly remarked that he thought there were fifty-seven varieties.

The opacity may be found in the capsule covering the lens, as well as in the lens itself. It may consist of a hard, dense tissue, or be of a softer and less opaque consistency. It is found in widely different shapes and sizes. The spots may be sharply defined, or diffused over a large area of the lens. A small, hard spot, in the middle of the lens impairs vision much less than does a soft and thin opacity which is spread through the width of the lens. Some spots on the margins of the lens are hardly discernible, and do not interfere with vision. The various types are subject to a difference in the nature of the changes which take place in the character of the tissues. Some are described as partial-stationary, because they are permanently limited to the same dimensions. Others are called progressive, because they spread progressively over a larger area of the lens.

Cataracts are spoken of as congenital when they are found at birth, or discovered later when they attract attention. Those are supposed to be due to some fault in the development during foetal (fetal) life. The form which is acquired generally appears in later life, but may appear at any age. A cataract may develop so quickly that the lens may be completely opaque in a few hours. It may develop so slowly that its progress continues during many years. The opacity may develop in most irregular stages—increasing for a time, remaining stationary for a variable period, and then increasing for another period only, or progressing continuously until the lens is completely occupied. That is one reason why, sometimes, it is not possible to estimate the probable outcome and the time the process will take. Cataracts may be hard or soft. They may fill the lens with an excess of fluid until it swells. This excess of fluid ultimately is lost. The lens is then spoken of as being "ripe". Often it is difficult to estimate when a cataract is going to become ripe.

In the text books many conditions are given as possible causes of the development of cataracts. General diseases is a term that is used, and diabetes is mentioned specifically, and toxic conditions, and epilepsy, and hysterical convulsions, poison and injuries.

The treatment described in text books includes the correction of any apparent abnormal condition when it is possible. It is explained, for instance, that when the system is relieved of the excess of sugar present in diabetes, there may be a relief from the cataract. Therefore disturbed chemistry, or the presence in the system of a poison, or some toxic condition, may cause a cataract. Also cataract may be caused by whatever abnormal conditions may be developed by hysterical convulsions. But in many cases where cataracts are present it is not possible to find any indications of the presence of any of these conditions.

There are many facts relating to cataracts which I have not been able to find in text books. A patient of mine who had been treated for developing cataracts during several years, by a well known ophthalmologist, came to me finally with the hope that the Bates method would relieve the condition. She had been taking medicine and visiting her eye specialist regularly until some months before she came to me. She stopped the medicine and all treatment because the cataracts were growing steadily, and she was afraid she would lose all her vision. The ophthalmologist had found no indications of any abnormal condition of the system; and as her family physician, during some years, I had never found any abnormal condition, except a mental tension which showed itself only in her conversation. Heart and blood pressure were always normal, and every examination and analysis indicated was carefully carried out to assure her there was no apparent underlying abnormal condition of organs or chemistry. Although she knew of my work with the Bates method, and discussed it with me and with the eye specialist, she never considered trying it until the increasingly serious difficulty with her vision made her determine to try it as a last resort. Her ophthalmologist had told her the cataracts were not in a condition to be operated upon.

During two weeks of almost constant practice of the various techniques of the Bates method, she secured such an improvement that her eyes were almost normal for near and far vision, and were satisfactory for continued reading, and every other use of daily life. This case was under my care for several years. Her vision continued to be satisfactory, and was better than average for small print and sewing. It was quite variable, however, because her nerve tension became more apparent. Her blood pressure was an average normal when I last took it, at eighty-two years of age, and her heart was in good condition, and there was no evidence of any other organic or functional disorder. Sometimes she came with complaint about some dimness of vision, or change in her power of vision from hour to hour; but even then she would demonstrate by reading fine print readily, and reading the ten-foot line on the Snellen Card at ten feet, that her vision was fine for a woman over eighty years old. She had no difficulty in seeing her way clearly in the midst of street traffic. Nevertheless there remained in her mind the memory of the very poor sight she once had, and these recollections would sometimes impress her mind so vividly that she would have spells of poor vision as a result.

Another case of my own, recorded in the chapter on children, illustrates just the opposite type of cataract, relieved by the same treatment. During an attack of poison oak, with both eyes closed by the swelling of the face, a boy of fifteen developed a cataract which filled his right eye, and was there when his eyes opened. The cataract must have been produced by the toxic condition. During four months of treatment by an ophthalmologist, no least improvement had been secured. Three weeks after I first treated him, three-quarters of the cataract had disappeared, and in a few months there remained no trace.

A different aspect of the subject is illustrated by the case of a woman over eighty, who had very poor vision due to cataracts in both eyes. She discarded her glasses at once, and for the remaining two years of her life she did not use them again, and she could read and write and had satisfactory vision for all purposes. The most significant thing about this case, was that there was very little difference in the appearance of the cataracts. It seemed that the change took place in her visual center. An improvement was apparent at once. Her eyes began almost immediately to respond differently to the same rays of light which before had not registered any conscious impression on her mind. This may seem strange to one who has never deliberated over the many explanations in standard text books on the eye, which point out that better impressions are made on the conscious mind, even with the same rays of light reflected from the same objects, when the visual center is aroused by the attention and desire of the will. This is true in every other field of the work of the mind, and we are all familiar with that fact. It is only because we are not accustomed to giving any attention to the ceaseless functioning of the marvelous mechanism of our eyes, that we are surprised when we are told that they, too, function poorly at times, because our mind is paying no attention to them, and they will respond with more power when we ask them to do so.

Dr. Bates reported a demonstration made by a professor of anatomy before a group of observers. When the professor held the eye of a dead cow loosely between his fingers, the observers could see that the pupil was perfectly clear. But whenever he compressed the eyeball so as to flatten it in the middle, the pupil became completely opaque, and it became clear again as soon as the pressure was released and the eyeball resumed its natural round shape. The opacity was a cataract. Dr. Bates suggested that this experiment can be demonstrated by anyone who is interested. Dr. Bates claimed that patients have increased the density of a cataract by a voluntary effort to harden the eyeball. This was done through the compression of the external eye muscles by means of a tension produced deliberately.

Conversely Dr. Bates claimed, that by relieving an abnormal tension, through the practice of techniques which he described, patients have improved the condition of different forms of cataracts temporarily, and made the improvement permanent by continuing practicing. **The various practices suitable for this relief from the tension causing cataracts are given in preceding chapters Palming, and Sunning, and Shifting the Central Fixation, et cetera.**

CHAPTER XXXI

SOME OTHER CONDITIONS

IN THIS chapter I shall report some cases in my own practice which illustrate the value of the Bates method in abnormal conditions of the eye which are rare, as compared with the conditions of the eye that have been discussed in previous chapters. The causes of these conditions are often obscure. In the text books certain causative predisposing diseases are mentioned, but often none of those mentioned abnormal conditions of the body are present. The purpose of reporting the following cases is to show that the abnormal conditions of the eye discussed were relieved and normal sight recovered. In these several cases, the treatment was undertaken either after treatment by a specialist had proved to be of no value, or after a specialist of recognized standing had assured the patient that no cure could be promised.

Iritis is an affliction in which the iris is inflamed. This almost always causes severe pain; and generally the vision is badly impaired or entirely lost. Often it is a so-called recurrent condition, disappearing entirely and reappearing sooner or later. In other cases the condition is constant.

A colored man, mentioned in a previous chapter, who gave a record of having been treated during seventeen years of recurrent iritis, by several eye specialists that he named, came to my office one Saturday with a statement that he had been home three weeks with a new attack, was suffering great pain and could not see all his fingers even with his hand held very near that eye. A friend drove him from Oakland. During that first hour in the office he was enabled to see with that eye, at a distance of three feet, the top two lines on the Snellen Test Card. Later, I was told by the patient who persuaded him to come and talk with me, that he had made an appointment the day before, to have that eye removed on Monday. It was only because of the novel treatment, and the result which astonished him, that he decided to go on with further treatment. He returned to work in ten days. It was over a year from that time that I heard from him last, and he then wrote me that his eye was in a satisfactory condition.

That patient had been through every examination used to detect a focus of toxemia in the body, and had his tonsils removed and teeth inspected. He knew every sort of customary treatment as used by the several specialists who had cared for him. However, his eye had never been treated with an **ultraviolet ray** until I used that ray on it. It was plain that the ultraviolet ray helped his eye very much. I have seen its value in treating other abnormal conditions of the eye. I have used the **Kromayer ultraviolet ray lamp** on my own eyes many times to note its effects. I have never seen any ill effects although I have used the Kromayer light several inches from the eyes, for a period up to three minutes. But the principal factor in his cure was the grand help he received from his visual center, in response to the demand in his mind, and the confidence developed from that first morning, when the pain stopped, and the sight began to come back to his blind eye. Modern teachers use full spectrum lamps and full spectrum sunlight, all rays of the sun's light spectrum that normally reach the planet. Exposing the eyes to only one ray or only certain rays can harm the eyes, unbalance the brain, visual system, health. UV Rays are included in the sun's healthy light spectrum.

Another case of iritis, constant for one year, has also been mentioned before. When that patient came to me, she could not see at all. For a year, a well known specialist treated her eyes. He promised he would help one eye, but said the other was "out of luck". The patient discontinued his treatments because her eyes were steadily growing worse. She then tried for three months to get some help from Christian Science teachings, but without any relief. **By exposure to ultraviolet rays, and prolonged exposures to sunlight, and other practices, her eyes became normal.** A significant feature of this case was that her eyes faltered again some months after, because of continued nerve tension, and failure to observe the rules she had been given. She secured relief when she followed the same treatment that had cured the condition before. During the two years following, her sight was normal. I have never heard that it did not continue to remain so. The cause for that iritis was not found by the eye specialist, during a year of treatment. The patient was under a constant mental strain, caused by economic conditions, and the dark outlook for a family of growing children. The same outlook continued at the time of the second attack. No medicine was used. She was cured twice with treatment by the practices of the method of Dr. Bates. The ultraviolet ray is an intensive sunlight treatment, approved by Dr. Bates when I wrote him that I was using it.

A case of **detached retinas, consequent upon forty years of nearsightedness**, and stronger and stronger eyeglass lenses has been mentioned before. That man was enabled to discard his two pairs of glasses by treatment according to the method directed by Dr. Bates, with the addition of the ultraviolet ray. The ultraviolet treatment helped him most, according to his own close observation.

The case of the young woman with **hemianopsia**, (blindness or reduction of vision in one half of the visual field) also reported in a previous chapter, was remarkable. Such cases are described in the textbooks. Sometimes a small spot on the retina is blind—no perception is registered in the visual center from the rays received on that spot. **Such spots are called scotomata**. This young woman had a large blind area on her left eye. In looking at the Snellen Test Card she could see only the last letter on each line with that eye. Among the conditions mentioned in text books as possible causes for failures of this nature on the part of the mechanism of vision, one finds **neurasthenia** (a nerve fatigue condition) and hysteria. Hysteria is not a condition called hysterics, which is often seen. Hysteria demonstrates many various forms of abnormal functions, of different parts of the body, and always involves some abnormal condition of the control center of the brain. Since some of that type of cases are classed in the text books as being caused by different kinds of nerve dysfunctions, why is it not reasonable to expect a suitable treatment of the nervous system to correct the dysfunction? In every other branch of medicine similar conditions are being cured in that way. The hemianopsia of that young woman was cured in that way in one hour. In previous chapters, I have mentioned two cases of **amblyopia** (vision poor up to the point of blindness), and my own case of **amaurosis** (blindness when no physical or chemical change is apparent). The cases of amblyopia in adults each involved practical blindness in one eye from birth. One patient was twenty-two, and the other thirty-five years of age. Both eyes, practically blind, were able in a few days to see distinctly such objects as fingers, large letters, et cetera. The older patient had been offered no hope or treatment by the eye specialists

consulted. The younger one was told to keep the good eye closed whenever possible, and make the nearly blind eye gradually learn to function. He was told that it would be two or three years before he would find any improvement, but he secured a fine improvement in a few days. My own experience, occurring when I was twenty, developed in an instant, began to lessen in half an hour, and had entirely disappeared in one hour. I was in normal health, had no other sensations, and was not conscious of any reason for its occurrence.

In standard text books, where the discussion treats of disturbances of vision when no changes in tissues are found, many real or supposed causes are specified. The type mentioned last on the list may be **psychic blindness**. But when one searches the large text books, with reams of pages recording the most minute findings about every other aspect of this tremendous subject of vision, one will find almost nothing about this psychic element of a function which in the same book is spoken of as ultimately a psychic function. Suppositions are offered to account for psychic blindness. But no explanation is found for that failure in vision when the supposed causes certainly are not present. For instance, it is stated that if a psychic blindness is caused by some destruction of an area in the visual center, objects are seen but are not recognized. But in cases where the psychic blindness suddenly changes into normal sight after it has been present for many years, that specific supposition is invalid. When no other explanation is offered for psychic blindness, one is left to wonder what causes it when it comes suddenly and disappears as quickly. To say simply that it is a phenomenon of hysteria is not a fair explanation, when many facts are in full view that are offered no consideration—or at least no comment.

It is not the intention of this chapter to wander into the field of psychology. What is written here is not an effort at some kind of erudite criticism. But the mechanism is under consideration in this book, and some plain facts are offered, in the form of a question. The underlying principle or factor in the type of faltering vision called psychic blindness, is the foundation of the method of Dr. Bates. When the answer is written to the question: "What then is psychic blindness?", it will be realized that the same answer will explain the cause which underlies those simpler failures in visual function that are troubling such a large part of the population which spends its daily life in a mental atmosphere full of unnatural, and unnecessary, and disturbing tensions.

The answer given by Dr. Bates was that **the eye which is perfectly relaxed sees perfectly; and in order to relax the eye it is necessary to relax the mind.** It is all very simple. Omar Khayyam found it, in the midst of his mathematics and astronomy and the intrigues of an Eastern Court. Abraham Lincoln had it. President Roosevelt has it—ever: though sometimes he does put on glasses. The simple, practical importance of it, to those who are having trouble with their vision, or whose children are ordered to put on spectacles for life, is that the **necessary mental relaxation—simply normal, deliberate, effective functioning of the visual center, is within the easy and certain reach of all who are interested.** It is a false answer to say that artificial lenses cure the abnormal mechanism of vision, when those artificial lenses must be changed again and again for stronger ones, because, as the wearers are told, their eyes are getting weaker and weaker.

CHAPTER XXXII

CONCLUSION

IN THIS closing chapter, I hope to make plain the meaning of what has been written. It is only a hope, but growing in the years, it has become a faith. There is a significance in that meaning, which has reference to the future of this country. The needless subjection of the eyes of the coming generations to the domination of glass lenses must have an absolute and malevolent influence on the mentality of any weak-eyed nation.

It has been written, again and again, that the race is losing its virility. Losing it through the artificial and unnatural environment which has developed in this modern civilization. We are told that because we live in air conditioned offices, and steam heated apartments that are not homes, but only places to sleep, and spend our days in purposeless, feverish excitement, we have lost the faculty of adaptation which raised the race as it evolved, and without which it is sinking back from the place it had attained. We are told that we are mechanicists mentally as well as physically.

In the United States the habit of wearing artificial lenses is increasing at such an astonishing rate, that it is fast becoming a remarkable national trait. A young woman from Australia, who came to me because she had heard of the Bates method there, told me that for the last three or four days on the ship, she was impatient, above every other thought, to get on the street in San Francisco, to see if it was really true that almost everyone wore spectacles. She said she had tried to imagine how the people would look, and that in spite of her preparation, she never-the-less was astonished when she saw the procession of glasses. The shock made her more than ever determined to have the beginning trouble with her own eyes corrected, so she would not be compelled to wear spectacles for the remainder of her life. Such a feeling would have been quite common when I was her age in New York City, in the early eighties. But the environment in our large cities has silenced such a feeling with millions of the people of the United States.

The new psychology has served to obscure whatever consciousness there might have been of the meaning of such a condition, if the change had come over the inhabitants in a few months. The difference, in a moment as it were, would have startled the public mind into an apprehension which would have aroused questions, and questions are dangerous, if you like, but always the incentive to action. There is beginning to be heard, from different quarters, comments on this subject which sound very much like actual questions.

Suppose we try to imagine the questions, and the answers, if it should happen that an epidemic came upon this nation of a similar condition in the legs of the population. Suppose that millions were finding their legs beginning to falter, so that they could not be relied upon—without damage, and without pain or apparent cause. Suppose they sought help, and were told that the cause was only a strain, and the cause of the strain was not apparent, and no cure was possible, and they must all wear braces. Would such a situation be accepted with what a famous Englishman called the docility of the American Public?

Suppose, further, that a famous orthopedist published a book which explained that a strain is an unnatural tension, in the leg muscles, the same as in any other body function, and curable in the same way. Can it be imagined that the public would say: "Never mind, we prefer to put on artificial braces; and besides we think it is a most attractive fashion." There is a difference, certainly, in the two situations, but the analogy is perfect. It is only that it may seem different. A little deliberate thought will demonstrate that the factors involved are the same. It sounds frightful to think of a nation with helpless lame legs. But what of a nation with helpless eyes? Suppose that all the spectacles in the United States were lost over-night? It is no answer to say that it will not happen. Because it will never happen is not a reason for refusing to question why a nation with just the same eyes as other nations, should be putting on spectacles so fast that it seems to be responding to an ambition which has been expressed, that all should be wearing them. Suppose we remember that a book has been in print for sixteen years, following a public knowledge for another sixteen years. Is it then a question as to why the public has decided against the cure for the eye—or is it a question as to why the public does not know the established facts?

From certain sources there is positive and persistent opposition to the spread of this knowledge. It is combated and suppressed. There are living examples of the vital power of this truth in several different countries. The book of Dr. Bates has been in this country and in England and Australia since 1920. There are schools teaching the system in Germany and in England.

Truths that are new generally must keep themselves alive, until time wears a way into the consciousness of a public which thinks that an original man is a fool or a prodigy—and is likely to dismiss him as not a prodigy. When there is added to this inertia, a positive, active, and persistent influence of tremendous interests, any new conception meets an atmosphere in which it is hard to live and develop power. It was into such an environment that the discovery of Dr. Bates was born.

It has lived. Truth always, lives. This truth belongs to the race. It cannot be permanently stifled or suppressed. The people of this country have the right to know the truth. It is still their privilege to make their own decisions. Some day, some way, it will become known, as other great truths have become known. When the people of the United States realize that they can have, and their children can have, the same fine natural eyesight that the mass of the race is enjoying today—who would say that they will not decide to use their own eyes, instead of being slaves, helpless without their pieces of glass?

Dr. Bates published scientific reports of his discoveries in conventional medical journals. Discussed them in medical societies. At one annual convention of the American Medical Association, so he has written, he was one of those allowed five minutes to comment on a paper read. The reader of the paper accused Dr. Bates of being a quack—because of the claims he had published and was supporting. **The same man had removed him from the staff of a post-graduate medical school in New York City, because Dr. Bates had enabled medical men in the school to discard their glasses, after that specialist had fitted them.** His complaint was that nearsightedness could not be cured. Dr. Bates had answered that he could examine the eyes of the doctors under discussion as to their nearsightedness. The complaining specialist's only reply was, that if they were not nearsighted at that time, he had made a mistake when he examined them. So many whom I have met have discarded their own glasses, after wearing them for years, because they found they were not nearsighted any longer—I speak of those who never heard of Dr. Bates. The five-minute talk of Dr. Bates interested those specialists of the American Medical Association so much that they insisted upon his talking to them for an hour. The paper of the doctor who had called him a quack took only fifteen minutes.

During more than thirty years of private practice and clinical work, Dr. Bates cured those afflicted with various dysfunctions of vision, removing their glasses permanently, and teaching them how to have normal vision. Many physicians have been interested in the work of Dr. Bates. Patients who were cured are in evidence and the work of Dr. Bates is known all over the world. Although he demonstrated his experiments in the presence of specialists, and his proofs were accepted, no public acknowledgment of his discovery has ever been made. I have often been asked why this is the case. Certainly it is not my part to offer any explanation.

Three years after the death of Dr. Bates, a personal friend, who was a trained newspaper man, persuaded me to submit an article on the subject of this book, to a popular weekly. The reply was a courteous refusal, on the ground that it was "too far from their trail." Later, I submitted the same article to a classical monthly magazine, which publishes both sides of interesting controversial subjects. It was again met with a courteous refusal.

Last spring, a widely read magazine announced a prize competition for unpublished articles of human interest. The intention was to secure articles from those who, thanks to unusual experience or observation or reflection, might well contribute magazine articles having a high standard of lasting interest and significance. Except that it must be the first contributed article from the writer, there were to be no restrictions. A special knowledge of some phase of American life that can be given general importance and appeal; an illuminating human experience; the desire to recognize a fine accomplishment—these were the qualities the judges were to consider in making their decisions. There was to be no fiction. They must be accurate in fact and genuine in feeling. They must be the product of unusual thought or unusual knowledge. They must deal with a subject either not treated before, or presented in a fresh light. They must have a significance and interest as broad as possible. They must combine these qualities in such a way as to produce an article whose value would survive long after the month in which it was printed.

The conditions seemed to me to fit so perfectly the subject discussed in this book, that I submitted an article entitled "The Marvelous Work of Dr. Bates." The article was returned, so I was informed, with especial regret. I was told that my article was

one of those which received most serious consideration. In the final selection it was left off the list because, in the opinion of the judges, it either dealt with material covered fairly recently by the magazine, or to which the magazine was already committed; or because in competition with other articles on the same subject, another had slightly the better of it; or because either the subject, or the treatment of it, did not seem quite within the scope of the magazine.

That my article was rejected is of no moment. If some other writer covered the subject in a better manner, that writer will receive my most sincere congratulations, and my gratitude. If the accuracy of my facts was questioned, it would have been a simple matter to verify or disprove them. If, otherwise, all the ten articles selected were considered to be of greater lasting interest and significance, and to have more general importance and appeal for the American public, I believe that most of the readers of this book will share with me an intense curiosity to read every one of the articles when they appear. Until that time, I can only wonder "why".

We all remember that exquisite little poem of Dr. Oliver Wendell Holmes, "The Last Leaf." It was the quaint philosophy of a grand intellect put into a parable. The picture of the old man, with the thin nose, that rested on his chin, and the crook in his back, who had not been welcomed by the new life in which he wandered around as a stranger, impressed that lover of the race, and he put the innermost thoughts of his own heart into those lines that will never grow old.

With his keen insight, The Autocrat of the Breakfast Table sensed the melancholy crack in the laugh of the man in the old three-cornered hat; he pictured him when not a better man was found by the crier on his round through the town. Now the Old Timer, who had outlasted all the other leaves upon the tree, was still hanging, an old leaf in a new spring, among fresh flowers. He was in a new world of different things; and now he walks the streets, and he looks at all he meets sad and wan.

Is it a strange fantasy for me to think of the human eye, today, as Oliver Wendell Holmes thought of the neglected man of a by-gone generation, who made the pavement stones resound as he tottered o'er the ground with his cane? The eye itself, is the last leaf upon the tree. It is a stranger in a new generation. Every other part of the body is living in a different world. Every other part is cared for when it is sick. The life, and mechanism, and needs and nurture of every other part of the body have been searched and studied, and are being helped and renewed with a science and an art born of new interest and new hope. But the eye has been deserted to its fate. There are volumes—of literature reporting newly discovered knowledge about almost every other organ of the body; and there are campaigns to protect, and to refresh, and to prolong the life of every other organ and function. But when the function of the eye falters, there is no help offered. Like the old man, it is given a cane. Even when it is quite young, still the faltering eye is given a cane for life. In early life even a little sympathetic interest and care would be sufficient to save it, with all its power; and it could even develop a finer power out of the new knowledge of its functions, as the other organs are being improved in their power by the same modern methods as Dr. Bates used in the treatment of the eye.

If this book succeeds only in arousing the attention of those who are interested in the welfare of children, I will feel that it has fulfilled a purpose sufficient for the effort. They are being wronged when their eyes are made the slaves of glass lenses for life. Sight is a psychic function. Who can say what it means to children when the natural freedom of their eyes is dominated by spectacles in those early formative years?

The subject of this book is not an abstract exposition. It is not an academic discussion of public policies or class interests. It is not offering a theory. The issue is simple and clear, and of the most vital interest. It has been established, during a period of over twenty-five years, that most of those who are wearing spectacles can use their natural eyesight, without any artificial assistance, and with perfect satisfaction. There is a question that concerns a great part of humanity at the moment, and which we hope will not harass us in this country—the question of what price glory? This book is concerned with the price the American people are paying for discarding the natural use of their eyes, so they may have the privilege of wearing spectacles. This book is an effort to interest them sufficiently, if possible, to arouse an inquiry that will disclose and consider the danger which is already a disaster, and threatens to become a catastrophe.

Simply to deny that an eye which is finding some difficulty in seeing, cannot be given any curative assistance—to reply merely that "Bates has been discredited"—is not an answer worthy the medical profession. Digitalis is the best life-saving drug in heart disease. It was found by a young physician, in the days before there were schools of medicine. He thought enough of some folk stories to search out and discover the valuable ingredient in an herb mixture used by an old hag who could help faltering hearts, but refused to tell what she put in her concoctions. Because a strange, obscure gleam was noticed by a research worker in a laboratory, and was not "discredited", the medical profession today has the marvelous advantages of the X-Ray. Quinine was found among the ignorant savages of the Andes Mountains. Because it cured their fever, the medical profession investigated and used it. The vaccination, which prevents the contagion of smallpox, was brought to the attention of Jenner, by the stories of what some ignorant farmers of southern England were doing to render themselves immune. He heard that they cut their skin and inserted some of the discharge from an infection on the udder of a cow, and it was called cowpox. Jenner sent one of his young assistants to investigate. Then he went himself, and when he returned he vaccinated his own family. He did not dismiss such a vital matter without investigation. Pasteur could not be silenced by the stupid incredulity of medical men who would not believe their ears; and out of his discoveries has developed the modern system of protecting the race from infection. It was thirty years before the medical world was finally persuaded by the proofs that Dr. Wagner-Jauregg continually gave them, although during all those years he was curing mental diseases, and other serious conditions, by producing a high fever in the bodies of his patients. The doctors had always believed that fever was a disaster for the body, and the claim of Dr. Wagner-Jauregg had to break down another entrenched conviction.

In the current number of a popular magazine, which is small in size, but large in circulation, and broadminded in conception, there is a report of the story of Dr Charles Henry Duncan, a practicing physician in New York City, who has given the medical profession a new method of curing infectious diseases. The method is called autotherapy, and in curing patients in that way, Dr. Duncan

utilizes the inherent resources of the system to protect the body by its own natural method. His treatment is described in standard medical dictionaries. His work has been fully investigated and approved by medical societies, and endorsed over the signatures of many prominent men in the medical profession. He has been recommended by men of standing for a Nobel Prize. Nevertheless, the majority of the medical profession in the United States have never heard of Dr. Duncan or his discovery. Of those who have heard of his work, some have been interested enough to investigate his findings, and have practiced them with success. Other medical then, incredulous, have condemned his theory. The experience of Dr. Duncan, like that of so many other men in the field of medicine, has been similar to that of Dr. Bates. He has met with the same old incredulity, skepticism, controversies, and opposition.

In the press this morning I find an account of a Dr. G. W. Day. of Texas, reporting in The Texas State Journal of Medicine his own successful treatment of several mental diseases, by the simple procedure of producing long continuous sleep—the longest lasting for seventy-eight days, and the average about twenty days. Such treatment may seem to be revolutionary. But such a conception certainly is original and magnificent. But in the final analysis it is a higher degree of "relaxation", prolonged, and prolonged further and further, until the terrific mental tension has finally been relieved. For a long time, continued treatment with music, and other methods of suggestion, have been used with gratifying results, in the care and cure of diseases of the mind.

The analogy of the experiences recorded above, to the different aspects of the discovery and the work and the experience of Dr. Bates, seems very plain to me. He was met with incredulity, and the resistance which meets any new conception that conflicts with a fixed conviction in the minds of men. There is a similarity between the story of Dr. Bates and the stories above, in the portrayal of the manner in which truth forces itself upon the attention of those who happen to have a mind that is open to its evidence. They all comprise a record of one blessing after another becoming the possession of the race.

An editorial in an official medical journal, commenting upon the eightieth birthday of a leader in the field of psychology, compiles the different aspects of the experience his discoveries met with when he offered them to the medical profession. That editorial states that. The inevitable phases of reaction and consternation always provoked by new discoveries have not yet been passed. The concept of the unconscious has deeply modified the subjective attitude of human beings toward life. Human beings seem instinctively to resent the acknowledgment forced on them by Freud, that even their own personalities are removed from the sovereign influence of their conscious selves, and that they are not even complete masters of their own actions. The discovery of the unconscious has led to a striving to bring the unconscious under the domination of consciousness. The editorial explains that Freud discovered the unconscious mind as an entirely new territory of research.

Referring to Charcot, the greatest authority in neurology of his own time, the editorial points out that he was an empiricist and a clinician in the best sense (meaning that his conclusions were founded on the symptoms apparent in patients). It states that: His great reverence for facts enabled him to emancipate himself from the current theories and dogmas in medicine, and to recognize the psychologic element in hysterical phenomena. In commenting on the life work of Freud, the editorial points out that the thirty-year period of his isolated work is not remarkable. It reminds the medical profession that the fight for the scientific study of the human body by dissection lasted for centuries, and the unbiased objective study of the human personality must prevail even over greater emotional obstacles.

In his remark that the inevitable phases of reaction and consternation always provoked by new discoveries have not yet been passed, that editor pictured the situation regarding the discovery of Dr. Bates, and the reasons why his wonderful gift to mankind is not yet being used to meet the necessities of the multitude asking for help for its eyes, and being offered, instead, only the crutch of a pair of spectacles. That erudite editorial pictures frankly the causes which prevented the benefits of the work of Dr. Freud from being used by physicians for thirty years. The same reasons are preventing the benefits of thirty years. The unconscious mind, the editorial explains, is still an unexplored region. Like the biologist who recently wrote that the medical profession has not yet begun to study the human mind, the writer tells the same men that they have not yet realized how dependent they are themselves, as well as their patients, upon the mechanism that is taking care of them—the mechanism called the unconscious mind. The doctor, who knows that sight is a psychic function, and that we see in our brain, makes no effort to influence the visual center, which controls the mechanism of vision.

The findings of Harvey and Lister and Pasteur and Charcot and Freud, were challenged; but they were investigated, and now they belong to humanity. The finding of Dr. Bates are as important as any other discovery, but they have never been investigated, nor weighed, nor tested. They are simply ignored. And will this always be so? I am neither a prophet nor the son of a prophet, but I am not afraid to hazard a challenge that in due time the discovery of Dr. Bates will, likewise, come into its own. The others all had to wait until their time came. It is not yet the thirty years that Freud had to wait, and Wagner-Jauregg. The decision as to the value of the method of Dr. Bates will come from the men whose life work is the same as that of Dr. Bates. Instead of delivering the troubled eyes over to the men who grind the glass lenses, the physicians of tomorrow will treat them as the physicians of today have already learned to treat and correct the disorders of the other functions of the body.

"In Flanders Field the poppies blow, Between the crosses, row on row, That mark our place; Take up our quarrel with the foe. To you from failing hands we throw the torch; Be yours to hold it high."

As surely as any soldier ever died on the field, Dr. Bates gave his life for a cause, battling against fate, during many years of magnificent struggle, when the unending disappointment finally broke in hopeless despair. His torch is still burning. There will come some other battler, who is fit, and will hold it high until the people who are sitting in darkness have seen its great light.

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NORMAL SIGHT
WITHOUT GLASSES

by

W. B. MacCracken, M.D.

PUBLISHED BY THE AUTHOR
BERKELEY, CALIFORNIA
1945

Dr. MacCracken, a Medical Doctor, trained in Natural Eyesight Improvement by Ophthalmologist William H. Bates.
Dr. MacCracken cured his patients of unclear vision and other abnormal eye conditions.
This is Dr. MacCracken's 2nd book, an addition to his first book 'Use your own eyes'.

Printed by
GAZETTE PRESS
BERKELEY, CALIFORNIA

This book is dedicated to the memory of W. H. Bates, M. D. It was his discovery and his lifework that founded and established the system which can prevent the impending degeneration of the eyes of civilized humans. His genius and his fine courage made it possible for him to bequeath this magnificent gift to the race.

Our lives are modified, more than we know, by constant, active influences. Not only are our minds molded, obeying unconsciously many silent orders; but also our bodies and organs. There are serious chronic nervous diseases which have no found cause in any change of tissue structure, and which are increased or cured by emotions and impulses. Emotions and impulses are actually only automatic reactions to impressions which are often not even possible to discover. It is established that emotions may cause specific changes in many of the body functions: the action of the heart and lungs, the tension of the blood vessels, the conduct of muscles and even tendons. In normal healthy bodies muscular tremors have been demonstrated, registered by laboratory instruments, produced by arousing mental conditions such as curiosity, or fear, or anger. And it is common to find tendon reflexes modified by similar emotions, or even by ordinary excitement. And just such mental conditions are present as the cause of many abnormal physical conditions such as nervous indigestion, insomnia, nervous depression, constant eyestrain, and even distinct diseases with muscle spasms and mental disturbances. And above all, the brain itself with all its nerves, is dominated by the same impressions from the world it lives in, and is molded like the softest clay.

Suppressions, conscious or unconscious, increase these abnormal conditions of tension, and we are constantly suppressing. And worst of all, we are thoughtlessly allowing abnormal and harmful influences to suppress the natural normal functions of our subconscious mind, and mislead us into complexes that are the causes of many diseased conditions.

It is possible to relieve these abnormal conditions by the simple expedient of securing a state of relaxation of the muscles of the body. Without muscular relaxation there never is mental relaxation. And when the muscles are relaxed mental relaxation is always present. There are different methods and varieties of technique by which this muscular relaxation may be secured. But they all must depend upon the same laws of psychology and physiology. It is necessary to enlist the cooperation of the subconscious mind. This can be accomplished by occupying the conscious mind so completely with some carefully chosen impression that the subconscious mind is also influenced by that voluntary control for a period of time. This method has been proved. It is scientific and successful. It requires, however, that the patient be receptive, earnest, and confident.

The story in this book is founded on these truths. Vision is the most precious of the senses which feed the life and the happiness of the human. That vision should be allowed to degenerate into a crippled dependent upon a mechanical device is an ominous threat to the future of the race. If the mind can be roused into a consciousness of its loss, the recovery of the natural power of the eye will be the smallest of the glorious achievements that will come with the new life.

It has been interesting to try to imagine the mighty spirits of the past contemplating the modern hosts that are helpless without their pieces of glass. How could those independent souls understand this new habit. How long will it be before the minds of children, who are beginning their lives, will be taught to use their own eyes, with the freedom and the power which belongs to them, and which will give them a new fullness of life.

W. B. M.

Berkeley, California
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William B. MacCracken, M. D.

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CHAPTER I

THE PROBLEM

There is a great new American disease (dis-ease). The malady is accumulating in victims so fast that already they have grown into a vast procession.

If one tries to adopt a simile for the picture, one may think of it as built upon the model of the torrent of children that thronged after the Pied Piper of Hamlin.

This is not a joke. It is a challenge.

The Pied Piper led that procession of young spirits into the open sunlight. To fetter the eyes of young children with a pair of artificial lenses is to rob them of the birthright of freedom to use their eyes without that unnatural interference.

The condition under consideration is not a disease, in the common understanding of the meaning of that word. In the great majority of those so afflicted, there is no change in tissue structure. There is no infirmity, as that word is properly understood. The specific mechanism which is involved, the mechanism of vision, has retained all of its inherent power. But we are told, nevertheless, that the condition is incurable.

Notwithstanding that assertion, multitudes are in evidence who have suffered disturbances of normal vision, of the several different types, and have experienced the spontaneous recovery of normal function.

This national malady is identified under the ambiguous, strangely remarkable designation of "eyestrain". It is accepted casually, with a preposterous, absent-minded attitude of "O. K.", which is equivalent to a welcome. The habit, custom, performance itself, might fairly be classified with the fashion dictum "What is being done".

This might all provoke a smile, just as some other fashions do, if it were not for the unconsidered consequences of such a national obsession. It is another illustration of the light-hearted mental attitude which is so aptly expressed in the quip: "I don't know where I'm going, but I'm on my way".

The popular acceptance with which this strange propaganda has been received is some measure of the success of the publicity announced campaign to make every one in the United States what is called "eyeconscious". "Your eye is your most precious possession, take good care of it" Do that, you are directed, by ignoring the endowed marvelous power of accommodation (focus) which the mechanism of vision has. Introduce an outside interference, we are told, a pair of glass lenses.

Thus we are to compel the mechanism which has been evolving since life began, to live in an artificial manner, obliged to work with the altered light rays that are allowed it by the ground glass of the spectacles.

What is this "eyestrain"? Who ever asks what that word means? Try to find that word in the technical exposition of the text books. In the medical dictionary, strain is defined: "To overexercise: To use in an extreme and harmful degree." Eyestrain is defined as: "A weariness of the eye from overuse or from uncorrected defect in focus of the eye."

In any other field of the science and art of the practice of medicine, there would be an endeavor to prevent said "overuse", whatever that vague term might mean, and to correct the "uncorrected defect in focus".

The prevailing method of treatment offers no cure. The defect remains. Further, the defect progressively increases in degree. We are told that it is expected so to do.

It is explained that those eyes, with those glasses, will become weaker, even in healthy children and young people. The glass lenses are periodically made stronger. One is warned to report regularly. It is a positive defeatist program.

For many years it has been known publicly, and demonstrated plentifully, in the United States and in other countries, that in most of these cases of abnormal vision it is possible to secure deliberately the recovery of normal vision, even as so frequently it recovers spontaneously.

This is being accomplished, methodically, by the use of a series of techniques, practices, which are designed to influence, and to secure the co-operation of, the central control in the brain, which has charge of the whole mechanism of vision.

This method, or system, is scientific, and simple, and practicable. The underlying principles are exactly similar to those of practices in common use by medical men. Those principles are in constant successful use for the cure of analogous abnormal functioning of other units of mechanism in the human system. This specific method is in accord with the established findings and teachings of the science and art of the practice of medicine.

The correct answer to this controversial medical problem was discovered by a genius named William H. Bates, M. D. of New York City. He was an ophthalmologist of perfectly ethical standing in the medical societies. He was a member on the staffs of different hospitals. His writings were accepted by the medical journals. He was called upon to discuss the claims he expounded, in the medical societies, and in annual medical conventions.

There was controversy, of course. He had to contend with the same "static" that confronts every pioneer scientist.

The experience of Dr. Bates was quite of a kind, for instance, to that of Columbus. His genius realized that the world must be round. He sailed around it. There were many obvious facts to support his explanation. But the "wise men" simply ignored those truths and put him in jail.

Certainly there were those among the colleagues of Dr. Bates who frankly accepted the truths that he presented. But his claims were never investigated. Generally his demonstrations were ignored. Instead, the replies he received in the controversy were trite reminders of the unsupported opinion of medical men long dead.

That need not seem strange. There are many records in the history of the life and growth of the medical profession, where "The moving finger" wrote in vain discovered truths that were infinitely more necessary than this truth is to the life of the race. There have been many findings, vital in the tragic battle for life and health, which also have been made, sometimes for many years, to stand and wait.

Surely millions of young men would gladly discard spectacles, if only they had it forced into a conviction in their minds that a little earnest endeavor on their part would correct their abnormal vision to normal satisfactory sight permanently.

With women the considerations are somewhat different. As women, they are learning, in many aspects now being presented, that there are vital interests involved in those frameworks on their faces.

The heart interest of this whole subject is the case for the helpless children. Perhaps we need not wonder that most parents do not wonder why no answer is being given, or no protest is being offered, by the medical profession, to those few members of it who are babbling, commercially, that many children, as young as one year old, should have their developing mechanism of vision interfered with for life by the restriction of glass lenses.

It is timely here perhaps for me to say that I know this subject from the inside as well as from the outside. I have been over that trail myself, and know the road.

For thirty years I wore spectacles. It began with a psychic blindness lasting an hour, from a mental shock when all but drowned. There was inaugurated then a continuing astigmatism. Through the years there developed a growing myopia. My lenses were satisfactory, generally for periods of years. They were renewed when my eyes finally rebelled and demanded a new pair. But there were occasions, nevertheless, without any apparent exciting cause, when my astigmatism indulged in most unpleasant outbursts, lasting perhaps an hour, perchance a day or two.

One day, by merest chance, I read a casual reference to the method of Dr. Bates. I found his book PERFECT SIGHT WITHOUT GLASSES. It was most convincing. It was not hard, nor did it take long, for me to discard my glasses. That was over twenty years ago and I have never considered resuming them, and my vision is very satisfactory.

It will be helpful, I believe, to those who may be interested in this book, to submit here a brief resume of the background to the claims Dr. Bates made for the system he developed.

In the private and clinical practice of an ophthalmologist, in New York City, he was impressed with the obvious discrepancies apparent in the explanations offered for the different types of abnormal vision.

That was the beginning of a bitter controversy. He began a search for the real explanation, and the cause of the abnormal functioning which was being allowed to pass unchallenged, with an interpretation that obviously could not be true. He was not discouraged by the disapproval of his years of successful treatment. Time has amply demonstrated the truth of what he proclaimed. No attempt has ever been made to prove that his story was not true.

It would be interesting surely, to know something of the personal experience of this genius, in his years of battle for such a great cause.

It was no chance discovery of some secret that was received presently with acclaim. But he was a true scientist. He kept his hand on the plow, and nothing could make him turn back.

In all that I have read of his writings he maintained consistently the objective attitude of a scientific research worker. Only once the record required, and he tersely reported, how it happened, in a simple way, that the secret he sought was revealed to him in a single minute.

Dr. Bates Cures His Presbyopia

His own remarkable affliction was diagnosed as presbyopia, the eye of old age. But the strange difficulty he did have was that **when he wanted to see close up, his eyes might persist in focusing at a distance; and when he wanted to see at a distance, probably they would refuse to change from a focus close up.** These demonstrations proved that he did not have presbyopia.

Working alone for months, as he reported, because none of his colleagues in eye work had any sympathy with his new ideas, Dr. Bates was being helped by a clergyman who learned to be of assistance. He knew that he must cure his own eyes to prove his revolutionary claims.

One day he was looking at a picture of the Rock of Gibraltar. He noted some black spots on the face of the rock. He imagined that these spots were the openings of caves, and that there were figures of men moving in them. But the retinoscope showed that at the moment his eyes were focused at the reading distance—not suitable for his distance from the picture.

Then he looked at the picture from the correct reading distance, still imagining that the spots were caves with people in them. The retinoscope showed then, that his eyes were accommodating, that is, focused correctly for close-up vision, and he was able, at the moment, to read the close-up lettering under the picture.

He realized at once that the faulty functioning of his eyes had been cured, temporarily, by the use of his imagination.

He demonstrated after that how it was possible for him to secure normal accommodation by the specific use of his deliberate imagination, practiced in different techniques which he devised. That was the beginning of a tedious course of endeavor before he secured, permanently, very good normal vision.

If one is inclined to question the consistency of this explanation of Dr. Bates, one has only to remember that, working independently, Emile Coue of France, by a proceeding exactly similar, cured multitudes suffering from afflictions quite analagous, after the efforts of other medical men had failed.

Coúe had a high ethical standing in his own field. He was a psychologist who took his laboratory findings out into the world, and proved the value of them, just as Dr. Bates proved his claim in the same way.

There is much in medical literature which supports the interpretation that Dr. Bates offered for his findings, and that he sustained, during many years of successful demonstration of their practical value, before he died in 1931.

Gradually, in the years, the seeds which were planted by Dr. Bates have been bearing fruit. Like the sower in the parable, his work found much ground that was barren. But in these recent present days there is being gathered a most remarkable harvest, which he would have considered "even an hundred fold".

Not to tire the reader with a long recital of the many presentations now in evidence of a new interest in this vital subject, it may be sufficient here to report that: the **military** authorities of the United States have already inaugurated a tremendous specific program, in an undertaking to accomplish a satisfactory improvement in the vision of enlisted men who need it in the special work for which they are detailed.

Several stations have been established, in different states, where men are being trained to go out as instructors to teach enlisted men until their vision has been corrected to a good normal. That normal can be a vision much superior to the degree which is a common general average.

Any method being used is founded, certainly, on the principles of the method of Dr. Bates, which is founded on the laws of psychology and physiology, as involved in the mechanism of vision.

In closing this first chapter, permit me to offer, as a foundation of your own faith and confidence, the reminder that seeing is not an "art".

The human mechanism of vision is an endowment. It was given to you at birth. You did not educate it. You cannot re-educate it. Multitudes have recovered their normal vision in a moment, by an unconscious mental reaction. I have watched a number recover it during one hour, by obeying the simple directions given by Dr. Bates. Those cures were accomplished by the visual centers in the mind.

It will be my endeavor throughout the book to impress; the reader with the great importance of continually reminding the mind that the endeavor is not to acquire an art. Success depends on the degree in which one is dominated by the idea that **the defect in vision is caused by a habit, acquired unconsciously, of interfering with the normal function of the mechanism of vision.**

That habit can be recovered from only by the specific co-operation of the mechanism itself. A conscious voluntary endeavor to rely on the visual centers to respond to such a respectful understanding is the foundation of the practices of the method.

This statement is supported by accepted findings recorded in the standard books. It is very simple. But it will be of little value to the beginner until it has been impressed, by earnest, voluntary, continued attention, in that way sending a message to the part of the mind which Coue called the engineer, the factor that gives the orders to all the units of mechanism in the system. That factor, like the engineer on the train, sometimes illustrates the comment of the philosopher who said: "To err is human."

We must establish a conscious friendship, born of knowledge, with that part of the mind which is designated as the center of vision.

That sentence is very simple. But it involves the arousing of some serious thought. But what is thought? Who knows? "How many think they think, who never do." Personally, I am guilty. In later years I often remind myself that, being of the race, I am constantly dominated by my own unconscious "reactions".

Such mental functioning is illustrated by the reply of the co-ed who defended herself against the charge that she had allowed him to kiss her, by countering with the rebuttal that "Yes, but he thought that I thought that he thought I was asleep".

To establish a friendship with our center of vision is to become acquainted, by a deliberate endeavor, with "a stranger in the house". The central control in the mind, which dominates our mechanism of vision, is a factor most of us have never been conscious of. What about yourself?

CHAPTER II

THE BACKGROUND

What is the real explanation of the vernacular word "Eyestrain", which is not found in technical books? The specific word that does describe the condition referred to is Asthenopia. It is a made word, from weak and sight. Asthenopia has many manifestations, that is, complications.

This condition ("weak sight") is described as a sense of strain or weariness in the eyes and head, set up by the use of the eyes. It may be simple, that is, alone, or it may be associated with blurred vision, which may be continuous or only transient. Print may run together, and then become clear again. There may be double, or multiple images. Flashes of light, or floating specks may be seen. It is stated that the condition may be caused by refractive errors, in accommodation (focusing), by anomalous conduct of the six muscles surrounding the eyeball, or by hysteria or neurasthenia, by improper illumination, or by morbid conditions of other organs.

Those predisposed to the condition find that it readily occurs, so we are told, in any concentrated use of the eyes, or when motoring, or train riding ("panoramic asthenopia"), or in public crowds, at games, moving pictures, et cetera...

But we are told also, presently, that reflex disturbances may be caused in the system by the presence of the condition itself; for example, remote pains, nausea, tics (twitchings), et cetera.

We are told, finally, that asthenopia is the commonest of all eye symptoms, and the one that is most readily relieved by proper treatment. The treatment is the removal of the cause.

The discussion in the books thus becomes confusing.

We know that most of those who are wearing lenses have been told that their abnormal vision has been caused by eyestrain. No morbid conditions have been found in other organs. They are apparently in normal health. More confusion.

There are several types of these prevalent disturbances of vision. There is a tragic condition which is the ultimate extreme of such abnormal functioning. It is called psychic blindness. This catastrophe is not common but it is well known. Also, quite frequently, it likewise is recovered from spontaneously. Such spontaneous recoveries generally occur after all deliberate efforts to relieve it have failed. In those cases of record where it has been relieved by deliberate effort, the cure has been effected by endeavors to influence the mind.

The cause of **psychic blindness** is always a mental shock. Its occurrence may crash instantaneously, or may take months to develop; and likewise the recovery may occur in a moment, or may take years.

A woman's husband threw a cup of hot coffee in her face. In that instant she became blind. Fortunately, the doctor consulted was a clever fellow. He told the patient that the coffee had caused a film to form over her eyes. He said he could clear it off by painting the eyeballs with a solution, and covering the eyes for an hour with a heavy surgical dressing. The solution, he said, would dissolve the film. When finally be took the dressing off, the patient's sight was normal. Of course there was no film on the eyeballs. The film was in her mind.

A man who had spent his life building up a large enterprise, found himself finally promoted into the honorary office of Chairman of the Board of Directors. His unhappy discontent caused gradually a complete loss of vision.

Finally his physician persuaded him that mental depression had caused this remarkable condition of his sight, suppressing the normal reaction of the central control of vision in the brain.

The physician explained that one hour of unconsciousness, under the effects of ether, would quiet this extreme reaction because it would silence the haunting humiliation he felt, being thus deprived of direct control of the enterprise which constantly filled his thoughts.

His troubled mind accepted the promise. When he recovered consciousness, the physician held out his watch, and the patient told him the time.

Even a very little deliberate consideration of the import and the indication of records such as those, makes one realize their significance.

Those who are troubled with nearsightedness, or farsightedness, or astigmatism, or other symptoms of eyestrain, report that the degree, and even the nature of the affliction, varies with an irregular irregularity.

The standard books explain that eyes which are crossed make changes often, temporary or permanent, in the direction of the squint. Such changes may occur in one eye, or in both eyes. They occur without the consciousness of the owner of the eyes.

This marvelous, exquisite mechanism of human vision, this faculty which is next to thought, is, so much of it, so beyond our conception that the most erudite descriptions cease to describe it. Their explanations terminate in crude speculation, very little beyond the border where "radiant energy is transformed into another form of energy", which cannot be described, when it "contacts the retina", the lining membrane of the eye, and as a strange new force, carries a message to the brain.

Did you ever deliberate over the process by which the size of a sky scraper building is taken into your eyes, and you can "see" how big it is? Can you explain at all how a glance at another human face may give you some specific conception of the thoughts in the mind of the owner of that face?

The eyeball itself is only the beginning of the mechanism of vision. Wonderful as it is, the eyeball, with the muscles which encircle it and change its shape, comprises only the comparatively trivial end organ. That end organ receives and directs the waves of light, determining their distribution and contact with the retina. In the retina biological chemistry accomplishes the transformation which is known, but cannot be described.

The refracted light rays, which comprise the stimulant to the ultimate tendrils of the optic nerve, become the determining factor which conveys to the mind the presentation that makes possible the conception impressed on the consciousness.

Psychic blindness is a disturbance which suppresses the ultimate function of the mechanism of vision. That part of the process which normally so impresses the microscopic brain cells in the visual center, that the mind itself becomes conscious of the message coming in from the world outside.

This central control has demonstrated its ability to correct, spontaneously, such lapses into helplessness. There is official record, sufficient, that deliberate scientific effort has accomplished the same recovery. That is done by securing what Emile Coue' described as autosuggestion. For years he secured analagous results, in that same way, that are recorded today as fine scientific achievements.

Is it not clear that the recovery of normal function, in those subordinate factors in this mechanism of vision, that is, the correcting of abnormal conduct of muscles which are receiving improper nerve impulses, is a trifling matter, when compared with the recovery from collapse of the control center itself?

In other words, since no one would, or could deny the recovery from psychic total blindness, upon what grounds can anyone persist in claiming that there will never be any cure found for the simple, almost fashionable, variety of eyestrains with which our people are being supplied?

In the civilizations that had appeared, and had been lost again, in the mists of time, long ages before the Egyptians and the Chaldeans, man had learned how to make telescopes, and how to study the stars, billions of light years away in the vast firmament. But the art of making telescopes had been lost.

Since that long ago age, the mechanics have learned how to make great improvements on the glass that was made eons before the records, or the imagination, of present day man had any conception of them.

Since that time, too, anatomists and physiologists and psychologists have uncovered for eye specialists of the medical profession today many mysteries of which the wise men of old China had no knowledge.

But in their treatment of the varieties of abnormal vision designated as eyestrain, those specialists, the world over, are found to be still congealed in the same footprints on the sands of time as Marco Polo found in the civilization of ancient China.

During the fifty years of my own personal experiences concerning abnormal vision, like Omar Khayyam, I have heard great argument

About it and about: but evermore
Came out by the same door where in I went.
Back to the same door. Astigmatism is not curable.

But Coue cured many thousands with much more serious afflictions.
(Bates Method cures astigmatism.)

Milton H. Berry, a plain kind of a genius in Los Angeles, left a medical record of three thousand cases of various kinds of paralysis which recovered the power of their muscles, all of them after their various medical advisors had informed them they were incurable.

If we would deliberately consider circumstances which are common knowledge, it would clarify many vague, almost unconscious mental impressions concerning this most important personal subject.

Multitudes who never heard of Dr. Bates have discarded their spectacles, often after wearing them continuously for years. That the majority of wearers have not discarded them proves only that they are still wearing them. Their experience confirms the habitual promise of the specialist that their eyes, with the spectacles on, will become more and more helpless, without the "stronger" and stronger glasses. The current explanation of the condition is the coined word "Eyestrain". The simple practices of the Bates Method teach the patient how to correct said strain. The mental discipline learned in that endeavor is illuminating. The freedom from the spectacles, and the eyestrain, is not the only value discovered.

How often one hears a direct, or a covert sneer at the possibility of "disciplining our thoughts". Those who have that mental attitude are ignoring not only the priceless privilege endowed in their inheritance, but as well the cost of that "thoughtless" surrender.

Not a few of those seeking relief from glass lenses are obstructed by the unconscious build-up in their minds, accomplished by the current propaganda against the possibility of securing a correction of the abnormal condition of their vision. Suppose you consider your own conception.

CHAPTER III

THE ANSWER

It was his own distress that gave birth in his mind to the burning urge which drove Dr. Bates to find the true answer, the real reply to the universal belief that eyes behaving like his were helpless, and hopelessly lost.

His lenses were hard as stone he had been told. But it was true, however, that his eyes did accommodate. Dr. Bates published this record in his book, in which he tells the story of his own experience. Generally, however, **his eyes accommodated (focused) in the reverse, that is, at the wrong time. His was a strange remarkable case.**

According to the commonly accepted explanation today of how the eye accomplishes accommodation, a hard lens cannot accommodate at all.

The diagnosis was that Dr. Bates had presbyopia, that is, a lens which had hardened. Presbyopia (the eye of old age) is expected to begin at forty. The books state, however, today, that cases are on record in which presbyopia began at eight. On the other hand we know, Oliver Wendell Holmes, a distinguished medical intellect, reminded us, in his Autocrat of the Breakfast Table, that in millions it never does begin.

Those who are interested can find evidence, in current events, that a new, and a different, and an imperative demand is becoming organized, for the truth to be told them about this misinformation. They want to know why a trifling abnormal function developing in the mechanism of vision, condemns that whole mechanism as helpless, permanently, without the assistance of a pair of glass lenses.

Most of the varieties of abnormal vision are being explained casually, under the designation of asthenopia, the vernacular eyestrain.

Like the miner who traces the tiny particles of gold back up the stream to where they originate, the genius of Dr. Bates told him to trace this effect (eyestrain) back to its source.

There are a number of factors in that problem. They will be described in this book as we come to them.

Dr. Bates began by studying the six muscles which are attached to the outside of the eyeball, the muscles which the great philosopher Helmholtz looked at, but did not "See".

The standard books allow to the muscles the power to do just what Dr. Bates explained that they do. But, like Dr. Helmholtz, those standard books do not realize the import and significance of what they themselves describe.

Dr. Bates worked on: Muscles carry out orders. Orders are delivered to them by nerves. Nerves receive directions from the central control, where all nerve impulses originate.

When it is ascertained that the muscles, and the nerves, are in good working order, the fault in the mechanism must originate in the central control. That is comparatively easy to understand.

But to comprehend the functioning of that secret mental organism is not yet possible. Fortunately, such knowledge was not necessary for the purpose in the mind of Dr. Bates.

In those cases where a spontaneous recovery has occurred, the control center has ceased to give out abnormal impulses. It again is giving to the muscles the correct orders which it gave originally, when the muscles performed their function without the disturbances caused by "eyestrain".

At this point, someone who is conscious of an awakening interest in the subject interjects a challenge. "But that is psychology". Dr. Bates admits that it is such. So we remind our interrogator that sight is a psychic function, so termed in the text books. From that hitherto unmarked margin on his trail Dr. Bates had to be guided by his own "psychology".

This book will not presume to discuss at all the working of the mind of Dr. Bates. It will simply follow the trail of his endeavors, as marked by his footprints; the sequence of his proceedings, as described in his writings.

Having arrived at the source, past the dissection of muscles, and the tracing of nerves, he laid down his tools, including his remarkable original work in photography. He was on firm ground. He must learn now how to approach the "master mind" of the biological organization.

Alexis Carrel, in his MAN THE UNKNOWN, raises the curtain that conceals from the casual attention of most of us the forces that are working out the salvation of the race.

Dr. Carrel reminds us that a few are born endowed with rare and marvelous powers. These men have intuition of things not known, imagination that discovers and creates. They have the faculty of discerning the hidden within the living matter, which he says is ignored by physiologists, as well as by economists, and left almost unnoticed by physicians.

In his frank dissection of the dangers in the trail of the medical specialists, Dr. Carrel expresses the opinion that harm is caused by extreme specialization. He believes that a specialist who confines himself, from the beginning of his career, to a minute part of the body, has so rudimentary a knowledge of the rest of the system that be is incapable of thoroughly understanding even that part in which he specializes.

As an illustration of the consequences involved in this point of view of a leader of medical thought, we find the eye specialist physicians delivering the mind, where the said mind is concerned with the mechanism of vision, over to the large commercial interests that supply the glass lenses, and that even advertise lenses which are so made as to prevent the eyes from receiving the natural light of the sun.

In the discourses and the accomplishments of this vast field of psychology, normal and abnormal, the foundation and the determination of the course of treatment is predicated on the conception that thought is the power in our lives that determines our course. The will is only the factor which carries out the purpose of the thought. As Coue' puts it so simply, it is the IDEA which dominates the conduct, and the idea comes from the imagination, and the imagination is the unconscious when it makes its conception conscious as a thought.

When a thought is held that artificial lenses are the only possible relief to help difficulties with abnormal vision, the will determines to accept that opportunity.

When deliberate thought accepts the proof that a natural way has been discovered by which the fault in the function can be corrected, the picture is changed, and the decision then remains with ourselves.

Every direction, and every practice described by Dr. Bates, is based upon this conception. Interpreted simply, he endeavors to imitate the normal, unconscious conduct of a mechanism of vision that is not disturbed by any abnormal strain.

He requires that the beginner forget his eyes, and have his ATTENTION absorbed entirely in carrying out the details of the proceeding involved. That is the habitual conduct of one whose eyes are normal, who never does think of his eyes.

Some are so responsive that they are cured at the first sitting-the same as those who recover normal vision spontaneously.

The spontaneous recoveries revert unconsciously to the correct habit. The pupils under instruction in the method of Dr. Bates must accomplish the same transition deliberately by following the specific directions given.

In this book the directions are based on those given by Dr. Bates. No claim is made for any improvement on the techniques he devised. Like all geniuses his work was simple and direct.

In plain language, simple but fully warranted by the accepted findings reported in technical books on the subject, these acquired abnormal functioning's of the mechanism of vision, fundamentally are habits.

Unconsciously they come. Unconsciously they cease. Spontaneously, meaning without any voluntary effort, multitudes have ceased to be so afflicted. Their normal sight has returned.

Even though many have not known of such cases, certainly those recoveries are not uncommon. This was one of the impressive considerations which aroused in the mind of Dr. Bates the determination to search for the truth. He undertook to find the foundation of the principles and the factors involved in the medical specialty which he had chosen as his life work.

The obvious contradictions urged on him as the explanation for his own most peculiar affliction intensified his conviction. The necessity for relief was a constant urge which drove him through fields of research entirely new. In order to overcome obstacles which had never before been considered, he was obliged to invent new methods.

When he had discovered causes, and the way the mechanism of vision effected its own cures, without the help of the conscious mind, he had to devise practicable techniques, easily learned and carried out. The conscious mind had to learn to undertake the endeavor to recover normal vision by securing the co-operation of the visual centers which are known to control the mechanism of vision.

This search culminated in the practices which are known to the world as the Bates Method.

In the several books that I have bought and read, which offer what are often called "exercises" for correcting abnormal vision, I find the specific presentation of the writers' own interpretations of the suggestions of Dr. Bates.

As I understand Dr. Bates, we are not to order the mechanism of vision. When we are instructed to make said mechanism perform a series of complicated proceedings, the effort is expended in training the mind. One may accomplish a cure by such a complicated method. But a deliberate consideration of the instantaneous, or even the gradual spontaneous (not consciously) cures that are recorded and accepted will impress the realization of the value of the method which the mechanism uses. Doctor Bates reported a number of cures accomplished in less than an hour, when he could secure the simple and direct response of his patient.

Such a simple and direct response is not common. This means that one does not really accomplish a deliberate consideration. There is generally an automatic, unconscious inhibition. The only thoughts a beginner has had on the subject of the troubled vision have been the register of the prevailing propaganda, which states positively that the condition is not curable.

To eliminate that confirmed mental attitude is a necessity, as a beginning in the endeavor. Such a new and different conception will be produced by a study of those established and accented records printed in the standard books, and found, each in their place, in the chapters of this book.

CHAPTER IV

THE EYE

Everyone knows that the eye is round. Not many have inquired much further. Some could tell us that the round eye lies cushioned in the soft tissue which lines the cave-like round hollows of bone that carry the eyes; right under the floor of the skull, beneath the brain. There are six muscles attached to the outside covering of the eye. At one end they are attached to the edge of the round hole in the rear of the cavity through which the optic nerve passes on its way back to the brain. Four muscles pass forward and are imbedded in the outer walls of the eye, near the front; one on top, one on the bottom, and one on each side. The other two are attached to the sidewalls of the cavity, and are wrapped around the middle of the eye like belts, one passing over, and the other passing under the eye.

The four muscles called the recti, passing forward on all four aspects of the walls, move the eye in different directions. Working in harmony, they change the position of the eye in the socket, and point it, unconsciously, wherever the mind wants to look. When they are contracted together and sufficiently they change the shape of the eye and make it flatter on each end. That is, they make the distance shorter between the front and the rear walls than it properly should be. Such an abnormal condition is present when an eye is what is called farsighted. The two so-called oblique muscles serve to compress the eye in the middle and flatten it there so that it becomes longer horizontally. In this condition the distance is longer between the front and rear walls of the eye, called the focal distance. Such a longer focal distance is necessary when the eye is focused on nearby objects.

The inside of the eye is divided into two compartments.
Immediately behind the anterior wall of the eye is a small chamber, filled with a thin fluid, which separates the front of the eye from the lens. The lens is fastened to the inner walls of the eye by a ribbon-like circular band of tendon, attached edgewise. Behind the lens, filling the remainder of the eyeball, is a different liquid which resembles a jellyft (jelly, fish, fit, gelatin like?) in

consistency. The spherical shape of the eye is sustained by the pressure outward of the fluids with which it is filled. The crystalline lens consists of an elastic capsule holding in an oval shape its fluid-like contents.

The walls of the eye are opaque, and light can enter only through the transparent lens in the middle of the front wall. The colored circle just inside the front of the eye is called the iris, and the opening in the center of that circle is called the pupil. This opening constantly varies in diameter. It is furnished with a diaphragm, of which the diaphragm in a camera is something of an imitation. Its function is to control the amount of light which is permitted to enter through the lens. In a poor light, it enlarges, and in a strong light it contracts. The outer walls of the eye are composed of a dense, firm tissue, with a lining of opaque pigment, and contain vessels which supply the nutriment required. The inner membrane, lining the eyeball, is called the retina. **This membrane, although it is thinner than the finest paper, consists of ten distinct layers.** In its surface are spread out the nerve terminations, which are the microscopic endings of the nerves that receive and carry the impressions made upon the surface of the retina by the rays of light. We have some understanding of this when we remember the film in a camera, which also is acted upon, although in a way infinitely simpler, by rays of light.

The terminations of the nerve tendrils in the retina are of two kinds. They are distinguished as rods and cones, and there is much difference in their exact functions. The most sensitive part of the retina is a small area at the very back of the eye in the center, which is called the macula. Here form and color and very sharp definition are registered. In this area there are no rods, which are nerve endings plainer and less highly specialized than the cones. Beyond this spot cones and rods mingle, but toward the front edges of the retina no cones are found. The rods seem to be more sensitive to the presence of simple light than are the cones.

When light rays contact the surface of the retina a chemical transformation takes place. The force called radiant energy is changed into "another form of energy". This new force is carried by the nerve fibres which terminate in the cones and rods, back through the collection of fibres called the optic nerve. In order that light rays coming into either eye, from right or from left may be registered simultaneously in the visual centers of both sides of the brain, there is a switch in the course of the optic nerves from both eyes. This is the beginning of the mechanism of sight: The comparatively simple reception and absorption and assimilation of those rays of light which are reflected from external objects and come into contact with the retina.

Vision is classified as a psychic function. The eye does not see. It is the brain that sees. The force or energy which courses up through the optic nerves to the vision center in the brain creates a transformation in those brain cells. Just how those impressions are registered so that they become conscious conceptions, has not yet been discovered. The process is a brain function, and part of the mind. **Previous similar impressions upon brain cells make it possible for a harmonious cooperation of memories to interpret the newly registered images. This involves memory, imagination, and every element of the intellect.**

Does not this brief description impress the tremendous significance of the prevailing custom of neglecting all this marvelous mechanism?

Reminding the reader that this is exactly what is being done by the eye specialists who allege that the different, common types of abnormal vision are not curable, should help the patient realize the factors and their conduct which are involved in the mechanism of vision.

This theory on the part of those specialists is founded on statements formulated by medical men long dead.

Under the present stress of necessity as much has been discovered in the field of medicine as in any other branch of science. **The military authorities of the United States have learned that it is possible to cure or to sufficiently improve the defective vision of the men they needed in the service.**

Is it not obvious that anyone who continues to maintain that an abnormal function in the mechanism of vision is not curable, is ignoring this record of accomplishments.

The import of what I am trying to impress on the patients, in calling attention to this field of thought, is the influence of unconscious inhibitions, in any effort to accept an entirely new conception, the more especially concerning a subject which is unfamiliar.

I am not concerned here with the belief or the practice of a specialist who is prescribing glasses for those who want them. My purpose is to constrain the patient against his own unconscious reluctance. That is, the failure to discard the teaching which has been, may I say incorporated in his mind, during the years, as a part of what I think of as the mechanism of vision.

CHAPTER V

ACCOMMODATION

When the word "accommodation" is used by an eye specialist, he means by it the changes which take place in the eye when it is focusing. That is, the eye is accommodating itself to the distance of the object at which it is looking. Just what muscular changes occur in the eye during the act of accommodation has been a subject of most fascinating interest for centuries.

There have been different theories as to how this is accomplished. Some supposed a change in the position of the lens. Another theory was that the eyeball was lengthened. That would amount to the same thing; it would change the relative position of the lens. Such a change would increase the distance between the lens and the most sensitive part of the retina, at the rear of the eyeball. A change in the horizontal length of the eyeball can be accomplished only by the external muscles of the eye.

We must remember that rays of light, while passing through the front of the eye, are so refracted as to present the image of an object upside down on the retina. This is because the rays reflected from the top of the object are directed downward, so as to contact the floor of the retina; and rays reflected from the bottom of the object are directed upward and contact the upper surface of the retina.

In some way, before the "new form of energy" so called in the text books, registers in the cells of the visual center, that inverted image is reinverted.

Dr. Helmholtz, who died in 1894, was the authority for the present prevailing belief that accommodation is accomplished by an increase in the convexity of the anterior surface of the lens. He said, however, that his guess was only a theory, and his findings not satisfactory. He simply ignored the transverse muscles, saying that besides the lens, he did not "see" anything else which could accomplish accommodation. That certainly was a great man's lapse.

For a century those external muscles had been discussed, and some leaders of thought had believed they did accomplish accommodation. It had been fully proved, too, for many years, that an eye could, and many eyes did, accommodate after the lens was removed. Dr. Helmholtz offered no reply to those records.

The discoveries of Dr. Bates explain why eyes can accommodate when the lens of the eye has been removed. They do not conflict with what is known of the structure and functions of the tendon and the tiny ciliary muscles that sustain or modify the convexity of the lens. His discoveries explain many apparent discrepancies in the theories which are held, or discussed, by eye specialists. They show why and how it is possible to prevent and to cure the various abnormal function conditions which are such a distressing problem to the men whose work it is to care for and to help the increasing number of cases of defective vision.

It is established that the normal eye at rest is adjusted only for rays coming from a distance, not for rays reflected from objects nearby. Rays from nearby objects will come to a focus behind the retina. But the myopic eye, that is the nearsighted eye, does constantly focus the rays reflected from near objects. It is accepted that the myopic eye is always longer horizontally than the normal eye at rest, when it is not focused-that is, accommodated-for nearby objects.

Dr. Bates discovered and proved how this change is accomplished. But he too had a lapse. Perhaps he was "made mad" by the Gods, bitter finally from the contumely heaped on him by the specialists, he wrote that "the lens has no part in accommodation". But that is not true.

The eyeball, in changing the distance between the lens and the near end of the retina, changes its shape. Its walls are curved. When the rear end recedes from the lens, the curvature of the walls changes as the ball is made longer horizontally. The lens is placed a short distance back from the inner side of the front end. Its substance is not an unchanging solid. Its capsule, the flexible envelope which holds the contents in shape, is fastened to the curved inner sides of the eyeball by the tendon which controls its shape. Any change in the shape of those walls could modify the convexity of the anterior surface of the lens. This relationship makes it necessary for the exact shape of the lens to perfectly conform to any change made in the curvature of the anterior of the eyeball. This is necessary because the outer covering there, the cornea, is also a refracting medium, and the lens must conform to any changes that may occur in the refraction which takes place in the cornea. It is necessary also for the convexity of the lens to conform perfectly to whatever changes occur in the relationship with the retina consequent upon the changes in the shape of the eyeball.

At that moment the lens must not become less convex. Perhaps, it is kept from so changing; or even it may be made a trifle more convex. This could be done by the ciliary muscle. Dr. Bates ignored that muscle, even as Dr. Helmholtz ignored the comparatively big oblique muscles.

If that theory is correct, it will harmonize the findings of Dr. Helmholtz and Dr. Bates. I have not found it written before. But that is my guess.

It is apparent that the same impulse or nerve control which issues from the visual center in the brain harmonizes the cooperation of the external muscles and the ciliary muscle of the lens.

The highest standard text book writes specifically that the theory of Dr. Helmholtz does not accord with some accepted findings. The explanation offered here would agree with what he offered, and with the discovery of Dr. Bates. **The lens serves as an**

auxiliary adjustment, secondary and compensatory to whatever changes are produced by the action of the two external oblique muscles of the eye.

This is not a text book. This chapter gives a sufficient description of the factor of accommodation, based on factual records in standard text books. You have also the statement of Dr. Helmholtz, and that of Dr. Bates. I believe you will see the reasonableness of my explanation, which apparently harmonizes the two conflicting claims.

It will probably help you to succeed if you get a clear understanding of the mechanism, and realize that there was no real conflict; because they both were right in their positive claims, and wrong only in their denials, one against the other.

That however, is not of fundamental import to you. **The lens is a factor in accommodation, and the oblique muscles are also a factor. The records in the standard books support that statement.**

What you should emphasize, and impress on your mind, is that the same central control activates both muscles, and when the functioning is normal, the mental conception is correct.
Bates method relaxes, corrects the function of all the eye muscles, inner and outer.

CHAPTER VI

RELAXATION

We often hear the word Relaxation. With most it is little more than a joke. To the thoughtful, it is something they are trying to learn about. They have realized that it is of vital importance. They know that it must be mental. Tersely (Brief, to the point, simply) it means: Be yourself, at your own best, deliberate but alert, confident and expectant, but without abnormal tension, conscious that you are relying on the marvelous inherent power of the organism which is your endowment.

Such a state of mind some of us have, in some measure, sometimes. Today there are many, in humble stations as well as among the great, demonstrating that what they are giving is born of a magnificent endowment, working well.

Relaxation does not necessarily mean rest. It has been described as change of motion. An artist painted it as a bird, perched on a swaying thin branch, waving over a rushing turbulent stream.

The term relaxation applies to all the parts and functions of the system. **The foundation of the method of Dr. Bates is: "The eye which is perfectly relaxed sees perfectly. In order to relax the eye, we must relax the mind."**

His method is a simple and a scientific and direct approach to the dominating subconscious mind. In its practices we center the imagination on the specific idea that it is necessary only to stop trying to see. Such trying comprises an abnormal tension, called EYESTRAIN. When we cease such straining, we allow the waves of light, described as radiant energy, to contact the retina unhampered, allowed to convey a normal correct impulse to the fibres of the optic nerve.

We need not know why or how incorrect orders distract the harmony of the functions composing the mechanism of vision; why eyes become crossed, or nearsighted, or astigmatic; nor how many eyes have accommodated after the lens of the eye has been removed, just as other minor disturbances, have recovered normal function without any consciousness on the part of the owner. But it cannot honestly be denied that there is ample record of those facts.

The correct practice of a technique which imitates the normal function of the mechanism of vision, relying on the cooperation of the mind, with an earnest attitude of expectancy, actually serves to discipline, in a slight but effective measure, the faculty, the endowment of attention, by the conscious or unconscious exercise of which the visual centers in the brain register a conception of the object being observed.

That such a mental reaction is possible in this field, as in many other fields of mental conduct, is supported amply by the research and the records of accepted psychological findings.

Personally I can report many cures I have watched, recovering under my care, during the twenty years of experience I have had in the use of this method of Doctor Bates.

Shakespeare wrote that: "Our doubts are traitors, and make us lose the good we oft might win, by fearing to attempt".

It is my experience that those who come with only a hope, which is next to despair, are often hampered by an unconscious doubt. They wish, yes. But the fable says that if wishes were horses, beggars would ride. Not a few are like the beggar. They wish they could get on without glasses; but unconsciously they are almost convinced that they have the same chance as the beggar.

Those must stop looking back. Discard the mental impressions planted in their minds, and accept instead the uncovered truth that the visual center has restored multitudes to normal, and will do that for them too, if they will make the correct attempt.

CHAPTER VII

TYPES OF ABNORMAL VISION

Myopia

Myopia, the technical name for nearsightedness, is described as a condition in which the eyeball is longer than normal. For that reason the rays of light reflected from distant objects are brought to a focus before they contact the rear end of the retina. The effect is that those distant objects either are not seen or are not seen clearly.

Stating that the eyeball certainly is longer, the books indulge in a long further discussion, much of it erudite suppositions, sometimes contradictory. Considering here this type of abnormal vision, it is agreed that the eyeball is longer. But we remind the reader that the eyeball always is longer, and that will not be denied, whenever it is focused on nearby objects. In short, a habitually nearsighted eye is an eye habitually focused for nearby objects.

All myopes will agree that their nearsightedness is so variable that it might be called an irregular irregularity. It may be thought of as an acquired habit which is more or less constant.

Dr. Bates claims that such an eye has developed a difficulty in an effort to see distant objects, and seeks relief from that strain by confining the function of vision to objects close up.

Many suggestions are made concerning general hygienic environment, and personal conduct, which plainly indicate that the acquired habit can be cured and may be prevented. Its beginning, and type of misconduct, variable rate of increase, and sensitiveness to circumstance, as described in the books, all support the explanation here offered, and warrant the claim that it is not incurable, even as the books point out that it is preventable.

Hyperopia

This condition, like myopia, is produced by an improper action of external eye muscles. When the two oblique muscles contract at the wrong time, it is myopia. When the four recti muscles contract uniformly and equally, instead of moving the eyeball in some specific direction, they shorten it, so that the focal distance between the front of the lens and the rear end of the eye is too short, and the light rays from nearby objects would come to a focus behind the retina. One does not see any object with a perfect register, but the far off objects are clearer than those nearby. Commonly a farsighted person, so-called, sees clearly very little farther than a person with average vision.

Presbyopia

"The eye of old age" begins to appear about the time one passes the meridian in the forties. The supposition is that the lens is getting harder, and cannot change its shape. Cases of this condition, it is recorded, have been diagnosed at nine years of age. It would be idle to discuss the correctness of that diagnosis. Surely it might be wrong.

It is not reasonable to expect the eye to maintain a youthful vigor different from any other unit of the system. Accommodation is a function that involves muscles as well as mentality. But some maintain their general physiological vigor far beyond the average normal. Many lose it earlier. Dr. Holmes, a leader of medical thought, reminds us pointedly that **some retain at eighty years a power of vision exceeding the average of youth.** To say simply that a hardening of the lens is the only cause of presbyopia is an assumption not only unscientific, but also inconsistent with findings accepted by the medical profession.

Astigmatism

Astigmatism is defined as a refractive condition of the eye in which the parallel rays falling upon it are not focused to a single point. Instead of a single point, they are spread into a diffused area on the retina. There are a number of types of this condition, which is referred to as an aberration. They are classified as latitudinal or longitudinal, regular or irregular, direct or inverse or oblique, simple or compound or mixed, myopic or hyperopic, and these classes are again compounded. These classifications are based upon an elaborate and meticulous study of the many various and complicated ways in which an astigmatic eye may, or may not, conduct itself. The variegated combinations of abnormal refraction which are described are all ascribed to one or two causes. The lens may be too near to, or too far from, the receiving screen, the retina; or the refracting surfaces of the eye (that is, the covering of the anterior end of the eyeball, and the lens) are curved too much or curved too little. The surface covering also may have the correct curvature, but may be too dense or not dense enough. Astigmatism, it is stated, may be congenital or acquired.

The above is perhaps a sufficient explanation, and enough of a technical description, of what occurs in astigmatism. To put the picture simply, it means that the eyeball normally should be perfectly round, and when it is not, a condition is present which is the cause of unequal refractive areas. The uneven external surface of the eyeball sends the light rays in wrong directions, and the result is very much like a photograph taken while the camera is moving.

The explanation of the cause which is given by Dr. Bates accounts for all of these varieties and variations.

There are six muscles fastened into the walls of the eyeball. When these muscles move with the perfect coordination which is their normal function, there is no astigmatism. When they impose an abnormal, irregular, and uncoordinated pressure upon the eyeball, some parts of the surface are subjected to a greater or to a lesser compression than is normal. That causes the flatness in one meridian, and permits a fuller curve in another meridian. When the abnormal pressure is released the fault is corrected. That seems so simple that in the text books it has been entirely overlooked. So was Newton's law, for a long time.

In the text books there are many pages about this famous, or infamous, intruder, astigmatism. But it all amounts to a most erudite, meticulous recording of research findings which we are told constitute a pathological condition that is incurable. But that is not a fair statement. It is possible to modify and even to diminish the said symptoms, so that they become, in the words of Shakespeare, "smaller by degrees and beautifully less," even until at least the condition is not at all disagreeable.

Cataracts

Cataracts are commonly thought of as different in nature from the functional conditions above. But it is true that many of these specific abnormal conditions also recover, even without any treatment. There are many different types of cataracts but it would not be of interest here to discuss them with the general reader.

Years ago, I discussed with an ophthalmologist friend of mine a white cataract filling the lens of a fifteen-year-old boy, who acquired it from a severe attack of oak poisoning. Before his eyes were closed by the swelling in his face, the lens was clear. I saw him first four months later, after treatment by his family doctor, and then an ophthalmologist, and there was no improvement. After a few weeks of treatment, especially including a carefully directed exposure to sunlight, the lens became normal. When I urged my friend for an explanation, he replied that we know cataracts, even severe cases, recover spontaneously.

I have treated a number, generally elderly adults, and have been able to secure a considerable relief in all the cases, sometimes quite satisfactory.

A different kind of an opacity was a **heavy scar on the cornea**, covering the anterior end of the eyeball, the result of a severe infection of the eye thirty years before. The first time I saw it, the woman looked up at the sun, and said it was light; looked across the street, and said it was dark. There was a great improvement in a few weeks, and now, for fifteen years, the vision right through the unchanged scar has been as good a normal as most sixty-year-old eyes. The main treatment was a careful, graduated exposure to the sun, which stimulated the dormant visual center, helped very much by the hope, which was developed into an expectancy by the improvement which began in a very few days.

Strabismus

Squint, which technically is called strabismus, is an abnormal condition in which one eye deviates, or both eyes deviate, instead of pointing directly toward an object being looked at. The customary observation of such conditions is so casual that very few have any knowledge of the different forms in which squint is recorded. The abnormal deviation may be toward the nose, or outward, up or down, or in some oblique direction. When both eyes squint, they may assume similar abnormal directions, or may deviate in directions that are dissimilar. In some cases both eyes may look straight at the same object when both are uncovered, but when covered, either eye, or both, may deviate in any direction. That specific type of abnormal action is spoken of as insufficiency.

Deviations may be constant, always present; or intermittent, not always present. They may be continuous-the same during distant and near vision; or periodic-when the degree is greater for near objects than for distant ones, or the reverse. They may be concomitant (existing or occurring with something else)-when the amount of deviation is constant; or non-concomitant-when the degree changes, as the eyes move in different directions. These different conditions are often mixed, and the various combinations have specific names.

The reasons given in the text books for the development of squint involve so much intricate description and explanation that they would have no place in a book like this, which makes no pretense of being a text book. The predominating fundamental cause is an inherited predisposition.

It is common knowledge that the beginning of a squint is often noted following some sickness, generally in childhood. It may follow a mental shock. A girl of seven was thrown down by a big dog, and the result was an instantaneous squint involving both eyes. The text books state that certain causative factors are not located in the muscles that move and may hold the eyes in abnormal positions. The books point out that until very late in the development of most cases of squint, the rotations of the eyes are normal, indicating that the power of the muscles is neither impaired nor excessive. The books conclude therefore, that the changes which take place are doubtless central, due to the excessive stimulation of the center for one movement producing inhibitions for the center of the opposing movement, and vice versa.

Thus far, I have described briefly the explanations one finds in a standard text book regarding the many different forms of squint, and the theories which are offered to account for the abnormal conduct of the different factors involved. I will now present the conception of Dr. Bates, which recognizes that the fault in the mechanism of vision originates in the center in the brain, and endeavors to correct that fault by influencing the conduct of that center. Since it is established that some eyes afflicted with a squint, as reported in the text books, not only become straight, but recover normal vision, there is, then, a way to actually cure them. That is the way by which they cure themselves. The laws of that way are not known. But the symptoms are quite evident,

and the causes are indicated in what is known of the mechanisms. The established facts would seem to point out the line of endeavor. It is that line of endeavor which is the foundation of the successful methods of Dr. Bates.

Many can produce a strabismus in one eye, or both eyes, at will. I saw a man make his eyes roll in unison like a moving figure eight; and he could hold them wherever he wished. A famous German movie star, in Hollywood, acted realistic parts in some very tragic scenes. Several times in the performance, at a very tense moment, his eyes showed an extreme strabismus which disappeared instantly when he had finished that specific portrayal. Such well-established facts are the warrant for the technique in the Bates method that is to be used in the treatment of strabismus.

Other Conditions

I might mention here many other abnormal functions, and some actually diseased conditions, reported by Dr. Bates as cured by his method of treatment; but I do not feel that to be necessary for the purpose of this book.

There is one remarkable case which supports amply the truth of that claim of Dr. Bates.

Aldous Huxley, an author famous over the civilized world as a writer of books, published by Harper, on different scientific subjects, has written a book entitled **THE ART OF SEEING**.
Margaret Corbett Bates Teacher greatly improved Huxley's eyesight.

He reports that for many years he consulted eye specialists here and abroad about a specific disease of his eyes. He was becoming totally blind. The specialists all informed him there was no possible cure for the condition. Finally he was cured, and his eyes are normal, by the method of Dr. Bates.

But SEEING is not an art. It is an endowment. Huxley was cured because his scientific mind developed a conviction that there was a power born in him which could correct the abnormal process that was destroying his sight. As Alexis Carrel has worded it, he demonstrated another case in which "Psychology contacted physiology and effected a quick repair".

Finally, however, I must call attention, as a most vital concern, to a statement in a much read journal published by the American Medical Association. An ophthalmologist proclaimed that every infant's eyes should be examined by a specialist, because it is possible they are already abnormal. He then asserted that if the said specialist decided the infant should be made to wear glass lenses at one year of age, the spectacles should be attached to the infant at once. Remember that the eye specialist contends that defects of vision are not curable, and lenses must be made strong as the eyes become more defective.

Certainly that statement, in that paper, does not represent, and is not consistent with the attitude, or even the consciousness of the medical profession in general. It is a fact that the mass of general practitioners of medicine, and even many eye specialists I believe, have not even heard of Dr. Bates, or his method, and surely would not approve of imposing glasses on a year old infant.

CHAPTER VIII

PRACTICES

"Each Faculty acquires fitness for its function by performing its function; and if its function is performed for it by a substituted agency, none of the required adjustment of nature takes place; but the nature becomes deformed to fit the artificial arrangements instead of the natural arrangements."

HERBERT SPENCER

The Snellen Card

Dr. Herman Snellen, a celebrated Dutch ophthalmologist, who died in 1908, offered a standard test for visual acuity by designating the size of letters that are to be read at different distances from the card.

Because the common average of those being tested, young as well as old, have so much poorer vision than a great many have, Dr. Snellen was obliged to set a standard low enough to accommodate those with the poorer vision.

But the Snellen Card had been used only as a test to diagnose and designate the degree of visual acuity.

It was Dr. Bates who discovered and demonstrated the value of Dr. Snellen's test card as perhaps the most helpful among the different practices he described for the correction of abnormal function in the mechanism of vision.

Central Fixation

Naturally the principles involved in the method have to be adjusted to meet the specific conduct of each mentality. The different types of abnormal functioning may be caused by different types of reactions in the central control of the mechanism.

Having considered the contents of the previous text, suppose we allow the imagination to be dominated by the idea that we are going to imitate the conduct of the normal eye. We therefore will stop trying to see. We will be governed by the realization that our endeavor is to carry out a simple proceeding. We look at a letter on the Snellen card, or at some other letter, or figure, or object. Not seeing it, we close the eyes softly for a moment, then look the same way again. Properly, easily carried out, the "strain" is eliminated by the conscious expectation that the rays of light, not being interfered with by the acquired bad habit, contact the retina in a normal reception, and the image is perceived.

More than many times I have watched patients succeed during the first hour, in reading two, three and even four lines on the Snellen card, that at first they could not decipher.

There are details in this practice, and perhaps the most important is the factor designated as central fixation, which is the same in optics as in any other mental procedure.

Seeing consists of paying attention. Normally we see an object because the visual center pays attention to it. Confining the attention to a tiny spot is easier. It gets a sharper image, and it moves instantly to another. One imitates by likewise regarding a tiny spot, and then closing the eyes. A racing horse blinks, closes his eyes for a flash-otherwise he would "stare". To get advantage from this practice, one must do it with these ideas in mind. Remember that when we read a page of letters, we must have seen every spot on every letter of every word on the page-how else could we know what we have read? We must realize that we had to see every little spot.

Suppose one does not see at ten feet the line expected to be seen at fifty feet. A practice which generally helps very much to relieve the strain is to sit so close to the card that those letters appear very clear. Beginning with the first character on the fifty foot line, one pays attention to one small spot for just a moment. While the eyes are then closed for a moment, one keeps the mind intent by thinking of the letter. This procedure is repeated, on the same letter, say ten or even fifteen times. One after another, each letter on four or five lines is considered in the same way. Carefully reasoned out as explained, and consistently carried out, during a period of say thirty minutes or more, the habitual mental urge is automatically minimized, and many times so much diminished, even perhaps permanently in a degree, that one can go further, and perhaps still further from the letters, until reading them clearly six, or eight, and even ten feet away. Those who have experienced this improvement in thirty or forty minutes, have a new conviction, which becomes an expectation, and they are well started on the trail.

There is another type, of which Johnnie, age fourteen, is an example, that cannot figure out central fixation. Johnnie came to my office alone. Weeks after he had regained normal vision, in six lessons, I learned that a patient of mine had convinced his mother he need not put on glasses for life. She had a mind independent enough to make a decision, and she phoned me, and deliberately sent him alone, that she might watch the experiment without bossing it.

Before school closed, Johnnie had good normal vision. When he returned to school, six weeks before I saw him, it was quite poor. From the teacher, he bounced to the nurse. She knew only what she was told, and that spelled glasses pronto. "Come back in a week." That week made his vision more strained, of course. When he came to me, he could not read the fifty foot line at ten feet.

I explained that his eyes were just as good actually as last Spring. That the only trouble was his trying harder and harder to see, making things worse and worse, as he admitted. I explained deliberately that I did not want him to see those letters; I wanted him only to look at them the right way. Looking, he did not see, because he was staring.

He was told to close his eyes softly for a moment and keep thinking of a particular letter, which I told him was an O. Each time he looked and failed to see, he was to close his eyes and think of an O and then look again. He was to keep his mind intent, but his only concern was to practice the right way.

Of course he just stared hard at first. Adults do not "stare" as he did; but they have the same habitual urge in their minds, although like Johnnie, they think not.

The next effort is to distract, side-track the mind from the urge which is the obstruction. I told Johnnie some little stories. There was a cat climbed into a barrel. Three women saw it go in. They were sure it did not come out. But when they looked in the barrel, the cat wasn't there! Johnnie wanted to know where the cat went. I had to answer that they did not know.

There was a two hundred pound woman who fell out of a two story window and landed on a man's derby hat. The man argued that she ought to pay for the hat; she argued that he had no business to be there. By that time, Johnnie had forgotten about his eyes. Softly I slid him back to the letter. Presently Johnnie looked at me with a thrill, and told me that he had seen all the letters on the line at once. He did not know that he saw each letter separately, one after the other. He looked back at the line, and it was gone again. By reminding him that he had seen those letters on the card with his own eyes, I was gradually able to help him see clearly two more lines of letters.

There is a practice which will be more successful if one has realized the factors involved in what has preceded. Sitting close to a black letter O, one blinks at this softly, confining the attention to one small spot on the white surface inside the O. While blinking, one makes believe that the white space inside of the O is whiter than the white outside of the O. Then closing the eyes for a short

period, one watches expectantly to see if some after image appears while the eyes are closed. When this practice is carried out properly, and the mind is dominated by the idea, sooner or later the effect is an after image, when the eyes are closed, of a very black O; and when the eyes are open, the area inside the O actually seems to be whiter than the white outside of the O. This involves the mechanism of vision, which is being dominated by the idea, and cooperates with the intent of the mind.

Sometimes I have patients who are quite confused mentally by the simplicity of such practices as I have described. They have been so fully impressed by the current misinformation, that, almost unconsciously, their minds refuse to accept the proposition that their mechanism of vision, which they never heard of before, is not a helpless, sort of foreign part of them, and can be persuaded to act in a normal way.

Some types are willing to believe, and when led carefully, soon have evidence, like Johnnie in thirty minutes, which enables them to gradually forget what they have thought was the plain "truth and nothing but the truth".

Others are combative. Surely, they vaguely wonder, there must be some mysterious ritual, some ceremonious interference from the outside to combat and overcome the rebellious conduct of a pair of eyes which look at simple things and do not see them.

Almost always there is a new mental attitude aroused when they read the story in the first part of my book. It is hardly reasonable to expect them to accept such a new truth simply because Dr. Bates said so. I have opened with the series of practices as above because I have found that commonly it makes a better impression, and secures a prompter response if I present some such unique and unaccustomed procedure. In my own work I have found that Dr. Bates was right in considering a practice with the Snellen test card the most effective technique to secure a recovery to normal vision, and to maintain an increasing improvement.

He directed that a patient should continue a daily, or a frequent use of it, by what he called **flashing the card**. Placing the large letter card at a distance of ten feet or even much more, on a level with the eye, and holding the duplicate in small letters at two feet or less from the eye, the patient is to look from the small to the large letters and back again. That is actual accommodating; and it affords a fine test because one ascertains the success of the effort by being able to note the degree of clearness of the letters under observation. One practicing any technique becomes more and more proficient, and gradually the practice becomes automatic and unconscious.
Switching, shifting back and forth on objects '3 identical eyecharts, familiar objects'… at close, middle, far distances. Practice with both eyes together, one eye at a time, then both eyes together again.

Dr. Bates proved, by the records, that the placing of a Snellen card in a school room, attracting the attention of the scholars, showed an improvement in vision among the scholars, and even a correction of abnormal vision. This was done in the public schools of New York City, and of other cities. The card was removed from the schools of New York City, by some influence, after it had proved its value during eight consecutive years. It was placed at the request of the Board of Education, after their personal investigation under the direction of Dr. Bates.

It would not be expedient to continue describing other practices which may be of value in the use of the Snellen card. I have even had patients discover some original technique which seemed of special value to them. My endeavor is to have the patient learn the reasons, and carry on because they "know how".
Remember to combine shifting with central fixation. The vision is clear when the eye moves point to point.

The Sun and the Eye

There is a strange, new public habit which is remarkable as a freak. I am referring to the fad which is being indulged in by those who are wearing colored lenses to protect their eyes from the same sunlight in which they have always lived. Most of them would resent any assumption that their eyes are not normal. Some years ago this passing fashion got to be quite popular. We saw some lenses embellished to show how expensive they were. In two or three years that "new one" wore out. But a few are in evidence off and on, even yet.

The eye specialists condemned the practice, protesting that is deprived the eyes of the sunlight, and led to eyestrain, because objects were not seen as clearly and as easily as without the unnatural light rays.
Sunglasses cause unnatural, partial spectrum, unbalanced light to enter the eyes, brain, body. Plain glass also does this.

The eye began, we are told, as a piece of specialized tissue which was responsive to light. Always under the care of the sun, the eye has evolved into a mechanism which is so wonderful that its secrets are still beyond the knowledge of the human race. The sun is to the eye what air is to the lung. The sun, which is such a life-giving necessity to every other part of the human body, is above all an absolute necessity to the eye.

Civilized humans are becoming conscious again of a knowledge which seems to have been lost soon after the days of the Greeks and the Romans. They knew the value of the rays of the sun. Special exposure to the sunlight was a constant custom with them.

Perhaps, to Finsen, more than to anyone else, is due the beginning of the new knowledge of the value of the sun in so many conditions of impaired organic function and specific disease. It was Dr. Bates who directed attention to its very fine value in the care of the eye, and as a help in relieving conditions of eyestrain and dysfunctions.

We know that the men who live out in the open, on the land and on the sea, commonly look into the sun freely. It is natural for them, because it is a natural thing to do in a natural habit of life. Sailors and plainsmen and mountaineers, Indians and Africans and Eskimos have not yet been informed that the sun is an enemy of their eyes. The little Indian papoose, riding backward on mama's back, generally finds the sun shining right in its eyes when it opens them to see its new world. In the years, I have met over a dozen, right among the common people like myself, who astonished me (that is, the first few) by looking at the sun with the same ease and directness and comfort as they looked at the ground. Those who do that are not freaks. Those who cannot do it have simply learned-or should we say inherited bad habits.

One can use the sun on the eyes by simply allowing the rays to strike directly on the softly closed eyelids, for a few minutes at first, and gradually for as much as an hour or longer at a time. This may be done more than once a day. It will soon be found that after a period of exposure with the lids closed, the lids may be opened for an instant, and the eyes allowed to look for a good flash, first into the sky toward the sun, and later on even right into the strong sun. The streak of color seen immediately after the lids are closed is never unpleasant, and the after-effect is an increasing feeling of relaxation, and an improvement in the power of vision.

I early learned (1924), from directions of Dr. Bates, to know the great value of sunning the eyes. Beginning with the softer sun, in the forenoon or late afternoon, and gradually using the noon sun. One must not bend the neck, but assume some relaxed and comfortable position. It may be better to move the head leisurely from side to side. Some prefer to cover the head. Thus the skin gets the rays more kindly than with a motionless exposure. I have, when I had the opportunity, lain on the grass or the sand, and allowed the direct rays of the sun to fall on my full face; and several times slept that way for some part of an hour. The effect has always been gratifying.

It is worth while, as a demonstration, to test the effect of the sunlight, as an immediate result. Having found the letters that can be seen ten feet from the Snellen card, or any set of letters, in a well-lighted room, take the card out into the noon sunlight, and test again. One will almost surely find that either the letters will be just as clear at some feet farther from the eyes, or better still, one can see clearly much smaller letters at the same distance from the card.

There is a more specialized use of sunlight recommended by Dr. Bates. It is to concentrate the rays directly on the eyeball. Until well accustomed, that should be done through the closed eyelids. It is better to have a friend hold the glass, but many have learned to use it with their own hand.

Use a small magnifying glass, one or two inches in diameter. Learn on the back of the hand the exact distance, some inches, at which the refracted rays show a bright spot about a quarter of an inch in diameter. If held still, the heat would be severe. But by continuing to move it back and forth slowly, no discomfort is produced. After fully acquainted with its use on the skin of the hand, it can be carefully tried on the closed eyelid. There the back and forth movement must be very carefully continued, on one eye for not more than a half a minute, then on the other eye the same way. Only a few seconds is safer: 1-3 seconds. Light must not shine through the glass into the eyes pupil. Only on the white of the eye or on closed eyelids. Keep the light moving on the white of the eye.

Such practice may be continued for ten minutes, and may be repeated more than once in a day. If these directions are carefully read, and exactly carried out, there will be no unpleasant results. If a glare is felt on and off, perhaps it means that the lens has slipped out from under the lower lid.
Just return it. The practice should not be done at all unless under the necessary conditions here explained.
Only an experienced Bates Method Ophthalmologist should apply the use of the Sun-Glass.

I have treated many eyes that way. Before using the treatment on others, I practiced it fully on my own eyes It has always been helpful. Later, when thoroughly familiar the glass can be used on the eye with the lid held open. Closed or open, the lens of the eye being treated must be held down under the lower lid. That is done unconsciously, with a little practice, by keeping one eye open while watching the other eye in a mirror, thus insuring that the lens is shielded, hidden under the lower lid.

When done exactly as directed, the shadows of the tiny blood-filled vessels in the walls of the eyeball cast the daintiest interesting shadows back on the retina. The terminating fibrils of the smallest last branches are the smallest lines perceived by the conscious mind.

While I use this practice constantly, when the sun is available through my office window, I repeat that it is not a necessary proceeding, and should not be undertaken unless in competent hands under favorable conditions.

Constantly in my office I use with patients two powerful electric lights. I have a three hundred watt and a one thousand watt light, both with clear glass. The three hundred watt is placed in a reflector, lined with white or aluminum paint. The one thousand watt light has no reflector to intensify it. Almost always the improvement of vision is so apparent to the patient, in a few minutes, that I generally use it at the first lesson. Most of my patients are so impressed by its effects, that they volunteer to buy an outfit, generally the three hundred watt, and use it at home. I rarely approve of the one thousand watt light for home use, because the three hundred watt is sufficient.

The benefit, I believe, is accomplished by the great stimulation the strong light produces in the mechanism of vision. This is demonstrated, sometimes in a few minutes, by the patients seeing letters not deciphered at the same distance before, and the greater clearness of the images.

The books explain that we interpret color in our conscious minds according to the wave length of the light producing it. Looking at the light, at a distance of two or three feet, the patient at first sees simply the golden glow of the filament. The directions are to blink softly at the light, and confine the attention to one designated spot on the filament. After blinking from ten to twenty times, softly, they are to close the eyes. While the eyes are closed, for the same length of time as spent blinking at the light, they are to keep the mind occupied with the memory of what they saw when blinking at the filament.

This alternate routine is continued, generally for fifteen or twenty minutes. In the course of a few minutes the visual center begins to register pictures not seen at first. With the eyes open, colors begin to appear, one or two, coming and going, separately or simultaneously. Blue or pink or green or crimson. Solid or in pattern. There may be more of a picture seen when the eyes are closed, or more when the eyes are open. In later practices, often several colors are seen, and the image of the filament, with the eyes open or when closed, will assume different shapes, and change colors frequently.

In the very complicated, and often disputed theories offered for the conduct of the color sense, we are told incidentally that the functioning of the color sense is more or less dependent upon the illumination. My interest here is in the well proven fact that even as the color sense is accentuated and remarkably improved, the function of general vision is also improved in a most gratifying way.

Swinging to Relax

The Long Swing

When I explain to patients that swinging the body gently in a half-circle, with the eyes closed, is generally a very effective way to relax, they almost always are surprised at the idea that such a practice will help the eyes to see better. Some find it a great help, and always begin any period of practice with ten or fifteen minutes of swinging.

The first requirement of any successful technique is that the attention be completely occupied with the thought of what is being done. The very act of swinging, when it is correctly performed, involves that specific objective attitude of mind. The tension in the eyes and the mind is relieved because a condition of relaxation is produced in all the muscles of the body.

Standing with the heels well apart, and the toes turned out, and the eyes closed softly, the body is rotated with an easy rhythm in semi-circles from right to left and back from left to right. It must be a soft, even roll, with the idea in mind that all the muscles are as soft as cloth. The position of the feet insures an easy and perfect balance of the body, and the curve in the swing shifts the weight easily from one foot to the other, so that no effort is required to maintain balance. The head and neck work in perfect unison with the body, so that the head may swing only a few inches in each direction, or may swing so far to each side that the face will point fully to the right and then fully to the left, and the body will time its motion to meet the movements of the head.

When the head goes to the right, if the muscles are to remain relaxed, the left heel must be allowed to leave the floor, because the left line from floor to neck will be longer; and when the head turns to the left, the right heel leaves the floor, to match the position of the head. It is a further help to allow the arms to swing around while hanging limply at the sides. There must be a soft feeling in the muscles of the neck, and the head must roll as if limp on the body. The eyes are to take an intimate part in the movement by rolling softly to the outer limits of the orbit in each direction. This free roll of the eyes is easier to acquire if they are kept open at first, until a consciousness is established, and the sensation registered and remembered, so one will know that the eyes are in action and are relaxed.

To secure the full effects of this practice, the whole body must be dominated and coordinated by an attitude of mind. This can be accomplished by giving undivided attention to the conduct of all the muscles, including the muscles of the eyes. But it must be an objective attitude. A concern about correctness induces a tension instead of a soft relaxation. A violinist, or an organist, or any expert performer, is not any more concerned with observation of the muscles than the runner or the gymnast. The whole body of those experts is dominated and stimulated and educated by the enthusiasm of the mind. If one is walking leisurely toward a point, and suddenly remembers that the car is due at the corner, there comes to the conscious mind no thought of the feet, but the muscles all change their conduct, and instantly the limbs are propelling the body in a run.

I once saw a picture of an operator showing a cripple with a paralyzed limb how he was to try to move the limb. He demonstrated with his own limb. He was communicating a conception to the mind of the cripple. The perfect unison with which two partners in a waltz move in rhythm, is controlled by the thoughts of each. All very simple. But I have found that most of those who begin to practice a swing for relaxation, are obstructed by their bewilderment of mind, which causes a stiffness of their muscles. I found this reaction in myself and conceived the idea of humming softly, as one dances to music. The melody which suited me best was a few bars o£ the "Merry Widow Waltz" tune. Gradually, I learned to soften the timbre of my voice until it was almost imperceptible, and I found that this relaxed the vocal cords, so that with a few minutes of practice, I was frequently able to carry a note an octave higher that I could reach when I began.

Swinging with the eyes closed, slowly and in perfect balance, for fifteen or twenty minutes, will develop a feeling of softness, and is found by some to be their best method of relaxing the eyes. It is possible to add to the swinging the very helpful addition of shifting. Facing a corner of the room, with small objects or pictures along each side, blinking the eyes slowly, and looking always straight ahead, the eyes will shift in passing from one object to another. There must be a fixed idea that the mind is not paying attention to the objects as they pass the eyes, but that the eyes are looking softly into the distance. Another method, when there is a long distance outlook from a window, is to look softly at the scenery while swinging and blinking, and let the eyes shift constantly from the different points in view.

There is a method of swaying the head, while seated comfortably, and blinking the eyes softly. One may hold the first finger of the right hand six inches in front of the face and six inches to the right of the eye. Close the left eye (Modern teachers state to keep the eye that is not in use open: Cover it with an eyepatch, open under the patch, both eyes open.) and blink the right eye, and rock the head back and forth, looking always straight ahead. After one or two minutes, close the eye and hold the head still. Repeat, alternating, until an after-image appears, of the finger and the hand swinging back and forth in the opposite direction to the rocking of the head. Practice the same way with the left hand and the left eye, the right eye closed. Continue for fifteen or twenty minutes. This sometimes gives a better result if one is facing a window, or sits facing a good light in the evening. Strong contrasts are more impressive on the eyes. A method that has a similar effect, is to look softly ahead, blinking the eyes and holding the head still, while the elbows rest on the body, and the hands, closed except the first finger straight up, are rocked back and forth in front of the face, so that they cross each other and return.

In that procedure, the fingers are shifting across the line of vision, and the effect is to relax the eyes by the passive change of central fixation. The eyes in that procedure are shifting with the moving fingers. One can use any small object the same way, a pen handle or a ring, by passing it across the line of vision rhythmically, while the eyes blink softly and look directly ahead. A helpful practice is to sway the head back and forth across the partitions of a window, especially the small panes of a leaded window, while blinking the eyes. A good test of the success of any of these practices is the appearance of the after-image when the eyes are closed after a few minutes with them open.

It is helpful to remember that swinging or swaying, when the eyes are open, is another way of shifting, that is, moving the central fixation from one spot to another, with an added value in the relaxing effect of the soft swaying movement. There are different techniques which can be practiced, to secure these two effects. One can devise individual efforts. A piece of chain, or rope, or cord, or ribbon, hanging at a given distance, less or more, in front of the eyes, with a background of light, or a background selected-Snellen Test Card, a picture, a window frame, a white sheet or a black cloth, likewise placed at any given distance back of the hanging cord or what not, or back of a tall thin object placed on a table half way between.

One can place three Snellen Test Cards, three, six and nine feet in front of the eyes, or use home-made cards, say twelve by sixteen inches, and paint on black letters of similar sizes. They should be suspended on upright strips or hung on strings stretched across the room, and placed so that they almost overlap. Stand, or sit, so that when the head is swayed with slow rhythm back and forth, the eyes softly blinking, the cards will seem to overlap and to show the clear between them, according to the direction the head moves in. Pick the same letter on each of the cards, and watch for it, and ignore the other letters. That will facilitate the apparent movements of the letters in the direction opposite to the way the head is moving. Close the eyes in periods, but continue to sway, and watch for the letters to appear as after-images. Practice with either eye closed, or/and with both open. Practice while sitting, and using a pen or pencil with a book for a background, holding it still while the head moves, or moving it while the head is still. Whatever the details of these practices involving swinging or swaying, the effort is to have the object under observation move back and forth across the line of vision so that it is alternately seen and not seen, as it goes in a direction toward the right and then back toward the left and out of sight. If, with the eyes closed, an after-image is not produced, there is some fault in the technique.

Palming

This is a practice in which the hands are used to softly cover the eyes. The cheek bones rest on the heels of the hands, and the fingers cross above the eyes, with the eyes resting softly on the palms. The hands shutout all light. It is difficult to carry out this practice with a satisfactory result unless the elbows rest on a table in such a manner that all the muscles of the body are relaxed. The further effect is that such a deliberate and unusual gesture impresses the mind. To complete the procedure it is necessary to engage the mind continuously in some specific line of thought and not let it wander as it usually does.

Even with all the light shut out, there will be the appearance of lights and colors and fragments, which seem to be seen by the eyes. These are illusions. They are produced in the visual center of the brain itself. To put it more simply, it is just imagination, since there is no light admitted to the eyes. Sometimes these appearances are persistent. Occasionally they are quite vivid. In other cases they are not pronounced and they may fade promptly. When there is no least stimulation of the optic nerve by light rays, the visual center of the brain should show no reaction, and there should be a perfect blackness.

When there is no tension in the mind, the field will be black. One can command the mind by keeping it attentive to the field that appears, and expecting the blackness to come, which is proof that the mind is in a normal condition of relaxation. If one has an urge to eliminate the fragments in the field, the effect is to prevent relaxation. But there must be a firm, earnest confidence, and a specific desire which keeps the mind intent.

The more habitual tension there is in the mechanism of vision, the more intense will be the illusions which persist. When there is some unusual disturbance of the mind or body at the moment, there is even more difficulty in securing the required relaxation. It is true, however, that some persons, even with extreme abnormal conditions of vision, secure a most satisfactory relaxation quite easily. That is because they occupy the mind so completely with the practice they are carrying out, that all other thoughts are thus prevented from intruding and distracting. Want of success is always caused by the fixed habits of the mind. Consciously or unconsciously the patient is allowing an intrusion of thoughts to distract the attention. This distraction is a direct interference. If the mind is earnest enough in purpose, it will become conscious of the interference and brush it aside.

One sees a perfect black only when the mind is completely at rest. The more at rest the mind is, the deeper the black. When one sees an area of black in the field, it is likely to increase. With proper technique one may improve the blackness until the field is completely black. There may be floating spots of pure black. There may be dull gray areas. There may appear different colors instead of black-just the fancy of mind. If one continues to see red, or yellow or other colors sharply marked, it is better to be

satisfied with these colors as they come, instead of combating that picture, and to keep the mind occupied watching the different colors. A good plan is to imagine in the field a small patch of white, such as a piece of white paper. If such a white patch is seen, when secured intentionally, the background of the field will probably show quite black. Proceeding further, one may imagine in the white spot a black letter, for instance an O. When one can imagine a black letter in a white spot already imagined, the letter will be blacker than the background on which one imagines the white spot.

When there is special difficulty in clearing the field which is seen when the eyes are covered, some other practice will probably be helpful in attaining the degree of relaxation necessary in order to see a black field. For instance, one may use the memory of a black object to assist. Blink softly at some familiar black object placed where the color is most pronounced, then close the eyes and watch for the image to appear. By looking at the object for some minutes with the eyes closed, alternately, sooner or later the object will appear clearly when the eyes are closed. This is called an after image. The successful outcome may take quite a while, or it may develop promptly; the result depends upon the exactness with which the mind carries on the process. When the object is seen, black and clear, with the eyes closed, one may proceed to palm as directed above, and the field will probably appear black.

There are two factors operating such a practice. There is the impression of black on the mind, and the relaxation which has been secured by the game one has played with the black spot. It will hasten the success if one uses what is called central fixation, and imagines one spot on the black object to be blacker than the rest of the surface, ignoring with the mind the remainder of the object. One can practice changing the spot on the object to another area, or even changing the contemplation from one black object to another black object. To change is sometimes a relief from monotony; but the longer one practices with the same spot, or the same object, without losing an alert interest, the more vivid the reaction, that is, the more perfect the after-image. This is true of any practice in this method. To continue the technique longer, if it is properly carried out, will develop a progressive increase in the degree of the result.

This technique, or practice, called palming, is one of the clearest and most impressive illustrations of the mechanism and the value of this method for relieving the abnormal condition commonly called eyestrain. One must realize that palming consists essentially of an attitude of mind, and that the details of that procedure are simply expedients which facilitate the shutting out of distractions from the mind.

It becomes more than a negative procedure as soon as one calls upon the mind to imagine, or make believe, the various conceptions which can be used in the practice. It is a very simple idea to impress upon the mind that one wants to see a small white patch. In the technique of psychologists, it is a common practice to persuade a patient to develop in a muscle a sensation of soft languor, and then to have a feeling that the arm is so heavy it cannot be lifted. It is just as easy to have the same mind order the vision center to picture a patch of white, and then to make believe that there is a black O on the white spot. A designer of dresses, an architect, an artist, a leader in any field, is seeing things in his mind just as literally, as a common habit.

Palming Cures Cataracts

A patient whose eyes were almost useless because of three different types of defects in vision, was distressed by the prospect of inability to retain his position. The **developing cataracts** were the culminating interference with his vision. He had been told there could be no relief until they were what is called "ripe" enough to be removed, and his lenses replaced by glass lenses. Having been instructed how to **palm**, **he practiced it intensively for many hours with little interruption. His earnestness and persistence so influenced the condition of his mind that his sight became a very good normal in twenty-four hours, and continued normal.** This case, reported by Dr. Bates, was unusual, but I can report many cases of improvement that are equivalent. The commonest difficulty is the want of a vivid conception of the simple mechanism of the process involved, and the next in order, perhaps, is a lack of the fine determination that constrained that man to keep on demanding success, hour after hour, until his courage and patience were rewarded.

The practice of palming was designed by Dr. Bates as an expedient which is simple and easily carried out, and has a direct effect on the vision center in the brain. He believed it to be, perhaps, the most effective of all the techniques he suggested. I have found that even children can understand what is necessary to do, and they often have fine success in seeing a very black field when their eyes are closed. Dr. Bates even suggested that the measure and the degree of the blackness which is imagined when the eyes are closed may be used as a test of the degree of relaxation secured.

When a sufficient degree of relaxation has been secured, it will be found that the eyesight has been improved accordingly. There may be flashes o£ clear vision which are replaced by the same old want of sight, or there may be a progressive improvement in the conduct of the eyes. I have personally experienced some fine thrills when lines of letters have appeared with a vivid clearness that was startling. Others have reported being astonished by the same revelations of power in their eyes, which they could not have imagined. Letters and words appeared blacker than the ink, and they stood out with a vividness never realized before.

There is nothing unreal or unnatural or miraculous in such an experience. It is simply the result of interesting the active and sympathetic attention and co-operation of that part of the brain which has charge of the mechanism of vision. There can be no doubt that millions have a constant power and vividness of eyesight that is unknown to most of us. **This is true of the savage, and the plainsman, and the man of the sea, who see plainly what most of us cannot see at all. The same is true of the artist who reads the lines of the face and the form and the color and beauty of the picture which his sight enables him to reproduce so the rest of us can be helped to imagine something of that which, to him, is an open book.**

In the practice of palming, several factors serve to assist the endeavor to secure a special condition of mind. We speak of the condition as a relaxation. It is, however, a positive mental attitude. But it must be impersonal and objective-some pleasant contemplation which enlists the interested attention so completely that one forgets self entirely and becomes absorbed in the

subject. This unusual gesture facilitates, as well as the darkness; but the paramount element is the complete domination of the mind by the idea in charge.

Each mind finds its own natural line of thought, and some will try very different imaginary pictures. Since the vital element in the techniques is the degree of exclusive attention which is given to the specific idea that is to occupy the mind, it is imperative that no other thought be allowed to merge into the process. It is easy to think that one is giving complete and undivided attention, when actually the mind is only half-heartedly in its effort, and the greater part of the opportunity is lost.

Suppose we undertake to make believe we are swinging in a hammock. I have questioned some who agreed to that expedient, and found they could not tell a detail of the proceeding. They could answer only that they just made believe they were swinging in a hammock. Those who really do it, can describe the hammock, the short rope that held it to the house at one end and the long rope that held it to the tree some feet away. They can describe the pillow, and the cord they pulled on to keep up the slow swinging which produced the soft drowsiness that was so restful. I have even been told how they climbed into the hammock, and how they later woke up and were amused to find that they had fallen asleep.

Suppose we imagine, make believe, we are going to drift down the stream in a canoe. Let us begin at the float by looking the canoe over and deciding just how we will sit. Let us then carry out the proceeding by stepping carefully into the canoe, with the same deliberate care one should always use. No one familiar with the conduct of a canoe would share the close attention necessary to every move, with any other thought. I have seen a few incidents where even one familiar with the requirements of balance and movement has failed to give the attention the canoe demands, and has demonstrated his carelessness by a spill.

Now let us recline quietly and float lightly down the stream. If the mind forgets the canoe, and wanders to some other subject, at that moment it stops carrying out instructions. The conscious part of the mind, I mean, stops obeying instructions and allows itself to be misled; and right then it forfeits the advantage of having the subconscious part of the mind help in the proceeding, instead of hindering, as it commonly does. But if one watches the water, and the shore, and the sky, one keeps the mind intent and active on the side of the endeavor. One imagines the details of the scenery, observing specifically a house, a boat, a rock, a tree, the hill, the sky, the turn in the stream, the opposite end of the canoe. If one answers that it is not possible to do this, I know that one has not really tried. One has not held the idea. One has not been earnest enough in purpose. One has not learned what his own mind will do for him, even in his first efforts. If the feeling is strong enough to persist continuously for thirty minutes, with a quiet determination, the subconscious part of the mind will become interested in the new adventure, and will reveal to the adventurer something of its power. I have explored a little into that new country myself, and others who went further and found more, have confided in me. As long as one keeps the conscious mind occupied with any impersonal, objective idea, the unconscious mind is at the command of the purpose implied in the idea.

It is a great help to remember the way a little girl plays alone with her dolls. As well as she knows that it is all make-believe, her conversation proves how perfectly the autosuggestion works. Her mind is not hampered with confirmed mental habits. It is simple and direct. With a strong, primitive impulse she gives her whole mind to the idea, and no hampering doubts or reminders interfere with what she is doing. That is the subtle meaning in the sentence: "Unless ye come as little children, ye cannot enter the kingdom of heaven." The cures I have seen occur in a few minutes have all been accomplished by a profound and positive conviction acting on the control center in the mind.

It is necessary to forget the eyes entirely, or to think of them objectively, as one thinks, for instance, of a sprained ankle, or a cut finger. There are no mental reservations with those. We think of them as we would of some other person's cut finger, or somebody else's sprained ankle-just do this or do that with it, as one does this or does that with any other predicament.

There are many different lines of thought with which one can interest the mind in an endeavor to secure an abstract condition of mental relaxation. Each mind has its own predispositions and aptitudes. As illustrations, the following practices may encourage original ideas better suited, perhaps, to individual students.

While palming, imagine the soft rolls of water, lapping the sand on the seashore. When the water is seen, picture a large rubber ball, black or red, bobbing on the rippling rolls. Always in motion, the ball will slowly recede from the shore. As you see it in your mind, it must recede farther and grow smaller, until finally it is lost in the hollows of the swells, and you do not see it any more. If the mind is given with feeling to this interesting experiment, the ball will seem very real, and all other thoughts will be excluded from the field.

Imagine a dog romping and swerving on a large lawn. See him stand, with head up, facing you, asking you what you think of his speed and grace. Make believe a fly is crawling over a large pane of glass in front of you, reaching a corner and starting over again to find a path with no obstruction. Picture a cat racing up a tree trunk to a low limb, and standing there with back and tail and hair raised, daring the dog to come up and see which eye she will put her claws into. Look from the cat to the fool dog, trying to stand on his hind legs, and yelping "coward" at the cat for not staying on the ground, even if he is four times as big as she is.

If any of these suggested techniques, practices, efforts of the imagination, are to be of value, they must be carried out with a will to win. Beginning with a conscious feeling of soft relaxation in all the muscles, put into them by the will of the mind, the same purpose must pay close attention to each detail in the procedure, and not be satisfied until some specific success rewards the close devotion and enthusiastic expectation which will be aroused if the spirit is right. When one really works that way, the conscious mind is actually demanding, and it will secure, the help of the inner mind. All these simple requests, the ceaseless activity of that inner mind can grant in marvelous fullness, if only the spirit of the worker dominates the mechanism.

Some simple procedures are very helpful, especially if they are practiced frequently and for a sufficient period, and with patience, and with an earnest expectancy.

One may blink at a soft, dull finish piece of black cloth, the size of a large pillow case, hung at a distance of two or three feet. While blinking softly for half a minute, one confines the attention to a point on the surface, then closes the eyes for the same period, and continues to think of that spot. Blinking again, with the attention confined to a different spot, and then closing the eyes, one thinks of the new spot. In twenty or thirty minutes there will come some most interesting after-images. There will probably be a white oblong at first, and there may be some spots seen. Later the surface may be seen black, while the eyes are kept closed and the mind attentive. With the eyes closed that image will fade, and if one waits, it will appear again, not so black, and disappear and appear again, less black; then come gray and faint, and not return, until the blinking is renewed, and the eyes closed expectantly. Black, soft and not shiny, is generally most relaxing, and is a favorite objective with many.

Some find a white pillow case more effective. Practicing the same way, the after-image seen is black at first, in the shape of the pillow case. Later, when more relaxed, the image will come white, fading and recurring as gray, and finally showing again black and faint.

If one changes the practice, and blinks longer, transferring the attention so as to see the four corners, one after another during a full minute, when the eyes are closed the after-image will be white very soon, and the recurring image will hold longer the white.

Another variation is to sew a small period of white cloth on the black cloth, and confine the attention to it while blinking; or to sew a black period of cloth on the white pillow case, and practice with it the same way.
Let the eyes shift, move, even when looking at a small part. Shift point to point on the tiny part. Let the eyes shift away from the part then back to it… Blinking causes the eyes to shift automatically.

In various practices sometimes inconsistent after images appear, or even when looking at letters or figures, one will see double, overlapping outlines, or half letters appearing while the eyes are open. Or, again, the outlines may be more or less blurred. I think of these hybrid appearances as sideline stuff, which are easiest eliminated by smiling them off, and proceeding expectantly to the result which is correct. Careful attention to directions very soon gives the better results which lead on to success.

There are different kinds, as well as degrees of eyestrain. Some with good vision find trouble in various ways. For instance, in continuing to read after twenty or thirty minutes, an astigmatism begins to blur the print.

A remedy for that is found in the simple procedure of ignoring the print, and confining the attention to the white paper close under the line. Have the eyes observe the paper from the beginning of the line to the end, then treat the space beneath the next line the same way, and so on down the page, and to the next page, as in reading. Continue this practice the first evening for ten minutes. Add a few minutes each night, observing directions consistently. It has not failed to cure that specific tension in the several cases I have seen.

Related perhaps most closely to any difficulty in reading is the technique with a very fine white line, imagined, made believe, to be close underneath a line of print.

Clipping some heavy small type, suppose a short insert advertisement in a magazine, paste it in the middle of an oblong white card, say five by eight inches, across the short diameter. Blink softly at some line in the middle of the set of lines. While blinking, and looking, and blinking, make believe, hold the idea that there is, close under that line of print, a line as fine as a hair, and whiter than the rest of the card. After half or a whole minute, close the eyes for the same period. While they are closed, keep thinking of the imaginary white line. Sooner or later, either first under the print, or first when the eyes are closed, as an after-image, the vivid white line will appear. This is an expedient which secures the co-operation of the imagination acting through the mechanism of vision. It is one of those practices which correct and improve the vision in whatever experience the eyesight is occupied with.

The Period

This technique is a practice designed to develop a custom which will secure a specific help whenever one finds difficulty in getting a sharp image of any object.

The idea is that one will rely on actually seeing a period, and that expedient will secure a clear image of the object that has not been clear.

Doctor Bates said that "To see a period is the optimum of relaxation." To realize the import of that, one must remember that one sees the period in the visual center. This involves relaxation, meaning normal conduct of the mechanism. The result is the "optimum" because it is an endeavor never tried before.

A first reaction is that trying to see a period would add to the difficulty rather than relieve it. But Dr. Bates explains that seeing a period, in that way, does not relax. One will not see the period unless already relaxed. In short, one must practice and learn to see the period, without any concern being aroused, just as one finds an answer, in the mind ready, in response to some simple question, as for instance, "What will I do now, this or that?".

The way I learned this technique was to put a large period in the middle of a good sized white card, and learn from practicing to get a bold after-image of the period. Progressing with the practice, I learned to close my eyes and see the period, not after looking at it, but as a memory, just as one can recall from memory, other objects.

Shift small point to small point on the period with the eyes open, then in the mind with the eyes closed, then with eyes open again. Blink when the eyes are open.

One cannot understand the import of this proceeding at once. It involves a conception of the higher functions of the mind at work. But one can readily realize that it is a mental reaction, in response to a specific desire. Accepting this reason as the truth, one will surely achieve success. I know it from experience, and from the enthusiasm of others who have made it work. It is a most helpful practice.

Dr. Bates says not to fill the atmosphere with periods. That means to be concise in your expectations. He had a small room with a red linoleum, and the patient was to select a spot which gradually he could imagine to be redder in contrast. It might be easier to imagine a difference in redness that in blackness.

In my own endeavor, after securing an after-image of a period, I made believe that the period, while l was looking at it, moved from side to side, back and forth, by the diameter of itself. (Oppositional Movement - the result of eye movement, shifting on the period.) Dr. Bates explains that the normal eye moves continuously back and forth just that much. Otherwise, not moving, there would be a constant specific tension. The visual center ignores, in its adjustment, the effect such a back and forth movement would produce, if not automatically ignored.

Seeing a period, as in this practice, when the period is only in the imagination, is simply a technique. But it is a great little helper when one has accomplished what Dr. Bates has directed.

ATTENTION

It seems timely to repeat a few words about this most important element of the practices prescribed. One should constantly recall that seeing is attention, because seeing actually constitutes attention, because when we pay attention, we see.

Supplementing the specific detailed directions involved with the Snellen card and other practices, it is worth while to devote periods to just paying attention. Thus we see one spot after another, deliberately and alertly. Without any intention of seeing, the practice is to involve the interest, may we even say a certain degree of discipline of the visual center. I do not say of the eyes, because the eyes are forgotten. The measure of discipline and of control involves the mind itself. It is the mind which is used as long as we remain attentive to whatever we are designating.

Such periods may often be found, in a room, or when walking for just that purpose, even for perhaps half an hour. Simple as it may seem, this is fundamental. Those who have tried it earnestly have found it a great help.

Attention is a factor in human life which we began to make use of when we started to live. If one ponders the history of what Mark Twain, a thinker, called "The Damn Human Race," it is obvious that only a very few have made in their lives more than a very little use of it.

How many great men have neglected entirely to realize that they have failed to pay attention to the most important factor in the mighty problem it was their mission to solve?

Note the attention of an infant-learning every minute. Certainly each has an endowment that is different. But as one watches the procession, the "big shots" and the "man on the street," how often it is evident that their contrasting success was due only to the deliberate thought that marked the distinguishing difference in the quality or the conduct of the individual who left the crowd behind.

My concern here is to impress on the seeker for success in the practices of the method of Dr. Bates, the value of attention. This means for us the specific exactness with which we examine and differentiate the factors in the mechanism involved, our own conscious reactions, and the evidence of that progressive improvement which is the result that we are working for.

Often a patient who has succeeded in perceiving finally some letters on the Snellen card, or on a sign from the window, generally after practicing with me for twenty or thirty minutes, forgets on the next office visit that he saw those letters the last time, and we must start again.

I have impressed a beginner to pay earnest attention to every item seen with eyes blinking softly twenty or thirty times at a 300-watt clear glass bulb inside a reflector, or at a 1000-watt light. Then to pay close attention to any vision at all while the eyes are closed for the same period of time. Often enough, when I question after ten or fifteen minutes of such practice, about the details registered, the first answers are almost empty. Gradually, the patient may recollect, under persistent questioning, that the filament did appear to change its shape, and did have one, yes, finally even three or more different colors, as the blinking continued. Then, almost surprised, the memory prompts the answer that when the eyes were closed there were a large number of colors seen, some solid shapes, or the filament, changing color, and even several filaments of a much smaller size. Such reactions illustrate some want of the necessary attention. Do not get too close to a strong bulb, it can burn the eyes, especially if it suddenly blows out. Keep a safe distance, use a new bulb, good wiring, surge protector… Plain sunlight is best.

MEMORY

Only a little deliberate thought is required to realize that memory is a most important part of the mechanism of vision. We know that constantly it is our memory of objects, human faces and every other thing, which enables us to identify them. Such an obvious truth, however, is constantly ignored by us, INASMUCH as we do not think of it, much less take care to use the advantage of it in our daily lives.

Memory is born of experience. The value of an experience depends on the degree of attention we may pay at the moment. How often our conception of an incident involves the picture which is conveyed to the mind by the mechanism of vision. It happens constantly that our interpretation of an image is determined by the judgment of the memory; and that judgment is dependent upon previous attention during the reception of other images. It is just as true that the care with which we observe an image is the measure of the stimulation imparted to the mind. How much more the mind learns from the mechanism of vision than from any other one of our faculties.

Considering the story in the previous chapters, I feel that this reminder of the necessity, and the value of our memory, is the best suggestion I can offer to the beginner. Give a most earnest attention to the attention you use when you are asking something of the outside contact with the world-your eyes. Such a deliberate careful attention will register a more correct image, will store up a more permanent memory, and will develop the habit of using the mechanism of vision correctly, allowing that function to conduct itself automatically without the intervention of an abnormal strain.

In the medical dictionary memory is defined as: That mental faculty by which sensations, impressions, and ideas are recalled. Has anyone added to that? Going higher, can anyone suggest how the changes, record of alterations in the brain cells, might perhaps be explained; and more of it, can anyone tell us how the unknown changes are retained, notwithstanding the renewal of the cell tissue by the constant repair. It is not necessary to know those facts. It will be a very profitable indoor sport, however, for a beginner, undertaking the practices of the method of Dr. Bates from the reading of this book, to ponder carefully what is written here.

If one will please read again, deliberately, the preceding paragraph, it will help in the realization of what Dr. Bates tries to impress in the many pages he spends on the memory itself. The different ways one can develop, and can be helped to get value out of the practices he directs, by building up and using constantly the memory.

Although he majors on black, he remembers that some do better with another color, or even changing colors. Always the endeavor is to remember, as perfectly as possible, some familiar object in its color which is being used to practice on. A dress, a shoe, a hat, a book, a colored wall, even some colored object or surface never seen. He emphasizes that the more perfectly one does REMEMBER, the more perfectly one is relaxed, that is, without abnormal tension. To be successful one must be without any urge. One must EXPECT of the memory. Its function is to recall. How often it does recall, vividly, objects or incidents, perhaps in a past which to the memory never has ceased to exist.

Constantly our registered vision is a procession of more or less attention to routine incidents. Memory is functioning automatically; but we are drifting with the tide. How many have ever considered the thoughts here involved. To obtain value from our memory, we must study the subject, and then practice the method.

IMAGINATION

Imagination is allied with memory. It depends very much on memory. Memory depends on experience. Experience depends on attention, as it may have been used in the past. But imagination is not static. It is creative. It can build, however, only with the power it has. Therefore imagination depends on previous experience, previous attention. I am discussing this reminder only as it concerns the practices used in this method.

In the accumulated conceptions of the mind there is power to fulfill any reaction that is required. The figured imagination here required is an aggressive attitude of mind. With that attitude there follows what I call an expectancy. That must be built on two factors, conviction and determination. Conviction will come only after one has considered the evidence presented. Determination must be founded on a realization of the value which is contained in the simple practice that is engaging the attention of the mind.

These are simple statements, and their meaning easily understood. It is my experience, nevertheless, that a few questions from me to the patient demonstrate to most of them how incorrectly they are attempting to carry out the unaccustomed mental procedure which has been described in the instructions with deliberate care. Emile Coue, a miracle man who proved his claims to many thousands during twenty-five years, reminds us that the will is only the engine, and that the imagination, which he tells us is finally just the idea, is the engineer. Suppose we consider as our model in this undertaking the engineer whose constant responsibility requires a deliberate and unremitting memory and imagination, concerning and involving not only the smallest detail of his mechanical commander of life and death, but also the immutable laws of the signals and the switches of the track which tell him, and dominate his conduct, which according to the mechanism of his mind, will be right or wrong.

STRENGTHENING THE EYES

A New Course in Scientific Eye Training in 28 Lessons

By
BERNARR MACFADDEN
and
WILLIAM H. BATES M.D.

Published by
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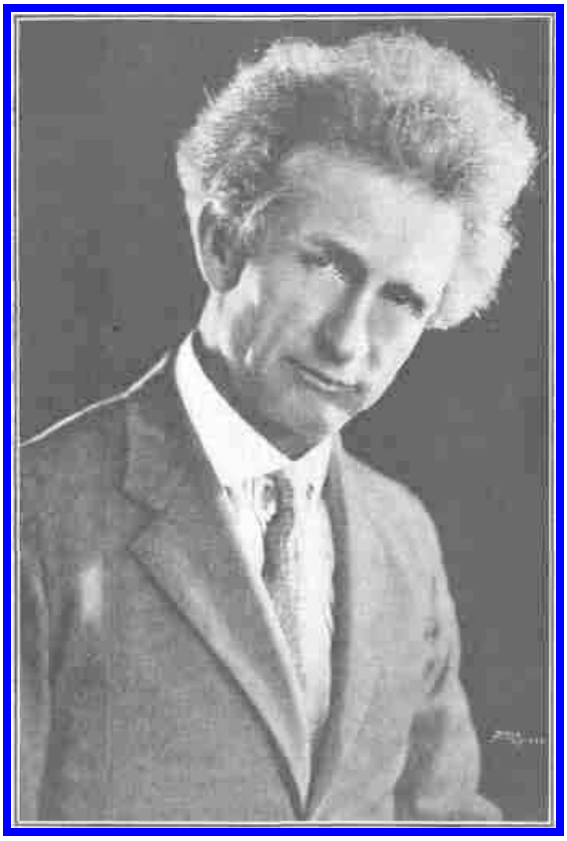
New York

Strengthening The Eyes

By Bernarr A. MacFadden



Strengthening The Eyes

A System of Scientific Eye Training

BY
BERNARR MACFADDEN

NEW YORK
MACFADDEN PUBLICATIONS, INC.
1924

Strengthening The Eyes was published 25 years after MacFadden's first book:

Strong Eyes: How Weak Eyes May Be Strengthened and Spectacles Discarded

Strengthening the Eyes was written after MacFadden met Ophthalmologist William H. Bates, studied Dr. Bates Method and integrated it into the new 1918 book.

The earlier editions of the 1918 book were authored by MacFadden and Bates. In later editions Bates name was not on the book.

MacFadden published many books on Physical Fitness, Natural Health Treatments.

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Strengthening The Eyes - A New Course in Scientific Eye Training in 28 Lessons

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DISCLAIMER & DIRECTIONS

Contact lenses cannot be worn before, during, after practicing Natural Eyesight Improvement. Contacts will not fit the eye, cornea as it changes to normal, healthy shape and function with practice of The Bates Method. Contact lenses can scrape, injure, infect the eyes cornea, eyes, impairing the vision, eyes health. The eye can change shape often with or without practice of Natural Eyesight Improvement. Contact lenses are never a perfect fit to the eye. Avoid wearing contact lenses.

Natural Eyesight Improvement normalizes the eyes pressure, improves eye health. If the reader has any eye condition, Glaucoma... check with your Eye Doctor first before practicing The Bates Method, Natural Eyesight Improvement. Eye drops, drugs, medicine, un-natural treatments for eye pressure may need to be changed, reduced, discontinued.

Natural Eyesight Improvement changes the shape of the eye, cornea back to normal, healthy condition. If eye, retina, cornea, cataract... surgery has been done on the eyes; check with a Eye Doctor first to be sure the surgery and Natural Eyesight Improvement do not conflict, interfere with eachother; with the eye shape, condition the doctor has fit the surgery to. Natural Eyesight Improvement may help the surgery, eye to heal or it may work against the surgery because; Natural Eyesight Improvement brings the eye, cornea to normal shape-but, the surgery may have been done to place, keep the eye in a abnormal shape, the shape it was in before the surgery or a new abnormal shape. Example; Retina surgery done on a eye that is abnormally lengthened due to advanced Nearsight, many years wearing eyeglasses or a injury may act differently if the patient practices Natural Eyesight Improvement and returns the eye to normal, round shape, normal eye pressure, normal fluid, circulation flow... Same warning for eye cornea laser and other surgeries. Possibly cataract lens surgery. Read complete directions in the free PDF E-book and the Laser Cornea Eye Surgery Article at the end of this book.

People have regained clear vision after unsuccessful eye muscle, cataract and other surgery but always check with a eye doctor, preferably a Bates Method, Natural Eyesight Improvement Ophthalmologist, Teacher.

Strengthening
The EYES

A System of Scientific Eye Training

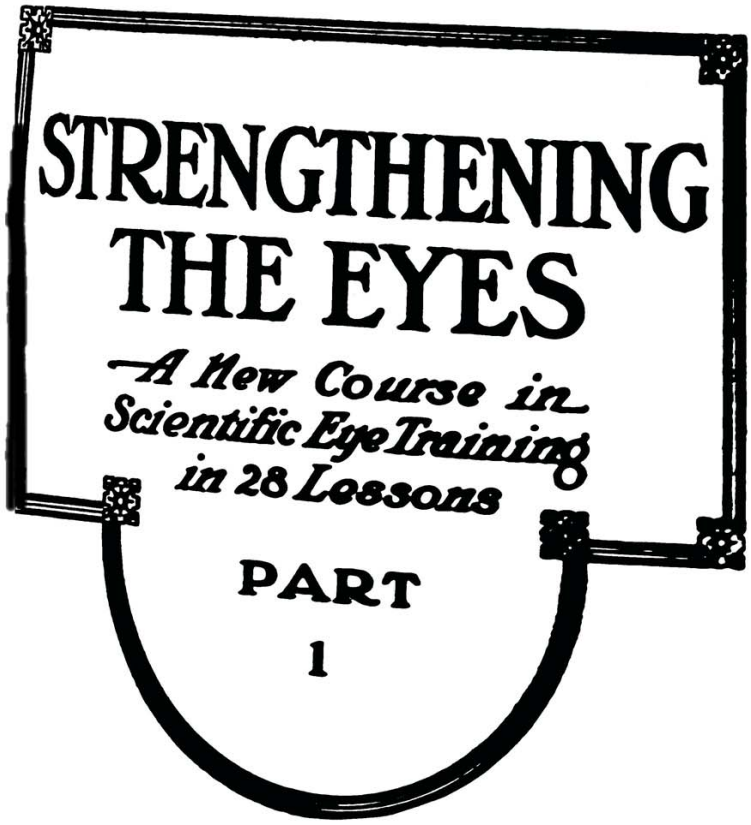
BY

BERNARR MACFADDEN

AUTHOR OF "MACFADDEN'S ENCYCLOPEDIA of PHYSICAL CULTURE,"
"EATING FOR HEALTH AND STRENGTH " "HAIR CULTURE"
"MANHOOD AND MARRIAGE," "PREPARING FOR MOTHERHOOD"
"PHYSICAL CULTURE FOR BABY," "THE WALKING CURE,"
AND OTHER WORKS ON HEALTH AND SEX

NEW YORK
MACFADDEN PUBLICATIONS, INC.
1925

A typical advertisement from *Physical Culture* advertising the "course" prepared by Dr. Bates and Bernarr Macfadden in collaboration.



By
BERNARR MACFADDEN
and
WILLIAM H. BATES M.D.

Ophthalmologist William H. Bates and Bernarr MacFadden originally published 'Strengthening The Eyes'.
Later Editions contained only MacFadden's name as author.
Strengthening the Eyes is MacFadden's second book. It was written after studying Natural Vision Improvement with Ophthalmologist William H. Bates.
MacFadden was one of the first Natural Health Crusaders.
A few of the Eye Exercises and treatments in this book are not taught/practiced by Bates Natural Vision Improvement Teachers/students or, the exercises have changed, improved.
I have placed notes in blue to specify which exercises are not to be practiced. In this way the original book is preserved and students can be aware of the difference between the Bates Method and other eye exercises.
See last page this book for more directions. Clark Night Clearsight Publishing Co. - www.cleareyesight.info

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This Course in eye strengthening is presented in 28 lessons, each lesson being called a Part. To render the study and use of the Course more convenient, the lessons are published in a series of fourteen booklets. Depending on their length, from one to three lessons appear in a booklet.

Continued on Opposite Cover

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PREFACE – INTRODUCTORY - I

Eyes speak all languages; wait for no letter of introduction; they ask no leave of age or rank; they respect neither poverty nor riches; neither learning nor power, nor virtue, nor sex, but intrude and come again, and go through and through you in a moment of time.—Emerson.

NEARLY twenty-five years have passed since my interest was aroused in the problem of strengthening the eyes. It was the result of an experience that came near to being tragical.

No one can adequately measure the value of sight; but when we feel it failing we can in some degree realize what that value is. Such was my case on the occasion referred to. At the time I was assuming unusual responsibilities in the editorial and business management of the PHYSICAL CULTURE MAGAZINE, the publication having recently leapt into a prominent position, making the work extremely difficult. I had also undertaken to write an important book, the correspondence I was receiving having led me to see that there would be a large demand for the information that I expected to include therein.

Before having done any work on the book, except to divide the important phases of the subject into chapters, I advertised it, thinking it could well be finished and printed, ready for sale, at the time announced. My other duties, however, were so exacting that I was unable to begin writing when I expected to.

The demand for the work was extraordinary; orders poured into the office at the rate of two or three hundred a day, and further delay was out of the question. No one could assume my particular duties in editing and publishing the PHYSICAL CULTURE MAGAZINE; and moreover, at that time I had no assistant editors, or proofreaders, to relieve me of details. Therefore, in order to get any time for the book I was obliged to labor far into the night. By working night and day, however, I was able to finish it in about thirty days.

But the morning after the last corrected proof had been returned to the printer, I was appalled by the condition of my eyes. Vision was imperfect in many ways, and on picking up a newspaper, the printed page appeared like solid black.

I realized in a few seconds the value of my eyesight, and I did some rapid and serious thinking.

I had no faith in oculists and less in other doctors; the thought of consulting them did not even occur to me. I knew that my eyes must have been affected both locally and constitutionally, for not only had they been subjected to extreme overwork, but this overwork had lowered my general vitality. Whatever my business responsibilities might be, I saw that a vacation was now necessary, and I accordingly took it.

After returning to my duties in about two weeks, my eyes were greatly improved, but their condition was still far from satisfactory. I finally concluded to **take a fast of one week in order to cleanse thoroughly my physical organism. This benefited my eyes tremendously.** Thereafter I began to experiment with various eye exercises together with the eye bath, massage, etc., and my eyes soon acquired their former vigor.

Oculists with whom I came in contact during this period warned me of the dangers of adhering to my views. Blindness, they said, would surely be my fate.

In recent years I have been informed on numerous occasions that the eyes naturally begin to deteriorate after forty years of age, and that total blindness might result if I did not assist them with glasses. About ten years ago (I am now in my fifty-fifth year), when I was treating hundreds of patients at the Bernarr MacFadden Healthatorium in Chicago, one of my patients, an oculist, was very emphatic in his warnings as to the danger I was running by not wearing glasses, and he finally induced me to promise him that I would try a pair if he sent them to me after he returned home. The glasses arrived in due time, but after wearing them for about ten minutes my eyes pained me so severely that I had to discard them. No doubt they were not adjusted to the condition of my eyes, but I did not try to improve upon them. I have refrained from adopting the "eye crutch" up to the present time, and I hope that for many years to come I shall be able to avoid them. As a result of the natural methods of treatment already explained, my eyes are excellent and I work strenuously with both brain and eyes regularly six days per week, and long, tedious days at that.

When my book, "STRONG EYES," was first published, the principles presented therein were to a certain extent new, but I was thoroughly convinced of their correctness and thousands of readers have attested their value since the first edition of the book was issued. More than fifty thousand copies of the book have been sold, and in no instance have I heard of an injury to the eyes because of the use of the methods outlined therein; but, on the other hand, thousands have borne witness to extraordinary benefit derived from them, while numbers have been able to discard their glasses altogether as a result of their use.

Consequently this book is presented, not as a mere set of complex and untried theories, but as an aggregation of definite and practical facts.

Some years ago I came in contact with the work of a prominent eye specialist (William H. Bates) who is a scientist of high standing in the field of ophthalmology and a graduate of the College of Physicians and Surgeons, Columbia University, New York. This physician began his studies in connection with his revolutionary theories in 1886. It was in this year that he cured his first case of myopia (near-sight). Encouraged by this success, he treated many patients at the New York Eye Infirmary with benefit, accomplishing some complete cures. **While he was at the New York Post Graduate, his success was such as to bring about the loss of his position, the eye specialist in charge there maintaining that such cures were impossible, and this notwithstanding the fact that the proof was there for investigation.**

In 1903 this physician discovered that teachers could not only prevent the occurrence of myopia among their pupils, but could cure it by the use of the "Snellen test card." This was the first successful method for the prevention of myopia and other cases of imperfect sight in school children, and in itself is a discovery that will greatly benefit humanity. (See New York Medical Journal,

July 29, 1911.) In 1912 this method was introduced into some of the public schools of the city of New York, the results being published in the New York Medical Journal, August 30, 1913. The teachers cured one thousand children of imperfect sight without the help of glasses.

During the last ten years, this scientist has made many experiments on rabbits, fish, cats and dogs for the purpose of gaining information about the action of the external muscles of the eye. By this means he has been able to bring to light many facts which are entirely opposite to the theories about the eye published in text books at the present time. These experiments, some details of which may be found in the New York Medical Journal for May 8, 1915, together with his untiring studies of the human eye, have further led this physician to formulate a system of eye training by means of which not only errors of refraction but almost every irregularity of the eye can either be cured or materially benefited without the help of glasses.

Directly opposed to the methods and theories of orthodoxy, this system is not only revolutionary in character, but far-reaching in its practical importance.

I feel sure that in adopting the ideas of this eminent scientist I have been able not only to stamp my own theories with the approval of up-to-date science, but to present to the public a course of eye training which will bear the most searching criticism.

It is scientific and practical, and has been proven conclusively to be of inestimable value. It should enable you to so strengthen your eyes that glasses will not be needed later in life, while in many cases it will enable you to discard the glasses which you may now be wearing; it should also enable many to avoid the loss of a possession priceless in value—the sense of sight.

This book is sent out in the hope that it will be a boon to many who need the invaluable information which it contains. That its methods sometimes require considerable time and patience for their successful practice should not lessen their value. The rewards which await those who follow the instructions given will be beyond price.

CHAPTER II

Strong, Beautiful Eyes

Eyes, of microscopic power, that would discern
the population of a dewdrop.
—Montgomery.

IT is undoubtedly true that man comes into more intimate contact with the outer world through the sense of sight than through any other, or perhaps through all the others combined. In the case of the other senses, outside impressions: or "stimuli" seem to come to the man—to impinge *upon* him, as it were; but in the case of sight, he apparently goes outside himself, and actually seems to project himself into the outer world—seeing what is there, actually existing. We know now that this subjective impression of the facts is not true; but the feeling is there none the less. We can also direct or govern the sense of sight more fully than any other. We can "turn away" from sights we do not wish to see, while we cannot readily stop listening to sounds we do not like or shut out smells which are disagreeable to us. Sight seems to be, more than any other sense, in touch with the true personality—the godlike self within.

Yet, in spite of their great value, the eyes are among the most delicate organs in the human body. They are composed largely of liquid, are extremely sensitive, and can very readily be destroyed altogether. It is only the marvelous protective measures of nature which prevent a greater number of fatal injuries to these organs.

Man, more than any other animal, depends upon his sense of sight, for in his case the other senses, such as smell and hearing, are more or less "atrophied," or stunted, as compared with their keenness in other animals. They are sometimes almost lost through lack of use. To a certain extent this is true of the sense of sight also, but it is less true here than in the other instances, the conditions of modern life requiring the almost constant use of the organs of vision.

The eye in the lower animal, as well as in man, is one of the most highly specialized structures in the body, and so wonderful in contrivance that it is rightfully alluded to as one of the marked instances of the beneficences of God as displayed in creation. Yet, in spite of the profundity of the researches which the ingenious mind of man has made, of late years, in the domain of science, this most important and wonderful organ has not received the amount of attention given to many other subjects.

Not only are the eyes important in themselves, but if they are strained or injured they in turn affect the general nervous system. It must be remembered that what we call "the eye" is only the eyeball; the whole optical apparatus is far more extensive than this, and is hidden away in and back of the socket, including a part of the brain itself. By means of the optic nerve the eye proper is connected with the sight-centers in the brain; and, again, the eye is nourished by the blood, which circulates to and in these parts. All treatment of the eyes must, in a certain sense, be *constitutional* (that is, general) and not local only. The latter method of treatment would be very inadequate, failing to take into account the fundamental fact that the eyes are a part of the body and dependent upon and influenced by it.

Emotions and expressions are mirrored in the eye. The "love light in the eye" has been the theme of amatory verse in all ages and times, and throughout literature we find endless references to the expression of the varying emotions of the human soul by the eyes. Passionate, burning, cruel, mystic, gentle, cunning, hot, cold, etc., are among the adjectives applied to them. The character is depicted by the eye more plainly, perhaps, than by any other organ of the body, courage, dignity and power being expressed by the organs of vision when other external indications of these attributes are lacking.

Yet, though these varying emotions and expressions can doubtless be read in the eyes, it is extremely difficult to say just *how* and *why* the eyes betray and portray them.

Some authors are of the opinion that the eye itself never changes, but only the muscles directly around it. "These muscles vary the expression," and the theory seems to be more or less borne out by the fact that, in many cases, if the parts adjacent to the eyes be covered up, no change of expression can be detected. Other authors, on the contrary, contend that the eye itself changes in expression and have advanced arguments which seem to prove it. This is an interesting line of inquiry which the student might follow for himself with interest and profit.

The eye, to be beautiful, must be clear. It must be free from defects, such as squint or dullness; the lashes must be of the proper length, the lids healthy and the whites free from the discolorations of impure blood. A perfect digestion, a healthy and energetic circulation of the blood, a delicate nervous poise, are all physical prerequisites to beautiful eyes. Form, color and size avail nothing without the luster and brilliancy of expression imparted by general physical health and tone, and though the shape and color of the eyes can never be changed, they can be greatly improved in appearance by the rational system of constitutional and hygienic treatment to be considered later.

The unfortunate tendency of modern medical science is to specialize too much; and under the influence of this tendency, general conditions are often ignored. In the majority of cases the eye specialists are no exception to this rule. They are too often inclined to treat the eye along purely local lines, instead of recognizing that it is a part of the general nervous system and treating it also along constitutional lines. Effects have been treated instead of causes; yet it is plain that the causes must be removed if we are ever to cure the effects.

The prevalence of defective eyesight is indeed alarming, did we but realize it. It has been estimated that from 25 to 50 per cent of the inhabitants of the United States are more or less short-sighted—to cite this one defect alone. At the lowest possible estimate, therefore, at least 25,000,000 people in this country suffer from myopia, and probably a good many more than this! And if, to this, we add those suffering from hypermetropia (or far-sight), presbyopia (old-age sight), astigmatism, squint, color-blindness and other defects of vision, we are surely safe in saying that the great majority of the inhabitants of America are afflicted with imperfect vision, and all the ills that follow in consequence.

CHAPTER III

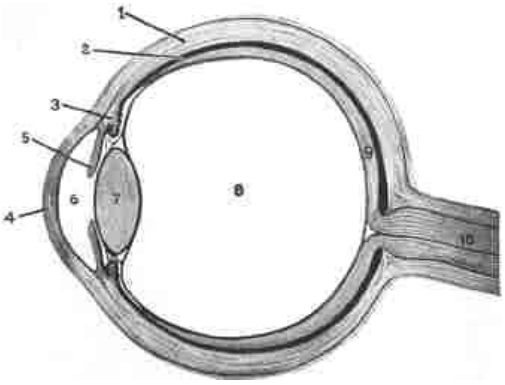
The Anatomy of the Human Eye

A SIMPLIFIED exposition of the structure of this wonderful organ is imperative in a course of this character in order that the pupil may understand the terms which follow, but only a very brief summary can be attempted. For a more detailed account of the structure and physiology of the eye the student is referred to larger works.

Normally, the eyeball is nearly spherical in shape, and has three *membranes*, or coats, and three *humors*. The external coat is a thin, tough membrane, which maintains the form of the ball; it is called the *sclerotic*, and forms what is known as the "white of the eye," and includes the anterior four-fifths of the outer coat; the anterior one-fifth is the *cornea*, a transparent disk joined to the sclerotic somewhat as a watch-glass is set in its case. It can be plainly seen by looking at the eye sideways.

The next coat which lies against the inner surface of the sclerotic and is very vascular, is called the *choroid*.

The *choroid* is composed of a network of blood-vessels, and is lined with a layer of pigment cells, whose duty it is to absorb an excess of light.

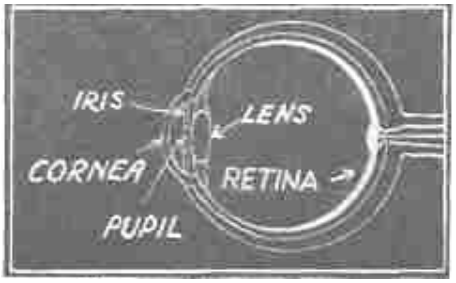


Horizontal and sectional view of the structure of the eye. (1) Sclerotic coat; (2) Choroid coat; (3) Ciliary body; (4) Cornea—the "watch glass" in front of the eyeball; (5) The iris; (6) Anterior chamber, containing aqueous humor; (7) Crystalline lens; the pupil is between 6 and 7; (8) Vitreous Humor, filling the eyeball; (9) Retina; (10) Optic nerve.

The *iris*, which forms a thin curtain behind the cornea, gives the eye its special color and to a large extent its beauty. The color of the iris in newly born babies is blue, and the differing colors which come later in life are due to the addition of a greater or lesser amount of dark pigment. The color is usually more or less in uniformity with the general coloring of the individual.

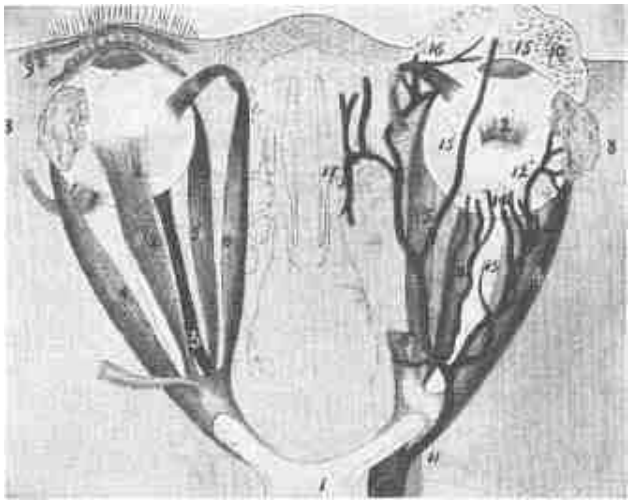
The *pupil* is merely an opening in the center of the iris, and appears black because of the darkness of the interior of the eye. Through it the rays of light, coming from any object, must pass. The pupil has the power of contracting or expanding under the influence of light; and certain drugs, such as opium and belladonna, cause it to contract or dilate unnaturally for long periods of time. The pupils of cats, tigers and other animals appear to shine in the dark; and for long it was thought that this phenomenon was due to some form of phosphorescence, but it is now known to be merely a reflection from the cornea.

At the junction of the iris and choroid is found a narrow band of delicate muscular fibers, called the *ciliary muscle*. This little muscle has been thought to play a very important part in the workings of the eye, notably in its "accommodation," and should be remembered, as it will be referred to repeatedly further on.



Simplified diagram, corresponding to the figure on page 10.

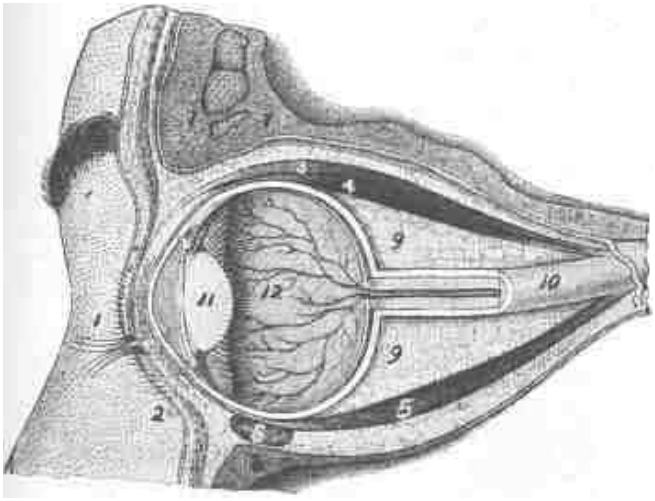
The *retina*, the third or nervous membrane, lies at the back of the eye-wall, and upon it the light-rays entering the eye are thrown or "focused." It is an exceedingly delicate and sensitive structure, liable to injury and less than one-hundredth of an inch thick. Nevertheless about **ten different layers have been found within it!** The outermost of these, called "Jacob's membrane," has been found to consist of minute columns arranged side by side perpendicular to the choroid, while the internal, or nerve-fiber layer, is composed of delicate nerve-fibrils forming a surface parallel to the choroid.



View of eyeballs from above, showing the muscles and arteries. (1) Crossing of the optic nerve; (2) Superior rectus muscle; (3) Inferior rectus muscle; (4) External rectus muscle; (5) Internal rectus muscle; (6) Superior oblique muscle (7) Inferior oblique muscle; (8) Lachrymal glands; (9) Eyelid in section; (10) Eyelid from inside; (11) Infra-orbital artery; (12) Branch to the tear gland; (13) Branch to the retina; (14) Branch to the iris; (15) Branch to the upper eyelid; (16) Branch to the eyebrow; (17) Branch to the cavity of the nose.

The *optic nerve* passes from the eye to the brain, and carries the nervous impulses which, in the sight-centers of the brain, are converted into the "sensation of seeing." There is evidence that the optic nerve carries impulses that result in pain, but apart from this it can carry only one kind of nerve impulse, that of sight. Hence, when it is stimulated, by whatever means, whether normally

by light, or by an electric current, or by a blow, we get the **impression of light or "seeing stars."**



Section through the right eye. (1) Upper eyelid; (2) Lower eyelid; (3) Eyelid lifting muscle; (4) Superior rectus muscle; (5) Inferior rectus muscle; (6) Inferior oblique muscle; (7) Frontal bone; (8) Superior maxillary bone; (9) Fat; (10) Optic Nerve; (11) Crystalline lens; (12) Vitreous humor.

The three humors are the *aqueous*, *crystalline* and *vitreous*.

The *vitreous humor* occupies about four-fifths of the interior of the ball; it is colorless and transparent, and somewhat resembles a very thin jelly. It is solid enough to maintain the shape of the eye, while at the same time yielding readily under pressure. It is firm, yet elastic.

The *crystalline humor*, or *lens*, is firmer than the vitreous, but not solid, and is shaped somewhat like an ordinary magnifying glass. It grows denser with age. This also is a very important part of the eye, and will be dealt with more fully in the discussion of accommodation and errors of refraction.

The *aqueous humor* is nearly pure water, and is contained in the space between the cornea and lens.

The *orbit* is the hollow cone of dense protective bone in which the eye is set. The roof of the orbit, however, is very thin, and upon this the fore-brain rests. It may be injured by a blow from beneath; and duelists are said to have selected this spot for a fatal sword-thrust. King Henry II of France was accidentally killed at a tournament by a lance point which pierced his brain through this fragile bone.

The eyebrows are formed of bone, muscle and thick skin, covered with hairs, and protect the eyes from drops of sweat, water, dirt, etc., which might otherwise find their way into them.

The eyelid is also a protective covering, composed of a layer of loose skin, and covers the eyes during sleep, when the ball is "everted," or turned upwards, also from dust, smoke, etc.

The polish and transparency of the cornea are maintained by frequent unconscious winking, (blinking) which keeps its surface moist and free from dust. The mucous lining of the eyelids is always more or less moist, and is continuous with skin at the margin of the lids. After lining the inner surface of the lids it passes over to the ball, forming a loose fold, which is the only direct connection between them; hence its name, *conjunctiva*. It covers the front part of the sclerotic, the whole of the visible portion, and lining the walls of the tear-duct, **becomes continuous with the membrane of the nose and throat, and, therefore, usually takes a part in a "cold in the head," or influenza.** It is usually transparent, but may become bloodshot, or yellow, as in jaundice. Yellowness results when the coloring matter of the bile is deposited in the conjunctiva.
(Sinus pressure, congestion can cause pressure on the eyes, affect eye movement, disrupt eye shape, focus of light rays, cause slight astigmatism, headache, dizziness.)

The opening between the lids is called the *commissure*, and the apparent size of the eyes depends chiefly upon the width of this space. The almond shape of Oriental eyes is due to the unusual length of the fissure between the lids, apparently increased by the absence of the *plica semilunaris*—the small triangle of flesh at the inner angle of the eyelids. In the Chinese, the outer angle of the commissure is much higher than the inner, giving the cleft an obliquity upwards and outwards. This has a marked effect upon the whole expression of the face.

The lachrymal apparatus consists of the gland for secreting tears and the passages for draining them off. The "tear glands" are situated just above the outer angle of the eye, and a number of small ducts carry the tears, when secreted, to the eye itself. After passage across the surface of the eye, the tears are taken up by passages, which commence near the inner angle of the eye, and are conducted into the nose. The tubes carrying the tears to the nasal passages are called the *lachrymal canals*. Two tiny holes or outlets permit the tears to enter these canals from the surface of the eye. Tears are usually drained off in this manner, and only "overflow" and drop off the lids when the glands are excited by excessive emotion or by local irritation. "Sniffing" is usually the

first stage of a "good cry." Infants do not shed tears before the third to fourth month, and the elephant is the only one of the lower animals accused of this human weakness—statements concerning the crocodile to the contrary notwithstanding!

The eyeball is moved in various directions by a number of muscles, attached to it at the back, top, bottom and sides. It can thus be turned upwards, downwards, inwards or outwards, or may be rotated. When these muscles are uniformly relaxed or acting in unison, the eye is normal. When, from any cause, one set of muscles exerts a stronger pull than its opposites, a squint is produced. When the muscles contract excessively, they squeeze the eyeball out of shape, elongating it or the reverse. The importance of this fact we shall see when we come to the chapter devoted to errors of refraction.

CHAPTER IV

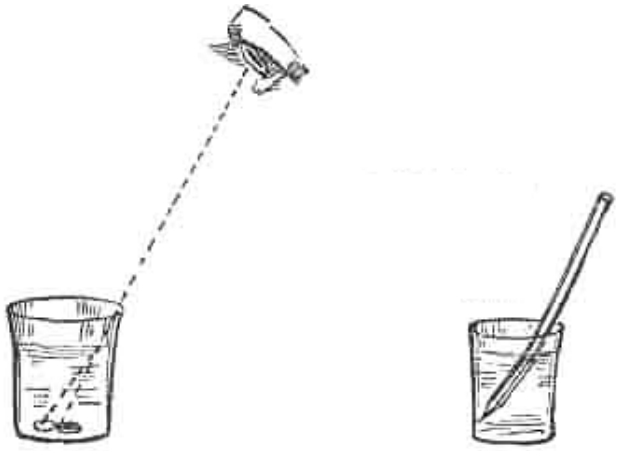
How We See: The Physiology and Physics of Vision

THE act of seeing is one of the greatest mysteries in the world. To the ancients it was an even greater mystery than to us, and continued to be so until the great astronomer Kepler noted the resemblance between the human eye and the camera, and demonstrated that images of external objects are formed by the organs of vision exactly as they are by the photographer's apparatus. In the eye, the rays of light, coming from the object seen, traverse the eyeball and fall upon the sensitive retina (the "plate" of the camera), from which they are conveyed to the sight-centers of the brain by the fibers of the optic nerve. That is, the impression which they have created upon the retina is so conveyed.

In order that the reader may understand the optics and physics of the eye, and of sight, it is necessary to say a few words concerning light, and reflecting and refracting bodies and surfaces.

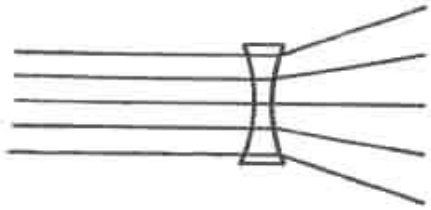
Light is primarily given forth by self-luminous bodies, such as a candle or the sun; and everything else is *reflected* light. The earth reflects the rays of the sun, and this gives us our "daylight." When this reflection is cut off, dense blackness prevails. The spaces between the stars are inky black, for there is no solid body to reflect the rays coming from the sun. Rays of light are reflected when the body on which they shine sends them back. And if the light strikes a reflecting surface at an angle, the reflected angle—the so-called "angle of reflection"—is always equal to the "angle of incidence," or the direction of the shaft of light striking the object.

The white light we see is composed, as we know, of seven primary colors. Some bodies absorb some of these vibrations, and reflect others; and when this is the case such bodies are said to be colored in various ways. The color of any object is not inherent *in* it, but is due solely to the fact that some of the light-rays are reflected and some absorbed. Those which are reflected constitute its "color."



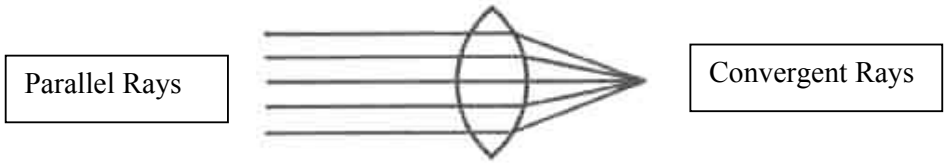
Refraction of light by the surface of water, illustrated by the coin which in an empty cup may be invisible and which appears to move upward and come within the range of vision when the cup is filled with water. Refraction is also seen in the appearance of the bending of a stick or pencil immersed in water, when looking at it from above.

When rays of light pass from one medium into another of different (shape, curvature, structure, density…) they are bent of their previous course, which in the case of rays coming from a distance, is one of parallel lines. A simple experiment which demonstrates this is that in which a small coin is thrown into a basin of water. It appears to be in a certain place, but if an attempt be made to touch it in this place it is found to be not there at all, but somewhere else! "Appearances are deceptive." This is due to the fact that water, being of a density different from that of air, bends the rays of light and makes them take a different direction; they are, in short, *"refracted."* By suitable means, these light-rays can be straightened out again; they may also be refracted any number of times and in various ways.



Refraction of light-rays passing through concave lens, becoming divergent.

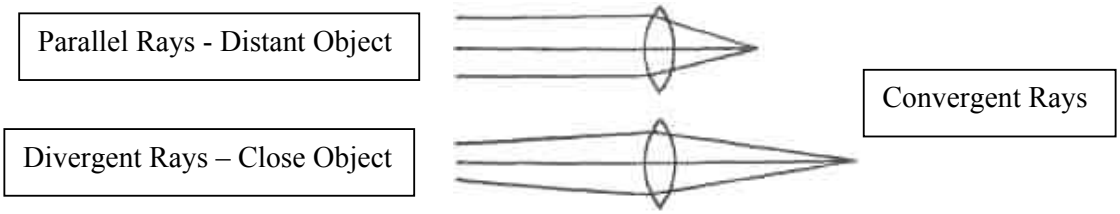
Thus, a plain, flat sheet of glass will bend all the light-rays which pass through it at the same angle. They are neither *diverged* (scattered), nor brought to a point *(converged)*. When, however, the glass is double "convex," the rays of light are brought together into a *"focus."* When it is double "concave," the light-rays are scattered, or diverged.



Refraction of light-rays passing through convex lens, becoming convergent.

We have seen that (divergent or parallel) light-rays passing through a double convex glass or lens converge at a certain point, and if, at that point, we place a screen, we catch an image of the object from which they proceed. In the eye, precisely this phenomenon takes place. The cornea and crystalline lens focus the light-rays upon the retina at the back of the eye, which catches the image, and from this point the impression is carried along the optic nerve to the brain, as before described. When the rays are focused exactly upon this delicate surface, the impression is clear and distinct. Otherwise it is blurred, or sight may fail altogether.

All parts of the retina are not equally sensitive to visual impressions. The most sensitive portion is a little depression directly in the line of vision, called the *fovea centralis*, literally, the central pit. Indeed, this is the *only* spot which admits direct vision. In all other places it is more or less blurred. We can see only one thing at a time clearly; the rest becomes blurred and fades out as it recedes from the central point. Not far from this most sensitive spot there is a *blind spot* on the retina, which is unable to see anything. We have one in each eye, but the eyes are so adjusted that when one eye is blind the other sees, and *vice versa*. This blind spot is at the entrance of the optic nerve to the retina, and its locality can easily be seen in the diagram on the preceding page.



Illustrating the refraction of rays of light from distant and nearby points. The parallel rays, from a distant point, are concentrated at a point much closer to the lens than the divergent rays from a nearby point, which are focused further back. This is also demonstrated by the familiar experience of focusing light-rays in a camera.

The eye is set in normal shape/state to focus light rays from distant objects onto the retina.
The eye must accommodate, lengthen and/or the lens must move or change shape to bring the light rays from close objects onto the eyes retina.

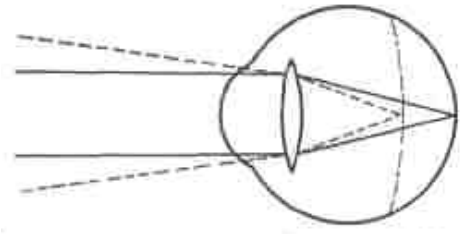
A diagram for demonstrating the "blind spot" on the retina which is the point at which the optic nerve enters.
Closing the left eye and holding the diagram horizontally ten or twelve inches in front of the right eye, look fixedly upon the cross and gradually bring the diagram nearer.
At from seven to nine inches the black spot will suddenly disappear from the vision because the image falls upon the "blind spot."

Light rays from the round spot focused on the eyes blind spot.

To prove the existence of the blind spot:

Close the left eye and direct the right eye to the small cross on the left hand side of the figure. Hold the page vertically before the eye, ten or twelve inches off, and then gradually bring it nearer, still keeping the gaze fixed upon the cross. The round spot will also be visible, except at a certain distance from the eye—about seven inches—when it will disappear from view. Its image falls upon the point of entrance of the optic nerve, (Blind Spot) which is incapable of perceiving light.

In the diagram on this page is illustrated how the image is thrown upon the retina in the "blind spot" experiment. The eyeball in this diagram is proportionately small. The cross marks the spot of entrance of the optic nerve.

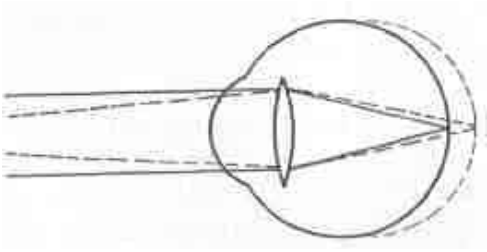


Unclear Close Vision

Diagram illustrating hypermetropia or far-sightedness, light-rays from nearby points (indicated by broken lines) being focused behind the retina. This old picture is imperfect. The abnormal eye shape that causes unclear close vision is a shortened eye shape (shown by the light vertical line in the diagram?) that causes the light rays to focus beyond the retina, scattering unfocused on the retina.

The normal eye lengthens slightly to focus divergent light rays from close objects onto the retina. The picture shows that the eye has remained round, or shortened, has not lengthened to adjust/enable the light rays from the close object to focus correct on the retina. Close vision is unclear. Light rays in the picture is a misprint–Light rays from close objects diverge before entering the eye. The eyes lens also focuses light rays.

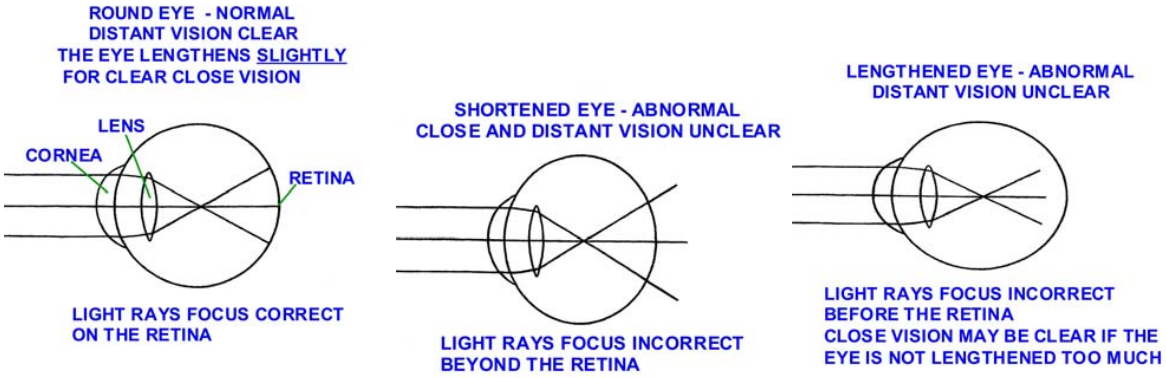
We have seen that a double convex lens will focus light-rays at a certain point or distance beyond it; this distance will depend upon the degree of convexity of the lens. If it is only slightly convex, the focal point will be some distance away, while if it is very much curved, the focal point will be very near. We have only to alter the degree of convexity of the lens to insure the focusing of the rays at any desired distance (within limits).



Unclear Distant Vision

Diagram illustrating myopia or near-sightedness, rays of light from a distance (indicated by broken lines) falling in front of (before) the retina. The abnormal eye shape that causes unclear distant vision is a lengthened eye which prevents the light rays from reaching, focusing on the retina. Distant vision is unclear.
A round eye shape produces clear distant vision. The eyes lens also focuses light rays.
Light rays from distant objects are basically parallel.

See these correct, modern eye pictures;

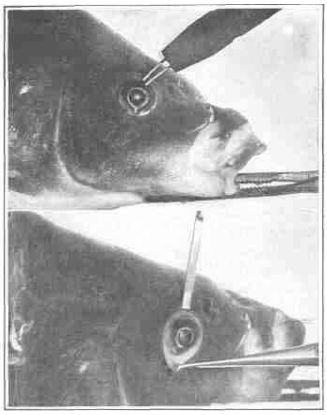


Now, the lens of the eye is like any other lens in this respect; and it was long ago pointed out that if it were slightly altered in shape, by means of muscular tension or otherwise, rays of light coming from different distances could be focused accurately upon the retina. It has been believed for many years that the eye adjusts itself for vision at different distances by this means, and the theory, which was accepted mainly upon the authority of Helmholtz, is the basis of the teaching in all the text books on ophthalmology today. This change of focus is called "accommodation," and is supposed to be effected by means of the ciliary muscle.

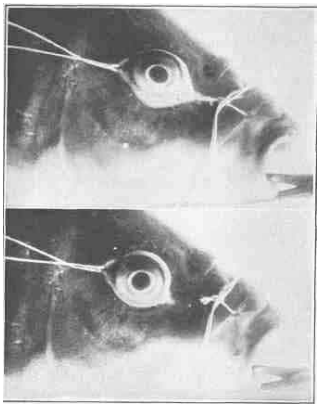
When the eye does not adjust itself properly for vision at different distances it is said to be suffering from an *error of refraction*. These errors, with the exception of presbyopia (old-age sight), are attributed to a wrongly-shaped eyeball (occasionally to a wrongly-shaped lens), and are believed to be either congenital (present at birth) or acquired. Presbyopia is attributed to the

hardening of the lens and its consequent inability to change its shape. It is stated in all the text books on ophthalmology that these conditions are incurable and almost entirely unavoidable; but, by altering the shape of the lens, the ciliary muscle is supposed to be capable of compensating to some extent for deviations from the normal in the shape of the eyeball, and when the patient is not physically at par this is believed to impose a great strain on the eye and the nervous system.

The Bates method relaxes the mind, body, eyes, outer eye muscles, inner eye muscles (lens, Iris…) and improves the clarity of vision by returning the eye, lens to normal shape, function, improves health of the eyes, mind, body, nervous system.



An experiment on the eye of a carp demonstrating that the lens is not a factor in accommodation. In the upper picture the eye is normal and accommodates normally when stimulated by the electrode. In the lower the lens has been pushed out of the line of sight by an instrument the point of which can be seen in the pupil. The eye is then stimulated by electricity and accommodates precisely as in the upper picture.



Production of astigmatism in the eye of a carp by changing the shape of the eyeball. In the upper picture the pull of two strings attached to the conjunctiva has made the cornea oval, thereby producing astigmatism. In the lower one the string has been cut, the cornea has resumed its natural shape and the eye is normal.

It is upon these doctrines that the treatment of refractive errors by means of glasses is based. So long as the lens and the ciliary muscle worked, and the eyeball was of the normal shape (or the lens and ciliary muscle were capable of compensating for its deficiencies), the light-rays, we have been told, were focused accurately upon the retina, and the eye required no help. But when this was no longer possible or easy, for any reason, then an extra lens was prescribed to assist in bending the light-rays so that they should be properly focused. This often improved the vision and seemed to relieve strain. In other cases it did neither, and the patient wandered hopelessly from one specialist to another in the vain search for relief.

As we shall see, however, when we come to the further discussion of accommodation and refractive errors (Chapter VI), these theories are erroneous.

CHAPTER V

Asthenopia: Weak Eyes

NORMAL, healthy eyes should be strong, clear, alert and full of expression. When they are dull, weak or lacking in expression, we may be sure there is something physically or mentally wrong with their possessor. Everyone has noted the meaningless expression in the eyes of the drunkard—how they roll about in a heavy, lusterless way in their sockets. This sufficiently demonstrates the intimate relationship between the eyes and the general nervous system. Indeed, it may be said that the eyes are a fair indication of the condition of the stomach and of the whole system. Excessive eating, drinking, smoking, worrying or other debilitating practices are sure to be recorded sooner or later in these delicate and sensitive structures.

When the body is normal and healthy, the blood furnished to the eyes is pure and clear. Strong eyes are the result. If, on the other hand, the digestion is out of order and the blood is impure, or loaded with unassimilated material, then the eyes grow dull and heavy; their power of vision is impaired no less than their beauty, and a wholesale degeneration of their tissues results. **Eye defects of this character are almost invariably due to some constitutional weakness or defect, and not to the local causes to which they are often ascribed.** This will become more apparent as we proceed. Most oculists and opticians have a

tendency to treat the eye as a detached organ, without any relation at all to the rest of the body, the blood stream or the nervous structure. This is irrational, and it is impossible that any permanent good should come of it. The connection between the eye and the rest of the body is most intimate, and any form of poisoning, or weakness, in the latter at once manifests itself in the former. Under these circumstances local treatment is useless without improvement of the general physical condition. **Only vigorous bodily exercise, proper diet, deep breathing and general invigoration can build up the system and place it on that high plane of energy which is essential to the health, strength and beauty of the eyes.**

The causes to which the deplorable condition of civilized eyes is usually ascribed, such as prolonged use for near work, improper lighting, etc., are only injurious, as we shall see later, when the eyes are not properly used.

It usually takes a long time to tire out the eyes, and they recuperate very rapidly under proper care. Of course, if things have been allowed to go too far, a long course of treatment may be essential, but even then it is astonishing to see how rapidly recovery will take place.

Resorting to glasses as soon as any visual discomfort is experienced is a mistake—for reasons to be set forth later. The eyes are thus supplied with a crutch which partially supports them, but which, at the same time, keeps them artificially strained. The natural result is that they call for more and more powerful lenses. The proper thing to do in such cases is to find out and remove the cause of the condition, whether constitutional or local. Then all palliative measures will become unnecessary.

CHAPTER VI

The Imperfect Sight of the Normal Eye

In the following discussion, based upon the experience of a scientist who has specialized in the field of ophthalmology, are presented facts of the greatest practical importance, not only to all those who desire to have perfect sight, but to those whose safety depends upon the sight of others. Revolutionary as these statements are, they are supported by such wealth of evidence that they cannot well be questioned.

IT is generally believed that the normal eye has perfect sight all the time.

It has been compared to a perfect machine which is always in good working order. No matter what the object regarded may be, whether new, strange or familiar, whether the light is good or imperfect, whether the surroundings are pleasant or disagreeable, orthodoxy teaches that the normal eye is *always* normal and its sight *always* perfect. Even under conditions of nerve strain and bodily disease, the normal eye is expected to have perfect sight always.

This idea is very far from the truth. A careful study of the refraction of the eye extending over a period of many years has proven that no eye has perfect sight continuously. It is unusual, in fact, to find persons who can maintain perfect sight longer than a few minutes, even under the most favorable conditions. Of twenty thousand school children more than half had normal sight, but not one had perfect sight in each eye every day. The sight of many of them might be good in the morning and imperfect in the afternoon, while many with imperfect sight in the morning would have perfect sight in the afternoon.

Many children could read some letters of the alphabet perfectly, but were unable to distinguish others of the same size under similar conditions.

The degree of the imperfect sight varied within wide limits from one-third of the normal to one-tenth or less; duration was also variable. Under some conditions the imperfect sight might continue for only a few minutes or less. Under other conditions, however, a small number of students (sometimes all with normal eyes) would have sufficient loss of sight to prevent them from seeing writing on the blackboard for days, weeks, or even longer.

The sight of adults of all ages varies in a similar manner. Persons over seventy years of age with normal eyes have had attacks of loss of sight variable in degree and duration. A man aged eighty with normal eyes had periods of imperfect sight which would last from a few minutes to several hours or longer.

Both adults and children with normal eyes may have attacks of color blindness, and all persons, when their sight for form is lowered, are less able to distinguish colors than at other times. One patient, with normal eyes, perfect sight and perfect color perception in the daytime, had always been color-blind at night; he had no perception of colors after sunset.

There can be no doubt that accidents on railroads, at sea and on the streets often occur because the normal eyes of the responsible persons, *for a time*, had imperfect sight.

Unfamiliar objects almost always produce eye strain and are imperfectly seen. School children with normal eyes who can read small letters one-quarter of an inch high, at a distance of ten feet, always have trouble in reading strange writing on the blackboard, although the letters may be as much as two inches high. Strange maps always produce imperfect sight in the normal eyes of school children because they cause a strain to see. Temporary myopia, or myopic astigmatism, is always produced under these conditions, and if the strain is frequently repeated it may become continuous.

The strain may be conscious or unconscious, and may or may not produce pain, discomfort or fatigue.

Unfamiliar objects seen at the near-points are also a cause of eye strain. For this reason school children or adults learning to read, write, draw, or sew, suffer from defective vision, although they have normal eyes. In such cases temporary hypermetropia, or hypermetropic astigmatism, is produced, and with frequent repetition of the strain it becomes permanent. Learn to avoid strain, staring, squinting. Blink, shift, central fixation, relaxation for clear vision.

This matter is of such great practical importance in the education of children that the attention of teachers should be called to the facts. (New York Medical Journal, August 30, 1913, Myopia Prevention by Teachers.)

Many children lose interest in their school work and become truants and incorrigibles from this one cause.

Light has a very important effect on vision of the normal eye; an unexpected strong light always produces defective vision. The vision of all persons is imperfect when the eyes are first exposed to the strong light of the sun, or to any strong artificial light. Rapid or sudden changes in the intensity of the light always produce defective vision, not sufficiently great to be manifest to the individual, but always to be demonstrated by careful test of the vision and by use of the retinoscope. The defective vision produced by strong light may be temporary, but it has been observed to continue in many cases for a number of weeks, frequently running into months, although it is never, probably, a permanent disability. If the eyes are gradually accustomed to strong lights, however, they will be benefited, and one may even become able to look directly at the strong light of the sun without any loss of vision whatever.

Noise is a frequent cause of defective vision in the normal eye. All persons see imperfectly when they hear any unexpected loud sound. Familiar noises do not usually lower the visual power, but unfamiliar, new or strange noises, which cause shock, always do, with the production of a temporary error of refraction. Country children from quiet schools, after they move to a noisy city, often suffer from defective vision for long periods of time. In the classroom they rarely do well with their work because of impaired sight. It is a gross injustice for teachers and others to criticize, scold or humiliate such children.

The reading of small distant familiar letters, for a few minutes at least every day, is very successful in preventing these fluctuations of sight, as it tends to prevent strain in looking at unfamiliar objects. Not only the Snellen eye chart, but a calendar, a sign with small letters, or even a single small letter, may be used for such practice. The good results of this simple system of **eye training justify its use in schools, in the Army and Navy, in the Merchant Marine and on railroads,** as well as by everyone who desires or needs continuous perfect sight.
Avoid eyeglasses during times of fluctuating, temporary changing visual clarity. Learn The Bates Method, improve the vision to better than 20/20 and normal fluctuations of vision will be minor, occur less often and fluctuate less to only about 20/20, 20/30 then will return back to clearer than 20/20 - to 20/15, 20/10…
Eyeglasses prevent the eyes natural return to normal clarity, function. Glasses cause, maintain, increase vision impairment.

CHAPTER VII

Errors of Refraction: Their Cause

In the two chapters following are presented the results of over thirty years of labor upon the part of a physician of high scientific standing. Until he discovered that errors of refraction were merely functional derangements, it was universally believed that they were incurable. His experiments have proved beyond the possibility of doubt that these conditions are due to the abnormal action of the muscles and that their cure is therefore a mere matter of muscular control. The details of these experiments may be found in the New York Medical Journal, May 8, 1915.

ERRORS of refraction are responsible for most cases of defective vision and often lead to actual disease of the eye. These errors fall into four classes: Myopia, Hypermetropia, Astigmatism and Presbyopia.

In *myopia*, commonly called short-sight or near-sight, rays of light coming from a distance are focused in front of the retina.

In *hypermetropia* they are focused behind the retina. This condition is usually called long-sight or far-sight; but in reality the sight is defective both for near and for distant vision.

In *astigmatism* the rays are not brought to a single focus, because the curvature of the refracting surfaces is greater along certain meridians than along others. There are six different kinds of astigmatism.

When one meridian is correct and the one at right angles to it myopic or hypermetropic, the condition is called simple myopic or hypermetropic astigmatism; when both meridians are hypermetropic or myopic, but one more so than the other, we get compound hypermetropic or myopic astigmatism; while a combination of myopia and hypermetropia is known as mixed astigmatism. Simple hypermetropia or myopia, without any astigmatism, is rare.

Presbyopia is that condition of the eyes which comes on usually between forty and fifty, and compels the subject to wear glasses for reading or sewing, the vision at the distance being at first apparently unaffected.

As already stated these conditions are generally supposed to be both incurable and largely unavoidable; but abundant evidence is available to show that they are purely functional troubles, and therefore both curable and preventable.

It can be and has been demonstrated, both clinically and by means of experiments on the eyes of rabbits, fish and other animals, that the lens and ciliary muscle have nothing to do with accommodation; and that, on the contrary, the shape of the whole eyeball is changed when the focus is changed, through the agency of the external muscles. When the lens has been removed from the eyes of experimental animals, or pushed out of the line of vision (as on p. 24, Chapter III), they have continued to accommodate just as before. So long as certain muscles, known as the obliques, were intact, electrical stimulation of the eyeball, or of the nerves of accommodation, always produced accommodation, but when one of them was cut accommodation could not be produced. When the severed muscle was sewed together again, however, accommodation took place as before.

These observations are in harmony with records of accommodation in the lensless human eye which may be found scattered through the literature of the subject for over a hundred years. Many persons, unfortunately, lose their lenses through the operation for cataract, and usually they are supplied afterward with two sets of glasses, one for reading, and one for distance; but occasionally such a person is able to see at both distances without any change of glasses. The correctness of these observations

used to be disputed but it is no longer possible to do so, and in consequence the idea that the lens cannot be the only agent of accommodation is creeping into the orthodox literature.

From these facts it would appear that whatever may be the cause of that failure of sight which comes to most people living under civilized conditions during their later years, it cannot be the hardening of the lens; and since the change of focus in the eye depends upon the action of the external muscles, we would naturally expect that failure to focus properly would be due to failure in the action of these muscles. The accuracy of this conclusion has been demonstrated by numerous experiments upon the eye muscles of animals.

These muscles (Oblique) form an almost complete band around the eyeball and lengthen it when they contract, as the camera is lengthened to take pictures at the near-point.

+In these experiments myopia was produced by operations increasing the pull of the obliques, leading to a lengthening of the eyeball;
+hypermetropia by increasing the pull of a set of muscles known as the recti, thereby shortening the eyeball;
+and astigmatism by operations causing an unsymmetrical change in the shape of the eyeball (as on page 25, Chapter III). Cutting one or more of the obliques, moreover, prevented the production of myopia, while hypermetropia was prevented by the cutting of one or more of the recti.

These observations leave no room for doubt that when errors of refraction exist in any eye it is because the outside muscles are squeezing it out of shape, making it, for the time being, too long or too short, or lengthening it or shortening it unevenly.
+Myopia is evidently due to an abnormal contraction of the oblique muscles,
+hypermetropia to the abnormal contraction of the recti,
+and astigmatism to the unequal contraction of these two sets of muscles, causing a greater elongation or shortening in one part than in another.
+In presbyopia the abnormal action of the recti is evidently confined at first to those periods during which the subject is looking at near objects, leaving the distant vision but slightly affected, but later on the distant vision fails also.

That these conditions cannot be due to any permanent change in the shape of the eyeball is further proven by the fact that they can be produced at will in a moment of time, as demonstrated by the retinoscope, and that they have been cured in thousands of cases, while they often disappear without treatment.

The cause of this abnormal action of the muscles is a strain, conscious or unconscious, to see, and as such is both preventable and curable. Poor diet, stress, tension, eye immobility, Eccentric Fixation, body, neck… immobility/lack of exercise, neck muscle tension, incorrect posture, mis-alignment of neck, body vertebrae can cause eye muscle tension, dysfunction.

The underlying causes of this strain are, obviously, those factors which have marked the change from primitive savage life to ultra-civilization. Improper dietetic habits, bad air and shallow breathing, insufficient exercise, too little bathing and sunlight, constipation, the excessive use of stimulants, city noises, hurry, worry, rivalry—all the physical and mental abuses ordinarily associated with civilized life—result in tension and strain of the whole body, including the eyes. Hearing and the other senses suffer as the sight does.

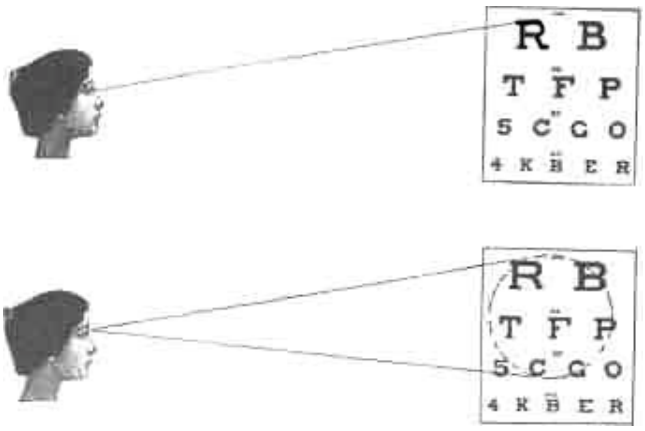
Of course some of the evils of civilization can not be completely overcome. The average man is likely to succumb to the powerful combination of its adverse influences if he follows the line of least resistance and makes no effort to rise above the example of his associates. But a person of average intelligence, if he understands the problem that confronts him, can, as a rule, live in the most congested centers of civilization with very little or no detriment to his health and sense organs.

CHAPTER VIII

Errors of Refraction: Their Cure

IN the chapter on "The Imperfect Sight of the Normal Eye" it was seen that no refractive condition is ever continuous. Eyes with ordinarily normal sight may suffer from errors of refraction at times, and eyes which are ordinarily near-sighted or far-sighted or astigmatic, may become less so, or even normal. It is obvious that this must be so, from the fact that the refraction is controlled by muscular action. But glasses cannot change as the eyes change, and therefore the mind, which wants to see, and which has a great capacity for adapting itself to adverse conditions, tries to maintain continuously the refractive condition they are designed to correct. That this tires the eyes is the experience of everyone who has worn glasses; that it must make the condition worse is obvious; and that it must be particularly harmful during the plastic years of childhood goes without saying.

The thing to do if one has an error of refraction, therefore, is not to wear glasses but to learn how to use the eyes correctly. This means seeing best with the center of sight, (Center of the visual field) the fovea centralis previously alluded to, and this means that a very small part of everything one looks at is seen best and everything else less distinctly in proportion as it is removed from the central point. This is called *Central Fixation* and is the basis of the treatment of errors of refraction without glasses. When the eye looks at objects with central fixation it is at rest, the muscles which control the refraction act normally, and maximum vision is attained.



+In the upper picture the sight is centered upon one spot, the upper left-hand corner of the letter R, which is seen more clearly and appears to be blacker than the rest of the field of vision. This is central fixation.
The eyes shift on the spot, point to point. All areas of the letter are seen clear by shifting part to part on the letter; moving the center of the visual field from part to part, (point to point.)

+In the lower picture the subject is endeavoring to see every part of her field of vision equally well at the same time. This is eccentric fixation and always accompanies eye strain. Person is not shifting part to part on letters and not shifting letter to letter. She is trying to see all parts, all letters at the same time, without moving the eyes, without shifting, without central fixation.

It is impossible, however, for the eye to look at any point for more than a fraction of a second. If it tries to do so, the point disappears and the whole visual field blurs. Perfect vision is thus seen to depend on clear vision of the smallest possible area and constant movement of the eye from one such area to another. (Shifting point to point.)

Central fixation is opposed to *Eccentric Fixation*, in which the eye partially or completely suppresses the vision of the center of the retina and sees a considerable area all alike at one time, or even sees the outer part of the visual field (peripheral field) better than the center. In such cases not only is the central point seen less distinctly than it normally should be, but the outer parts of the field are less distinct than when the center is seen best. Black letters appear less black, white letters upon a black background less white, and colored letters of a lighter shade than they normally would. The outlines of the letter are not clear, the margins being shadowy. Their size is altered and they appear larger or smaller than with normal vision. Their shape is distorted, and a square letter may seem to be round. Illusions of various kinds occur, and multiple vision is common. Pain, fatigue, or discomfort of some sort is usually felt, and headaches are frequently produced.

A common symptom, also, is twitching of the eyeballs or eyelids. This is usually unconscious, but may be felt if the patient lightly touches the closed eyelid of one eye while the other is looking at a letter by eccentric fixation. The appearance of the eye is usually expressive of effort, and **a greater or less degree of squint is always present.** Even redness of the margins of the lids and dark circles under the eyes may be produced by eccentric fixation.

Most people whose vision is not markedly defective can demonstrate the facts of central fixation for themselves. Let such a person try to see two printed words, or even two letters, equally well at the same time. At first he will probably find himself looking from one word or letter to another, and if he really tries to see both at the same time he will find it so difficult that he may give it up before anything happens. If he is able to keep up the strain for a very brief period, however, the words will blur and become indistinguishable. If he is able to look at a small letter, however, and see it better than the others in its neighborhood, or look at one side of the letter and see it better than the other he will experience a feeling of rest.

Eccentric fixation is a symptom of strain (in which the whole body participates). The first thing for the patient who wants to improve his vision to do, therefore, is to relax this strain. One of the best ways to do this is to close the eyes, cover them with the palms of the hands in such a way as to exclude all the light, while avoiding pressure on the eyeballs (see illustration), and think of something that will keep the mind at rest. Many people like to remember something black, but any other color will do just as well if one prefers it. **It is necessary to shift the attention from one part of the remembered object to another,** because, as any psychologist knows, it is impossible to be continuously conscious of an unchanging object, and if one tries it he will only increase the strain. With practice it becomes easier to think of very small objects, like a period, or a very small letter, but in the beginning most people prefer something fairly large. One can also for a change think of other things, but the memory of a small object of vision seems to produce the best results.

How palming is done for relaxing the strain on the eyes.

Rest the elbows on a pillow on the lap or on a table... to support the arms and prevent muscle tension in the arms, shoulders, neck, head, eyes.

If one succeeds in obtaining perfect relaxation in this way the entire visual field will become black, apart from any memory image one may have formed, because, as explained in Chapter II, the optic nerve cannot carry any sensation but that of light (unless it be the sensation of pain). If no light enters the eye, and the visual mechanism is perfectly at rest, one sees nothing—that is, black. If it is not at rest, however, one will continue to see lights and colors even without the stimulus of light. As a rule the colors are grays and browns, but in some cases they are kaleidoscopic in character. It is best, however, not to think very much about the nature of one's visual field, because as soon as he begins to do so he is liable to begin to strain. An approximate black indicates a satisfactory degree of relaxation, and most people attain it with very little trouble.

These periods of rest may be as long and as frequent as time and inclination permit. A few minutes will help, but a half-hour period, two or three or more times a day, is usually necessary for adults. Some people are more greatly benefited by an hour, or even several hours; but it is useless to attempt these long periods unless one can do it without becoming mentally worried or physically restless. In that case they become periods of strain, not periods of rest. The ability to relax in this way grows with practice.

After the eyes have been rested by palming, or by simply closing them, one should look at the letters of the Snellen test card, or at a bit of reading matter which one could not see before, and almost invariably he will find that his sight has improved, sometimes only slightly, sometimes to an astonishing degree. Occasionally this improvement is permanent, but usually it lasts for a moment only. This is the germ (flash) of improved vision from which the full flower of normal sight must grow. As soon as the strain returns, and the vision begins to lapse to its old condition, one should rest again for as long a time as is found necessary, and proceed as before. If one keeps up the practice, the flashes of improved vision come oftener and stay longer until at last they become permanent. In reading the letters on the test card one should, of course, never stare at them. If one does not see a letter, he should immediately look away, close the eyes, or palm. If one does see it, and wants to go on looking at it, he can shift from one side of it to the other. Blink.

Between periods of regular practice one can rest by closing the eyes for a moment or longer, as occasion permits, with or without the memory of a period or other small object, and sometimes one has an opportunity to palm with one hand. And one can practice on the letters of advertisements and signs, or on any small objects in one's line of vision. Some people think they are benefited by carrying about with them continually the memory of a period or small letter, but others find it a strain to remember such an object with the eyes open.

Another way to obtain central fixation is to notice that one sees a *part* of everything he looks at best, and the rest of it less distinctly in proportion as it is removed from the central point. The Snellen test card is useful for this practice. One can begin by looking from one end of a line to another, noting that he sees each best alternately. Then he can look from one letter to another and finally he may become able to look from one side to another of the smallest letters at a distance of ten or more feet and see each side best alternately.

A good way to practice at the near-point is to make a dot of about the size of a pica-type period, and after finding the distance at which it is seen best, try, by the methods given above, to bring it out with equal clearness at greater and lesser distances. **By daily practice it should become possible to see it clearly as close as three inches and as far away as twenty.** Or one may do the same thing with diamond type.

When the eyes are different it is best to begin practicing both together. Later, if it is found necessary, the eye farthest from normal can be practiced separately and to a greater extent.

Diamond type is condemned by most Ophthalmologists and Optometrists as being too fine for any eye except under most favorable conditions. My experience has been that **considerable benefit can be derived from reading this because it practically necessitates central fixation. It cannot be read except when the eye is relaxed.**

Many Bibles and Testaments are printed in Pearl type. This small print is considered by some to be responsible for much eye weakness, but we can prove that the eye defects are the results of other causes than the small print.

It is claimed by the secretary of one of the State Boards of Health that an attempt of a boy to read a Bible printed in Agate type caused the eyes to be so weakened that school work was abandoned for two years. I claim other causes were instrumental in producing this eye weakness.

Nonpareil is used for some papers and children's magazines, but is condemned by those who have a wrong idea of the use and abuse of the eyes.

It is claimed that Minion may be safely used by adult or young eyes, though it is, erroneously, considered injurious for children.

Brevier is frequently seen in newspapers. This should be a satisfactory type for anyone.

Bourgeois is a favorite type for magazines and is very similar to Brevier.

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And in all cases it should be kept constantly in mind that **the sight cannot be improved by effort. Strain cannot be relieved by effort, but only by "letting go."**

In addition to the foregoing practices everything possible should be done to relax the mind and the whole body. It is well to begin the day with general bodily exercises. A warm or tepid sponge bath, followed by a cool or cold sponging and brisk rubbing with a rough towel, will help to maintain normal skin action. A cool eye bath, gradually growing a little cooler, but never cold enough to be uncomfortable, is an excellent local treatment for the eyes.
Dr. Bates and Modern Bates Teachers do not advise eye baths. Placing liquids of any kind on the eyes, including eye drops, contact lens solutions… impairs the eyes natural tear structure, production and protection, nourishment of the eye and eye moisture. Opening the eyes under the water when swimming in pure, unpolluted, salt ocean water may be healthy but do not over-do it. If irritation is felt, keep the eyes closed. Use an under-water eye-mask. Chlorine, fluoride and other chemicals, germs, toxins in tap water, fresh water sources and pollution in sea water can also impair eye health. Choose a healthy beach, ocean to swim in.
One should take whatever measures are necessary to secure normal action of the bowels. A daily walk as long as time and strength permit, introducing short runs at intervals, will prove a great benefit unless there is some contra-indication in the way of serious disease. Increased vitality is needed for health of body and eyes, and it cannot be obtained without exercise, taken in gradually increasing doses. One should breathe fresh air all night and every hour possible during the day. One should obtain sufficient sleep if one hopes to have normal eyes.

These measures are usually successful in curing myopia, hypermetropia, astigmatism and presbyopia. **Patients with presbyopia, combined with other errors of refraction, and even incipient cataract, have been cured at sixty, seventy and even eighty years of age. Persons with high degrees of myopia have been cured by practicing only a few of the directions presented here.** It is not necessary to understand anything about the anatomy and physiology of the eye—however interesting and useful it may be to know these things—to be cured of errors of refraction. All that is necessary is to follow, literally and persistently, the simple directions given, every day for a sufficient length of time.

In the picture at the left the subject is looking at a Snellen test card with normal vision.
At the right she is trying to see a picture at twenty feet, and the strain has produced compound myopic astigmatism.
Trying, straining, using effort to see = blur.

Avoid Glasses

Glasses should be discarded if possible. Some people are able to make progress in spite of wearing them part of the time, but they are always a great handicap, undoing, to a greater or less degree, what has been gained by practice. If worn without change after the refraction has changed, they may also cause great discomfort.

Seeing without strain, the all-important factor in preserving normal and healthy sight.
This is possible only through central fixation. (and shifting.)

If the methods recommended later for the prevention of myopia in schools were practiced by people generally, whether they are old or young, or whether their eyes are good, bad or indifferent, that one thing alone would be of inestimable benefit. If any child under twelve who has never worn glasses **reads the small letters of the Snellen test card, or any small letter, every day, or letters, at a distance of ten feet or more, with both eyes together and each eye separately,** he will be cured of errors of refraction in from three months to two years, without any supervision or any other treatment. Adults of all ages will also be benefited by this practice, and may be cured, if they are sufficiently persistent. By such practice both children and adults will usually discover for themselves the facts about central fixation, strain, and other fundamental truths about the eyes. The time required for a cure varies greatly in different cases. Some persons are relieved immediately. In other cases weeks, months and even years of training are required. The practice should always be continued for a few minutes daily to avoid relapses. Even the normal eye requires practice in normal vision to avoid falling into errors of refraction.

CHAPTER IX

Amblyopia

Most physicians at the present time believe that amblyopia is incurable, but it has been proved that it can be successfully treated by means of new methods of eye training. During the last ten years numerous patients, ranging in age from six to seventy-five years, have secured normal vision by this means. The facts were first reported in La Clinique Opthalmologique, December, 1912.

AMBLYOPIA is a term applied to a condition of the eyesight in which there is a lowering of visual power which can not be relieved by glasses and is not dependent on any visible changes in the organ of vision. It has been facetiously defined as a condition in which neither the patient nor the doctor can see. The patient suffers from poor vision, while the doctor can find nothing wrong with his eyes. The condition usually affects only one eye, and is so often associated with squint that it has been erroneously supposed to be both the cause and the effect of that condition.

The text books enumerate many different types of amblyopia. The one known as amblyopia exanopsia was so named because it was supposed to result from a suppression of the sight of the affected eye during early youth, owing to some defect, such as a squint or error of refraction. Such defects were supposed to prevent the retina from attaining the functional capacity of normal eyes, and the literature of the subject is full of the impossibility of cure. "The function of the retina never again becomes perfectly normal," says Fuchs, "even when the cause of the trouble has been removed."

There are, nevertheless, many cases of spontaneous cures on record, these usually occurring when the perfect eye has been lost by accident. In such cases the amblyopic eye in the course of time frequently becomes normal.

It is gratifying to be able to state that the ailment is a purely functional one, and that the authorities are quite wrong in supposing that it cannot be cured. All cases have been relieved by eye training, and complete cures have been effected when the exercises were faithfully practiced. The progress has sometimes been very rapid, the sight occasionally improving in a few minutes from one-fiftieth of the normal to one-tenth.

Amblyopia Treatment

In order that patients may understand the condition, they are taught how to produce amblyopia in the better eye and how to increase it in the amblyopic eye by improper efforts to see. After they have learned to lower their vision voluntarily they become better able to improve it. The following case illustrates the method:
A girl of fifteen had had amblyopia and squint since childhood. The vision of the right eye was 1/40 (of normal), while that of the left was 2/3. Glasses did not improve either eye. The patient was seated twenty feet from a Snellen test card and the right or poorer eye was covered with an opaque screen. She was then directed to look with her better eye at the large letter on the card and to note its clearness. Next she was told to look at a point three feet to one side of the card, and her attention was called to the fact that then she did not see the large letter so well. The point of fixation was brought closer and closer to the letter until she appreciated the fact that her vision was lowered even when she looked only a few inches to one side of it. When she looked at a small letter she readily recognized that an eccentric fixation of less than an inch lowered the vision.

After she had learned to increase the amblyopia of the better eye, this eye was covered, while she was taught how to lower the vision of the other or poorer eye by increasing its eccentric fixation. This was accomplished in a few minutes. She was told that **the cause of her defective sight was her habit of looking at objects with a part of the retina to one side of the true center of sight. (Placing the object in the peripheral field, using the peripheral area of the retina to see the object.) She was advised to see by looking *straight at* the letters she wished to see. (Place the object in the center of the visual field, use the center of the retina, fovea centralis to see the object.)** (In less than half an hour the vision of the left eye became normal, while the right improved from 1/40 to 1/10. The cure was complete in two weeks.

Unconscious of the fact that they were looking at objects with their eyes turned to one side, many amblyopic patients had difficulty in realizing that this was the case. When they did come to understand it, it helped them to secure central fixation, and their sight immediately improved.

CHAPTER X

Color Blindness

BOTH because of its scientific interest and its practical bearings, this curious defect of the eyes occupies a large place in ophthalmological literature. Although it must have existed for centuries, the first case on record was discovered in the practice of a Dr. Tuberville in 1684. Nearly a hundred years later an English chemist by the name of Dalton, who was color-blind himself, and could see no difference between the color of a laurel leaf and that of a stick of red sealing wax, published the first accurate description of the condition. For this reason continental scientists gave it the name of Daltonism.

Although it would seem to be obvious that a condition of color blindness must be very dangerous, when it exists in persons responsible for the lives of others on railroads and steamers, it was not until the latter part of the nineteenth century, after much agitation by the medical profession, that its practical bearings were recognized. Owing to the remarkable tendency of color blindness to conceal itself both from the subject and his associates, managers of transportation companies distrusted the scientists and could not be brought to believe that such a defect could exist in persons who had been in their employ for years without its being discovered.

Sweden was the first country to pass a law forbidding the employment of any man upon a railroad until his color vision had been tested. This action was taken as the result of the investigations of Prof. Holmgren of the University of Upsala, who discovered thirteen color-blind men among 266 railroad employees, and his book on "Color Blindness in Its Relations to Railroads and the

Marine," had the effect of concentrating the attention of the world upon the subject. Today most shipping and railway companies require employees whose duties include the recognition of variously colored lights and signals to submit to a special examination for color blindness.

There are various degrees of **color blindness**. The condition in which no color can be recognized, and the world looks like a steel engraving, is rare, and its existence is denied by some. In cases where this total lack of color perception has been recorded, there has also been a considerable reduction of visual acuity in other respects. Usually only one color is lost by the subject in this odd manner, but sometimes more than one. Thus the subject may be color-blind for red, for blue, for green, etc., as the case may be. The most common form is that in which red is deficient. Many theories have been advanced to account for color blindness, and it is generally supposed to be incurable, but the evidence at present available indicates that it **is simply a functional trouble like errors of refraction.** It has been relieved, even when of considerable degree, by the methods presented in this book. Practice should be taken to acquire this habit, (Correct Vision Habits, Correct, normal, natural use of the eyes – Bates Method) even when there may be no other apparent trouble with or defect of vision.

CHAPTER XI

Strabismus: Squint

In the following is presented a cure, the efficacy of which has been tested in numerous cases, for one of the most distressing and disfiguring of eye complaints. Only approximately curable by any of the means heretofore used, it has been found that ***squint always yields to eye training when persistently and intelligently used.***

SQUINT, or strabismus, as it is called scientifically, is one of the vexed problems of ophthalmology. Many curious suggestions, both popular and scientific, have been made as to its cause. None of these theories come anywhere near to agreement, and while some seem to fit some cases, they leave many others unexplained.

The first definitely scientific theory advanced to account for squint was that it was due to an abnormality of the muscles which turn the eyeball in the socket. This theory seemed so plausible that it was almost universally accepted at one time, and an era of operations ensued, with many disastrous results.

Then Donders advanced his accommodation theory, which immediately came into vogue. This theory is based on the fact that when the eyes look at a near object there is not only a change of focus, but the visual axes, eyes which are parallel when the object of vision is a distant one, are turned slightly inward. These two acts, **accommodation and convergence, being always performed together,** have become associated by hereditary habit so that it is difficult to converge without accommodation. Donders concluded, therefore, that an abnormal effort of accommodation resulted in abnormal convergence.

Fig. 55

No. 1.—Convergent squint of the right eye.
No. 2.—The patient is temporarily cured by the memory of a black period.

main concern seemed to be to know whether she would have to wear the ground glass any more. She was assured that she would not have to do so unless there was a relapse, but there never was any relapse.[1]

[1] Bates: L'éducation de l'oeil dans l'amblyopie ex anopsia, Clin. Opht., Dec. 10, 1912.

1 -A typical case of convergent squint or "cross eyes."

2- The same patient cured by rational/natural methods of eye training.

According to another theory, the essential or underlying cause is a congenital defect in the "fusion faculty," of the power of co-coordinating the two visual images, resulting in the development of a squint on the slightest provocation.

The truth is that squint is a purely functional defect. **Some persons can produce it at will, and it is frequently produced in persons with normal eyes, both children and adults, when they try unsuccessfully to read the Snellen test card. When the eyes are not properly used, the optic axes are never parallel, although the defect is not usually sufficient to attract attention.**

Squint can be cured by the same methods recommended for errors of refraction, and it is also helpful to learn how to squint voluntarily. These methods not only straighten the eye, but cure the imperfect sight which is almost invariably associated with squint. Operations, even when successful—and often they make the condition worse—are not expected to do anything more than approximately straighten the eye. They do not improve the sight.

CHAPTER XII

Saving the Sight of the Children

In the following pages the first successful attempt to cure defective vision and prevent myopia in schools is described. The details may be found in the New York Medical Journal, July 29, 1911, and August 30, 1913, and are worthy of more attention than they have received. The prevention of myopia among school children is of vital and far-reaching importance. Eye defects, with the nervousness, headaches and irritability for which they are responsible, not only prevent children from availing themselves of the educational opportunities offered to them by the state, but are often a serious handicap as well as a discomfort and an expense in later life. If there is any way of preventing such tragedies it ought to be adopted without a moment's delay. Meantime parents can protect their children by using the methods advocated at home. Since it is difficult to prove a negative proposition, it cannot, of course, be absolutely proven that these methods actually prevented myopia, but since all cases of defective eyesight were improved by them there can be no reasonable doubt that they also prevented this condition.

ONE of the most serious problems which civilization has been called upon to solve is that of saving the sight of children. Ever since the introduction of popular education it has been recognized that the system was disastrous to the eyesight of the rising generation. Voluminous statistics, collected both in this country and in Europe, show that whereas most children on entering school have perfect sight, the percentage of eye defects steadily increases during the educational process, reaching its climax in the higher institutions of learning.

In Europe, where the military system has made the matter one of great practical importance to the State, much effort has been made to find a remedy for the evil, and millions of dollars have been spent in carrying out the suggestions of the eye specialists. The lighting of the schools, the furniture, the print in the school books, the position assumed by the pupils at work, were all regulated in accordance with expert opinion. In some cases the suggested reforms were carried out with such thoroughness that "face-rests" were attached to the desks to prevent the children from getting their eyes too near their books. This limits movement of the body, head, eyes, causes muscle tension and unclear vision.

The injurious effects of the educational process were not, however, appreciably arrested. Cohn reports, indeed, an increase both in the percentage and degree of myopia in those schools in which he had especially exerted himself to secure reforms, while Just found that the excellent hygienic arrangements in the high school of Zittau, where he examined the eyes of 1,229 of the pupils, had not in any degree lessened the percentage of myopia.

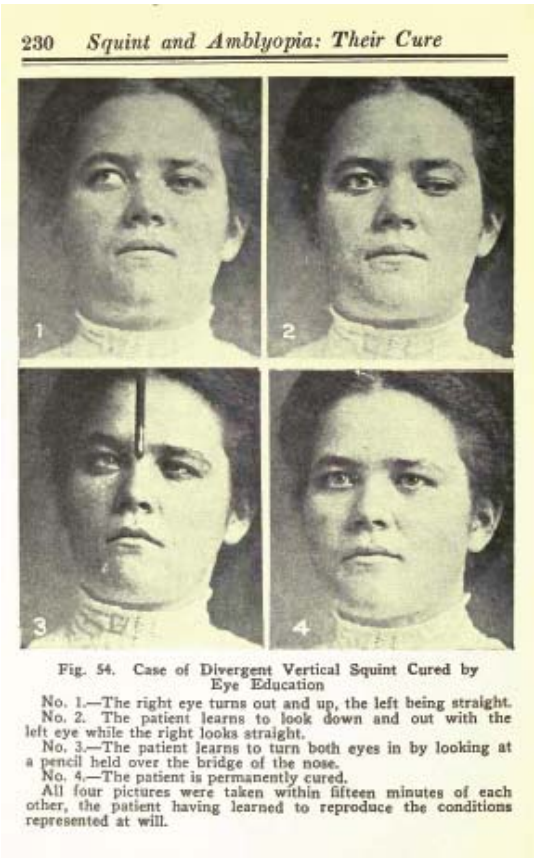
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Fig. 54. Case of Divergent Vertical Squint Cured by Eye Education

No. 1.—The right eye turns out and up, the left being straight.
No. 2. The patient learns to look down and out with the left eye while the right looks straight.
No. 3.—The patient learns to turn both eyes in by looking at a pencil held over the bridge of the nose.
No. 4.—The patient is permanently cured.
All four pictures were taken within fifteen minutes of each other, the patient having learned to reproduce the conditions represented at will.

All these efforts to prevent myopia failed because they were based on a wrong conception of the cause of the condition. It was naturally supposed that the cause of the failure of the eye to see distant objects was its too constant use for near work; but this theory is gradually giving way before statistics, and the orthodox writers have now fallen back on that convenient scapegoat, heredity, for an explanation. Since some people are able to use their eyes continuously for near work without getting near-sighted, and others get near-sighted without any appreciable amount of such work; since the limitation of such work fails to check the progress of the trouble; and since domestic animals and wild animals in captivity, although they neither read nor sew, develop high degrees of myopia (as shown in numerous investigations);—there is obviously some other influence at work, and this influence is now supposed to be heredity.

Squint, Crossed, Wandering Eyes Cure

A case of divergent vertical squint ultimately cured by educational methods.

1- In the picture at the left the right eye turns out and up, while the left eye looks straight.

2- At the right the patient has learned to look straight with the right eye, while the left turns down and out.

3- A part of the treatment. The patient has learned to turn both eyes in by looking at a pencil held over the bridge of the nose. Later she became able to turn them in without the pencil, or to turn either eye in while the other remained straight.

4- The same patient after a complete cure had been effected.
All four pictures were taken within fifteen minutes of each other, the patient having learned to reproduce voluntarily the conditions represented.

It is known that people are rarely if ever born myopic, but they are supposed to be born with a tendency to that condition, and near work is generally believed to accentuate this tendency. As there is no way of finding out who has this unfortunate bent and who has not, the old precautions are, therefore, still insisted upon for the most part, although some authorities attach very little if any importance to them, maintaining that when one has the myopic tendency one might as well resign oneself to one's fate and not bother with tiresome precautions.

As a matter of fact the retinoscope has demonstrated that straining to see at the near-point never produces myopia, but, on the contrary, hypermetropia, as already noted in Chapter V, on "The Imperfect Sight of the Normal Eye." Myopia is produced by straining to see distant objects, and it has been found that it is produced whenever children with normal vision strain to see unfamiliar distant objects. (See also Chapter V.)

When regarding familiar distant objects it is quite otherwise. Daily exercise in the distant vision of familiar objects, therefore, suggests itself as the best method of preventing the tendency to strain in viewing unfamiliar distant objects and thus of preventing permanent myopia and hypermetropia. This method has been tried in many public schools during the last fifteen years and has been uniformly successful, not only in preventing myopia, but in curing it where it already existed.

The Snellen test card was found to be the best distant object for exercises in distant vision. When memorized it becomes a familiar distant object. **Its daily use for half a minute or longer both prevented and cured myopia, and also improved the vision for near objects,** many pupils stating that they were able, after its introduction into the classroom, to study with less or no discomfort. The test card was placed permanently where all the pupils could see it from their seats, and the children were instructed by the teachers to **read it daily with both eyes together and with each eye, separately,** the other being covered with the palm of the hand in such a way as to avoid pressure on the eyeball. Records of vision were made either with the same card or with an unfamiliar one. This method of preventing myopia was used for eight years continuously in the public schools of Grand Forks, North Dakota, and reduced the percentage of myopia from six to one per cent.

Later it was introduced into a number of public schools in New York with a total attendance of ten thousand children. The cards were received with considerable skepticism, the teachers being unable to believe that such a simple method, and one so entirely at variance with previous teachings on the subject, could produce results. Some of the teachers neglected to use them, but others, in spite of their miscellaneous and often trying duties, gave the matter serious attention, and were able to present complete reports covering five thousand children. Of this number three thousand had defective eyesight and the reports showed that more than a third of this number gained perfect vision in both eyes after the test cards were introduced.

In one case in which there had been twenty-seven defectives in a class, twenty-five were reported cured and two much improved, while one incorrigible and one truant had become good students because, after they had obtained normal vision, they were able to study without pain or discomfort.

The Snellen test card was devised by Herman Snellen, Professor of Ophthalmology in the University of Utrecht, for the purpose of testing the sight by means of letters and figures of different sizes, but it has been found equally valuable for eye training. Each line is designated by a number indicating the distance in feet at which it should be read, **but this is only a minimum standard. Many people become able to read the various lines at twice the distances marked and a few at three times these distances.** The records of vision are written in the form of a fraction, the upper line (numerator) indicating the distance in feet of the reader from the card, and the lower (denominator) the line read. When the numerator and denominator are equal, the sight is normal. The school records were made as follows, the vision of each eye being recorded separately:

	February, 1913		April, 1913		June, 1913	
	R.	L.	R.	L.	R.	L.
John D.....	20/100	20/50	20/50	20/40	20/20	20/20
Sanford G...	20/50	27/70	20/30	20/40	20/15	20/20

That the improvement shown by the records was due to the use of the cards was demonstrated not only by the fact that when the cards were removed relapses occurred where improvement had not been sufficient to establish its permanence, but also by comparative tests made with and without cards. In one case six pupils with defective sight were examined daily for one week without the use of the test card. No improvement took place. The same six pupils were then given daily exercises in distant vision with the test card. At the end of that time they had all improved and five were cured. In the case of another lot of six defectives in the same school the results were similar. No improvement was noted during the week that the card was not used, but after a week of exercises in distant vision all had shown marked improvement, while at the end of a month all were cured.

In a considerable proportion of cases the children learned in a few minutes how to look at things without effort and were thus cured of their myopia. Many of the teachers were also cured of eye troubles and enabled to discard their glasses.

CHAPTER XIII

Injuries to the Eye

THE eye is one of the most delicate portions of the human body; and although Nature has endeavored to protect it from injury by embedding it deep within the skull, surrounding it, so far as possible, with a circular orbit of bone, and veiling it with lids that close at the slightest hint of danger, it can not always escape injury. This chapter will treat of the most common of the accidents to which it is liable, and of the speediest and most efficient measures that can be adopted in such cases.

FOREIGN BODIES IN THE EYE. Probably the most common form of injury from which the eyes suffer is that resulting from the intrusion into it of small particles of dust, cinders, etc. These cause extreme discomfort, if not actual pain, accompanied by a flow of tears. This watering of the eye is really an effort on the part of nature to expel the offending substance, the water tending to wash the particle from the eyeball, and into the lachrymal canals, which carry it into the nose. If the particle lodges in the corner of the eye, it can be removed by means of the corner of a handkerchief, or a point twisted into it. Most foreign substances can readily be removed in this manner—**provided the eye be not *rubbed*. If you rub the eye, it tends to embed the grit, or whatever it may be, more deeply in the eyeball, and if the substance has sharp points, it is liable to become so deeply embedded that it becomes difficult to remove.** If, when a foreign body finds its way into the eye, the temptation to do this be resisted, the substance can readily be removed in practically every case.

Smooth bodies rarely cause much trouble, but bodies having rough cutting edges may often lodge in the conjunctiva and cause intense pain. The right method of extraction is to *evert the eyelid*, when it will be found easy in the majority of cases to remove the cinder, or whatever it may be, by means of a small, clean, soft paint brush or the corner of a handkerchief. Direct the patient to look downwards, if the body has lodged on the upper eyelid, then turn the eyelid back over a toothpick, match or pencil. If the body is seen to be near the edge of the upper lid, it can often be removed by lifting the lid up by means of the eyelashes, and bringing it over the lashes of the lower lid. These then act as a sort of broom, and sweep out the foreign body. As in all such cases, the free flow of tears is helpful.

When a foreign body has lodged in the firmer tissue of the cornea, its extraction is not so simple a matter, and rubbing only presses it in more firmly. In such cases, the particle is often driven in with considerable force, and it is usually so small that a magnifying glass must be employed to see it clearly. **If the body be of iron or steel, it may be extracted by means of a magnet made for that purpose, otherwise a surgeon had best be sent for at once, as lasting injury may result if the substance be left in the eye too long, or if the eye be perforated, and the interior liquids allowed to escape.**

WOUNDS made with pointed instruments, such as a knife, scissors, pin, etc., sometimes injure the cornea and lens, and the after-effect is frequently a cataract, when the eye is not totally lost. These, the formation of connective tissue, are usually absorbed in young people, but in older persons they may require an operation for their removal.

LIME may be splashed in the eye, and this is a dangerous form of injury. Quicklime is a powerful caustic, and often causes complete blindness by destroying the cornea. When this substance gets into the eye, it should be washed out as quickly as possible with water, and then with a solution of weak acid and water—say, a teaspoonful of vinegar to a glass of water. An equally efficient and more soothing method, however, is to bathe the injured eye in sweet oil.

In case of injury by *acids*, one part of lime-water to three of water may be used, or the eye may be freely bathed in milk. These alkalis neutralize the acid, and make it harmless or less harmful.

SYMPATHETIC INFLAMMATION. When one eye is injured by the entrance of some foreign body, or by a wound, the injury does not always limit itself to that eye. The other eye is also affected, and becomes inflamed through sympathy. This is noticeable even in slight injuries; but in grave cases it may become so serious as to necessitate the removal of the injured eye (that is, if the injured eye is so badly hurt as to render it blind and useless). In our days, this operation is not so serious as it used to be.

Showing the method of everting the upper eyelid for examination or removal of cinders or other foreign bodies.

CHAPTER XIV

Common Diseases of the Eye

IN addition to "errors of refraction," there are certain diseases of the eye and its appendages which require special mention, since these are quite frequently met with, and their treatment is often limited, in orthodox practice, to purely local measures, neglecting the constitutional treatment which is usually so necessary, and also the measures for relief of eye strain which we are advocating.

The eye is made up, as we have seen, of numerous parts, and each of these parts may become diseased; thus we have diseases of the iris, conjunctiva, retina, eyelids, optic nerve, etc., as the case may be. We shall mention the most important of these, giving their chief causes and most effectual means of cure in each case.

CONGESTION OF THE CONJUNCTIVA. This often results, in a mild form, after exposure of the eyes to smoke, or even to strong winds. The conjunctiva is, however, nearly always inflamed in measles, and frequently in scarlet fever and smallpox. Occasionally a diphtheric membrane is formed over it, either with or without an accompanying infection of the throat. These, however, are exceptionally severe cases. In most instances, a more or less readily curable congestion results—partly from the causes mentioned, and partly from the general physical condition of the patient. If the blood is full of impurities, it aggravates the congestion. These cases are relieved from within by those hygienic and cleaning measures which tend to purify the blood stream, and carry away poisonous material.

As regards the external treatment of the eye, frequent eye baths in moderately cold pure salted water will be found beneficial. These may be followed by the application of cold wet cloths to the eyes, changing them as frequently as occasion may require. The patient must keep the eyes closed as much as possible. Modern teachers state that eye drops, baths destroy the natural structure, production of the eyes tears resulting in dry, red eyes, infection, unclear vision. Blink, yawn, shift, use a warm steam humidifier with purified water, clean air for natural eye moisture/tear production.

CATARRHAL CONJUNCTIVITIS, or "Catarrh of the Eye," results largely from a prolonged continuation of conditions similar to those which produce congestion. Those suffering from this complaint often feel as though sand were in the eyes. It is frequently met with in large cities, where dust and smoke tend to keep the eyes inflamed. The eyes are often found glued together on awakening. The mucous membrane of the eye is affected in much the same way as those of the nose and throat, and often at the same time. The eyes, nose, throat, ears are connected, affect, eachother. Congestion in one can affect the other organs, areas. A neti-pot used to flush the nose, sinuses clear with warm organic salt water helps clear congestion. Health of the teeth can also affect all these areas and other body organs, systems.

Constitutional and local treatment, as advised for congestion, with complete rest for the eyes, is unquestionably about the best remedy for this trouble. When the lids are swollen and the eyes red and hot, an eye bath in salted water may be employed to advantage several times a day. If inflammation is especially severe, a weak solution of boric acid, ten grains to an ounce of water, may be employed. Poultices, eye waters and remedies of that sort should be avoided. Burning of the lids can nearly always be **alleviated by an eye bath. Check with your eye doctor first! Try natural methods first. Try to avoid eye baths. A natural anti-biotic, anti-infection eye bath may be needed if a doctor cannot be contacted, but get the recipe from a Bates Method Ophthalmologist.**

GRANULAR CONJUNCTIVITIS: TRACHOMA: GRANULATION OF THE EYELIDS.—All these are names for the same malady, which is merely a severe form of the two former complaints. Violent inflammation of the eye, which is covered with numerous nodules, is the principal characteristic. It is a tedious and obstinate complaint, unless treated in a prompt and efficient manner. The inner surface of the lids often becomes thickened and rough, like sandpaper, and, by constant friction, impairs the transparency of the cornea. Trachoma is very contagious and in all cases precautions should be taken to avoid communicating the disease by allowing the smallest particle of the discharge from the eyes to come into contact with a healthy eye. Appropriate antiseptic treatment will be helpful. An eye-wash made from sulphate of zinc—about one grain to an ounce being the usual strength—is often effective in terminating the symptoms of this trouble, though this suggestion does not in any way eliminate the necessity for careful constitutional treatment.

PURULENT CONJUNCTIVITIS is often found in the newly born, and results from gonorrheal infection from the mother. It often produces blindness, unless promptly treated with nitrate of silver under proper medical supervision. This should be followed by the strictest care and cleanliness. The discharge, which is thick and yellowish, and, in bad cases, very copious, is undoubtedly and virulently contagious. Fortunately, the disease is rarely met with among adults.

STYES are a very painful species of small boils which form generally on the edge of the eyelids. The disease usually follows more or less the course of ordinary boils, and is nearly always brought about through constitutional causes, general debility, a disordered stomach, impure blood, etc., though eye strain is the usual immediate cause. If treatment is begun at the first sign of the appearance of the styes, they may be absorbed without suppuration, but if well started, relief may be secured more speedily by allowing them to come to a head. Hot compresses will hasten this desirable end. Usually they will open themselves when ready to discharge the pus, though in some cases it is necessary to open them with a lance. A permanent cure can be effected only by adopting constitutional treatment and learning how to use the eyes properly, thus avoiding strain. It is hardly necessary to say that strict cleanliness and adequate drainage of the parts are essential in this condition. The practice of eye relaxation and of central fixation should be observed by everyone subject to styes.
Pulling out eyelashes attached to a forming stye can prevent the stye from growing and reverse, remove it.

DISEASES OF THE CORNEA. These are troublesome and often difficult to treat and still more difficult to diagnose properly by an unqualified practitioner. Says Dr. Black, in his work on the eyes:

"Diseases of the cornea may destroy or impair its transparency, or the ulcers that are frequently formed may extend through its substance, allow the aqueous humor to escape, and involve the iris. Even when such ulcers heal most favorably, they leave a permanent scar in the form of a white speck. (Bates method can remove these scars.) Inflammation of the cornea is usually painful and accompanied by distressing sensitiveness to light. It occurs most frequently in persons whose health has been subjected to some depressing cause, or in children who have inherited a delicate constitution. Many of the latter are subject to

repeated attacks for years, but the tendency to their recurrence generally disappears before adult life, and if care be taken to prevent each attack from leaving a permanent mark, the eyes may finally remain sound and strong… A large, white opacity of the cornea is often mistaken for cataract, and not many years ago, when a knowledge of diseases of the eye was not so general as now, this mistake was sometimes made by physicians, and such patients were sent hundreds of miles to have the cataract removed."

It is hardly necessary to point out that, though "delicacy of constitution" might predispose certain person to this disease, the actual causes are an overloaded circulation, poor digestion, poor light, excessive use of tobacco and alcohol, etc.

This being the case, the treatment for all forms of these diseased conditions is obvious. A rigid diet, preceded, if possible, by a few days' fasting; plenty of water-drinking; eye baths; fresh air; exercises which tend to build up and strengthen the general bodily tone, etc., are all essential. Plenty of good light and sunshine are imperative at all times.

IRITIS, or inflammation of the iris, often destroys the sight by closing the pupil and shutting off the light from the interior of the eye. It may be accompanied by inflammation of the conjunctiva, and hence be overlooked until well developed. It should always be suspected when, in an acute affection of the eye, the sight is decidedly diminished and there is some pain in the ball, and particularly in the brow, the latter being always more severe at night. The cause is usually syphilis or rheumatism, and one of the chief aftereffects to be feared is the permanent contraction of the pupil. Local treatment is of little avail, but the application of hot and cold cloths alternately to the eye will usually assuage the pain. The patient should be careful not to use the eyes more than is absolutely necessary.

CATARACT is a disease of the crystalline lens, in which this body gradually loses its transparency. The pupil thus loses its natural blackness, the whitish surface of the opaque lens being seen just behind it. Cataracts are not "on the eye," as is commonly supposed, but in it. Until lately, it has been contended that the surgeon's knife was the only remedy, but other methods of treatment are now coming in, and it is highly probable that as soon as these newer methods become more widely known and recognized by the medical profession, operations will not be found necessary in any but advanced cases.

There are two kinds of cataracts—the old, hard cataract, and the so-called "soft" cataract. In the majority of cases the lens becomes hard and stonelike, and sight is restored by removing it, the operation having been successfully performed in many instances. In such well-advanced cases, it is probable that all the physical culturist can do is to encourage such a condition of good health that the operation can be well borne, and keep the blood as pure as possible, to carry on the good work of repair afterwards. By preserving the health, however, and using the eyes properly, cataract may be prevented; and prevention is better than cure here as elsewhere. In their earlier stage, cataracts have been permanently cured by hygienic treatment and eye education.

The reason for this is simple enough. It is this: The lens is composed of a number of transparent layers superimposed one upon another—like a number of sheets of glass laid flat one upon another. When these all lie flat and even, the light can penetrate them all equally and without interference; but if they become separated or warped, then the light-rays are bent and warped, and the otherwise transparent medium becomes more or less opaque. This is what happens in the case of cataract. By improper use of the eyes these delicate layers are disarranged. Instead of lying flat, some of them are bent or warped, preventing the free passage through them of the light-rays. If this state has been permitted to continue long enough a degenerative change within the eye takes place. When this happens, probably the only relief procurable is by removal of the lens, and thanks to the advance of modern surgery, this may now be done in the majority of cases with relative safety.
The Bates Method has cured even advanced cases of cataract.

Both clinical and experimental proof that this theory is correct is forthcoming. If you take a bullock's eye, and squeeze it, you can instantly produce cataract—with the typical white, glassy look in the pupil. As soon as the pressure is removed, the eye again becomes normal. The little "plates" have been bent and warped, and functional cataract has been produced. This theory of cataract is also sustained by the fact that such patients actually do get well, under the influence of eye education, whereas formerly there was considered to be no help for them. All they could do was to wait, in gradually increasing blindness, until the lens was "ripe" for removal.

Constitutional causes also contribute to the production of cataract. The lens has to be nourished, like any other part of the body; but if the circulation is sluggish and the blood impure and lacking in its normal water content, the layers dry out, becoming not only less transparent, but more liable to disarrangement by the abnormal pressure of the outside muscles associated with errors of refraction.

The regime which sufferers from incipient cataract should adopt, therefore, is the following: Comply strictly with all the laws of health, including an abstemious diet with plenty of fruit, green vegetables, and water, and no alcohol; take regular exercise and use all other methods of improving the circulation; use eye baths and similar local measures of relief; and practice daily the exercises necessary to relax the external eye muscles. Bates Method and healthy diet improves eye circulation without eye baths.

These methods have, in many cases, either cured or greatly relieved the condition, or checked its progress, the results depending on the condition of the eye at the beginning of the treatment, the general health of the patient, his mental responsiveness, and the amount of time available for eye training. If they are adopted at the very beginning of such cases, there is every reason to believe that the majority of cataracts can be overcome in their initial stages, and before they develop to the point where they become organic.

GLAUCOMA is a disease which frequently results in blindness and about which little is known. It is thought that an excess of fluids in the eye makes the ball tense and hard, and exerts injurious pressure upon its delicate contents. In acute cases, it is intensely painful, and rapidly destroys sight by pressure upon the optic nerve. In its earliest stage, its progress has been checked by the removal of a piece of the iris, or of tapping or incision through the sclerotic coat, but the operation is very uncertain in its results and sometimes seems to make the condition worse. When the optic nerve is once affected other complications arise.

In no other disease is early diagnosis and treatment more important, and many of its victims have been condemned to blindness by delay. **No one with a violent pain in the eye and head, particularly if it is accompanied by flashes of light, rainbow colors and dimness of vision, should allow himself to be lulled into a sense of security by thinking it is "neuralgia."**

Although the ultimate and true causes of glaucoma are as yet unknown, the thing to do, immediately it has been diagnosed, is to adopt a very abstemious diet, following a fast of a few days, if possible; use all those measures which tend to build up the general health; discard glasses if possible, and practice the various methods of eye education. Frequent cold eye baths may also be useful. In all cases a specialist should be consulted at once, if the victim has not the courage to adhere to the treatment suggested here. Reduced 20/40 eyeglass lenses can be used for driving, safety on the job... but use little as possible.

DISEASES OF THE CHOROID AND RETINA. These diseases can be detected only by means of the ophthalmoscope, but may be foretold by increasing dimness of vision. They usually develop painlessly, and hence are as insidious as they are unfortunate. Long continued eye strain is one of the causes of these conditions. The excessive use of tobacco and alcohol is also, probably, an important factor; hence the necessity of giving them up completely when treatment is begun. Syphilis and kidney disease are common causes.

ATROPHY OF THE OPTIC NERVE. This is a very serious progressive disease, resulting in total blindness. Syphilis is a frequent cause, and it goes without saying that such condition would be impossible in a healthy body, or in one wherein the seeds of disease had not been sown.

THE HEREDITARY TRANSMISSION OF EYE DISEASES. There is evidence to show that a certain number of eye diseases—or rather the *tendency* to these diseases—may be acquired by means of heredity. In color blindness this is particularly marked, as well as in certain peculiarities or conformations of the eyes. Actual *diseases* are probably not inherited, and errors of refraction are probably acquired in each generation. A tendency to gouty or rheumatic iritis, it has been contended, may be inherited; but here again it is probable that no more than the *tendency* is ever passed on in this way. A peculiar affection, **"retinitis pigmentosa,"** which is recognized, with the ophthalmoscope, by the presence of black spots upon the retina, shows a marked tendency to hereditary transmission. It also occurs in several members of the same family, though there may be no history of it in the family. The prominent symptoms are **"night blindness"** and a gradually increasing contraction of the field of vision. (This is also a characteristic of certain forms of hysteria.) It is also probable that **"nyctalopia,"** or the reverse condition—ability to see in the dark—is to some extent hereditary. But it may be laid down as a general rule that eye diseases—like all other diseases—are not hereditary, but are acquired by each generation, and by each individual for himself or herself.

EYE HEADACHES. As already mentioned, the eyes and the whole nervous system are very intimately connected; and it is well known that a constant strain upon the eyes will induce a general condition of **strain, nausea, backache, etc.**, in addition to frequent and sometimes **severe headaches**. Strain occurs when the person uses incorrect posture, staring/eye immobility, not taking a break to get up and move around, look to the distance, get some sunlight. Neck, shoulder tension is a main cause of headache, eye pain and unclear vision. Some physicians have gone so far as to assert that true and organic diseases have been induced in this manner; but this view is no longer generally held by the medical profession. Hewetson, Noyes, Weir Mitchell and others, however, have published numerous facts showing the **close connection between defective eyesight and headache**, **with general nervous and physical impairment of the health**; and when we consider the **constant strain** involved, the reason for this is obvious. Some of the early symptoms are a feeling of **fatigue and tension, especially above the eyes, with indistinct and confused vision in reading, writing and other close work.** Following this, **slight headaches will be experienced, at the base of the brain; and these will be followed or accompanied by nausea, vertigo and general nervousness.** Other physical and mental symptoms may follow. When these appear, it is high time to begin treatment of the eyes. And the posture… Diet – Avoid dehydration, caffeine, chemicals in food, drink, aspartame, high fructose corn syrup, processed sugar.

The usual treatment in cases of this kind is a prescription for glasses; and there is no doubt that relief has often been obtained by their use.

Such measures, however, are only palliative and not ultimately curative. When the external muscles are squeezing the eyeball out of shape, glasses may correct some of the results of that condition, and by so doing may make the patient more comfortable; but they can not relieve the fundamental trouble. On the contrary, as has already been shown, they must make it worse. The only real remedy is to be found in the methods described in "Errors of Refraction; Their Cure." In the absence of such treatment glasses may prove useful, in some cases. In others they fail entirely. If it seems necessary to resort to them, and there can seldom be any legitimate excuse for such a course, they should be carefully fitted by a competent oculist and should not be worn any more than is absolutely necessary, as they serve to confirm the eyes in their bad habits. Eye headaches can often be relieved in a short time by proper hygienic methods. It is hardly necessary to say that the general health should be built up.
Massage of the back of the neck and head will often bring material and instantaneous relief from the pain, and cold wet compresses to these parts will soothe and relieve the local congestion. A salt eye bath often relieves.

CHAPTER XV

Eye Exercises

NOTHING could be more evident than the fact that exercise of the eyes will strengthen these organs just as exercise of any other part of the body will strengthen that part. The Bates Method relaxes, coordinates eye muscle function, activates relaxation and contraction of the muscles. This is the natural way to keep the muscles strong – Shifting, Central Fixation, Switching Close and Far..,

Exercise of any group of muscles not only tends directly to strengthen those muscles, but it so improves the circulation as to improve the condition of the adjacent parts. If any part of the body is weak, flabby, ineffective, exercises which involve the use of the muscles in that region will have a strengthening and toning-up effect. This applies with special force to exercises for the muscles of the eye.

Most persons will be surprised, perhaps even amazed, at the improvement in the condition of the eyes, resulting from two or three weeks of proper exercise of the eye muscles. This does not mean that one should keep up this work for only two or three weeks. If you will make it a daily practice you can expect to enjoy strong eyes and good vision to perhaps the end of life.

You will find that these exercises are very simple indeed. You should practice them not once a day, but a number of times each day. You can practice them while dressing in the morning, while undressing in the evening, while out on your walks, while sitting in the car, or even while taking your meals. But you should set aside some particular time for this special purpose, whether it be morning or evening, else they are more than likely to be crowded out. At this time you should follow the eye exercises by a little of the massage treatment described in Chapter XVII, and in the end use the eye bath, described in Chapter XVIII.

Exercise 1.—Turn and stretch the eyes far to the left.
Exercise 1 (Continued).—Then turn and stretch them far to the right, continuing the movement back and forth from left to right ten times or more.

No force! No Strain. The head/face, body must move with the eyes in the same direction. Moving the eyes without moving the head/face with the eyes causes eye muscle tension, neck muscle tension.

The Bates Method does not teach eye exercises. Shifting, central fixation, blinking normally, relaxation and easily moving the head/face, body with the eyes, in the same direction, at the same time is the True Bates Method.

Exercises that cause pulling, stretching, resistance of the eye muscles causes tension and strain in the muscles, head, neck and unclear vision. Let the head/face, neck, body move with the eyes and feel ease, relaxation, freedom of movement in the eyes, head, neck, shoulders and body.

Moving the eyes, head/face... in opposite directions causes tension, strain in the eyes, eye muscles, head, neck, shoulders, back, body, impairs eye shifting, central fixation, causes diffusion, (Eccentric Fixation), headaches and unclear vision. Tension in the neck also impairs ear function, balance.

Do the Figure Eight/Infinity Swing for full movement of the eyes, to improve eye movement. The eyes, head/face, body moving relaxed, together, at the same time, in the same direction. Do the Long Swing and Sway.

Exercise 2.—Turn the eyes upward, that is to say, look as far upward as possible without raising the head.

Exercise 2 (Continued).—Then, without moving the head, lower the eyes, looking as far down as possible. Continue raising and lowering the eyes ten times or more.

Exercise 3.—Raising the eyes, look upward obliquely to the left.

Exercise 3 (Continued).—Then lower them obliquely to the other side, looking downward toward the right. Repeat ten times or more.

Exercise 4.—Raise the eyes upward obliquely to the right.

Exercise 4 (Continued).—Then stretch them obliquely downward to the left. Continue back and forth ten times or more.

Exercise 5.—Roll the eyes around in a circle, to the left upward, to the right downward, so on around. Then reverse, rolling them the other way around. Continue until slightly tired.

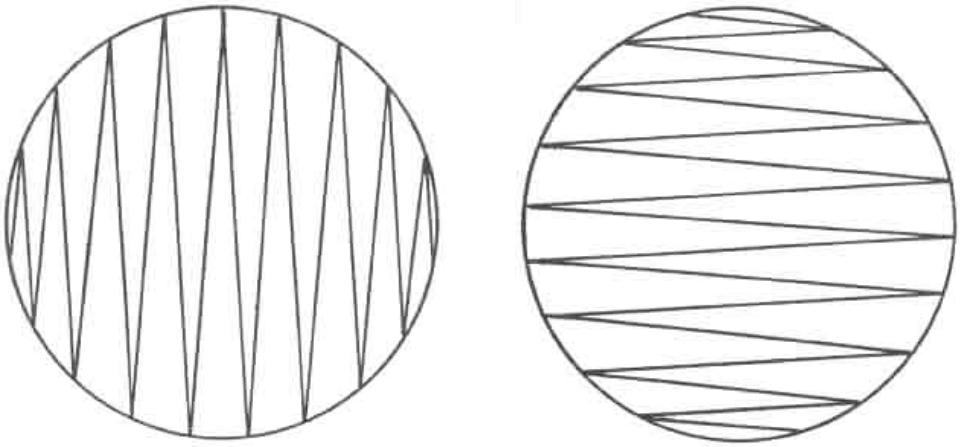
Exercise 6.—Shut the eyes tightly and vigorously, squeezing the eyelids together as firmly as possible. Open and repeat ten times or more.
I do not recommend this exercise. Too much tension.
I do notice that many of Dr. MacFadden's exercises are natural things people do automatically and to a gentle, safe extent may be beneficial.

Looking up, down, left, right, diagonally… exercise can be done if the head/face is moved with the eyes, in the same direction, at the same time. A relaxed head roll clockwise and counter clockwise. Do not stretch the eyes, do not force, pull them in any direction. Let them move easy, freely with the head. Blink easy, soft, relaxed. Do not let the eyes feel strained or tired. Do not force the eyes to remain in any left, right, up, down… position. Avoid feeling tired.
Then do the Modern Infinity Swing.

Exercise 7.—This is an exercise that should be performed without strain, and at first with only two to four repetitions at a time. Simply look cross-eyed as though trying to see the bridge of the nose with both eyes at once.
Shift point to point on small parts of the nose. This will prevent staring, tension. Place a ring, stone between the left and right eyes, center of the visual field, at eye level. Practice shifting point to point on the small details of the object. Blink, relax. Read fine print at close distances.
Practice at a variety of close distances; 2-6+ inches from the eyes.

One of the most vigorous of eye exercises, and one extremely effective for gaining voluntary control of the muscles of the eyes, is the practice of looking cross-eyed. A great many persons will naturally shrink from the thought of such an exercise from the fear that it may produce a permanent condition of strabismus.

The fact is that the ability to look cross-eyed voluntarily indicates a good muscular condition and good control of the muscles concerned, and a person with a tendency to involuntary squint will find the practice one of the best ways in the world to correct that condition.

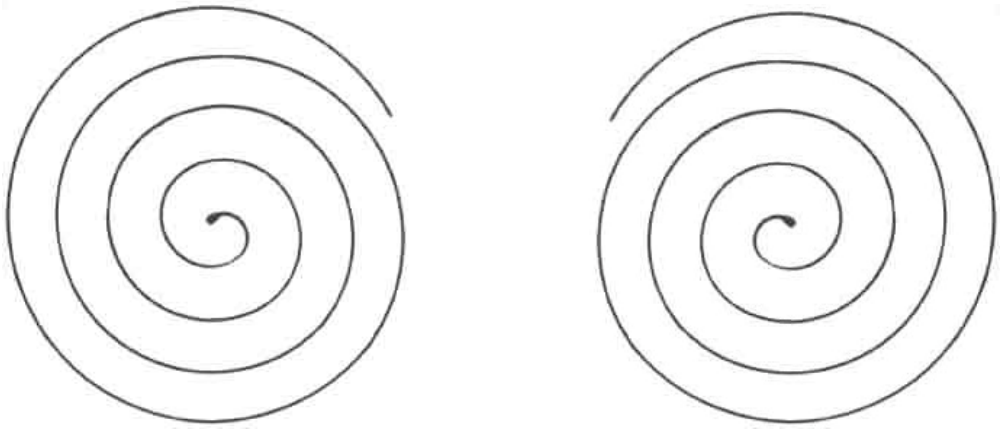


Trace along the lines, blink, shift on the lines.

Eye Exercise Diagram No. 1.— (Explanation in text.)
Eye Exercise Diagram No. 2.— (Explanation in text.)

Another very simple method of exercising the eyes will be found in a system of following lines drawn within a large circle, or an imaginary system of lines based upon any diagram, such as those illustrated in the accompanying drawings. Suppose that the circle represents the complete range of vision attained by rolling the eyes around. Imagine, then, that this circle occupies the space on the wall of the room, in front of you, that you can see by rolling your eyes around. Then imagine a series of lines or a continuous line running from side to side, as in Eye Exercise Diagram No. 1, from the top of the circle to the bottom. Now, starting at the top, follow on the wall with your eyes just such an imaginary scheme of lines as that in the diagram. Practice this a few moments with one eye first, then with the other, finally with both eyes together, and then go on to the exercise suggested in Diagram Mo. 2. In Diagram No. 3 the eye starts in the center, then traces out a circular, or to be more exact, an imaginary spiral line, until the circling of the entire range of vision is attained. The head must not be moved.

This last sentence is incorrect. Modern teachers state to move the head with the eyes.



Eye Exercise Diagram No. 3.— (Explanation in text.) If you follow the eye exercises offered in the photographic illustrations there will be no need of adding these imaginary line-tracing exercises. But you may find them interesting as a change.

Print this diagram different sizes. Trace with the eyes, (center of visual field) on the diagram, along the line of the spiral counter–clockwise and clockwise. Trace inward and outward on each spiral. Blink. This improves eye movement and activates, integrates the left and right brain hemispheres. Move the head/face with the eyes. Removes blur and astigmatism.

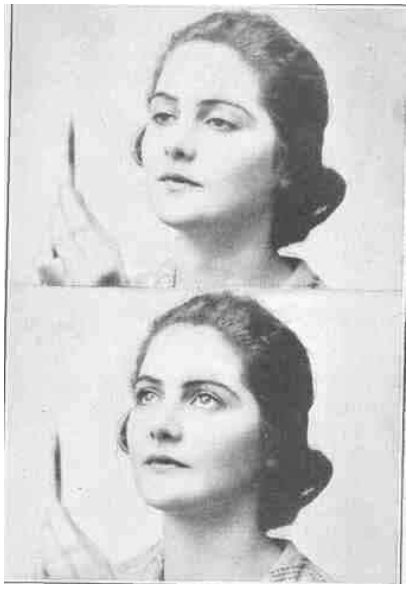
CHAPTER XVI

Eye-Focusing Exercises

THE exercises given in this chapter are of a type quite different from those recommended in the preceding lesson. They are designed to strengthen the power of accommodation, that is, the power of changing the focus of the eyes for vision at different distances, and will be particularly valuable to those who are either near-sighted or far-sighted.

Improving accommodation and un-accommodation at a variety of close distances and far distances automatically improves convergence at all close distances and un-convergence at farther close distances and far distances.

Shut one eye (do not shut one eye – new method teaches to cover the eye not in use and keep it open under the eye patch) and look at a pencil point held five or six inches in front of the other eye. (shift on the pencil) Now, look through the window at some point on the horizon or any distant object. (shift on the distant object) After looking for two or three seconds at this distant point, focus the eye on the pencil point. (shift on it) If your eyes are normal you will be able to change the focus without any consciousness of effort, but otherwise you may experience very clearly the sensation of muscular effort in and about the eyeball. Muscular action, whether one is conscious of it or not, accompanies all changes of the focus of the eye, and the power of making these changes must obviously be improved by the daily practice of some such exercise as this.



1 - An eye-focusing exercise for <u>both eyes</u>. (See text.)
Pencil upright between the left and right eyes, at eye level.
Align the pencil/close object with a distant object.
Both objects between left and right eyes, center of the visual field, eye level. Place a cap on the pencil point for safety.

+Look first at the point (cap) of a pencil held near by, as in the upper photo; (Shift on the pencil)

+ Then shift (switch) to a distant cloud, or some tree or building on the horizon. (Shift on the distant object.)

+Immediately upon seeing the distant object, shift (switch) back again to the pencil point. (Shift on the pencil. Repeat.)

When looking at the pencil or the distant object: shift on the object part to part, (point to point) even if it is for only 1-3 seconds before switching back to the other object/distance.
Shifting prevents staring (staring-a main cause of blur), shifting keeps the eyes moving, relaxed, vision clear.
Shift, Blink, Relax. Avoid staring.
The eyes do not have to always immediately move back to the other distance. Spend a bit of time shifting on the object before moving back to the other object/distance. Use central fixation: shift on small details of objects.

+Practice with both eyes together, then
+one eye at a time, then
+both eyes together again.
+If vision is less clear in one eye, practice extra time with that eye.
+End with both eyes together again for equally balanced, clear vision in the left and right eyes at all distances.
Use a eye patch over the eye not in use and keep both eyes open.

These 'looking close and far' exercises greatly improve central fixation, shifting eye movement, convergence, divergence, accommodation, un-accommodation, clarity of vision in each individual eye and gets both eyes working together, fusion, binocular vision, depth, distance, 3-Dementional perception, perfect, equally clear vision in the left and right eyes at all distances close, middle, far.

Bates Method combined with Behavioral Optometry.

Additional directions for directions on the right.
Although close and far objects are lined up, in line with eachother when practicing switching, it is ok to move the eyes, visual attention to other objects in the visual field as long as the eyes, head/face move and face directly at the object of attention placing it in the center of the visual field.

2 - A similar eye-focusing exercise, using <u>one eye at a time</u>.
(Pencil and distant object still between the left and right eyes, at eye level, center of the visual field.)

Look at the nearby pencil point or any close object, (shift on it) then at some distant object; (shift on it) return to the pencil point and continue.

When looking at any close or distant object with one eye: keep it between the left and right eyes, center of the visual field as it would be when using both eyes. Move the head/face with the eye as the eye moves about the object, visual field.
+If vision is less clear in one eye, practice a little more with that eye to bring the vision equally clear, perfect in the left and right eyes. Working the less clear vision eye will also improve brain function for that eye.
+Then, work the other eye and then both eyes together again for equal clear vision in both eyes and balanced, equally activated, integrated left and right brain hemispheres, all areas of the brain working correct with the eyes, eye muscles, nerves...

There is a exercise when using one eye that is different and very effective: "Secret Switching Method"
When using one eye, the <u>close and distant objects can be lined up</u> and <u>placed directly in front of the eye in use</u> but this is advanced training: Like a kid looks at a marble up close with one eye, marble in front of that eye, then looks to the distance beyond the marble, then back to close marble...
The close object can be placed one inch to a few feet from the eye.
+Practice switching back and forth on the close and distant objects lined up in front of the one eye. Shift on the objects at close, middle, far distances.
The objects must never be placed outward or too far inward away from the eye that is being used, never away from the eyes central field. (Each individual eye has its own central field and it moves with the eye.)
The eye must not pull, not feel strain.
Placing the object too far out or in can cause wandering/crossed eyes.
Let the eye move natural, keep the objects the eye is looking at directly in front of that eye without feeling rigid, tension, no immobility.
If moving to another object in the visual field: move that eye and the head/face/body with the eye, placing the object in front of the eye.
The eye may move inward naturally if a object is moved inward toward the nose. <u>Do not place the object too far inward past the nose, toward the other eye</u>. The object must also not be placed outward to the outer side of the eye in use.
Keep the object at eye level.
Practice with one eye at a time: left, then right, left, then right...
Practice extra time with a eye that has less clear vision.
The eyes, head, face, neck, body are relaxed and move freely.

Always end the exercise by returning to the basic exercise with the <u>close and distant objects between the left and right eyes</u>, eye level as objects are when using both eyes together.
Objects are still lined up with eachother.
+Practice in this way again with; both eyes together, then
+one eye at a time - left, then right, then left, right...
+Then practice with both eyes together again.
Practice switching close and far, shifting, central fixation... with both eyes together, one eye at a time, little more with a less clear vision eye, then both eyes together again. This will completely balance the vision in both eyes, brain Hemispheres. Practice a few minutes per day, 3-7 days week as needed. Practice in daylight and at night for clear night vision.
This extra 'Secret Switching' exercise is being placed in our other book and explained in more detail with pictures.

+Never place the objects in front of only one eye when both eyes are being used or unbalanced vision, crossed, wandering eyes, impaired convergence, divergence, accommodation, un-accommodation can occur.

+Do not close the eye that is not in use and do not touch it.
Use an eye patch over the eye not in use and keep the eye open under the patch. Both eyes open, one covered.
+Holding the hand/arm up to cover one eye causes muscle tension in the arm, shoulder, neck, eyes and lowers the vision.
+Closing one eye causes tension in the face, around the eye, neck, shoulders, and eye muscles leading to unclear Vision.

3 - Another eye-focusing exercise. Closing one eye,
+look at the end of the nose with the open eye, as in the upper photo,
+then at some distant point. Repeat.
+Same with the other eye.

The eye shifts point to point on the nose.
Then shifts on the distant object.
A small close object: stone, ring can be used in place of the nose. Place it between the eyes, at eye level, close to the eyes.
Do not touch the eye, eyelid with the hand or eyepatch; Just cup the palm of the hand over the eye not in use and keep the eye not in use open under the hand. Both eyes open. (Closing one eye causes muscle tension in the face, around the eyes, and in the outer, inner eye muscles.) It is also best to use an eyepatch to prevent muscle tension, fatigue in the hand, arm which can travel to the shoulders, neck, head, eye muscles from holding the hand up a long time.

A combination eyeball exercise and eye-focusing exercise.

+First try to see the end of the nose as in the photo. Shift on the nose, relax.

+Then shift the gaze to some distant point for a moment. Shift on the distant object.

+Look again at the end of the nose and continue, repeating only four or five times at first.

Shift point to point (small part to small part) on the nose, then shift point to point on the distant object, then on the nose... Central fixation, shift on small details. Blink.
This exercise can also be done by shifting, central fixation on tiny details of a small object (stone, ring...) placed close to the eyes, between the left and right eyes, at eye level. Practice at a variety of close distances. Practice ¼ -1 inch from one eye, object in front of that eye. Then with other eye.
Read fine print up close. Practice with both eyes and one eye at a time.
For perfect convergence, accommodation, eye movement, clarity of vision at close distance and divergence, un-accommodation, eye movement, clarity of vision at far distance.
These switching, shifting exercises really work!!

The exercises should be practiced with both eyes together, unless one is weaker than the other, in which case it may be necessary to practice the weaker one separately. At first you may not be able to see things very close to the eyes, but gradually you will find yourself able to diminish the distance. Begin by holding your pencil at whatever point you can see it most clearly, focus the eyes upon it for a moment, and then look at some distant object, such as a cloud, a tree, a house, or a chimney. You can vary the exercise, if you like, by looking at intervening distances, from a few feet up to fifty feet, one hundred feet, three hundred feet and so on. Then you can begin to hold the pencil point, thimble, needle, printed card, or whatever it is you choose to use, nearer to the eye. (Do not place a needle close to the eye. Be careful- do not place any pointed, sharp object close to the eye. Avoid injury.) You will, in time, find that you can easily shift your vision from a distant object to your pencil or thimble held perhaps four or six inches in front of the eye, and see clearly and sharply at each distance.

A fairly good plan is to go to the window, and instead of using a pencil find some speck or imperfection in the glass which you can utilize as the nearby point, and then alternately shift the sight from this point to a cloud or distant tree. Open the window for a perfect clear view, full spectrum sunlight. Hang a pencil in the open window.

Another plan is to throw the head back, shutting one eye, and with the other trying to see the end of the nose, afterward looking to the distance and then back to the end of the nose. This exercise, when practiced with both eyes together, combines the

advantage of looking cross-eyed with those of rapidly changing the focus.
I do not recommend this exercise. Throwing the head back to see objects is unnatural, tenses the muscles in the eyes, head, neck, body.
Do the exercise with the head, body straight/upright, relaxed and replace the nose with a small stone or other close object to shift on, and place the close and distant objects up to eye level, between the left and right eyes.

CHAPTER XVII

Exercises for the Pupil of the Eye

IT is a comparatively simple matter to exercise the little dilator and sphincter muscles which have to do with the enlarging and diminishing of the pupil of the eye. Under normal conditions of vigor these muscles scarcely need attention. It is only when the eyes are weak, and these muscles do not respond readily in accommodating the opening to various degrees and intensities of light, that special exercise is required.

Naturally, the only practical way to exercise these muscles is to find a method of exposing the eye in rapid succession to degrees of light of varying intensity. At night this may be done by turning an electric light on and off repeatedly for a minute or two. In the daytime one can stand in a room with one window, pulling the shade down to darken the room, and then raising it and looking out of doors. In either case try to see the various objects in the room when it is darkened. It is through this attempt to see in the dark that the dilator muscles will be especially stimulated, as the pupil enlarges as much as possible to enable you to see.

Exercising the pupil of the eye. This is best done in a dark room. At first, do not look directly at the light but at some white object, turning the light off and on at intervals of two or three seconds. You can soon accustom yourself to looking squarely at the light while turning it on and off. One minute or less will be sufficient.

When the electric light is turned on, or the shade raised, the greatest stimulation will be derived from looking directly at the light, or at the sun, for an instant, provided this does not involve the sensation of eye strain or discomfort. It might not be wise, however, to do this unless you are sure that your eyes are fairly strong. You can get sufficiently good results by looking at any white object when the light is turned on, for instance, the blank page of a book. Turn the light on and off at intervals of two or three seconds. If your eyes are sensitive to artificial light it may be better to practice this exercise in the daytime, pulling down the window shade and then raising it. One or two minutes of this exercise usually should be sufficient.
Artificial lights produce unbalanced, partial spectrum light. Pure sunlight is most healthy for the eyes. Sunlight contains healthy, balanced, full spectrum light.
Alternating Palming, then Sunning/Sunlight, Palming, Sunning/Sunlight, Palming… improves pupil, retina function, adjustment of the eyes to light and dark.

CHAPTER XVIII

Eye Massage and Resistance

IN conjunction with the various methods for strengthening and invigorating the eyes outlined in this book, massage of the eye and adjacent tissues will be found, in many cases, to be of great practical value.

Massage is known to be beneficial in its effects upon all parts of the body. The nerves are stimulated, the blood stirred into greater and more active circulation, and the muscles and tissues generally stimulated into more vigorous life. It is now employed to advantage in many forms of disease.

The professional beauty knows these facts, and lays the greatest stress upon both facial and bodily massage, while athletic trainers rub and massage the bodies of their charges before and after any event of importance.

Why, then, should some form of modified massage not be of value in the treatment of the eyes? Of course, one can not very well massage the eyes in the same way one would a muscle, but they can certainly be strengthened and invigorated by manipulation which quickens the circulation of the blood and stimulates the nerves.

Probably the best eye massage is applied with the heel of the hand, either at the base of the thumb or opposite as in the above photo. With gentle pressure give the hand a twisting movement. At the same time, contract and relax the eyelid muscles.
This is in line with the natural impulse often felt to "rub the eyes."
I do not recommend this exercise. Do not press or rub on the eyes or eyelids.
I do notice that many of Dr. MacFadden's exercises are natural things people do automatically and to a gentle, safe extent may be beneficial.

Placing the thumb and finger upon the upper and lower eyelids as illustrated, impart a very gentle massaging motion. You should gently "feel" the eyeball in applying this massage. A half a minute or less should be sufficient.
Apply no pressure on the eye. I do not recommend this exercise.

With two fingers placed one on each side of the eyeball make a gentle upward and downward movement. Use no pressure. The gentlest movement will suffice.
I do not recommend this exercise. Do not press/place any amount of pressure... on the eyeball, even through the lids. The Bates method, shifting, blinking... naturally massages, relaxes the eye muscles, eyes and normalizes pressure, circulation in the eyes.
Use Acupressure points without pressing on the eyes. See book: 'Do It Yourself – Natural Eyesight Improvement – Original and Modern Bates Method' free with this book.

A gentle resistance exercise. Either close or partly close the right eye, placing the forefinger at the right of the eye. Then turn the eye to the right and resist very slightly with the pressure of the finger upon the eyeball. Relax and repeat a few times only.
I do not recommend. The eye must move freely without resistance.

A continuation of the preceding resistance exercise. Shift the same finger to the inner side of the left eye, resisting slightly as before while turning the eye to the right. The left forefinger can be used on the left side of each eye.
I do not recommend these exercises. Do not press on the eye. The finger can easily irritate/injure the eye. Do not resist against the normal movement of the eye. Let the eyes move freely and on their own. These are examples of old eye exercises that can cause strain and impair the vision.
Practice of Bates Method: shifting, central fixation, blinking and other natural eye functions is best.
Modern treatment applies acupressure points near these areas but without touching, without pressure on the eyeball.

This massage treatment, if used, should follow the eye exercises. It is a good plan to follow the massage with the eye bath.
No eye baths! Breaks down the natural tear structure of the eye. Do only if advised by a doctor for a specific condition.

The illustration showing the "heel" of the hand over the eye shows the position for straight pressure, which is frequently very helpful in case of the acute stabbing pains that sometimes shoot through the eye as the result of straining. When there is a definite acute inflammation this treatment must not be applied, but otherwise it gives considerable relief—not only from pain but from strain and tiredness. It may be given gently in case of glaucoma, but care must be taken in this instance to observe immediate and after effects and avoid a degree of pressure that is irritating.

Other good movements are, placing the balls of the fingers between the eyeball and the bony socket above, below, and to either side, and giving gentle pressure in the opposite direction.

When the eyes are tired either hot or cold cloths may be placed over them and gentle massage given through the cloth. In this case the heel of the hand is usually better than the balls of the fingers.

When there is pain in the eye or when they are fatigued, or when there is that occasional small twitching of the eyelid, a good treatment can be given by placing the ball of one finger over the small notch felt at the edge of the eyebrow slightly inward from the center, and giving pressure here. Pressure may be given at the notch over each eye at the same time. It is usually better to give a steady pressure for at least two or three minutes. This may follow or be followed by the hot applications and gentle massage. A similar treatment may be given to the notch at the very edge of the bony socket immediately in the center below the eye.

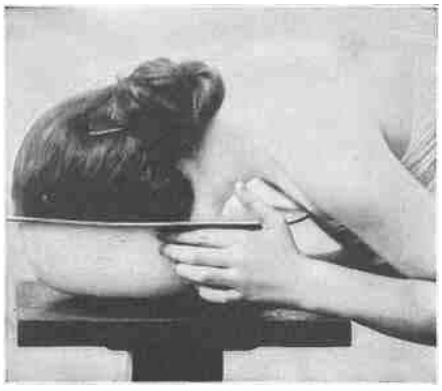
The ball of each forefinger or of each thumb may be applied to the inner edge of the eye, but above the margin of the lower lid where the drainage canal is situated. Steady pressure may be applied here in case of eye-ache or a headache resulting from eye strain.
Some of these applications are beneficial but some are not! See the modern books mentioned above for the true acupressure points. Palming, sunning, shifting, central fixation.., massage of the neck muscles and acupressure are the best treatments.

CHAPTER XIX

The Eye Bath

IT is a good plan to follow the massage of the eyes with an "eye bath." A *weak* solution of salt and water or a dilute solution of boric acid and water, is the best for this purpose, under ordinary conditions. These solutions must on no account be *strong*. The water must not be brine, nor the boric acid solution too strong. The water should usually be cool, or lukewarm; but the temperature must depend upon circumstances. In certain inflammatory conditions of the eye, it is often advisable to have the water quite cold, while, on the other hand, in all injuries and local affection which render the eye sore or tender, it is best to bathe it in warm or hot water—at least at first. The bath, as a rule, should not last more than twenty or thirty seconds for each eye, and should be followed by a blinking of the eye—which, however, will probably follow automatically.

The eye bath may be taken in two ways. The first method is to fill an ordinary bowl with water, hold the breath, immerse the face in the water, and then open and close the eyes a number of times while the eyes are well under water. This may be repeated two or three times. This is the first method, and while it has the disadvantage of wetting the whole face, has the advantage of lack of suction, which the second method entails.



For taking the eye bath, the simplest plan is to fill an ordinary wash bowl with a weak solution of salt water or dilute boric acid.

Taking the eye bath in a basin. Immerse the face in the salt water or boric acid solution and open the eyes under water, then move them from side to side, up and down, and roll them around.
I do not recommend eye baths.
Boric acid sounds too strong! Dangerous? Ask an eye doctor first. Bates Teachers state that any type of artificial tears, eyedrops, eyebaths for the eyes will break down the natural tear structure of the eyes, impair tear production, cause dry eyes and dependence upon eyedrops, baths. Use a warm steam humidifier with purified water, (no chlorine…) to prevent dry air, dry eyes. Get fresh air. Blink, yawn, shift to produce natural tears.

The eye-cup. A convenient device for taking the eye bath with a minimum of solution.

Taking an eye bath with the eye-cup. The eye-cup filled with the desired solution is so placed as to fit the eye socket with the head bent forward over it. Then tip the head back as in the illustration and open the eye and move it about in the solution. **My Mom used the eye cup to remove dirt from the eye.**

THE EYE-CUP. Eye-cups are now easily obtained, at a low figure, and are very useful little appliances, enabling one to bathe the eyes, without immersing the whole face, as in the method just described. In this case, the eye-cup is filled with whatever solution is to be used, the head leaned forward and the cup placed over the eye; then the head is tilted backward, and the eye under the cup opened and closed a number of times. The same operation is repeated with the other eye.
It is a good thing not to keep the cup against the eye for too long a time, owing to the suction which develops in consequence. It should be removed and re-applied several times.

People use the eye cup to flush a foreign object out of the eye.
I know a man that had a very small object in his eyes cornea. It was almost like a small bubble, ulcer on the cornea. It was blocking his vision, causing blur, astigmatism. He could not get to a doctor. He used his own saliva, the slippery saliva from under the tongue and gently rubbed it on the bubble on the cornea. It broke the foreign object free from the cornea without irritating the cornea and the vision immediately returned to normal. Dogs… use their saliva to heal wounds. Saliva can contain bacteria, especially if the teeth are decayed, but in this experience, the mans eyesight, eyes were benefited from the treatment. Many years gone by and no return of the eye problem.

As regards medicinal substances to be used in the water, there are but few of these which can be recommended. A small percentage of salt is often strengthening to the eyes, but a heavy brine is irritating and injurious. A dilute solution of boric acid is often beneficial, as it tends to cleanse the eye and wash out irritating substances. Apart from these solutions, it is safe to say that ordinarily, the further the patient keeps from "eye lotions" and concoctions of that sort, the better. These eye baths should have the effect of strengthening and stimulating the eyes in a wholesome, hygienic manner, without irritation. Cases of weak and dull eyes are especially helped by them, and they are helpful in practically every case of eye disease and defect, where they are not distinctly contra-indicated.

I do not recommend eye baths unless an infection, object is in the eye and an eye doctor has taught the patient how to do the eye bath and the correct (preferably natural) ingredients, solutions to use.

A old remedy to remove metal from the cornea, eye is to place a magnet near the metal and let it pull the metal out of the eye. In some cases only a doctor can remove an object from the eye. Doing it yourself can result in breaking blood vessels, other parts of the eye and result in more injury.

People claim to have removed eye floaters with a specific eye bath solution of Cheyenne Red Pepper and water. Cheyenne opens the capillaries, veins in the body and may help improve eye circulation, removal of waste, strengthen capillaries… I do not know if these are safe or effective. Cheyenne Pepper may be used in pepper Spray defense weapons which do not cause damage to the eye. Eating foods that open, clear out the body, eyes blood and lymph vessels is a safe way to improve circulation of blood, lymph, fluids in the eye. Eat healthy food, nutrition for the eyes.
Check with your eye doctor first. Bioflavonoids in bilberry fruit and white part, whole peel of oranges, lemons, lutein, dark greens also strengthen the blood vessels, improve health of body, eyes.
Lemon juice and water solution is used in other eye baths for cleaning the eye. (Lemon Juice Eye Bath By Dr. William Apt, Eye specialist in the mid-1900's, learnt this from a 105 yr. old man who had perfect health and clear

(I have experienced pepper spray on the face, eyes without damage but only a eye doctor can give advice on this. I do not recommend Cheyenne pepper eye bath on the eyes but eating the peppers is a safe alternative if the stomach can handle it. People have claimed to be cured of ulcers by eating red cheyenne peppers but I find that they can also irritate the stomach.)

eyesight). Use only purified water, 3-4 drops lemon juice with pure water in an eye cup. All ingredients must be pure, organic, no chemicals… Ask your eye doctor first!
The author of this book was trained in Natural Vision Improvement Bates Method School to never use any type of eye drops, baths (except in a emergency when a doctor is not available to remove dirt.. from the eye when the eyes natural tears are not expelling the object) because eyedrops, baths will break down the eyes natural tear structure, layer (oil, water, antiseptic, nourishment and other ingredients) prevent natural eye tear production, protective coating over the eye, cornea and result in dependence on the eyedrops, baths, and cause dry eye, infections, cornea abrasions, astigmatism, blur. Contact lens solutions have caused eye infections, loss of eye and blindness.
The eyes natural tears also contribute to the correct focus of light rays in the eye and act as a natural contact lens bringing the vision to an increased level of clarity.

CHAPTER XX

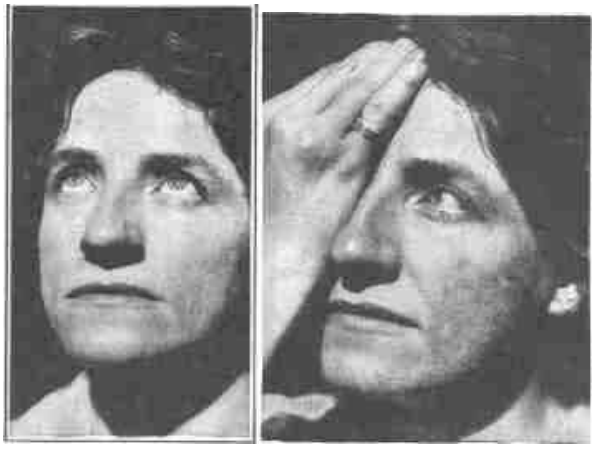
Eye Strength Through Sunlight

Here is presented a most remarkable discovery to the effect that the rays of the sun have not only a beneficial, but a curative effect upon the eyes. The physician who conducted these researches, and who affirms the validity of these statements, does not attempt to explain this benignant influence of the sunlight, but fact is attested by numerous proofs.

The author, however, suggests caution in attempting any home treatment of this kind. The policy of "safety first" has come to be a recognized principle of modern life, and it would undoubtedly be wise to experiment carefully with radical measures of this sort. Anyone can experiment with sun-gazing in the early morning or late afternoon, but caution is suggested in attempting to outstare the noonday sun in June. The burning glass should never be used by inexperienced persons.

WHILE it is recognized in a general way that light is good for the eyes, most people entertain a fear of what they call "strong light." For this reason, as well as because the light often causes them actual discomfort, people protect their eyes from the sunlight with smoked or amber glasses and broad-brimmed hats and parasols, while persons working under artificial light use eye-shades and similar devices. All this is, to a large extent, superstition.
Sunglasses block full spectrum sunlight and impair the health of the eyes, brain, body, clarity of vision, hormone production, regulation, sleep cycle.

The eyes need no protection either from the light of the sun or from any other light. No artificial light can equal the rays of the sun in intensity, and the sunlight, far from being harmful, is the best thing in the world for the eyes. The eyes were made to react to the light, and in its absence they deteriorate and become weak. **Fishes which live in sunless caves become blind; miners and people living in dark tenements develop all sort of eye troubles.** Their eyes become increasingly sensitive to the light-rays until after a time they cannot look at strong light at all without pain. Then they are advised not to do so, but to rest the eyes by remaining in a dark room until they have recovered! As a matter of fact, the eyes are weak just *because* they have lacked the benefit of the sun's rays; and what they need more than anything else, in order to get well, is the thing of which they have been deprived. Sunlight is one of the best curative agents we can employ for the eye. Persons with weak and defective eyes should look in the direction of the sun every day, until they are able to look straight at it without pain or injury.



Persons with normal sight can look directly at the sun without injury or discomfort. Note that the eyes are wide open, with no evidence of pain and no watering.

Demonstrating again that the normal eye can regard the orb of day without injury. With the sun shining almost directly into her eye, the subject reads the Snellen test card with normal vision.

Modern teachers teach only closed eye sunning. Looking at the bright sky on a sunny day is healthy but do not stare into the sun. Some people still sun-gaze – look into the sun but they keep the eyes moving, shifting on the sun side to side, top and bottom, look away from it and back, across it..., head/eyes moving and do not look at the sun for more than a few seconds at a time. No staring.

+Concentrating the rays of the sun upon the eyeball (sclera, white part of the eye) with a lens or "burning glass," sunglass, demonstrated to be an effective curative measure in conjunctivitis, iritis, ulcers of the cornea and other diseases of the eyes and blindness.

Person looks down with the pupil under the lower eyelid so the sun does not shine into the pupil through the glass. Upper lid is lifted up.
The sunglass must be kept in movement on the white of the eye and for a short time, 1-2 seconds or less to prevent overexposure, burning the eye.

The Sunglass must be used by a professional Bates Method Ophthalmologist only! Applied wrong, it can burn, injure the eye.

The sunglass does block out part of the suns light spectrum, causes unbalanced, not full spectrum light to shine on the eye, but its intensity does awaken the cells, cones, rods... in the eyes retina, cells... in other parts of the eyes. This can improve vision, reverse some forms of blindness.
Sunning, daily full spectrum sunlight is a safe alternative.

Not only is it beneficial to look at the sun, but in most diseases of the eyes the sun's rays concentrated upon them by means of a burning glass exert a remarkably curative effect. The following are examples of hundreds of similar cases that might be cited:

A man suffering from inflammation of the eyelids was unable to attend to his work, because, as soon as he left the house and went into the sunlight the discomfort he experienced was so great that he could not keep his eyes open, and had to return home. He had been in this condition for more than fifteen years, and had received all kinds of treatment from many physicians. After a few treatments with the burning glass he was able to return to his work without further trouble.

Another man suffering from trachoma was unable to open his eyes in the sunlight and therefore had great difficulty in finding his way about. One treatment enabled him to open his eyes and go into the sunlight without discomfort.

These cases are interesting, not only in themselves, but because they strikingly illustrate the baselessness of the present fear of strong light.

Modern Natural Vision Improvement Teachers advice only closed eye sunning (no sunglass) and the head, eyes are moved side to side... while sunning.
Opening the eyes and looking at the bright sky is healthy. Use common sense, avoid sunburn.

CHAPTER XXI

Constitutional Improvement for Strengthening the Eyes

IF your eyes are weak or your sight impaired in any manner whatsoever, one of the first requirements for improvement is to build up a better state of the general health.

It may have been your experience, just as it has been that of countless others, that signs of weakness of the eyes, failing of the sight, twitching of the eyelids and a smarting and burning sensation have accompanied a condition of depleted vitality. After your health has been restored you have found that your eyes grew stronger and better, giving you little or no further trouble.

Practically everyone has had some such experiences. At all events, it is undeniably true that the condition of the general health is very largely reflected in the eyes, just as it is in the voice, in the complexion, in one's whole mental and physical bearing. As soon as you build vitality, strengthen the nervous system and improve the condition of the blood, the eyes acquire new vigor.

The reason for all this is obvious. The eyes depend upon the blood supply. If it is of the proper quantity and purity it will tend to keep these organs vigorous, just as all parts of the body are thus kept vigorous. If the blood is in poor condition, filled with impurities and sluggishly circulated, then you can not expect to keep your eyes, or any other part of your body, in the best condition. It is for this reason that good digestion, active elimination and general functional vigor must be considered if you wish to improve the condition of your eyes. In other words, constitutional treatment is necessary. No processed white sugar.

One of the first lessons for every man, woman and child to learn is that illness is one's own fault. It is purely a matter of cause and effect. Sickness comes as an inevitable result of habits and conditions of life which would logically produce such a result. Health is merely the effect of normal and natural habits of life. If you live in accordance with the laws of Nature you make illness practically impossible.

The truth is that it requires more energy to be sick than to be well. In a state of health the organs function properly, naturally and easily. There is no special effort upon the part of anyone of them. Life proceeds smoothly and easily. But when one is sick the body has to struggle against poisons, against various handicaps, and the work of each organ of the body becomes a serious effort. Sickness means hard work for the body. Good health means freedom from all these troubles. It is, therefore, far easier to be well than to be sick.

If you have strength enough to resist illness and still live, you certainly will have energy enough to recover normal health, and to keep it. But you cannot secure health in a drug store. You cannot build health simply by conversing with a physician and paying him regrettable sums of money. You can build health only by obeying the laws of Nature, by cultivating habits and conditions such as will increase your strength, help your organs to function more perfectly and smoothly, and purify and improve the condition of your blood.

The cornerstones of health may be said to be exercise, air, food and sleep.

Exercise is probably the most neglected of all these vital health essentials. The first characteristic of all life is movement or the capacity for movement. You see an insect, a reptile, a lobster or any other animal lying motionless, and you wonder whether it is alive or dead. Perhaps you poke it with a stick. If it moves you know that it is alive. Our lives are based upon the capacity for movement. This applies not merely to the muscles which move the body about, but to the muscular organs which maintain the vital processes, such as the heart, stomach and blood-vessels, which have muscles in their walls to keep the contents circulating.

Forty per cent or more—that is to say, from two-fifths to one-half—of the weight and bulk of the body in a state of health and vigor is made up of muscular tissue. Most of the food is consumed in the muscles. It is inevitable, therefore, that a healthy state of the muscular system is a prime condition of what we call health. We are essentially muscular creatures. Therefore, to permit our muscles to degenerate and deteriorate means not only a loss of strength, but it means a poor and weak circulation, a loss of tone in all the organs, and consequently a general impairment of the health.

You will see from all this that muscular activity is absolutely essential to health. Inactivity means stagnation. Stagnation not merely of the muscles, but of the blood and of all those vital forces which together make up what we call life. Out-of-door exercise is undoubtedly the best. You should make it a point to get enough of it. But whether you can spend much time outdoors or not, you should certainly take enough exercise of a strength-building character in your own home, or in your own room, to maintain the muscular system in a state of full development and normal vigor. More detailed consideration of the subject of exercise for constitutional purposes will be given in the next chapter.

CHAPTER XXII

Exercises for Constitutional Improvement

THE value and necessity of exercise as a factor in constitutional improvement has already been pointed out. Everyone needs a proper amount of exercise for the sake of the general health, irrespective of the effect upon his eyes.

Without going too deeply into the physiology of exercise, it may be said that there are two general results to be gained from any good system of physical training. In other words, exercise may affect one in two ways. It may have chiefly a muscle-building value. Or it may have what is commonly called a constitutional or health-building value. Muscle-building exercises are intended chiefly to build strength and enlarge the muscles. Constitutional exercises chiefly affect the heart, the lungs, the vital organs generally, and, in consequence, the purity and quality of the blood.

Now, nearly all exercises partake of this twofold purpose. They strengthen and enlarge the muscles and, at the same time, they build up the general health through their effect upon the heart and lungs, the digestive and eliminative systems. That is why almost any form of activity, if one secures enough of it, is likely to fulfill all requirements in both these respects. At the same time there are some exercises which are particularly of the muscle-building type and are only slightly constitutional in their influence. There are others which have only a small muscle-building value, being useful mainly because of their effect in toning up the vital organs.

Exercise 1.

With the hands at the hips bend far forward in the manner illustrated. Repeat five or ten times according to strength. It is best to commence with a few repetitions and increase the number with the increase of strength.

Touch the palms of the hands to the floor as your muscles become more relaxed, used to the stretch. A old gymnastics exercise.

Exercise 2.—Bend well backward in the manner illustrated.
It is usually most convenient to combine exercises 1 and 2 in one movement.
Repeat as desired.

Exercise 3.—With feet well apart to give a better base of support, bend the body far sideways, to both sides, five or ten times.

Exercise 4.—Twist first far to one side then far to the other. This is a spine-twisting and organ-stretching movement.
The more action, the better.

Exercise 5. Fingers extended, stretch vigorously upward, lower arms, then stretch upward again. Vary by stretching forward and sideways.

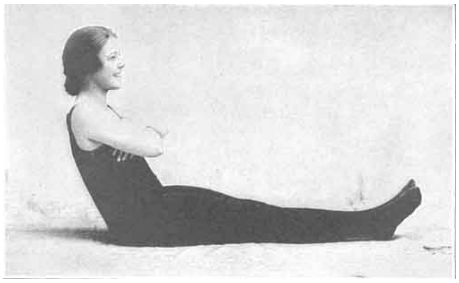
Exercise 6. Raise the body high on the toes as illustrated.
If too easy, do it on one foot at a time.

Walk up a long hill on your toes daily.

Exercise 7. Starting in a standing position with the arms at the sides, bend the knees and lower the body to the squatting position. It is easier to maintain balance and requires less effort if the arms are swung forward and upward as the body is being lowered, as illustrated.

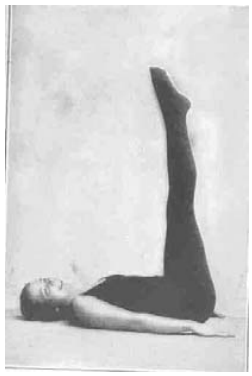
Squat down and up to standing with both legs and then with one leg at a time, 5-10 times.

Exercise 8. Bring one knee at a time upward as high as possible with a snappy, kicking movement. A little more action is secured by swinging the arms upward at the same time. Repeat five or ten times or more with each leg.



Exercise 9.—Lying on the back with arms folded, raise body to a sitting position. Repeat according to strength and fatigue. If necessary, use a weight over the feet.

Do this on a slanted sit-up board or body slant with the head at the lower level. Combines exercise with inversion, improved circulation of blood, lymph, oxygen to head, ears, eyes.



Exercise 10.—Lying on the back with the arms at sides, raise the legs to the perpendicular position illustrated. Repeat as desired.

Exercise 11.—This is a variation and extension of the preceding movement. It is a little more vigorous but also more interesting. Continuing the preceding movement, raise the hips and back from the floor as illustrated. Push the feet up higher into the air, back straightens leaves the floor. Repeat up and down movement.
Chiropractor teaches this.

All those types of exercise which call for endurance are of the greatest value from a constitutional standpoint. In other words, any exercise which may be continued for a considerable length of time and which, therefore, keeps the heart working energetically and causes one to breathe deeply and freely during that period, will inevitably tone up the internal organs.

The shallow breathing of the inactive man or woman is not calculated to fill the blood with oxygen, and the brain and all of the structures of the body suffer more or less from the lack of this life-giving element. Exercises which cause prolonged deep breathing will naturally increase the oxygen intake until your entire body from top to toe is literally charged with it. This will make you more alive. It will make you brighter and more energetic, and the improved circulation will tend to tone up every cell and every structure of the body.

It is for this reason that a long walk is one of the best of all forms of constitutional exercise. Every time you step you lift the weight of your entire body and move it the distance of your stride. Although there may be little effort in walking, nevertheless considerable energy is consumed, and the largest muscles of the body are brought into play. It is because walking is accomplished by the largest muscles that the effort seems easy. Nevertheless it calls for a large supply of blood and of oxygen. This means increased circulation and deeper breathing. Walking for a distance, therefore, means the continuation for a period of time of moderate exercise for the body's largest muscles, without involving any strain. There is the very least expenditure of nerve-force in proportion to the physiological benefit.

There are other forms of constitutional exercise which do not involve any severe strain upon the muscles, and which are beneficial largely because of their endurance-building quality. Cycling at moderate speed, hill climbing, rowing for pleasure, horseback riding, golf, gardening, and other varieties of exercise, may be included in this class. Of course, some of these, like gardening or rowing, may be made very strenuous indeed if one wishes to exert oneself.

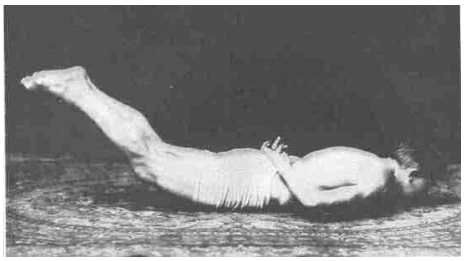
The exercises which we are illustrating herewith are useful both for their constitutional and their muscle-building value. They are particularly designed to keep the trunk of the body firm, strong and vigorous. Exercises that bend and twist the trunk of the body not only build up and strengthen the external muscles, thus supplying the lower trunk with strong, firm muscular walls, which prevent any prolapses or sagging of the internal organs, but they indirectly affect the internal organs, toning them up and making them far more vigorous. They also help to keep the spine and its cartilages strong, flexible and youthful.

Either the system of exercise presented herewith, or any other system which answers the same purpose, should be practiced at least once each day. It will be best to take the movements in your bedroom before dressing. If taken in the morning, they will wake you up and warm you up, so that a cold bath will be not an ordeal but a pleasure. You will find it advantageous to give the skin of the entire body a brisk rubbing following the exercises and preceding your bath. If you do not find it convenient to take the exercises in the morning, however, they may be taken either late in the afternoon or in the evening—a half hour before retiring.

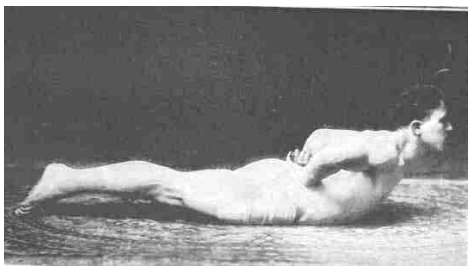
Special attention is called to the exercises for the neck which are illustrated. There are two ways in which they are especially valuable: first, in improving the circulation about the neck and head; and second, in improving the upper spine, or, to be more exact, the cervical spine.

The question of active circulation is always important. These neck exercises will not only affect the neck itself, strengthening and building up the neck muscles, but they will improve the circulation throughout the head because of the quantity of blood sent in this direction in response to the exercise.

See Paul and Patricia Bragg books on breathing, fasting…

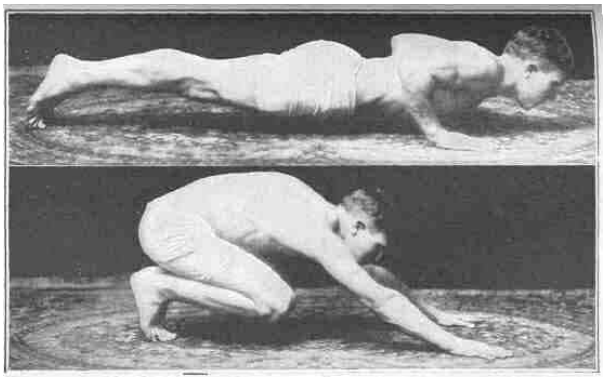


Exercise 12.—Lying prone with hands behind the back, raise feet and, if possible, the entire length of both legs as high as possible. This involves the muscles of the lower region of the back and the hips, up the neck muscles, but they will also improve the circulation throughout the head because of the quantity of blood sent in this direction in response to the exercise.



Exercise 13.—Again lying prone, raise the head and shoulders as high as possible as illustrated. This involves the muscles of the middle and upper back.

Exercise 14.—Starting from a standing position, bend down and place the hands on the floor in the manner illustrated. Then with a jumping movement, kick the feet back until the body is straight with the weight on hands and feet. (See next photo.)



Exercise 15 and 16.—Next lower the body as shown in the upper photo. Push up and repeat until slightly tired. A variation is shown in lower photo. Keep arms stiff, straighten the legs, projecting the body forward with head well in front of supporting position of hands. Swing back, repeat.

Exercise 17.—A vigorous and stimulating exercise is found in shadow boxing as shown in the above photo. Strike out forward vigorously first with one fist and then with the other, continuing to alternate until slightly tired.

Exercise 18.—The "stationary run." A running action without going forward. A splendid constitutional exercise, inducing free respiration and perspiration. Excellent for finishing up any type of indoor exercise.
Running in place is very beneficial to people working indoors, at computer. The 'Bragg' Health books advise this.

Congestion about the neck is known to produce a "fullness" in the head with consequent congestion in and about the eyes. Measures which relieve this condition will naturally tend to lessen the strain upon the eyes themselves, making for more perfect and easier sight.
Deep breathing, water drinking and relaxation, as well as exercise, are useful for this purpose. Conscious relaxation of the neck muscles with deep breathing will often relieve congestion in the head very quickly, but active exercise promoting a vigorous circulation is one of the most effective means known for overcoming either a state of congestion or an anemic condition of any part of the body.

These neck exercises will also tend to keep the upper spine flexible and in normal alignment. Exercise for spinal strength and flexibility is, perhaps, even more important, generally speaking, than exercise for muscular development, for the reason that the spine would otherwise tend to become rigid, and the little cartilages or cushion-like disks between the vertebrae in the back, neck…hardened and compressed. Exercise will prevent this, keeping these cushions elastic and healthy. Furthermore, any displacement of the vertebrae causes a pinching of the spinal cord, or spinal nerves, and consequent interference with the currents of nerve force, with more or less derangement of various functions of the body.
Osteopaths claim to accomplish very marked results in many cases of eye trouble through the proper mechanical adjustment of the spine and the freeing of the nervous impulses. Proper neck exercise will prevent adhesions of the vertebrae and tend to keep the upper spine in such perfect alignment that the spinal cord is free from any disturbing factors of this kind.

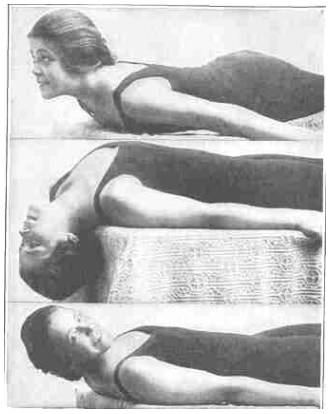
Exercise 19.—A neck resistance exercise. Placing one hand back of the head, bring the head backward, resisting the movement with the hand in the manner illustrated.
Five to ten movements.

Exercise 20.—Neck exercise. Place hand against forehead and bring head forward and downward against resistance.

Exercise 21.—A simple neck exercise. Bring the head first far to one side, then to the other, placing it upon the shoulder on each side. Vary by a head-circling movement, and neck-twisting movement.

Avoid if ear ringing, dizziness, pain occurs. Misaligned vertebrae, pinched nerves may need to be corrected first. There are easier Physical Therapy Exercises for the neck.
Neck rolls clockwise, counter-clockwise, shoulder rolls forward, backward, the Figure Eight/Infinity Swing, Sway, Long Swing relax the neck and improve neck movement. Combine muscle strengthening and movement exercises.
Strong neck muscles keep the muscles relaxed, contracting, releasing normally, vertebrae aligned.

If you have not been accustomed to muscular exercise, a word of caution is necessary in order that you may not overdo the work the first day, and thereby produce a condition of **lameness and stiffness of the muscles** that is likely to be very discouraging. Enthusiasm in the beginning may lead one to take too much exercise. It is best to try only about half as much as you think you could comfortably do to start with. Never carry any exercise to the point of pronounced fatigue. As you get stronger you can increase the vigor of your movements.



Exercise 22, 23 and 24.—In this series of free movement neck exercises, the horizontal position is assumed so as to secure the natural resistance provided by the weight of the head.

+In the first position, lying upon the stomach, the head is first lowered as far as possible and then raised high, as in the upper photo.

+In the next exercise, lying on the back, the head is first lowered as shown, and then raised straight upward and brought over the chest.

+In the last exercise (lower photo), the raising of the head is combined with a head-turning or neck-twisting action, very valuable for its effect upon the vertebrae of the upper spine.

If you should experience any lameness or stiffness of the muscles, the local application of hot water, or a complete hot bath, will give relief, especially if followed by energetic rubbing of the parts. In any case, the soreness will disappear in a few days and should not prevent your continuing with the exercise.

It is, of course, understood that all exercises will be taken with the windows open, so that you may have the advantage of fresh, pure air. Much of the benefit of your exercise will be lost if you breathe stale or stagnant air while you are taking it. Much of the benefit and energy that you derive from your exercises will also depend upon how much energy you put into them. Exercise vigorously. Put life, vim, determination into every movement. Ten or fifteen minutes energetically spent in these exercises will keep you vigorous and fit.

In addition, try to spend at least two or three hours a day in the open air. It may be well to start with a walk of one or two miles. Then increase the distance by a quarter of a mile each day until you are covering anywhere from five to six miles and upward. If in addition to the vigor-building exercises which are illustrated you will make it a point to take at least one good walk each day, you will have established for yourself an ideal scheme of physical culture.

CHAPTER XXIII

Eating for Health and Strength

IF your eyes depend largely upon the condition of your general health and your general health depends very largely upon the condition of your stomach, you will see that it is highly important that you make no serious errors in the matter of what, when and how you eat.

What you eat is important. Your sustenance and strength depend upon it. But there are other important factors in the food problem. The question of how you eat, how much you eat and how often you eat requires nearly as much consideration, and people go wrong in these matters, perhaps, even more often than in regard to what they eat.

The first thing to learn is to follow your appetite. This means not only that you should eat when you are hungry, but also that you should not eat when you are not hungry. The greatest dietetic crime in the world is eating without appetite. Do not eat merely because the custom of the country calls for three meals per day at stated hours. If you are not hungry when meal time comes, or if you are excited, nervous, sick, or for any other reason without an appetite, then do not think of eating. Wait until appetite appears.

In other words, you should put your stomach on a natural and not on a forced regime. To force food down your throat when you do not desire it and cannot enjoy it means that you are placing an unnatural burden upon your stomach. If you are not hungry and your stomach seems a little bit upset, then drink water. **The quickest relief for any form of stomach trouble is found in the drinking of hot water. This is an old-fashioned, old woman's remedy, but the best in the world.** If you are "sick at your stomach" and the hot water induces vomiting, this will be the best thing that could possibly happen, for it will relieve you of the burden of the fermenting and poisonous load. And if the drinking of more water is followed by further vomiting, it will mean that the stomach has been well washed out. You will then quickly recover.

In any case the drinking of hot water has a tendency to flush or wash out the stomach, as well as the entire alimentary canal, particularly if you drink enough of it. Nothing in the world is so effective in the case of indigestion or loss of appetite, as several cups of hot water, taken at intervals of five or ten minutes, or even more frequently, if you can take it faster. I mention this for the sake of any emergency in which you may have lost your appetite or suffered from temporary indigestion. You will find that hot water, taken before meals, will improve your power of assimilation. It is to be hoped, however, that you will not need even this simple treatment for this purpose. If you have no appetite, the omission of one or two meals can be depended upon to give you an appetite such as even a child might have reason to envy. Avoid eating late at night.

Do not think that you must eat three times a day irrespective of appetite just because farmers and piano-movers have that kind of an appetite. For many people, especially office workers, the two-meal-per-day plan is far superior. You may take your meals either morning and evening, or noon and evening, as you choose. This is no untried theory. Millions of people eat such a light breakfast that it is practically no breakfast at all—merely coffee and rolls. In fact such a meal is worse than none at all. Thousands of others have found by experiment that the two-meal-per-day plan means a better appetite, better assimilation and consequently better health.

Almost as bad as eating without an appetite is eating too fast. Do not swallow your food without thorough chewing. The work of digestion is commenced in the mouth, through the treatment of the food with saliva. You should try to chew your food to a liquid before passing it on to the stomach.

On the subject of what you eat one may well hesitate to give any sweeping advice. There is no special menu or diet that will suit everyone. It is not strictly true that "what is one man's meat is another man's poison," and yet there is a small measure of truth in this old saying. Do not eat anything advised by dietetic experts as ideal if you cannot enjoy it. On the other hand, do not follow the course of eating "palate ticklers" to the exclusion of plain and substantial foods.

If you have a normal and natural appetite this should dictate as to your food requirements. To a large extent the entire problem of diet may be narrowed down to the question of eating natural foods, as against those which are too much refined, or tampered with, in the process of preparation.

For instance, take the case of wheat. Wheat is a perfect food just as it is grown. It will nourish every part of the body. In the making of white flour, however, much of the best nutrition in the wheat is thrown away to be fed to stock.

A similar food crime is committed in the polishing of rice. The best part of the rice is in the natural light brown coating. When this is removed in the polishing process, leaving practically pure starch, rice is no longer an adequate or satisfactory food. The same thing applies to the refining of sugar. White granulated, or fine white powdered sugar, does not contain the nourishing elements found in the juice of the sugar cane from which it has been made.

To a large extent, the nutrition loss involved in the refinement of food is due to the wastage of the mineral salts. Old books on dietetics, after discussing the importance of protein, fats and carbohydrates (sugar and starch), were accustomed to refer to these mineral salts under the collective term of "ash," and then to dismiss them. These organic minerals form only a very small percentage of any food, but they are a vitally important percentage, nevertheless. Because they are limited in quantity it is all the more important that they should not be eliminated from any of our foods.

Not only are mineral salts lost in the commercial manipulation of flour, rice, sugar, corn and other foods, but they are often lost, also, in the kitchen. The woman who boils her potatoes, cauliflower, peas, beans and other vegetables and then throws the water down the drain commits an equally serious food crime, inasmuch as these **mineral salts are, to a large extent, dissolved in the water and thus lost when the latter is thrown away.** What to do about it? These vegetables should be cooked in no more water than is necessary, and simmered down so that only a moderate amount of juice, which should be served and eaten with them, is left. Don't follow the cookbooks that tell you to boil your vegetables and then "drain." Too much cannot be said about the criminal stupidity of this wastage of **iron, lime, phosphorus and the many other organic mineral salts which Nature has so carefully built into the structure of plant life.** The same consideration applies to draining water from other foods.

To make this discussion of food as brief as possible, therefore, it is earnestly recommended that you endeavor to follow the plan of eating foods in their natural condition as nearly as possible. If cooked, they should be as unchanged as possible. Honey is a more perfect, more digestible and more satisfactory form of sweetening than sugar. Brown sugar, being less refined, is better than white sugar.

As foods contain elements which are destroyed by cooking, the diet should contain a liberal proportion of raw foods, such as lettuce, celery, watercress, onions, peppers, tomatoes and fruits. Fruits not only help digestion, but they are especially valuable for supplying mineral salts.

The question of meat eating is one which may be left to the individual with the caution that the use of large quantities of meat is neither desirable nor necessary to health. Nearly everyone would do better to eat one-fourth of the amount of meat which he consumes. It may even be just as well to **eliminate meat entirely, if one uses a sufficiency of eggs, cheese, milk or buttermilk in the diet. Lentils, beans and peas are also valuable protein foods, and may be used as substitutes for meat.**

Milk is the ideal food for infants and young children. It should continue to form the most important part of the diet of young children up to six or eight years of age, one quart a day being required for each child. Eggs are a substantial protein food and for tissue building may be classed with meat, fish, poultry, cheese, milk and buttermilk. Many men and women who do not care for milk will find buttermilk, or fermented milk, which answers the same nutrition requirements, more palatable and agreeable.

Constipation is an almost universal problem. It is invariably the direct result of improper diet and irrational habits of life. Given proper muscular activity, a natural diet and a sufficiency of water, constipation would be a rare condition.

What then is the victim of this stubborn and chronic complaint to do about it? The first thing is to revise the diet, using natural foods and especially a considerable amount of fruit and raw green salads. White bread is probably the greatest enemy of the constipation victim. An immediate change to whole-wheat, or graham flour and such whole-grain cereals as oatmeal and shredded wheat will be helpful. Rice, tapioca and spaghetti are likewise constipating. Macaroni, or spaghetti, with cheese, is particularly so, but when spaghetti and macaroni are served in the Italian style, with a plentiful sauce made of olive oil, tomatoes and onions, this objection is practically eliminated.

The drinking of a sufficient amount of water is an important factor in preventing constipation. The hot water suggested earlier in the chapter is very effective indeed. Laxatives or cathartics should never be used because of the detrimental after-effects. They tend to make the condition more stubborn. An enema should be used when necessary, although even an enema should be regarded as an emergency treatment. The refined mineral oil, which is sometimes known as Russian oil, and sometimes as liquid petrolatum, (petrolatum – I do not recommend, is a chemical) offers a very satisfactory means of relief and prevention. It is not assimilated, and serves merely as a lubricant. Old fashioned prunes is a healthy alternative.

The condition of the alimentary canal is such an important factor in the preservation of health that the above suggestions should be very carefully studied and assiduously followed. Keep at peace with your stomach and avoid constipation, and you will have little or no trouble in building up that condition of vigorous health which is conducive to the strength of your eyes.

CHAPTER XXIV

Eye Rest Through Sleep

THE health-building, strength-restoring influence of sleep is an important factor in those cases in which the condition of the eyes is particularly concerned.

Sleep restores the reserves of nerve force and gives an opportunity for exhausted tissues to rebuild and refresh themselves, and at the same time usually affords rest for the eyes. This is not always true, however, because one can strain the eyes during sleep. Persons with eye trouble, as well as all others who do not get the proper amount of rest from their sleep, should palm before retiring, in the manner described in "Errors of Refraction: Their Cure." How long the relaxation thus induced will continue in the individual case it is impossible to say, but some persons report great benefit from this practice.

Opinions vary as to the amount of sleep required. The truth is that different individuals vary in this respect. It is a well-understood principle among students of the subject that duration of sleep is not as important for constitutional purposes as depth of sleep. In other words, many hours of light sleep are not as refreshing as half that number of hours of profound slumber. Great depth of sleep means complete mental relaxation, whereas light sleep may mean dreams, or a degree of mental activity bordering on dreamland, which does not yield the same complete relaxation and the same degree of recuperation.

Spiritual – Physical and Sprit bodies are strengthened, energy restored, balanced while in deep stage sleep.
See Robert Monroe – Book – Journeys out of the Body and The Monroe institute in Virginia U.S.

There are two primary factors involved in healthful sleep. First, the surrounding conditions, and second, the condition of the slumberer himself.

Darkness and quiet are essential to refreshing sleep. One may train oneself to sleep in spite of more or less noise. Yet the more quiet and peaceful the surroundings, the easier it becomes to arrive at a condition of complete mental and nervous relaxation. Sounds tend to excite the nervous reactions, which are disturbing.

In the same way, light interferes with restful sleep, for even though the eyes may be closed the lids are not entirely light-proof and a certain amount of light penetrates. This light is more or less stimulating and prevents absolute relaxation of the optic nerves. Complete darkness is much more conducive to sound sleep and, for this reason, one should avoid having any light best that one should retire fairly early in the evening and rise early in the morning. Sleep in the late morning, during several hours of

daylight, is not conducive to complete rest. "Early to bed and early to rise," may not make a man wealthy and wise, according to the old saying, but it unquestionably does have some relation to making him healthy.

Fresh air is even more important than darkness or quiet as a factor in inducing restful sleep. The need for oxygen during the building-up processes of sleep is self-evident, but the influence of fresh air *as a means of enabling one to sleep more soundly* is not always appreciated. If you want to know what truly refreshing sleep, beginning as soon as the head touches the pillow, really is, try sleeping out of doors. The next thing to that is sleeping in a room with several windows wide open, so as to approximate the condition of outdoor life as nearly as possible.

In winter bodily warmth is a necessary factor in sleep. The feet, particularly, should be thoroughly warm. On the other hand, an overheated condition is always conducive to restlessness. Do not cover too heavily. The nerve pressure incidental to heavy coverings is disturbing. In other words, while warmth is necessary, one should have no more covering than is absolutely required to maintain warmth. Cotton blankets and quilts are extremely heavy, but have little warmth. Wool is light and, whether in the form of blankets or wool-filled quilts, is ideal for cold-weather use. Down comforters likewise provide warmth without weight. During the hot summer nights it is best to sleep absolutely without covering and sometimes even without any night apparel.

A reasonably hard bed with a good, firm mattress is preferable to undue softness of bedding. If one lies on one's back, it would certainly be better not to use a pillow. A pillow is likewise unnecessary if one sleeps on the chest, so to speak, or partially on one side. This is probably the best position for sound and refreshing sleep. If one sleeps on the side, then a pillow is desirable for comfort. Do not sleep on the chest/stomach because the neck becomes twisted, turned to one side causing muscle tension, leads to neck vertebrae misalignment. **Small soft** neck pillows or a soft roll of a **small** blanket edge under the neck can help keep the necks natural curve when sleeping on the back. When **sleeping on the side the sides of the neck should be straight.** A special neck pillow or the perfect amount of a soft edge of a blanket under the neck, (just the right amount, without causing the neck to pull up or down) can provide normal alignment. The natural curve in the back of the neck should occur on its own. If tension is felt, move onto the back. The blanket must be even on all areas to keep the support even. I never needed a neck pillow until after having a neck injury, and then after a bad, unprofessional chiropractor's alignment in Worcester, Massachusetts. Before that I just lied naturally, whatever is perfect comfort on a blanket. Never used a pillow. I believe many natural ways of sleeping are better. Learn to make your own soft, small neck pillows with a soft blanket and avoid expensive neck pillows. If the pillow or blanket is too large it can pull on the vertebrae, stress the nerves… in the neck especially if the neck has been injured.

The best remedy for sleeplessness is probably a hot foot bath, as it draws the blood away from the brain. This treatment may be supplemented by cold cloths applied to the forehead in case of mental stimulation, emotional excitement or congestion of the brain due to any cause. A drink of hot water or hot milk will draw the blood from the brain to the stomach.

A condition of normal muscular fatigue is always favorable to slumber, and if you have taken the exercises described in another chapter and spent sufficient time out of doors either in walking or in any other exercise, you can almost depend upon a condition of healthy fatigue that will enable you to sleep well.

The air bath is another invaluable means of soothing the nervous system and bringing about a condition favorable to sleep. Simply remove all clothing for a half hour before going to bed, providing the room is not too cold.

In many cases a walk in the open air just before bedtime is to be recommended. Although walking for the purpose of exercise should be brisk and vigorous in order to be beneficial, the walk before bedtime for the sake of inducing sleep will be more effective if taken at a leisurely gait, especially if deep breathing is practiced during a good part of the walk.

CHAPTER XXV

Fresh Air, Bathing and Other Health Factors

IT goes without saying that an outdoor nation will be infinitely more rugged than a race of people that lives chiefly indoors. We may not be altogether an indoor race, but we are far too much so. Great numbers of people can measure the average amount of time spent daily in the open air in minutes, whereas it should be measured in hours.

Outdoor life is one of the most potent of all factors in maintaining and restoring health. Pure outdoor air has a tonic effect upon the digestion, upon the quality of the blood, upon the nerves, upon the brain and upon the entire organism. Fresh air in large quantities is one of the first essentials to health.

Everyone should make it a point, therefore, to spend a certain part of each day in the open air, irrespective of the weather. It is not sufficient to spend fifteen minutes or a half hour out of doors. You should make it two or three hours at the very least, and more if possible. Many people will object that they cannot find time for such a purpose, but often it will be found that they devote more than the two or three hours in question to indoor recreation of one kind or another. It is a very simple plan to choose outdoor recreations in place of those taken indoors. Even motoring is commendable because it takes one into the open air.

The practice of bathing is one of the marks of civilization, although primitive peoples instinctively take to the water when they have the opportunity through pure enjoyment of the bath. Bathing has two functions. It serves as a means of cleanliness and as a tonic.

Cold baths may be said to be chiefly tonic in their influence. They are stimulating. They have a pronounced effect upon the circulation, and may be useful in strengthening the heart. They have, however, very little cleansing value, unless used in combination with plenty of soap.

A cold bath offers an ideal means of waking one up and toning up the nervous system, as well as arousing or stimulating an active circulation. In this respect it may supplement any exercise that one may take each morning. The cold bath should always follow the exercises which warm one up to such a degree that the sensation of the cold water upon the skin is a pleasure.

The benefit of a cold bath may be measured in a general way by the pleasure one finds in it. If the bath is something in the nature of an ordeal, if one dreads it and feels thoroughly chilled both during and after the experience, then it cannot be of any value. To those who are of too frail a constitution to be able to react or recuperate from a cold bath, it can not be recommended. It is absolutely necessary that one should react with the feeling of warmth and comfort immediately after.

Unless you are fairly rugged, therefore, do not attempt a cold bath except when you feel thoroughly warm, and can take it in a warm room. See that your hands and feet are not cold. Preliminary exercise is usually desirable for the sake of insuring thorough warmth. Following a hot bath also one is naturally disposed to enjoy cold water and a quick cold sponging or shower is usually desirable at such a time to close the pores.

A cold tub or cold shower will offer a rather strenuous form of cold bathing. If you are not vigorous enough for such measures, then try a sponge bath, if necessary, sponging only one part of the body at a time. A fairly good plan, if your recuperative powers are weak, is to take a preliminary hot foot bath, or to stand with the feet in hot water while taking a cold sponge. Do not try to use water that is too cold in the beginning. Use water of a moderate temperature at first and gradually accustom yourself to a colder bath. You will find it a delightful tonic when you have once hardened your body in such a way that you can thoroughly enjoy it.

A warm bath in soap and water is valuable not only for cleanliness, but for its quieting and soothing effect upon the nerves. A hot bath, in which classification may be placed any bath from 102 degrees up to 110 degrees, is very effective for breaking up a cold and for eliminating poisons from the system, in kidney trouble and various other diseases. A cabinet steam bath, or dry hot-air bath, will, to a large extent, serve the same purpose as a regular Turkish bath, but if a cabinet is unavailable an improvised Turkish bath may be arranged by means of a hot foot bath taken in a warm room while wrapped in blankets. Drinking hot water or hot lemonade will help. The hot water bath will, however, answer just as well in many cases and is far more convenient. It is best to use a bath thermometer so that you can determine the temperature beforehand.

Magnesium in Epsom Salts in the bath relaxes all body muscles. Helps bring movement to stiff joints and healing.

Air baths and sun baths are tonics of no small value, especially so far as the nervous system is concerned. Modern methods of clothing tend too much to smother the skin. Let your skin breathe. An air bath of half an hour or longer before going to bed, or at any other time of the day that may be convenient, will have a tonic effect upon the entire nervous system, besides stimulating the activity of the pores. The same is even more true of a sun bath. A little sunshine each day is almost a necessity. It may be said, however, that those of exceedingly fair skin should be careful not to expose themselves too much to the noonday sun in midsummer. The rays of the sun may be as harmful to blondes as they are beneficial to others.

A dry friction rub constitutes another very stimulating and refreshing form of dry bathing. This may be applied either with soft flesh brushes, a rough Turkish towel, or by vigorous rubbing of the entire body with the bare hands. Five minutes of this will have a splendid tonic effect, improving the circulation and also the smoothness and texture of the skin.

The condition of the skin and the care of the skin are important because this wonderful covering of the body is not merely an external coating, but an organ with very important functions. The skin constitutes one of the channels of elimination. Its health and activity are necessary to keep the blood pure. It is related to the nervous system in a most important way; our sense of touch is dependent upon its millions of infinitesimal nerve endings. Through the power of contraction or relaxation of this wonderful surface of the body, the circulation is controlled and the body enabled to adapt itself to the varying changes of the temperature. It will be seen, therefore, how and why the care of the skin is important.

For all these reasons the clothing that we wear has a decided effect upon the general health. The more porous it is, admitting the free circulation of air upon the surface of the body, the more satisfactory and healthful it will be found. Avoid tightly woven or air-tight garments. They do not permit of the "ventilation" of the skin. The loosely woven fabrics are also much warmer.

A very good general rule is never to wear any more clothing than is absolutely necessary. This does not mean that in severe winter weather one should go about in a chilled condition. It is better, however, to depend upon a good circulation for warmth than upon excessive clothing, or bed covering. In summer, the more nearly your clothing enables you to enjoy a continuous air bath the better.

Open-mesh linen or cotton underwear is especially recommended for summer. For those who work indoors heavy underwear is probably undesirable at any time of year, for the reason that homes and offices are usually heated to a summer temperature. Comfort outdoors should be secured by using sweaters, gaiters and overcoats.

Another factor in clothing of some importance and interest is the question of color. Black and dark-colored fabrics shut out the light, whereas white, tan, light gray and other light-colored goods permit the light to penetrate, thus giving one a light bath, so to speak, when in the sunshine. Light-colored clothes are superior for summer wear for the additional reason that they are cool. **White and light-colored materials reflect the heat and transmit the light.** Dark-colored clothes absorb the heat, but do not transmit the light. Black clothing in the sunshine is very hot indeed. It may be advantageous in winter for this reason. Some students of this and allied health problems have adopted the practice of wearing tan-colored or other light clothing the year round, holding that even during the evening the body receives some benefit from the electric light-rays.

CHAPTER XXVI

EYE HEADACHES

As already mentioned, the eyes and the whole nervous system are very intimately connected; and it is well known that a constant strain upon the eyes will induce a general condition of strain, nausea, backache, etc., in addition to frequent and sometimes severe headaches. Some physicians have gone so far as to assert that true and organic diseases have been induced in this manner; but this view is no longer generally held by the medical profession. Hewetson, Noyes, Weir Mitchell and others, however, have published numerous facts showing the close connection between defective eyesight and headache, with general nervous and physical impairment of the health; and when we consider the constant strain involved, the reason for this is obvious. Some of the early symptoms are a feeling of fatigue and tension, especially above the eyes, with indistinct and confused vision in reading, writing and other close work. Following this, slight headaches will be experienced, at the base of the brain; and these will be followed or accompanied by nausea, vertigo and general nervousness. Other physical and mental symptoms may follow. When these appear, it is high time to begin treatment of the eyes.

The usual treatment in cases of this kind is a prescription for glasses; and there is no doubt that relief has often been obtained by their use.

Such measures, however, are only palliative and not ultimately curative. When the external muscles are squeezing the eyeball out of shape, glasses may correct some of the results of that condition, and by so doing may make the patient more comfortable; but they can not relieve the fundamental trouble. On the contrary, as has already been shown, they must make it worse. The only real remedy is to be found in the methods described in "Errors of Refraction; Their Cure." In the absence of such treatment glasses may prove useful, in some cases. In others they fail entirely. If it seems necessary to resort to them, and there can seldom be any legitimate excuse for such a course, they should be carefully fitted by a competent oculist and should not be worn any more than is absolutely necessary, as they serve to confirm the eyes in their bad habits. Eye headaches can often be relieved in a short time by proper hygienic methods. It is hardly necessary to say that the general health should be built up. Massage of the back of the neck and head will often bring material and instantaneous relief from the pain, and cold wet compresses to these parts will soothe and relieve the local congestion. A salt eye bath often relieves.
Neck tension, headaches of all types affect the clarity, function of vision.
This chapter was repeated here in order to coincide with the original book contents/index.

CHAPTER XXVII

Eye Hygiene

MUCH that has been written about the care of the eyes is erroneous and misleading. We have been exhorted not to read in bed, and told with much detail just how the various positions in which the body and the book must be held disarranged our internal machinery. We have been warned against reading on the train, the only place, in many cases, where people have time to read. Even that delightful practice, reading at meals, has been condemned in unmeasured terms. We have been instructed as to the distance which should intervene between reading matter and the eyes, and even the angle at which the book we are reading, or the paper on which we are writing, should be adjusted. The effect of light has been discussed endlessly, and we have been warned against the evil effects both of too much and too little.

We have been told that reading was a dangerous practice at best, and that, if we must read, we should, as we valued our eyesight, avoid fine print, although the types of the newspapers are among those classed as too small to be safe in large quantities and we can't live without reading newspapers.

Most of us pay no attention to any of these instructions, reading when, where and how we please and can, and therefore, it is gratifying to learn that none of them have any material bearing upon the preservation of our sight. The essential thing is to learn how to use the eyes properly. Then all such details as the foregoing can safely be left to the inclination and convenience of the individual.

In the case of light there is much evidence to show that the views commonly held have no basis in fact.

Rabbit's eyes have been exposed to the most intense light known, avoiding heat, but subsequent examination of the eyes with the microscope revealed no change either in the retina, the optic nerve, or the brain. A teacher of fifteen years' experience complained that because her classroom was in the basement and the light poor, the sight of her pupils was worse at the end of every school year than it was at the beginning. The classrooms where the light was good, however, had the same experience; and when the Snellen test card was introduced into both the well-lighted and the poorly-lighted classrooms, and the children used it every day, the sight of all improved, regardless of lighting conditions. In Germany it was demonstrated by the statistics of Cohn and others that improvements in the lighting of the schools made in the hope of staying the progress of myopia did not have that effect.

These and other observations show that poor lighting has very little, if anything, to do with the production of eye defects.

The fact is that anyone who can read comfortably in a poor light is to be congratulated, and need not be afraid to continue the practice. If he were straining his eyes, he could not do it, whereas in a good light one can read in spite of the strain.

People who have perfect sight think very little about the light, but it is undoubtedly more comfortable to have it so arranged that no shadow is thrown upon the work, either from the head, hand, or any other object, and so that it shines upon the page which one is reading, or upon the desk at which one is writing, not into the eyes.

Protection of the eyes from strong light is not necessary. In fact, the light is beneficial, as we have already demonstrated. The glare from snow or water may be trying, and smoked or amber glasses will conduce to comfort, but, ordinarily, no harm will be done if they are not worn.

Since the moving pictures came in we have heard much about the strain imposed upon the eyes by this new appurtenance of civilization, and predictions of dire results to our already very bad eyesight, in consequence of our constant attendance upon these exhibitions, have been made. Theoretically, this view of the matter seems a reasonable one. The ordinary rate at which the film runs through the projecting machine is about a foot a second—sixteen pictures a second. That is to say, sixteen distinct pictures are thrown upon the screen in each second of time, and the shutter comes down and is raised that number of times each second also. Between each projected picture there must be a black period, for if this were not the case, the pictures would all run into one another, in a hopeless blur.

It might have been expected that these rapid alternations of light and darkness would be very trying to the eyes, and they often do produce much temporary discomfort, particularly in persons suffering from errors of refraction. Some years ago when the mechanical process involved was less perfect than it has since become, the strain was probably much greater than it is now. Today there is no reason for supposing that the movies are injurious to the eyes. On the contrary they have been found to be a great benefit. Instead of avoiding them, persons who do not suffer from them should go to them frequently, and those who do should accustom their eyes to them gradually, at the same time practicing the methods recommended in this book for the improvement of the vision. Often all that is necessary to relieve the strain is to close the eyes frequently, or look away from the screen, while viewing the pictures.

As for the dangers of fine print, those who understand the principles of central fixation will understand that it is easier, normally, to see small things than larger ones, and that the fear of fine print is, therefore, as baseless as the fear of light.

The fact is that the eye is a much less fragile instrument than we have generally supposed it to be. If properly used, it is fully able to withstand all the strains of modern life.

CHAPTER XXVIII

Test Your Own Eyes

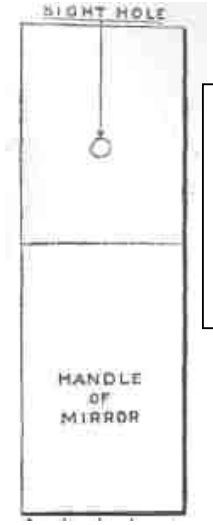
IT does not require any special training, or even any expensive apparatus, to test the vision. With the aid of a Snellen test card anyone can test his own sight, and with the assistance of a second person a retinoscope can be used.

A test card, which is sometimes difficult to buy, accompanies this course. You can also make one for yourself by painting black letters of an appropriate size on a white background. Directions for using the card for the purpose of testing the vision are given in Chapter XI, "Saving the Sight of the Children." Each eye should, of course, be tested separately.

A retinoscope can be even more easily made than a test card, all the material required for the purpose being a small piece of looking-glass about one inch wide and three inches long. A small mirror that will answer the purpose can be bought at the five-and-ten-cent stores, and a glass-cutter, which is as easy to use as a pair of scissors, can also be bought at these stores. For a few cents, too, a glazier, or painter, will cut a piece of mirror glass of the right size. About three-quarters of an inch from the top of this mirror, and midway between the sides, scrape off the silver backing on an area a little larger than the lead of a lead-pencil. If it is a little larger, or a little smaller than this, it will not matter. By means of the mirror the observer reflects light from a lamp, or other source of light, into the eye which is being examined, and the opening serves as a sight-hole through which he looks into the pupil. The room must be darkened, and the light placed a little behind and over the head of the subject.

Fig. 8. The Usual Method of Using the Retinoscope
The observer is so near the subject that the latter is made nervous, and this changes the refraction.

Testing the eye with the retinoscope.



A simple homemade retinoscope, made by scratching a small hole in the silver back of a small mirror, to be used for self-testing in conjunction with another larger mirror.

When the observer, who stands or is seated a few feet from the subject, looks through the sight-hole, he observes that the pupil, instead of being black, is more or less red. This is the color of the retina, which is not ordinarily seen, because the eye of the observer is not placed in position to receive the rays of light coming from the interior of the eye. When the light is moved slowly in different directions across the pupil, a dark shadow will be observed at the edge of the retina.

If the eye is near-sighted, this shadow moves in a direction opposite to that of the movements of the mirror. If it is far-sighted it moves in the same direction the mirror moves. If it is normal, the shadow remains stationary. When the shadow moves in one direction in one meridian, and in the opposite direction in another, the eye has mixed astigmatism. The shadow may, for instance, go with the light when the mirror is moved up and down, and in an opposite direction to it when the mirror is moved from side to side. In the case of other kinds of astigmatism the observer may note that the shadow moves more decidedly in one meridian than in the other. When errors of refraction are corrected by glasses there will be no movement of the shadow.

The retinoscope can be used as an ophthalmoscope simply by lessening the distance between the observer and the subject. The principle is just the same as that involved in looking through a keyhole into a room. The closer you come to the keyhole the more you will see. At a distance of about half an inch, by looking a little toward the nasal side of the eye, one will begin to see the optic nerve, an area whiter than the rest of the interior of the eyeball and apparently about one-quarter of an inch in diameter. Radiating from the center one sees fine streaks of branching blood vessels, the darker being the veins, the lighter the arteries.

It requires no experience to make these observations, and children of ten have used the instrument successfully. The larger the pupil the easier it is, just as in the case of the keyhole. The larger the opening the more one sees in both cases. The normal eye is more easily examined than a defective one, and young adults than older or younger persons. **The light should be thrown on the blind spot, the entrance of the optic nerve, as the pupil contracts when it is thrown on the center of sight.** The red light should be seen constantly in the pupil. When it is lost the observer should withdraw a little and get it again, afterward bringing the instrument up close to the eye.

There are also various other ways in which the vision can be tested. If the subject, when looking at the letters on the Snellen test card, can remember anything blacker, the vision is imperfect, no matter what the light, or the distance. Another way is to squint the eyes, or to look through a small opening, such as a hole in a card, or an opening between the fingers. If this enables you to see better, your vision is imperfect.
Squinting- squeezing the eyelids close together, looking out of the small space between the lids brings a brief improvement in vision while the eyes are squinting, but leads to eye muscle tension, increased blur. Shift the eyes to replace squinting, staring. Think of something pleasant, let the mind drift, happy thoughts. This prevents effort to see, strain and then the vision clears.

Everyone should have the means of making these simple tests, for eye troubles when not accompanied by discomfort, are insidious, (insidious= slowly and subtly harmful or destructive) and may make considerable progress before they are discovered. This is particularly apt to be the case if one eye is principally affected. So long as one has one fairly good eye to see with one may not observe that the other is falling behind, and when an eye once begins to do this it can hardly fail to lose function rapidly, simply because it does not get enough work to do. If errors of refraction are discovered at the beginning, they can be quickly corrected by the methods presented in this book; but if they are allowed to continue for years, they may be very difficult to cure. **And if the eye is not allowed to develop any permanent errors of refraction and the general health is satisfactory, one need have no fear of organic diseases.**

CHAPTER XXIX

A Final Word to Those Who Wear Glasses

PERSONS coming to this country from Europe are always struck by the number of people using artificial aids to vision, for the United States seems to have pre-empted the position formerly held by Germany as the land of the eyeglass. Thousands of people in this country wear glasses whose vision for reading and distance is normal without them. What more they could expect of their eyes and why they wear glasses it is difficult to understand. They will tell you that glasses remove strain, enable them to read longer, or to do work that their eyes could not be expected to do without them. The fact is, as has been explained, that glasses can never remove strain, but must, on the contrary, be a cause of strain. It is also a fact that glasses, though fitted by the best of oculists, can never give as good vision as the normal eye enjoys without them.

Or they will tell you that they put on glasses in the first place because they were subject to frequent headaches, and as the pain was above the eyes, they were convinced that they were due to eye strain. This may have been true, because a very slight error of refraction will sometimes cause a great deal of discomfort. But the trouble may have been a temporary one that would have passed away if the patient had not resorted to glasses, and **headaches may be due to many things besides eye strain: improper diet, indigestion, constipation, lack of fresh air, insufficient exercise, sinus pressure, migraine and other headaches, neck vertebrae misalignment of plain old extreme neck, shoulder... muscle tension and too little sleep being the usual causes.** Headaches and the other causes listed above are a main cause of unclear vision. Glasses have probably caused a great many more headaches than they have cured, and an oculist's prescription for those conditions is extremely illogical. A correction of their harmful, energy-dissipating habits of living would soon convince the majority of such persons that there was little or nothing wrong with their eyes. All that stands between them and eye freedom, probably, is a few days of discomfort, the natural consequence of the readjustment to ocular self-dependence.

Whether the vision is normal or not, everyone who wears glasses should discard them as quickly as possible, and those who understand the facts will surely not delay a day longer than is necessary in doing so. It can be done in all but a very few cases, and has been done by thousands. **If one makes his living by the use of his eyes, and cannot see to do his work without glasses he cannot, obviously, discard the latter at once, but some people are able to make progress in spite of this handicap, reducing the strength of the lenses as their refraction improves,** if necessary, while others may be able to

make the necessary start during a vacation. The transition from glasses to no-glasses may be unpleasant, but usually the discomfort is not serious, and if glasses can be completely discarded, does not last long. **The wearing of glasses for work and other necessary purposes is a complication that had better be eliminated if it is in any way possible, because the refraction may change very quickly, and we all know how uncomfortable it is to put on glasses not adapted to our eyes for even a moment.** Myopic persons have a great advantage in the fact that they can see at the near-point without their glasses, and near vision is the kind most needed under modern conditions. Hypermetropic persons can often see well enough at the near-point to read without glasses, but are more likely to have headaches when they first try to get on without them than are the myopic.

Most people heartily dislike glasses, because of their effect on personal appearance, their inconvenience, and the imperfect vision secured through their use. Persons who have worn them for any length of time know by the evidence of their own senses that their eyes have grown steadily weaker under their influence. That the conditions for which they are worn are curable cannot be disputed by anyone who will impartially examine the facts. Yet, most people cannot be persuaded to give the new way a trial. Ignoring even the facts of their own experience, they cling to their glasses for fear they may lose their eyesight if they go without them. The process of cure, moreover, is often tedious, though in the majority of cases it takes only a moderate amount of time, and many people would rather put up with the inconvenience of glasses than make the necessary effort to get rid of them. Modern Bates Teachers teach easy, relaxed Correct Vision Habits to imitate, activate automatic, normal, correct eye function, clear vision. Reduced, weaker and weaker 20/40… less straining eyeglass lenses are used if needed until vision improves and the student can to go without glasses.

For all these reasons the gospel of no-glasses spreads slowly, and opticians who have accepted it say they have no fear of its injuring business.

There remains, however, a considerable minority who insist on doing their own thinking, no matter how much their conclusions may be opposed to the teaching of tradition and authority, and who are willing to take as much trouble as may be necessary to preserve that most precious of all possessions, their sight. To them this book is addressed, and on them we must depend to lead the way where a new generation will follow.

[THE END]

PART XXVII

Eye Hygiene

MUCH that has been written about the care of the eyes is erroneous and misleading. We have been exhorted not to read in bed, and told with much detail just how the various unnatural positions in which the body and the book must be held disarranged our internal machinery. We have been warned against reading on the train, the only place, in many cases, where people have time to read. Even that delightful practice, reading at meals, has been condemned in unmeasured terms. We have been instructed as to the distance which should intervene between reading matter and the eyes, and even the angle at which the book we are reading, or the paper on which we are writing, should be adjusted. The effect of light has been discussed endlessly, and we have been warned against the evil effects both of too much and too little. Most of us pay no attention to any of these instructions, reading when, where and how we please and can, and therefore, it is gratifying to learn, that none of them have any material bearing upon the preservation of our sight. The essential thing is to learn how to use the eyes properly. Then all such details as the foregoing can safely be left to the inclination and convenience of the individual.

In the case of light there is much evidence to show that the views commonly held have no basis in fact.

Rabbit's eyes have been exposed to the most intense light known, avoiding heat, but subsequent examination of the eyes with the microscope revealed no change either in the retina, the optic nerve or the brain. A teacher of fifteen years' experience complained that because her classroom was in the basement and the light poor, the sight of her pupils was worse at the end of every school year than it was at the beginning. The classrooms where the light was good, however, had the same experience; and when the Snellen test card was introduced into both the well-lighted and the poorly-lighted classrooms, and the children used it every day, the sight of all improved, regardless of lighting conditions. In Germany it was demonstrated by the statistics of Cohn and others that improvements in the lighting of the schools made in the hope of staying the progress of myopia did not have that effect.

These and other observations show that light has very little, if anything, to do with the eye-

sight becoming defective. On the contrary, reading by a poor light successfully is a rest to the eyes because it cannot be done unless they are free from strain, while in a good light people with defective eyesight can read in spite of the strain.

People who have perfect sight think very little about the light, but it is undoubtedly more comfortable to have it so arranged that no shadow is thrown upon the work, either from the head, hand or any other object, and so that it shines upon the page which one is reading, or upon the desk at which one is writing, not into the eyes.

Protection of the eyes from strong light is not necessary. In fact, the light is beneficial, as we have already demonstrated. The glare from snow or water may be trying, and smoked or amber glasses will conduce to comfort, but no harm will be done if they are not worn.

Since the moving pictures came in we have heard much about the strain imposed upon the eyes by this new appurtenance of civilization, and predictions of dire results to our already very bad eyesight, in consequence of our constant attendance upon these exhibitions, have been made. Theoretically, this view of the matter seems a reasonable one. The ordinary rate at which the film runs through the projecting machine is about a foot a second—sixteen pictures a second. That

is to say, sixteen distinct pictures are thrown upon the screen in each second of time, and the shutter comes down and is raised that number of times each second also. Between each projected picture there must be a black period, for if this were not the case, the pictures would all run into one another, in a hopeless blur.

It might have been expected that these rapid alternations of light and darkness would be very trying to the eyes, and they often do produce much temporary discomfort, particularly in persons suffering from errors of refraction. Some years ago when the mechanical process involved was less perfect than it has since become, the strain was probably much greater than it is now. Today there is no reason for supposing that the movies are injurious to the eyes. Instead of avoiding them it is well to go to them frequently, practice central fixation and become accustomed to the flickering light. Afterward other lights and reflections from smooth surfaces will be less annoying.

The fact is that the eye is a much less fragile instrument than we have generally supposed it to be. If properly used, it is fully able to withstand all the strains of modern life.

PART XXVIII

Test Your Own Eyes

IT does not require any special training, or even any expensive apparatus, to test the vision. With the aid of a Snellen test card any one can test his own sight, and with the assistance of a second person a retinoscope can be used.

A test card, which is sometimes difficult to buy, accompanies this course. You can also make one for yourself by painting black letters of an appropriate size on a white background.

A retinoscope can be even more easily made than a test card, all the material required for the purpose being a small piece of looking-glass about one inch wide and three inches long. A small mirror that will answer the purpose can be bought at the five-and-ten-cent stores, and a glass-cutter, which is as easy to use as a pair of scissors, can also be bought at these stores. For a few cents, too, a glazier, or painter, will cut a piece of mirror glass of the right size. About three-quarters of an inch from the top of this mirror, and midway between the sides, scrape off the silver backing on an area a little larger than

Testing the eye with the retinoscope.

the lead of a lead-pencil. If it is a little larger, or a little smaller than this, it will not matter. By means of the mirror the observer reflects light from a lamp, or other source of light, into the eye which is being examined, and the opening serves as a sight-hole through which he looks into the pupil. The room must be darkened, and the light placed a little behind and over the head of the subject.

When the observer, who stands off a few feet from the subject, looks through the sight-hole, he observes that the pupil, instead of being black, is more or less red. This is the color of the retina, which is not ordinarily seen, because the eye of

the observer is not placed in position to receive the rays of light coming from the interior of the eye. When the light is moved slowly in different directions across the pupil, a dark shadow will be observed at the edge of the latter. If the eye is near-sighted, this shadow moves in a direction opposite to that of the movements of the mirror. If it is far-sighted it moves in the same direction. If it is normal, the shadow remains stationary. When the shadow moves in one direction in one meridian, and in the opposite direction in another, the eye has mixed astigmatism. The shadow may, for instance, go with the light when the mirror is moved up and down, and in an opposite direction to it when the mirror is moved from side to side. In the case of other kinds of astigmatism the observer may note that the shadow moves more decidedly in one meridian than in the other. When errors of refraction are corrected by glasses there will be no movement of the shadow.

The retinoscope can be used as an ophthalmoscope simply by lessening the distance between the observer and the subject. The principle is just the same as that involved in looking through a keyhole into a room. The closer you come to the keyhole the more you will see. At a distance of about half an inch, by looking a little toward the inside of the eye, one will begin to see the optic nerve, an area whiter than the rest of the

interior of the eyeball and apparently about one-quarter of an inch in diameter. Radiating from the center one sees fine streaks of branching blood vessels, the darker being the veins, the lighter the arteries.

A simple home-made retinoscope, made by scratching a small hole in the silver back of a small mirror, to be used for self testing in conjunction with another larger mirror.

It requires no experience to make these observations, and children of ten have used the instrument successfully. The larger the pupil the easier it is, just as in the case of the keyhole. The larger the opening the more one sees in both cases. The normal eye is more easily examined than a defective one, and young adults than older or younger persons. The light should be thrown on the blind spot, the entrance of the optic nerve, as the pupil contracts when it is thrown on the center of sight. The red light should be seen constantly in the pupil. When it is lost the observer should withdraw a little and get it again, afterward bringing the instrument up close to the eye.

The Snellen test card is an arrangement of letters and figures

of different sizes, and the distance at which the normal eye can read each row is marked in small figures above it. Letters half an inch square should be read in a good light at thirty feet by the normal eye, and if they can be read only at fifteen feet the vision is half normal and would be indicated by the fraction 15/30, whereas 30/30 would indicate that the sight was normal. Letters to be read at two hundred feet are about 8½ inches square and those to be read at fifteen feet ¼ inch square. Each eye should be tested separately.

There are also various other ways in which the vision can be tested. If the subject, when looking at the letters on the Snellen test card, can remember anything blacker, the vision is imperfect, no matter what the light, or the distance. Another way is to squint the eyes, or to look through a small opening, such as a hole in a card, or an opening between the fingers. If this enables you to see better, your vision is imperfect. A third method is to look at any distant object from the window of a moving train—a tree, an animal, a house, etc.—and try to remember a perfectly black period. If you can not do so, your vision is imperfect. The ability to remember anything else will serve as a test, but the period is the most convenient object to use for

the purpose, as with it the accuracy of one's memory can always be tested. If the train is moving very rapidly the ability to remember the period will be impaired when the sight is imperfect at the same time.

Blue edits in this book are by Clark Night. Most of the edits are to provide the Original and Modern Bates Method opinion on a few Eye Exercises in this book. Dr. Bates does not teach eye exercises. Bates Method teaches relaxation of mind, body, eyes, eye muscles, deep, perfect and dynamic, active relaxation, how to imitate normal, natural eye movement, functions to bring the eyes, brain, body back to normal function with clear vision.
I also notice some of Bernarr MacFadden's exercises are similar to Yoga Eye exercises. Bates teachers state that some yoga eye exercises, staring, eye immobility, forcing the eyes to remain immobile, in one position cause eye muscle tension, strain unclear vision. Bates Method prefers to teach relaxed, natural, eye movement.

When I speak of moving the head/face with the eyes I am referring to vision, looking at objects in the visual field; moving the attention from object to object, part to part on a object.
It is normal for the eyes to move up, down when trying to remember something or thinking other specific thoughts, emotions without the head/face moving with the eyes. This is natural.
It is also normal for the head/face to move with the eyes when this occurs.
See example; EFT (Emotional Freedom Technique) Acupressure/karate Pressure Points exercise at -
http://www.youtube.com/watch?v=6i33V2EcVIY&feature=related
Notice that the mans eyes move easy and he does not apply tension, not forcing the eyes to remain for a long time in one position. EFT is a successful method to release negative emotions, thoughts, energy blocks in the mind, body, eyes. This relaxes the mind, body, eyes, returns the brain, eyes to normal function, clear vision.
Many cases of unclear vision are caused by a stressful past or present emotion, experience, situation, way of thinking. See our other books for more methods.

I do not mean to discredit Mr. MacFadden. He has contributed much to eye health in this book. Edits are only to state new, modern improvements in Natural Vision Improvement.

For complete, true, old and new Bates Method books I advise - in historical order:

+The 'Cure of Imperfect Sight by treatment Without Glasses' and 'Better Eyesight Magazines' by Ophthalmologist William H. Bates.
+'Use Your Own Eyes' and 'Normal Sight Without Glasses' by William B. MacCracken M.D.
+Sight Without Glasses by Dr. Harold M. Peppard.
+Relax and See by Clara Hackett.
+'Help Yourself to Better Sight' and 'A Quick Guide to Better Vision; How to Have Good Eyesight Without Glasses' by Margaret Corbett.
+The Art of Seeing by Aldous Huxley.
+Natural Vision Improvement by Janet Goodrich and her two children's eyesight books.
+Relearning to see and Better Eyesight by Thomas Quackenbush.
Even a few of the older books contain methods that have been improved/changed.

More books listed in our main book.

The following pages contain Treatments, Activities for Natural Eyesight Improvement by Ophthalmologist

William H. Bates and Emily C. A. Lierman, Bates from Better Eyesight Magazine.

Better Eyesight Magazine by William H. Bates, M. D.

Ophthalmologist - Eye, Ear, Nose & Throat

Central-Fixation Publishing Co.,

New York City, New York, USA

Original Antique Magazine Pages

Ophthalmologist
William H. Bates

This E-book contains Photo-Copies of the Original printed pages of 'Better Eyesight Magazine' written and published by Ophthalmologist William H. Bates and his assistant/wife Emily C. A. Lierman/Bates. 11 Years - All 132 Monthly Magazine Issues; July 1919 to June 1930. A History Book, Antique Collection.

Dr. Bates discovered the natural principles, true function of the eyes (Visual System) and applied relaxation, natural methods to return the eyes, eye muscles, nerves, mind/brain, body to normal function with clear vision and healthy eyes. The Bates Method.

Emily C. Lierman, Bates

The Stories, articles in Better Eyesight Magazine describe how Dr. Bates, Emily Lierman Bates, other Doctors, School Teachers, Bates Method Students/Teachers, Children and Parents used Natural Treatments to prevent, remove, many different eye problems without use of eyeglasses, surgery, drugs; unclear close and distant vision, astigmatism, cataracts, glaucoma, conical cornea, cornea scars, wandering and crossed eyes (Strabismus, Squint) and other conditions. Hundreds of Natural Treatments are listed. Dr. Bates used surgery only when necessary.

Cataract Number

Better Eyesight

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

Vol. IV JANUARY 1921 No. 1

The Treatment of Cataract
A Report of a Case

Cataract: Its Cause and Cure
By W. H. Bates, M.D.

Traumatic Cataract Disappears
By Margaret Downie

Incipient Cataract Relieved
By C. L. Steenson, M.D.

Cataract at the Clinic
By Emily C. Lierman

$2.00 per year 20 cents per copy

Published by the CENTRAL FIXATION PUBLISHING COMPANY
342 WEST 42nd STREET NEW YORK, N. Y.

Better Eyesight Magazine consists of articles that are interesting, positive, fun to read. 'True Life Stories' of the doctors, patients, adults and children. Vision improvement based 'Fairy Stories' and other articles for children are included.

The magazines, books are the original source of Natural Eyesight (Vision) Improvement. The Original Better Eyesight Magazine collection is proof that Ophthalmologist William H. Bates discovered the Bates Method, Natural Eyesight Improvement and is the True Author of the Magazine.

Dr. Bates discovered Natural Eyesight Improvement over 100 years ago. The Optical and Medical Industry/Association and most Eye Doctors, Opticians have hidden Dr. Bates magazines, books, articles, Natural Eyesight Improvement from the public for over 100 years because: The writings are proof that Natural Eyesight Improvement works, produces clear vision, healthy eyes, it teaches people how to obtain clear vision 'on their own' and prevents the need for purchasing eyeglasses, contact lenses, sunglasses, eye surgery and drugs.

Due to the truth about Natural Medicine becoming available to the modern public, Dr. Bates work has been recovered from individual owners and re-published. Many modern Ophthalmologists, Optometrists are now learning, teaching the Bates Method.

The 8 Correct Vision Habits, (natural, normal, relaxed eye, visual system function): Shifting, Central-fixation, Memory, Imagination, Switching Close and Far, Long Swing, Sunning, Palming and other activities described in this book are derived from Dr. Bates work, magazines.

Directions for the Original Better Eyesight Magazines

The Original Better Eyesight Magazine contains a few treatments that are no longer taught the old way to Natural Eyesight Improvement students. They have been changed, improved and new treatments, activities added. The E-Book 'Better Eyesight Magazine Illustrated with 500 Pictures' is attached free with this book. Read that modern text version of Better Eyesight Magazine to learn the new correct way a few of the old treatments in the original magazines are practiced.

Treatments, activities must be practiced correct to maintain healthy eyes, clear vision. Blue print and pictures in the text version describe the old, new, and improved treatments and the correct new way to practice them. The text version can also be used to check for correction of the old worn print in some copies of the original pages.

Fig. 8. The Usual Method of Using the Retinoscope
The observer is so near the subject that the latter is made nervous, and this changes the refraction.

Example of older methods that have been changed;

Open Eyes Sunning is no longer practiced in this way. Closed Eyes Sunning only is practiced.

Some people still practice open eyed sunning but in a specific way: Eyes, head/face continually move, eyes blinking, eyes, head/face shifting to the sky near the left, right, top, bottom of the sun and across the sun quickly. The person faces the sun for a brief time. Other directions are applied for safety.

Modern Bates Teachers teach Closed Eyes Sunning only and with eye, head/face movement. Looking at the bright sky, clouds, trees... away from the sun is allowed.

The Sunglass is used only in special cases of near or complete blindness by an experienced Bates Method Ophthalmologist if other methods fail. It can burn the eye, like a magnifying glass when used incorrect, and, because it is a glass, it blocks full spectrum light resulting in partial spectrum, unbalanced light emitting through, from the glass. The light does not go into the eyes pupil and is not directed at the cornea. It is only directed at the sclera, white area of the eye, but it still must not be overused. Partial spectrum light is unhealthy. Pure full spectrum sunlight, not passing through glass is best, healthy for the eyes, brain, body, clarity of vision. The Sunglass is only a short, temporary treatment to awaken, bring to life and action the cells in the eyes retina, lens... to reverse extreme vision impairment, blindness. Done correct, by a Bates Method Eye Doctor, it is beneficial and will not harm the eye.

Reading by 'first' looking at the white spaces between sentences - Do not try to see, read the print clear while at the same time, looking at the white spaces between sentences. Central-fixation must be used: look directly at the print to see, read it. In Better Eyesight Magazine, Dr. Bates explains in detail in his 'Questions and Answers Page' to: Use central-fixation when reading; Look directly at the object you want to see. First: Look at, move the eyes (visual attention, center of the visual field) along the white spaces between the sentences to relax the mind and eyes. (Looking at the white spaces causes relaxation because there if nothing to see, there is no effort to see anything clear, so, strain is avoided. This enables relaxation of the mind, eyes, eye muscles to occur. The relaxation produces clear vision, a 'Flash of Clarity'.) When the relaxation and clarity occur and the print flashes dark black and clear; then: look away from the spaces, look directly at the black print, place the print in the center of the visual field to read, see it clear. The relaxation and clear vision from looking at the white spaces continues when looking at the print. If it blurs, return to the spaces or Palm to regain relaxation. Then back to the print. Use the memory and imagination when looking at the white spaces: Imagine painting the spaces pure, bright white with a white paint brush and pure white paint while imagining the white space is seen pure, bright, glowing white and clear. Relax, no effort. Move the paintbrush, eyes left and right along the spaces, blink, relax. Practice with the eyes open, then in the imagination with the eyes closed, then open again. Paint with an imaginary paint brush in the hand or use a white Nosefeather.
Practice on Fine Print in the Sunlight.

Some people misunderstood Dr. Bates in early times and would try to read the print while looking at the white spaces. Dr. Bates explained to; look at the space or the print; only one at a time, not both at the same time. Looking at, trying to see, think about 2 or more objects at the same time is the opposite of central-fixation: it is diffusion, eccentric fixation and causes tension, strain in the mind, (brain) eye muscles, eyes and unclear vision.
Look at one object at a time for clear vision. This is central-fixation: looking directly at the object of visual attention: first at the white spaces, then the black print, one object at a time, in the center of the visual field.

Palming and imagining, remembering, seeing perfect black on the closed eyes produces perfect relaxation and clear vision. Dr. Bates noticed that some patients used effort to imagine, see black and this prevented relaxation. Dr. Bates states that imagining, seeing black is not necessary to obtain perfect relaxation and clear vision. Remembering, imagining any pleasant thoughts, letting the mind drift from one happy thought, object to another while palming will produce the relaxation and clear vision. Then, black may also appear in front of the closed eyes. If black does not appear, it's alright, it will not make a difference in relaxation, clarity. See the palming chapter for examples.

Square, elliptical...swings - Some of the older swings are now combined into the Infinity, Figure Eight Swing. The Long Swing, Sway (Rock) remain as Dr. Bates created them and are also combined in the Figure Eight Swing.

In later editions of Better Eyesight Magazine and books, Dr. Bates and Emily Lierman, Bates lists these changes.
Dr. Bates himself stated that the Bates Method is continually advancing, being improved. As he treated thousands of patients over the years the Bates Method was perfected. Bates Teachers state they learn much from their patients, students, each student being an individual and various treatments being successful for each condition, state of mind, body, eyes and personality.

A few original magazine pages that are old with unclear print have an additional new clear page attached, typed in present date print. A few misprints are corrected with additional print, leaving the original pages untouched.
Book printing settings for the original pages is best at: darkest black and highest quality. Not too dark or it will smear the print. The Original Antique Magazines will be in Paperback on Amazon.com in 2011-2012.

Distributing this book free to the public is encouraged. Keep this page in the Original Better Eyesight Magazine E-book that states; The modern version is free with the original book and should also be read to insure correct application of some of the older original practices, treatments.

Thank-You, in Historical Order

+The University of California Library - http://www.lib.berkeley.edu/ and the Optometrist - Monroe J. Hirsch (name shown in old print, pictures in this book) and other Colleges, Libraries, Eye Doctors, Emily C. A. Lierman Bates, Bates Teachers, Individual Persons that preserved Ophthalmologist Bates Magazines, Books, hid them from the Optical Industry when these businesses, doctors were destroying Doctor Bates work. The law in Europe allowed preservation of Dr. Bates magazines, books.

+Thomas Quackenbush - http://www.naturalvisioncenter.com Bates Method, Natural Vision Improvement Teacher, Author of 'Relearning to See - Improve Your Eyesight Naturally' and 'Better Eyesight - The Complete Magazines of William H. Bates'. He is the first Natural Vision Improvement Teacher to re-publish and bring Dr. Bates work, treatments in Better Eyesight Magazine to the modern public.

+David Kiesling - http://www.iblindness.org For creating, bringing the first photo copy of all Dr. Bates Original Better Eyesight Magazines back to the public. Every page, month, year in original antique print type! This proved that Dr. Bates is the discoverer of Natural Eyesight, Vision Improvement, the true source of the Bates Method. Original Pictures of Better Eyesight Magazine Pages and Dr. Bates... were provided, purchased from David.

The following pages provide a sample of the 1919 Better Eyesight Magazine Issue Illustrated with 500 Pictures. Free in PDF form with this book.

http://www.adobe.com/products/reader/languages/ See the E-Book videos for directions on how to use the E-books & free Natural Eyesight Improvement Training videos at; www.cleareyesight.info & YouTube; http://www.youtube.com/watch?v=WO9AS4A8f_c http://www.youtube.com/watch?v=5E5IBZ0BQuY

E-Books are the new 'Do It Yourself ' way to buy books at a decent price. No expensive publishers, printers, bar-codes, shipping, no censorship by governments, corporations, businesses... The reader can view the book on computer, laptop, Kindle other small electronic devices without Internet connection and the E-Book moves faster than highest speed Internet. Carry the book on a disk or in your pocket on a tiny computer chip disk, view it on any local library, hotel... computer.

This book is unlocked, no security. The reader can copy, paste, print and change the size of the print. **Print your own book** with home computer/printer or copy the book to a CD and bring it to a printer for printing, book binding. Print in color or black ink. Any size paper. Choose spiral binding so the book opens fully when set on a book holder - prevents the need to hold the book open with the hands for relaxed arms, shoulders, neck when reading.

Adobe can print in large, medium, small, fine & microscopic print. Fine print is healthy for the eyes, cures unclear close and distant vision when read correct with relaxation, shifting, central-fixation. Set Adobe Reader to print 2 or more pages per page for small print. 4 to 6... pages per page for a fine and microscopic print for perfect central-fixation, saccadic shifting, fine detailed vision at close and far distances. The Zoom Function also changes print size.

Create mini fine and microscopic print booklets to read in the sunlight daily. Practice the treatments described to prevent unclear vision, cataracts and other eye conditions.

In the Adobe Reader Print Setup: Select % of normal size, a number less than 100% or use page scaling. This will fit all text, pictures onto the paper, reduce the size to create a margin on the edge of the page for binding a printed book. Or print normal size 100% on larger paper.

Select 'Print Document and Comments/Markups' in the Adobe print box to print all page numbers on the upper right corner and text boxes in the book. Print pictures large for kids to color or to hang on a wall for Natural Vision Improvement Training. Adobe Acrobat 30 day Free Trail can be downloaded free from http://www.adobe.com to arrange the book pages as preferred.

For Better Eyesight Magazine

This book contains all publications of Dr. Bates Monthly 'Better Eyesight Magazine' – Unedited, everything included, July 1919 - June 1930, all of his original treatments and modern versions of older treatments.

+ Text in light blue are comments added by author Clark Night, Bates Method Natural Eyesight Improvement, Graduated Student, to clarify Modern Natural Eyesight Improvement versions of a few older methods described and to correct a few spelling errors in the original magazines.
+ Print in bold, black specifies Bates Method Natural Eyesight Improvement treatments for a variety of eye conditions, military articles, and other items of importance.
+ Print in bold, dark navy blue are specific Bates treatments, activities, steps for vision improvement.
+ This book contains 500 pictures placed on the right margin of the magazine pages to help the reader quickly understand every Bates Method treatment described.
+ The First Article and usually the 2nd article of each monthly Better Eyesight Magazine and other articles not labeled by author are written by Ophthalmologist Bates.
+ The First Article on page 2 (inside cover in the original magazines) consists of some of the best treatments, activities taught by Dr. Bates, specific directions for a Bates Method Natural Eyesight Improvement treatment.

Example; **July 1919 magazine PAGE TWO - Do You Read Imperfectly?**

Do you read imperfectly? Can you observe then that when you look at the first word, or the first letter, of a sentence you do not see best where you are looking; that you see other words, or other letters, just as well as or better than the ones you are looking at? Do you observe also that the harder you try to see the worse you see?

Now close your eyes and rest them, remembering some color, like black or white, that you can remember perfectly. Keep them closed until they feel rested, or until the feeling of strain has been completely relieved. Now open them and look at the first word or letter of a sentence for a fraction of a second. If you have been able to relax, partially or completely, you will have a flash of improved or clear vision, and the area seen best will be smaller.

After opening the eyes for this fraction of a second, close them again quickly, still remembering the color, and keep them closed until they again feel rested. Then again open them for a fraction of a second. Continue this alternate resting of the eyes and flashing of the letters for a time, and you may soon find that you can keep your eyes open longer than a fraction of a second without losing the improved vision.

If your trouble is with distant instead of near vision, use the same method with distant letters.

In this way you can demonstrate for yourself the fundamental principles of the cure of imperfect sight by treatment withqut glasses.

If you fail, ask someone with perfect sight to help you.

Dr. Bates Instructions for PAGE TWO

Disclaimer

The Author of this book; (Do It Yourself – Natural Eyesight Improvement – Original and Modern Bates Method & Better Eyesight Magazine Illustrated with 500 Pictures, EFT and all books by the Author) must place a disclaimer in this book to protect herself from lawsuits, imprisonment, destruction of this book by the Medical Association, Drug/Optical Industries, corrupt politicians, fraudulent vision improvement teachers that attempt to prevent the public from acquiring free, authentic Natural Eyesight Improvement information, training;

The author, publisher, (Clark Night-Pen Name) Mary I. Oliver www.cleareyesight.info mclearsight@aol.com Clearsight Publishing Co. - Do it yourself - Natural Eyesight Improvement is not responsible for the readers use, misuse, misunderstanding of the information in this book and website. The author does not claim/promise to diagnose, treat, cure eye problems, disease, medical conditions. The reader agrees that he/she does not have a personal or professional relationship with the author. The author is not an eye doctor or medical doctor.
This book and other books, videos, website by the author consist solely of Educational Information for improving the clarity of vision and health/function of the eyes along with the student's communication with an Optometrist, Ophthalmologist. Always obtain an eye exam by an Ophthalmologist and medical exam by a Medical Doctor.

Choose a Bates Method Behavioral Ophthalmologist, Optometrist and Medical Doctor that prefers natural health treatment, prefers to teach Natural Eyesight Improvement, discontinue use of eyeglasses, keep the eyes healthy and prevent use of eye surgery, drugs. Avoid eye doctors selling laser and other eye cornea surgeries, drugs that are not needed, unnecessary lens removal/surgery, eyeglasses (especially strong over-corrected eyeglass lenses), unnecessary, addictive astigmatism sections in the glasses, contact lenses, bifocals, mono-vision lenses, plus lens treatment, tinted, colored lenses, sunglasses and all types of eyeglasses. (Legal 20/40 reduced, weaker eyeglass lenses can be used temporarily, only if needed for driving, work... safety as the vision is improving. See a Behavioral Optometrist and on-line mail order low cost optical stores.)

An experienced eye doctor can detect health of the eyes and body by examining, looking at and into the eyes. Blood pressure, sugar levels, injury, stroke and many health conditions are reflected in the eyes, often in an early reversible stage.

An eye doctor experienced in iridology can determine health of organs, systems in the body. See the story of Ignatz Von Peczely, Physician, a man that cured a injured owl and noticed that the owls eyes, iris was altered when the bird was sick, injured and it returned to normal as the birds health healed.

Children - Read/use this books contents only with direction of, supervised by parents and a Bates Method Eye Doctor. Children and adults: do not us the Sunglass and other methods that are for application only by an experienced Bates Method Ophthalmologist. If in doubt about how to apply a method; ask a Bates Teacher and Bates Method Eye doctor. See 'Better Eyesight Magazine Illustrated with 500 pictures'.

Natural Eyesight Improvement normalizes, corrects the eyes pressure. If a person is taking drugs, eye drops... for Glaucoma, eye pressure or other eye conditions; to lower or raise the pressure; ask your eye doctor's advice first before applying Natural Eyesight Improvement. The drugs strength, amount to take, may need to be changed or the drug may need to be discontinued. The doctor must monitor the eyes pressure as the person practices Natural Eyesight Improvement. Natural Eyesight Improvement also changes the eyes, corneas shape; back to normal, healthy shape. If the eye, cornea, retina has been operated upon, surgery; speak to your eye doctor first before applying Natural Eyesight Improvement to be sure it does not interfere with the surgery. Detached retina surgery... Read the laser cornea surgery articles in this book. I have communicated with Natural Eyesight Improvement Students that had; cataracts, glaucoma, holes, fluid leaking in the eyes retina, retinitis pigmentosa, other conditions and they have only benefited, regained good eye health and clear vision from practicing Natural Eyesight Improvement, The Bates Method and working with a Bates Method Ophthalmologist.

The Following Words Describe Eye Conditions Listed in This Book

+Emmetropia=Normal Round Eye=clear distant vision.

Dr. Bates states that the eye lengthens slightly (due to action of the outer oblique eye muscles) to produce accommodation for clear close vision. Other eye doctors state that the lens, or lens and eye, change shape (lens; due to action of the ciliary, inner eye muscle) to produce accommodation, others theorize the lens may move, as in a camera. The iris, pupil size, iris muscle also affects the function of the eye, light rays.., clarity of vision.

+Myopia=Nearsighted=abnormally lengthened eyeball=unclear distant vision.

+Hypermetropia=Hyperopia=Farsighted=abnormally shortened eyeball=unclear close vision.

+Presbyopia=abnormally shortened or greatly lengthened eyeball due to outer eye muscle tension, and/or the lens is inflexible, ciliary muscle stiff=unclear close 'Reading' Vision. Extreme neck muscle tension, arthritis lowering blood, oxygen, nutrient flow to the head, eyes, retina, lens and causing neck muscle tension to travel into the outer and inner eye muscles can cause unclear close, distant vision, cataracts and other eye problems.
The Bates Method, nutrition, sunlight, posture, movement.., corrects this condition.
Reading fine print cures presbyopia. See the Close Vision chapter and Better Eyesight Magazine.

+Astigmatism=irregular, abnormal cornea, lens, eye shape, due to outer, inner eye muscle tension, dysfunction.
Vision/objects are distorted, blurred, unclear in various areas of the visual field at close and/or far distances. Headaches, dizziness can be experienced due to distortion of objects in the visual field. Objects can appear to move, produce a variety of visual effects when the eyes move and the astigmatism area of the eyes cornea passes over objects. It is usually the eye and cornea that have the abnormal shape, not often the lens.
Headaches, sinus congestion, pressure can also affect the eyes nerves, muscles, eye movement, entire eye, eye shape and cause unclear vision, astigmatism, a variety of visual disturbances. Check with your doctor if a sinus infection is suspected. Usually is harmless but occasionally infection can travel. See the Nutrition Chapter for natural prevention of sinus congestion, infection. Extreme neck muscle tension, misaligned neck vertebrae can affect eye muscle, nerve, ear, sinus... function causing many different eye, vision problems.
Relax the neck, stay healthy, use the Bates Method to avoid astigmatism, blur, eyeglasses.

+Amblyopia=Amblyopia Ex Anopsia=Dim, low, no vision or less clear vision in one eye, often in a wandering/crossed eye due to lack of use of the eye or the brain shutting off the image in the wandering/crossed eye to prevent double vision. Can occur in both eyes. Can occur in an eye with very unclear, blurry vision.

+Squint=Strabismus=Wandering/Crossed/Lazy Eye - Dr. Bates uses the word 'Squint' to describe this condition.
A tense outer eye muscle pulls the eye in, out, up, down... causing strabismus, slow, stiff, un-coordinated eye movement, imperfect convergence, divergence, double vision. The state of convergence, for close vision, divergence for distant vision functions with and affects accommodation for clear close vision, un-accommodation for clear distant vision.
Strain in the mind, left and right brain hemisphere imbalance, one hemisphere or part of the brain not working correct with a eye muscle, not activating its movement or partially activating it can cause strabismus, imperfect eye movement. Exercises, games, Bates Method corrects this condition.

Imperfect Left and right brain hemisphere function, imbalance, interfering with a baby's crawling, natural walking stage, use of baby walkers, (This disrupts natural left and right brain hemisphere development, activation & integration as the baby grows, learns to craw and walk. The brain, hemispheres work with the eyes, eye muscles, eye development, clarity of vision.), injury from forceps birth delivery, (incorrect handling of the baby at birth, doctors forcing mothers to avoid natural, healthy instincts of safe ways to massage, caress the baby's body, head that naturally insures perfect skull bone alignment after passing through the birth canal, 'like animals do with their tongue'), misaligned skull & eye socket bones and/or neck, back vertebrae, collarbones, other bones, pressure, pulling on nerves, muscles in/along the spine, neck, skull, eye socket can also cause eye muscle tension, eye/eye muscle dysfunction, strabismus, blur, astigmatism and other eye problems. Usually;
Mental strain, eye muscle tension, eyestrain, staring, not shifting, lack of central-fixation and other incorrect use of the eyes, wearing eyeglasses, sunglasses, lack of sunlight, using incorrect posture, is the cause of defective vision; blur, astigmatism, strabismus...
Stress, negative emotions, thoughts, experiences can also strain, tense the mind/brain, eye muscles, cause Brain Hemisphere imbalance and un-coordinated eye muscle function, vision impairment. Stress can temporarily shut off part of the brain, lower certain brain functions, communication with the eyes, eye muscles, retina. Computer use; looking all day at that one close distance, at the artificial 3-D images on the screen can tense up the eye muscles and eye movement in one or both eyes, cause one brain hemisphere to be dominant and one eye to be dominant at close distances, less clear vision at other distances... Divergence when looking to the distance after hours on the computer can be slow, double vision, one or both eyes movement almost frozen for close distance. (Looking at print, images, videos on the computer screen is different than looking at real print, pictures on a piece of paper. The computer screen strains the eyes when overdone.) Diet also affects the eyes health and vision.

Dr. Bates proved that all these eye conditions are most always caused by mental strain, incorrect use of the eyes and outer eye muscle tension placing pressure, pulling, stretching, tension on/in the eye, cornea, lens, retina, distorting their shape, function, disrupting the focus of light rays in the eye, on the retina, impairing blood, oxygen, nutrient, fluid, energy circulation to, in, out of the eyes and tear production. (Tears contribute to clear vision by acting as a natural contact lens and keeping the cornea, eye healthy. People state their vision improves to clear, even cataracts clearing from the eyes after crying. Crying improves eye circulation, cleansing inside and outside the eye, and stretches, relaxes the muscles in the eyes, head, neck, shoulders.) Sunlight on the eyes, no eye or sun-glasses cures many eye problems, improves the clarity of vision. Outer & Inner eye muscle tension affects eye, lens, iris/pupil, tear... function, health of the eye, clarity of vision.

Neck, shoulder muscle tension is a major cause of eye muscle tension, eye muscle and eye nerve dysfunction, impaired circulation in the head, eyes and unclear vision. Extreme neck muscle tension can pull or tilt a neck vertebra temporarily out of alignment, placing pressure, pulling on the nerves in the neck that travel to/connect to the brain stem, brain, eyes, retina, eye muscles, ears. (Eyes, ears, balance and vision are connected, work together.) Blood, lymph vessels can be affected. Neck muscle tension alone can do this to a lesser degree.

The Author, assembler (Clark Night) of this book experienced a crossed/wandering eye condition with astigmatism, double vision, sinus inflammation, congestion, ear ringing, balance impairment from a neck injury, misaligned vertebrae, torn muscles, ligaments, injured nerves in the neck from a dishonest chiropractor. The Bates Method and a new, good chiropractor corrected the eye, vision, sinus condition.

Natural Eyesight Improvement, Dr. Bates Method relaxes the mind/brain, body, eye muscles, eyes, neck, returns all parts of the eye to normal shape, function, circulation, correct focus of light rays in the eyes for healthy eyes and clear vision at all distances.

THE SWINGING CURE

If you see a letter perfectly, you may note that it appears to pulsate, or move slightly in various directions. If your sight is imperfect, the letter will appear to be stationary. The apparent movement is caused by the unconscious shifting of the eye. The lack of movement is due to the fact that the eye stares, or looks too long at one point. This is an invariable symptom of imperfect sight, and may often be relieved by the following method:

Close your eyes and cover them with the palms of the hands so as to exclude all the light, and shift mentally from one side of a black letter to the other. As you do this, the mental picture of the letter will appear to move back and forth in a direction contrary to the imagined movement of the eye. Just so long as you imagine that the letter is moving, or swinging, you will find that you are able to remember it, and the shorter and more regular the swing, the blacker and more distinct the letter will appear. If you are able to imagine the letter stationary, which may be difficult, you will find that your memory of it will be much less perfect.

Now open your eyes and look first at one side and then at the other of the real letter. If it appears to move in a direction opposite to the movement of the eye, you will find that your vision has improved. If you can imagine the swing of the letter as well with your eyes open as with your eyes closed, as short, as regular and as continuous, your vision will be normal.

BETTER EYESIGHT

A MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

Copyright, 1919, by the Central Fixation Publishing Company
Editor—W. H. BATES, M.D.
Publisher—CENTRAL FIXATION PUBLISHING CO.

Vol. I OCTOBER, 1919 No. 4

SIMULTANEOUS RETINOSCOPY

Much of my information about the eye has been obtained by means of simultaneous retinoscopy.

The retinoscope is an instrument used to measure the refraction of the eye. It throws a beam of light into the pupil by reflection from a mirror, the light being either outside the instrument—above and behind the subject—or arranged within it by means of an electric battery. On looking through the sight-hole one sees a larger or smaller part of the pupil filled with light, which in normal human eyes is a reddish yellow, because this is the color of the retina, but which is green in a cat's eye, and might be white if the retina were diseased. Unless the eye is exactly focussed at the point from which it is being observed, one sees also a dark shadow at the edge of the pupil, and it is the behavior of this shadow when the mirror is moved in various directions which reveals the refractive condition of the eye. If the instrument is used at a distance of six feet or more, and the shadow moves in a direction opposite to the movement of the mirror, the eye is myopic. If it moves in the same direction as the mirror, the eye is either hypermetropic or normal; but in the case of hypermetropia

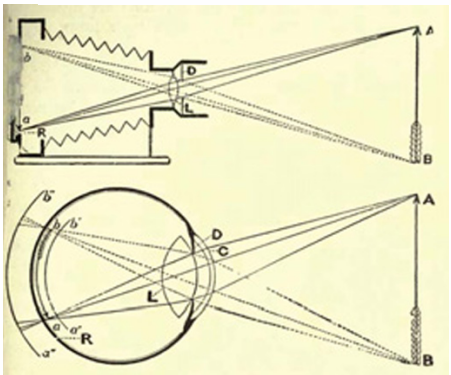


Fig. 5. The Eye As a Camera

The photographic apparatus; D, diaphragm made of circular overlapping plates of metal by means of which the opening through which the rays of light enter the chamber can be enlarged or contracted; L, lens; R, sensitive plate (the retina of the eye ; AB, object to be photographed; ab, image on the sensitive plate.

The eye: C, cornea where the rays of light undergo a first refraction; D, iris (the diaphragm of the camera); L, lens, where the light rays are again refracted; R, retina of the normal eye; AB, object of vision; ab, image in the normal or emmetropic eye; a' b', image in the hypermetropic eye; a'' b'', image in the myopic eye. Note that in a' b' and a'' b'', the rays are spread out upon the retina instead of being brought to a focus as in ab, the result being the formation of a blurred image.

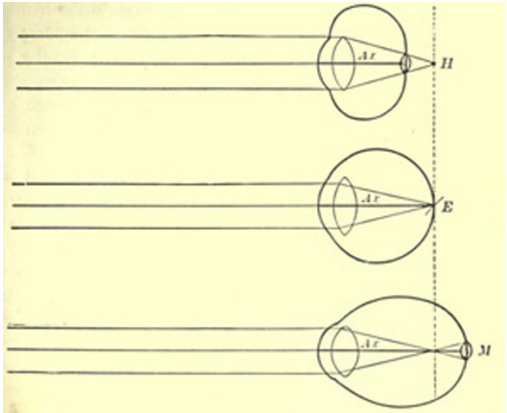


Fig. 4. Diagram of the Hypermetropic, Emmetropic and Myopic Eyeballs

H, hypermetropia; E, emmetropia; M, myopia; Ax, optic axis. Note that in hypermetropia and myopia the rays, instead of coming to a focus, form a round spot upon the retina.

The Original Method for Practicing Natural Eyesight Improvement Described by Ophthalmologist William H. Bates

BETTER EYESIGHT

September 1927

Perfect Sight

By William H. Bates

If you learn the fundamental principles of perfect sight and will consciously keep them in mind your defective vision will disappear. The following discoveries were made by W. H. Bates, M. D., and his method is based on them. With it he has cured so-called incurable cases:

I. Many blind people are curable.

II. All errors of refraction are functional, therefore curable.

III. All defective vision is due to strain in some form.

You can demonstrate to your own satisfaction that strain lowers the vision. When you stare, you strain. Look fixedly at one object for five seconds or longer. What happens? The object blurs and finally disappears. Also, your eyes are made uncomfortable by this experiment. When you rest your eyes for a few moments the vision is improved and the discomfort relieved.

IV. Strain is relieved by relaxation.

To use your eyes correctly all day long, it is necessary that you:

1. Blink frequently. Staring is a strain and always lowers the vision.

2. Shift your glance constantly from one point to another, seeing the part regarded best and other parts not so clearly.
That is, when you look at a chair, do not try to see the whole object at once; look first at the back of it, seeing that part best and other parts worse. Remember to blink as you quickly shift your glance from the back to the seat and legs, seeing each part best, in turn. This is central-fixation. (with shifting.)

3. Your head and eyes are moving all day long. Imagine that stationary objects are moving in the direction opposite to the movement of your head and eyes. When you walk about the room or on the street, notice that the floor or pavement seems to come toward you, while objects on either side appear to move in the direction opposite to the movement of your body.

BETTER EYESIGHT

December 1927

INSTRUCTIONS FOR HOME TREATMENT

By William H. Bates

The most important fact is to impress upon the patient the necessity of discarding his glasses. He is told that when glasses are used temporarily a relapse always follows and the patient loses for a short time, at least, everything that has been gained. If it is impossible or unnecessary for the patient to return at regular intervals for further treatment and supervision, he is given instructions for home practice to suit his individual case, and is asked to report his progress or difficulties at frequent intervals.

The importance of practicing certain parts of the routine treatment at all times, such as blinking, central-fixation, shifting and imagining stationary objects to be moving opposite to the movement of his head and eyes, is stressed. The normal eye does these things unconsciously, and the imperfect eye must at first practice them consciously until it becomes an unconscious habit.

The Natural Vision Improvement student practices, imitates these normal, natural eye functions (relaxed, natural, Correct Vision Habits) to gently coax the brain, eyes, eye muscles, body (visual system) back to normal, relaxed function and clear vision. Then, the eyes, brain… function correct, automatically 'on their own' maintaining clear vision.

The Fundamental Principles of Treatment

Derived from Dr. Bates Better Eyesight Magazine -June, 1921 & other Issues

HOW TO DEMONSTRATE THE FUNDAMENTAL PRINCIPLE OF TREATMENT

Experience, demonstrate that strain, lowers the vision: think something disagreeable, some physical-discomfort, or something seen imperfectly. When the eyes are opened, it will be found that the vision has been lowered. Staring causes strain, blurred vision. Next: repeat and think something pleasant, happy - notice clear vision.

BASIC TREATMENTS

Resting the Eyes

Palming

Shifting and Swinging

Memory

Imagination

Flashing or Blinking

Central-fixation

Sun Treatment

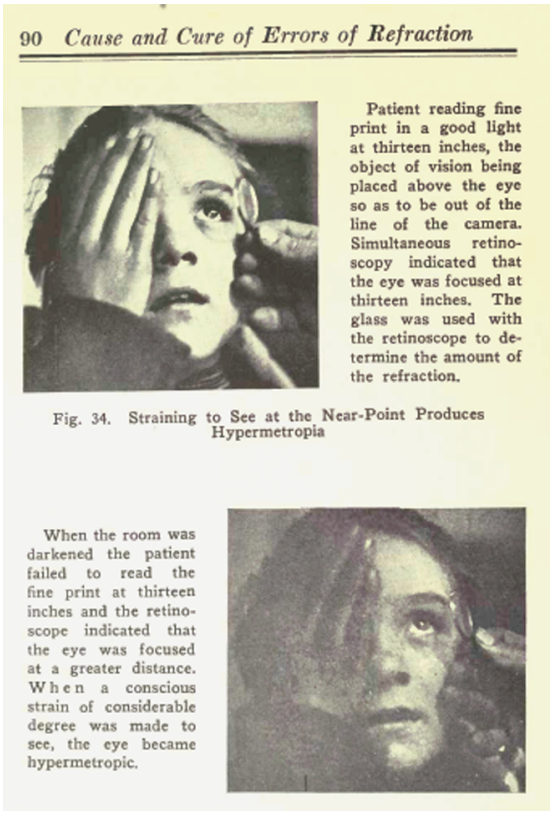
How to Practice With the Test Card
Reading small, Familiar Letters Daily

Use the Adobe PDF E-Book to search for the complete directions for these steps in Better Eyesight Magazine and Dr. Bates Books. Also, see the latest version of 'Better Eyesight Without Glasses' 1940+ book editions, final extra chapter by Emily C. A. Lierman, Bates - her list, directions for these Treatments. They are basically the same as are described in Dr. Bates old copyright free books and 132 Issues of Better Eyesight magazine.

Adults can experience free Natural Eyesight Improvement Training by watching how children (that have clear vision) use their eyes: Relaxed, their eyes move, 'shift' often, easily, clear vision occurs effortless, automatically without thinking about, controlling their eyes and vision. (Do not let the child know you are watching their eyes because this might cause them to start thinking about their eyes, clarity of vision, try to control eye function and this will interfere with completely natural, normal eye function and visual clarity. Similar to a teacher placing a lot of pressure on a child to see an eyechart clear. The child must be allowed to see the chart in a relaxed state, memorize the letters.) Relaxation, good memory produces clear eyesight. Imitate, practice the child's correct eye function.

Read the Free PDF E-Book;
'Do It Yourself-Natural Eyesight Improvement-Original and Modern Bates Method' for directions on how to reduce the strength of eyeglass lenses, wear weaker and weaker lenses and permanently discontinue use of Eyeglasses. Lenses are worn only if absolutely necessary for driving, safety at work… Not wearing eyeglasses is the fastest, easiest way to obtain perfect, clear 20/20 and better vision at all distances, close and far.

AVOID EYEGLASSES, SURGERY AND DRUGS.
EYEGLASSES, SURGERY AND DRUGS CAUSE AND INCREASE EYE MUSCLE TENSION, MENTAL STRAIN, ABNORMAL EYE SHAPE, UNCLEAR VISION, CATARACTS AND ALL EYE PROBLEMS.

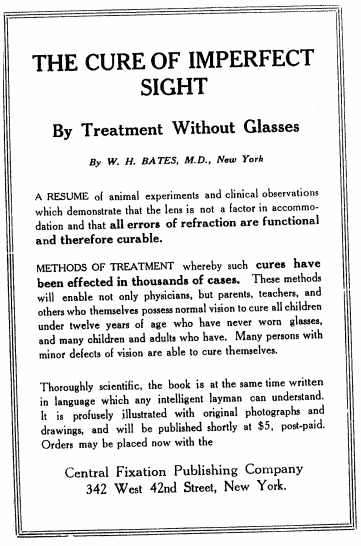


90 *Cause and Cure of Errors of Refraction*

Patient reading fine print in a good light at thirteen inches, the object of vision being placed above the eye so as to be out of the line of the camera. Simultaneous retinoscopy indicated that the eye was focused at thirteen inches. The glass was used with the retinoscope to determine the amount of the refraction.

Fig. 34. Straining to See at the Near-Point Produces Hypermetropia

When the room was darkened the patient failed to read the fine print at thirteen inches and the retinoscope indicated that the eye was focused at a greater distance. When a conscious strain of considerable degree was made to see, the eye became hypermetropic.



THE CURE OF IMPERFECT SIGHT

By Treatment Without Glasses

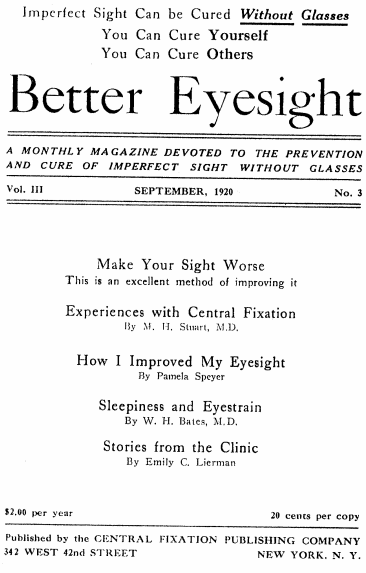
By W. H. BATES, M.D., New York

A RESUME of animal experiments and clinical observations which demonstrate that the lens is not a factor in accommodation and that **all errors of refraction are functional and therefore curable.**

METHODS OF TREATMENT whereby such **cures have been effected in thousands of cases.** These methods will enable not only physicians, but parents, teachers, and others who themselves possess normal vision to cure all children under twelve years of age who have never worn glasses, and many children and adults who have. Many persons with minor defects of vision are able to cure themselves.

Thoroughly scientific, the book is at the same time written in language which any intelligent layman can understand. It is profusely illustrated with original photographs and drawings, and will be published shortly at $5, post-paid. Orders may be placed now with the

Central Fixation Publishing Company
342 West 42nd Street, New York.



Imperfect Sight Can be Cured *Without Glasses*
You Can Cure **Yourself**
You Can Cure **Others**

Better Eyesight

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

Vol. III SEPTEMBER, 1920 No. 3

Make Your Sight Worse
This is an excellent method of improving it

Experiences with Central Fixation
By M. H. Stuart, M.D.

How I Improved My Eyesight
By Pamela Speyer

Sleepiness and Eyestrain
By W. H. Bates, M.D.

Stories from the Clinic
By Emily C. Lierman

$2.00 per year 20 cents per copy

Published by the CENTRAL FIXATION PUBLISHING COMPANY
342 WEST 42nd STREET NEW YORK, N. Y.

Better Eyesight Magazine

By

Ophthalmologist William Horatio Bates M.D.

Better Eyesight

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

Vol. I JULY, 1919 No. 1

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Ophthalmologist
William H. Bates

BETTER EYESIGHT

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

July, 1919 - June, 1930 - 132 Magazine Issues

Central Fixation Publishing Co.

New York, N. Y. USA

July, 1919

Emily C. Lierman, Bates

Do you read imperfectly? Can you observe then that when you look at the first word, or the first letter, of a sentence you do not see best where you are looking; that you see other words, or other letters, just as well as or better than the ones you are looking at? Do you observe also that the harder you try to see the worse you see?

Now close your eyes and rest them, remembering some color, like black or white, that you can remember perfectly. Keep them closed until they feel rested, or until the feeling of strain has been completely relieved. Now open them and look at the first word or letter of a sentence for a fraction of a second. If you have been able to relax, partially or completely, you will have a flash of improved or clear vision, and the area seen best will be smaller.

After opening the eyes for this fraction of a second, close them again quickly, still remembering the color, and keep them closed until they again feel rested. Then again open them for a fraction of a second. Continue this alternate resting of the eyes and flashing of the letters for a time, and you may soon find that you can keep your eyes open longer than a fraction of a second without losing the improved vision.

If your trouble is with distant instead of near vision, use the same method with distant letters.

In this way you can demonstrate for yourself the fundamental principles of the cure of imperfect sight by treatment without glasses. If you fail, ask someone with perfect sight to help you.

Do You Read Imperfectly? - This first article and others are placed on page 2 on the inside cover of each monthly Better Eyesight Magazine issue. The articles consist of a variety of the Best of Dr. Bates Original Natural Eyesight Improvement Treatments, Activities. The student can copy, paste these into a small fine print booklet to carry in a pocket and practice in your spare time.

FOREWORD

WHEN the United States entered the European war recruits for general military service were required to have a visual acuity of 20/40 in one eye and 20/100 in the other.1 This very low standard, although it is a matter of common knowledge that it was interpreted with great liberality, proved to be the greatest physical obstacle to the raising of an army. Under it 21.68 per cent of the registrants were rejected, 13 per cent more than for any other single cause.2

Later the standard was lowered3 so that men might be "unconditionally accepted for general military service" with a vision of 20/100 in each eye without glasses, provided one eye was correctible to 20/40. For special or limited service they might be accepted with only 20/200 in each eye without glasses, provided one was correctible to 20/40. At the same time a great many defects other than errors of refraction were admitted in both classes, such as squint not interfering with vision, slight nystagmus, and color blindness. Even total blindness in one eye was not a cause for rejection to the limited service class, provided it was not due to progressive or organic change, and the vision of the other eye was normal. Under this incredible standard eye defects still remained one of three leading causes of rejection.

Over ten per cent, (10.65) of the registrants were disqualified by them, while defects of the bones and joints and of the heart and blood-vessels ran respectively one and one and a half percent higher.4 Most of the revelations about the physical condition of the American people which resulted from the operation of the draft law had been anticipated by persons who had been giving their attention to such matters - and whose warnings had long fallen upon deaf ears - but it is doubtful if anyone had formed an adequate conception of the truth regarding the condition of the nation's eyesight. That it should be impossible to raise an army with even half normal vision in one eye, and that one man in every ten rejected for military service should have been unable, even by the aid of glasses, to attain this standard, is a situation so appalling that words fail to characterize it, so incredible that only the most unimpeachable evidence could compel belief in it. Under these circumstances it seems to me the plain duty of anyone who has found any means of controlling the evil in question to give the facts the widest possible publicity.

Most writers on ophthalmology today appear to believe that defective eyesight is part of the price we must pay for civilization. The human eye, they say, was not designed for the uses to which it is now put. Eons before there were any schools, or printing presses, electric lights, or moving pictures, its evolution was complete. In those days it served the needs of the human animal perfectly, but it is not to be expected, we are told, that it should respond without injury to the new demands. By care it is thought that this injury may be minimized, but to eliminate it wholly is considered to be too much to hope for. Such is the depressing conclusion to which the monumental labors of a hundred years and more have led us.

I have no hesitation in stating that this conclusion is unqualifiedly wrong. Nature did not blunder when she made the human eye,

but has given us in this intricate and wonderful mechanism, upon which so much of the usefulness as well as the pleasure of life depends, an organ as fully equal to the needs of civilization as to those of the Stone Age. After thirty-three years of clinical and experimental work, I have demonstrated to my own satisfaction and that of others that the eye is capable of meeting the utmost demands of civilization; that the errors of refraction which have so long dogged the footsteps of progress, and which have made the raising of an army during the recent war so difficult, are both preventable and curable; and that many other forms of imperfect sight, long held to be incurable, may be either improved or completely relieved.

All these discoveries have been published in the medical press, but while their reliability has never been publicly disputed, the medical profession has so far failed to make use of them. Meantime the sight of our children is being destroyed daily in the schools, and our young men and women are entering life with a defect which, if uncorrected, must be a source of continual misery and expense to them, sometimes ending in blindness or economic ruin. Admitting for the sake of argument that I may be wrong in my conclusion that these things are unnecessary, it is time I was proven to be wrong. I should not be allowed to play on the forlorn hope of a suffering world. If I am right, as I know I am, a suffering world should no longer be deprived of the benefit of my discoveries.

To give publicity to these discoveries and arouse discussion regarding them is one of the objects for which this magazine has been started. At the same time its pages are open to everyone who has any light to throw upon the problem. It has too long been the custom of ophthalmologists to disregard every fact at variance with the accepted theories. Such facts, when observed, have usually not been published, and when published they have either been ignored or explained away in some more or less plausible manner. The management of this magazine wishes to make it a medium for the publication of such facts, which, it may safely be asserted, are known to every ophthalmologist of any experience, and which, if they had received proper consideration, would long ago have led us out of the blind alley in which we are now languishing.

While I think it may be truthfully said that many of my methods are new and original, other physicians, both in this country and in Europe, have cured themselves and others by treatment without glasses. Lay persons have done the same.

Fine Print – For Clear Close Vision

In *The Autocrat of the Breakfast Table*, Oliver Wendell Holmes published a very remarkable case of the cure of presbyopia.

"There is now living in New York State," he says, "an old gentleman who, perceiving his sight to fail, immediately took to exercising it on the finest print, and in this way fairly bullied Nature out of her foolish habit of taking liberties at five-and-forty, or thereabouts. And now this old gentleman performs the most extraordinary feats with his pen, showing that his eyes must be a pair of microscopes. I should be afraid to say how much he writes in the compass of a half-dime, whether the Psalms or the Gospels, or the Psalms and the Gospels, I won't be positive."[5]

An officer in the American Expeditionary Forces, whose letter is published elsewhere, wrote to me about a year ago that he has cured himself of presbyopia, and after half a lifetime of misery was entirely free from eye discomfort. There must be many more of these cases, and we want to hear of them.

(Five and forty=fifties, forties… year of age.) Reading fine print maintains clear close and distant vision at all ages and keeps the eyes healthy, prevents development of eye diseases.

FUNDAMENTAL FACTS

For about seventy years it has been believed that the eye accommodates for vision at different distances by changing the curvature of the lens, and this theory has given birth to another, namely, that errors of refraction are due to a permanent organic change in the shape of the eyeball. On these two ideas the whole system of treating errors of refraction is based at the present time.

My experiments and clinical observations have demonstrated that both these theories are wrong.[6] They have shown:

(1) That the lens is not a factor in accommodation;
(2) That the change of focus necessary for vision at different distances is brought about by the action of the superior and inferior obliques, which, by their contraction and relaxation, change the length of the eyeball as the length of the camera is changed by the shortening and lengthening of the bellows;
(3) That errors of refraction are due to the abnormal action of these muscles and of the recti, the obliques being responsible for myopia and the recti for hypermetropia, while both may combine in the production of astigmatism;
(4) That this abnormal action of the muscles on the outside of the eyeball is always due to mental strain of some kind.

This being the case it follows that all errors of refraction can be cured by relaxation. All methods of treatment, therefore, are simply different ways of obtaining relaxation. And because it is impossible to relax the eye muscles without relaxing the mind - and the relaxation of the mind means the relaxation of the whole body - it also follows that improvement in the eyesight is always accompanied by an improvement in health and mental efficiency.

The fact that all errors of refraction are functional can often be demonstrated within five minutes. When a person with myopia, hypermetropia, or astigmatism, looks at a blank wall without trying to see, the retinoscope, with a plane mirror, at six feet, indicates, in flashes or more continuously no error of refraction. The conditions should be favorable for relaxation and the doctor should be as much at his ease as the patient.

It can also be demonstrated with the retinoscope that persons with normal sight do not have it all the time.[7] When the vision of such persons becomes imperfect at the distance it will be found that myopic refraction has been produced;[8] when it becomes imperfect at the near point it will be found that hypermetropia has been produced.

CENTRAL FIXATION

An invariable symptom of all abnormal conditions of the eyes, whether functional or organic, is the loss of central fixation. When a person with perfect vision looks at a letter on the Snellen test card he can always observe that all the other letters in his field of vision are seen less distinctly. He can also observe that when he looks at the bottom of even the smallest letter on the card, the top appears less black and less distinct than the part directly regarded, while the same is true of a letter of diamond type, or of the smallest letters that are printed. When a person with imperfect sight looks at the card he can usually observe that when he can read a line of letters he is able to look at one letter of a line and see it better than the others, but the letters of a line he cannot read may look all alike, or those not directly regarded may even be seen better than the one fixed.

These conditions are due to the fact that when the sight is normal the sensitiveness of the fovea is normal, but when the sight is imperfect, from whatever cause, the sensitiveness of the fovea is lowered, so that the eye sees equally well, or even better, with other parts of the retina. Contrary to what is generally believed, the part seen best when the sight is normal is extremely small. **The text-books say that at twenty feet an area having a diameter of a quarter of an inch can be seen with maximum vision, but anyone who tries at this distance to see every part of one of the small letters of the Snellen test card - the diameter of which is about a quarter of an inch - equally well at one time will immediately become myopic. The fact is that the nearer the point of maximum vision approaches a mathematical point, which has no area, the better the sight.**

The cause of this loss of function in the center of sight is mental strain; and as all abnormal conditions of the eyes, organic as well as functional, are accompanied by mental strain, all such conditions must necessarily be accompanied by loss of central fixation. When the mind is under a strain the eye usually goes more or less blind. The center of sight goes blind first, partially or completely, according to the degree of the strain, and if the strain is great enough the whole or the greater part of the retina may be involved. When the vision of the center of sight has been suppressed, partially or completely, the patient can no longer see the point which he is looking at best, but sees objects not regarded directly as well, or better, because the sensitiveness of the retina has now become approximately equal in every part, or is even better in the outer part than in the center. Therefore in all cases of defective vision the patient is unable to see best where he is looking. When the person with imperfect vision sees the peripheral field clearest, it is not as clear as the central field is when the vision is normal.

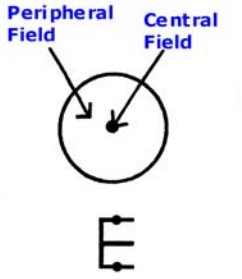
This condition is sometimes so extreme that the patient may look as far away from an object as it is possible to see it and yet see it just as well as when looking directly at it. In one case it had gone so far that the patient could see only with the edge of the retina on the nasal side. In other words, she could not see her fingers in front of her face, but could see them if she held them at the outer side of her eye. She had no error of refraction, showing that while every error of refraction is accompanied by eccentric fixation, the strain which causes the one condition is different from that which produces the other. The patient had been examined by specialists in this country and Europe, who attributed her blindness to disease of the optic nerve, or brain; but the fact that vision was restored by relaxation demonstrated that the condition had been due simply to mental strain.

Eccentric fixation, even in its lesser degrees, is so unnatural that great discomfort, or even pain, can be produced in a few seconds by trying to see every part of an area three or four inches in extent at twenty feet, or even less, or an area of an inch or less at the near point, equally well at one time, while at the same time the retinoscope will demonstrate that an error of refraction has been produced. This strain, when it is habitual, leads to all sorts of abnormal conditions and is, in fact, at the bottom of most eye troubles, both functional and organic. The discomfort and pain may be absent, however, in the chronic condition, and it is an encouraging symptom when the patient begins to experience them.

Natural health improvement doctors state; When health or vision is impaired, pain and other symptoms occur. When health/vision impairment increases, sometimes the pain, other uncomfortable symptoms vanish, are not felt. New symptoms may take their place. When healing occurs and the health/vision is reversing back to normal, is being corrected/cured; the old pains, symptoms may temporarily re-appear as the health/vision is passing backwards through previous beginning stages of the health or vision problem. Then, as the health/vision improves to perfect health, clear vision; the pain, symptoms are completely removed. Complete recovery without passing through pain, uncomfortable symptoms can also occur.

The center of the retina, macula and fovea centralis with its many cones produce the clearest vision and brightest color in the center of the visual field. The peripheral field of the retina produces less clear vision and less color in the peripheral field of vision. When the vision is normal, clear; the center of the visual field is clearest and the peripheral field less clear. The exact center of the visual field is produced by the fovea centralis and is the size of the pointed end of a pin and produces very clear vision, much clearer than 20/20 and brightest color, fine detailed vision, ability to see very small parts of objects at close and far distances.

Central fixation – To look at/see one small part of a object clearest at a time in the center of the visual field. Shifting is combined with central fixation- The eyes, center of the visual field moves, shifts continually from part to part (point to point) on a object to see the object clear. The center of the visual field also moves with the eyes from object to object seeing one object at as time clearest.
Natural Eyesight Improvement returns perfect clear central vision and brings the peripheral to its maximum possible clarity.



**Look at the dot on the top of the E.
The dot is in the center of the visual field and is clearest. The dot on the bottom is in the peripheral field and is less clear.
Shift dot to dot seeing one dot clearest at a time.**

When the eye possesses central fixation it not only possesses perfect sight, but it is perfectly at rest and can be used indefinitely without fatigue. It is open and quiet; no nervous movements are observable; and when it regards a point at the distance the visual axes are parallel. In other words, there are no muscular insufficiencies. This fact is not generally known. The text-books state that muscular insufficiencies occur in eyes having normal sight, but I have never seen such a case. The muscles of the face and of the whole body are also at rest, and when the condition is habitual there are no wrinkles or dark circles around the eyes.

In most cases of eccentric fixation, on the contrary, the eye quickly tires, and its appearance, with that of the face, is expressive of effort or strain. The ophthalmoscope reveals that the eyeball moves at irregular intervals, from side to side, vertically or in other directions. These movements are often so extensive as to be manifest by ordinary inspection, and are sometimes sufficiently marked to resemble nystagmus. Nervous movements of the eyelids may also be noted, either by ordinary inspection, or by lightly touching the lid of one eye while the other regards an object either at the near point or the distance. The visual axes are never parallel, and the deviation from the normal may become so marked as to constitute the condition of **squint**. Strain, eccentric fixation, diffusion causes squint, crossed, wandering eyes, imperfect convergence, divergence. Redness of the conjuctiva and of the margins of the lids, wrinkles around the eyes, dark circles beneath them and tearing are other symptoms of eccentric fixation.

Eccentric fixation is a symptom of strain, and is relieved by any method that relieves strain; but in some cases the patient is cured just as soon as he is able to demonstrate the facts of central fixation. When he comes to realize, through actual demonstration of the fact, that (when experiencing blur, eccentric fixation, diffusion, not seeing with the center of the visual field) he does not see best where he is looking, and that when he looks a sufficient distance away from a point (when the eyes are working correct, relaxed, with central fixation) he can see it worse than when he looks directly at it, he becomes able, in some way, to reduce the distance to which he has to look in order to see worse, until he can look directly at the top of a small letter and see the bottom worse, or look at the bottom and see the top worse. The smaller the letter regarded in this way, or the shorter the distance the patient has to look away from a letter in order to see the opposite part indistinctly, the greater the relaxation and the better the sight. When it becomes possible to look at the bottom of a letter and see the top worse, or to look at the top and see the bottom worse, it becomes possible to see the letter perfectly black and distinct. At first such vision may come only in flashes. The letter will come out distinctly for a moment and then disappear. But gradually, if the practice is continued, central fixation will become habitual.

Most patients can readily look at the bottom of the big C and see the top worse; but in some cases it is not only impossible for them to do this, but impossible for them to let go of the large letters at any distance at which they can be seen. In these extreme cases it sometimes requires considerable ingenuity, first to demonstrate to the patient that he does not see best where he is looking, and then to help him to see an object worse when be looks away from it than when he looks directly at it. The use of a strong light as one of the points of fixation, or of two lights five or ten feet apart, has been found helpful, the patient when he looks away from the light being able to see it less bright more readily than he can see a black letter worse when he looks away from it. It then becomes easier for him to see the letter worse when he looks away from it. This method was successful in the following case:

A patient with vision of 3/200, when she looked at a point a few feet away from the big C, said she saw the letter better than when she looked directly at it. Her attention was called to the fact that her eyes soon became tired and that her vision soon failed when she saw things in this way. Then she was directed to look at a bright object about three feet away from the card, and this attracted her attention to such an extent that she became able to see the large letter on the test card worse, after which she was able to look back at it and see it better. It was demonstrated to her that she could do one of two things: look away and see the letter better than she did before, or look away and see it worse. She then became able to see it worse all the time when she looked three feet away from it. Next she became able to shorten the distance successively to two feet, one foot and six inches, with a constant improvement in vision; and finally she became able to look at the bottom of the letter and see the top worse, or look at the top and see the bottom worse. With practice she became able to look at the smaller letters in the same way, and finally she became able to read the ten line at twenty feet. By the same method also she became able to read diamond type, first at twelve inches and then at three inches. By these simple measures alone she became able, in short, to see best where she was looking, and her cure was complete.

The highest degrees of eccentric fixation occur in the high degrees of myopia, and in these cases, since the sight is best at the near point, the patient is benefited by practicing seeing worse at this point. The distance can then be gradually extended until it becomes possible to do the same thing at twenty feet. One patient with a high degree of myopia said that the farther she looked away from an electric light the better she saw it, but by alternately looking at the light at the near point and looking away from it she became able, in a short time, to see it brighter when she looked directly at it than when she looked away from it. Later she became able to do the same thing at twenty feet, and then she experienced a wonderful feeling of relief. No words, she said, could adequately describe it. Every nerve seemed to be relaxed, and a feeling of comfort and rest permeated her whole body. Afterward her progress was rapid. She soon became able to look at one part of the smallest letters on the card and see the rest worse, and then she became able to read the letters at twenty feet.

On the principle that a burnt child dreads the fire, some patients are benefited by consciously making their sight worse. When they learn, by actual demonstration of the facts, just how their visual defects are produced, they unconsciously avoid the unconscious strain which causes them. When the degree of eccentric fixation is not too extreme to be increased, therefore, it is a benefit to patients to teach them how to increase it. **When a patient has consciously lowered his vision and produced discomfort and even pain by trying to see the big C, or a whole line of letters, equally well at one time, he becomes better able to correct the unconscious effort of the eye to see all parts of a smaller area equally well at one time.**
(experience strain=learn to avoid it.)

In learning to see best where he is looking it is usually best for the patient to think of the point not directly regarded as being seen less distinctly than the point he is looking at, instead of thinking of the point fixed as being seen best, as the latter practice has a tendency, in most cases, to intensify the strain under which the eye is already laboring. One part of an object is seen best only when the mind is content to see the greater part of it indistinctly, and as the degree of relaxation increases the area of the part seen worse increases until that seen best becomes merely a point.
(Exact center of visual field, fovea centralis, clearer than 20/20)

The limits of vision depend upon the degree of central fixation. A person may be able to read a sign half a mile away when he sees the letters all alike, but when taught to see one letter best he will be able to read smaller letters that he didn't know were there. The

remarkable vision of savages, who can see with the naked eye objects for which most civilized persons require a telescope, is a matter of central fixation. Some people can see the rings of Saturn, or the moons of Jupiter, with the naked eye. It is not because of any superiority in the structure of their eyes, but because they have attained a higher degree of central fixation than most civilized persons do.

Not only do all errors of refraction and all functional disturbances of the eye disappear when it sees by central fixation, but many organic conditions are relieved or cured. I am unable to set any limits to its possibilities. I would not have ventured to predict that glaucoma, incipient cataract and syphilitic iritis could be cured by central fixation; but it is a fact that these conditions have disappeared when central fixation was attained. Relief was often obtained in a few minutes, and sometimes this relief was permanent. Usually, however, a permanent cure required more prolonged treatment. Inflammatory conditions of all kinds, including inflammation of the cornea, iris, conjunctiva, the various coats of the eyeball and even the optic nerve itself, have been benefited by central fixation after other methods had failed. Infections, as well as diseases caused by protein poisoning and the poisons of typhoid fever, influenza, syphilis and gonorrhoea, have also been benefited by it. Even with a foreign body in the eye there is no redness and no pain so long as central fixation is retained.

Since central fixation is impossible without mental control, central fixation of the eye means central fixation of the mind. It means, therefore, health in all parts of the body, for all the operations of the physical mechanism depend upon the mind. Not only the sight, but all the other senses - touch, taste, hearing and smell - are benefited by central fixation. All the vital processes - digestion, assimilation, elimination, etc. - are improved by it. The symptoms of functional and organic diseases are relieved. The efficiency of the mind is enormously increased. The benefits of central fixation already observed are, in short, so great that the subject merits further investigation.

Central fixation example:
Look at the top part of the letter C. Place it in the center of the visual field. Shift on it to avoid staring. While looking at that part, in the center of the visual field; that part is clearest. Other parts of the C away from the part the eyes are looking directly at are in the peripheral field are seen worse, less clear. When the eyes move, shift to a new part, example; a part on the bottom of the C; this part is now in the center of the visual field, is clearest and the top of the C and other parts are in the peripheral field, away from the central field and are seen less clear.
Shift from part to part on the C and see one small part at a time clearest in the center of the visual field – Central Fixation.
Practice on large, then smaller letters, any objects, then on small objects, a fine print letter.
When the eyes can shift: small point to small point on a small object, small part of a object, fine print letter and use central fixation, vision is very clear.
Central fixation must be combined with shifting; shifting from point to point.
Central fixation does not mean to fix the eyes immobile on a point.

Look at/see clearest - one part (dot) of the C at a time, in the center of the visual field. The part (dot) in the peripheral field is less clear.

Eccentric fixation is – Diffusion – trying to see two or more objects or more than one part of a object at the same time, objects in the central and peripheral field equally clear at the same time. Not shifting from part to part, object to object. To space the visual attention out to cover the entire field without moving the eyes. Using the peripheral area of the retina and field of vision to see with, placing the object of visual attention in the peripheral field.

A TEACHER'S EXPERIENCES

A teacher forty years of age was first treated on March 28, 1919. She was wearing the following glasses: O. D. convex 0.75 D. S. with convex 4.00 D. C., 105 deg.; O. S. convex 0.75 D. S. with convex 3.50 D. C., 105 deg. On June 9, 1919, she wrote:

I will tell you about my eyes, but first let me tell you other things. You were the first to unfold your theories to me, and I found them good immediately - that is, I was favorably impressed from the start. I did not take up the cure because other people recommended it, but because I was convinced: first, that you believed in your discovery yourself; second, that your theory of the cause of eye trouble was true. I don't know how I knew these two things, but I did. After a little conversation with you, you and your discovery both seemed to me to bear the earmarks of the genuine article. As to the success of the method with myself I had a little doubt. You might cure others, but you might not be able to cure me, However, I took the plunge, and it has made a great change in me and my life.

To begin with, I enjoy my sight. I love to look at things, to examine them in a leisurely, thorough way, much as a child examines things. I never realized it at the time, but it was irksome for me to look at things when I was wearing glasses, and I did as little of it as possible. The other day, going down on the Sandy Hook boat, I enjoyed a most wonderful sky without that hateful barrier, of misted glasses, and I am positive I distinguished delicate shades of color that I never would have been able to see, even with clear glasses. Things seem to me now to have more form, more reality than when I wore glasses. Looking into the mirror you see a solid representation on a flat surface, and the flat glass can't show you anything really solid. My eye-glasses, of course, never gave me this impression, but one curiously like it. I can see so clearly without them that it is like looking around corners without changing the position. I feel that I can almost do it.

I very seldom have occasion to **palm**.[9] Once in a great while I feel the necessity of it. The same with **remembering a period**.[10] Nothing else is ever necessary. I seldom think of my eyes, but at times it is borne in upon me how much I do use and enjoy using them.

My nerves are much better. I am more equable, have more poise, am less shy. I never used to show that I was shy, or lacked confidence. I used to go ahead and do what was required, if not without hesitation, but it was hard. Now I find it easy. Glasses, or poor sight rather, made me self-conscious. It certainly is a great defect and one people are sensitive to without realizing it. I mean the poor sight and the necessity for wearing glasses. I put on a pair of glasses the other day just for an experiment, and I found that they magnified things. My skin looked as if under a magnifying glass. Things seemed too near. The articles on my chiffonier looked so close I felt like pushing them away from me. The glasses I especially wanted to push away. They brought irritation at once. I took them off and felt peaceful. Things looked normal.

I see better in the street than I ever did with glasses. I can see what people look like across the street, can distinguish their features, etc., a thing I could not do with glasses, or before I wore them. I can see better across the river and further into people's houses across the street. Not that I indulge, but I noticed an increase of power while looking out of the window in school.

Speaking of school, I corrected an immense pile of examination papers the other day, five hours at a stretch, with an occasional look off the paper and an occasional turn about the room. I felt absolutely no discomfort after it. Two weeks previous to this feat I handled two hundred designs over and over again, looking at each one dozens and dozens of times to note changes and improvement in line and color. Occasionally, while this work was going on. I had to palm in the mornings on rising.

I use my eyes with as much success writing, though once in a while after a lot of steady writing they are a little bit tired. I can read at night without having to get close to a light. I mention this because last summer I had to sit immediately under the light, or I could not see.

From the beginning of the treatment I could use my eyes pretty well, but they used to tire. I remember making a large Liberty Loan poster two weeks after I took off my glasses, and I was amazed to find I could make the whole layout almost perfectly without a ruler, just as well as with my glasses. When I came to true it up with the ruler I found only the last row of letters a bit out of line at the very end. I couldn't have done better with glasses. However this wasn't fine work. About the same time I sewed a hem at night in a black dress, using a fine needle. I suffered a little for this, but not much. I used to practice my exercises at that time and palm faithfully. Now I don't have to practice, or palm; I feel no discomfort, and I am absolutely unsparing in my use of my eyes. I do everything I want to with them. I shirk nothing, pass up no opportunity of using them. From the first I did all my school work, read every notice, wrote all that was necessary, neglected nothing. Everything I was called upon to do I attempted. For instance, I had to read President Wilson's "Fourteen Points" in the assembly room without notice in a poor light-unusual wording, too,-and I read it unhesitatingly. I have yet to fail to make good.

Now to sum up the school end of it, I used to get headaches at the end of the month from adding columns of figures necessary to reports, etc. Now I do not get them. I used to get flustered when people came into my room. Now I do not; I welcome them. It is a peasant change to feel this way. And-I suppose this is most important really, though I think of it last-I teach better. I know how to get at the mind and how to make the children see things in perspective. I gave a lesson on the horizontal cylinder recently, which, you know, is not a thrillingly interesting subject, and it was a remarkable lesson in its results and in the grip it got on every girl in the room, stupid and bright. What you have taught me makes me use the memory and imagination more, especially the latter, in teaching.

Now, to sum up the effect of being cured upon my own mind. I am more direct, more definite, less diffused, less vague. In short, I am conscious of being better centered. It is central fixation of the mind. I saw this in your latest paper, but I realized it long ago and knew what to call it.

ARMY OFFICER CURES HIMSELF

An engineer, fifty-one years of age, had worn glasses since 1896, first for astigmatism, getting stronger ones every couple of years, and then for astigmatism and presbyopia. At one time he asked his oculist and several opticians if the eyes could not be strengthened by exercises, so as to make glasses unnecessary, but they said: "No. Once started on glasses you must keep to them." When the war broke out he was very nearly disqualified for service in the Expeditionary Forces by his eyes, but managed to pass the required tests, after which he was ordered abroad as an officer in the Gas Service. While there he saw in the Literary Digest of May 2, 1918, a reference to my method of curing defective eyesight without glasses, and on May 11 he wrote to me in part as follows:

At the front I found glasses a horrible nuisance, and they could not be worn with gas masks. After I had been about six months abroad I asked an officer of the Medical Corps about going without glasses. He said I was right in my ideas and told me to try it. The first week was awful, but I persisted and only wore glasses for reading and writing. I stopped smoking at the same time to make it easier on my nerves.

I brought to France two pairs of bow spectacles and two extra lenses for repairs. I have just removed the extra piece for near vision from these extra lenses and had them mounted as pince-nez, with shur-on mounts, to use for reading and writing, so that the only glasses I now use are for astigmatism, the age lens being off. Three months ago I could not read ordinary head-line type in newspapers without glasses. Today, with a good light, I can read ordinary book type (18 point), held at a distance of eighteen inches from my eyes. Since the first week in February, when I discarded my glasses, I have had no headaches, stomach trouble, or dizziness, and am in good health generally. My eyes are coming back, and I believe it is due to sticking it out. I ride considerably in automobiles and trams, and somehow the idea has crept into my mind that after every trip my eyes are stronger. This, I think, is due to the rapid changing of focus in viewing scenery going by so fast.

Other men have tried this plan on my advice, but gave it up after two or three days. Yet, from what they say, I believe they were not so uncomfortable as I was for a week or ten days.

I believe most people wear glasses because they "coddle" their eyes.

July, 1919 footnotes

1 - Harvard: Manual of Military Hygiene for the Military services of United States, third revised edition 1917, p. 195.
2 - Report of the Provost Marshal General to the Secretary of War on the First Draft under the Selective Service Act, 1917.
3 - Standards of Physical Examination for the Use of Local Boards, District Boards and Medical Advisory Boards under the Selective Service Act, Form 75, issued through office of the Provost Marshal General.
4 - Second Report of the Provost Marshal General to the Secretary of War on the Operations of the Selective Service System to December 20, 1918.
5 - Everyman's Library, 1908, pp. 166 and 167.
6 - Bates: The Cure of Defective Eyesight by Treatment Without Glasses. N. Y. Med. Jour., May 8, 1915. A Study of Images Reflected from the Cornea, Iris, Lens and Sclera. N. Y. Med. Jour., May 18, 1918.
7 - Bates: The Imperfect Sight of the Normal Eye. N. Y. Med. Jour., Sept 8, 1917.
8 – Bates: The Cause of Myopia. N. Y. Med. Jour., March 16, 1912.
9 - By palming is meant the covering of the closed eyes with the palms of the hands in such a way as to exclude all the light, while remembering some color, usually black.
10 - Bates: *Memory as an Aid to Vision.* N. Y. Med. Jour., May 24, 1919.

SCHOOL NUMBER
BETTER EYESIGHT
A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES
August, 1919

How to Use the Snellen Test Card
FOR THE
Prevention and Cure of Imperfect Sight in Children

The Snellen Test Card is placed permanently upon the wall of the classroom, and every day the children silently read the smallest letters they can see from their seats with each eye separately, the other being covered with the palm of the hand in such a way as to avoid pressure on the eyeball. This takes no appreciable amount of time, and is sufficient to improve the sight of all children in one week and to cure all errors of refraction after some months, a year, or longer.

Children with markedly defective vision should be encouraged to read the card more frequently.

Records may be kept as follows:

John Smith, 10, Sept. 15, 1918.
R. V. (vision of the right eye) 20/40.
L. V. (vision of the left, eye) 20/20.

John Smith, 11, Jan. 1, 1919.
R. V. 20/30.
L. V. 20/15.

20/20

The numerator (top number) of the fraction indicates the distance of the test card from the pupil;
The denominator (bottom number) denotes the line read, as designated by the figures printed above the middle of each line of the Snellen Test Card.

A certain amount of supervision is absolutely necessary. At least once a year some one who understands the method should visit each classroom for the purpose of answering questions, encouraging the teachers to continue the use of the method, and making a report to the proper authorities.

It is not necessary that either the inspector, the teachers, or the children, should understand anything about the physiology of the eye.

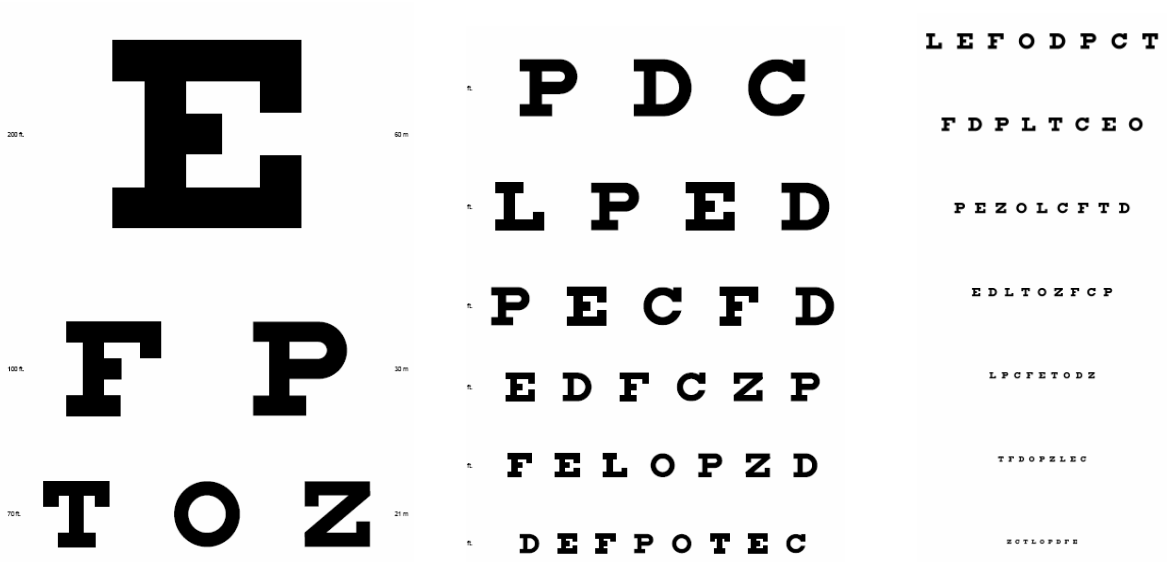


Fig. 8. The Usual Method of Using the Retinoscope
The observer is so near the subject that the latter is made nervous, and this changes the refraction.

Glasses are often prescribed unnecessarily or 'too strong' (over-corrected) due to temporary nervousness, pressure to hurry, limited eye, head, neck, body movement, looking into test equipment during an eye exam. Eye doctors also prefer to prescribe an 'extra strength' to the eyeglass lenses. All eyeglasses, especially strong eyeglass lenses cause fast, increased vision/eye impairment and prescriptions for stronger and stronger lenses.

Fig. 43

Patient with atrophy of the optic nerve gets flashes of improved vision after palming.

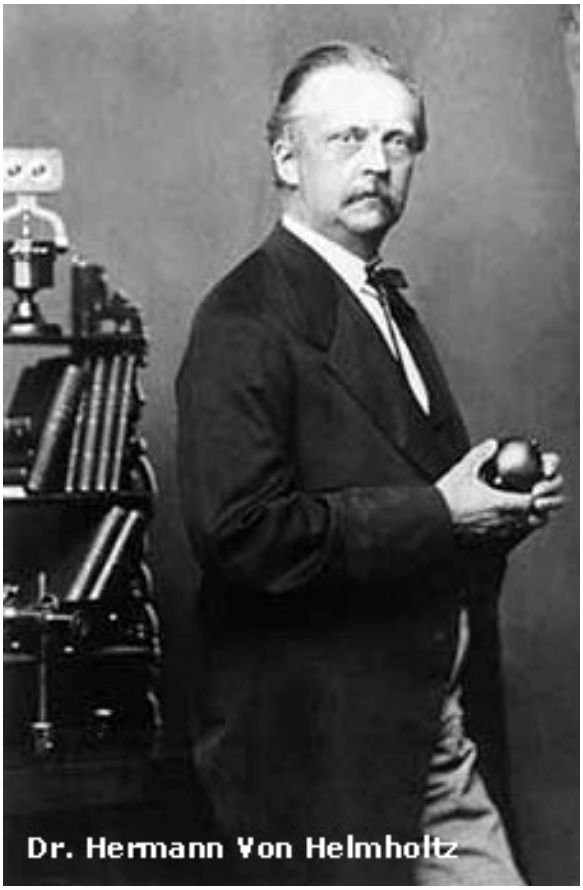
Fig. 39. A Family Group Strikingly Illustrating the Effect of the Mind Upon the Vision

No. 1.—Girl of four with normal eyes. No. 2.—The child's mother with myopia. No. 3—The same girl at nine with myopia. Note that her expression has completely changed, and is now exactly like her mother's. Nos. 4, 5 and 6.—The girl's brother at two, six and eight. His eyes are normal in all three pictures. The girl has either inherited her mother's disposition to take things hard, or has been injuriously effected by her personality of strain. The boy has escaped both influences. In view of the prevailing theories about the relation of heredity to myopia, this picture is particularly interesting.

These old pictures are from Dr. Bates original book 'The Cure of Imperfect Sight by Treatment Without Glasses'. More pictures in that book and Medical Articles. Books are included free in E-Book form with this book. Contact www.cleareyesight.info mclearsight@aol.com

Dr. Hermann Von Helmholtz

Inventor of the Ophthalmoscope



Hermann Von Helmholtz (1821–1894) A German Physician, Physicist

Dr. Helmholtz studied and contributed to developments in mechanics, physics, science, mathematics, energy conservation, electrodynamics, fluid dynamics, thermodynamics, chemical thermodynamics, chemistry, electricity, magnetism, meteorology, philosophy, fine arts, physiology of the eye and the ear, hearing, acoustics, motion perception, physiological optics, mathematics of the eye, theories of vision, visual perception of space, color vision, color blindness, dioptrics (study of the refraction of light, especially by lenses) of the eye and many other areas of science.
He studied electrodynamics by Michael Faraday and James Clerk Maxwell, began the revolution in wireless communication, wrote the 'Handbook of Physiological Optics'.

He invented the Ophthalmoscope to examine/inspect the interior of the eye/retinal blood vessels, detect high blood pressure and arterial disease… He also invented the Ophthalmometer to measure the eyes accommodation/the eye's curvature.

Dr. Helmholtz created the 'Theory of Accommodation' – which states that the human eyes lens changes shape due to the action of the Ciliary Muscle to produce accommodation in the eye for clear vision when looking at close distances.

For years the Optical Industry, Eye Doctors stated Helmholtz's Theory as an absolute fact and stated that due to this fact, unclear vision cannot be cured, that only glasses, surgery, drugs can correct unclear vision and other eye problems.

Dr. William H. Bates, Ophthalmologist, eye, ear… doctor proved that the outer eye muscles (Oblique, Recti) can change the shape of the eye, produce accommodation and affect the clarity of vision. Relaxed, normally functioning outer eye muscles produced clear vision. Bates stated the lens does not produce accommodation. Dr. Bates proved as fact that unclear vision and a variety of other eye problems can be corrected, cured by natural methods of relaxing the mind, body, eye muscles, returning mind, body, eye muscles, eyes to normal function without eyeglasses, surgery, drugs. The Bates Method.

Modern day Ophthalmologists state that: with new technology, they have proven that the lens does change shape and can produce accommodation.

Some Scientists, Ophthalmologists state that Helmholtz and Bates were correct, that the eye and lens change shape, work together (and the lens might also move) to produce accommodation.

The Bates Method relaxes, improves function, health of the entire visual system, eyes, mind, body and relaxes, improves function of all the eye muscles; outer (Oblique, Recti & other outer muscles), inner (ciliary/lens, iris…) and continues to produce clear vision for over 100 years. Even before Bates time, the Bates Method was used naturally by the human eye.

A HOUSE BUILT ON SAND

That the results of the present method of treating defects of vision are far from satisfactory is something which no one would attempt to deny. It is well known that many patients wander from one specialist to another, seeking vainly for relief, while others give up in despair and either bear their visual ills as best they may without assistance, or else resort to Christian Science, mental science, osteopathy, physical culture, or some of the other healing cults to which the incompetence of orthodox medicine has given birth. The specialists themselves, having daily to handle each other's failures, are scarcely better satisfied. Privately they criticize each other with great asperity and freedom, and publicly they indulge in much speculation as to the underlying causes of this deplorable state of affairs.

At the recent meeting of the Ophthalmological Section of the American Medical Association, Dr. E. J. Gardiner, of Chicago, in a paper on *The Present Status of Refraction Work*,1 finds that ignorance is responsible for the largest quota of failure to get satisfactory results from what he calls the "rich heritage" of ophthalmic science, but that a considerable percentage must be attributed to other causes. Among these causes he enumerates a too great dependence on measuring devices, the delegation of refraction work to assistants, and the tendency to eliminate cycloplegics, in deference to the prejudices of patients who have a natural objection to being incapacitated by "drops."

On the same occasion, Dr. Samuel Theobald, of Johns Hopkins University, noted a tendency to "minimize the importance of muscular anomalies" as an important cause of many failures to give relief to eye patients. Among cases that have come into his hands after glasses had been prescribed by other ophthalmologists he has often found that "though great pains had been taken to correct even minor faults of refraction, grave muscular errors had been entirely overlooked." From this fact and from the small number of latent muscular defects noted in the hospital reports which he has examined, the conclusion seems to him inevitable that such faults are in large measure ignored.

Dr. Walter Pyle, of Philadelphia, laid stress on "necessary but often neglected refinements in examination of ocular refraction." "Long practice, infinite care and attention to finer details," he said, "are imperative requisites, since a slight fault in the correction of a refractive error aggravates rather than relieves the accompanying asthenopic symptoms." This care, he says, must be exercised not only by the oculist but by the optician, and to the end that the latter may be inspired to do his part, he suggests that the oculist provide himself with the means for keeping tabs on him in the form of a mechanical lens measure, axis finder and centering machine.

Dr. Charles Emerson, of the Indiana University School of Medicine, suggested a closer co-operation between the ophthalmologist and the physician, as there were many patients who could not be helped by the ophthalmologist alone.

The fitting of glasses by opticians is usually condemned without qualification, but in the discussion which followed these papers, Dr. Dunbar Roy, of Atlanta, said that the optician, just because he does not use cycloplegics, frequently fits patients with comfortable glasses where the ophthalmologist has failed. When a patient needs glasses, said Dr. Roy, he needs them when his eyes are in their natural or normal condition and not when the muscle of accommodation is partially paralyzed. Even the heavy frames used in the adjustment of trial lenses were not forgotten in the search for possible causes of failure, Dr. Roy believing that the patient is often so annoyed by these contrivances that he does not know which is causing him the most discomfort, the frames or the glasses.

Nowhere in the whole discussion was there any suggestion that this great mass of acknowledged failure could possibly be due to any defect in fundamental principles. These are a "rich heritage," the usefulness of which is not to be questioned. If they do not

produce satisfactory results, it must be due to their faulty application, and it is taken for granted that there are a select few who understand and are willing to take the trouble to use them properly.

The simple fact, however, is that the fitting of glasses can never be satisfactory. The refraction of the eye is continually changing.[2] Myopia, hypermetropia and astigmatism come and go, diminish and increase, and the same adjustment of glasses cannot suit the affected eyes at all times. One may be able, in many cases, to make the patient comfortable, to improve his sight, or to relieve nervous symptoms; but there will always be a considerable number of persons who get little or no help from glasses, while practically everyone who wears them is more or less dissatisfied. The optician may succeed in making what is considered to be a satisfactory adjustment, and the most eminent ophthalmologist may fail. I personally know of one specialist, a man of international reputation, who fitted a patient sixty times with glasses without affording him the slightest relief.

And even when the glasses do what is expected of them they do very little. Considering the nature of the superstructure built on the foundation of Donders, and the excellent work being done by leading men, Dr. Gardiner thinks the present status of refraction work might be deemed eminently satisfactory if it were not for the great amount of bad and careless work being done; but I do not consider it satisfactory when all we can do for people with imperfect sight is to give them eye crutches that do not even check the progress of the trouble, when the only help we can offer to the millions of myopic and hypermetropic and astigmatic and squinting children in our schools is to put spectacles on them. If this is the best that ophthalmology can do after building for three-quarters of a century upon the foundation of Donders, is it not time that we began to examine that foundation of which Dr. Gardiner boasts that "not one stone has been removed"? Instead of seeking the cause of our failure to accomplish even the little we claim to be able to do in the ignorance and carelessness of the average practitioner, great as that ignorance and carelessness often are; in the neglect of cycloplegics and the refinements of lens adjustment: in the failure to detect latent muscular anomalies; in the absence of co-operation between specialist and general practitioner: would it not be wiser to examine the foundation of our superstructure and see whether it is of stone or of sand?

THE PREVENTION OF MYOPIA

Methods That Failed

The publication in 1867 by Professor Hermann Cohn of Breslau of a study of the eyes of ten thousand school children first called general attention to the fact that while myopia is seldom found in the pre-school age, the defect increases steadily both in percentage of cases and in degree during the educational period. Professor Cohn's investigations were repeated in all the advanced countries, and his observations, with some difference in percentages, were everywhere confirmed. The conditions were unanimously attributed to the excessive use of the eyes for near work, and as it was impossible to abandon the educational system, attempts were made to minimize the supposed evil effects of the reading, writing and other near work which it demanded. Careful and detailed rules were laid down by various authorities as to the size of type to be used in school books, the length of the lines, their distance apart, the distance at which the book should be held, the amount and arrangement of the light, the construction of the desks, the length of time the eyes might be used without a change of focus, etc. Face rests were even devised to hold the eyes at the prescribed distance from the desk and to prevent stooping, which was supposed to cause congestion of the eyeball and thus to encourage elongation. The Germans, with characteristic thoroughness, actually used these instruments of torture, Cohn never allowing his children to write without one, "even at the best possible desk."[3]

The results of these preventive measures were disappointing. Some observers reported a slight decrease in the percentage of myopia in schools in which the prescribed reforms had been made; but on the whole, as Risley has observed in his discussion of the subject in Norris and Oliver's *System of Diseases of the Eye*, "the injurious effects of the educational process were not noticeably arrested."

"It is a significant, though discouraging fact," he continues, "that the increase, as found by Cohn, both in the percentage and in the degree of myopia, had taken place in those schools where he had especially exerted himself to secure the introduction of hygienic forms, and the same is true of the observations of Just, who had examined the eyes of twelve hundred and twenty-nine of the pupils of the two High Schools of Zittau, in both of which the hygienic conditions were all that could be desired. He found, nevertheless, that the excellent arrangements had not in any degree lessened the percentage of increase in myopia. It became necessary, therefore, to look beyond faulty hygienic environments for the cause of the pathological states represented by Myopia."[4]

With the passage of time further evidence to the same effect has steadily accumulated. In an investigation in London, for instance, in which the schools were carefully selected to reveal any difference that might arise from the various influences, hygienic, social and racial, to which the children were subjected, the proportion of myopia in the best lighted and ventilated school of the group was actually found to be higher than in the one where these conditions were worst.[5] It has also been found that there is just as much myopia in schools where little near work is done as in those in which the demands upon the accommodative power of the eye are greater, while in any case it is only a minority of the children in any school who become myopic, although all may be exposed to practically the same eye conditions. Dr. Adolf Steiger, in his recent hook on *Spherical Refraction*, bears witness, after a comprehensive survey of the whole question, to the "absolutely negative results of school hygiene,"[6] and Dr. Sidler-Huguenin reports[7] that in the thousands of cases that have come under his care he has observed no appreciable benefit from any method of treatment at his command.

Facts of this sort have led to a modification of the myopia theory, but have produced no change in methods of myopia prevention. An hereditary tendency toward the development of the defect is now assumed by most authorities; but although no one has ever been able to offer even a plausible explanation for its supposed injuriousness, and though its restriction has been proven over and over again to be useless, near work is still generally held to be a contributing cause and ophthalmologists still go on in the same old way, trying to limit the use of the eyes at the near-point and encourage vision at the distance. It is incomprehensible that men calling themselves scientific, and having had at least a scientific training, can be so foolish. One might excuse a layman for such irrational conduct, but how men of scientific repute who are supposed to write authoritative textbooks can go on year after year copying each other's mistakes and ignoring all facts which are in conflict with them is a thing which reasonable people can hardly be expected to

understand.

In 1912,[8] and a good many times since, I published the observation that myopia is always lessened when the subject strains to see at the near point, and always produced in the normal eye when the subject strains to see at the distance. These observations are of the greatest practical importance, for if they are correct, they prove our present methods of preventing myopia to be a monumental blunder. Yet no one, so far as I have heard, has taken the trouble to test their accuracy. I challenged the medical profession to produce a single exception to the statements I made in the 1912 publication, and that challenge has stood for seven years, although every member of the Ophthalmological Section of the American Medical Association must have had an opportunity to see it, and anyone who knows how to use a retinoscope could have made the necessary tests in a few minutes. If any did this, they failed to publish the results of their observations, and are, therefore, responsible for the effects of their silence. If they found that I was right and neglected to say so, they are responsible for the fact that the benefits that must ultimately result from this discovery have been delayed. If they found that I was wrong, they are responsible for any harm that may have resulted from their indifference.

THE PREVENTION AND CURE OF MYOPIA AND OTHER ERRORS OF REFRACTION

A Method That Succeeded

You cannot see anything with perfect sight unless you have seen it before. When the eye looks at an unfamiliar object it always strains more or less to see that object, and an error of refraction is always produced. When children look at unfamiliar writing, or figures, on the blackboard, distant maps, diagrams, or pictures, the retinoscope always shows that they are myopic, though their vision may be under other circumstances absolutely normal. The same thing happens when adults look at unfamiliar distant objects. When the eye regards a familiar object, however, the affect is quite otherwise. Not only can it be regarded without strain, but the strain of looking later at unfamiliar objects is lessened.

This fact furnishes us with a means of overcoming the mental strain to which children are subjected by the modern educational system. It is impossible to see anything perfectly when the mind is under a strain, and if children become able to relax when looking at familiar objects, they become able, sometimes in an incredibly brief space of time, to maintain their relaxation when looking at unfamiliar objects.

I discovered this fact while examining the eyes of 1,500 school children at Grand Forks, N. D., in 1903.[9] In many cases children who could not read all of the letters on the Snellen test card at the first test read them at the second or third test. After a class had been examined the children who had failed would sometimes ask for a second test, and then it often happened that they would read the whole card with perfect vision. So frequent were these occurrences that there was no escaping the conclusion that in some way the vision was improved by reading the Snellen test card. In one class I found a boy who at first appeared to be very myopic, but who, after a little encouragement, read all the letters on the test card. The teacher asked me about this boy's vision, because she had found him to be very "near-sighted." When I said that his vision was normal she was incredulous, and suggested that he might have learned the letters by heart, or been prompted by another pupil. He was unable to read the writing or figures on the blackboard, she said, or to see the maps, charts, and diagrams on the walls, and did not recognize people across the street. She asked me to test his sight again, which I did, very carefully, under her supervision, the sources of error which she had suggested being eliminated. Again the boy read all the letters on the card. Then the teacher tested his sight. She wrote some words and figures on the blackboard and asked him to read them. He did so correctly. Then she wrote additional words and figures, which he read equally well. Finally she asked him to tell the hour by the clock twenty-five feet distant, which he did correctly. It was a dramatic situation, both the teacher and the children being intensely interested. Three other cases in the class were similar, their vision, which had previously been very defective for distant objects, becoming normal in the few moments devoted to testing their eyes. It is not surprising that after such a demonstration the teacher asked to have a Snellen test card placed permanently in the room.

Practice shifting on a familiar object - letters on a test card daily with; Both eyes together, one eye at a time, both eyes together again.

The children were directed to read the smallest letters they could see from their seats at least once every day, with both eyes together and with each eye separately, the other being covered with the palm of the hand in such a way as to avoid pressure on the eyeball. (Use of eye patch is best so the hand does not need to be held up – holding hand up to eye causes the muscles in hand, arm, shoulder, neck, then eyes to become tense.)

Those whose vision was defective were encouraged to read it more frequently, and in fact needed no encouragement to do so after they found that the practice helped them to see the blackboard, and stopped the headaches, or other discomfort, previously resulting from the use of their eyes.

In another class of forty children, between six and eight, thirty of the pupils gained normal vision while their eyes were being tested. The remainder were cured later under the supervision of the teacher by exercises in distant vision with the Snellen card. This teacher had noted every year for fifteen years that at the opening of the school in the fall all the children could see the writing on the blackboard from their seats, but before school closed the following spring all of them without exception complained that they could not see it at a distance of more than ten feet. After learning of the benefits to be derived from the daily practice of distant vision with familiar objects as the points of fixation, this teacher kept a Snellen test card continually in her classroom and directed the children to read it every day. The result was that for eight years no more of the children under her care acquired defective eyesight.

This teacher had attributed the invariable deterioration in the eyesight of her charges during the school year to the fact that her classroom was in the basement and the light poor. But teachers with well-lighted classrooms had the same experience, and after the Snellen test card was introduced into both the well-lighted and the poorly lighted rooms, and the children read it every day, the deterioration of their eyesight not only ceased, but the vision of all improved. Vision which had been below normal improved, in most cases, to normal, while children who already had normal sight, usually reckoned at 20/20, became able to read 20/15 or 20/10. And not only was myopia cured, but the vision for near objects was improved.

At the request of the superintendent of the schools of Grand Forks, Mr. J. Nelson Kelly, the system was introduced into all the schools of the city and was used continuously for eight years, during which time it reduced myopia among the children, which I found at the beginning to be about six per cent, to less than one per cent.

In 1911 and 1912 the same system was introduced into some of the schools of New York City[10] with an attendance of about ten thousand children. Many of the teachers neglected to use the cards, being unable to believe that such a simple method, and one so entirely at variance with previous teaching on the subject, could accomplish the desired results. Others kept the cards in a closet except when they were needed for the daily eye drill, lest the children should memorize them. Thus they not only put an unnecessary burden upon themselves, but did what they could to defeat the purpose of the system, which is to give the children **daily exercise in distant vision with a familiar object as the point of fixation**. A considerable number, however, used the system intelligently and persistently, and in less than a year were able to present reports showing that of three thousand children with imperfect sight over one thousand had obtained normal vision by its means. Some of these children, as in the case of the children of Grand Forks, were cured in a few minutes. Many of the teachers were also cured, some of them very quickly. In some cases the results of the system were so astonishing as to be scarcely credible.

In a class of mental defectives, where the teacher had kept records of the eyesight of the children for several years, it had been invariably found that their vision grew steadily worse as the term advanced. As soon as the Snellen test card had been introduced, however, they began to improve. Then came a doctor from the Board of Health who tested the eyes of the children and put glasses on all of them, even those whose sight was fairly good. The use of the card was then discontinued, as the teacher did not consider it proper to interfere while the children were wearing glasses prescribed by a physician. Very soon, however, the children began to lose, break, or discard, their glasses. Some said that the spectacles gave them headaches, or that they felt better without them. In the course of a month or so most of the aids to vision which the Board of Health had supplied had disappeared. The teacher then felt herself at liberty to resume the use of the Snellen test card. Its benefits were immediate. The eyesight and the mentality of the children improved simultaneously, and soon they were all drafted into the regular classes, because it was found that they were making the same progress in their studies as the other children were.

Another teacher reported an equally interesting experience. She had a class of children who did not fit into the other grades. Many of them were backward in their studies. Some were persistent truants. All of them had defective eyesight. A Snellen test card was hung in the classroom where all the children could see it, and the teacher carried out my instructions literally. At the end of six months all but two had been cured and these had improved very much, while the worst incorrigible and the worst truant had become good students. The incorrigible, who had previously refused to study, because, he said, it gave him a headache to look at a book, or at the blackboard, found out that the test card, in some way, did him a lot of good; and although the teacher had asked him to read it but once a day, he read it whenever he felt uncomfortable. The result was that in a few weeks his vision had become normal and his objection to study had disappeared. The truant had been in the habit of remaining away from school two or three days every week, and neither his parents nor the truant officer had been able to do anything about it. To the great surprise of his teacher he never missed a day after having begun to read the Snellen test card. When she asked for an explanation he told her that what had driven him away from school was the pain that came in his eyes whenever he tried to study, or to read the writing on the blackboard. After reading the Snellen test card, he said, his eyes and head were rested and he was able to read without any discomfort.

To remove any doubts that might arise as to the cause of the improvement noted in the eyesight of the children comparative tests were made with and without cards. In one case six pupils with defective sight were examined daily for one week without the use of the test card. No improvement took place. The card was then restored to its place and the group was instructed to read it every day. At the end of a week all had improved and five were cured. In the case of another group of defectives the results were similar. During the week that the card was not used no improvement was noted, but after a week of exercises in distant vision with the card all showed marked improvement, and at the end of a month all were cured. In order that there might be no question as to the reliability of the records of the teachers some of the principals asked the Board of Health to send an inspector to test the vision of the pupils, and whenever this was done the records were found to be correct. Dr. Bates has the children read the eyechart with both eyes together, then one eye at a time, then both eyes together again. He also has the children look close and distant, shifting on exact letters on two identical eyecharts placed at close and far distances. Also done with both eyes together, then one eye at a time, then both eyes together again. If vision needs more improvement in one eye, extra time is spent practicing with that eye to bring the vision equally clear, perfect in both left and right eyes. Basic Behavioral Optometry.

One day I visited the city of Rochester, and while there I called on the Superintendent of Public Schools and told him about my method of preventing myopia. He was very much interested and invited me to introduce it in one of his schools. I did so, and at the end of three months a report was sent to me showing that the vision of all the children had improved, while quite a number of them had obtained perfect sight in both eyes.

The method has been used in a number of other cities and always with the same result. The vision of all the children improved, and many of them obtained perfect sight in the course of a few minutes, days, weeks or months.

It is difficult to prove a negative proposition, but since this system improved the vision of all the children who used it, it follows that none could have grown worse. It is therefore obvious that it must have prevented myopia. This cannot be said of any method of preventing myopia in schools which had previously been tried. All other methods are based on the idea that it is the excessive use of the eyes for near work that causes myopia, and all of them have admittedly failed.

It is also obvious that the method must have prevented other errors of refraction, a problem which previously had not even been seriously considered, because hypermetropia is supposed to be congenital, and astigmatism was until recently supposed also to be congenital in the great majority of cases. Anyone who knows how to use a retinoscope may, however, demonstrate in a few minutes that both of these conditions are acquired; for no matter how astigmatic or hypermetropic an eye may be, its vision always becomes normal when it looks at a blank surface without trying to see. It may also be demonstrated that when children are learning to read, write, draw, sew, or to do anything else that necessitates their looking at unfamiliar objects at the near-point, hypermetropia, or hypermetropic astigmatism, is always produced. The same is true of adults. These facts have not been reported before, so far as I am aware, and they strongly suggest that children need, first of all, eye education. They must be able to look at strange letters or objects at the near-point without strain before they can make much progress in their studies, and in every case in which the method has been tried it has proven that this end is attained by daily exercise in distant vision with the Snellen test card. When their distant

vision has been improved by this means children invariably become able to use their eyes without strain at the near-point.

The method succeeded best when the teacher did not wear glasses. In fact, the effect upon the children of a teacher who wears glasses is so detrimental that no such person should be allowed to be a teacher, and since errors of refraction are curable, such a ruling would work no hardship on anyone. Not only do children imitate the visual habits of a teacher who wears glasses, but the nervous strain of which the defective sight is an expression produces in them a similar condition. In classes of the same grade, with the same lighting, the sight of children whose teachers did not wear glasses has always been found to be better than the sight of children whose teachers did wear them. In one case I tested the sight of children whose teacher wore glasses and found it very imperfect. The teacher went out of the room on an errand, and after she had gone I tested them again. The results were very much better. When the teacher returned she asked about the sight of a particular boy, a very nervous child, and as I was proceeding to test him she stood before him and said, "Now, when the doctor tells you to read the card, do it." The boy couldn't see anything. Then she went behind him, and the effect was the same as if she had left the room. The boy read the whole card.

Still better results would be obtained if we could reorganize the educational system on a rational basis. Then we might expect a general return of that **primitive acuity of vision** which we marvel at so greatly when we read about it in the memoirs of travelers. But even under existing conditions it has been proven beyond the shadow of a doubt that errors of refraction are no necessary part of the price we must pay for education.

There are at least ten million children in the schools of the United States who have defective sight. This condition prevents them from taking full advantage of the educational opportunities which the State provides. It undermines their health and wastes the taxpayers' money. If allowed to continue, it will be an expense and a handicap to them throughout their lives. In many cases it will be a source of continual misery and suffering. And yet practically all of these cases could be cured and the development of new ones prevented by the daily reading of the Snellen test card.

Why should our children be compelled to suffer and wear glasses for want of this simple measure of relief? It costs practically nothing. In fact, it would not be necessary, in some cases, as in the schools of New York City, even to purchase the Snellen test cards, as they are already being used to test the eyes of the children. Not only does it place practically no additional burden upon the teachers, but, by improving the eyesight, health, disposition and mentality of their pupils, it greatly lightens their labors. No one would venture to suggest, further, that it could possibly do any harm. Why, then, should there be any delay about introducing it into the schools? If there is still thought to be need for further investigation and discussion, we can investigate and discuss just as well after the children get the cards as before, and by adopting that course we will not run the risk of needlessly condemning another generation to that curse which heretofore has always dogged the footsteps of civilization, namely, defective eyesight. I appeal to all who read these lines to use whatever influence they possess toward the attainment of this end.

Native American Indians had perfect eyesight and health before they were forced into the white mans culture, schools, religion diet.
Modern Indians are now reclaiming their heritage. An American Indian would be a great U.S. President.
This book is free for Native American Indians to read, distribute, sell.

THE STORY OF EMILY

**Children cured of defective eyesight by Dr. Bates, teach the Bates Method,
cure defective sight; blur, astigmatism, cataract, crossed eyes in other children.**

The efficacy of the method of treating imperfect sight without glasses has been demonstrated in thousands of cases, not only in my own practice but in that of many persons of whom I may not even have heard; for almost all patients when they are cured proceed to cure others. At a social gathering one evening a lady told me that she had met a number of my patients; but when she mentioned their names, I found that I did not remember any of them, and said so.

"That is because you cured them by proxy," she said. "You didn't directly cure Mrs. Jones or Mrs. Brown, but you cured Mrs. Smith and Mrs. Smith cured the other ladies. You didn't treat Mr. and Mrs. Simpkins or Mr. Simpkins' mother and brother, but you may remember that you cured Mr. Simpkins' boy of a squint, and he cured the rest of the family."

In schools where the Snellen test card was used to prevent and cure imperfect sight, the children, after they were cured themselves, often took to the practice of ophthalmology with the greatest enthusiasm and success, curing their fellow students, their parents and their friends. They made a kind of game of the treatment, and the progress of each school case was watched with the most intense interest by all the children. On a bright day, when the patients saw well, there was great rejoicing, and on a dark day there was corresponding depression. One girl cured twenty-six children in six months; another cured twelve in three months; a third developed quite a varied ophthalmological practice and did things of which older and more

experienced practitioners might well have been proud. Going to the school which she attended one day, I asked this girl about her sight, which had been very imperfect. She replied that it was now very good, and that her headaches were quite gone. I tested her sight and found it normal. Then another child whose sight had also been very poor spoke up,

"I can see all right too," she said. "Emily"—indicating girl No. I—"cured me."

"Indeed"" I replied. "How did she do that?"

The second girl explained that Emily had had her read the card, which she could not see at all from the back of the room, at a distance of a few feet. The next day she had moved it a little further way, and so on, until the patient was able to read it from the back of the room, just as the other children did. Emily now told her to cover the right eye and read the card with her left, and both girls were considerably upset to find that the **uncovered eye was apparently blind.** The school doctor was consulted and said that nothing could be done. The eye had been blind from birth and no treatment would do any good.

Nothing daunted, however, Emily undertook the treatment. She told the patient to cover her good eye and go up close to the card, and at a distance of a foot or less it was found that she could read even the small letters. The little practitioner then proceeded confidently as with the other eye, and after many months of practice the patient became the happy possessor of normal vision in both eyes. The case had, in fact, been simply one of high myopia, and the school doctor, not being a specialist, had not detected the difference between this condition and blindness.

In the same classroom, there had been a little girl with congenital **cataract**, but on the occasion of my visit the defect had disappeared. This, too, it appeared, was Emily's doing. The school doctor had said that there was no help for this eye except through operation, and as the sight of the other eye was pretty good, he fortunately did not think it necessary to urge such a course. Emily accordingly took the matter in hand. She had the patient stand close to the card, and at that distance it was found that she could not see even the big C. Emily now held the card between the patient and the light and moved it back and forth. At a distance of three or four feet this movement could be observed indistinctly by the patient. The card was then moved farther away, until the patient became able to see it move at ten feet and to see some of the larger letters indistinctly at a less distance. Finally, after six months, she became able to read the card with the bad eye as well as with the good one. After testing her sight and finding it normal in both eyes, I said to Emily

"You are a splendid doctor. You beat them all. Have you done anything else?"

The child blushed, and turning to another of her classmates, said:

"Mamie, come here."

Mamie stepped forward and I looked at her eyes. There appeared to be nothing wrong with them.

"I cured her," said Emily.

"What of?" I inquired.

"Cross eyes," replied Emily.

"How," I asked, with growing astonishment.

Emily described a procedure very similar to that adopted in the other cases. Finding that the sight of the **crossed eye** was very poor, so much so, indeed, that poor Mamie could see practically nothing with it, the obvious course of action seemed to her to be the restoration of its sight; and, never having read any medical literature she did not know that this was impossible. So she went to it. She had Mamie cover her good eye and practice with the bad one at home and at school, until at last the sight became normal and the eye straight. The school doctor had wanted to have the eye operated upon, I was told, but fortunately Mamie was "scared" and would not consent. And here she was with two perfectly good, straight eyes.

"Anything else?" I inquired, when Mamie's case had been disposed of. Emily blushed again, and said:

"Here's Rose. Her eyes used to hurt her all the time, and she couldn't see anything on the blackboard. Her headaches used to be so bad that she had to stay away from school every once in a while. The doctor gave her glasses; but they didn't help her, and she wouldn't wear them. When you told us the card would help our eyes I got busy with her. I had her read the card close up, and then I moved it farther away, and now she can see all right, and her head doesn't ache any more. She comes to school every day, and we all thank you very much."

This was a case of compound hypermetropic astigmatism. Such stories might be multiplied indefinitely. Emily's astonishing record cannot, it is true, be duplicated, but lesser cures by cured patients have been very numerous and serve to show that the benefits of the method of preventing and curing defects of vision in the schools which is presented in this number of BETTER EYESIGHT would be far-reaching. Not only errors of refraction would be cured, but many more serious defects; and not only the children would be helped, but their families and friends also.

August, 1919 -

1 - For reports of all the papers quoted, see Jour. Am. Med. Assoc. June 21, 1919.
2 - Bates: The Imperfect Sight of the Normal Eye, N. Y. Med. Jour., Sept. 8, 1917.
3 - The Hygiene of the Eye in Schools, English translation, edited by Turnbull, p. 127.
4 - System of Diseases of the Eye, 1897. Vol. II, p. 361.
5 - Brit. Med. Jour., June 18, 1898.
6 - Die Entstehung der sphärischen Refraktionen des menschlichen Auges, Berlin, 1913, p. 540.
7 - Archiv f. Augenhlk., Vol. LXXIX, 1915, translated in Archives of Ophthalmology, Vol. XLV, No. 6, November 1916.
8 - Bates: The Cause of Myopia, N. Y. Med. Jour., March 16, 1912.
9 - Bates: The Prevention of Myopia in School Children, N. Y. Med. Jour., July 29, 1911.
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BETTER EYESIGHT

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

September, 1919

THE FLASHING CURE

Do you read imperfectly? Can you observe then that when you look at the first word, or the first letter, of a sentence you do not see best where you are looking; that you see other words, or other letters, just as well as or better than the ones you are looking at? Do you observe also that the harder you try to see the worse you see?

Now close your eyes and rest them, remembering some color, like black or white, that you can remember perfectly. Keep them closed until they feel rested, or until the feeling of strain has been completely relieved. Now open them and **look at the first word or letter of a sentence for a fraction of a second**. If you have been able to relax, partially or completely, you will have a **flash of improved or clear vision**, and the area seen best will be smaller.

After opening the eyes for this fraction of a second, close them again quickly, still remembering the color, and keep them closed until they again feel rested. Then again open them for a fraction of a second. Continue this alternate resting of the eyes and flashing of the letters for a time, and you may soon find that you can keep your eyes open longer than a fraction of a second without losing the improved vision.

If your trouble is with distant instead of near vision, use the same method with distant letters.

In this way you can demonstrate for yourself the fundamental principles of the cure of imperfect sight by treatment without glasses.

If you fail, ask someone with perfect sight to help you.

When looking at a letter: shift on it part to part. Blink. The letter remains clear.
Shift dot to dot (part to part) on the E.

VISION AND EDUCATION

Poor sight is admitted to be one of the most fruitful causes of retardation in the schools. It is estimated1 that it may reasonably be held responsible for a quarter of the habitually "left-backs," and it is commonly assumed that all this might be prevented by suitable glasses.

There is much more involved in defective vision, however, than mere inability to see the blackboard, or to use the eyes without pain or discomfort. Defective vision is the result of an abnormal condition of the mind, and when the mind is in an abnormal condition it is obvious that none of the processes of education can be conducted with advantage. By putting glasses upon a child we may, in some cases, neutralize the effect of this condition upon the eyes and by making the patient more comfortable may improve his mental faculties to some extent, but we do not alter fundamentally the condition of the mind and by confirming it in a bad habit we may make it worse.

It can easily be demonstrated that among the faculties of the mind which are impaired when the vision is impaired is the memory; and as a large part of the educational process consists of storing the mind with facts, and all the other mental processes depend upon one's knowledge of facts, it is easy to see how little is accomplished by merely putting glasses on a child that has "trouble with its eyes." The **extraordinary memory of primitive people** has been attributed to the fact that owing to the absence of any convenient means of making written records they had to depend upon their memories, which were strengthened accordingly; but in view of the known facts about the relation of memory to eyesight it is more reasonable to suppose that the retentive memory of primitive man was due to the same cause as his **keen vision**, namely, **a mind at rest**.

The primitive memory as well as primitive keenness of vision have been found among civilized people, and if the necessary tests had been made it would doubtless have been found that they always occur together, as they did in a case which recently came under my observation. The subject was a child of ten with such marvelous eyesight that
she could see the moons of Jupiter with the naked eye, a fact which was demonstrated by her drawing a diagram of these satellites which exactly corresponded to the diagrams made by persons who had used a telescope. **Her memory was equally remarkable**. She could recite the whole content of a book after reading it, as Lord Macauley is said to have done, and she learned more Latin in a few days without a teacher than her sister who had six diopters of myopia had been able to do in several years. She remembered five years afterward what she ate at a restaurant, she recalled the name of the waiter, the number of the building and the street in which it stood. She also remembered what she wore on this occasion and what every one else in the party wore. The same was true of every other event which had awakened her interest in any way, and it was a favorite amusement in her family to ask her what the menu had been and what people had worn on particular occasions.

When the sight of two persons is different it has been found that their memories differ in exactly the same degree. Two sisters, one of whom had only ordinary good vision, indicated by the formula 20/20, while the other had 20/10, found that the time it took them to learn eight verses of a poem varied in almost exactly the same ratio as their sight. The one whose vision was 20/10 learned eight verses of the poem in fifteen minutes, while the one whose vision was only 20/20 required thirty-one minutes to do the same thing. After palming the one with ordinary vision learned eight more verses in twenty-one minutes, while the one with 20/10 was only able to reduce her time by two minutes, a variation clearly within the limits of error. In other words, the mind of the latter being already in a normal or nearly normal condition, she could not improve it appreciably by palming, while the former whose mind was under a strain was able to gain relaxation, and hence improve her memory, by this means.

When the two eyes of the same person are different a corresponding difference in the memory has been noted according to whether both eyes were open, or the better eye closed. A patient with normal vision in the right eye and half-normal vision in the left when looking at the Snellen test card with both eyes open could remember a period for twenty seconds continuously, but could remember it only ten seconds when the better eye was closed. A patient with half-normal vision in the right

eye and one-quarter normal in the left could remember a period for twelve seconds with both eyes open and only six seconds with better eye closed. A third patient with normal sight in the right eye and vision of one-tenth in the left could remember a period twelve seconds with both eyes open and only two seconds when the better eye was closed. In other words if the right eye is better than the left the memory is better when the right eye is open than when only the left eye is open.

Under the present educational system there is a constant effort to compel the children to remember. These efforts always fail. They spoil both the memory and the sight. The memory cannot be forced any more than the vision can be forced. **We remember without effort, just as we see without effort, and the harder we try to remember or see the less we are able to do so.**

The sort of things we remember are the things that interest us, and the reason children have difficulty in learning their lessons is because they are bored by them. For the same reason, among others, their eyesight becomes impaired, boredom being a condition of mental strain in which it is impossible for the eye to function normally.

Some of the various kinds of compulsion now employed in the educational process may have the effect of awakening interest. Betty Smith's interest in winning a prize, for instance, or in merely getting ahead of Johnny Jones, may have the effect of rousing her interest in lessons that have hitherto bored her, and this interest may develop into a genuine interest in the acquisition of knowledge; but this cannot be said of the various fear incentives still so largely employed by teachers. These, on the contrary, have the effect, usually, of completely paralyzing minds already benumbed by lack of interest, and the effect upon the vision is equally disastrous.

The fundamental reason, both for poor memory and poor eyesight in school children, in short, is our irrational and unnatural educational system. **Montessori has taught us that it is only when children are interested that they can learn. It is equally true that it is only when they are interested that they can see.** This fact was strikingly illustrated in the case of one of the two pairs of sisters mentioned above. Phebe, of the keen eyes, who could recite whole books if she happened to be interested in them, disliked mathematics and anatomy extremely, and not only could not learn them but became myopic when they were presented to her mind. She could read letters a quarter of an inch high at twenty feet in a poor light, but when asked to read figures one to two inches high in a good light at ten feet she miscalled half of them. When asked to tell how much 2 and 3 made, she said "4," before finally deciding on "5"; and all the time she was occupied with this disagreeable subject the retinoscope showed that she was myopic. When I asked her to look into my eye with the ophthalmoscope she could see nothing, although a much lower degree of visual acuity is required to note the details of the interior of the eye than to see the moons of Jupiter.

Short-sighted Isabel, on the contrary, had a passion for mathematics and anatomy, and excelled in those subjects. She learned to use the ophthalmoscope as easily as Phebe had learned Latin. Almost immediately she saw the optic nerve, and noted that the center was whiter than the periphery. She saw the light-colored lines, the arteries; and the darker ones, the veins; and she saw the light streaks on the blood-vessels. Some specialists never become able to do this, and no one could do it without normal vision. Isabel's vision, therefore, must have been temporarily normal when she did it. Her vision for figures, although not normal, was better than for letters.

In both these cases the ability to learn and the ability to see went hand in hand with interest. Phebe could read a photographic reduction of the Bible and recite what she had read verbatim, she could see the moons of Jupiter and draw a diagram of them afterwards, because she was interested in these things; but she could not see the interior of the eye, nor see figures even half as well as she saw letters, because these things bored her. When, however, it was suggested to her that it would be a good joke to surprise her teachers, who were always reproaching her for her backwardness in mathematics, by taking a high mark in a coming examination, her interest in the subject awakened and she contrived to learn enough to get seventy-eight per cent. In Isabel's case letters were antagonistic. She was not interested in most of the subjects with which they dealt and, therefore, she was backward in those subjects and had become habitually myopic. But when asked to look at objects which aroused an intense interest her vision became normal.

When one is not interested, in short, one's mind is not under control, and without mental control one can neither learn nor see. Not only the memory but all other mental faculties are improved when the eyesight becomes normal. It is a common experience with patients cured of defective sight to find that their ability to do their work has improved.

The teacher whose letter was quoted in the first issue of BETTER EYESIGHT testified that after gaining perfect eyesight she "knew better how to get at the minds of the pupils, was "more direct, more definite, less diffused, less vague," possessed, in fact, "central fixation of the mind." In another letter she said, "The better my eyesight becomes the greater is my ambition. On the days when my sight is best I have the greatest anxiety to do things."

Another teacher reports that one of her pupils used to sit doing nothing all day long and apparently was not interested in anything. After the test card was introduced into the classroom and his sight improved, he became anxious to learn, and speedily developed into one of the best students in the class. In other words his eyes and his mind became normal together.

A bookkeeper nearly **seventy years of age** who had **worn glasses for forty years** found after he had **gained perfect sight without glasses** that he could work more rapidly and accurately and with less fatigue than ever in his life before. During busy seasons, or when short of help, he has worked for some weeks at a time from 7 a. m, until 11 p. m., and he reports that he felt less tired at night after he was through than he did in the morning when he started. Previously, although he had done more work than any other man in the office, it always tired him very much. He also noticed an improvement in his temper. Having been so long in the office and knowing so much more about the business than his fellow employees, he was frequently appealed to for advice. These interruptions, before his sight became normal, were very annoying to him and often caused him to lose his temper. Afterward, however, they caused him no irritation whatever. In the case of another patient whose story is given elsewhere symptoms of insanity were relieved when the vision became normal.

From all these facts it will be seen that the problems of vision are far more intimately associated with the problems of education than we had supposed, and that they can by no means be solved by putting concave, or convex, or astigmatic lenses before the eyes of the children.

THE DOCTOR'S STORY

One of the most striking cases of the relation of mind to vision that ever came to my attention was that of a physician whose mental troubles, at one time so serious that they suggested to him the idea that he might be going insane, were completely relieved when his sight became normal. He had been seen by many eye and nerve specialists before he came to me and consulted me at last, not because he had any faith in my methods, but because nothing else seemed to be left for him to do. He brought with him quite a collection of glasses prescribed by different men, no two of them being alike. He had worn glasses, he told me, for many months at a time without benefit and then he had left them off and had been apparently no worse. Outdoor life had also failed to help him. On the advice of some prominent neurologists he had even given up his practice for a couple of years to spend the time upon a ranch, but the vacation had done him no good.

I examined his eyes and found no organic defects and no error of refraction. Yet his vision with each eye was only three-fourths of the normal, and he suffered from **double vision and all sorts of unpleasant symptoms**. He used to see people standing on their heads, and little devils dancing on the tops of the high buildings. He also had other **illusions** too numerous to mention in a short paper. At night his sight was so bad that he had difficulty in finding his way about, and when walking along a country road he believed that he saw better when he turned his eyes far to one side and viewed the road with the side of the retina instead of with the center. At variable intervals, without warning and without loss of consciousness, **he had attacks of blindness**. These caused him great uneasiness, for he, was a surgeon with a large and lucrative practice, and he feared that he might have an attack while operating.

His memory was very poor. He could not remember the color of the eyes of any member of his family, although he had seen them all daily for years. Neither could he recall the color of his house, the number of rooms on the different floors, or other details. The faces and names of patients and friends he recalled with difficulty, or not at all.

His treatment proved to be very difficult, chiefly because he had an infinite number of erroneous ideas about physiological optics in general and his own case in particular and insisted that all these should be discussed; while these discussions were going on he received no benefit. Every day for hours at a time over a long period he talked and argued. Never have I met a person whose logic was so wonderful, so apparently unanswerable, and yet so utterly wrong.

His eccentric fixation was of such high degree that when he looked at a point forty-five degrees to one side of the big C on the Snellen test card, he saw the letter just as black as when he looked directly at it. The strain to do this was terrific, and produced much astigmatism; but the patient was unconscious of it, and could not be convinced that there was anything abnormal in the symptom. If he saw the letter at all, he argued, he must see it as black as it really was, because he was not color-blind. Finally he became able to look away from one of the smaller letters on the card and see it worse than when he looked directly at it. It took eight or nine months to accomplish this, but when it had been done the patient said that it seemed as if a great burden had been lifted from his mind. He experienced a wonderful feeling of rest and relaxation throughout his whole body.

When asked to remember black with his eyes closed and covered he said he could not do so, and he saw every color but the black which one ought normally to see when the optic nerve is not subject to the stimulus of light. He had, however, been an enthusiastic football player at college, and he found at last that he could remember a black football. I asked him to imagine that this football had been thrown into the sea and that it was being carried outward by the tide, becoming constantly smaller but no less black. This he was able to do, and the strain floated with the football, until, by the time the latter had been reduced to the size of a period in a newspaper, it was entirely gone. The relief continued as long as he remembered the black spot, but as he could not remember it all the time, I suggested another method of gaining permanent relief. This was to make his sight voluntarily worse, a plan against which he protested with considerable emphasis.

"Good heavens!" he said, "Is not my sight bad enough without making it worse."

After a week of argument, however, he consented to try the method, and the result was extremely satisfactory. After he had learned to see two or more lights where there was only one, by straining to see a point above the light while still trying to see the light as well as when looking directly at it, he became able to avoid the unconscious strain that had produced his double and multiple vision and was not troubled by these superfluous images any more. In a similar manner other illusions were prevented.

One of the last illusions to disappear was his belief that an effort was required to remember black. His logic on this point was overwhelming, but after many demonstrations he was convinced that no effort was required to let go, and when he realized this, both his vision and his mental condition immediately improved.

He finally became able to read 20/10 or more, and although more than fifty-five years of age, he also read diamond type at from six to twenty-four inches. His night blindness was relieved, his attacks of day blindness ceased, and he told me the color of the eyes of his wife and children. One day he said to me:

"Doctor, I thank you for what you have done for my sight; but no words can express the gratitude I feel for what you have done for my mind."

Some years later he called with his heart full of gratitude, because there had been no relapse.

LYING A CAUSE OF MYOPIA

I may claim to have discovered the fact that telling lies is bad for the eyes. Whatever bearing this circumstance may have upon the universality of defects of vision, it can easily be demonstrated that it is impossible to say what is not true, even with no intent to deceive, or even to imagine a falsehood, without producing an error of refraction.

If a patient can read all the small letters on the bottom line of the test card, and either deliberately or carelessly miscalls any of them, the retinoscope will indicate an error of refraction. In numerous cases patients have been asked to state their ages incorrectly, or to try to imagine that they were a year older, or a year younger, than they actually were, and in every case when they did this the retinoscope indicated an error of refraction. A patient twenty-five years old had no error of refraction when he looked at a blank wall without trying to see; but if he said he was twenty-six, or if someone else said he was twenty-six, or if he tried to imagine that he was twenty-six, he became myopic. The same thing happened when he stated or tried to imagine that he

was twenty-four. When he stated or remembered the truth his vision was normal, but when he stated or imagined an error he had an error of refraction.

Two little girl patients arrived one after the other one day, and the first accused the second of having stopped at Huyler's for an ice-cream soda, which she had been instructed not to do, being somewhat too much addicted to sweets. The second denied the charge, and the first, who had used the retinoscope and knew what it did to people who told lies, said:

"Do take the retinoscope and find out."

"I followed the suggestion, and having thrown the light into the second child's eyes, I asked:

"Did you go to Huyler's?"

"Yes," was the response, and the retinoscope indicated no error of refraction.

"Did you have an ice-cream soda?"

"No," Said the child; but the tell-tale shadow moved in a direction opposite to that of the mirror, showing that she had become myopic and was not telling the truth.

The child blushed when I told her this and acknowledged that the retinoscope was right, for she had heard of the ways of the uncanny instrument before and did not know what else it might do to her if she said anything more that was not true.

The fact is that it requires an effort to state what is not true, and this effort always results in a deviation from the normal in the refraction of the eye. So sensitive is the test that if the subject, whether his vision is ordinarily normal, or not, pronounces the initials of his name correctly while looking at a blank surface without trying to see, there will be no error of refraction; but if he miscalls one initial, even without any consciousness of effort, and with full knowledge that he is deceiving no one, myopia will be produced.

CURED IN FIFTEEN MINUTES

Patients often ask how long it takes to be cured. The answer is that it takes only as long as it takes to relax. If this can be done in five minutes, the patient is cured in five minutes, no matter how great the degree of his error of refraction, or how long its duration. All persons with errors of refraction are able to relax in a few seconds under certain conditions, but to gain permanent relaxation usually requires considerable time. Some persons, however, are able to get it very quickly. These quick cures are very rare, except in the case of children under twelve; but they do occur, and I believe the time is coming when it will be possible to cure everyone quickly. It is only a question of accumulating more facts and presenting them in such a way that the patient can grasp them quickly.

A very remarkable case of a quick cure was that of a man of fifty-five who had worn glasses for thirty years for distant vision and ten years for reading, and whose distant vision at the time he consulted me was 20/200.

When he looked at the Snellen test card the letters appeared grey to him instead of black. He was told that they were black, and the fact was demonstrated by bringing the card close to him. His attention was also called to the fact that the small letters were just as black as the large ones. He was then directed to close and cover his eyes with the palms of his hands, shutting out all the light. When he did this he saw a perfect black, indicating that he had secured perfect relaxation and that the optic nerve and visual centers of the brain were not disturbed. While his eyes were still closed he was asked:

"Do you think that you can remember with your eyes open the perfect black that you now see?"

"Yes," he answered, "I know I can,"

When he opened his eyes, however, his memory of the black was imperfect, and though able to read the large letters, he could not read the small ones. A second time he was told to close and cover his eyes, and again he saw a perfect black. When he opened them he was able to retain complete control of his memory, and so was able to read the whole card. This was ten minutes after he entered the office.

Diamond type was now given him to read, but the letters looked grey to him, and he could not distinguish them. Neither could he remember black when he was looking at them, because in order to see them grey he had to strain, and in order to remember black he would have had to relax, and he could not do both at the same time. He was told that the letters were perfectly black, and when he looked away from them he was able to remember them black. When he looked back he still remembered them black, and was able to read them with normal vision at twelve inches. This took five minutes, making the whole time in the office fifteen minutes. The cure was permanent, the patient not only retaining what he had gained, but continuing to improve his sight, by daily reading of fine print and the Snellen test card, till it became almost **telescopic.**

September, 1919

1 -School Health News, published by the Department of Health of New York City, February, 1919.

BETTER EYESIGHT

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

October, 1919

THE SWINGING CURE

If you see a letter perfectly, you may note that it appears to pulsate, or move slightly in various directions. If your sight is imperfect, the letter will appear to be stationary. The apparent movement is caused by the unconscious shifting of the eye. The lack of movement is due to the fact that the eye stares, or looks too long at one point. This is an invariable symptom of imperfect sight, and may often be relieved by the following method:

Close your eyes and cover them with the palms of the hands so as to exclude all the light, and shift mentally from one side of a black letter to the other. As you do this, the mental picture of the letter will appear to move back and forth in a direction contrary to the imagined movement of the eye. Just so long as you imagine that the letter is moving, or swinging, you will find that you are able to remember it, and the **shorter and more regular the swing, the blacker and more distinct the letter will appear**. If

you are able to imagine the letter stationary, which may be difficult, you will find that your memory of it will be much less perfect.

Now open your eyes and look first at one side and then at the other of the real letter. If it appears to move in a direction opposite to the movement of the eye, you will find that your vision has improved. If you can imagine the swing of the letter as well with your eyes open as with your eyes closed, as **short**, as **regular** and as **continuous**, your vision will be normal.

SIMULTANEOUS RETINOSCOPY

Much of my information about the eye has been obtained by means of simultaneous retinoscopy.
The retinoscope is an instrument used to measure the refraction of the eye. It throws a beam of light into the pupil by reflection from a mirror, the light being either outside the instrument—above and behind the subject—or arranged within it by means of an electric battery. On looking through the sight-hole one sees a larger or smaller part of the pupil filled with light, which in normal human eyes is a reddish yellow, because this is the color of the retina, but which is green in a cat's eye, and might be white if the retina were diseased. Unless the eye is exactly focused at the point from which it is being observed one sees also a dark shadow at the edge of the pupil, and it is the behavior of this shadow when the mirror is moved in various directions which reveals the refractive condition of the eye. If the instrument is used at a distance of six feet or more, and the shadow moves in a direction opposite to the movement of the mirror, the eye is myopic. If it moves in the same direction as the mirror, the eye is either hypermetropic or normal; but in the case of hypermetropia the movement is more pronounced than in that of normality, and an expert can usually tell the difference between the two states merely by the nature of the movement. In astigmatism the movement is different in different meridians. To determine the degree of the error, or to distinguish accurately between hypermetropia and normality, or between the different kinds of astigmatism, it is usually necessary to place a glass before the eye of the subject.

This exceedingly useful instrument has possibilities which have not been generally realized by the medical profession. It is commonly employed only under certain artificial conditions in a dark room; but it is possible to use it under all sorts of normal and abnormal conditions on the eyes both of human beings and of the lower animals. I have used it in the daytime and at night; when the subjects were comfortable and when they were excited; when they were trying to see and when they were not; when they were lying and when they were telling the truth. I have also used it, under varying conditions, on the eyes of many cats, dogs, rabbits, birds, turtles, reptiles and fish.

Most ophthalmologists depend upon the Snellen test card, supplemented by trial lenses, to determine whether the vision is normal or not, and to determine the degree of any abnormality that may exist. This is a slow, awkward and unreliable method of testing the vision, and absolutely unavailable for the study of the refraction of the lower animals and that of human beings under the conditions of life. The test card can be used only under certain favorable conditions, but the retinoscope can be used anywhere. It is a little easier to use it in a dim light than in a bright one, but it may be used in any light, even with the strong light of the sun shining directly into the eye. It is available whether the subject is at rest or in motion, asleep or awake, or even under ether or chloroform. It is also available when the observer is in motion. It has been used successfully when the eyelids were partly closed, shutting off part of the area of the pupil; when the pupil was dilated; also when it was contracted to a pin-point; when the subject was reading fine print at six inches, or at a greater distance; and when the eye was oscillating from side to side, from above downward, or in other directions.

It takes a considerable time, varying from minutes to hours, to measure the refraction with the Snellen test card and trial lenses. With the retinoscope, however, the refraction can be determined in a fraction of a second. With the Snellen test card and trial lenses it would be impossible to get any information about the refraction of a baseball player at the moment he swings for the ball, at the moment he strikes it, and at the moment after he strikes it. With the retinoscope, however, it is quite easy to determine whether his vision is normal, or whether he is myopic, hypermetropic, or astigmatic, when he does these things; and if any errors of refraction are noted, one can guess their degree pretty accurately by the rapidity of the movement of the shadow.

With the Snellen test card and trial lenses conclusions must be drawn from the patient's statements as to what he sees; but the patient often becomes so worried and confused during the examination that he does not know what he sees, or whether different glasses make his sight better, or worse; and, moreover, visual acuity is not reliable evidence of the state of the refraction. One patient with two diopters of myopia may see twice as much as another with the same error of refraction. The evidence of the test card is, in fact, entirely subjective; that of the retinoscope is entirely objective, depending in no way upon the statements of the patient.

By means of simultaneous retinoscopy it has been demonstrated that the refraction of the eye is never constant; that all persons with errors of refraction have, at frequent intervals during the day and night, moments of normal vision when their myopia, hypermetropia, or astigmatism, disappears completely; and that all persons, no matter how good their sight may ordinarily be, have moments of imperfect sight when they become myopic, hypermetropic, or astigmatic. It has also been demonstrated that when the eye makes an effort to see, an error of refraction is always produced, and that when it looks at objects without effort, all errors of refraction disappear, no matter how great their degree, or how long their duration. It has been further demonstrated that when the eye strains to see distant objects myopia is always produced in one or all meridians, and when it strains to see near objects hypermetropia is always produced in one or all meridians.

The examination of the eyes of persons while asleep, or under the influence of ether or chloroform, has shown that the eye is rarely at rest during sleep, or while the subject is unconscious from any cause. Persons whose sight was normal while awake were found to have myopia, hypermetropia and astigmatism when asleep, and if these errors were present when they were awake, they were increased during sleep. This explains why so many people are unable to see as well in the morning as at other times, and why people waken with headaches and pain in the eyes. Under ether or chloroform, errors of refraction are also produced or increased, and when people are sleepy they have invariably been found to have errors of refraction.

Under conditions of mental or physical discomfort, such as pain, cough, fever, discomfort from heat or cold, depression, anger, or anxiety, errors of refraction are always produced in the normal eye, or increased in the eye in which they already exist. In a dim light, in a fog, or in the rain, the retinoscope may indicate no error of refraction in eyes which ordinarily have normal sight; but a pilot on a ship on a rainy night usually has an error of refraction, because he is straining to see, and it is rare to find persons in

positions of responsibility under unfavorable conditions with normal vision.

In order to obtain reliable results with the retinoscope it must be used at a distance of six feet or more from the subject. When used at a distance of three feet or less, as it commonly is, the subject becomes nervous and unconsciously strains, thus altering his refraction.

FLOATING SPECKS

A very common phenomenon of imperfect sight is the one known to medical science as *muscae volitantes*, or *flying flies*. These floating specks are usually dark, or black; but sometimes appear like white bubbles, and in rare cases may assume all the colors of the rainbow. They move somewhat rapidly, usually in curving lines, before the eyes, and always appear to be just beyond the point of fixation. If one tries to look at them directly, they seem to move a little farther away. Hence their name of *flying flies*.

The literature of the subject is full of speculations as to the origin of these appearances. Some have attributed them to the presence of floating specks—dead cells or the debris of cells—in the vitreous humor, the transparent substance that fills four-fifths of the eyeball behind the crystalline lens. Similar specks on the surface of the cornea have also been held responsible for them. It has even been surmised that they might be caused by the passage of tears over the cornea. They are so common in myopia that they have been supposed to be one of the symptoms of this condition, although they occur also with other errors of refraction, as well as in eyes otherwise normal. They have been attributed to disturbances of the circulation, the digestion and the kidneys, and because so many insane people have them, have been thought to be an evidence of incipient insanity. The patent-medicine business has thrived upon them, and it would be difficult to estimate the amount of mental torture they have caused, as the following cases illustrate.

A clergyman who was much annoyed by the continual appearance of floating specks before his eyes was told by his eye specialist that they were a symptom of kidney disease, and that in many cases of kidney trouble, disease of the retina might be an early symptom. So at regular intervals he went to the specialist to have his eyes examined, and when at length the latter died, he looked around immediately for some one else to make the periodical examination. His family physician directed him to me. I was by no means so well known as his previous ophthalmological adviser, but it happened that I had taught the family physician how to use the ophthalmoscope after others had failed to do so. He thought, therefore, that I must know a lot about the use of the instrument, and what the clergyman particularly wanted was some one capable of making a thorough examination of the interior of his eyes, and detecting at once any signs of kidney disease that might make their appearance. So he came to me, and at least four times a year for ten years he continued to come.

Each time I made a very careful examination of his eyes, taking as much time over it as possible, so that he would believe that it was careful; and each time he went away happy because I could find nothing wrong. Once when I was out of town he got a cinder in his eye and went to another oculist to get it out. When I came back late at night I found him sitting on my doorstep, on the chance that I might return. His story was a pitiable one. The strange doctor had examined his eyes with the ophthalmoscope, and had suggested the possibility of glaucoma, describing the disease as a very treacherous one which might cause him to go suddenly blind and would be agonizingly painful. He emphasized what the patient had previously been told about the danger of kidney disease, suggested that the liver and heart might also be involved, and advised him to have all of these organs carefully examined. I made another examination of his eyes in general and their tension in particular; I had him feel his eyeballs and compare them with my own, so that he might see for himself that they were not becoming hard as a stone; and finally I succeeded in reassuring him. I have no doubt, however, that he went at once to his family physician for an examination of his internal organs.

A man returning from Europe was looking at some white clouds one day when floating specks appeared before his eyes. He consulted the ship's doctor, who told him that the symptom was very serious, and might be the forerunner of blindness. It might also indicate incipient insanity, as well as other nervous or organic diseases. He advised him to consult his family physician and an eye specialist as soon as he landed, which he did. This was twenty-five years ago, but I shall never forget the terrible state of nervousness and terror into which the patient had worked himself by the time he came to me. It was even worse than that of the clergyman, who was always ready to admit that his fears were unreasonable. I examined his eyes very carefully, and found them absolutely normal. The vision was perfect both for the near-point and the distance. The color perception, the fields and the tension were normal; and under a strong magnifying glass I could find no opacities in the vitreous. In short, there were absolutely no symptoms of any disease. I told the patient there was nothing wrong with his eyes, and I also showed him an advertisement of a quack medicine in a newspaper which gave a great deal of space to describing the dreadful things likely to follow the appearance of floating specks before the eyes, unless you began betimes (in good time, early) to take the medicine in question at one dollar a bottle. I pointed out that the advertisement, which was appearing in all the big newspapers of the city every day, and probably in other cities, must have cost a lot of money, and must, therefore, be bringing in a lot of money. Evidently there must be a great many people suffering from this symptom, and if it were as serious as was generally believed, there would be a great many more blind and insane people in the community than there were. The patient went away somewhat comforted, but at eleven o'clock—his first visit had been at nine—he was back again. He still saw the floating specks, and was still worried about them. I examined his eyes again as carefully as before, and again was able to assure him that there was nothing wrong with them. In the afternoon I was not in my office, but I was told that he was there at three and at five. At seven he came again, bringing with him his family physician, an old friend of mine. I said to the latter:

"Please make this patient stay at home. I have to charge him for his visits, because he is taking up so much of my time; but it is a shame to take his money when there is nothing wrong with him."

What my friend said to him I don't know, but he did not come back again.

I did not know as much about **muscae volitantes** then as I know now, or I might have saved both of these patients a great deal of uneasiness. I could tell them that their eyes were normal, but I did not know how to relieve them of the symptom, which is simply **an illusion resulting from mental strain**. The specks are associated to a considerable extent with markedly **imperfect eyesight**, because persons whose eyesight is imperfect always strain to see; but persons whose eyesight is ordinarily normal may see them at times, because no eye has normal sight all the time. Most people can see muscae volitantes when they look at the sun, or any uniformly bright surface, like a sheet of white paper upon which the sun is shining. This is because most people strain when

they look at surfaces of this kind. The specks are never seen, in short, except when the eyes and mind are under a strain, and they always disappear when the strain is relieved. **If one can remember a small letter on the Snellen test card by central fixation, the specks will immediately disappear, or cease to move; but if one tries to remember two or more letters equally well at one time, they will reappear and move.**

Usually the strain that causes muscae volitantes is very easily relieved. See; April, 1925

Floating specks may be debris in the eyeball. A cleansing diet, improved circulation of blood, fluid to/in the eye can break down floaters and enable them to flow out of the eye. Eyestrain, mental strain, staring, poor diet, sugar, can cause floaters. Shifting, central fixation, relaxation can stop the appearance of floaters.

CORRESPONDENCE TREATMENT

Correspondence treatment is usually regarded as quackery, and it would be manifestly impossible to treat many diseases in this way. Pneumonia and typhoid, for instance, could not possibly be treated by correspondence, even if the physician had a sure cure for these conditions and the mails were not too slow for the purpose. In the case of most diseases, in fact, there are serious objections to correspondence treatment.

But myopia, hypermetropia and astigmatism are functional conditions, not organic, as the text-books teach, and as I believed myself until I learned better. Their treatment by correspondence, therefore, has not the drawbacks that exist in the case of most physical derangements. One cannot, it is true, fit glasses by correspondence as well as when the patient is in the office, but even this can be done, as the following case illustrates.

An old colored woman in the wilds of Honduras, far removed from any physician or optician, was unable to read her Bible, and her son, a waiter in New York, asked me if I could not do something for her. The suggestion gave me a distinct shock which I will remember as long as I live. I had never dreamed of the possibility of prescribing glasses for anyone I had not seen, and I had, besides, some very disquieting recollections of colored women whom I had tried to fit with glasses at my clinic. If I had so much difficulty in prescribing the proper glasses under favorable conditions, how could I be expected to fit a patient whom I could not even see? The waiter was deferentially persistent, however. He had more faith in my genius than I had, and as his mother was nearing the end of her life, he was very anxious to gratify her last wishes. So, like the unjust judge of the parable, I yielded at last to his importunity, and wrote a prescription for convex 3.00 D. S. The young man ordered the glasses and mailed them to his mother, and by return mail came a very grateful letter stating that they were perfectly satisfactory.

A little later the patient wrote that she couldn't see objects at the distance that were perfectly plain to other people, and asked if some glasses couldn't be sent that would make her see at the distance as well as she did at the near-point. This seemed a more difficult proposition than the first one; but again the son was persistent, and I myself could not get the old lady out of my mind. So again I decided to do what I could. The waiter had told me that his mother had read her Bible long after the age of forty. Therefore I knew she could not have much hypermetropia, and was probably slightly myopic. I knew also that she could not have much astigmatism, for in that case her sight would always have been noticeably imperfect. Accordingly I told her son to ask her to measure very accurately the distance between her eyes and the point at which she could read her Bible best with her glasses, and to send me the figures. In due time I received, not figures, but a piece of string about a quarter of an inch in diameter and exactly ten inches long. If the patient's vision had been normal for the distance, I knew that she would have been able to read her Bible best with her glasses at thirteen inches. The string showed that at ten inches she had a refraction of four diopters. Subtracting from this the three diopters of her reading glasses, I got one diopter of myopia. I accordingly wrote a prescription for concave 1.00 D. S., and the glasses were ordered and mailed to Honduras. The acknowledgment was even more grateful than in the case of the first pair. The patient said that for the first time in her life she was able to read signs and see other objects at a distance as well as other people did, and that the whole world looked entirely different to her.

Would anyone venture to say that it was unethical for me to try to help this patient? Would it have been better to leave her in her isolation without even the consolation of Bible reading? I do not think so. What I did for her required only an ordinary knowledge of physiological optics, and if I had failed, I could not have done her much harm.

In the case of the treatment of imperfect sight without glasses there can be even less objection to the correspondence method. It is true that in most cases progress is more rapid and the results more certain when the patient can be seen personally; but often this is impossible, and I see no reason why patients who can not have the benefit of personal treatment should be denied such aid as can be given them by correspondence. I have been treating patients in this way for years, and often with extraordinary success.

Some years ago an English gentleman wrote to me that his glasses were very unsatisfactory. They not only did not give him good sight, but they increased instead of lessening his discomfort. He asked if I could help him, and since relaxation always relieves discomfort and improves the vision, I did not believe that I was doing him an injury in telling him how to rest his eyes. He followed my directions with such good results that in a short time he obtained perfect sight for both the distance and the near-point without glasses, and was completely relieved of his pain. Five years later he wrote me that he had qualified as a sharpshooter in the army. Did I do wrong in treating him by correspondence? I do not think so.

After the United States entered the European war, an officer wrote to me from the deserts of Arizona that the use of his eyes at the near-point caused him great discomfort, which glasses did not relieve, and that the strain had produced granulation of the lids. As it was impossible for him to come to New York, I undertook to treat him by correspondence. He improved very rapidly. The inflammation of the lids was relieved almost immediately, and in about four months he wrote me that he had read one of my own reprints-by no means a short one-in a dim light, with no bad after effects; that the glare of the Arizona sun, with the Government thermometer registering 114, did not annoy him, and that he could read the ten line on the test card at fifteen feet almost perfectly, while even at twenty feet he was able to make out most of the letters.

A third case was that of a forester in the employ of the U. S. Government. He had myopic astigmatism, and suffered extreme discomfort, which was not relieved either by glasses or by long summers in the mountains, where he used his eyes but little for close work. He was unable to come to New York for treatment, and although I told him that correspondence treatment was somewhat uncertain, he said he was willing to risk it. It took three days for his letters to reach me and another three for my reply

to reach him, and as letters were not always written promptly on either side, he often did not hear from me more than once in three weeks. Progress under these conditions was necessarily slow; but his discomfort was relieved very quickly, and in about ten months his sight had improved from 20/50 to 20/20.

In almost every case the treatment of cases coming from a distance is continued by correspondence after they return to their homes; and although the patients do not get on so well as when they are coming to the office, they usually continue to make progress till they are cured.

At the same time it is often very difficult to make patients understand what they should do when one has to communicate with them entirely by writing, and probably all would get on better if they could have some personal treatment. At the present time the number of doctors in different parts of the United States who understand the treatment of imperfect sight without glasses is altogether too few, and my efforts to interest them in the matter have not been very successful. I would consider it a privilege to treat medical men without a fee, and when cured they will be able to assist me in the treatment of patients in their various localities.

BETTER EYESIGHT

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

November, 1919

THE MEMORY CURE

When the sight is perfect, the memory is also perfect, because the mind is perfectly relaxed. Therefore the sight may be improved by any method that improves the memory. The easiest thing to remember is a small black spot of no particular size and form; but when the sight is imperfect it will be found impossible to remember it with the eyes open and looking at letters, or other objects with definite outlines. It may, however, be remembered for a few seconds or longer, when the eyes are closed and covered, or when looking at a blank surface where there is nothing particular to see. By cultivating the memory under these favorable conditions, it gradually becomes possible to retain it under unfavorable ones, that is, when the eyes are open and the mind conscious of the impressions of sight. By alternately remembering the period with the eyes closed and covered and then looking at the Snellen test card, or other letters or objects; or by remembering it when looking away from the card where there is nothing particular to see, and then looking back; the patient becomes able, in a longer or shorter time, to retain the memory when looking at the card, and thus becomes able to read the letters with normal vision. Many children have been cured very quickly by this method. Adults who have worn glasses have greater difficulty. Even under favorable conditions, the period cannot be remembered for more than a few seconds, unless one shifts from one part of it to another. One can also shift from one period, or other small black object, to another.

REASON AND AUTHORITY

This article describes how eye doctors fought against Dr. Bates, tried to hide the Bates Method from the public so they could continue selling eyeglasses, surgery, drugs.

Some one—perhaps it was Bacon—has said: "You cannot by reasoning correct a man of ill opinion which by reasoning, he never acquired." He might have gone a step farther and stated that neither by reasoning, nor by actual demonstration of the facts, can you convince some people that an opinion which they have accepted on authority is wrong. A man whose name I do not care to mention, a professor of ophthalmology, and a writer of books well known in this country and in Europe, saw me perform an experiment upon the eye of a rabbit which, according to others who had witnessed it, demonstrated beyond any possibility of error that the lens is not a factor in accommodation. At each step of the operation he testified to the facts; yet at the conclusion he preferred to discredit the evidence of his senses rather than accept the only conclusion that these facts admitted.

First he examined the eye of the animal to be experimented upon with the retinoscope and found it normal, and the fact was written down. Then the eye was stimulated with electricity, and he testified that it accommodated. This was also written down. I now divided the superior oblique muscle, and the eye was again stimulated with electricity. The doctor observed the eye with the retinoscope when this was being done and said, "You failed to produce accommodation." This fact, too, was written down. The doctor now used the electrode himself, but again failed to observe accommodation, and these facts were written down. I now sewed the cut ends of the muscle together, and once more stimulated the eye with electricity. The doctor said, "Now you have succeeded in producing accommodation," and this was written down. I now asked:

"Do you think that superior oblique had anything to do with producing accommodation?"

"Certainly not," he replied.

"Why?" I asked.

"Well," he said, "I have only the testimony of the retinoscope. I am getting on in years, and I don't feel that confidence in my ability to use the retinoscope that I once had. I would rather you wouldn't quote me on this."

While the operation was in progress, however, he gave no indication whatever of doubting his ability to use the retinoscope. He was very positive, in fact, that I had failed to produce accommodation after the cutting of the oblique muscle and his tone suggested that he considered the failure ignominious. It was only after he found himself in a logical trap, with no way out except by discrediting his own observations, that he appeared to have any doubts as to their value.

Patients whom I have cured of various errors of refraction have frequently returned to specialists who had prescribed glasses for them, and, by reading fine print and the Snellen test card with normal vision, have demonstrated the fact that they were cured, without in any way shaking the faith of these practitioners in the doctrine that such cures are impossible. A girl of sixteen who had progressive myopia of such high degree that she was not allowed to read, and was unable to go about on the streets without a guide, was assured by the specialist whom her family consulted that her condition was quite hopeless, and that it was likely to

progress until it ended in blindness. She was cured in a very short time by means of the methods advocated in this magazine, becoming able to discard her glasses and resume all the ordinary activities of life. She then returned to the specialist who had condemned her to blindness to tell him the good news; but, while he was unable to deny the fact that her vision was normal without glasses, he said it was impossible that she would have been cured of myopia, because myopia was incurable. How he reconciled this statement with his former patient's condition he was unable to make clear to her.

A lady with compound myopic astigmatism1 suffered from almost constant headaches which were very much worse when she took her glasses off. Every week, no matter what she did, she was so prostrated by eyestrain that she had to spend a few days in bed; and if she went to a theatre, or to a social function, she had to stay there longer. She was told to take off her glasses and go to the movies: to look first at the corner of the screen, then off to the dark, then back to the screen a little nearer to the center, and so forth. She did so, and soon became able to look directly at the pictures without discomfort. After that nothing troubled her. One day she called on her former ophthalmological adviser, in the company of a friend who wanted to have her glasses changed, and told him of her cure. The facts seemed to make no impression on him whatever. He only laughed and said, "I guess Dr. Bates is more popular with you than I am."

In some cases patients themselves, after they are cured, allow themselves to be convinced that it was impossible that such a thing could have happened, and go back to their glasses. A clergyman and writer, aged forty-seven, who had worn glasses for years for distance and reading, had what I should have considered the good fortune to be very quickly cured. By the aid of his imagination he was able to relax in less than five minutes, and to stay relaxed. When he looked at fine print it appeared grey to him, and he could not read it. I asked him if he had ever seen printer's ink. He replied, of course, that he had. I then told him that the paragraph of printed matter which he held in his hand was printed in printer's ink, and that it was black and not grey. I asked him if he did not know and believe that it was black, or if he could not at least imagine that it was black. "Yes," he said, "I can do that"; and immediately he read the print. It took him only about a minute to do this, and he was not more than five minutes in the office. The cure was permanent, and he was very grateful-for a time. Then he began to talk to eye specialists whom he knew, and thereupon grew skeptical as to the value of what I had done for him. One day I met him at the home of a mutual friend, and in the presence of a number of other people he accused me of having hypnotized him, adding that to hypnotize a patient without his knowledge or consent was to do him a grievous wrong. Some of the listeners protested that whether I had hypnotized him or not, I had not only done him no harm, but had greatly benefited him, and he ought to forgive me. He was unable, however, to take this view of the matter. Later he called on a prominent eye specialist who told him that the presbyopia (old sight) and astigmatism from which he had suffered were incurable, and that if he persisted in going without his glasses he might do himself great harm. The fact that his sight was perfect for the distance and the near-point had no effect upon the specialist and the patient allowed himself to be frightened into disregarding it also. He went back to his glasses, and so far as I know has been wearing them ever since. The story obtained wide publicity, for the man had a large circle of friends and acquaintances; and if I had destroyed his sight I could scarcely have suffered more than I did for curing him.

Other Doctors try to hide Dr. Bates discoveries from the public. Doctors expel Dr. Bates from the Hospital he worked at after Dr. Bates cures patients without glasses, surgery, drugs and proves the facts of Natural Eyesight Improvement.

Fifteen or twenty years ago the specialist mentioned in the foregoing story read a paper on cataract at a meeting of the ophthalmological section of the American Medical Association in Atlantic City, and asserted that anyone who said that cataract could be cured without the knife was a quack. At that time I was assistant surgeon at the New York Eye and Ear Infirmary, and it happened that I had been collecting statistics of the spontaneous cure of cataract at the request of the executive surgeon of this institution, Dr. Henry G. Noyes, Professor of Ophthalmology at the Bellevue Hospital Medical School. As a result of my inquiry I had secured records of a large number of cases which had recovered, not only without the knife, but without any treatment at all. I also had records of cases which I had sent to Dr. James E. Kelly of New York and which he had cured, largely by hygienic methods. Dr. Kelly is not a quack, and at that time was Professor of Anatomy in the New York Post Graduate Medical School and Hospital and attending surgeon to a large city hospital. In the five minutes allotted to those who wished to discuss the paper, I was able to tell the audience enough about these cases to make them want to hear more. My time was, therefore, extended, first to half an hour and then to an hour. Later both Dr. Kelly and myself received many letters from men in different parts of the country who had tried his treatment with success. The man who wrote the paper had blundered, but he did not lose any prestige because of my attack with facts upon his theories. He is still a prominent and honored ophthalmologist and in his latest book he gives no hint of having ever heard of any successful method of treating cataract other than by operation. He was not convinced by my record of spontaneous cures, nor by Dr. Kelly's record of cures by treatment; and while a few men were sufficiently impressed to try the treatment recommended, and while they obtained satisfactory results, the facts made no impression upon the profession as a whole, and did not modify the teaching of the schools. That spontaneous cures of cataract do sometimes occur cannot be denied; but they are supposed to be very rare, and any one who suggests that the condition can be cured by treatment still exposes himself to the suspicion of being a quack.

Between 1886 and 1891 I was a lecturer at the Post Graduate Hospital and Medical School. The head of the institution was Dr. D. B. St. John Roosa. He was the author of many books, and was honored and respected by the whole medical profession. At the school they had got the habit of putting glasses on the nearsighted doctors, and I had got the habit of curing them without glasses. It was naturally annoying to a man who had put glasses on a student to have him appear at a lecture without them and say that Dr. Bates had cured him. Dr. Roosa found it particularly annoying, and the trouble reached a climax one evening at the annual banquet of the faculty when, in the presence of one hundred and fifty doctors, he suddenly poured out the vials of his wrath upon my head. He said that I was injuring the reputation of the Post Graduate by claiming to cure myopia. Every one knew that Donders said it was incurable, and I had no right to claim that I knew more than Donders. I reminded him that some of the men I had cured had been fitted with glasses by himself. He replied that if he had said they had myopia he had made a mistake. I suggested further investigation. "Fit some more doctors with glasses for myopia," I said, "and I will cure them. It is easy for you to examine them afterwards and see if the cure is genuine." This method did not appeal to him, however. He repeated that it was impossible to cure myopia, and to prove that it was impossible **he expelled me from the Post Graduate, even the privilege of resignation being denied to me.** The fact is that, except in rare cases, man is not a reasoning being. He is dominated by authority, and when the facts are not in accord with the view imposed by authority, so much the worse for the facts. They may and indeed must win in

the long run; but in the meantime the world gropes needlessly in darkness and endures much suffering that might have been avoided.

THE EFFECT OF LIGHT UPON THE EYES

Although the eyes were made to react to the light, a very general fear of the effect of this element upon the organs of vision is entertained both by the medical profession and by the laity. Extraordinary precautions are taken in our homes, offices and schools to temper the light, whether natural or artificial, and to insure that it shall not shine directly into the eyes; smoked and amber glasses, eye-shades, broad-brimmed hats and parasols are commonly used to protect the organs of vision from what is considered an excess of light; and when actual disease is present, it is no uncommon thing for patients to be kept for weeks, months and years in dark rooms, or with bandages over their eyes.

The evidence on which this universal fear of the light has been based is of the slightest. In the voluminous literature of the subject one finds such a lack of information that, in 1910, Dr. J. Herbert Parsons of the Royal Ophthalmic Hospital of London, addressing a meeting of the Ophthalmological Section of the American Medical Association, felt justified in saying that ophthalmologists, if they were honest with themselves, "must confess to a lamentable ignorance of the conditions which render bright light injurious to the eyes."2 Since then, Verhoeff and Bell have reported3 an exhaustive series of experiments carried on at the Pathological Laboratory of the Massachusetts Charitable Eye and Ear Infirmary, which indicate that the danger of injury to the eye from light radiation as such has been "very greatly exaggerated." That brilliant sources of light sometimes produce unpleasant temporary symptoms cannot, of course, be denied; but as regards definite pathological effects, or permanent impairment of vision from exposure to light alone, Drs. Verhoeff and Bell were unable to find, either clinically or experimentally, anything of a positive nature.

The results of these experiments are in complete accord with my own observations as to the effect of strong light upon the eyes. In my experience such light has never been permanently injurious. Persons with normal sight have been able to look at the sun for an indefinite length of time, even an hour or longer, without any discomfort or loss of vision. Immediately afterward they were able to read the Snellen test card with improved vision, their sight having become better than what is ordinarily considered normal. Some persons with normal sight do suffer discomfort and loss of vision when they look at the sun; but in such cases the retinoscope always indicates an error of refraction, showing that this condition is due, not to the light, but to strain. In exceptional cases persons with defective sight have been able to look at the sun, or have thought that they have looked at it, without discomfort and without loss of vision; but, as a rule, the strain in such eyes is enormously increased and the vision decidedly lowered by sun-gazing, as manifested by inability to read the Snellen test card. **Blind areas (scotomata)** may develop in various parts of the field—two or three or more. The sun, instead of appearing perfectly white, may appear to be slate-colored, yellow, red, blue, or even totally black. After looking away from the sun, patches of color of various kinds and sizes may be seen, continuing a variable length of time, from a few seconds to a few minutes, hours, or even months. In fact, one patient was troubled in this way for a year or more after looking at the sun for a few seconds. Even total blindness lasting a few hours has been produced. Organic changes may also be produced. Inflammation, redness of the conjunctiva, cloudiness of the lens and of the aqueous and viterous humours, congestion and cloudiness of the retina, optic nerve and choroid, have all resulted from **sun-gazing**. These effects, however, are **always temporary**. The scotomata, the strange colors, even the total blindness, as explained in the preceding chapter, are only mental illusions. No matter how much the sight may have been impaired by **sun-gazing**, or how long the impairment may have lasted, a return to normal has always occurred; while prompt relief of all the symptoms mentioned has always followed the relief of eyestrain, showing that the conditions are the result, not of the light, but of the strain. **Some persons who have believed their eyes to have been permanently injured by the sun have been promptly cured by central fixation, indicating that their blindness had been simply functional.**

By persistence in looking at the sun, a person with normal sight soon becomes able to do so without any loss of vision; but persons with imperfect sight usually find it impossible to accustom themselves to such a strong light until their vision has been improved by other means. **One has to be very careful in recommending sun-gazing to persons with imperfect sight; because, although no permanent harm can result from it, great temporary discomfort may be produced, with no permanent benefit. In some rare cases, however, complete cures have been effected by this means alone.**

In one of these cases the sensitiveness of the patient, even to ordinary daylight, was so great that an eminent specialist had felt justified in putting a black bandage over one eye and covering the other with a smoked glass so dark as to be nearly opaque. She was kept in this condition of almost total blindness for two years without any improvement. Other treatment extending over some months also failed to produce satisfactory results. She was then advised to look directly at the sun. The immediate result was total blindness, which lasted several hours; but next day the vision was not only restored to its former condition, but was improved. The sun-gazing was repeated, and each time the blindness lasted for a shorter period. At the end of a week the patient was able to look directly at the sun without discomfort, and her vision, which had been 20/200 without glasses and 20/70 with them, had improved to 20/10, twice the accepted standard for normal vision.

Like the sun, a strong electric light may also lower the vision temporarily, but never does any permanent harm. In those exceptional cases in which the patient can become accustomed to the light, it is beneficial. After looking at a strong electric light some patients have been able to read the Snellen test card better.

It is not light but darkness that is dangerous to the eye. Prolonged exclusion from the light always lowers the vision, and may produce serious inflammatory conditions. Among young children living in tenements this is a somewhat frequent cause of ulcers upon the cornea, which ultimately destroy the sight. The children, finding their eyes sensitive to light, bury them in the pillows and thus shut out the light entirely. **The universal fear of reading or doing fine work in a dim light is, however, unfounded. So long as the light is sufficient so that one can see without discomfort, this practice is not only harmless, but may be beneficial.**

Sudden contrasts of light are supposed to be particularly harmful to the eye. The theory on which this idea is based is summed

up as follows by Fletcher B. Dresslar, specialist in school-hygiene and sanitation of the United States Bureau of Education:

"The muscles of the iris are automatic in their movements, but rather slow. Sudden strong light and weak illumination are painful and likewise harmful to the retina. For example, if the eye adjusted to a dim light is suddenly turned toward a brilliantly lighted object, the retina will receive too much light, and will be shocked before the muscles controlling the iris can react to shut out the superabundance of light. If contrasts are not strong, but are frequently made, that is, if the eye is called upon to function where frequent adjustments in this way are necessary, the muscles controlling the iris become fatigued, respond more slowly and less perfectly. As a result, eyestrain in the ciliary muscles is produced and the retina is over stimulated. This is one cause of headaches and tired eyes."4 There is no evidence whatever to support these statements. Sudden fluctuations of light undoubtedly cause discomfort to many persons, but far from being injurious, I have found them, in all cases observed, to be actually beneficial. The pupil of the normal eye, when it has normal sight, does not change appreciably under the influence of changes of illumination; and persons with normal vision are not inconvenienced by such changes. I have seen a patient look directly at the sun after coming from an imperfectly lighted room, and then, returning to the room, immediately pick up a newspaper and read it. When the eye has imperfect sight, the pupil usually contracts in the light and expands in the dark, but it has been observed to contract to the size of a pinhole in the dark. Whether the contraction takes place under the influence of light or of darkness, the cause is the same, namely, strain. Persons with imperfect sight suffer great inconvenience, resulting in lowered vision, from changes in the intensity of the light; but the lowered vision is always temporary, and if the eye is persistently exposed to these conditions, the sight is benefited. Such practices as reading alternately in a bright and a dim light, or going from a dark room to a well-lighted one, and vice versa, are to be recommended. Even such rapid and violent fluctuations of light as those involved in the production of the moving picture are, in the long run, beneficial to all eyes. I always advise patients under treatment for the cure of defective vision to go to the movies frequently and practice central fixation. They soon become accustomed to the flickering light, and afterward other lights and reflections cause less annoyance.

In later years Dr. Bates advises closed eyes sunning.

TWO POINTS OF VIEW

Being anxious to know what my colleagues think of BETTER EYESIGHT, I lately sent notes to a number of them asking for their opinion. The following replies were so interesting that I think the readers of the magazine have a right to see them.

Dear Doctor:

As long as you ask for my opinion of your new magazine entitled BETTER EYESIGHT, permit me to give it to you in all frankness. It is what we call in the vernacular, "PUNK."

Meaning no personal offense, I am,

Your colleague.

Dear Doctor

Your little note received this morning and am glad to have the opportunity to tell you what I think of BETTER EYESIGHT.

It is all that you claim for it, and I am always glad to receive it, as I know that I am going to get something beneficial for myself as well as something for the good of my patients.

If the medical bigots had BETTER EYESIGHT on their desks, and would put into practice what you give in each number, it would be a great blessing to the people who are putting eye crutches on their eyes. I first tried central fixation on myself and had marvelous results. I threw away my glasses and can now see better than I have ever done. I read very fine type (smaller than newspaper type) at a distance of six inches from the eyes, and can run it out at full arm's length and still read it without blurring the type.

I have instructed some of my patients in your methods, and all are getting results. One case who has a partial cataract of the left eye could not see anything on the Snellen test card at twenty feet, and could see the letters only faintly at ten feet. Now she can read 20/10 with both eyes together and also with each eye separately, but the left eye seems, as she says, to be looking through a little fog. I could cite many other cases that have been benefited by central fixation, but this one is the most interesting to me. Kindly send me more of the subscription slips, as I want to hand them out to my patients.

Yours very truly,

November, 1919

1 - A condition in which the eye is shortsighted in all meridians, but more so in one than in the others.
2 - Jour. Am. Med. Assn., Dec. 10, 1910, p. 2028.
3 - Proc. Am. Acad. Arts and Sciences, July, 1916, vol. 51, No. 13.
4 - School Hygiene, Brief Course Series in Education, edited by Paul Monroe, Ph.D., 1916, pp. 235-236.

BETTER EYESIGHT

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

December, 1919

THE IMAGINATION CURE

When the imagination is perfect the mind is always perfectly relaxed, and as it is impossible to relax and imagine a letter perfectly, and at the same time strain and see it imperfectly, it follows that when one imagines that one sees a letter perfectly one actually does see it, as demonstrated by the retinoscope, no matter how great an error of refraction the eye may previously have had. The sight, therefore, may often be improved very quickly by the aid of the imagination. To use this method the patient may proceed as follows:

Look at a letter at the distance at which it is seen best. Close and cover the eyes so as to exclude all the light, and remember it. Do this alternately until the memory is nearly equal to the sight. Next, after remembering the letter with the eyes closed and covered, and while still holding the mental picture of it, look at a blank surface a foot or more to the side of it, at the distance at which you wish to see it. Again close and cover the eyes and remember the letter, and on opening them look a little nearer to it. Gradually reduce the distance between the point of fixation and the letter, until able to look directly at it and imagine it as well as it is remembered with the eyes closed and covered. The letter will then be seen perfectly, and other letters in its neighborhood will come out. **If unable to remember the whole letter, you may be able to imagine a black period as forming part of it. If you can do this, the letter will also be seen perfectly.**
Imagine the letter is composed of many black periods and shift from period to period (part to part) on the letter.

THE MENACE OF LARGE PRINT

If you look at the big "C" on the Snellen test card (or any other large letter of the same size) at ten, fifteen, or twenty feet, and try to see it all alike, you may note a feeling of strain and the letter may not appear perfectly black and distinct. If you now look at only one part of the letter, and see the rest of it worse, you will note that the part seen best appears blacker than the whole letter when seen all alike, and you may also note a relief of strain. If you look at the small "c" on the bottom line of the test card, you may be able to note that it seems blacker than the big "C." If not, imagine it as forming part of the area of the big "C." If you are able to see this part blacker than the rest of the letter, the imagined letter will, of course, appear blacker also. If your sight is normal, you may now go a step further and note that when you look at one part of the small "c" this part looks blacker than the whole letter, and that it is easier to see the letter in this way than to see it all alike.

If you look at a line of the smaller letters that you can read readily, and try to see them all alike-all equally black and equally distinct in outline-you will probably find it to be impossible, and the effort will produce discomfort and, perhaps, pain. You may, however, succeed in seeing two or more of them alike. This, too, may cause much discomfort, and if continued long enough, will produce pain. If you now look at only the first letter of the line, seeing the adjoining ones worse, the strain will at once be relieved, and the letter will appear blacker and more distinct than when it was seen equally well with the others.

If your sight is normal at the near-point, you can repeat these experiments with a letter seen at this point, with the same results. A number of letters seen equally well at one time will appear less black and less distinct than a single letter seen best, and a large letter will seem less black and distinct than a small one; while in the case of both the large letter and the several letters seen all alike, a feeling of strain may be produced in the eye. You may also be able to note that the reading of very fine print, when it can be done perfectly, is markedly restful to the eye.

The smaller the point of maximum vision, in short, the better the sight, and the less the strain upon the eye. This fact can usually be demonstrated in a few minutes by any one whose sight is not markedly imperfect; and in view of some of our educational methods, is very interesting and instructive.

Probably every man who has written a book upon the eye for the last hundred years has issued a warning against fine print in school books, and recommended particularly large print for small children. This advice has been followed so assiduously that one could probably not find a lesson book for small children anywhere printed in ordinary reading type, while alphabets are often printed in characters one and two inches high. The British Association for the Advancement of Science does not wish to see children read books at all before they are seven years old, and would conduct their education previous to that age by means of large printed wall-sheets, blackboards, pictures, and oral teaching. If they must read, however, it wants them to have 24- and 30-point type, with capitals about a quarter of an inch in height. This is carefully graded down, a size smaller each year, until at the age of twelve the children are permitted to have the same kind of type as their elders. Bijou editions of Bible, prayer-book and hymnals are forbidden, however, to children of all ages.1

In the London myope classes, which have become the model for many others of the same kind, books are eliminated entirely, and only the older children are allowed to print their lessons in one- and two-inch types.2

Yet it has just been shown that large print is a strain upon the eyes, while the retinoscope demonstrates that a strain to see at the near-point always produces hypermetropia3 (commonly but erroneously called "farsight"). We should naturally expect, therefore, to find hypermetropia very common among small children, and it is. Of children eight and a half years old in the public schools of Philadelphia, Risley4 found that more than eighty-eight per cent were hypermetropic, and similar figures may be found in all statistics of the subject. The percentage declines as the children become older, but hypermetropia, or hypermetropic astigmatism, remains at all ages the most common of all errors of refraction. Hypermetropia is, in fact, a much more serious problem than myopia, or nearsight. Yet we have heard very little about it, for the specialists have concluded, from its prevalence and its tendency to pass away or become less pronounced with the growth of the body, that it is the normal state of the immature human eye and therefore beyond the reach of preventive measures. It is true that many young children are not hypermetropic, but

this fact is easily disposed of by the theory that the ciliary muscle alters the shape of the lens in such cases sufficiently to compensate for the shortness of the eyeball.

The baselessness of this theory, as well as the relation of large print to the production of hypermetropia, may be demonstrated by the fact that the condition can be relieved, and has been relieved in numerous cases, by the reading of fine print, combined with rest of the eyes. A child of eight was cured in a few visits by this means. Yet according to the British Association she should not, at this age, have been allowed to read any type larger than 12-point, with capitals more than an eighth of an inch in height. Many grown people have been cured of hypermetropia in the same way, and in all forms of functional imperfect sight the reading of fine print, when it can be done with comfort, has been found to be a benefit to the eyes. Even straining to see fine print is sometimes a benefit in myopia. Large letters are not a strain if central fixation, shifting are applied. Avoid diffusion, eccentric fixation.

SHIFTING AND SWINGING

Correct Appearance of Oppositional Movement

When the eye with normal vision regards a letter either at the near-point or at the distance, the letter may appear to pulsate, or move in various directions, from side to side, up and down, or obliquely. When it looks from one letter to another on the Snellen test card, or from one side of a letter to another, not only the letters, but the whole line of letters and the whole card, may appear to move from side to side. This apparent movement is due to the shifting of the eye, and is always in a direction contrary to its movement. If one looks at the top of a letter, the letter is below the line of vision, and therefore appears to move downward. If one looks at the bottom, the letter is above the line of vision and appears to move upward. If one looks to the left of the letter, it is to the right of the line of vision and appears to move to the right. If one looks to the right, it is to the left of the line of vision and appears to move to the left.

Persons with normal vision are rarely conscious of this illusion, and may have difficulty in demonstrating it; but in every case that has come under my observation they have always become able, in a longer or shorter time, to do so. When the sight is imperfect the letters may remain stationary, or even move in the same direction as the eye.

It is impossible for the eye to fix a point longer than a fraction of a second. If it tries to do so, it begins to strain and the vision is lowered. This can readily be demonstrated by trying to hold one part of a letter for an appreciable length of time. No matter how good the sight, it will begin to blur, or even disappear, very quickly, and sometimes the effort to hold it will produce pain. In the case of a few exceptional people a point may appear to be held for a considerable length of time; the subjects themselves may think that they are holding it; but this is only because the eye shifts unconsciously, the movements being so rapid that objects seem to be seen all alike simultaneously.

The shifting of the eye with normal vision is usually not conspicuous, but by direct examination with the opthalmoscope5 it can always be demonstrated. If one eye is examined with this instrument while the other is regarding a small area straight ahead, the eye being examined, which follows the movements of the other, is seen to move in various directions, from side to side, up and down, in an orbit which is usually variable. If the vision is normal, these movements are extremely rapid and unaccompanied by any appearance of effort. The shifting of the eye with imperfect sight, on the contrary, is slower, its excursions are wider, and -the movements are jerky and made with apparent effort.

It can also be demonstrated that the **eye is capable of shifting with a rapidity which the ophthalmoscope cannot measure**. (Saccadic movements) The normal eye can read fourteen letters on the bottom line of a Snellen test card, at a distance of ten or fifteen feet, in a dim light, so rapidly that they seem to be seen all at once. Yet it can be demonstrated that in order to recognize the letters under these conditions it is necessary to make about four shifts to each letter. At the near-point, even though one part of the letter is seen best, the rest may be seen well enough to be recognized; but at the distance it is impossible to recognize the letters unless one shifts from the top to the bottom and from side to side. One must also shift from one letter to another, making about **seventy shifts in a fraction of a second**.

A line of small letters on the Snellen test card may be less than a foot long by a quarter of an inch in height; and if it requires seventy shifts to a fraction of a second to see it apparently all at once, it must require many thousands to see an area of the size of the screen of a moving picture with all its detail of people, animals, houses, or trees, while to see sixteen such areas to a second, as is done in viewing moving pictures, must require a rapidity of shifting that can scarcely be realized. Yet it is admitted that the present rate of taking and projecting moving pictures is too slow. The results would be more satisfactory, authorities say, if the rate were raised to twenty, twenty-two or twenty-four a second. The human eye and mind are not only capable of this rapidity of action, and that without effort or strain, but it is only when the eye is able to shift thus rapidly that eye and mind are at rest, and the efficiency of both at their maximum. It is true that every motion of the eye produces an error of refraction; but when the movement is short, this is very slight, and usually the shifts are so rapid that the error does not last long enough to be detected by the retinoscope, its existence being demonstrable only by reducing the rapidity of the movements to less than four or five a second. The period during which the eye is at rest is much longer than that during which an error of refraction is produced. Hence, when the eye shifts normally no error of refraction is manifest. The more rapid the unconscious shifting of the eye, the better the vision; but if one tries to be conscious of a too rapid shift, a strain will be produced.

Perfect sight is impossible without continual shifting, and such shifting is a striking illustration of the mental control necessary for normal vision. It requires perfect mental control to think of thousands of things in a fraction of a second; and each point of fixation has to be thought of separately, because it is impossible to think of two things, or of two parts of one thing, perfectly at the same time. The eye with imperfect sight tries to accomplish the impossible by looking fixedly at one point for an appreciable length of time; that is, by staring. When it looks at a strange letter and does not see it, it keeps on looking at it in an effort to see it better. Such efforts always fail, and are an important factor in the production of imperfect sight.

+ One of the best methods of improving the sight, therefore, is to imitate consciously the unconscious shifting of normal vision, and to realize the apparent motion produced by such shifting. Whether one has imperfect or normal

sight, conscious shifting and swinging are a great help and advantage to the eye; for not only may imperfect sight be improved in this way, but normal sight may be improved also.

Detailed instructions for improving the sight by this method will be given in my forthcoming book, *The Cure of Imperfect Sight by Treatment without Glasses*.

Rapid and tiny shifts, the eyes ability to shift many times per fraction of a second are called Saccadic eye movements, vibrations. The eye produces many different movements, high frequency…

OPTIMUMS AND PESSIMUMS

In nearly all cases of imperfect sight due to errors of refraction there is some object, or objects, which can be regarded with normal vision. Such objects I have called *optimums*. On the other hand, there are some objects which persons with normal eyes and ordinarily normal sight always see imperfectly, an error of refraction being produced when they are regarded, as demonstrated by the retinoscope. Such objects I have called *pessimums*. An object becomes an optimum, or a pessimum, according to the effect it produces upon the mind, and in some cases this effect is easily accounted for.

For many children their mother's face is an optimum, and the face of a stranger a pessimum. A dressmaker was always able to thread a No. 10 needle with a fine thread of silk without glasses, although she had to put on glasses to sew on buttons, because she could not see the holes. She was a teacher of dressmaking, and thought the children stupid because they could not tell the difference between two different shades of black. She could match colors without comparing the samples. Yet she could not see a black line in a photographic copy of the Bible which was no finer than a thread of silk, and she could not remember a black period. An employee in a cooperage factory, who had been engaged for years in picking out defective barrels as they went rapidly past him on an inclined plane, was able to continue his work after his sight for most other objects had become very defective, while persons with much better sight for the Snellen test card were unable to detect the defective barrels. The familiarity of these various objects made it possible for the subjects to look at them without strain—that is, without trying to seem them. Therefore the barrels were to the cooper optimums; while the needle's eye and the colors of silk and fabrics were optimums to the dressmaker. Unfamiliar objects, on the contrary, are always pessimums.

In other cases there is no accounting for the idiosyncracy of the mind which makes one object a pessimum and another an optimum. It is also impossible to account for the fact that an object may be an optimum for one eye and not for the other, or an optimum at one time and at one distance and not at others. Among these unaccountable optimums one often finds a particular letter on the Snellen test card. One patient, for instance, was able to see the letter K on the forty, fifteen and ten lines, but could see none of the other letters on these lines, although most patients would see some of them, on account of the simplicity of their outlines, better than they would such a letter as K.

Pessimums may be as curious and unaccountable as optimums. The letter V is so simple in its outlines that many people can see it when they cannot see others on the same line. Yet some people are unable to distinguish it at any distance, although able to read other letters in the same word, or on the same line of the Snellen test card. Some people again will not only be unable to recognize the letter V in a word, but also to read any word that contains it, the pessimum lowering their sight not only for itself but for other objects. Some letters, or objects, become pessimums only in particular situations. A letter, for instance, may be a pessimum when located at the end, or at the beginning of a line, or sentence, and not in other places. When the attention of the patient is called to the fact that a letter seen in one location ought logically to be seen equally well in others, the letter often ceases to be a pessimum in any situation.

A pessimum, like an optimum, may be lost and later become manifest. It may vary according to the light and distance. An object which is a pessimum in a moderate light may not be so when the light is increased or diminished. A pessimum at twenty feet may not be one at two feet, or thirty feet, and an object which is a pessimum when directly regarded may be seen with normal vision in the eccentric field—that is, when not directly regarded.

For most people the Snellen test card is a pessimum. If you can see the Snellen test card with normal vision, you can see almost anything else in the world. Patients who cannot see the letters on the Snellen test card can often see other objects of the same size and at the same distance with normal sight. When letters which are seen imperfectly, or even letters which cannot be seen at all, or which the patient is not conscious of seeing, are regarded, the error of refraction is increased. The patient may regard a blank white card without any error of refraction; but if he regards the lower part of a Snellen test card, which appears to him to be just as blank as the blank card, an error of refraction can always be demonstrated, and if the visible letters of the card are covered the result is the same. The pessimum may, in short, be letters or objects which the patient is not conscious of seeing. This phenomenon is very common. When the card is seen in the eccentric field it may have the effect of lowering the vision for the point directly regarded. For instance, a patient may regard an area of green wall-paper at the distance, and see the color as well as at the near-point; but if a Snellen test card on which the letters are either seen imperfectly, or not seen at all, is placed in the neighborhood of the area being regarded, the retinoscope may indicate an error of refraction. When the vision improves, the number of letters on the card which are pessimums diminishes and the number of optimums increases, until the whole card becomes an optimum.

A pessimum, like an optimum, is a manifestation of the mind. It is something associated with a strain to see, just as an optimum is something which has no such association. It is not caused by the error of refraction, but always produces an error of refraction; and when the strain has been relieved it ceases to be a pessimum and becomes an optimum.

HOME TREATMENT

It is not always possible for patients to go to a competent physician for relief. As the method of treating eye defects presented in this magazine is new, it may be impossible to find a physician in the neighborhood who understands it; and the patient may not be able to afford the expense of a long journey, or to take the time for treatment away from home. To such persons I wish to say that it is possible for a large number of people to be cured of defective eyesight without the aid either of a physician or of anyone else.

They can cure themselves, and for this purpose it is not necessary that they should understand all that has been written in this magazine, or anywhere else. All that is necessary is to follow a few simple directions.

Place a Snellen test card on the wall at a distance of ten, fourteen, or twenty feet, and devote half a minute a day, or longer, to reading the smallest letters you can see, with each eye separately, covering the other with the palm of the hand in such a way as to avoid touching the eyeball.

Keep a record of the progress made, with the dates. The simplest way to do this is by the method used by oculists, who record the vision in the form of a fraction, with the distance at which the letter is read as the numerator and the distance at which it ought to be read as the denominator. As already explained, the figures above the lines of letters on the test card indicate the distance at which these letters should be read by persons with normal eyesight. Thus a vision of 10/200 would mean that the big C, which ought to be read at 200 feet, cannot be seen at a greater distance than ten feet. A vision of 20/10 would mean that the ten line, which the normal eye is not ordinarily expected to read at a greater distance than ten feet, is seen at double that distance. This is a standard commonly attained by persons who have practiced my methods.

Children under twelve years who have not worn glasses are usually cured of defective eyesight by the above method in three months, six months, or a year. Adults who have never worn glasses are benefited in a very short time—a week or two—and if the trouble is not very bad, may be cured in the course of from three to six months. Children or adults who have worn glasses, however, are more difficult to relieve, and will usually have to practice the various methods of gaining relaxation which have been presented from month to month in this magazine and will be described in more detail in my forthcoming book, *The Cure of Imperfect Sight by Treatment without Glasses*.

It is absolutely necessary that the glasses be discarded. No half-way measures can be tolerated, if a cure is desired. Do not attempt to wear weaker glasses, and do not wear glasses for emergencies. Persons who are unable to do without glasses are not likely to be able to cure themselves.

Modern Natural Vision Improvement teachers state that reduced, weaker eyeglass lenses can be worn, but only when necessary. In later years Dr. Bates stated glasses can be worn if absolutely essential but, glasses will slow vision improvement.

Children and adults who have worn glasses will have to devote an hour or longer every day to practice with the test card and the balance of their time to practice on other objects. It will be well for such patients to have **two test cards, one to be used at the near-point, where it can be seen best, and the other at ten or twenty feet. The patient will find it a great help to shift from the near card to the distant one, as the unconscious memory of the letters seen at the near-point helps to bring out those seen at the distance.** (Switching close and far. Shift on the E on the close card. Switch to the distant card. Shift on the E on that card. Then back to the close card. Repeat. Remember, imagine the E clear.)

If the patient can secure the aid of some person with normal sight, it will be a great advantage. In fact, persons whose cases are obstinate will find it very difficult, if not impossible, to cure themselves without the aid of a teacher. The teacher, if he is to benefit the patient, must himself be able to derive benefit from the various methods recommended. If his vision is 10/10, he must be able to improve it to 20/10, or more. If he can read fine print at twelve inches, he must become able to read it at six, or at three inches. He must also have sufficient control over his visual memory to relieve and prevent pain.

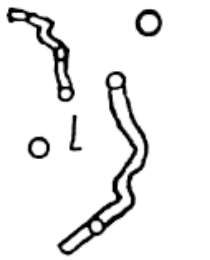
Parents who wish to preserve and improve the eyesight of their children should encourage them to read the Snellen test card every day. There should, in fact, be a Snellen test card in every family; for when properly used it always prevents myopia and other errors of refraction, always improves the vision, even when this is already normal, and always benefits functional nervous troubles. Parents should improve their own eyesight to normal, so that their children may not imitate wrong methods of using the eyes and will not be subject to the influence of an atmosphere of strain.

December, 1919

1 - Report on the Influence of School Books upon Eyesight, second revised edition, 1913.
2 – Pollock: The Education of the Semi-Blind, Glasgow med. Jour., Dec, 1915.
3 – Bates: The cause of myopia, N.Y. Med. Jour., March 10, 1912.
4 – School hygiene, in System of Diseases of the Eye, edited by Norris and Oliver, vol. II, P. 353.
5 - An instrument for viewing the interior of the eye. When the optic nerve is observed with the ophthalmoscope, movements can be noted that are not apparent when only the exterior of the eye is regarded.

Floating Specks caused by Eyeglasses, Contacts, Laser Surgery, Sunglasses.

Eyeglasses, Contact lenses, Cornea Laser Surgery, Sunglasses, Staring cause Floating Specks by impairing natural eye movement, shifting, central-fixation, creating strain, tension in the eyes, eye muscles, neck, visual system, brain. Diet also affects the eyes health, function and can cause floaters.



Floaters, Floating Specks – Moving spots, lines, bubbles… in the visual field can appear in many forms, colors. They move when the eye moves and move away from the central field of vision. They are usually harmless.
Scientists state that floaters *Muscae Volitantes*, or *Flying Flies* are debris left in the eye from its development, injury or toxins in the body which can be removed by fasting, cleansing diet, improved liver, kidney health, avoiding: sugar, ingestion of chemicals, or chemicals in the air, on the skin, artery clogging food.
Ophthalmologist Bates states that tension in the mind, staring, squinting, limited eye movement, lack of central-fixation, eye muscle tension causes the appearance of floaters. Worrying about them, looking for the floaters, trying to prevent them from appearing and moving causes staring, eye muscle tension: the floaters then appear/stay in the visual field.
Dr Bates states that floating specks disappear when the mind, visual system, eye muscles, eyes relax causing the eyes to move, 'shift' correct – Relaxed mind, eye muscles, eyes produce all sizes, types of eye movements and it's the tiny, small shifts (saccadic eye movements, vibrations) and central-fixation that occur with relaxation, normal eye function that produce very clear vision, causes the floaters to disappear, stop moving around and the brain shuts them off.
Shift point to point on a fine print letter or small part on a distant or close object: left and right, top and bottom, diagonally… and notice the vision improves and floaters disappear. Clear vision removes floaters.

Practice shifting point to point on a fine print letter or tiny period with the eyes open. Then; imagine shifting on the letter or period with the eyes open without looking at it, see it in the mind only. Blink, relax. Then: do this with the eyes closed using the memory and imagination, then with eyes open again. Notice the eyes do tiny movements even when shifting on the imaginary tiny object with the eyes open or closed. The floaters disappear.
Relaxed eye muscles, neck muscles, exercise, deep breathing improve blood/oxygen, nutrient, lymph flow, circulation to the brain, eyes, allows the eyes to remove waste, return eye fluid, lymph flow to normal. This removes floaters.

All Correct Vision Habits: Shifting, Central-fixation, Blinking, Switching Practice… and other Bates Method Activities; Long Swing, Rock, Sunlight, Deep Abdominal Breathing, good diet, avoiding processed sugar, aspartame, chemical exposure removes floaters. Food that improves the circulation in body, eyes helps cleanse the eyes, improves eye health.

Many floaters, suddenly appearing, flashing lights are a different type of floater and a sign of detached retina or other eye condition. See an Eye Doctor Immediately.
Migraine headaches can cause temporary flashing moving lights, patterns, blind spots in the visual field with or without the headache. Sinus headache, pressure can cause floaters and disrupt eye movement, cause blurry vision.

See Better Eyesight Magazine for a variety of Articles on Floaters

BETTER EYESIGHT

A MONTHLY MAGAZINE DEVOTED TO THE PREVENTION AND CURE OF IMPERFECT SIGHT WITHOUT GLASSES

October, 1919

FLOATING SPECKS

Girl lying in the grass on a hill looking at the blue sky, white clouds and seeing floaters, imaging they are angels or outer space aliens, secret friends with magic powers that protect her.

A man returning from Europe was looking at some white clouds one day when floating specks appeared before his eyes. He consulted the ship's doctor, who told him that the symptom was very serious, and might be the forerunner of blindness. It might also indicate incipient insanity, as well as other nervous or organic diseases. He advised him to consult his family physician and an eye specialist as soon as he landed, which he did. This was twenty-five years ago, but I shall never forget the terrible state of nervousness and terror into which the patient had worked himself by the time he came to me. It was even worse than that of the clergyman, who was always ready to admit that his fears were unreasonable. I examined his eyes very carefully, and found them absolutely normal. The vision was perfect both for the near-point and the distance. The color perception, the fields and the tension were normal; and under a strong magnifying glass I could find no opacities in the vitreous. In short, there were absolutely no symptoms of any disease. I told the patient there was nothing wrong with his eyes, and I also showed him an advertisement of a quack medicine in a newspaper which gave a great deal of space to describing the dreadful things likely to follow the appearance of floating specks before the eyes, unless you began betimes (in good time, early) to take the medicine in

question at one dollar a bottle. I pointed out that the advertisement, which was appearing in all the big newspapers of the city every day, and probably in other cities, must have cost a lot of money, and must, therefore, be bringing in a lot of money. Evidently there must be a great many people suffering from this symptom, and if it were as serious as was generally believed, there would be a great many more blind and insane people in the community than there were. The patient went away somewhat comforted, but at eleven o'clock—his first visit had been at nine—he was back again. He still saw the floating specks, and was still worried about them. I examined his eyes again as carefully as before, and again was able to assure him that there was nothing wrong with them. In the afternoon I was not in my office, but I was told that he was there at three and at five. At seven he came again, bringing with him his family physician, an old friend of mine. I said to the latter:

"Please make this patient stay at home. I have to charge him for his visits, because he is taking up so much of my time; but it is a shame to take his money when there is nothing wrong with him."

What my friend said to him I don't know, but he did not come back again.

I did not know as much about muscae volitantes then as I know now, or I might have saved both of these patients a great deal of uneasiness. I could tell them that their eyes were normal, but I did not know how to relieve them of the symptom, which is simply an illusion resulting from mental strain. The specks are associated to a considerable extent with markedly imperfect eyesight, because persons whose eyesight is imperfect always strain to see; but persons whose eyesight is ordinarily normal may see them at times, because no eye has normal sight all the time. Most people can see muscae volitantes when they look at the sun, or any uniformly bright surface, like a sheet of white paper upon which the sun is shining. This is because most people strain when they look at surfaces of this kind. The specks are never seen, in short, except when the eyes and mind are under a strain, and they always disappear when the strain is relieved. If one can remember a small letter on the Snellen test card by central-fixation, the specks will immediately disappear, or cease to move; but if one tries to remember two or more letters equally well at one time, they will reappear and move. Usually the strain that causes muscae volitantes is very easily relieved. See; April, 1925 and other issues;

Stories from the Clinic

NO. 76: CATARACT

By **EMILY C. LIERMAN**

MANY patients, after being cured of imperfect sight, go their way and we never see them again. However, many come back, even after a period of five years or more, to report, or to show their gratitude. If a patient is cured quickly, he is very apt to forget that he ever had eyestrain. Normal vision helps him to forget, and he is able to go on with things that interest him without tension or strain.

There is nothing that affects the whole nervous system more than eye strain.

I have deep sympathy for patients suffering from cataract. Some of these have told me that, when they first discovered, or were told that they had acquired cataract, the shock was so great it sometimes made them very ill. I have often wished that I could broadcast to every human being troubled with cataract, that they need not worry about an operation, nor fear blindness.

While treating patients at the Harlem Hospital Clinic, Dr. Bates placed under my care many patients with cataract. Some of them were children who were born with it, while others acquired it from an injury of some sort. If they faithfully practiced the daily treatment for their particular case, they always improved. There were no exceptions, although in all cases where the patient did not practice enough, it took much longer for a cure. Adults were also cured quickly when the directions for home treatment were faithfully carried out. Age made no difference.

A colored mammy, who was a faithful servant of one of our private patients, came regularly, three days a week for many months, and was treated for cataract. I have described her case in my book, "Stories from the Clinic." In the beginning of her treatment, she could not see the letters of the test card at five feet. As she explained it in her dialect: "Do you know, ma'am, ah can see nothin', no ma'am, nothin' at all at dis distance!"

Long periods of palming, early in the morning and late in the afternoon, when her work was done, helped her sight. In the clinic she was taught to sway her body slightly from side to side and to blink all the time. The swaying helped her to see things about the room moving opposite to the movement of her body. **The blinking prevented the stare, which is usually the cause of cataract.** The quickest way to obtain a cure is by palming, and I advise my private patients to practice it for several hours or many times each day. It would be impractical, however, to advise a clinic patient to use the same method, because they cannot spare the time from their work, nor can the employer spare them. If such advice were given them, their answer would surely be: "This treatment is only for those who can afford the time." Dr. Bates often tells them that it takes less time to use their eyes correctly than it does to use them incorrectly.

Clinic patients, as well as private ones, are advised to relax all day long. Mammy was to see things moving all day by watching her broom as she swept the floors; the washboard as she washed the clothes; the clothes-wringer as she turned the handle; and the dishes as she dried them and put them in the cupboard. We treated her many times, but occasionally she had a relapse. These were sad times for mammy, when she had tears in her eyes and a heavy heart. Frequently she would say: "Ma'am ah knows der is no hope for me. Ah has displeased de good Lord." A kind word or two always helped her, and I made sure that she received many of them.

As time went on, she obtained normal vision with the use of the test card, and became able to read very fine print and to thread a needle. We left the Harlem Hospital Clinic, never thinking that we would hear from her again. Six years had passed, and new patients were coming and going from our own clinic, when one day about three months ago, we received a letter from mammy. All

through the letter were words of gratitude and praise for what we had done for her. **She is now seventy-eight years old, and can still read her newspaper and thread a needle**. She asked for permission to come to see us. She wanted the Doctor to look at her eyes to prove that her cataract had entirely disappeared. We, of course, were anxious to see her. When she came both of her eyes were examined and no sign of cataract was found in either eye. Her vision with various test cards was 10/10, and she read fine print without any difficulty, because she did as she was told. She was cured. It was not always easy for her as her work at times required good eyes. Her madam had patience with her for she, also, was under treatment. During mammy's last visit, she said: "Ah jest knowed dat ah was cured 'cause ah could see de crumbs on de carpet to brush up, an' ah could see de dust all ober de furniture an' ah cleans better. De sun is clear now an' not in de mist no mo'."

About a month ago, another patient came with a report of good vision. She is **over eighty years old**, and has a disposition just as cheery as she had when I first knew her, about eight or nine years ago. Perhaps our readers will remember an article I wrote about her. She is the patient who was employed in an orphanage. Her duties there were to see that all the buttons were sewed on the clothes of little ones at the Home. She said she was the only daisy in the country while she was there. From the very beginning she had infinite faith that Dr. Bates could cure her without an operation. During one of her early treatments, when she noticed a decided improvement in her sight while palming, she could not resist the temptation to peep through her fingers at me and say: "I'll fool them yet." I asked her what she meant and she answered: "Oh! The other doctors who want to operate on my eyes." Well, she kept her word. She fooled them and was entirely cured. She has never worn glasses since her first treatment and the only reason for her being cured is, that she practiced faithfully the methods of treatment that helped her most. When she looks at you, her young, blue eyes twinkle and she wears a smile that won't come off.

Better Eyesight Magazine - November, 1927 – Alexander Technique

The question that comes up more prominently than any other is: What can the patient do to bring about relaxation of any group of muscles? A man, by the name of F.M. Alexander, of London, England has accomplished a great deal in the cure of all kinds of diseases. He says that all diseases of the body are caused by tension. They can all be cured by the relaxation of the tension. He has offered many methods of bringing about relaxation in the most interesting, although seemingly incredible way and the most successful is to bring about relaxation by having the patient state that it is desired.

For example, a patient sitting in a chair or lying down on the floor, whichever is easier, says: **"I desire relaxation of the muscles of my neck, so that my head can be lifted forwards and upwards." This is sometimes repeated one hundred to a thousand times.** Mr. Alexander has always succeeded in having the patient bring about **relaxation of the muscles of the neck** by this method.

Mr. Alexander goes further and brings about relaxation of the muscles of the chest, both outside and inside, by having the patient say: "I wish my shoulder to relax and to move downwards and backwards. I wish my chest to relax and to move backwards. I wish my whole body to relax and move backwards. I wish my foot to move backwards without effort, without strain of any muscles of the body."

It has been a great shock to many orthodox physicians to observe the cures that Alexander has made. Epilepsy, considered by the medical profession to be incurable, has been cured by relaxation, without the use of any other form of treatment. Of course, rheumatism responds perhaps more quickly to relaxation than a great many other diseases, but there are cases of so-called rheumatism affecting the shoulder in which all parts of the joint become immovable.

One patient was afflicted with Parkinson's disease; all the joints of the body became so fastened together, so immovable, that the patient was unable to produce any voluntary movement of the hand or the arm. As time passed, the voluntary and the involuntary muscles gradually became useless from tension. Mr. Alexander had the patient relax those muscles which she could relax most readily. When this was done, the more difficult muscles became relaxed, until finally she was cured completely by the relaxation of tension.

(The Alexander technique continues to be popular today; original and modern Natural Vision Improvement teachers apply neck relaxation, movement as a main vision improvement treatment. The Alexander Technique is known for improving breathing and vision.)

See the E-Book for entire Better Eyesight Magezine Collection.

Better Eyesight Magazine Articles by Dr. Bates & Emily Lierman, Bates, Teachers - Steps # 1 to 10

#1 - Relaxation, Palming

REST

***By* W. H. BATES, M.D.**

Eyes closed - imagine looking back and forth over the left and right shoulders and lightly touch the fingers onto the upper closed eyelids and feel the eyes move left and right.
Next - imagine shifting left and right on a small letter and feel the eyes movement become smaller, shorter. The eyes, eye muscles and brain, mental pictures work together.

REST and relaxation of the eye and mind is perfect when the vision is perfect, and can always be demonstrated.

When the eye is at rest, it is always moving. To demonstrate this, instruct the patient to close his eyes and imagine that he is looking fast over his right shoulder, then over his left shoulder. By alternating quite vigorously, the eyeballs can be seen to move from side to side. While the eyes are still closed, one can place the fingers on the closed eyelids and feel this movement. Now instruct the patient to imagine a shorter movement of the eyes from side to side, that is, look a shorter distance from right to left while the eyes are closed. The movement can usually be felt, but it is not so manifest to the observer as it is when the wide movement of the eyes is made. However, after a little practice, five minutes or more, when the patient is imagining the eyes are moving, one can feel the movement even though it may be very short, one-quarter of an inch or less. If the patient stares at a part of an imaginary letter with the eyes closed, the memory or the imagination of the letter becomes blurred and the movement of the eyeball is not continuous. On the other hand, if the patient remembers a letter perfectly, and shifts on it in the mind, the eyeball appears to move continuously a short distance in various directions.

When central fixation is practiced, that is, when one remembers or imagines one part of a letter best, the eyeballs move. If one tries to remember or imagine a letter, all parts equally well, the movement of the eyeballs cannot be seen or felt, and the eyeballs appear stationary. One can demonstrate the movement of the eyeballs very well with the aid of the ophthalmoscope. When the optic nerve is regarded with this instrument, one can always see the movement of the pigment of the eye or of the blood vessels of the retina when the sight, memory, or imagination is normal. This movement is slow, short, easy and continuous. When the sight, memory, or imagination is imperfect, the eyeball may move very irregularly, with frequent periods when it is stationary. Eye immobility, impaired shifting = unclear vision.

In nystagmus, the eyeballs move from side to side, usually continuously, a distance so great that it is conspicuous. The rapidity of this movement may vary. It is always stopped after closing the eyes and resting them a sufficient length of time, several minutes or longer, or by practicing the slow, short, easy swing.

Nystagmus is generally believed to be difficult to cure. In fact, it is so difficult that very few cases have ever been reported as benefited by orthodox methods of treatment. It has usually been considered an incurable symptom of disease of the eye. Nystagmus is, however, to a greater or less degree, under the control of the mind of the patient. Some people are able to stop the movement at will. These cases, however, are rare. Some children acquire the ability to practice nystagmus just as they learn to look cross-eyed. Nystagmus requires a strain. When practiced either consciously or unconsciously, the vision is always lowered. When the nystagmic movements are lessened or stopped altogether, the vision improves and has frequently become normal, either temporarily or permanently.

Some years ago I treated a boy, aged ten, for the cure of nystagmus. His mother told me that she had visited many physicians and had sacrificed a great deal financially in order to obtain a cure for her son. I tested his vision and found it normal at times, when the nystagmus would stop. Repeated tests demonstrated the fact that his vision was always worse when he had the nystagmus. While he was reading with almost normal vision, I said to him: "Stop the movement of your eyes!" Much to my surprise, he did what I told him and then read the card with normal vision. Then I said to him: "Start it up again and read the card." This he did very promptly, but he was unable to obtain normal sight. Again I asked him to stop the nystagmus and his vision became normal and remained normal as long as he had no nystagmus.

The mother paid close attention to the conversation. She realized that the boy was able to produce or stop the nystagmus at will. He seemed to be pleased by the attention he received when he showed off his control of ft. The mother asked me no questions. There was no need of questions after the convincing demonstration that the boy gave of his ability to control the movement. There was a grim determination in her face when she left the office, and she grasped the arm of her boy with a great deal more force than was perhaps necessary. She spoke to the boy with considerable emphasis: "Just you wait until I get you home!" I am sorry that I cannot report what happened later, but I can guess. I hope that she was able to stop this bad habit without much severity.

It can be demonstrated that when the eyes are not at rest, the vision is always imperfect. When the memory or imagination is perfect with the eyes closed, the vision is improved when the eyes are opened. Usually the improvement of

the vision is only temporary, and may last for only a second, or in flashes. In these cases, the memory soon becomes imperfect with the eyes open. By alternating perfect memory with the eyes closed, the memory with the eyes open usually improves. By practice, many patients become able to remember or imagine with their eyes open a small area of black or white, as well as they can imagine it with their eyes closed. When such patients look at a blank wall, where there is nothing in particular to see, no effort may be made to see and the vision improves. One can practice with the Snellen test card and remember for a moment one known letter of the card, with the eyes open, as well as one can for a longer time with the eyes closed. When one letter of the Snellen test card is improved, all the letters and other objects are also improved. The perfect memory of a known letter with the eyes closed is perfect rest, while an imperfect memory or imagination with the eyes closed or open is always a strain. It is a great help to many people with imperfect sight to demonstrate that rest improves the vision, while the stare or strain always lowers it.

To fail to see requires an effort. When the patient regards the letters which are so blurred and indistinct that he cannot tell what they are, he is always straining, trying to see, either consciously or unconsciously. People are cured of their imperfect sight when they cease to strain, stare, or make an effort to see. When I explained this to one of my patients, she said that I was wrong, that the only way she could see was by means of an effort. I had her test the facts. When she looked at the Snellen test card at ten feet, she could not read it with normal vision. At five feet her vision was better, but when she made an effort, her vision became much worse. The same was true when she regarded letters at a nearer point, three feet, two feet, or even one foot. An effort to see always made her sight worse. She had to demonstrate the facts repeatedly before she was finally convinced that her vision was good only when her eyes were at rest and no effort was made. Articles not labeled are by Dr. Bates or Emily Bates. A few sentences are added in some articles by Clark Night for descriptions of modern training.

Be Comfortable

By W. H. BATES, M. D.

IT can be stated without fear of successful contradiction that persons with perfect sight are always comfortable, not only as to their eyes, but as to the rest of the body. As soon as they cease to be so, it can be demonstrated, by examination with the retinoscope, that their sight has ceased to be perfect. They become nearsighted, farsighted, or astigmatic. The art of learning to use the eyes properly, is, in short, the art of learning to be comfortable. Even the memory of comfort improves the sight, while the memory of discomfort lowers it. Persons with imperfect sight often say and think that they are perfectly comfortable; but invariably such persons experience a feeling of relief when they close their eyes, demonstrating that they were not perfectly comfortable before, but had merely formed a habit of ignoring that discomfort. Persons with perfect sight, on the other hand, can immediately produce discomfort by producing imperfect sight, or even by remembering or imagining it, and persons with imperfect sight can produce a degree of discomfort that cannot be ignored by making their sight worse.

Imperfect sight cannot, in other words, be produced without effort, and this effort tears the nerves of the whole body to pieces. The same is true of an imperfect memory and imagination. To demonstrate these facts is often the best way of improving the sight.

While persons with imperfect sight may feel no discomfort when looking at letters on the test card which they do not ordinarily distinguish, they cannot blur their vision for a letter they do distinguish without great effort and discomfort. In fact, the effort and discomfort are so great that many patients cannot be induced to make the experiment. When they can be prevailed upon to do so, however, they realize that they must be unconsciously straining whenever they look at anything with imperfect sight. It is often hard to convince patients of the existence of this unconscious strain, and nothing helps more in their treatment than to have them demonstrate the facts.

What is true of the vision is true of the memory and imagination. When a letter is remembered perfectly, with the outlines clear, and the opening as white as snow or starch; when the attention shifts easily from one part of the letter to another and it appears to move in a direction opposite to that in which the attention shifts; it is remembered easily. There is no sense of effort, or strain, and the individual is perfectly comfortable. When, on the other hand, a letter is remembered imperfectly, with the outline obscured by a gray cloud which is all the time changing, the mind tires so quickly that the memory of the letter is lost from time to time and has to be brought back by an effort. Discomfort is soon produced, and if the effort is continued long enough, severe pain may result. At the same time the retinoscope will show that an error of refraction has been produced, or if this condition previously existed, that its degree has increased.

It should be added, however, that if the strain is to remember a near object, myopia may be decreased, because a strain to see a near object always decreases myopia and the memory of near objects has the same effect. Similarly a strain to remember distant objects may decrease hypermetropia.

Staring is uncomfortable, and lowers the vision. Shifting and the realization of the apparent movement resulting from it are comfortable, and improve the vision. Let anyone try to stop the apparent movement of telegraph poles and other objects past a moving train, and discomfort, pain and carsickness result. In the same way any effort to stop the slighter movement of stationary objects produced by the normal shifting of the eyes, results in discomfort and pain, even though the individual may not previously have been conscious of the movement.

Some people are able to close their eyes and be comfortable. Such persons are easy to cure. In one case a man with presbyopia was completely relieved by keeping his eyes closed for half an hour; and the cure was permanent. Later his wife

was cured by the same means. Other people cannot rest with their eyes shut, and are very difficult to cure. It is the same way with palming. Some persons, when they close and cover their eyes so as to exclude all the light, at once relax and are comfortable, and such persons are easily cured. Others strain more than ever, and are very difficult to cure.

Perfect sight, perfect memory and perfect imagination cannot, in short, coexist with the consciousness of any abnormal symptom, and all such symptoms are relieved when the sight becomes perfect, or when one is able to remember or imagine something seen perfectly. See Dr. Bates Palming Articles in the Relaxation Chapter #1.

New Uses for Relaxation

By BESSIE VREDENBURGH

I HEARD a woman say once that she had followed a certain cult for seventeen years, thoroughly believing in it, but that she had never really put it to the test. This explained what had often been a mystery to me, why certain beliefs and cults could flourish and apparently satisfy so many people, because they were seldom tested.

Not so with the discoveries and teachings of Dr. Bates. They must prove of definite and distinct service, else, they must be discarded, for they make no other appeal than just their own merit. There is no dust thrown in the eyes of the devotees—patients.

This fact was most forcefully brought home to me this summer. I had been greatly benefited by Dr. Bates' treatment in several ways. My eyes responded immediately in that they are now almost cured, but I want to tell of another way in which I was helped, really rescued from the slough of despond and failure. I have suffered many years from a sensitive, irritable skin. Heretofore, this would come in spells and then leave me free again for a little while. I say free, I mean comparatively speaking, for I always was troubled with it more or less. Either the sun was too hot and it became inflamed, or it was too cold and it got chapped and so inflamed, or the wind irritated it or warm clothing; most anything, in fact could cause me trouble.

Of late years it came to stay longer each time so that the periods of so-called freedom became less and less. I tried everything I could hear of to do. Doctors seemed to prefer to let me worry along by myself rather than attempt to cure me beyond suggesting certain diets, etc. I tried mental healing of various kinds also.

To make a very long story short, when I began practicing Dr. Bates' methods for improving my vision I found it rested and relaxed my nerves and also my skin.

I was so much better that I determined to take a little trip that I had wanted to take for some time, but I happened on a terribly hot wave!

My first stop was at St. Louis, and I thought I had never been in a hotter place in my life. The irritation of my skin became intense and my arms, hands, face and neck were red and swollen.

I had a wait of two and a half hours at St. Louis before taking the sleeper on for a point further west. The station was full of hot perspiring people, of all ages and races. I was covered with train dust and perspiration and just about crazy. I realized that I had to get better or go back home, as I couldn't go on like that. I determined to get the short swing more completely than I had ever been able to get it and give it a thorough trial.

I left the hot sultry station and went out into the equally hot and blistering streets, but I had more freedom outside. There I walked for two hours, slowly round and round, trying to maintain the swing. I thought I never could do it. I was under such a strain it seemed utterly impossible to relax. Then when I got a bit of relaxation it seemed as if I couldn't maintain it long enough to get much benefit. But more and more I got it until I felt a great peace and relief. When I finally got on my train for the next step of my journey, I was feeling quite comfortable for the first time in many hours. I was a long way from being entirely cured, but I was better, so that I could continue to get better and have one of the most delightful vacations I have ever had. I stood with equanimity a daily temperature of 110 degrees in the shade. I was out in the open fields, and so in the sun most of the time and did nothing to ease myself from what a person with a normal skin would do. I believe that I could have a normal skin at all times if I would continuously do as Dr. Bates suggested to me; but I forget it so often, and sometimes it seems easier to just let myself get nervous and my skin irritated than it is to try to relax. But it isn't easier in the end, and I envy people who have stronger wills than I have. For all the most wonderful methods in the world won't help those who fail to put them into practice.

Concentration and Relaxation

By LAWRENCE M. STANTON, M.D.

I KNOW of no writer who has so clarified the murky philosophy of concentration and relaxation as has Dr. Bates, and yet the final word has not been said, as he himself would undoubtedly avow.

Therefore, but with humblest intention, I offer a few thoughts upon the subject which is of the utmost importance to those who are striving for better eyesight.

Concentration - Attention

To my patients I have forbidden the practice of concentration, saying that the very word suggests strain, or else I bid them modify the dictionary's definition. I have reasoned that if by concentration you mean, as Dr. Bates says, doing or seeing one thing better than anything else, you may speak of concentration; but if by concentration you mean, as the

dictionary says, doing one thing continuously to the exclusion of all other things, then you must abandon the practice as an impossibility.

Concentration, however, cannot psychologically be ignored, and recent psychology, I believe, has given us a new interpretation which is worthy of our consideration.

Attention underlies concentration, as that word is commonly used, and Ribot's statement of attention is very enlightening. Ribot says "that the state of attention which seems continuous is in reality intermittent; the object of attention is merely a center, the point to which attention returns again and again, to wander from it as often on ever-widening circles. All parts of the object, and then the reflections inspired by these various parts hold our interest by turns. Even when the attention is fixed on the most trifling material object, it works in just the same fashion." This is entirely in accord with Dr. Bates' statement; it is central fixation.

There are, however, two aspects of concentration to be considered—voluntary and involuntary. Voluntary concentration is an effort and, as Dr. Bates has so clearly shown, cannot be maintained without fatigue. The highest grades of attention, to which this brief consideration is confined, are involuntary, and involuntary concentration can be defined as "a psychological equivalent of attention minus effort." In ordinary attention—that is, in voluntary concentration—our thought holds the object in focus, whereas in involuntary attention (which we shall consider synonymous with involuntary concentration) the object holds our thought without our volition, perhaps even against our will. "Spontaneous attention is rooted at the very center of our being," and things that hold the attention captive, as in fascination, fixed contemplation, the Hindu's meditation and revery are instances of involuntary concentration, and involuntary concentration is as effortless as the rising sun—it just happens. Then, there are those cases of miraculous quick cures of imperfect sight by one or another of Dr. Bates' methods, where it was enough for the patient to see the better course in order to be able to follow it, the idea and its realization occurring simultaneously, without effort, without volition even. Contrast this with the attitude "No, I see the better course and approve it, but I follow the worse." Involuntary concentration is displayed in the case of the insect, related by Fabre and quoted by Dr. Bates, which in captivity hung downward for ten months, its whole life's span, and in this position performed all its functions, even to mating and laying of eggs, apparently without the least fatigue.

Still another instance is that of Napoleon, who could work for eighteen hours at a stretch on one piece of work without the least fatigue. Napoleon speaks of his various affairs arranged in his head "as in a wardrobe." He says: "When I wish to put any matter out of my mind, I close its drawer and open the drawer belonging to another. The contents of the drawers never get mixed and they never worry me or weary me. Do I want to sleep? I close all the drawers, and then I am asleep."

The question, then, may be asked wherein does involuntary concentration differ from relaxation. If involuntary concentration and relaxation are not always one and the same thing, they often are psychological alternatives and not the opponents we think them.

To regard all phases of relaxation as purely passive is as erroneous as it is to say that concentration of the kind under consideration is associated with effort. Relaxation of the passive kind usually ends in sleep or sleepiness, as experienced by many patients after palming. Relaxation combined with action, on the other hand, may also be absolutely free from effort and strain.

Dynamic Relaxation

In any case it is the matter of effort and strain that concerns us most, rather than a question of concentration or relaxation. Victor Hugo speaks of "the calm and intense fixation of the eyes," and surely nowhere is intensity so impressive as in calmness. To be calm is not to be oblivious, and to be intense need not be to strain.

Another thought about relaxation is this: Obstacles to relaxation may prove sources of relaxation. An instance of which, is found in the noise that is keeping us awake when wishing to go to sleep. If we sufficiently relax, if we accept the disturbance and sleep in spite of it, not only is the obstacle overcome, but because overcome it in turn becomes rather pleasantly associated with going to sleep. When again we desire to sleep, we find the noise soothing rather than annoying, and really a source of relaxation instead of an obstacle to it. (A child deeply relaxed, drifting in and out of sleep, safe amongst the trees inside the edge of a field in a dugout up on a small hill, buried in a deep leaf pile, the sound of trains passing by along the river, crickets chirping, brothers, sisters playing in the distance, fire crackling in a old fashioned outdoor fireplace, smell of hamburgers.) The following quotation from Jean Kenyon MacKenzie's "Minor Memories" well illustrates how obstacles may become ministering angels. She writes of the stillness of the African forest:

"I remember that stillness. Many a time when I am in the subway I remember the ineffable stillness of the forest. I wonder to find myself where I am—so savagely circumstanced—so pressed upon by alien bodies, so smitten by noise. Traveling like this, in white man's fashion, you are certainly safe from the snakes, and the leopards, and the cannibal tribes of that other world where you traveled in other fashions. Now that you are shut up so safely in the guts of Manhattan, your friends feel at ease about you—surely the sun shall not smite you by day nor the moon by night. And yet, perversely, in this perfection of safety you are intimidated. *Suddenly passive after* your desperate adventures with traffic, you feel the hidden things of memory rise and flood your heart; you dream. You remember other times of day than the manufactured night of the subway and other ways of travel. *And suddenly, in the indestructible silence that is the core of that incessant clamor,* you hear a bugle calling in a forest-clearing that is half way around the world."* Certainly a remarkable experience—what relaxation, what imagination!

Involuntary concentration without effort is equivalent to relaxation in action. If you can achieve such equilibrium; if you can perform your mental functions without strain as Fabre's little insect performed its physical; if you can, whatever your particular captivity, hang by your feet head downward without effort, then "be my friend and teach me to be thine."

Palming

When palming is done correctly, the vision, memory, and imagination always improve. By palming is meant to close the eyes and cover them with the palm of one or both hands without exerting any pressure the closed eyelids. Think of something pleasant, something that you can remember perfectly. Then let your mind drift from one pleasant thought to another. This should be practiced for five minutes ten times daily, or more often when convenient. Some people obtain more benefit by palming for one-half hour, an hour or longer.

There are patients who have difficulty in palming, that is, they strain and make hard work of it. For them it is easier to simply close their eyes and in this way rest them. Other patients obtain relaxation by closing their eyes for part of a minute, then opening them for part of a second, and quickly closing them again. This is called flashing, and usually improves the vision immediately.

It is true that when the eye is perfectly at rest, the sight, memory, and imagination are always normal. Conversely, it is impossible for the sight to be imperfect when the eyes are perfectly at rest. Not only are all errors of refraction benefited and cured by rest, but also organic diseases of the eye,—glaucoma, cataract, opacity of the cornea, disease of the retina, choroid, or optic nerve are cured by rest and relaxation.

HOW I IMPROVED MY EYESIGHT

By Pamela Speyer

This patient was wearing when first seen the following glasses: each eye, concave 5.00 D.S. combined with concave 1.00 D.C. A number of competent men had said that her myopia was progressive, and that her vision was certain to become very imperfect even with glasses. They all insisted that she must wear glasses constantly. Yet after she had discarded them her vision improved in two days from 6/200 to 20/100.

I have always been near-sighted. When I was six years old, my father took me to a famous oculist in London, and he prescribed and fitted me with my first glasses. With these lenses I was able to distinguish things at a distance which before I had not been able to see. I found that I could read or see objects at close range just as well without the glasses. The only difference that they made to my sight in this case was that print appeared smaller and less black.

Every year stronger lenses were given to me, and I visited several oculists in England and America, in the hope of improvement. When I was fifteen an oculist told me that my eyesight, instead of improving each year as I had hoped, would gradually become worse. By this time I was wearing glasses all the time.

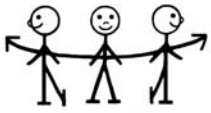
Then, quite by chance, my father heard of Dr. Bates through a friend whose eyesight had been cured by him. I was taken there at once. The first thing Dr. Bates did was to take away my glasses. I sat down in a chair, opposite which was a Snellen test card, fifteen feet away. I could not see the largest letter, a "C" about four inches by three, which people with normal vision are supposed to read at two hundred feet. He brought the card five feet nearer and then I read the "C." It appeared very blurred and indistinct. The smaller letters were so blurred that I could not see them at all.

Palming

Treatment steps

+Palm
+Swing
+Shift and see oppositional movement. Blink, relax.
+Long Swing
+Sway and shorter sway.
+Shift on a small or fine print letter and see a small, very short swing, (small oppositional movement).
+'Flash' letters, objects for a fraction of a second: Shift on a letter for a fraction of a second, then palm.
+Close the eyes and remember, imagine the letter clear and shift on it, see the swing in the mind.

The most helpful thing I learned was how to "palm." This I did by closing my eyes and then covering them with the palms of my hands, so that I saw black and remembered it perfectly. This perfect black rested my eyes a great deal. After doing this for some ten or fifteen minutes, I looked at the card and found that I could read the two letters on the next line.



Long Swing

After I had learned to "palm," I learned to "swing." The reason I strained my eyes so when looking at the card was that I stared at one place. So by imagining the letter was swinging like a pendulum, I moved my eyes instead of staring as I had done before. At first the swing was a long one, but after practicing for some weeks, I began getting it shorter until it was only half an inch on each side of the letter. The short swing was more difficult to do than the long one, but it helped more in the end.

Shift on a small letter and see a short swing.

Sway/rock left and right.

Flashing

Then I learned to "flash." I looked at a small letter at fifteen feet distance and could not read it. The longer I looked the worse it grew. So by closing my eyes, remembering the swing for a few seconds, I just glanced at the letter and closing my eyes at once, I saw the letter in a flash.

All these things must be practiced every day, and even now I have to "palm" every morning and night. Palming, swinging and flashing were the three fundamentals. As soon as they were mastered only practice remained. I have now been going to Dr. Bates for over a year, and my eyesight is almost cured. I often have flashes of

perfect sight. Dr. Bates has certainly helped me in a remarkable degree, more indeed than I ever thought possible when I first went to him wearing strong glasses.
The above article contains many of the main Natural Vision Improvement treatments: Palm, Shift, See the Swing/Oppositional Movement, Long Swing, Sway, Short Sway/Tiny Shift, Flash letters, objects, Memory, Imagination, Relaxation.

THE EFFECTIVENESS OF RELAXATION

By May Secor

Special Teacher of Speech Improvement, New York City Public Schools

STAMMERING, stuttering, lisping, and other speech defects may be considered erroneous speech habits which may be corrected by inculcating new, correct habits of speech. This presents a psychological problem. There is, however, another aspect to the work of speech correction - a physiological aspect. Many cases of speech defect are difficult to correct, because of the physical condition of the pupils. It is considered an important duty of the speech improvement teacher, therefore, to check up physical conditions and to advise parents to have corrected such defects as eyestrain, unhygienic dental conditions, malnutrition, and excessive fatigue.*
(I believe, however, that it is not the province of any teacher, principal, or nurse to advise, urge, or insist upon parents having children operated. Those in charge of children may, with propriety, advise parents to consult physicians regarding their children. In many cases, however, physicians differ among themselves as to the advisability of operating. I believe that the decision should be made by the physicians and parents.)

Many stammerers suffer from eye-strain. For years I urged the patients of such children to consult oculists - any oculists of good standing. They did so, and many cases returned with glasses; however, many of these children who used glasses continued to suffer from eyestrain. Upon returning to the oculist they were usually instructed to continue wearing their glasses until they "became accustomed to them." In many cases eyestrain continued, and the correction of stammering was still impeded. I was deeply concerned about the apparent impossibility of eliminating eye-strain.

Finally a friend placed in my hand Dr. Bates' book entitled "Perfect Sight Without Glasses." At that time I was wearing bi-focals, and had used artificial lenses for many years.
I read Dr. Bates' book and decided to apply the method to the correction of my own visual defects.

On March 15, 1923, I removed my bifocals. I followed the Bates Method carefully, hopefully, and persistently and have never used glasses since. My near vision and distant vision are excellent and I enjoy great "eye comfort." I have come into contact with many other men and women who have attained normal vision without glasses by means of the Bates method, after having suffered along with eye-glasses and eyestrain for years.

Convinced of the efficacy of the Bates Method, I became a pupil of Dr. Bates and learned the secret of relaxation. I learned how to relax more completely, and how to help others relax. I began to realize the value of relaxation in education. I made relaxation the keynote of my work in speech correction, and there resulted a harmony that was most helpful to my pupils. It created a pleasant, healthful atmosphere, which enabled pupils to acquire more readily the desired, correct habits of speech.
To the stammerer, especially, palming, swaying, swinging, sun-treatment, and reading the Snellen card are Godsends.

In April 1925, I began work with the speech defect cases in two new schools. Among these cases were a number who wore glasses, and several of these children were cross-eyed. (The term "squint" is frequently misinterpreted.) To induce relaxation and thereby facilitate the formation of new, correct habits of speech I included in my program palming, swaying with music, swinging, the use of memory and imagination, and sun treatment. Early in June 1925, it became apparent that several pupils, who formerly were very noticeably cross-eyed, showed either no defect or a decidedly less acute condition. To verify my observations I photographed these children. I also requested several teachers, and a physician to observe them; they did so, and their findings coincided with mine. The following children were among those who entered my speech improvement groups early in April 1925:

+Case A - Boy, age 14; myopia and strabismus (crossed-eye, called also "squint"); used glasses several years; speech defects, stammering and lisping; known in school as a discipline case. June, 1925 - marked improvement in speech and strabismus entirely corrected.
+Case B - Boy, age 11; myopia and strabismus; used glasses two years; speech defects, stammering, defective phonation, and aphonia. June, 1925 - marked improvement in speech; strabismus much less acute, and entirely relieved at times, when glasses are not used.
+Case C - Boy, age 7; myopia and strabismus; never used glasses; speech defect, lisping. June, 1925 - speech improved; strabismus relieved - occasional relapse when under strain.
+Case D - Girl, age 8; strabismus (but normal vision); wears glasses, constant use; speech defect, lisping. June, 1925 - lisping corrected; when glasses are removed, strabismus is very evident and child sees "two ladies instead of one;" after removing glasses and relaxing a few minutes, strabismus and double vision disappear; subsequent use of glasses causes return of these two defects, which again disappear after the child removes the glasses and relaxes.

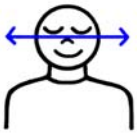
In these cases the relief of visual defects was merely a by-product of educational work, conducted on a basis of relaxation. Would it not be well for us to conduct all educational work in this way, and thus help to relieve eyestrain throughout our schools?

Let us consider the problem of the child having visual defects. What method has been used to help him? He has been urged to wear glasses, and if his eye distress or headaches persisted, he has been urged to continue wearing the glasses until he "becomes accustomed to them." Has this method been successful? Reports of the various sight conservation associations indicate that it has not been successful. What new method may we use to eliminate visual defects among school children? I suggest the Bates Method for Relaxation. Let teachers remove their glasses, and palm, sway, and swing. Let physicians and principals urge pupils to remove their glasses and practice these helpful exercises. Let us, as educators, be broad-minded and alert. When one method fails let us try another.

Relaxation occurs in many forms. See: Dynamic Relaxation – Book; The Art of Seeing by Aldous Huxley. Perfect relaxation can be deep as in the alpha, theta and delta brain wave states, hypnosis, meditation or dynamic: the mind, body, eyes can still be relaxed while more active, energetic. Example: when running a race; the runner is in a perfect state of relaxation, coordination. Mind, body positive, energetic, active but relaxed – no tension, strain. Walking in a relaxed strolling manner. (See Al Pacino walking in the park with his girlfriend in 'The Godfather' movie. Notice how his feet move outward, relaxed, strolling, perfect balance, coordination, character in his walk.)
Working on a science project, mind moving from thought to thought, no tension is dynamic relaxation.
See Better Eyesight Magazine April 1925 – Concentration and Relaxation.

#2 - SHIFTING-EYE MOVEMENT

SHIFTING AND SWINGING
Correct Appearance of Oppositional Movement



Eyes closed. Imagine looking over the left and right shoulders. Lightly touch the upper eyelids and feel the eyes move left and right when imagining looking left and right. The brain functions with the eyes.

Eyes closed. Imagine shifting left and right on the letter E. See it appear to move side to side opposite the movement of the eyes. Feel the eyes produce smaller movements.

E C

Look at, shift on, see one letter clearest at a time in the center of the visual field. Practice with the eyes open and in the imagination with the eyes closed.

Blink - the eyes shift automatically up and down when blinking. Blink and shift in any direction.

Shift left and right, top and bottom and in any direction on the E and see it move (swing) in the opposite direction.

When the eye with normal vision regards a letter either at the near-point or at the distance, the letter may appear to pulsate, or move in various directions, from side to side, up and down, or obliquely. When it looks from one letter to another on the Snellen test card, or from one side of a letter to another, not only the letters, but the whole line of letters and the whole card, may appear to move from side to side. This apparent movement is due to the shifting of the eye, and is always in a direction contrary to its movement. If one looks at the top of a letter, the letter is below the line of vision, and therefore appears to move downward. If one looks at the bottom, the letter is above the line of vision and appears to move upward. If one looks to the left of the letter, it is to the right of the line of vision and appears to move to the right. If one looks to the right, it is to the left of the line of vision and appears to move to the left.

Persons with normal vision are rarely conscious of this illusion, and may have difficulty in demonstrating it; but in every case that has come under my observation they have always become able, in a longer or shorter time, to do so. When the sight is imperfect the letters may remain stationary, or even move in the same direction as the eye.

It is impossible for the eye to fix a point longer than a fraction of a second. If it tries to do so, it begins to strain and the vision is lowered. This can readily be demonstrated by trying to hold one part of a letter for an appreciable length of time. No matter how good the sight, it will begin to blur, or even disappear, very quickly, and sometimes the effort to hold it will produce pain. In the case of a few exceptional people a point may appear to be held for a considerable length of time; the subjects themselves may think that they are holding it; but this is only because the eye shifts unconsciously, the movements being so rapid that objects seem to be seen all alike simultaneously.

The shifting of the eye with normal vision is usually not conspicuous, but by direct examination with the opthalmoscope5 it can always be demonstrated. If one eye is examined with this instrument while the other is regarding a small area straight ahead, the eye being examined, which follows the movements of the other, is seen to move in various directions, from side to side, up and down, in an orbit which is usually variable. If the vision is normal, these movements are extremely rapid and unaccompanied by any appearance of effort. The shifting of the eye with imperfect sight, on the contrary, is slower, its excursions are wider, and -the movements are jerky and made with apparent effort.

It can also be demonstrated that the eye is capable of shifting with a rapidity which the ophthalmoscope cannot measure. (Saccadic movements) The normal eye can read fourteen letters on the bottom line of a Snellen test card, at a distance of ten or fifteen feet, in a dim light, so rapidly that they seem to be seen all at once. Yet it can be demonstrated that in order to recognize the letters under these conditions it is necessary to make about four shifts to each letter. At the near-point, even though one part of the letter is seen best, the rest may be seen well enough to be recognized; but at the distance it is impossible to recognize the letters unless

one shifts from the top to the bottom and from side to side. One must also shift from one letter to another, making about seventy shifts in a fraction of a second.

A line of small letters on the Snellen test card may be less than a foot long by a quarter of an inch in height; and if it requires seventy shifts to a fraction of a second to see it apparently all at once, it must require many thousands to see an area of the size of the screen of a moving picture with all its detail of people, animals, houses, or trees, while to see sixteen such areas to a second, as is done in viewing moving pictures, must require a rapidity of shifting that can scarcely be realized. Yet it is admitted that the present rate of taking and projecting moving pictures is too slow. The results would be more satisfactory, authorities say, if the rate were raised to twenty, twenty-two or twenty-four a second. The human eye and mind are not only capable of this rapidity of action, and that without effort or strain, but it is only when the eye is able to shift thus rapidly that eye and mind are at rest, and the efficiency of both at their maximum. It is true that every motion of the eye produces an error of refraction; but when the movement is short, this is very slight, and usually the shifts are so rapid that the error does not last long enough to be detected by the retinoscope, its existence being demonstrable only by reducing the rapidity of the movements to less than four or five a second. The period during which the eye is at rest is much longer than that during which an error of refraction is produced. Hence, when the eye shifts normally no error of refraction is manifest. The more rapid the unconscious shifting of the eye, the better the vision; but if one tries to be conscious of a too rapid shift, a strain will be produced.

Perfect sight is impossible without continual shifting, and such shifting is a striking illustration of the mental control necessary for normal vision. It requires perfect mental control to think of thousands of things in a fraction of a second; and each point of fixation has to be thought of separately, because it is impossible to think of two things, or of two parts of one thing, perfectly at the same time. The eye with imperfect sight tries to accomplish the impossible by looking fixedly at one point for an appreciable length of time; that is, by staring. When it looks at a strange letter and does not see it, it keeps on looking at it in an effort to see it better. Such efforts always fail, and are an important factor in the production of imperfect sight.

+ One of the best methods of improving the sight, therefore, is to imitate consciously the unconscious shifting of normal vision, and to realize the apparent motion produced by such shifting. Whether one has imperfect or normal sight, conscious shifting and swinging are a great help and advantage to the eye; for not only may imperfect sight be improved in this way, but normal sight may be improved also.

Detailed instructions for improving the sight by this method will be given in my forthcoming book, *The Cure of Imperfect Sight by Treatment without Glasses*.

Rapid and tiny shifts, the eyes ability to shift many times per fraction of a second are called Saccadic eye movements, vibrations. The eye produces many different movements, high frequency…

SHIFTING

By W. H. Bates, M.D.

Shifting: The point regarded changes rapidly and continuously.

A man with imperfect sight, who had obtained normal vision by my method of treatment without glasses, called about five years later and announced that the cure had proved permanent. His vision was normal when each eye was tested at twenty feet with Snellen test cards which he had not seen before.

He was asked, "What cured you?"

"Shifting." he answered.

All persons with imperfect sight make an effort to stare with their eyes immovable. The eyes have not the ability to keep stationary. To look intently at a point continuously is impossible, the eyes will move, the eyelids will blink, and the effort is accompanied by an imperfect vision of the point regarded. In many cases the effort to concentrate on a point often causes headache, pain in the eyes and fatigue.

All persons with normal eyes and normal sight do not concentrate or try to see by any effort. Their eyes are at rest, and, when the eyes are at rest, they are constantly moving. When the eyes move, one is able to imagine all stationary objects in turn to be moving in the direction opposite to the movement of the head and eyes. It is impossible to imagine with equal clearness a number of objects to be moving at the same time, and an effort to do so is a strain which impairs the vision, the memory, or the imagination. To try to do the impossible is a strain, which always lowers the mental efficiency. This fact should be emphasized.

Many patients have difficulty in imagining stationary objects to be moving opposite to the movements of the eyes or head. When riding in a fast moving train, and one regards the telegraph poles or other objects which are seen,—the near objects may appear to be moving opposite to the direction in which the train is moving, while more distant objects may appear to move in the same direction as the train.

The above facts may also be imagined when traveling in an automobile. The driver of the car and others occupying a front seat may imagine the road to be moving toward the moving car. When pain, fatigue or other symptoms are present it always means that the individual is consciously or unconsciously trying to imagine stationary objects are not moving. The effort is a strain.

Walking and Eye Movement, Oppositional Movement

When walking about a room, the head and eyes move in the same direction as the body moves, and the carpet and the furniture appear to move in the opposite direction. However, it can be demonstrated that when the head and eyes are moving forward they are also moving from side to side. Every time the right foot is placed forward the eyes move to the right, while stationary objects appear to move in the opposite direction,—to the left; when the left foot steps forward the whole body, including the eyes moves to the left, while stationary objects appear to move in the opposite direction,—to the right.

Patients with normal vision are able to imagine this movement more readily than those with imperfect sight. The head and eyes also move upwards and downwards as the foot is lifted and lowered. When you raise your foot to take a step, the eyes go up, and everything else that is stationary appears to go down. When you lower your foot or head, the eyes go down, and stationary objects appear to go up.

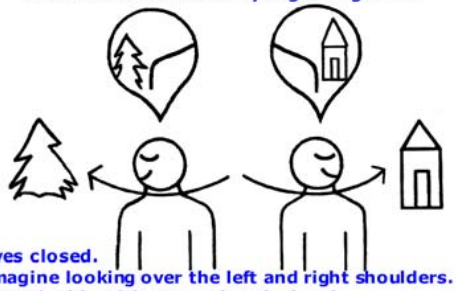
Shifting

Shifting when practiced with the best results is usually unconscious. Very few people with normal sight, which may be continuous for many years, ever notice that they are constantly shifting correctly. One may shift in a wrong way, strain the eyes, and fail to improve the vision. What is the right way? The right way to shift is to move the eyes from one point to another slowly, regularly, continuously, restfully, or easily without effort or without trying to see. The normal eye with normal sight has the habit of always moving or shifting, usually an unconscious habit. When, by practice, the eye with imperfect sight acquires the conscious habit of shifting, the habit may become unconscious. When the shifting is done properly, the memory, imagination, mental efficiency, and vision are improved until they become normal.

It often happens that when one consciously or intentionally shifts in the wrong way, a better knowledge of the right way to shift may be obtained. When the eyes are moved to the right, stationary objects should appear to move to the left; and, when the vision is good, all objects not regarded are seen less distinctly than those regarded. When the vision is imperfect, objects not observed may be seen better, or an effort is made to see them better than those directly observed. In fact, it is always true that in all cases of imperfect sight the eyes do not see best where they are looking, and central fixation is lost. To shift properly requires relaxation or rest. To shift improperly and lower the vision requires an effort. When one stares at a point, without blinking or shifting; fatigue, distress, or pain is felt. To continue to stare without shifting is hard work. To see imperfectly is difficult; and, when one regards letters which are blurred or not distinguishable either at the distance,—ten feet or further, or at a near point,—six inches or less, the strain on the eyes can be felt. Imperfect sight or a failure to see requires much trouble and hard work. This fact should be demonstrated repeatedly by the patient until thoroughly convinced that rest of the eyes, mind or body can only be obtained by shifting easily, continuously and without effort.

What is true of sight is also true of the memory and imagination. With the eyes closed, one can imagine that he is looking over the right shoulder for a moment and then shift the imaginary gaze over the left shoulder. By lightly touching the closed eyelids with the tips of the fingers he can feel the eyeballs moving from side to side when the shifting is done right. It can be done wrong when one, by an effort, imagines the eyeballs stationary under all conditions.

With the eyes closed, one can imagine alternately looking from one side of a letter to the other. When the imagination of the shifting is done right, the letter remembered is imagined to be moving from side to side. Two letters close together may be imagined or remembered clearly, provided one is imagined better than the other, or when the attention is shifted to each alternately without effort or strain.



STOP STARING

It can be demonstrated by tests with the retinoscope that all persons with imperfect sight stare, strain, or try to see. To demonstrate this fact:

+ Look intently at one part of a large or small letter at the distance or near-point. In a few seconds, usually, fatigue and discomfort will be produced, and the letter will blur or disappear. If the effort is continued long enough, pain may be produced. To break the habit of staring:

(1) Shift consciously from one part to another of all objects regarded, and imagine that these objects move in a direction contrary to the movement of the eye. Do this with letters on the test card, with letters of fine print, if they can be seen, and with other objects.

(2) Close the eyes frequently for a moment or longer. When the strain is considerable, keep the eyes closed for several minutes and open them for a fraction of a second—flashing. When the stare is sufficient to keep the vision down to 2/200 or less, palm for a longer or shorter time; then look at the card for a moment. Later mere closing of the eyes may afford sufficient rest.

(3) Imagine that the white openings and margins of letters are whiter than the rest of the background. Do this with eyes closed and open alternately. It is an interesting fact that this practice prevents staring and improves the vision rapidly.

SHIFTING. When the eyes are normal, they are completely at rest and when they are at rest, they are always moving, which prevents the stare or strain. When looking at an object, do not try to see all parts of that object equally well, at once. That is, when you look at the back of a chair, you see that part best, and the seat and legs not so clearly. But do not hold the point regarded longer than a second.
Remember to blink, as you shift rapidly to the seat and then to the legs of the chair, seeing each part best, in turn. When the eyes stare and an effort is made to see, the vision is always lowered.

Blinking and Shifting

By W. H. BATES, M.D.

BY BLINKING is meant the opening and closing of the eyes more or less rapidly. The normal eye with normal vision blinks almost continuously. Sometimes the upper lid just covers the pupil while in other cases both lids may be completely closed. With the aid of the moving picture camera it has been demonstrated that one may blink five times in one second without being conscious of it.

When an effort is made to stop blinking, whether successful or not, the vision is always lowered. When the eyes are permitted to blink regularly, easily, continuously, the vision is usually benefited. The camera also shows that the lower lids move up with a strong contraction of the muscle.

In many cases of normal vision, especially in those cases which are even better than the average normal vision, blinking is sometimes practiced with incredible rapidity, and on other occasions the eyes may blink infrequently, perhaps once in ten or fifteen seconds. The blinking of the normal eye varies or is different from the blinking of the eye with imperfect sight. The blinking of the eye with imperfect sight is usually very irregular and jerky and is accompanied by a manifest strain of the muscles of the eyelids. With imperfect sight an effort is always being made to hold the eye stationary and to stop the blinking.
If the eyes are allowed to shift and to blink, the vision improves.

Blinking is fundamental and very important, because one cannot shift frequently or continuously with improvement in the vision, unless the eyes blink often. To keep the eyes open without blinking requires an effort, a stare or strain, the patient becomes unable to shift easily or rapidly, and the vision always becomes imperfect.

The best way to rest the eyes is to close them while many things in turn are remembered or imagined. Blinking is a rapid method of resting the eyes and can be practiced unconsciously all day long, regardless of what one may be doing.

It is interesting to observe some people's eyes when they are asleep. One may note that the eyelids are blinking, which prevents the eyes from staring or straining, although the patent is unconscious of his eyes.

It is a well known fact that when people are asleep the eyes are often under a terrific strain. The first thing in the morning, after such a patient opens the eyes, he may find that his sight is very imperfect. He may suffer from pain in the eyes, pain in the head or in other parts of the body, or from extreme fatigue, as if he had been awake and hard at work all night long. When first opening the eyes, the patient may experience a feeling of dizziness, after the eyes have been straining during sleep. It is not an easy matter to recommend successful methods of obtaining relaxation, to such patients so that instead of working hard during sleep, the eyes may be completely relaxed and rested.

In some cases, the patient may have fairly good vision when he first opens his eyes after a good sleep. However, such cases are uncommon.

When the normal eye has normal vision it is always at rest, shifting. (The eye is relaxed, at rest when it is in motion, shifting.) During sleep, however, with the aid of simultaneous retinoscopy it has usually been demonstrated that the eyes are straining, staring or making an effort to see. The unconscious blinking is nature's method of resting the eyes during sleep.

"Shifting"
Directions - How to Shift

When the normal eye has normal vision it is always shifting or moving from one point to another. This is true with the eyes open as well as with the eyes closed. The shifting with the eyes open may be from side to aide, from above, downward, or in any other direction. The horizontal shifting is practiced more than the other forms of shifting. The eye is never stationary. When the vision is imperfect, the shifting is also imperfect and may be jerky. It may result in discomfort of the eyes, the head or in any other part of the body. The shift of the normal eye varies and is more or less irregular.

To know the proper way to shift the normal eye, in order that the vision may be continuously normal, it is well to demonstrate the wrong way. When the shifting is practiced or the eyes move from point to point, the vision is usually benefited, provided one shifts slowly, easily and continuously.
(The eye, brain will activate saccadic and other faster shifts automatically, on its own.)

Advise the patient to look directly at one point or one part of the smallest letter which can be distinguished. When he does this for a few seconds, he usually becomes able to feel that an effort is being made, and when the effort is continued or increased, much discomfort is felt and the vision always becomes imperfect. The patient is encouraged to prove that concentration does not last long, and that it is impossible for the eyes, memory or mind to see perfectly, remember perfectly, or imagine perfectly, when an effort is made to concentrate. When the eyes shift from one point to another, a feeling of relaxation soon follows and the vision improves. When the eyes do not shift from point to point, it can always be demonstrated that the vision becomes worse and that the eyes, mind and all the nerves of the body are uncomfortable and may be conscious of an effort or strain.

Shift part to part on a letter and from letter to letter to remember, imagine and see letters clear.
Long Shift:
Shift 4 to R, R to 4.

Shift part to part (dot to dot) on the E to see it clear.
Short shift:
Shift dot to dot on the E, then try on a fine print E, then on one fine print dot.

To constantly stare at one point of a letter or other object is wrong, because it lowers the vision and causes discomfort to the eyes. Perfect sight is not possible and cannot be imagined continuously, unless the shifting is continuous. The movement of letters or words which can always be demonstrated in normal vision, depends upon the shifting.

When the eyes stare and do not move, or when an effort is made to imagine letters or other objects to be stationary, the shifting stops, and if things seen are imagined to be stationary without shifting, or an effort is made to stop the shifting, the vision always becomes imperfect.

With the eyes open, it is possible to shift from the first letter of a line, of the Snellen test card, at fifteen feet, to the end of the line and improve the sight. In most cases a known letter of the Snellen test card can be remembered more or less perfectly with the eyes closed, but only when the eyes or the mind shifts from one letter to another, or from one part of one letter to another part. The letter remembered can be imagined or a mental picture of the letter obtained only by constant, slow, short, regular, continuous, easy shifting. When the patient can remember or imagine letters or other objects perfectly with the eyes open, as well as with the eyes closed, the vision is always benefited. If shifting is not practiced the vision always becomes worse.

Many people with imperfect sight are not able to shift or move their eyes without an effort. They complain that they lose their mental control because they are unable to shift easily or continuously. Much better vision is obtained with a short movement or shift of the eyes than with a long shift. (Shifting on small objects, parts of objects, fine print letter.)

It is necessary for those who have imperfect sight caused by a stare, a strain or an effort to see, to become able to shift in such a way as to benefit their vision. Keep the eyes closed for a large part of a minute and open them for a short time, a second or less. It takes time to stare, concentrate or make an effort to see. It is not possible to stare and lower the vision in a fraction of a second. Perfect sight is inconceivably quick. It is easy, regular and continuous. When shifting is practiced rapidly, easily and continuously, the symptoms of imperfect sight and other symptoms caused by strain are relieved at once. Shifting can be practiced slowly or rapidly, as long as effort, strain is avoided. Relax, practice easy.

The general belief is that when we read we are looking at the letters. When one reads with perfect sight one does not look at the letters, but at the white spaces between the lines and imagines the white centers of the letters to be whiter than they really are. Look directly at a small letter of the fine print that can be read and concentrate your mind and eyes on one part of the letter. You soon feel an effort or strain and the vision is always lowered. If the vision was not lowered, you were unable to keep your attention fixed on the same part of a small letter for a continuous length of time.
Modern teachers state: use central fixation. When you want to read the letters: look directly at the letters, move the eyes along the letters. Do not try to read by looking at/moving the eyes along the white spaces. This would be eccentric fixation, diffusion; looking at two things at the same time, central and peripheral field. Eccentric fixation, diffusion causes mental and visual strain, blur.

Shifting is very often practiced wrongly and the vision becomes lowered or no benefit is gained. To shift rapidly, look up for a moment and then look down quickly, rest the eyes for part of a minute; then repeat, look up and down quickly without paying much, if any attention to the sight. While looking down again, rest the eyes for part of a minute. Alternate until the shifting up and down can always be accomplished rapidly or rapidly enough to avoid testing the sight. When the eyes move up the test card or other stationary objects move down. When the eyes move down stationary objects move up or in the

opposite direction to the movement of the shifting eyes.
Try shifting relaxed, continuously from point to point on a object and from object to object. Blink.

Normal sight cannot be demonstrated continuously unless the eyes are continuously shifting. The patient is usually unconscious that he is shifting rapidly when he believes that he can see one letter of the bottom line perfectly and all the time.

Many people have said that they can see a letter with normal vision at fifteen feet or further without moving their eyes, and without imagining the letter to be moving. In other cases where some people thought they could regard one letter with normal vision without shifting, it was found that while doing this the eyes, when observed at the near point, a few feet or further, could be seen to move very quickly, up, down, from side to side or in other directions. The movement of the eyes was so rapid that it was not noticeable, unless the patient was observed very closely.

When the top of a large letter is regarded, that part may be seen best for a short time, while the rest of the letter is seen worse, i.e. central fixation. One cannot see with central fixation and have normal vision unless one is continuously shifting. When the bottom of the letter is regarded, it may be seen best, while all the rest of the letter is seen worse. By shifting alternately from the top to the bottom of the large letter, the vision is usually improved. At the same time, the uncomfortable feeling in the eyes or head is relieved and all pain is benefited.

Shift top and bottom, left and right, part to part in any direction on a letter, seeing one small part clearest at a time in the center of the visual field for relaxation, clear vision.

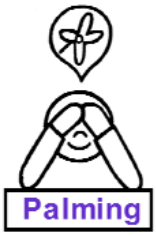
One patient with very unusual vision read the bottom line marked "10" not only at ten feet but at a much greater distance. In a good light she claimed that she could see one letter of the "10" line at fifteen feet continuously without blinking and without shifting. Although she was not conscious of the fact she must have been blinking or shifting because the moving picture camera has always demonstrated that no one could see one letter of the Snellen test card continuously without rapid blinking or shifting.

It requires time for one's sight to become imperfect. The habit of staring or straining cannot be accomplished in a second. It takes a longer time to fail than it takes to succeed. Perfect sight can only be obtained quickly without effort or strain. The cure of imperfect sight, then, is to stop all effort. It is not accomplished by doing things; it can only come by the things that one stops doing.

Shift left and right on the E and see it move in the opposite direction.
+Shift to the dot on the left, The E moves right.
+Shift to the dot on the right, the E moves left.

SHIFTING AND SWINGING: When shifting is done properly, it is practiced easily, without effort or strain. When one shifts from a point to the left to a point to the right, the swing produced is continuous, regular, and promotes relaxation. It is possible to shift with the eyes closed with as much benefit as with the eyes open. There are some people who cannot shift with the eyes open without a strain and yet they can shift or swing or imagine perfect sight with the eyes closed.

Whenever the head and eyes are moved from side to side, one should imagine that stationary objects are moving in the opposite direction. This should be practiced at all times until the habit is obtained. (The various swings are described in the June and other issues of this magazine.)



Palm and imagine black or any pleasant object, scene... Think happy thoughts. Shift on objects in the mind, see them clear, in color, motion.

Shifting

When the normal eye has normal sight it is at rest and when it is at rest it is always moving or shifting. Shifting may be done consciously with improvement in the vision, or it may be done unconsciously with impaired vision.

Shifting can be practiced correctly and incorrectly.
+A wrong way to shift is to turn the head to the right while the eyes are turned to the left, or to turn the head to the left while the eyes are turned to the right.
+Correct way = Eyes, head/face, body move together, synchronized, same time, same direction.

To improve imperfect sight by shifting, it is well to move the head and eyes so far away that the first letter or object imagined is too far away to be seen at all clearly. Shifting from small letters to large letters alternately may be a greater benefit than shifting from one small letter to another small letter. Quite frequently the vision is decidedly improved by shifting continuously from one side of a small letter to the other side, while the letter is imagined to be moving in the opposite direction. When the shifting is slow, short, and easy, the best results in the improvement in the vision are obtained.
The eye also moves quick, very fast (Saccadic) and this occurs automatically. Any attempt to stop the shifting always lowers the vision. The letter or other object which appeared to move is usually shifting a short distance – one half or one quarter of an inch. It is not possible to imagine any particular letter or other object stationary for a longer time than one minute.
Strain, blur begins when the eyes have not moved after a fraction of a second to one second.

While the patient is seated, benefit can be obtained from shifting, but even more benefit can be obtained when the shifting is practiced while the patient is standing and moving the head and shoulders, in fact the whole body, a very short distance from side to side. (The Sway, Rock) Shifting the whole body makes it easier to shift a short distance and may explain why this method is best. It is easy to see letters on a eyechart clear when shifting easily on the letters while doing the sway a short distance left and right.
Blink, sway, relax.

Dodge It

By W. H. BATES, M.D.

WHENEVER your sight improves shift quickly to something else. Dodge your improved vision. Whenever you see things imperfectly shift your eyes quickly to something else. Dodge your imperfect sight. To stare always lowers the vision. Do not stare. Dodge it: It is interesting to demonstrate the great fact that perfect sight comes so quickly that you cannot avoid seeing things perfectly. The long swing is a great benefit as long as you dodge the improvement in your sight. The short swing requires more relaxation, and to dodge the improvement in your vision is more difficult. Practice the swing which gives you the best vision, or the vision that you are able to dodge. The eye should always be sufficiently relaxed so that you will be able to dodge. One patient was wearing very strong glasses concave 15 D. S. with which he obtained vision of only 20/70. Without his glasses he was able to remember a letter or a period perfectly as long as he did not try to see anything. With the retinoscope it was demonstrated that when his memory was perfect his eyes were normal, he had no nearsightedness. As soon as he tested his sight he lost his memory, the myopia or nearsightedness returned, and his vision became very imperfect. By practicing most of the time out of doors, or in the house on ordinary objects he became able to dodge any improvement in his sight, but not enough in the beginning, or not quickly enough to avoid the fact that his vision in a moment became worse. He was unable to do much with the Snellen Test Card at first, and the temptation to stare and not dodge prevented him from shifting from one object to another, quickly enough to retain his perfect memory. He finally became able to dodge any improvement in his sight before his memory failed. At the end of a week he reported one day when he came in to see me that he was cured. I tested his ability to dodge any improvement in his sight and found it as good as that of the normal eye. He could not only dodge the improvement in his sight for ordinary objects, but had at last become able to do it when he looked at the Snellen Test Card.

I asked him, "Can you look at the bottom line at twenty feet for so short a time that you do not lose your perfect memory?"

"Yes," he answered.

"Can you read any letters on the bottom line?"

"I cannot help but read them."

Another patient whose vision had been equally as poor and who had nearsightedness as well was very much benefited by the memory of a short swing of her body, about one-quarter of an inch. She could maintain this swing continuously with her eyes closed, and almost as continuously when she would look at a blank wall where there was nothing to see. When she regarded the bottom edge of the card with a perfect memory of a short body swing, the letters became perfectly black but she could not at first shift her eyes, or dodge the improvement in her sight quick enough to maintain the memory of the body swing. By practicing at all times and in all places, in the house or on the street, her ability to dodge became better. It was such a shock to her to read the bottom line at six feet without glasses, that she became panicky, and lost her mental control, failed to dodge, and lost her improved vision. Perfect dodging of improved vision can only be done perfectly by the normal eye. The normal eye does not have normal sight continuously unless it shifts or dodges what it sees at frequent intervals. (Dodging – to avoid staring by shifting the eyes to a new point.)

When dodging or shifting the shorter the shift the better provided one sees best where he is looking and sees worse all parts not regarded. One may shift to the right of the letter when the letter is to the left of the point regarded and then shift to the left of the letter when the letter is to the right of the point regarded. Every time the eyes move to the right the letter moves to the left, every time the eyes move to the left the letter moves to the right and by doing this a few times most people become able to imagine that when the eyes move the letter appears to move in the opposite direction. This is called the Swing and when one is able to imagine a letter moving or swinging from side to side the letter is not regarded directly, the stare is prevented by the shifting or dodging and the vision is improved. When one regards a small letter of the Snellen Test Card at a distance where it can be seen perfectly and continuously, most people can demonstrate that they do not see the right hand side best all the time or the left hand best all the time, but that they are shifting from one part of the letter to another, and this may all be done unconsciously. If one, however, stares at one part of the letter continuously the vision soon becomes blurred. It is necessary to keep dodging from one part of the letter to another. Every time the eyes move one can imagine the letter moves in the opposite direction. Staring at some point of the letter continuously always blurs the sight. Letter moves in the opposite direction = The swing, oppositional movement.

3 - CENTRAL FIXATION, See Clearest With the Center of the Visual Field

MENTAL EFFECTS OF CENTRAL FIXATION

A man of forty-four who had worn glasses since the age of twenty was first seen on October 8, 1917, when he was suffering, not only from very Imperfect sight, but from headache and discomfort. He was wearing for the right eye: concave 5.00D.S. with concave 0.50D.C. 180 degrees, and for the left concave 2.50D.S. with concave 1.50D.C. 180 degrees. As his visits were not very frequent and he often went back to his glasses, his progress was slow. But his pain and discomfort were relieved very quickly, and almost from the beginning he had flashes of greatly improved and even of normal vision. This encouraged him to continue, and his progress, though slow, was steady. He has now gone without his glasses entirely for some months. His wife was particularly impressed with the effect of the treatment upon his nerves, and in December, 1919, she wrote:

"I have become very much interested in the thought of renewing my youth by becoming like a little child. The idea of the mental transition is not unfamiliar, but that this mental, or I should say spiritual, transition should produce a physical effect, which would lead to seeing clearly, is a sort of miracle very possible indeed, I should suppose, to those who have faith.

"In my husband's case, certainly, some such miracle was wrought, for not only was he able to lay aside his spectacles after many years constant use, and to see to read in almost any light, but I particularly noticed his serenity of mind after treatments. In this serenity he seemed able to do a great deal of work efficiently, and not under the high nervous pressure whose after-effect is the devasting scattering of forces.

"It did not occur to me for a long time that perhaps your treatment was quieting his nerves. But I think now that the quiet periods of relaxation, two or three times a day, during which he practiced with the letter card, must have had a very beneficial effect. He is so enthusiastic by nature, and his nerves are so easily stimulated, that for years he used to overdo periodically. Of course, his greatly improved eyesight and the relief from the former strain must have been a large factor in this improvement. But I am inclined to think that the intervals of quiet and peace were wonderfully beneficial, and why shouldn't they be? We are living on stimulants, physical stimulants, mental stimulants of all kinds. The minute these stop we feel we are merely existing, and yet if we retain any of the normality of our youth do you not think that we respond very happily to natural simple things?"

CENTRAL FIXATION: When the vision is best where the eyes are looking, and worse where the eyes are not looking, central fixation is evident. Central fixation when properly used is a relaxation and a benefit. It is interesting to observe that one cannot have perfect sight without central fixation. One should not strain and make an effort to obtain central fixation of a letter or any object, as by so doing, imperfect sight is very soon apparent. The normal eye shifts unconsciously from one part of an object to another, seeing the part regarded best and other parts worse, and the eye with imperfect sight must acquire this habit by practicing it consciously until it becomes an unconscious habit.

EXPERIENCES WITH CENTRAL FIXATION

By M. H. STUART, M.D.

Moultrie, Ga.

We are greatly indebted to Dr. Stuart for sending us this remarkable story of his own cure and that of his patients, all of which was accomplished without personal assistance by means of the information presented in this magazine.

Some sixteen years ago, when working as a stenographer, I developed indigestion and became extremely nervous, one of my symptoms being a tension in the spinal cord between the shoulder blades which was extremely uncomfortable. In the late afternoon and evening I would become so nervous that I could scarcely sit still, and I have walked five miles into the country and back again to get relief. I tried dieting for the indigestion, but after two months failed to get any relief. A medical student then suggested that the trouble might be due to my eyes. I went to an oculist, who fitted me with glasses, and all my troubles ceased.

The glasses given to me were convex 0.25, axis 90. A few years later, when I was in New York doing post-graduate work at the Polyclinic, they were changed to concave 0.25, axis 180, my refraction having changed from hypermetropia to myopia. In succeeding years the myopic astigmatism increased to concave 0.75, axis 180, and finally, after I had worn glasses for some fourteen years, to concave 1.00, axis 180. The last correction I had worn for about two years when I discarded glasses for good.

Slight as my error of refraction was, I was not able to leave off my glasses for more than an hour or two without suffering from nervousness and the feeling of tenseness in the spinal cord alluded to above. At other times I was perfectly

comfortable except for the last year or two, during which I had so much to do that I suffered at times from the old nervous trouble. I had no pain in my head or eyes, but the trouble in my back was so bad last fall that I had to have the services of a masseur in order to do my work.

Five years ago I first read about Dr. Bates' experiments upon the eye muscles of animals. While interested I was not prepared to abandon the accepted teachings on the subject, and I waited to hear more. Recently I read, in the May (1920) number of BETTER EYESIGHT, Dr. Arnau's story of how, his headaches were cured, and I was so impressed by it that I determined to try the relaxation method upon myself. I palmed for five minutes and then read the card three times with each eye as far as I could without effort. I did this six times a day for five days, and at the end of this time I had gained a very decided degree of relaxation. I had, of course, discarded glasses, and, although this caused me a little discomfort at first, I was able about a week later, to perform, without them, three tonsilectomies and one operation for cataract, and to remove two blind eyes. At the same time I went through my daily routine of treating ten to thirty patients, examining eyes, ears, noses and throats, much of which work requires extra good vision. At noon I lay down to rest as usual and read the Atlanta paper. At night I read the Moultrie daily paper and anything else that I wanted to.

After the first five days of systematic relaxation I have never done anything in a routine way for myself, but if I feel nervous, or my eyes feel drawn, I swing twenty times and palm. In this way I am always able to get relief. Another method of gaining relaxation that I have resorted to is to look at an imaginary period in any dark distant object. In this pine-woods district there are thousands of stumps, many of which have been burned and blackened. The third day after I discarded my glasses I had to drive about twenty-eight miles, and whenever my eyes felt drawn I would look in an easy relaxed way at a small point on one of these stumps and always got relaxation.

Nearly every afternoon at half past four I go out for a game of golf, and often I palm before going, as I find it gives me better control of my nervous system, and enables me to play a more consistent game.

I was so pleased with the results of the new treatment in my own case that I have since taught central fixation to about forty of my patients, and in only about two did I fail to improve the vision at the first sitting.

The following are some of my more notable cases.

Mr. S, an automobile mechanic, had been mentally deranged for two weeks, following an attack of flu, after which he gradually became rational, only to find that he saw double and his vision was imperfect in each eye. At the first examination he read with his right 20/120, and with the left 20/60. I suggested that he palm at least six times a day for five minutes, and on the second day he was greatly improved, reading with the right eye 20/80, left 20/40. On the third day he read with the right eye 20/40, left 20/30, an increase of vision in the right eye of 200 per cent, and in the left of 100 per cent. He is now at work, and when, occasionally, he has to lay off, it is not on account of any trouble with his eyes, but because of weakness in his knees.

A year ago a Mr. B consulted me about the sight of his right eye, the left having been blind for years. His vision was 10/40, and could not be improved by any lens. I advised him to have the left eye removed, since it was a menace to the other eye. He would not consent to this and I did not see him again until May 5 of this year, when he came to my office practically blind in his right eye from sympathetic opthalmia. At one foot he could only count fingers. I advised the immediate removal of the blind eye and of a few teeth that had pus about them; but I could not promise that his vision would be saved. That afternoon I removed the eye, and the following day I was gratified to find that he could count fingers at three feet. I sent him home with some large letters to use for the practice of central fixation, and by the fifteenth he was able to count fingers at five feet. I then told him how to practice the universal swing, and on the twenty-second he could count fingers at seven feet. On the twenty-ninth he could read the small type on the 20 line of the test card at four inches, whereas he had been entirely unable to see them previously. He states that he can now see the small chickens running about near his feet, and can see small cotton plants seven feet away. I am confident that in a year, or some such matter, he will have sufficient vision to attend to the necessary work of his farm.

I have treated three cases of squint, all of them with success. One of them, Delia S, aged twelve, came to me on May 15, with her right eye turned in to such a degree that the cornea was partly hidden. The sight of this eye was so imperfect that at three feet she could only count fingers. With her left eye she could read 20/30. She was told to palm, and when she returned on May 24 she was able, with the squinting eye, to count fingers at six feet, twice as far as at her first visit, and the eye was straighter. On June 5 she came again, and counted fingers at eight feet, an increase of vision since the beginning of 700 per cent. On July 3, while I was writing this report, she came in, and I found that her right eye had improved to 20/60, one third of normal, while her left had become entirely normal, 20/20. Her right eye was entirely straight at times, and I feel sure that in a few months this condition will have become permanent.

Another case of squint was that of a young girl of fourteen with rather large, pretty blue eyes, one of which, the right, was slightly crossed inwardly. Her sight was very imperfect—half normal in the right eye and one-third normal in the left—while, like most cross-eyed people, she was troubled with double vision. I asked her to palm at least six times a day, and she came back with her eyes straighter and able to read 20/30 with both. The next week showed normal vision, the eyes being at times perfectly straight.

I was particularly pleased to be able to relieve these little girls of a disfigurement which means so much more to them than it would mean to a boy, and I was much interested to note how much prettier their eyes were, apart from the disappearance of the squint, after a few treatments. They were wide open, softer-looking, in short, relaxed.

AN ARTIST'S EXPERIENCE WITH CENTRAL FIXATION

By FLORENCE CANE

This patient consulted the editor on July 20*, 1921, because her vision was getting worse, and she suffered from a constant feeling of strain and fatigue in her eyes. She had worn glasses since she was seven years old for hypermetropia, commonly called farsight, and was now wearing convex 4.00 D. S., a rather strong lens. Yet without her glasses she was able to read fine print imperfectly, and by the aid of her memory she became able at the first visit to read it at six inches. Her discomfort was relieved at the first visit, and her distant vision, which had been imperfect, though better than her near vision, also improved.*

I have made a few observations while improving my eyesight by the methods recommended by Dr. Bates, and many thoughts and questions regarding them have suggested themselves to me.

The first thing I remember observing on leaving the doctor's office after my first treatment was a new sense of movement and life. Never before had I seen such dear, bright color in the crowd. I walked toward the library on Fifth Avenue, and never had the sun shone so brightly, or the world looked so exciting. My heart beat faster. I felt a great elation, as if a new vision, a new power, had been given me.

The second thing I remembered was that I sat down the same evening with *The Cure of Imperfect Sight by Treatment Without Glasses*, determined to see what I could do without my glasses. I found that by shifting and palming I could read a sentence or two, later more, and after a while I could read a paragraph without stopping. I found shifting from a point above a word to one below it particularly helpful.

I went to bed at ten o'clock, but was so excited, after reading there until twelve that I could not sleep much. The magnitude of the truth thrilled me. The relation of sight, memory and imagination to body, mind and soul—the use of one faculty to strengthen another—seemed to be such a wonderful conception.

Soon I observed that looking upward seemed to improve my sight. I took to practicing on high objects out of doors. I shifted on points like two apples in a tree, or on the clouds. This helped me very much, and overcame my shrinking from light. I found that I had never walked with my eyes really open before. When I told Dr. Bates about it, he said it was the light that helped me, not the height of the objects I looked at.

I have had several experiences in the application of the principles of central fixation which seem interesting enough to communicate to the readers of BETTER EYESIGHT. The first occurred when I had mislaid something. I had looked everywhere for it in vain. I sat down and palmed and, quietly but suddenly, I saw in my mind where I had laid it. I got up and looked, and it was there.

I burned myself at a beach fire on a piece of wood that I picked up. It had been in the fire, but it was dark and I did not notice it. I burned my thumb quite badly-enough to raise a big blister. It was very painful, and I had no remedy at hand. I remember that I had read in Dr. Bates' book about central fixation in relation to pain, and I tried remembering the small *o*. After a few minutes the pain ceased until I could not tell which thumb I had burned. The same thing happened after a bee had stung me; and one night when I had a severe cold and could not sleep because of difficulty in breathing, I was greatly helped by seeing the period and making it swing. I fell asleep and continued seeing the period in my sleep.

In painting I have had the most interesting experiences of all. If I am working from the memory or imagination and it won't come the way I want, I try palming. The first time this happened. I was painting a lake with some birches at one side. I just couldn't remember how birches grew, and the trees wouldn't look right. So I closed my eyes and waited, and soon a vision came to me of myself walking in a young birch wood that I used to know; I saw how the branches grew, and felt the white glimmer of reflected light from the bark, and the tender young green of the fragile leaves, and I painted the birches with ease and joy. This use of palming may be of great value to artists, because the artist works from the image, and sometimes this image is lost. By straining and effort he cannot regain it, but by palming he may.

I have also had interesting experiences in treating others, my first pupil being my little girl. She had a great fear of the water, so that she could not let herself go, and float face down. She has a cat of which she is very fond; so I suggested that she recall her cat washing itself when she tried to float. She did this and was able to float for twelve seconds.

Another case of interest was that of a woman who was in a nervous condition, overwrought and discouraged over her problems. I began teaching her how to improve her eyesight and at the first lesson she made such great progress that she was overcome with happiness. The magnitude of the thing she had done gave her a sense of control over herself, a new sense of power. She said, "If I can do this, why I can do anything." And it is true; she has pulled herself out of the overwrought state.

Among all the people with whom I have talked, or to whom I have tried to explain these ideas, I have met only one with a perfectly rigid mind. He was, as one would expect, a pure scientist of very high standing. He wouldn't even admit that his hand appeared to move when he swung his bead from side to side with his hand eight inches before his eyes. He said it merely made him dizzy. He knew the hand was in a fixed position, so it couldn't appear to him to move. This statement showed that he only used half his functions. He used his reason but refused to allow his senses to record how things appeared.

There is one thing Dr. Bates has said that I want to question. "We can see only what we imagine, and we cannot imagine something which we have not seen or experienced." As an example, he gives our inability to imagine a foreign alphabet. Well, if that statement is true, how do we get at a new truth? I think it is from the imagination. One can conceive of new

forms in art, and I should judge that a scientist must conceive a possible truth in his imagination, and then set about testing it by experiment and observation. The marriage of the two—facts and imagination—creates new truth and widens man's consciousness. This Dr. Bates has done. But he has only called imagination good. I think it is infinite, and by penetrating deeper into its mystery we are penetrating into the source of man's growth.

MY EXPERIENCE WITH CENTRAL FIXATION

By Dr. Doris J. Bowlby

THE correction of imperfect sight without the use of glasses, as taught by Dr. Bates, first came under my observation on January 1 of this year when Dr, Etha Marion Jones, of St. Petersburg, Fla., called my attention to the method. It appealed to me as being both simple and rational, and I began at once to study and later to practice it. Since that time I have taken glasses off about fifty patients, varying in age from ten to eighty years. Among them have been cases of squint, glaucoma, iritis, retinitis, double progressive myopia and muscae volitantes (floating specks). Many had worn glasses for years. Yet I had great success with all of them. The following are specimens of other equally interesting cases that might be cited:

Frank, aged ten, came to my office on September 1, 1921, for examination. He had been wearing glasses since he was four years old for what was supposed to be congenital myopia, and was then wearing the following:

Right eye, concave. 15.75 D. S., combined with concave 4.00 D. C., axis 15;
left eye, concave 15.75 D. S., combined with concave 4.00 D. C., axis 165.

With his left eye he could see only the 200 letter at one foot (1/200), and with his right he had only light perception. His parents hesitated about putting him in my care, as it seemed incredible that he could ever be cured, but were finally persuaded to snatch at what must have appeared to them a forlorn hope. The boy himself was unwilling to discard his glasses at first; but after the second treatment, when the vision of the left eye improved to 3/30 and that of the right to 3/40, he hesitatingly consented to go home without their aid. After his third treatment he felt safe in going anywhere without them. As he lives twenty-five miles from my office, I could see him only twice a week, but after every treatment the improvement was so marked that now, after two months, his right vision is as good as his left, both being 11/30 for the Snellen test card, while he reads diamond type at six inches and the larger type of his school books at eight incites. I feel sure that he will soon be reading 20/20. He looks and acts like a different boy, and is, naturally, a very happy one. The case has attracted much attention in the village where he lives.

On September 9, a young girl of eighteen came to me because of the intense pain which she was suffering in her eyes and head. She had not been able to go to school, or use her eyes in any way, for over a year, and during this time had been to three specialists. Her lenses had been changed a number of times, she had dark glasses to wear whenever she went into the light, and for eight months she had spent most of her time in dark rooms. Her sight had been perfect, so far as she knew, until she had had measles four years previously. During this illness she had read and studied, and afterward her eyes were red and weak. Two years ago she noticed that she could not see writing on the blackboard, and in a few days an eruption appeared on the eyelids and side of the face. Later she had an infected sinus, and also infected tonsils, tonsillectomy and an operation upon the nose having been performed eighteen months previously. No doubt the foci of infection which had existed at least a year had something to do with her trouble. When she came to me she was suffering from conjunctival congestion, with exudation of purulent material, and there was some hardening of the eyeballs. Her left vision was 7/30 and her right vision 7/50, and she was wearing:

Right eye, convex 1.00 D. S., combined with convex 1.00 D. C., axis 100;
left eye, convex 1.00 D. S., combined with convex 1.25 D. C., axis 80.

The patient came for treatment every day and has been very faithful in her palming and other exercises. After the third treatment all pain left her and she left her glasses with me. By October 1 she was able to return to school. She now reads the lowest line of the test card at twenty feet (20/10), and reads diamond type at ten inches. The retinoscope shows no error of refraction in either eye, and the strained look about her eyes and in her face has given way to one of relaxation.

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CENTRAL FIXATION

When the eye sees best where it is looking it is called Central Fixation. Of course when one sees one point best it must see all other parts worse. It is a great help in accomplishing Central Fixation to ignore or dodge all other objects or letters (objects/letters the eyes are not looking directly at, that are in the peripheral field). To see worse may require in a way greater rest of the mind because in Central Fixation a great many more things are seen worse and only one thing is seen

best. It must be borne in mind that dodging may be done right or it may be done wrong like many other methods of improving the sight. Dodging is done properly when things are ignored. We do not think so much of the objects seen worse (in peripheral field) as we do of the one object which is seen best (in the central field). It is impossible to have perfect sight without Central Fixation. Central Fixation is demonstrated to be a passive condition of the mind and is always accomplished without effort. It is necessary then to dodge the objects not regarded.

CENTRAL FIXATION

By W. H. Bates, M.D.

Central Fixation: *The letter or part of the letter regarded is always seen best.*

With normal vision, a letter or an object cannot be seen clearly or perfectly unless one sees a part of the letter or object best, or better than all other parts.

Central fixation is passive. We do not see by any effort. Things are seen, one part best. Furthermore, it is a condition of relaxation of the eye or mind obtained without any effort.

The normal eye with normal sight is always at rest. Nothing is done. No effort is made. Many cases of imperfect sight have been cured when no efforts were made to see. One cannot relax by working hard, straining, nor obtain rest of the eyes or mind by the help of a strain. When the eyes are normal, they are at rest. When they are imperfect, they are always under a strain.

+Central fixation should not be confused with concentration, which is defined by the dictionary to mean an effort to keep the eyes or mind continuously on one point only, and to ignore all other points.

Try it. Look directly, for example, at the point of the notch on the upper right corner of the large letter C on the Snellen test card. Keep the eyes open without blinking. In a few seconds, or part of a minute, the mind begins to tire from the monotony. An effort is made to hold the concentration. The effort increases with discomfort or Pain. The vision becomes less, the white of the notch looks gray, the black appears less black, less clear and less distinct. The notch regarded is not seen as well as other parts of the large letter not regarded, and Central Fixation is lost. Not only does the notch appear less clear, but by continuing the effort the large letter C, as well as all the letters on the card, are seen less and less perfectly. The white of the whole card is also modified and becomes less white. Other objects in the neighborhood of the Snellen card soon begin to blur and are seen imperfectly. The stare or strain has very much the same effect as if the sun were covered with a cloud or as if the light in the room, or the general illumination, were lessened. When central fixation is practiced, all the objects in the room, including the Snellen card, look brighter, clearer, just as though the light had increased.

Experience the cause of unclear vision; staring, not blinking, not shifting, eccentric fixation, trying hard, using effort to see clear.

Learn to avoid this. Learn to use the eyes correct; relaxation, no effort, shifting, blinking, central fixation and the vision is clear.

+Concentration is trying to see one thing only. It always fails.

+Central fixation is seeing one thing best, and all other objects not so well. Central fixation is combined with shifting; the eyes, center of the visual field, shifts, moves continually from point to point; part to part, object to object.

When the vision, memory, or imagination are imperfect, concentration can always be demonstrated.

When the vision, memory, or imagination are perfect, Central Fixation can always be demonstrated.

Central fixation is an illusion. All parts of small letters as well as large ones are printed with the same amount of blackness. We do not see illusions. They are only imagined. When we see best one part of a letter, or other object regarded, we think we see it best, or more accurately, we imagine it best. One can imagine anything desired, and much more easily than to make an effort to see it. This fact should be demonstrated repeatedly, and consciously, until it becomes an unconscious habit.

With the eyes closed the imagination of Central Fixation may be much better than with the eyes open. By alternating the imagination of Central Fixation with the eyes open and closed, both may improve.

Many persons have no mental pictures with their eyes closed. For example: A patient consulted me about his eyes. He was asked to look at a white pillow. "Can you see it?" he was asked.
"Yes," he answered.

Shift point to point (dot to dot) on the E seeing one small part (dot) clearest at a time in the center of the visual field. The central field moves with the eyes as the eyes shift dot to dot.

Stare at the point on the upper right notch of the C. Do not shift the eyes, eyes immobile, do not blink. Strain, tension, blur occurs. Now shift on the C part to part and experience relaxation and clear vision.

Remember and see the pillow clear with central fixation and shifting: Look at and see one corner of the pillow best at a time. Shift from corner to corner (dot to dot) seeing one corner at a time best, clearest in the center of the visual field. Shift part to part on any area of the pillow.
The pillow is seen clear.

"Now, close your eyes. Can you remember it?"
"No," he replied; "I remember a black pillow."
"With your eyes open, can you see one corner of the pillow best, and the other corners not regarded worse?"

He was able to demonstrate this fact, and that he could in turn see, or imagine, each corner regarded best and the other corners worse. With his eyes closed he was able to remember one corner at a time best, and when he remembers the pillow by Central Fixation, he obtained a mental picture of a white pillow almost as well as he could see it with his eyes open.

He was then asked to remember two corners simultaneously, both perfectly clear. At once he lost his mental picture of the pillow. He demonstrated with other objects as well that he could only remember or imagine mental pictures of them by Central fixation.

Another patient had suffered for many years with almost constant pain and fatigue. With his eyes open his vision was 20/20. He read diamond type as close as six inches, and as far off as twenty inches. He could imagine the white part of large or small letters whiter than the rest of the Snellen test card, but only with his eyes open when regarding the letters. With his eyes closed he could not remember mental pictures of any objects.

He was asked: "Which is whiter, the white center of a large letter of the Snellen card or the white snow on the top of a mountain?" He answered, "The white snow on the top of a mountain."

"Can you shift from one mountain top to another, remembering each one best and the others not so well, or worse?"

This also he was able to do. But when he tried to imagine two or more snow-capped mountains simultaneously, he at once was conscious of an effort and lost his imagination of his mental pictures of the snow.

The memory of the snow-capped mountains by Central Fixation helped him to imagine Central Fixation with his eyes open as well as closed.

A girl, age eight, had imperfect sight not corrected by glasses. The right eye turned in continuously. The vision of this eye was 3/200 with glasses. The left vision was one-half of the normal. She was taught Central Fixation and became able, in a few days, to imagine one part best of the larger letters. The vision of both eyes improved very much. She demonstrated the value of Central Fixation, and that she could not distinguish clearly even the large letters with each eye unless she imagined one part best. By repeated demonstrations this young patient acquired speed in the practice of Central Fixation. She became able to read a newspaper more than five feet from her eyes by artificial light. Fine print, or diamond type, was read rapidly, easily, at one inch from each eye.

She enjoyed the practice of conscious Central Fixation. It was to me very wonderful to observe her imagine very small letters by Central Fixation and read them at ten feet or further.

The squint disappeared permanently.

A girl, aged twelve, was treated for progressive myopia. The vision of each eye was 3/200. With concave 16D.S. the sight of each eye was improved to 20/70. The patient was very nervous. Her memory was poor, and she was behind in her schoolwork. Treatment with the aid of Palming and Central Fixation improved her vision slowly. After about six months there came a sudden change for the better. In one day, her vision improved from 10/200 to 10/10 plus. The next day she read the bottom line of each of three strange cards at twenty feet. It was remarkable, also, because she read all the letters as rapidly as she could pronounce them. The mother was worried because her daughter had suddenly acquired a habit of running down stairs three steps at a time. She had never stumbled or fallen once. The mother also reported that the patient had acquired much pleasure in coasting and was the most daring of all the children. Her scholarship had improved. The teacher said the patient would read a page of history in a few seconds, and recite it with a perfect memory after a few days, a month, or longer. Her memory for other subjects was equally as good.

Immediately after she read the strange cards with normal vision, I asked her: "What helped you?"

"Starch," she answered.

Then she explained that she had become able to imagine a small piece of white starch perfectly white by Central Fixation. When her imagination was perfect her myopia disappeared, her eyes were normal, which made it possible to obtain normal vision. The retinoscope used at the same time demonstrated that her myopia disappeared when she had a perfect imagination of Central Fixation.

Patients whose sight is very imperfect usually require a much longer time to acquire Central Fixation than do some others. One should not be discouraged when, after some weeks or many months, their vision remains imperfect. Too many are disappointed because they fail to obtain Central Fixation after long periods of time, practicing without the help of a competent teacher. One very determined patient devoted many hours daily for over a year without any apparel benefit whatever. She told me that she knew she was curable and was resolved to keep at it the rest of her life if necessary. I wrote her a few suggestions. She followed my advice and was cured in a week.

Central Fixation

When the vision of myopic patients is imperfect, it can always be demonstrated that the point regarded is not seen best, and other parts of a letter may be seen equally well or better. When the patient becomes able to remember or imagine one part of a letter or an object best, the myopia is lessened and the vision improves. When the strain is prevented, by shifting from one side of the letter to another, the letter appears to move from side to side. The vision may then become normal and the myopia disappears.

CENTRAL FIXATION: Central fixation is seeing best where one is looking and worst at all other points. When the patient is swaying before the card, he is told to see one part of a letter which he is regarding at a time and to see that part better than any other part, then to quickly shift his glance to another part, seeing that part best and other parts of the letter worse. The letter is seen much more readily in this way. The patient is reminded that the normal eye uses central fixation at all times.

BLINKING: It can always be demonstrated that when a patient with imperfect sight looks intently at one point, keeping the eyes open constantly, or trying to do so, a strain of the eyes and all the nerves of the body is usually felt, and the vision becomes imperfect. It is impossible to keep the eyes open continuously without blinking. Each time the eyes blink, a certain amount of rest is obtained and the vision is benefited. For this reason, the patient is instructed to blink frequently while swaying before the card, and at all other times.

#4 - BLINKING

Blinking rests the eyes, activates shifting-eye movement, tear production, coats the eyes, cornea with tears that clean, nourish, protect the eye/cornea, prevent dry eyes and act as a natural contact lens increasing the clarify of vision. Blinking prevents over-exposure of the eyes to strong light.

It is a rest to the eyes to close them and keep them closed for a few minutes or a half hour or longer. When the eyes are open the vision is usually improved for a moment or longer. The normal eye can look at a small letter of the Snellen Test Card and see it continuously but when it does so the letter is always moving and the eyes are not kept open all the time. Closing the eyes effectually dodges perfect or imperfect sight. Usually unconsciously the normal eye closes and opens quite frequently and at irregular intervals and for very short spaces of time. Most people can demonstrate that when they regard a letter that they are able to see quite clearly it is possible for them to consciously close their eyes and open them quick enough and see the letter continuously. This is called Blinking and it is only another name for dodging. Dodging what? Dodging the tendency to look steadily at things all the time. All the methods which have been recommended for the improvement of the vision, central fixation, palming, swinging, blinking can all be grouped under the one word—dodging.

One of the characters in "Oliver Twist," by Charles Dickens, was called the "Artful Dodger." Persons with good sight may not be artful but they certainly are good dodgers.

Blinking

THE normal eye when it has normal sight rests very frequently by closing the eyes for longer or shorter periods, and when practiced quickly it is called BLINKING. When the normal eye has normal sight and refrains from blinking for some seconds or part of a minute, the vision always becomes imperfect. You can demonstrate that normal vision at the near point or at the distance is impossible without frequent blinking. Most people blink so easily and for such a short period of time that things are seen continuously while the blinking is done unconsciously. In some cases one may blink five times or more in one second. The *frequency* of blinking depends on a number of factors.

The normal eye blinks more frequently or more continuously under adverse conditions as when the illumination is diminished, the distance is increased or the print read is too pale or otherwise imperfect. The distraction of conversation, noise, reflections of light, objects so arranged as to be difficult to see, all increase the frequency of blinking of the normal eye with normal sight. If the frequency of blinking is diminished under adverse conditions or from any cause the vision soon becomes imperfect.

The imperfect eye or the eye with imperfect sight blinks less frequently than the normal eye. Staring stops the blinking. The universal optical swing, the long or short swing when modified or stopped are always accompanied by less frequent blinking.

Blinking

Blinking is necessary to maintain normal vision in the normal eye. When blinking is prevented, the eyes become tired

and the vision very soon becomes worse. Some persons, without knowing it, will blink five times in one second as demonstrated by the camera. When regarding a large letter of a Snellen test card at twenty feet or one foot, while blinking consciously, the letter appears to move up while the eyelids close slowly, and to move downwards as the eyelids are slowly opened. This apparent movement is caused by shifting the eyes up and down while blinking. (Blinking causes the eyes to shift automatically.) Many patients are unable to shift their eyes a short distance with benefit. When blinking, they may fail to obtain relaxation, because they too often blink with an effort. It is possible for most patients to demonstrate that the shifting of the eyes up and down improves the vision, when blinking is done easily, without effort. Blinking is very important. It is not the brief periods of rest obtained from closing the eyes which helps the sight so much as the shifting or movements of the eyes. It should be repeatedly demonstrated that the eyes are only at rest when they are shifting.

Blindness

By W. H. BATES, M.D.

A GREAT many people are blind or have vision so imperfect that they are unable to find their way about a strange place with the aid of their eyes. They are usually an object of interest to their friends and are frequently recommended to try every new form of treatment which comes out that promises any relief. They are too often disappointed.

Eyechart close to the face and move it side to side. If the vision is very unclear and the movement of the card cannot be seen: imagine it is moving. The letters will become clear. Then practice with the card at farther distances.

The orthodox ophthalmologist has been guided by a certain number of rules. For example: a patient who has no perception of light is at once considered incurable, no matter what may be the condition of the eyes. The first shock that I experienced in such cases was in that of a girl who had total blindness in one eye only, the other being fairly good. She had been to many physicians, and all pronounced her incurable because she had no perception of light in the blind eye. This was a long time ago, and at that time I did not know as much as I do now and told the patient that nothing could be done to improve the blind eye. The eye itself appeared normal. There was no opacity and no organic disease which I was able to find. She told me that one doctor said she was born with something wrong with the eye center in the brain, which accounted for the blindness in the one eye. However, I treated her, planning to improve the slight, imperfect sight that she had in the good eye. Much to my surprise, the vision in the blind eye simultaneously began to get better. The first improvement the patient noticed was that she could see strong light off to the outer side of the eye, while her vision straight ahead and to her left was still dark. One of the most remarkable things about the case was the rapidity with which the blind eye obtained perception of light when the vision improved for objects and letters of the Snellen Test Card. After two weeks of daily treatment the vision of the right eye had improved to 10/200, and at the end of another week she had 20/20. From the results of treatment and other reasons I believe that this was just a case of blindness from squint without the squint, which is called in the text books amblyopia ex anopsia. After doing her so much good, I expected that she would return or at least send word how she was getting along. She was not heard from again. I believe, if there had been any relapse, she might have returned. Sometimes these cases do relapse, and I learn the facts from friends of the patient.

About five years ago a patient was led into my office, blind from retinitis pigmentosa. The vision of the right eye was perception of light, while that of the left eye was 5/200. The pupils of both eyes were small, and in order to examine the interior of her eyes her pupils were dilated with a weak solution of atropine. It was followed very quickly by an attack of acute glaucoma. This subsided after about two weeks. The vision of the better eye was lowered to perception of light while that of the right eye, which had been practically blind for many years, had improved to 10/200. This was a great surprise because it was so unexpected. After many months of daily treatment she obtained normal vision in the right eye and almost normal vision in the left eye. She stopped treatment against my advice. The case was published in the New York Medical Journal, February 3, 1917.

Glaucoma is a very treacherous disease. One may have an attack and recover promptly under treatment. The same patient may have a number of attacks of temporary blindness, but sooner or later the patient will suffer an attack of glaucoma with total blindness, from which no recovery follows spontaneously. The patient goes to some competent ophthalmologist, who at once tells him that there is no hope of anything being done. At one time I examined with a microscope six eyes which had been enucleated for the relief of great pain from absolute glaucoma. Not one of these eyes was imperfect in any way. Quite frequently I have seen cases of absolute glaucoma which came to me for treatment, and which were completely relieved by palming and obtained normal vision in a very few days or weeks, some in even a shorter time. One such case, about ten years ago, had pain so severe that he was unable to attend to his business, and had been strongly advised to have the eye removed. He came to me as his last resort. After a half hour of palming the pain disappeared, and has not returned since in all this time. I saw the patient a few days ago and he is still full of gratitude for the benefit he received.

If my method never did anything more than to relieve the tension and pain of glaucoma, I would feel that I had done something worth while. Whenever I think of those glaucoma cases I relieved, it is a very difficult matter for me to refrain from boasting. There are many eye doctors of my acquaintance who do not believe that palming does much for glaucoma,

although I have gone to a great deal of trouble to advertise the fact. So strongly impressed on the minds of ophthalmologists that absolute glaucoma is incurable, that I can understand how difficult it is for men of experience to imagine that any of these cases can be benefited. Some day, soon I hope, some doctor will try the palming on a hopeless case and be gratified to find that these cases can be helped. If he has the courage to publish the facts he will find that his brother practitioners will not be as severe with him as he might expect. Some eye specialists have privately observed my work; and, although they at the time admitted that I was right and everybody else was wrong, they hesitated to indorse any of my discoveries publicly.

Many patients have said to me: "You cured me after other doctors failed. When I went back to some of them and reported the facts, they had nothing to say. What is the matter with them?"

Recently I was asked if my methods were of any benefit to the blindness of babies who have lost their sight from an infection soon after birth. I believe that these cases can be prevented by the well-known simple treatment as most doctors agree, but after the disease has caused blindness very few or no doctors believe that much can be done to restore the sight.

Some years ago I treated a girl, aged fourteen, whose right eye was blind following a severe inflammation of her eyes soon after birth. She was unable to see moving objects with this blind eye, but had perception of light. I had her hold the Snellen Test Card in her hand, close to her face, and to move it from side to side for a half hour or longer. In the beginning she could not imagine that the card was moving, but by appealing to her common sense she admitted that she did move the card, and furthermore that although she could not see it move, she could imagine it. The next day she practiced in the same way, and told me that she could imagine some black specks on this moving card and that the card was beginning to look more or less white. In a week's time she was able, as a result of daily use of the card, to see about half the letters with the card held close to her eyes. In another week she read the whole card. Then the card was placed gradually further off, and at the end of about three months the opacity on the front part of her eye had almost entirely disappeared and her vision had improved to 20/20.

I wish to emphasize that many cases of so-called incurable blindness can be completely relieved. It is wrong for any doctor or group of doctors who cannot cure cataract, for example, without an operation, to insist that because they cannot cure it nobody else can.

Blinking

Blinking, when practiced properly, promotes relaxation or rest. The normal eye blinks continuously all day long when the patient is awake. At night, when the patient is asleep, a movement of the eyeballs can be seen which resembles the movement of the eyeballs when the eye blinks. When the eye blinks slowly and the upper eyelid is slowly closed, distant objects appear to move up. When the eyelids slowly open, objects appear to move down. This movement is usually accompanied by an improvement in the vision. Blinking is absolutely necessary in order to obtain continuous normal vision. The normal eye blinks unconsciously, easily, sometimes with great rapidity and at other times rather slowly. It is impossible to stop the blinking of the normal eye. Any effort to do so is a strain, which lowers the vision and, if kept up for some minutes or longer, produces pain, fatigue, dizziness, and other nervous symptoms.

Shift left and right from one period to the other.
One period at a time is seen clear in the center of the visual field. When looking at a period: shift on it: tiny part to tiny part to see it clear. Blink.

The normal eye is shifting or looking from one point to another continuously, not only when one is awake, but also when one is asleep. This continuous movement of the eyes brings about a condition of perfect rest. To stare at one point for a few seconds or part of a minute is a difficult or painful thing to do. It requires a great effort which lowers the vision. It is not possible to see two black periods perfectly black at the same time. The only way that they can be seen perfectly black is to shift from one to the other alternately. It is not possible to see a large letter or a small letter perfectly without shifting or looking from one part of the letter to another part. It is well to realize that the human mind is not made to see more than one thing perfectly at a time. To see two or more things perfectly at the same time is impossible, but one can shift from one thing to another and alternately see each perfectly for a short time.

When regarding a person's face, it is impossible to see the whole face perfectly at once. It is necessary to shift from one part of the face to another to see those parts perfectly. If the shifting is more or less rapid, one gets the impression of seeing the whole of the face at once, when, as a matter of fact, only a small area is seen at a time.

One of my patients had normal sight in one eye and one-half normal vision in the other. He was very positive that he could see every letter of the Snellen test card perfectly at the same time. He was not aware that he shifted from one letter to the other, or that he shifted from one part to another of large and even small letters in order to see them clearly, or to be able to distinguish them at all. When he covered his good eye and looked with the poor one, he could read only one letter at a time. He was quite conscious that he did not see even the large letters perfectly; but when he practiced shifting with his poor eye, his vision improved not only for the large letters, but also for the small letters. It required considerable time and much patience to convince him that it was impossible for him to see all parts of any letter perfectly at the same time. When he demonstrated that staring lowered his vision, and that shifting improved it, he obtained normal vision in each eye.

5 - BREATHING, Deep, Relaxed

BREATHING

MANY patients with imperfect sight are benefited by breathing. One of the best methods is to separate the teeth while keeping the lips closed, breathe deeply as though one were yawning. When done properly one can feel the air cold as it passes through the nose and down the throat. This method of breathing secures a great amount of relaxation of the nose, throat, the body generally including the eyes and ears.

A man aged sixty-five, had imperfect sight for distance and was unable to read fine print without the aid of strong glasses. After practicing deep breathing in the manner described he became able at once to, read diamond type quite perfectly, as close as six inches from the eyes. The benefit was temporary but by repetition the improvement became more permanent.

At one time I experimented with a number of patients, first having them hold their breath and test their vision, which was usually lower when they did not breathe. They became able to demonstrate that holding their breath was a strain and caused imperfect sight, double vision, dizziness and fatigue, while the deep breathing at once gave them relief.

There is a wrong way of breathing in which when the air is drawn into the lungs the nostrils contract. This is quite conspicuous among many cases of tuberculosis.

Some teachers of physical culture in their classes while encouraging deep breathing close their nostrils when drawing in a long breath. This is wrong because it produces a strain and imperfect sight. By consciously doing the wrong thing, breathing with a strain one becomes better able to practice the right way and obtain relaxation and better sight.

The habit of practicing frequently deep breathing one obtains a more permanent relaxation of the eyes with more constant good vision.

Abdominal, diaphragmatic breathing, yawning is taught by modern Natural Eyesight Improvement teachers.

The Rabbit's Throat

DURING the past ten years a method of breathing has been practiced which has improved the vision of many patients after other methods had failed. It consists of depressing the lower jaw with the lips closed and lowering the tongue and muscles below the chin. At the same time one breathes in through the nose and throat in a manner somewhat similar to snoring and when done properly one can feel a coolness of the air while it passes down into the lungs. This method of breathing is accompanied with the eyelids being more widely open in a natural way without staring. **The ear passages, nose, and throat dilate. The tube which goes from the throat to the middle ear becomes more widely open, with improved hearing in chronic deafness which does not respond to any other treatment.** If one rests the chin with the thumb below it and the forefinger just below the lower lip, one can feel with the thumb the hardening of the muscles below the jaw accompanied with a decided swelling. By practice, the swelling and hardness increase. This suggested the title of the Rabbit's Throat because of a similar swelling below the rabbit's chin. The **tension of the other muscles of the body becomes relaxed.** There is a wonderful increase of muscular control. Music teachers have told me that the singing voice becomes much better because of the **relaxation of the muscles of the throat**. The involuntary muscles of the digestive tract become relaxed in a striking manner with the relief of many symptoms of discomfort. **Redness and inflammation of the mucous membranes of the eye, ear, nose and throat and the rest of the body are relieved in a few minutes with the aid of the Rabbit's Throat.**

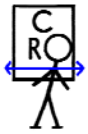
The Rabbits throat method improves breathing, relaxes the muscles in the neck, head, improves ear function. This helps to improve eye muscle and eye function, clarity vision. The visual system is connected/functions with the ears, balance system. Other breathing methods are found in yoga exercises, abdominal/diaphragmic breathing.

Relaxed throat, neck = improved circulation to the head, ears, eyes = clear vision.

REST—Children of all ages are benefited by resting their eyes and minds for a few minutes, several times a day. Teachers realize the benefit of rest in the school-room, and books are laid aside, windows opened, and a few exercises with deep breathing, are practiced. I am not aware that the school authorities have ever been criticized for devoting this daily amount of time to rest.

#6 - MOVEMENT, Oppositional Movement 'The Swing'

Demonstrate



Stand, face the eyechart, sway side to side. Sway right and look away to the right of the card. Sway left and look to the left of the card. Sway and look right, left, right, left... See the card appear to move in the opposite direction the eyes, body move, look to. Sway, move the body, eyes longer left and right and see a longer movement of the card. Sway shorter (6 in. or 1-3 in.) side to side and see the card move shorter and the vision become clearer. Small shifts, movements of the eyes (saccadic) and perfect central fixation on objects=clear vision.

1 - That a short, swaying movement improves the vision more than a long sway.
Place the test card at a distance where only the large letter at the top of the card can be distinguished. This may be ten feet, further or nearer. Stand with the feet about one foot apart and sway the body from side to side. When the body sways to the right, look to the right of the card. When the body sways to the left, look to the left of the card. Do not look at the Snellen test card. Sway the body from side to side and look to the right of the Snellen test card, and alternately to the left of it. Note that the test card appears to be moving. Increase the length of the sway and notice that the test card seems to move a longer distance from side to side. Observe the whiteness of the card and the blackness of the letters. Now shorten the sway, which, of course, shortens the movement of the card. The card appears whiter and the letters blacker when the movement of the card is short, than when the movement of the card is long.

2 – Demonstrate that when the eyes are stationary, they are under a tremendous strain.
Stand before the Snellen test card at a distance of fifteen or twenty feet. Look directly at one small area of a large letter, which can be seen clearly. Stare at that part of the letter without closing the eyes and without shifting the eyes to some other point. The vision soon becomes worse and the letter blurs. Stare continuously, and note that the longer you stare, the more difficult it is to keep the eyes focused on that one point or part of the letter. Not only does the stare become more difficult, but the eyes become tired; and by making a greater effort, the eyes pain, or a headache is produced. The stare can cause fatigue of the whole body when the effort is sufficiently strong and prolonged.

THE SWINGING CURE

If you see a letter perfectly, you may note that it appears to pulsate, or move slightly in various directions. If your sight is imperfect, the letter will appear to be stationary. The apparent movement is caused by the unconscious shifting of the eye. The lack of movement is due to the fact that the eye stares, or looks too long at one point. This is an invariable symptom of imperfect sight, and may often be relieved by the following method:

Shift left and right on the E and see it move in the opposite direction. Practice with the eyes open, then closed with the imagination, then open.

Close your eyes and cover them with the palms of the hands so as to exclude all the light, and shift mentally from one side of a black letter to the other. As you do this, the mental picture of the letter will appear to move back and forth in a direction contrary to the imagined movement of the eye. Just so long as you imagine that the letter is moving, or swinging, you will find that you are able to remember it, and the shorter and more regular the swing, the blacker and more distinct the letter will appear. If you are able to imagine the letter stationary, which may be difficult, you will find that your memory of it will be much less perfect.

Now open your eyes and look first at one side and then at the other of the real letter. If it appears to move in a direction opposite to the movement of the eye, you will find that your vision has improved. If you can imagine the swing of the letter as well with your eyes open as with your eyes closed, as short, as regular and as continuous, your vision will be normal.

The Thumb Movement

Move the thumb on the stationary finger tip in a 1/4 inch circle. Move clockwise for a while, then counter-clockwise.
Move the thumb left and right, up and down... against the finger. Practice with left and right hands.

Rest the hand against an immovable surface. Place the ball of the thumb lightly in contact with the forefinger. Now move the end of the thumb in a circle of about one-quarter of an inch in diameter. When the thumb moves in one direction, the forefinger should appear to move in the opposite direction, although in reality it is stationary. In the practice of the universal swing, everything is imagined to be moving in the same direction, except the eyes. With the aid of the thumb movement, however, one can imagine the spine and the head moving opposite to the direction of motion of the thumb, while the eyes, being fastened to the head, also move with the head and hand.

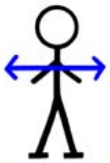
While watching the movement of the thumb, remember imperfect sight. At once, the thumb movement becomes irregular or may stop altogether. Demonstrate that any effort, no matter how slight, to see, remember or imagine, interferes with the movement of the thumb. The thumb is so sensitive to an effort or strain that the slightest effort is at once recorded by the motion.

While watching the movement of the thumb, remember perfect sight. Notice that the movement of the thumb is slow, short, continuous, and restful - with relaxation of all parts of the body.

Many patients have been successfully treated for pain, fatigue, and dizziness with the help of the thumb movement, after other treatment had failed. Some patients with severe pain complain that when they forget to practice the movement of the thumb, the pain comes back.

Not only have patients suffering from pain and symptoms of fatigue been relieved, but an equal number have been relieved of imperfect sight by the correct practice of the thumb movement.

Thumb movement done in various directions and with the left and right hands also activates, integrates the left and right brain hemispheres and eye movement, shifting.



Hang a ruler or curtain cord in front of a open window with a view of distant objects.
Rock left and right in front of the window. Body, head, eyes move together, at the same time, in the same direction.
See the cord appear to move opposite the movement of the body, head, eyes while distant objects appear to move with the body, head, eyes in the same direction.
The cord and distant objects move against each other in opposite directions.

Move the thumb side to side 1/4 inch or, do the thumb on finger tip movement as described in previous chapters.
Move the eyes with the thumb. Imagine stationary objects moving, 'the swing' when the eyes shift.

MOVING

The world moves. Let it move. People are moving all day long. It is normal, right, proper that they should move. Just try to keep your head, or one finger, one toe, stationary, or keep your eyes open continuously. If you try to stare at a small letter or a part of it without blinking, note what happens. Most people who have tried it discover that the mind wanders, the vision becomes less, pain and fatigue are produced.

Stand facing a window and note the relative position of a curtain cord to the background. Take a long step to the right. Observe that the background has become different. Now take a long step to the left. The background has changed again. Avoid regarding the curtain cord. While moving from side to side, it is possible to imagine the cord moving in the opposite direction. By practice one becomes able to imagine stationary objects not seen to be moving as continuously, as easily, as objects in the field of vision.

Seeing objects at different distances move opposite each other improves relaxation, eye movement and the clarity of vision. It also helps people with very unclear vision distinguish one object from another object, improves the ability to look at and shift part to part on one object at a time. This improves shifting with central fixation which further improves the clarity of vision.

The speed of the movement of close and distant objects changes if the eyes look at close or distant objects when moving left and right. Normally when practicing moving left and right the eyes do not look at any objects - just let the eyes move along, pass by over objects in the visual field.

Universal Swing: When one becomes able to imagine all objects seen, remembered, or imagined, to be moving with a slow short, easy swing, this is called the Universal Swing. It is a very desirable thing to have, because when it is imagined with the eyes closed or open, one cannot simultaneously imagine pain, fatigue, or imperfect sight.

The universal swing can be obtained without one being conspicuous. With the hand covered, move the thumb from side to side about one-quarter of an inch, and move the eyes with the thumb. Stationary objects can be imagined to be moving.

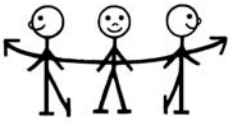
When walking rapidly forward, the floor or the sidewalk appears to move backward. It is well to be conscious of this imagined movement.

Never imagine stationary objects to be stationary. To do this, is a strain, a strain which lowers the vision.

Try Dancing

THERE has been repeatedly published in this magazine and in my book that the imagination of stationary objects to be moving is a rest and relaxation and a benefit to the sight. Young children, when one or both eyes turn in or out, are benefited by having them swing from side to side with a regular rhythmical motion. This motion prevents the stare and the strain and improves the appearance of the eyes. It helps the sight of most children to play puss-in-the-corner or to play hide-and-seek. Children become very much excited and laugh and carry on and have a good time and it certainly is a benefit to their sight. It seems to me that these children would be benefited by going to dancing school. Many of my patients practice the long swing in the office and give strangers the impression that they are practicing steps of a dance. One patient with imperfect sight from detachment of the retina recently told me over the telephone that he went to a dance the night before and although he lost considerable sleep his sight was very much improved on the following morning.

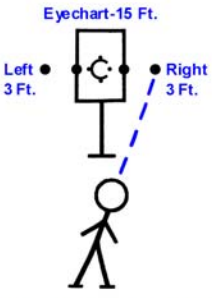
Dancing is certainly a great help to keep things moving or to imagine stationary objects are moving, and is always recommended. Some people have told me that the memory of the music, the constant rhythmic motion and the relaxation have improved the vision.



Long Swing

Swing the body left and right. Head/face, eyes, body move together, at the same time, in the same direction.
See oppositional movement; objects in the visual field appear to move 'swing by' in the opposite direction.
Do not stop to look at the objects. Keep swinging, relax and let them move.

Sway/rock left and right.



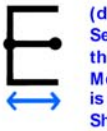
+Look 3 Feet to the right of the eyechart. Then, look 3 feet to the left of the eyechart.
+Notice the chart moves in the opposite direction the eyes, head, body move to.
+Shift long, left and right on the sides of the chart and see a long, wide oppositional movement. (see dots, shift dot to dot)
+Then shift shorter, left and right on the edges of the chart and see a shorter opposite movement. (see dots)
+Then shift shorter, smaller- left and right, top and bottom on the letter C and see a short, small opposite movement. (see dots)
+Shift point to point on a small part of the C and see a tiny opposite movement.
Small eye shifts on a object bring clearer, more fine detailed vision. Central Fixation. Practice at far and close distances.

SWAYING

It is a great help in the improving of vision to have the patient demonstrate that staring at one part of a letter at ten feet or further is a difficult thing to do for any length of time without lowering the vision and producing pain, discomfort, or fatigue. With the eyes closed it is impossible to concentrate on the memory or the imagination of a small part of one letter continuously without a temporary or more complete loss of the memory or the imagination.

When an effort is made to think of one part of a letter continuously with the eyes closed, the letter is imagined to be stationary. When the imagination shifts to the right of the letter a short distance and then to the left alternately, every time the attention is directed to the right, > the letter is always to the left, < and when the attention is directed to the left < of the letter, the letter is always to the right >. By alternating, the patient becomes able to imagine the letter is moving from side to side, and as long as the movement is maintained the patient is able to remember or imagine the letter. It can be demonstrated that to remember a letter or other object to be stationary always interferes with the perfect memory of the letter. One cannot remember, imagine, or see an object continuously unless it is moving. The movement must be slow, short, and easy.

Stare at one part (dot) of the letter E. Memory, imagination of the letter is lowered, strain occurs, the letter is seen unclear.



Shift part to part, left and right (dot to dot) on the letter E. Blink. See it appear to move opposite the movement of the eyes. Memory, imagination of the letter is perfect, the letter is seen clear. Shifting, movement relaxes the mind, body, eyes, improves memory, imagination and clarity of vision.

Natural Eyesight Improvement Astigmatism chart. Look at, shift on, see darkest black and clearest one black line at a time. Trace along a line, Shift line to line.

When patients stare habitually, the eyes become more or less fixed, and are moved with great difficulty. When the patient stands and sways the whole body from side to side, it becomes easier to move the eyes in the same direction as the body moves. No matter how long the staring has been practiced, the sway at once lessens it.

Swinging

By W. H. Bates, M.D.

The muscles on the outside of the normal eye are at rest when the sight is normal. Any contraction of one or more of these muscles by pressure, by operation or by electrical stimulation always produces an error of refraction. The removal of the crystalline lens may be done without changing the form of the eyeball.

The normal eye has normal sight when it is at rest. It is at rest, or relaxed, when it is moving to prevent the stare, strain, or effort to see. When the patient becomes aware that his eye troubles are always caused by one of these three, all of which are difficult, he becomes able easily to maintain the swinging of all objects. (Oppositional Movement)

Shifting or moving the eyes from side to side with a similar movement of the head

improves the sight when done properly. It can be done wrong when the eyes move in a different direction to the movement of the head. In some cases, when turning the head to the right, the eyes may turn in the opposite direction, for example, at the same time. Cases have been observed where one or both eyes appear stationary while the head may be moving.

One patient complained that when he planned to move his eyes with the movement of his head that he was not conscious that his eyes were moving as desired or that the eyes were moving and not stationary.

In some cases the eyes would move irregularly and unconsciously a longer or a shorter distance than the movements of the head. When one or more of the patient's fingers were pressed lightly on the closed eyelids, the eyes could be felt to move rapidly, slowly, or in any direction.

The eyes may move to the right while the head moves opposite, or to the left. Swaying the head and body a long distance to the right or left may be accompanied by an apparent movement of stationary objects in the opposite or in the same direction. Stationary objects with a prominent background move opposite, while objects partly covered may appear to move in the same direction.

Some people have difficulty in practicing the swing successfully. They cannot imagine any stationary object to be moving no matter how much swinging is practiced. They usually complain that they cannot imagine stationary letters or other objects to be moving when they move their head or eyes. They feel absolutely certain that the stationary object is always stationary and cannot be expected to move when the body sways from side to side in a long or short movement.

It is absolutely necessary that all persons with imperfect sight should become able to imagine stationary objects to be moving. When an effort is made to imagine stationary objects to be stationary, the eyes become fixed or stare at the letter or other object and make an effort which always fails. A very successful method of teaching nervous people how to imagine stationary objects to be moving is as follows;

The Snellen test card is fastened to a support about fifteen feet away from the patient. When the patient looks at a point about three feet to the right of the test card, the card is to the left of the point regarded, and advances farther to the left when the point regarded is moved to the right. When the patient is directed to regard a point to the left of the Snellen test card, the card moves to the right side of the point regarded.

The greater the shift from one point to another, the wider becomes the swing. By repetition, the patient becomes able to realize that whenever a point regarded is to the right of the card that the card and all other objects are to the left of the point regarded. When the eyes move to one side of the card, the card moves to the opposite side and this movement of the card can always be demonstrated by insisting that the patient imagine the Snellen test card moves to the left every time the eyes move to a point to the right. (The original sentence was; …insisting that the patient cannot imagine the Snellen test card moves…) The word cannot is thought to be a misprint and has been taken out.)

This method is always a truth without any exceptions because no matter how much the patient may insist that he is right, he has to acknowledge that when he looks to the right, the Snellen test card moves to the left, and this movement is so decided that it very soon becomes impossible for the patient to fail to imagine stationary objects to be moving whenever the eyes move from right to left, from left to right, or in any other direction. This demonstration may be made very convincing with a little time and patience. There are so many of these patients who have difficulty in imagining stationary objects to be moving when the eyes move from side to side or in other directions that the swing should be practiced.

Long Swing: The patient stands with the feet about one foot apart and turns the body to the right - at the same time lifting the heel of the left foot. The head and eyes move with the body, synchronized: eyes, head, body move together, same time, same direction. One should not pay any attention to the apparent movement of stationary objects. Do not look at the objects that are showing oppositional movement. Relax, swing and let the objects 'swing', pass by in the opposite direction. The left heel is then placed on the floor; the body is turned to the left as the patient raises the heel of the right foot. I usually advise patients to practice this right and left swing one hundred times morning and night, counting one to the right, two to the left, and so on.

Variable Swing with finger to side of face. Move the head left and right and see the finger move opposite.

Variable swing: The patients holds the forefinger of one hand six inches from the right eye and about the same distance to the right, as he moves the head a short distance from side to side. The finger should appear to move in the opposite direction to the movement of the head. This can also be done with the finger held between the left and right eyes, at eye level.

Universal Swing: The Patient stands and sways the body from side to side. While the body is moving, the eyes are moving, and stationary objects nearby (close objects) which have a background (distant object beyond close object) appear to move in the opposite direction to the movement of the head and eyes. Objects located at more distant points which have no background always appear to move in the same direction as the movement of the body.

If the finger is held before the eyes while the head is moved from side to side, one may, by practice, become able to imagine that everything connected with the finger, either directly or indirectly, is moving in the opposite direction, while the back ground is moving in the same direction. The universal swing is very beneficial and usually prevents and cures pain, dizziness, and other nervous symptoms.

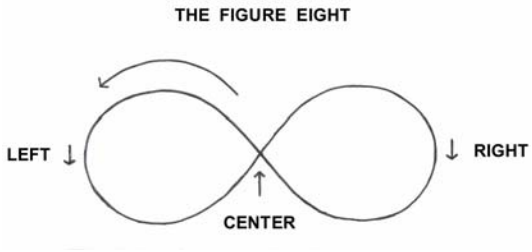
Variable Swing with finger in front, center of face, between the eyes, eye level.

Circular Swing: There is one objection to the universal swing and that is that at the end of the count to the right or left, the patient in some cases stares. This stoppage of the swing may be corrected by the

Sway/rock left and right.

practice of the circular swing, when all objects are imagined to move continuously in a circular direction. The circular swing may be remembered with the eyes closed and differs from the other swings in that the finger, Snellen test card, or other objects appear to move in a circular direction.
In the circular swing, the head and eyes are moved in a circular direction.

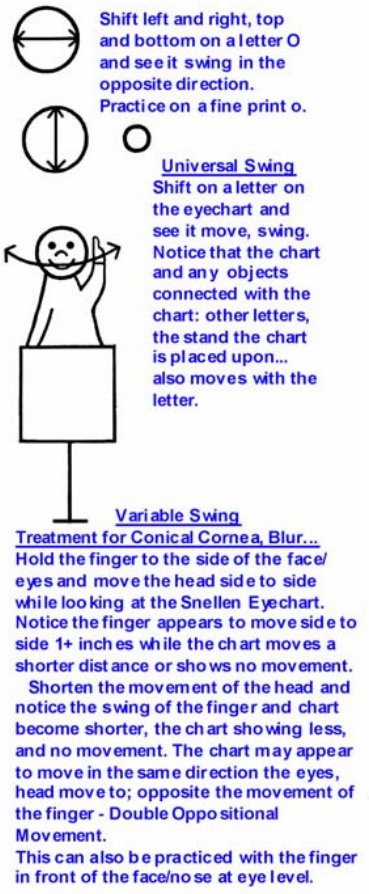
Square Swing: In the square swing, the head and eyes are moved in a horizontal line from one side to the other and then downward, across, upward, and across, without a stop being made in any part of the swing. Many patients can practice a square swing when they find it difficult or impossible to practice a circular swing. Either the circular or square swing may be practiced with the eyes open or closed.
(The Figure Eight – Infinity Swing is an improved, modern version of the circular and square swings.



Not all persons can practice any particular kind of a swing successfully with the eyes open, but with the eyes closed, with the help of the memory and the imagination, almost any swing can be practiced with benefit. It is interesting to observe that swinging the head and eyes a long distance from side to side is more easily accomplished than a short movement, although a short swing when practiced properly is more beneficial. Practice the swings with the eyes open, closed, open and remember, imagine and see oppositional movement of objects.

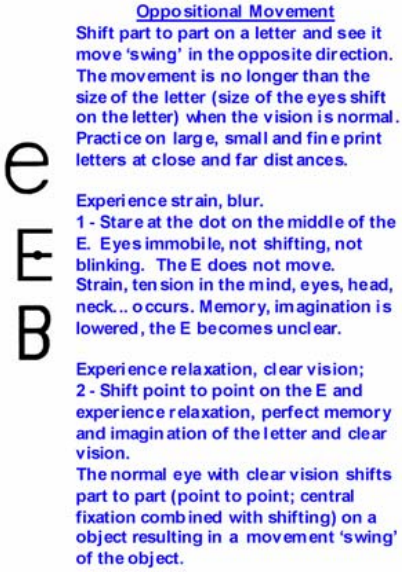
The Optical Swing

By W. H. Bates, M. D.



MOST people when they look at stationary objects believe that they see such objects stationary; but if they observe the facts more closely, they find that when the normal eye regards a small letter of the Snellen Test Card with normal sight, the letter does not appear to be stationary, but seems to move from side to side, a distance about the width of the letter. This is called the *optical swing*.
This is caused by the movement, shift of the eyes from point to point (part to part) on the letter.

During the late war, a soldier, who was rated as a sharpshooter, told me that when he regarded the bull's eye of a target five hundred yards away or further, that he had difficulty in aiming his gun properly because the bull's eye seemed to move from side to side a very short distance. Both he and others who had observed it did not discuss the matter with any great interest.



The movement of a letter or other object from side to side in the optical swing is so short, so slow, that most persons with normal eyes have never noticed it. There is no reference to the optical swing in any publication which I have seen. It is a truth that in all cases of normal sight the optical swing can be demonstrated. In all cases of imperfect sight the optical swing is modified; it may be lengthened, it may become too rapid and irregular. The swing is a necessary part of perfect sight. The importance of it has not been realized. With the short optical swing the vision is good while the mental efficiency and the efficiency of the nerves and muscles is enormously increased.

THE SHORT SWING: When the swing is short, no more than the width of the letter, the vision is normal; when the vision is normal, the swing is short. One cannot have normal vision of a letter, a normal memory or a normal imagination, without demonstrating the presence of a short optical swing.

It can be demonstrated that it is impossible to remember or imagine with the eyes closed a letter, a color or any object without the optical swing. When the swing is stopped an effort or strain is necessary, which may be conscious or unconscious, and the memory or imagination becomes imperfect. Normal vision is not maintained continuously without the short optical swing. It is not necessary, however, for one to be conscious of the swing in order to demonstrate normal vision.

(Practicing seeing it improves the clarity of vision.)

Methods of treatment which restore the optical swing are a benefit to imperfect sight. When the short swing can be demonstrated, the vision, the memory and the imagination are normal. One cannot imagine the short swing and imperfect sight at the same time. One cannot remember or imagine pain, fatigue or any symptom of disease and the short swing at the same time. For example, the symptoms of acute indigestion have disappeared when the patient imagined the short swing of a letter or some other object. In some cases, hay fever symptoms have disappeared quickly and permanently, through the use of the short swing. Bronchial troubles, the cough associated with influenza and whooping cough, have disappeared quickly when the short swing was imagined quickly.

THE UNIVERSAL SWING: When you hold the Snellen Test Card in your hand, you can imagine a small letter "o" printed on the card to have a slow, short, easy, continuous, regular swing. Of course, when the "o" swings, the card to which it is fastened also swings; when the hand holding the card swings, the card swings and the letter "o" swings. When the letter "o" swings the card swings, the hand swings, the wrist, the forearm, the elbow, are all swinging with the "o". If the elbow rests on the arm of the chair, when the chair moves the elbow moves; when the elbow moves, the card moves. One can demonstrate that a letter "o" pasted on the Brooklyn Bridge moves when the bridge moves, and when the "o" moves the bridge moves. One may think of many objects, one at a time, each one in turn moving with the moving "o". This is called the *universal swing*.

This movement is caused by the movement, shift of the eyes. Moving the head/face, body with the eyes improves appearance of the movement.

The universal swing has been a wonderful benefit in improving many cases of imperfect sight, in the relief of pain, fatigue and other symptoms of disease. It can be demonstrated that when one has the universal swing the sight is perfect. If the universal swing becomes modified, the sight is imperfect. There are no exceptions. This fact has suggested successful treatment for myopia, cataract, and other causes of imperfect sight.

It is well to remember that some people have difficulty in imagining the universal swing. They are very apt to separate the letter "o" from the card and imagine that either the card or the letter moves; and it is difficult for them to imagine the letter and the card fastened together and one unable to move without the other moving. Of course one can imagine the hand moving and the arm stationary, but when the hand and the arm are in a vise or fastened very closely together without any hinges, it is difficult or impossible to imagine the hand is moving without the arm moving as well. Persons who have difficulty in imagining the universal swing should consult others who can demonstrate it, explain it and help them to accomplish it.

The entire visual field moves 'swings' in the opposite direction the eyes move, shift to.

I generally suggest to my patients that they practice the universal swing twice daily, morning and night; or better still, practice it at all times, in all places, no matter where they are or what they may be doing.

THE MEMORY SWING: With the eyes closed you can feel your eyes move under your fingers when lightly touching the eyelids. If you imagine that you are looking over your right shoulder, you can feel the eyeballs move to the right, and a long distance to the right. When you imagine that you are looking over your left shoulder, you can feel your eyeballs moving to the left, and far to the left. One can shorten the movement of the eyeballs by looking a shorter distance to the right, alternately looking to the left. With a little practice one can feel or imagine one feels, the eyeballs are moving the shortest possible distance from side to side. The eyeballs can be seen to move under the closed eyelids. The memory swing is a good thing to practice under conditions which would not be so convenient for the other kinds of swings. One can practice the memory swing in a dark room, on a dark night, in a dark cellar, in bed, and obtain a mental relaxation or an optical relaxation or a relaxation of the nerves which is worth while.

Imagine shifting left and right, top and bottom on a tiny fine print letter and feel the eyes move.
Imagine seeing the swing; the letter appears to move in the opposite direction the eyes shift to. Produces very clear vision.

THE OPTICAL SWING

By W. H. Bates, M. D.

For thousands of years mankind, both lay and professional, has overlooked a seemingly minute but vitally important phenomenon of the human system—the eye's normal inability to see a stationary object. Of the result in the science of the eye of the final observation of this vital matter, Dr. Bates tells in part in this article.

For Clear Distant Vision

+Shift on a fine print letter on a close card and imagine, see that it has a slow, short, easy swing, movement. Practice for a minute or less, 5-20 seconds. Avoid staring. Blink and keep the eyes moving on the letter.
+Then, look at the same letter on a identical distant card for less than a fraction of a second.
As vision improves the eyes can look at a letter for a second or longer without experiencing blur.
+ Repeat looking at the letters on the close and distant cards. Practice on one letter at a time.
+Practice with the distant card farther away as vision improves.
+Practice with both eyes together, one eye at a time, then both eyes again.
+Reverse the process to improve close vision, looking at the close letter for the shortest time.

IN this magazine, and in other publications, I have quite frequently written about the swing. The matter is so important that I feel that it should be described and recommended more frequently. The benefits which come from the optical swing are far-reaching and of greater importance, I find at the present time, than I realized even six months or a year ago.

When a person of normal sight regards one letter of the Snellen test card with normal vision, the letter appears to move about a quarter of an inch or less from side to side, continuously and slowly, a little more rapidly than a movement each second. This is what I call the optical swing.

Shift left and right on the E and see it move in the opposite direction the eyes move to.
Shift top and bottom, diagonally and in any direction.

For many thousands of years people of normal sight have regarded small and large objects which were stationary and imagined that they saw them stationary. It can be demonstrated that when the normal eye imagines a letter, or a part of a letter, stationary, that the letter becomes very soon imperfect. Furthermore, the letter has a jerky movement, irregular, and variable, demonstrating that it is impossible by any kind of an effort to keep or imagine a letter stationary for any length of time.

Swinging

It is also beneficial while practicing this method to sway the body, head and eyes, a short distance from side to side, and imagine the card and the letters to be moving in the opposite direction. It may help you to imagine the card moving by regarding the background close to one vertical edge of the card. By swaying from side to side the edge of the card appears to move over the background. The shorter the movement of the body, head and eyes, the shorter is the movement of the card and the better is it remembered, imagined or seen. The short swing is more beneficial than the long swing. It is necessary to realize, however, that it doesn't require much of a strain to stop the short swing and blur the whole card. When the short swing stops, you should increase the swing or the swaying of the body from side to side, until the card can be again imagined to be moving. This combination of swaying, memory with the eyes closed, and imagination with the eyes open, is a cure for hypermetropia.

Swinging
By W. H. BATES, M.D.

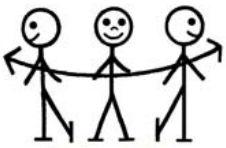
Swinging: When the eyes move slowly or rapidly from side to side, stationary objects appear to move in the direction opposite to the movement of the head and eyes.

PEOPLE with normal vision are not always conscious of the swing. When called to their attention, however, they can always demonstrate it, and are always able to imagine all stationary objects to be moving. In imperfect sight, the swing is modified or absent. This is a truth which has been demonstrated over a long period of years by a great many people, and no exceptions have been found.

The normal or perfect swing is slow, short, easy and continuous. When the swing is normal, it is always true that not only is the vision normal or perfect, but also the memory, the imagination, or the mental efficiency correspond. When the memory is imperfect, the imagination, the mental efficiency, and the sight are also imperfect.

All cases of imperfect sight from myopia, or near-sightedness, become normal when the swing becomes normal. The same is true in cataract, glaucoma, diseases of the optic nerve and retina. For example, a woman, aged sixty-three, was treated for imperfect sight from cataract. Her vision was 10/200, and was not improved by glasses. For twenty years she had not been able to read a newspaper with or without glasses. In three visits, with the help of the normal swing, her vision improved to 10/10 minus, with flashes of normal vision, and she read diamond type at twelve inches rapidly without glasses. Other similar cases have been relieved as promptly.

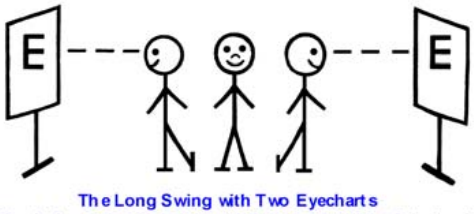
It is important to understand how the swing can be imagined. Some



Swing and turn left and right.
Swing, turn left-the heel of the right foot moves up.
Swing and turn right - heel of left foot moves up. 50-100 times.

The Long Swing

Long Swing relaxes the mind, body, eyes, activates eye shifting, clear vision. Do the Rock, (sway) a shorter swing for increased vision improvement. See oppositional movement.



The Long Swing with Two Eyecharts

Identical eyecharts placed on left and right side of the body. Swing and turn left and right and 'Flash' glance at, shift on a letter on the eyechart for a 'fraction of a second'-
Swing, turn left and 'flash' a letter on the left chart: Blink and shift quickly, easy on the letter. Do not stop swinging.
Swing and turn right and flash a letter on the right chart.
Keep swinging left and right, glancing at the letters. Relax, no effort to see - vision be comes clear.

people with mild cases of imperfect sight can imagine a letter or other object to be moving when they see or remember it perfectly. There are many others who fail. Severe pain, fatigue, or worry often prevent the demonstration of the swing. Blinking and palming are helpful in demonstrating the swing. The distance of the object regarded is important. The patient should be placed at a distance at which he can best demonstrate the swing. The distance varies with the patient.

It is unfortunate that many patients consider the swing complicated or impossible. However, they can usually demonstrate that a stare or strain lowers the vision. When holding a test card at a convenient distance from the eyes, patients may be convinced that the test card is seen better when moving. They may not profit by their experience, but continue to stare or strain, which always lowers the vision.

One patient was unable to imagine any kind of a swing. He was suffering from pain, mental depression, and imperfect sight for the distance. Reading the newspaper, even with glasses, was impossible. Since nothing he tried gave him any relief, I suggested that he stop trying to see and make no effort to imagine stationary objects to be moving. He practiced this while sitting in my waiting room. He paid no attention to the apparent movement of stationary objects, nor did he look at any object more than a fraction of a second. His vision after that improved from 20/50 to 20/10. He became able to imagine the movement of objects and demonstrated that all his pain and mental depression were caused by a stare or an effort to see all things stationary, when he regarded, remembered or imagined them. He was comfortable when he imagined objects moving or swinging, but very uncomfortable when he made an effort or imagined them to be stationary.

Recently, I tested the sight of a girl about ten years old. She read the Snellen card at ten feet with normal vision. She was asked: "Do you see any of the small letters moving from side to side?"

"Yes," she answered, "they are all moving."

"Now can you imagine one of the small letters stationary?" At once she quickly looked away and frowned.

"Why did you look away?" her father asked her.

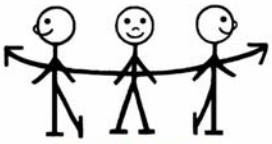
She replied: "Because it gave me a pain in my eyes and head, and the letters became blurred. Don't ask me to do it again."

The experience of this child is the same as that of everyone, young or old, with perfect or imperfect sight. When the sight is normal and continuously good, to try to stop the swing of a letter or other object necessitates a strain,—an effort which always lowers the vision and produces discomfort or pain in one or both eyes.

It has been repeatedly demonstrated that a letter or other object cannot be remembered or even imagined perfectly and continuously, unless one can imagine it to be moving or swinging. Not only does the sight become imperfect, but also the memory, imagination, judgment, and other mental processes are temporarily lost. These facts should be known to teachers, because they greatly affect the sight, the mental efficiency, and the scholarship of their pupils.

Variable Swing with finger to side of face. Move the head left and right and see the finger move opposite.

Variable Swing with finger in front, center of face, between the eyes, eye level.



Long Swing

Swing the body left and right. Head/face, eyes, body move together, at the same time, in the same direction.
See oppositional movement; objects in the visual field appear to move 'swing by' in the opposite direction.
Do not stop to look at the objects. Keep swinging, relax and let them move.

When the memory, imagination and vision are normal, the eyes, the brain and the entire nervous system are at rest. The reverse is also true, for when the muscles and nerves of the body are not at rest, the sight, memory and imagination are imperfect, and the mental efficiency is lessened or lost.

It is impossible to imagine pain, or any symptom of disease and the normal swing at the same time. Children with whooping cough have been immediately relieved by the relaxation obtained from the swing. Many patients suffering from severe attacks of bronchitis have been promptly relieved in the same way. Angina pectoris, pneumonia, trifacial neuralgia, and other serious diseases have also been relieved after relaxation or rest was obtained with the aid of the swing.

The swing is generally beneficial. Some patients obtain more relaxation from one type of swing than from another. The long swing, however, is most helpful in a great many cases.

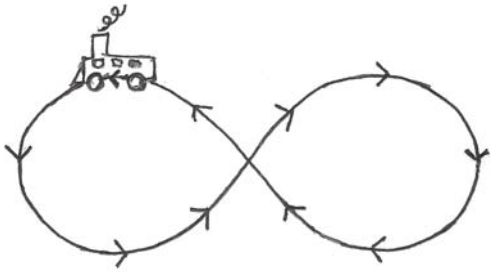
LONG SWING: Stand with the feet about one foot apart. Turn the body to the right, at the same time lifting the heel of the left foot. The head and eyes move with the movement of the body. Do not pay any attention to the apparent movement of stationary objects. Now place the left heel on the floor, turn the body to the left, raising the heel of the right foot. Alternate. Pain and fatigue are relieved promptly while practicing this swing. When done correctly, relief is felt in a short time. The long swing, when done before retiring, lessens eyestrain during sleep.

VARIABLE SWING: Hold the forefinger of one hand six inches from the right eye and about the same distance to the right. Look straight ahead and move the head a short distance from side to side. The finger appears to move in the direction opposite to the movement of the head and eyes.

DRIFTING SWING: The patient does not think of nor regard anything longer than a fraction of a second. It is helpful in doing this for the patient to imagine himself floating down a river. He may be able to imagine the drifting movement of the boat in which he is floating, better with the eyes closed than with them open. In this case, alternate the imagination with the eyes open and with them closed. The imagination may be improved in this way.

SHORT SWING: When the sight is normal, one can demonstrate the short swing. When it is imperfect, one can demonstrate only the longer swing. When a patient with imperfect sight regards the Snellen test card at ten or fifteen feet, he may be able to imagine one of the letters on the card to be swinging a quarter of an inch or less. The imagination of a shorter swing always improves the sight. Some patients can imagine the short swing better with their eyes closed than with them open. Alternate the imagination of the swing of the letter with the eyes closed and with them open. By repetition, the vision of the letter with the eyes open will improve (at first in flashes, later more continuously), if the memory of the short swing is perfect with the eyes closed.

UNIVERSAL SWING: When the eyes are at rest, they are always moving. When the body is at rest, it can always be imagined, one part in turn, to be moving or swinging. The chair, on which the patient is sitting, is swinging. The floor, on which the chair rests, is also swinging. The walls of the room also swing when the floor swings. When one part of the building swings, one can imagine the whole building to be swinging. The ground, on which the building stands, is also swinging. When the ground swings, other buildings connected with it swing. One can imagine the whole city to be swinging, this continent and all other continents on the earth can be imagined swinging. In short, one can imagine not only that the whole world is moving, but also the universe, including the sun, the moon and stars. The practice of the universal swing is of the greatest benefit, for in this way one can obtain the maximum amount of relaxation.



All objects appear to move, 'swing' in the opposite direction the eyes shift to. The Figure Eight shown on the right > is a new, improved version of a few different swings combined into one.

Trace <u>up the center and to the left first</u> for correct left and right brain hemisphere activation, integration.

THE VARIABLE SWING
Oppositional Movement
Conical Cornea Cured

Variable Swing with the finger in front of the face. Move the head left and right and see the finger move in the opposite direction.

Drifting Swing. Let the mind, eyes drift, shift freely from one thought, object to another. Relax.

Shift left and right, top and bottom on a small letter and see it move 'swing' in the opposite direction. Practice with the eyes open, closed, open.

RECENTLY I have been impressed very much by the value of the variable swing. By the variable swing is meant the ability to imagine a near object with a longer swing than one more distant.

Example: To move the eyes, head, body left and right and imagine and see oppositional movement: close objects appear to move 'swing by' in the opposite direction to the movement of the eyes, head, body while distant objects, beyond the close object appear to move with the eyes, head, body in the same direction. The close and distant objects also appear to move against eachother in opposite directions. The close object shows the most movement. The distant object shows the least movement as long as the eyes do not lock onto any objects, at any distance while swinging side to side. This can be seen when doing the Sway or Long Swing, in front of two eyecharts or any stationary objects at close and far distances. A variety of examples for experiencing the variable swing are provided in Better Eyesight Magazines.

For example, a patient came to me with conical cornea, which is usually considered incurable. I placed a chair five feet away from her eyes, clearly on a line with the Snellen test card located 15 feet distant. When she looked at the Snellen test card and imagined the letters moving an inch or less (shifting on the letters) she could imagine the chair that she was not looking at moving quite a distance. As is well known the shorter the swing the better the sight. Some persons with unusually good vision have a swing so short that they do not readily recognize it. This patient was able to imagine the chair moving an inch or less and the card on the wall moving a shorter distance. She became able to imagine the chair moving a quarter of an inch

Treatment for conical cornea and unclear vision.

When looking at, shifting on the letters on the distant eyechart the chair and chart appear to move 'swing', in the opposite direction the eyes move to. The chair shows the most movement, more than the distant chart.

Practice relaxation and shorter shifting on small letters on the chart and see a shorter swing.

Rock the body left and right in front of the chair, chart and see the chair appear to move opposite the movement of the eyes/body and the chart appear to move with the eyes/body in the same direction.

and the movement of the Snellen test card at 15 feet was so short that she could not notice it. In the beginning her vision with glasses was poor and without glasses was double, and even the larger letters on the Snellen test card were very much blurred. Now, when she imagined the chair moving a quarter of an inch and the Snellen test card moving so short a distance that she could not recognize it, the conical cornea disappeared from both eyes and her vision became normal. To me it was one of the most remarkable things I have seen in years. I know of no other treatment that has ever brought about so great a benefit in so bad a case.

The variable swing is something that most people can learn how to practice at their first visit. Some people can do it better than others. The improvement depends directly upon their skill in practicing the variable swing.

The Baby Swing

YOUNG babies suffer very much from eyestrain. The tension of the eye muscles is always associated with the tension of all the other muscles of the body. Their restlessness can be explained by this tension. I was talking with an Italian mother in the clinic one day about restless children, and asked her why it was that her baby was always so quiet and comfortable when she came to the clinic, while many other babies at the same time were very restless and unhappy.

"Oh," she said, "I love my baby. I like to hold her in my arms and rock her until she smiles."

"Yes, I know," I said, "but that mother over there is rocking her baby in her arms, and the child is screaming its head off."

"Yes," exclaimed the Italian mother, "but see how she rocks it."

Then I noticed that the other mother threw the child from side to side in a horizontal direction with a rapid, jerky, irregular motion, and the more she jerked the child from side to side, the more restless did it become.

"Now, doctor," said the Italian mother, "you watch me."

I did watch her. Instead of throwing the child rapidly, irregularly, intermittently from side to side, she handled her baby as though it had much value in her eyes, and moved her not in straight lines from side to side, but continuously in slow, short, easy curves. The Italian mother picked up the other mother's child, and soon quieted it by the same swing.

I learned something that day.

#7 - MEMORY AND IMAGINATION

MENTAL PICTURES AN AID TO VISION

By W. H. Bates, M.D.

Shift part to part on the apple, seeing one small part clearest at a time. (Central fixation combined with shifting). See the swing - The apple moves in the opposite direction the eyes shift to. Remember, imagine the apple is clear with perfect color. Practice with the eyes open and in the imagination with the eyes closed.

WHEN an object is seen perfectly it is possible to form a perfect mental picture of it; when it is seen imperfectly this cannot be done. Persons with ordinarily good vision are able to form a perfect mental picture of some letter of the alphabet especially a letter of diamond type, when looking at the Snellen test card, or at fine print; but persons with ordinarily imperfect vision can do this only under certain favorable conditions, as with their eyes closed, or when looking at a blank surface where there is nothing particular to see. They may also be able to do it when looking at objects at a distance at which their vision is fairly good, as in the case of near objects in myopia. Persons with ordinarily good vision, on the other hand, have moments when they see imperfectly, and at such times their mental pictures are imperfect.

These facts are of the greatest practical importance, because many persons easily learn how to form mental pictures, and when they become able to do so under all conditions their sight becomes perfect.

Mental vision is subject to precisely the same laws as visual perception. The mental picture must be seen or imagined by central fixation; that is, one part of it at a time must be seen best, and the attention must shift continually from one point to another. This shifting of attention produces a swing which is even more pronounced than the visual swing. (The swing, opposite movement of the object the eyes are shifting on in the mind, imagination with the eyes closed is more pronounced than when shifting on a real object with the eyes open.) Furthermore, the mind adds details that do not exist in the object remembered or imagined. If this object is a black letter on a white background, for instance, the white openings and margins will appear more intense than the reality.

It is not possible to retain a mental picture of a letter *o* of diamond type when one tries to think of one point continuously. The point may be remembered for a brief interval—a few seconds or part of a minute; then it is lost and with it the whole letter. One cannot, in short, "stare" at a point with the imagination any more than one can stare with the eye, and if one tries to do so the point disappears. If one tries to think continuously of two points of the letter, imagining them

both to be equally black at the same time, the picture is lost more quickly. To think of four points or more, or to think of the whole letter perfectly black at the same time, is still more difficult.

Mental pictures cannot be retained for any length of time unless they appear to move. This movement may be so slight and easy that it is not observed until the attention is called to it, and even then it may not be realized. Some patients have told me that they could remember small letters of diamond type easily and continuously, and that they were not moving. Usually the patient can demonstrate the facts by trying to think of one part of the letter as stationary. In this case it immediately disappears. But the effort to keep the attention fixed on a point is so great that some patients cannot or will not make it. It is easier to let the attention shift naturally. In such cases I direct them to look at the letter *o* so close to their eyes, or so far away, that they are unable to see it clearly, and call their attention to the fact that now it seems to be stationary. Then I have them look at the letter at the distance at which they see it perfectly and ask them to imagine it stationary, as the letter at the preceding distance seemed to be. Usually they are able to do this, and to note that the letter blurs or disappears. After they become able to imagine that a letter which they see is stationary, they become able also to imagine that their mental picture of it is stationary, and to note that it cannot be held more than a moment under these conditions.

To imagine that other things seem to be moving helps some people to form and retain mental pictures. One patient, whose mental pictures were very poor, became able, when walking around the room and imagining things moving in the opposite direction, to imagine that a letter "o" was moving in the same direction as the furniture.

A mental picture need not be a complicated one. The perfect memory or imagination of even a small spot of color is sufficient to cure all errors of refraction—nearsight, farsight, and astigmatism—as well as many other abnormal conditions. But to form a perfect mental picture of a spot of color—say a black period—is not always easy. One may think one is imagining a black period perfectly, but when one compares one's mental picture with the reality, one usually finds that the former is several degrees paler than the latter. It is usually easier to form mental pictures with the eyes closed than with the eyes open, and by imagining a period, or other object, with the eyes closed and open alternately one can improve one's ability to imagine it under the latter condition. In a few exceptional cases, however, mental pictures are better and are more easily held with the eyes open than when they are closed.

When the sight is imperfect it is always easier to hold a mental picture when looking at nothing in particular than when looking at letters or other objects at distances at which they cannot be seen distinctly. To improve the ability to hold them under the latter conditions it is necessary, alternately, to imagine the object with the eyes closed, or looking away from the Snellen test card or printed page, and then to look back at the Snellen test card or reading matter.

Persons unable to imagine a period or letter may succeed with other objects. For example, one patient who could not imagine a white card with black letters on it which she had just seen in her hand was able, with her eyes closed, to imagine the color of her house, one part best, and the different objects—curtains, furniture, etc.—in the different rooms. She was able to see the lawn, the flower-bed, the numerous flowers, one part best, and to imagine the color of the eyes of her friends. After that she became able to imagine the white card with the black letters.

Persons who suffer from pain, fatigue, or other discomfort to their eyes, have great difficulty in forming mental pictures. Such persons, although they cannot remember a letter or other objects, are often able to remember the movement of a card held in the hand. If they cannot do this at first, they may become able to do it by alternately looking at the card and then closing their eyes and trying to recall the movement. When they become able to do this the pain stops and the sight becomes temporarily normal.

Most people are helped by learning how to fail. When they demonstrate that their sight is lowered by an imperfect mental picture, they become able to avoid such pictures. A patient with squint was cured when she learned to imagine double images. At first, with her eyes open, she could not imagine them more than two inches apart, Later, with her eyes open, she got them four feet apart, while, with her eyes closed, she could imagine one Snellen test card on one side of a bay five miles wide and another on the other. These images could be imagined either crossed or homonymous at will; that is, each eye sometimes seemed to see the image on its own side, and at other times the image seemed to be on the opposite side. When the images were homonymous the eyes turned in, and when they were crossed the eyes turned out, By means of this practice the patient gained such a degree of mental control that her eyes became almost continually straight, the slight occasional deviation not being noticeable.

HOW TO OBTAIN MENTAL PICTURES

Quick Distant Vision Improvement Activity

+ Look at a letter on the Snellen test card.
+ Remember its blackness.
+ Shift the attention from one part of this spot of black to another. It should appear to move in a direction contrary to the imagined movement.
+ If it does not, try to imagine it stationary. If you succeed in doing this it will blur, or disappear. Having demonstrated that it is impossible to imagine the spot stationary, it may become possible to imagine it moving.
+ Having become able to form a mental picture of a black spot with the eyes closed, try to do the same with the eyes open. Alternate until the mental vision with the eyes closed and open is the same.
+ Having become able to imagine a black spot try to imagine the letter *o* in diamond type with the center as white as snow. Do this alternately with eyes closed and open.
+ If you cannot hold the picture of a letter or period, commit to memory a number of letters on the test card and recite them to yourself while imagining that the card is moving.
+ If some other color or object is easier to imagine than a black spot it will serve the purpose equally well.
+ A few exceptional people may get better results with the eyes open than when they are closed.

Memory and Imagination

A perfect memory and perfect imagination cures myopia under favorable conditions. Patients who have a good memory of mental pictures have no myopia when the mental pictures are remembered or imagined perfectly. There are near-sighted people who, after a course of eye education, can look at a Snellen test card at ten feet or further and remember or imagine the white part of the card perfectly white and the black letters perfectly black. When this is accomplished, the myopia improves.

When school children regard the blackboard, they often half-close their eyelids, or stare and strain to see and thus produce myopia. When they can remember a mental picture of some small letter, and remember it as well with the eyes open as with the eyes closed, normal vision and a temporary cure of their myopia is obtained.

In myopia and other phases of imperfect sight, the white centers of all letters are imagined less white than the rest of the card. When the patient becomes able to imagine the white centers with a white background to be whiter than the rest of the card, the vision is improved and there is no myopia.

MEMORY AND IMAGINATION. The scholarship of children is affected by their memory of mental pictures. Measures which have been practiced by many school teachers for the preservation or the improvement of memory are quite numerous. When children learn how to remember some things perfectly, the memory of other things is improved. With a perfect memory, it is also possible to have a perfect imagination. We see only what we think we see, or what we imagine. When the imagination is perfect, the sight is perfect and when the sight is perfect, the memory is perfect. These and other clinical observations have demonstrated the truth that sight is largely mental. Perfect sight or imperfect sight is due to the condition of the mind. When the mind is healthy and active, perfect memory can usually be demonstrated, but when the mind has lost its efficiency, the memory becomes impaired. The memory is benefited by those methods which bring rest and relaxation. With the eyes closed, the memory is usually better than it is with the eyes open.

After regarding a letter which is seen imperfectly at a distance of ten feet or nearer, the student can remember the same letter more perfectly by closing his eyes. When the child can remember a perfect letter at ten feet with the eyes open, he soon becomes able to see and remember the same letter at eleven feet, and can gradually increase the distance to fifteen or twenty feet. Practicing the sway, alternately with the eyes open and with the eyes closed, is a benefit to the memory and the sight, because when the eyes are moving, a stare, strain or effort to see is more or less prevented.

When a line of letters on a Snellen test card can be read easily, it is usually possible to read some of the letters on the line below. However, if this cannot be done, have the child come closer, until all the letters of the bottom line are seen at a distance of five or ten feet. When a child cannot read all the letters on the 10 line at ten feet, he may be able to remember or imagine all the letters of the 10 line, with the eyes closed, better than with them open. By alternately closing the eyes for part of a minute or longer, and then opening them for only a moment, the vision improves.

A child may be able to see the first letter on the bottom line of the card when he is told what the letter is. Although he may not know what the second or third letters are, he may be able to actually see them and other letters on the bottom line by improving the vision of the first letter so that it is imagined perfectly. When the memory and imagination of the first letter is quite perfect, or sufficiently perfect to be distinguished, the eye becomes normal and the other letters are really

seen and not imagined.

A child, at some previous time, may have had an inflammation or disease of the eyeball, which caused his imperfect sight. For example, a scar, sufficiently thick to interfere materially with the vision, may have formed over the front part of the eyeball. A perfect memory or imagination of a letter with the eyes closed, always lessens the opacity, and the vision is always improved, at least temporarily. By repetition, the short periods of improved vision occur more frequently and last more continuously.

The imagination is very important, much more so than many of us believe. Some people think imagination is simply another word for illusion. However, it is possible to imagine correctly as well as to imagine incorrectly. Some people can imagine a truth perfectly, but react differently when they imagine things imperfectly.

A girl, twelve years of age, had unusually good vision. She was able to read the 10 line of a strange card, which she had never seen before, at fifty feet. She said that she could look directly at one letter of the 10 line and see it continuously, but when her eyes were observed while she was doing this, it was found that she shifted almost continuously.

Her memory was also unusually good. She was the only member of the party who could remember the names of the officers on the different steamers on which she had traveled to Europe. She remembered the numbers of her staterooms, as well as the numbers of the staterooms of the other members of the party. However, when she imagined all these things incorrectly, she felt decidedly uncomfortable, but when she remembered to imagined things perfectly, she felt no discomfort.

At school, her teachers considered her stupid, because she disliked some of her studies and devoted no time to those lessons. Her poor scholarship disappointed her family very much. She was very unhappy and decided to prove what she could do. About a week before the examinations, she read through her Latin textbook and remembered it perfectly. She also read her other textbooks and remembered what they contained. She asked to be examined in all her subjects and much to the surprise of the teachers, she passed the examinations with unusually high honors.

A student obtained high grades in history by creating movie pictures in his mind of every story, event he read in his history book.

He stole the history book for the next school year, read it during summer vacation (without pressure from teachers to hurry and get a perfect grade). In September he entered that class and earned all A's on his history papers.

+Memory.—When the sight is normal the mind is always perfectly at rest, and when the memory is perfect the mind is also at rest. Therefore it is possible to improve the sight by the use of the memory. Anything the patient finds is agreeable to remember is a rest to the mind, but for purposes of practice a small black object, such as a period or a letter of diamond type, is usually most convenient. The most favorable condition for the exercise of the memory is, usually, with the eyes closed and covered, but by practice it becomes possible to remember equally well with the eyes open.

When patients are able, with their eyes closed and covered, to remember perfectly a letter of diamond type, it appears, just as it would if they were looking at it with the bodily eyes, to have a slight movement, while the openings appear whiter than the rest of the background. If they are not able to remember it, they are told to shift consciously from one side of the letter to another and to consciously imagine the opening whiter than the rest of the background. When they do this, the letter usually appears to move in a direction contrary to that of the imagined movement of the eye, and they are able to remember it indefinitely. If, on the contrary, they try to fix the attention on one part of the letter, or to think of two or more parts at one time, it soon disappears, demonstrating that it is impossible to think of one point continuously, or to think of two or more points perfectly at one time, just as it is impossible to look at a point continuously, or to see two points perfectly at the same time. Persons with no visual memory are always under a great strain and often suffer from pain and fatigue with no apparent cause. As soon as they become able to form mental pictures, either with the eyes closed or open, their pain and fatigue are relieved.

+Imagination.—Imagination is closely allied to memory, for we can imagine only as well as we remember, and in the treatment of imperfect sight the two can scarcely be separated. Vision is largely a matter of imagination and memory. And since both imagination and memory are impossible without perfect relaxation, the cultivation of these faculties not only improves the interpretation of the pictures on the retina but improves the pictures themselves. When you imagine that you see a letter on the test card, you actually do see it because it is impossible to relax and imagine the letter perfectly and, at the same time, strain and see it imperfectly. The following method of using the imagination has produced quick results in many cases: The patient is asked to look at the largest letter on the test card at the near point, and is usually able to observe that a small area, about a square inch, appears blacker than the rest, and that when the part of the letter seen worst is covered, part of the exposed area seems blacker than the remainder. When the part seen worst is again covered, the area at maximum blackness is still further reduced. When the part seen best has been reduced to about the size of a letter on the bottom line, the patient is asked to imagine that such a letter occupies this area and is blacker than the rest of the letter. Then he is asked to look at a letter on the bottom line and imagine that it is blacker than the largest letter. Many are able to do this and at once become able to see the letters on the bottom line.

+Flashing.—Since it is effort that spoils the sight, many persons with imperfect sight are able, after a period of rest, to look at an object for a fraction of a second. If the eyes are closed before the habit of strain reasserts itself, permanent relaxation is sometimes very quickly obtained. This practice I have called *flashing*, and many persons are helped by it who are unable to improve their sight by other means. The eyes are rested for a few minutes, by closing or palming, and then a

letter on the test card, or a letter of diamond type, if the trouble is with near vision, is regarded for a fraction of a second. Then the eyes are immediately closed and the process repeated.

+Reading Familiar Letters.—The eye always strains to see unfamiliar objects, and is always relaxed to a greater or lesser degree by looking at familiar objects. Therefore, the reading every day of small familiar letters at the greatest distance at which they can be seen, is a rest to the eye and is sufficient to cure children under twelve who have not worn glasses as well as some older children and adults with minor defects of vision.
In the treatment of imperfect sight these fundamental principles are to a great extent interdependent. They cannot be separated as in the above article. It is impossible, for instance, to produce the illusion of a swing unless one possesses a certain degree of central fixation. That is, one must be able to shift from one point to another and see the point shifted from less distinctly than the one directly regarded. Successful palming is impossible without mental shifting and swinging and the use of the memory and imagination.

HOW TO IMPROVE THE SIGHT BY MEANS OF THE IMAGINATION: No. 2

Imagine parts of a letter correct/clear to see a letter clear.

In a recent issue directions were given for improving the vision by the aid of the imagination.

+ According to this method the patient ascertains what a letter is by imagining each of the four sides to be straight, curved, or open, and noting the effect of each guess upon the imagined swing of the letter.

+ Another method which has succeeded even better with many patients is to judge the correctness of the guess by observing its effect on the appearance of the letter:

+ Look at a letter which can be seen only as a gray spot, and imagine the top is straight. If the guess is right, the spot will probably become blacker; if it is wrong, the spot may become fainter or disappear.
+If no difference is apparent, rest the eyes by looking away, closing, or palming, and try again.

In many cases, when one side has been imagined correctly, the whole letter will come out.
+ If it does not, proceed to imagine the other sides as directed above.
+ If, when all four sides have been imagined correctly a letter does not come out, palm and repeat.

One can even bring out a letter that one cannot see at all in this way.
+Look at a line of letters which cannot be seen, and imagine the top of the first letter to be straight. If the guess is correct, the line may become apparent, and by continued practice the letter may come out clearly enough to be distinguished.

THE MEMORY CURE

Remember, imagine and shift on a small black dot with the eyes closed. With practice it can also be remembered with the eyes open and the vision becomes clear.

When the sight is perfect, the memory is also perfect, because the mind is perfectly relaxed. Therefore the sight may be improved by any method that improves the memory. The easiest thing to remember is a small black spot of no particular size and form; but when the sight is imperfect it will be found impossible to remember it with the eyes open and looking at letters, or other objects with definite outlines. It may, however, be remembered for a few seconds or longer, when the eyes are closed and covered, or when looking at a blank surface where there is nothing particular to see. By cultivating the memory under these favorable conditions, it gradually becomes possible to retain it under unfavorable ones, that is, when the eyes are open and the mind conscious of the impressions of sight. By alternately remembering the period with the eyes closed and covered and then looking at the Snellen test card, or other letters or objects; or by remembering it when looking away from the card where there is nothing particular to see, and then looking back; the patient becomes able, in a longer or shorter time, to retain the memory when looking at the card, and thus becomes able to read the letters with normal vision. Many children have been cured very quickly by this method. Adults who have worn glasses have greater difficulty. Even under favorable conditions, the period cannot be remembered for more than a few seconds, unless one shifts from one part of it to another. One can also shift from one period, or other small black object, to another.

MEMORY AND IMAGINATION: A perfect memory is a great benefit in obtaining perfect relaxation of the eyes as well as all the nerves of the body. One cannot remember a letter or other object perfectly unless it has been seen perfectly. When the memory is perfect, the imagination may also be perfect. Some people with a good imagination find it easier to imagine a letter or other object perfectly when they do not expend an effort in trying to see it. Knowing what the letter is, with the aid of the imagination, one becomes able to imagine that it is seen perfectly. (Familiar objects, Eyechart)

It is well to keep in mind that many patients believe that they see large letters perfectly when they do not and they can

be tested by bringing the card up close to the eyes. The vision should be just as good at fifteen feet as it is at one foot. By improving the memory and imagination one improves the vision.

MENTAL PICTURES: The mind is capable of imagining all kinds of mental pictures. When the mind is at rest and the memory and imagination are perfect, all kinds of mental pictures are produced. When the mind is under a strain, the memory and imagination are imperfect and mental pictures are indistinct and cannot be remembered for any length of time. Central fixation when properly imagined is very helpful. With its aid a perfect mental picture may be obtained easily. When a mental picture is remembered easily and perfectly, the vision is benefited. Shift on the mental pictures. Imagine them as a movie, a motion, active picture in the mind.

Demonstrate

That memory and Imagination improve the vision.

Open - 'Flash' shift on the letter for a second or less, 'fraction of a second'.

+Look at the large letter at the top of the card and note that it may be more or less blurred.

+Close the eyes and remember or imagine the same letter perfectly.

+Then open both eyes and imagine it as well as you can.

Closed - Shift on the letter in the imagination, part of a minute, 10-30 seconds.

+In a second or less, close your eyes and remember the letter perfectly.

+When this is accomplished open the eyes and imagine it as well as you can.

+Close them quickly after a second or less.

+Practice the slow, short, easy swing and alternately remember the large letter with the eyes closed for part of a minute or longer, and then open the eyes and imagine it as well as you can.

Open - 'Flash' shift on the letter for a second or less, 'fraction of a second'. Repeat.

+When done properly, you will be able to improve your vision of the large letter until it becomes quite perfect.

+Then practice in the same way with the first letter of the second line.

+Improve your imagination of the first letter of the second line in flashes, until it improves sufficiently for you to recognize the next letter without looking at it.

+Improve the sight of the first letter of each line by alternately remembering it with the eyes closed for part of a minute and then flashing it (looking at/shifting on it) for just a moment, a second or less.

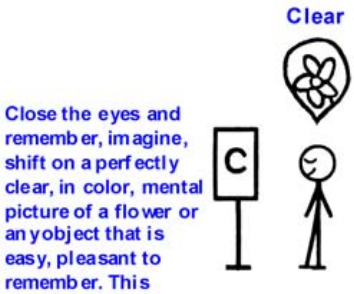
You should be told what the first letter of each line is. With your eyes closed remember it as perfectly as you can. Then open your eyes and test your imagination for the letter for a very short time, one second or even less. Keep your eyes closed for at least a part of a minute, while remembering the known letter.

The flashes of the known letter with the eyes open become more frequent and last longer, until you become able to see, not only the known letter, but other unknown letters on the same line.

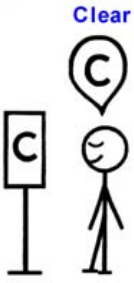
Mental Pictures

MANY patients with imperfect sight complain that when they close their eyes to remember a white card with black letters, they usually fail and remember instead a black card with white letters. The vision of these patients is very much improved when they become able to remember a white card white, with the black letters remembered perfectly black. Imperfect memory, imperfect imagination, imperfect sight are all caused by strain.

One patient could not remember a white pillow, but by first regarding the pillow and seeing one corner best and all the other corners worse and shifting from one comer to another he became able, when closing his eyes, to remember one comer in turn best, and obtained a good mental picture of the whole pillow. One cannot see a pillow perfectly without Central Fixation. To have Central Fixation requires relaxation or rest. One patient who could not remember a large letter C of the Snellen Test Card, with the eyes closed, was able to remember the colors of some flowers, and then he was able to remember a letter C. In order to remember a desired mental picture one should remember perfectly some other things. This is a relaxation which helps to remember the mental picture desired. It is well to keep in mind that one cannot remember one thing



Close the eyes and remember, imagine, shift on a perfectly clear, in color, mental picture of a flower or any object that is easy, pleasant to remember. This relaxes the mind, eyes and it is then easy to remember, imagine a clear C. Open the eyes and the C is seen clear.



Practice shifting on and remembering, imagining a clear letter C with the eyes open, closed, open.

perfectly and something else imperfectly at the same time.

In my book is described the case of a woman with imperfect sight who could remember a yellow buttercup with the eyes closed, perfectly, but with her eyes open and regarding the Snellen Card with imperfect sight, she had no memory of the yellow buttercup.

Memory

***By* W. H. BATES, M.D.**

When the sight is normal, the memory is perfect. The color and background of the letters or other objects seen, are remembered perfectly, instantaneously, and continuously.

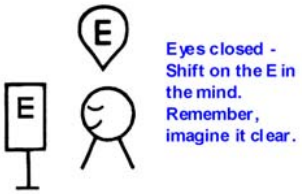
ONE of the quickest cures of imperfect sight has been gained through the use of the memory. When the memory is perfect, the eyes at once become normal with normal vision. A perfect memory changes the elongated eyeball of myopia into the shorter length of the normal eye. No matter how high a degree of myopia one may have, when he has a perfect memory of some one thing, he is no longer myopic, but has normal eyes with normal vision.

An imperfect memory or an imperfect imagination may produce organic changes in the eyeball. The organic changes, which are present in many diseases of the eye, have been relieved with the aid of a perfect memory. In some cases the vision has been reduced to perception of light from scars on the front part of the eyeball. Perfect memory brings about the absorption of such opacities. A perfect memory has cured these obstinate cases.

Conical cornea is a very serious disease. Neither operation nor the use of drugs relieves or cures it. A perfect memory gives instant relief, the curvature of the cornea becomes normal, and the patient obtains normal vision.

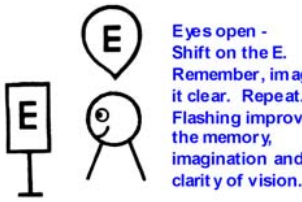
Glaucoma has been referred to as a very treacherous disease of the eye, because symptoms of blindness may become apparent at unexpected moments. The pain of glaucoma may be very severe. In most cases, the eyeball becomes very hard. The vision fails in a few hours, and all perception of light may be lost. These very severe cases are usually not benefited by operation nor drugs. The practice of a perfect memory has relieved all the disagreeable symptoms, and the vision has returned to normal.

There are patients who suffer from paralysis of one or more of the nerves connected with the eye. By resting the nerves or the muscles to bring about a condition of relaxation, which is best obtained by a perfect memory, the symptoms of paralysis are relieved. Paralysis of the nerves of the eye is caused by too great activity and is relieved by relaxation.

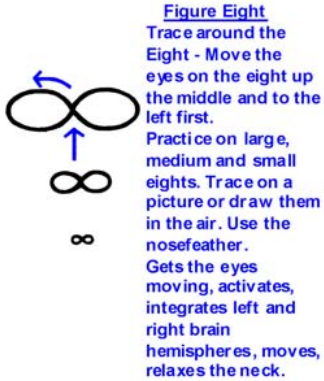


When one of the eyes has been injured or has a foreign body in the inside of the eyeball, the good eye may become affected and, in rare cases, may even be lost before the eye that has been injured is lost. This is called sympathetic ophthalmia. Through the use of the perfect memory, these cases, although of many years' duration, have been benefited and normal vision obtained. To be able to demonstrate a perfect memory habitually or unconsciously, it is necessary first to consciously remember with the eyes closed or open one thing perfectly, until an unconscious habit is formed.

A person can remember what his own name is without having a mental picture of each letter of the name. This is an example of what is known as an abstract memory. A concrete memory is a more perfect memory, because one remembers a mental picture of the object with the eyes closed, as well or better, than he can see it with the eyes open. One can remember perfectly only that which is seen perfectly. When a letter is seen perfectly, the whiteness of the card or page in the neighbor-hood of the black letter is imagined whiter than the rest of the card or page, or that part in which there are no black letters. The whiter that one can imagine the white in the neighborhood of a letter, or inside of the letter, enables one to see the blackness of the letter blacker than before. In other cases, where the whiteness in the neighborhood of the letter is apparently of the same whiteness as the rest of the card, the memory or the imagination of the black letter is imperfect.



Mental pictures are imagined perfectly when the memory is perfect. A great many patients complain that they are unable to remember mental pictures of the letters of the Snellen test card. They can remember what the letters are but have no mental pictures of them. To obtain perfect mental pictures, it is necessary that the sight should be continuously good. Most people, when they fail to imagine mental pictures, try to remember too much at once. When remembering a letter, it is not necessary to recall all parts of the letter. The memory of the color or one small portion of the letter is sufficient. The smaller the part of a black letter that you remember, the blacker it is, and the easier it is to recall. It should be emphasized that when one has a perfect



memory, central fixation can always be demonstrated. When central fixation is absent, the memory of the letter, as well as the imagination or the sight, is always imperfect. One can regard a point or a small part of a letter by central fixation for only a short time, not longer than a few seconds, without the memory becoming imperfect. Shifting is necessary to maintain a perfect memory, which is continuous. In other words, when practicing central fixation, the point regarded changes frequently.
Shift from part to part on the letter and the memory, mental and visual picture of the letter is clear.

After a demonstration that central fixation is necessary for a perfect memory, one patient became able to imagine, with his eyes closed, a small letter "O" with a white center as white as snow, starch, or any other white object that he had ever seen. He had no trouble in doing this. He said that he could remember it easily and quite continuously. Then I requested him to remember an imperfect "O," which was a shade of light gray instead of black. It had no white center, but was covered with a blur or a fog. He was able to remember it quickly, easily, for a few seconds, but when he was requested to remember the imperfect "O" for a minute or longer, the gray shade became darker and, at times, lighter, and the memory of the imperfect "O" became very difficult. In spite of all the efforts he made, he was unable to remember the "O" continuously. In strong contrast to the memory of the perfect "O" the memory or the imagination of the imperfect "O" was difficult. He agreed with me when I told him that in order to fail to see perfectly, he had to stare, strain, and make a tremendous effort. On the other hand, the memory or the imagination of the perfect "O" was spontaneous, easy, and continuous, and he experienced a feeling of general comfort in all his nerves. He was able to demonstrate that he could remember the perfect "O," provided he imagined it was moving, and that he could not remember it when he tried to imagine it stationary.
O is moving = The eyes are moving, shifting on the O.

Flashing is a great help in improving mental pictures. With the eyes open, one may see a letter quite perfectly and have a mental picture of that letter with the eyes closed for a fraction of a second. By repeatedly flashing the letter in this way, the mental picture becomes more frequent and lasts longer. When the sight becomes more continuously good, the memory is also benefited, and with this improvement in the memory, the mental pictures become more perfect. The converse is also true. When the memory is improved, the sight is improved. You cannot have a perfect memory by any effort or strain. The more perfect your memory, the greater is your relaxation, and the more perfect is your sight.
Memory, imagination, relaxation, clarity of vision function together, strengthen, improve eachother.
Practice on eyechart letters and any objects at close, middle, far distances.

Memory and Imagination

A perfect memory and perfect imagination cures myopia under favorable conditions. Patients who have a good memory of mental pictures have no myopia when the mental pictures are remembered or imagined perfectly. There are near-sighted people who, after a course of eye education, can look at a Snellen test card at ten feet or further and remember or imagine the white part of the card perfectly white and the black letters perfectly black. When this is accomplished, the myopia improves.

When school children regard the blackboard, they often half-close their eyelids, or stare and strain to see and thus produce myopia. When they can remember a mental picture of some small letter, and remember it as well with the eyes open as with the eyes closed, normal vision and a temporary cure of their myopia is obtained.

In myopia and other phases of imperfect sight, the white centers of all letters are imagined less white than the rest of the card. When the patient becomes able to imagine the white centers with a white background to be whiter than the rest of the card, the vision is improved and there is no myopia.

MEMORY AND IMAGINATION. The scholarship of children is affected by their memory of mental pictures. Measures which have been practiced by many school teachers for the preservation or the improvement of memory are quite numerous. When children learn how to remember some things perfectly, the memory of other things is improved. With a perfect memory, it is also possible to have a perfect imagination. We see only what we think we see, or what we imagine. When the imagination is perfect, the sight is perfect and when the sight is perfect, the memory is perfect. These and other clinical observations have demonstrated the truth that sight is largely mental. Perfect sight or imperfect sight is due to the condition of the mind. When the mind is healthy and active, perfect memory can usually be demonstrated, but when the mind has lost its efficiency, the memory becomes impaired. The memory is benefited by those methods which bring rest and relaxation. With the eyes closed, the memory is usually better than it is with the eyes open.

After regarding a letter which is seen imperfectly at a distance of ten feet or nearer, the student can remember the same letter more perfectly by closing his eyes. When the child can remember a perfect letter at ten feet with the eyes open, he soon becomes able to see and

Look at, shift on a unclear letter on the eyechart. Close the eyes and shift on the letter in the mind and remember, imagine it clear.
Open the eyes, shift on the letter, close the eyes and repeat.
When the letter is clear, practice at farther distances.
Do the reverse for close vision improvement.

remember the same letter at eleven feet, and can gradually increase the distance to fifteen or twenty feet. Practicing the sway, alternately with the eyes open and with the eyes closed, is a benefit to the memory and the sight, because when the eyes are moving, a stare, strain or effort to see is more or less prevented.

When a line of letters on a Snellen test card can be read easily, it is usually possible to read some of the letters on the line below. However, if this cannot be done, have the child come closer, until all the letters of the bottom line are seen at a distance of five or ten feet. When a child cannot read all the letters on the 10 line at ten feet, he may be able to remember or imagine all the letters of the 10 line, with the eyes closed, better than with them open. By alternately closing the eyes for part of a minute or longer, and then opening them for only a moment, the vision improves.

A child may be able to see the first letter on the bottom line of the card when he is told what the letter is. Although he may not know what the second or third letters are, he may be able to actually see them and other letters on the bottom line by improving the vision of the first letter so that it is imagined perfectly. When the memory and imagination of the first letter is quite perfect, or sufficiently perfect to be distinguished, the eye becomes normal and the other letters are really seen and not imagined.

A child, at some previous time, may have had an inflammation or disease of the eyeball, which caused his imperfect sight. For example, a scar, sufficiently thick to interfere materially with the vision, may have formed over the front part of the eyeball. A perfect memory or imagination of a letter with the eyes closed, always lessens the opacity, and the vision is always improved, at least temporarily. By repetition, the short periods of improved vision occur more frequently and last more continuously.

The imagination is very important, much more so than many of us believe. Some people think imagination is simply another word for illusion. However, it is possible to imagine correctly as well as to imagine incorrectly. Some people can imagine a truth perfectly, but react differently when they imagine things imperfectly.

A girl, twelve years of age, had unusually good vision. She was able to read the 10 line of a strange card, which she had never seen before, at fifty feet. She said that she could look directly at one letter of the 10 line and see it continuously, but when her eyes were observed while she was doing this, it was found that she shifted almost continuously.

Her memory was also unusually good. She was the only member of the party who could remember the names of the officers on the different steamers on which she had traveled to Europe. She remembered the numbers of her staterooms, as well as the numbers of the staterooms of the other members of the party. However, when she imagined all these things incorrectly, she felt decidedly uncomfortable, but when she remembered to imagined things perfectly, she felt no discomfort.

At school, her teachers considered her stupid, because she disliked some of her studies and devoted no time to those lessons. Her poor scholarship disappointed her family very much. She was very unhappy and decided to prove what she could do. About a week before the examinations, she read through her Latin textbook and remembered it perfectly. She also read her other textbooks and remembered what they contained. She asked to be examined in all her subjects and much to the surprise of the teachers, she passed the examinations with unusually high honors.

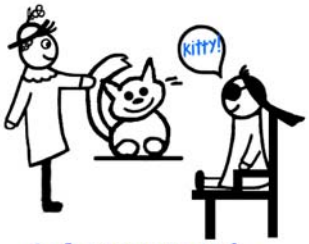
A student obtained high grades in history by creating movie pictures in his mind of every story, event he read in his history book.

He stole the history book for the next school year, read it during summer vacation (without pressure from teachers to hurry and get a perfect grade). In September he entered that class and earned all A's on his history papers.

Esther

Esther, aged seven, first came to me in January, 1927, to be relieved of squint. She had worn glasses since she was three years of age for the relief of squint in the right eye. Her parents noticed, after she had worn glasses a short time, that she was more nervous than before. Later, they were much concerned because she acquired bad habits, such as holding her head to one side instead of straight, especially while studying and reading her school lessons. Her glasses were then changed. It was thought that wrong glasses had been prescribed because she still kept her head to one side as before, and her nervousness became more pronounced. The parents were told that in time the squint would be corrected if Esther wore her glasses all the time.

The squint continued to get worse instead of better, so the parents brought her to me. The vision of her right eye was 10/15, but in order to read the letters of the test card, she had to turn her head so that it almost rested on her right shoulder. Her left vision was 15/15 and she read the letters of the card in a normal position. I tested her right eye again, placing the card up close. She turned her head just as much to one side as she did when the card was placed ten feet away. I asked her mother to hold the child's head straight, and again told Esther to tell me what the letters were. I held the test card two feet away while she covered her left eye. She said everything was all dark, and she could see nothing.



Left eye covered. Using the right (squint) eye. Mom touches a familiar toy and the girl names it.

It did not take me long to find out that Esther was a bright child, and that she would willingly do anything for the benefit of her poor eye. She said to me, "It is too bad that my sister should have two good eyes and that I should have only one good one." I encouraged her to follow my directions closely and I told her if she continued to do so and practiced as often as she should at home, that we would then try to correct the vision of the poor eye.

Palming, Memory, Imagination

I found her to be quite an artist. When her eyes were covered, I asked her if she could remember a drawing of some kind. "Oh, yes," she answered, "while my eyes are closed and covered I can imagine that I am drawing your picture."

I said, "All right, you keep on imagining that you are drawing my picture and later on I will let you sit at my desk and draw a picture of me." We talked about pleasant things for five or ten minutes while she had her eyes covered.

Long Swing

I then taught her to swing her body from left to right, glancing for only a second at the test card, and then looking away to her left. I purposely avoided having her swing to the right, because she had the desire, while reading or trying to see more clearly to always rest her head on the right shoulder. I drew her mother's attention to the fact that, as she swung, both eyes moved in the same direction as her body was moving. When she stopped blinking, which I had encouraged her to do rhythmically with the swing, her right eye turned in and her head also turned to one side.

After she had practiced swinging for a little while, I noticed that she gaped a few times, which meant that she was straining. It is good for parents to notice this, in helping the child practice for the relief of squint, and to stop all practice with the exception of closing the eyes to rest them.

When practicing the Long Swing for the first few times, for some people with squint, (wandering/crossed eyes) the eye may wander, cross. This occurs due to the Long Swings function of removing different types, multiple layers of strain from the mind, eyes, eye muscles and correcting left and right brain hemisphere function, integration and eye movement. A negative thought, emotion, experience may have initially caused the first strain, slight blur, then the person worries about the blur, starts squinting, staring and this causes a additional, different strain: worry, eye muscle, eyestrain. Blur is increased, wandering/crossed eye occurs or increases and more worry, strain, staring, squinting and trying to force the eye straight occurs=a third type of strain.

The Long swing and other Bates activities will remove all these strains and reverse the condition back to normal - straight eyes, clear vision.

Esther palmed again for a little while and then I showed her some celluloid toy animals and asked her to name each one of them. She named each one correctly with the exception of the buffalo, so I did not use that one for her case. If a child under treatment for squint is asked to tell things in detail, the child must be familiar with the objects. While she again covered her eyes to rest them, I placed animals on the floor five feet away from where she was sitting. I told her mother to touch each animal and have Esther name them. Out of eight animals, she named three incorrectly. They were among the last ones she tried to see. We then noticed that her head turned to one side in order to see them. All this time her left eye was covered.

Then I had Esther sit at my desk and asked her to draw my picture. The drawing was quite well done for a little girl of her age. She kept her head straight while drawing. When strain is relieved, the symptoms of imperfect sight are relieved also. She enjoyed drawing, therefore it did not produce a strain. When she was asked to read the test card letters, she strained in order to see them and the condition of her eyes became worse.

Esther was encouraged to do something that she liked at every treatment, such as writing figures from one to ten, or drawing a line without using a ruler. At the first attempt, the lines were very crooked and the figures not straight.

Swinging and palming, practiced several times daily, soon improved the right eye to normal. At the last visit, her head remained straight and the squint had entirely disappeared.

The vision of her right eye became better than normal, as far as reading the test card was concerned. She read the bottom line at twelve feet and seven inches. This line is read by the normal eye at nine feet. She did equally as well with the left eye, which, of course, had normal vision in the beginning.

To be sure that the child was entirely relieved of squint, I told her to look at my right eye, then at my left eye, then to my chin and other parts of my face as I pointed with my finger to each part. She followed me with both eyes moving and her head perfectly straight and as yet she has had no relapse.

IMAGINATION: Another method is to improve the vision by a perfect imagination. If the patient is unable to see the letters on a certain line, he is told what the first letter is and is directed to close his eyes and imagine that letter as perfectly as he can, and then alternate by imagining it as perfectly as he can with his eyes open. When the letter is imagined perfectly enough, other letters on that line when regarded are seen and not imagined.

It is very evident that one cannot imagine unknown letters. Therefore, if the vision improves by the use of the imagination, unknown letters when regarded are seen and not imagined. It has been repeatedly demonstrated that an opacity of the cornea which may be so dense that the pupil or iris are not seen, will clear up in some cases after the alternate imagination of a known letter or a known object is practiced with the eyes open and closed. When opacity of the lens is examined with the aid of the ophthalmoscope, the opacity becomes increased when the patient remembers imperfect sight. The memory of imperfect sight causes a contraction of the muscles on the outside of the eyeball, which in turn produces imperfect sight, cataract, cornea scar…

Shift dot to dot on the E seeing one dot clearest at a time in the center of the visual field.

The bird is seen clear by placing it in the center of the visual field. The eyes are looking at the middle of the bird, placing it in the exact center of the visual field. (See dot=exact center.) The dot (center) moves with the eyes as the eyes shift part to part, point to point on the bird seeing one part (actually one small point) clearest at a time.

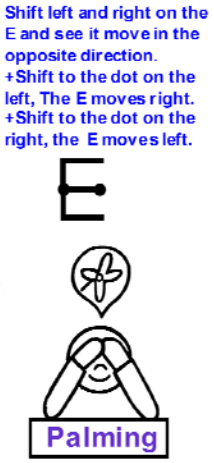
MEMORY: The pupil is told to remember a small letter "o" with a white center which is whiter than other letters on the Snellen test card. A small letter may be imagined much better than large letters of the Snellen test card. When the facts are analyzed, it is discovered that the reason small letters are imagined better than large ones is because a small letter has not so much of an area to be seen. It is easier for the eye to remember or imagine a small object than a large one. A perfect letter "O" can only be remembered when no effort is made; an imperfect letter "O," on the contrary, is difficult to remember. When a letter "O" is remembered very black with a very white center, the vision is benefited because no effort is made.

A great many near-sighted patients believe that they can remember or imagine an imperfect letter "O" much easier than a perfect letter "O." These people are encouraged to remember or imagine an imperfect letter "O," which helps them to understand and realize as thoroughly as possible that the memory or the imagination of imperfect sight is very difficult and requires a good deal of hard work, whereas the memory of perfect sight can only be accomplished easily without effort.

THE PERIOD: With the help of the imagination, alternating with the eyes open and closed, it is possible for many patients to remember or imagine they see a small black period. It may not necessarily be a black period but may have any color of the spectrum and be of any shape—round, square, triangular or irregular. It is impossible to remember or imagine a period that is stationary. It must always be remembered by central fixation and be moving. Some patients can imagine a period as small as it is printed in the newspaper. Unfortunately, it is difficult or impossible to teach all patients how to remember a period perfectly. The great value of the period is that when it is remembered perfectly, many serious diseases, such as opacities of the cornea, opacities of the lens, diseases of the retina and choroid, diseases of the optic nerve and blindness can all be relieved promptly.

MEMORY AND IMAGINATION: A perfect memory is a great benefit in obtaining perfect relaxation of the eyes as well as all the nerves of the body. One cannot remember a letter or other object perfectly unless it has been seen perfectly. When the memory is perfect, the imagination may also be perfect. Some people with a good imagination find it easier to imagine a letter or other object perfectly when they do not expend an effort in trying to see it. Knowing what the letter is, with the aid of the imagination, one becomes able to imagine that it is seen perfectly. (Familiar objects, Eyechart)

It is well to keep in mind that many patients believe that they see large letters perfectly when they do not and they can be tested by bringing the card up close to the eyes. The vision should be just as good at fifteen feet as it is at one foot. By improving the memory and imagination one improves the vision.



REST: Rest or relaxation of the nerves of the eyes, mind and all other parts of the body is necessary before perfect vision can be obtained. When the nerves of the body are at rest, it is possible to remember, imagine or see all letters or other objects perfectly. It is not possible to remember, imagine, or see anything without perfect relaxation. Perfect relaxation or rest comes without effort. When the mind is at rest, any effort to improve the memory, imagination or sight is wrong. (Use the memory, imagination in a easy, relaxed manner.) When the eye is at rest, it is perfectly passive. The eye at rest is never stationary: it is always moving. This seems a contradictory statement to make, but it is a fact which does not permit of any explanation.

PALMING: One of the best methods of obtaining relaxation is by palming. There is more than one way of palming. One very good way, however, is to cup both hands, press the sides of the palms together, and place the two hands over the closed eyes and in front of the nose. When done properly, all light is excluded, one sees black perfectly and relaxation is obtained.

BLINKING: When the normal eye is at rest, the eyelids are continually closing and opening. Blinking may be done so rapidly that it does not become conspicuous. Moving pictures (movies) have demonstrated that the normal eye may open and close, or blink, five times or more in one second. The habit of blinking may be acquired by remembering to blink at frequent intervals. All patients with 15 diopters or more of myopia may blink five times or more in one second when the eye becomes normal and myopic alternately five times in one second. There are no exceptions to this truth.

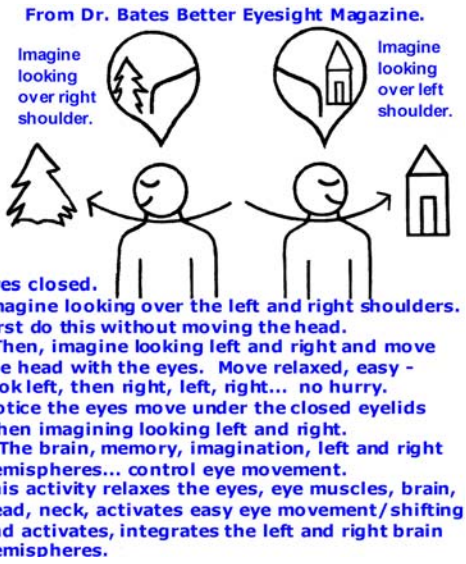
MENTAL PICTURES: The mind is capable of imagining all kinds of mental pictures. When the mind is at rest and the memory and imagination are perfect, all kinds of mental pictures are produced. When the mind is under a strain, the memory and imagination are imperfect and mental pictures are indistinct and cannot be remembered for any length of time. Central fixation when properly imagined is very helpful. With its aid a perfect mental picture may be obtained easily. When a mental picture is remembered easily and perfectly, the vision is benefited. Shift on the mental pictures. Imagine them as a movie, a motion, active picture in the mind.

The Memory Swing

The memory swing relieves strain and tension as do the long or the short swings which have been described at various times. It is done with the eyes closed while one imagines himself to be looking first over the right shoulder and then over the left shoulder, while the head is moved from side to side. The eyeballs may be seen through the closed eyelids to move from side to side in the same direction as the head is moved. When done properly, the memory swing is just as efficient as the swing which is practiced with the eyes open, whether it be short or long.
Feel the physical eyes move left and right when imagining moving left and right and when physically moving the head left and right. The eyes move in the same direction the mind imagines moving and the physical body, head moves. The brain works with the eyes.
This swing also relaxes, improves movement of the neck. Enjoy relaxation of the mind, eyes, head, neck, shoulders, body.

The memory swing can be shortened by remembering the swing of a small letter, a quarter of an inch or less, when the eyes are closed.

The memory swing has given relief in many cases of imperfect sight from myopia, astigmatism, and inflammations of the outside of the eyeball as well as inflammations of the inside of the eyeball. It is much easier than the swing practiced with the eyes open and secures a greater amount of relaxation or rest than any other swing. It may be practiced incorrectly, just as any swing may be done wrong, and then no benefit will be obtained.



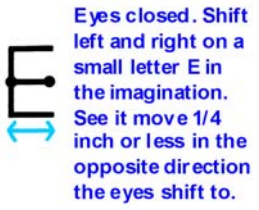
Mental Activity

By W. H. BATES, M.D.

IT IS a truth that activities of the mind under favorable conditions accomplish many things. As an example, let us consider the following case. A man, aged 30, employed in a distant city as a helper in a library, was treated about 15 years ago. He called to see me at about seven o'clock in the evening and remained with me for more than two hours. The patient was born with cataracts in both eyes. He also had amblyopia from birth. Some months previous to his visit, the cataract in both eyes had been removed. The vision of the right eye was very poor and not corrected by glasses. The vision of the left eye was worse than that of the right and also was not improved by glasses.

The treatment which was prescribed was to rest both eyes by closing them. His attention was also called to a known letter of the Snellen test card, a letter which he imagined better with his eyes closed than with his eyes open. When a known letter was regarded by central fixation, the vision improved. It did not take longer than half an hour to improve the right eye in this way, at first in flashes and then more continuously later.

At first he was able to flash the letters of the Snellen test card when he had momentary glimpses of the known letter very much improved. It did not take long before, much to my surprise, he was able to read all the letters on the lowest line at 10 feet. The vision of the left eye improved much more slowly, but after continual practice the vision of this eye became normal.



The eye which obtains improved sight by the aid of the memory and imagination very soon obtains improved vision for all the letters. It was demonstrated in this case and in others that the memory and the imagination of a known letter is a cure for myopia, hypermetropia, astigmatism, cataract, glaucoma, atrophy of the optic nerve, and other diseases of the eye.

With the aid of the retinoscope it has been demonstrated that the memory and the imagination are capable of improving the vision of these cases of refraction until the functional element is relieved. It is interesting to observe that these patients become able to see as well without glasses as they had previously seen with them.

Congenital cataract, traumatic cataract, and simple cataract have all been promptly cured with the aid of the imagination when it became as good with the eyes open as with the eyes closed. When one letter, a part of one letter, a period, a comma, or a semi-colon, is imagined as well with the eyes open as with the eyes closed, there follows almost immediately a temporary cure of imperfect sight. To understand how this can occur, one should demonstrate how imperfect sight is produced by an effort. It is a truth that the memory of imperfect sight has produced myopia, hypermetropia, and the increased tension of the eye in glaucoma. School children acquire myopia by a strain to see better. Some forms of concentration produce an inflammation of the retina similar to the imperfect sight of amblyopia ex anopsia. This must be a truth because it suggests proper treatment for amblyopia; namely, rest of the eyes.

Amblyopia is very frequently associated with imperfect sight, an imperfect field which may be irregular in its outline. For

many years amblyopia has been considered by authorities to be incurable, but these cases have been studied in recent years so that now most authorities believe that amblyopia is usually curable. It is a fact that some individuals with amblyopia ex anopsia recover without treatment. It seems reasonable to believe, if a number of patients recover spontaneously, that the treatment suggested to achieve this result would be successful in obtaining a cure. Normal eyes have been observed to acquire amblyopia, which was increased by an effort or a strain to see. By the practice of relaxation methods the amblyopia is usually benefited or cured.

There are diseases of the choroid which for many years have been understood to be incurable. The fact that a strain or effort to see may produce choroiditis suggests that relaxation methods should be practiced in order to obtain a cure. Cases of this type are too often neglected because they have not been sufficiently studied. The proper kind of mental activity benefits and cures functional or organic diseases of the eye: Some patients suffering from choroiditis obtain benefit quickly, while others take a longer time.

A man, aged 25, complained of many disagreeable symptoms. With both eyes open his vision at fifteen feet was one third of the normal. He suffered very much pain. Treatment relieved this pain and made it possible for him to read at the near point. At ten feet he read the bottom line of the test card with his right eye, a vision of 10/10. With the left eye at ten feet, he read the 50 line. In a poor light, his vision for distance and for the near point was much below the normal with either eye. When he covered the closed eyelid of the right eye with the palm of his hand, he saw a field of green which continued to be evident for part of a minute. When the eyelids of the left eye were covered with the palm of his hand, he imagined the whole field to be red, changing to yellow and orange. When he produced those colors in his closed eyelids he complained of headache, dizziness, and considerable pain in both eyes.

Some months previous each eye had started to turn in at different times. A stare, strain, or effort to see better increased the squint of the left eye. When the left eye was covered, an effort to see produced a squint of the right eye, which turned in. An operation, which was a failure, was performed on the left eye by a prominent ophthalmologist. Shortly after the operation the left eye turned out almost continuously.

The patient was nervous. His mind planned very unusual things which lowered the vision of the right eye when he stood six feet from the card. When he regarded the Snellen card at six feet and a half, only half a foot further off, his vision became much worse. When he regarded a letter at seven feet that he remembered or imagined, the vision of the right eye became normal for a few minutes. When the illumination of the Snellen test card was imperfect, his vision became very poor.

At a distance of ten feet, in ordinary daylight, his vision became normal. At twelve feet the vision of the right eye was reduced to one fourth of the normal. Most of the time the vision of the left eye was imperfect at a near distance, five feet or further. He was able to read fine print at ten inches from his eyes. At twelve inches he could remember or imagine diamond type, which he read quite readily, but at the same distance, he was unable to read print which was five times as large as diamond type. Such cases are rare.

After resting his eyes by palming for long periods of time—one hour, two hours, or longer—the vision of the right eye was improved to the normal for a few hours, but the vision of the left eye was improved to 1/20 of the normal for a few minutes only. Under favorable conditions the vision of the left eye was decidedly improved. When the light was quite bright, the vision of the left eye improved, while the vision of the right eye became worse. At twelve inches or farther, he was unable to read any of the print.

It was interesting to study his mind while the left eye was reading the Snellen test card at different distances. There were times when he could straighten the left eye when the Snellen test card was placed at five feet or ten feet. This ability to straighten the left eye was very changeable. With the right eye covered, the left eye read one half of the Snellen test card at five feet. Later the large letters of the Snellen test card were distinguished at 20 feet, while strange to say, his vision at five feet or ten feet was very poor. At about the same time he could read the Snellen test card with normal vision with the left eye at twelve inches.

It was difficult to explain or to find out why it was that there were periods of time when the vision at the middle distance was poor and why the vision at 20 feet was good. Sometimes the vision at the middle distance would be almost entirely absent. It was difficult or impossible for me on many occasions to understand the idiosyncracies of this man's vision. Another important fact was that the patient himself could improve his vision for any distance desired by some activity of his mind which was neither a strain or a relaxation. This patient, like other and similar cases, was bothered by a large blind area which interfered seriously with his sight. There were times when he was able to increase the blind area while there were other occasions when the area lessened its size.

The activity of this man's mind was very uncertain, and neither he nor his friends could prophesy what was going to happen next. He discontinued coming to me before he was entirely cured and I have not heard from him since.

Glaucoma is a very serious, treacherous disease of the eyes. The principal symptoms are hardness of the eyeball and a contracted field with imperfect sight. By prescribing rest or relaxation of the eyes all cases of acute glaucoma have been benefited.

Recently a number of patients were seen suffering from a mild form of glaucoma. Usually the field was contracted on the nasal side, but there were periods of time when the contracted field was on the temporal side. One patient could consciously manipulate the size, form, and location of the blind area of the field. A large letter which would appear about three inches in diameter, when regarded by an eye with normal sight, would seem to some cases of glaucoma to be only an

inch or less in diameter. The large letter which was seen by the normal eye to be a dark shade of black would appear to some patients as brown, lavender, yellow, or fiery red when regarded at fifteen feet or farther. At twelve inches the letters of the Snellen test card might have almost any color.

The letters might appear to be single, double, or more numerous. Every other line of letters would appear to consist of a number of letters instead of being seen properly one at a time. The mental strain to accomplish this consciously was not understood. As a matter of common sense, one would expect that if one line of letters was seen double, all the lines of letters should be seen double. Sometimes the letters of one line would be apparently one above the other. Sometimes the double images appeared to be slanting. The ways that the patient mentioned that he was able to have imperfect sight were very numerous. One of the peculiarities of his case was that he was able to see small letters more clearly than large letters. The different ways that he could see imperfectly with the left eye were not duplicated with the right eye.

Another patient, a girl with a very high degree of near-sightedness, had difficulty in finding a way which would produce some improvement in her sight. After spending a good many months in studying the problem and in trying various methods, she became able, with the aid of a rectangular swing, a swing which was accomplished by moving one hand in a rectangular direction, to obtain benefit. A finger of one hand was moved in such a way that she appeared to be drawing a rectangle, three feet by one foot. The patient was very much thrilled to find that the improved vision occurred at the same time that she produced the rectangular swing.
(Original, partial versions of the modern Infinity, Figure Eight swing.)

Some patients improved their vision by practicing the vertical swing; others, by practicing the oblique or horizontal swing, obtained an improvement in the sight. The more the facts were investigated, the greater became the evidence that it is a mental strain which lowers the vision and not a local strain of the eye itself. In all cases of imperfect sight a mental strain can always be recognized. When this strain is relaxed, the vision always improves.

In the treatment of imperfect sight by eye education, the results should be obtained very promptly. One soon becomes able to remember many other ordinary objects besides the letters of the Snellen test card. When the memory becomes as good with the eyes open as with the eyes closed, the mental strain disappears and the vision becomes normal. This suggests that by practicing with the Snellen test card at a near point—three, five, or ten feet—the memory will become more nearly normal. Patients with high degrees of myopia have been cured very promptly, perfectly, and continuously by the memory of perfect sight.

It is very important that mental activity be understood, because imperfect sight is not possible without a mental strain. When a patient with very imperfect sight is benefited or cured by relaxation methods he is very much inclined to say that he does not *see* the letters on the Snellen test card—that he just remembers or imagines them. The mind of the patient with imperfect sight will always imagine things wrong, although the patient may not be conscious of this fact. For example, he may see a large letter E at fifteen feet, and make the statement that it is not a letter E, but that it is a letter O. The patient may argue about that for some time. When he is told that it is a letter E, he says that it can't be a letter E, that it must be something else.

Double image of the letter E caused by imperfect vision. Shift on the letter, part to part, blink, relax, use central fixation and the letter will merge into one clear image.

In short, most patients are more apt to miscall large letters than to miscall small letters. Sometimes the letter E is not imagined or seen until the letter is brought a foot or two away. Then when the letter becomes known by regarding it at the near point, it may gradually be taken farther away and still be seen as a letter E. The next day when the E is regarded, it may not be seen, although it is known to be an E. It may be necessary to place the letter E closer to the patient again before it is recognized.

I have repeatedly stated that it is usual for patients to see a known letter better with the eyes closed than with the eyes open. In the treatment of such cases one should realize that the number of ingenious methods employed to make the sight worse are sometimes very remarkable. If the patient knows what is wrong with his eyes, the knowledge is a great help in obtaining a cure. Some patients have been told a number of times that when they know what is the matter with their eyes or their sight that they are more readily cured. By repetition, the vision of most people has been permanently cured. Staring, squinting, not shifting on a letter and remembering, imagining it unclear causes strain and blur. Experiencing this teaches the person to avoid it.

There are many ways of securing relaxation, but the best one of all is the simplest. The perfect memory of a house or a chair is a great help, but one obtains still greater assistance by the memory of a very small part of a chair. The smaller the object, the more perfectly can it be remembered, imagined, or seen. After the patient becomes convinced that he is suffering from a mental trouble as well as an eye trouble, progress toward a complete recovery in a very short time is obtained. Patients with a high degree of myopia have been cured by the memory of one half of a large letter, but others have been cured more quickly by the memory of a smaller area. Large letters are not seen, remembered, or imagined as well as small periods.

#8 - SWITCHING, Shifting Close, Middle, Far

Switch the Visual Attention at Close and Far Distances

Each day I varied the treatment. One day I placed her by a window and had her shift from the fine print up close to her eyes to the distant signs which I called to her attention, and to tops of houses and other buildings. An American flag waved in the distance and shifting from the flag to the flagstaff helped her to see the staff more clearly and by keeping up the constant sway of the body, blinking easily, but steadily all the while, she became able to see the harbor in the distance and also the boats which were moored near the shore. She told me that this was the first time in her life that she could ever see at such a distance.

She was the means of changing the mind of a skeptical husband who thought that the Bates treatment was a myth or something like it. However, he decided that if palming and swinging was a good thing for his wife and could make her so much more contented in her home duties than she was before, that perhaps it would help him to be a more agreeable person in his office as well as in his home. With just a few suggestions from me, my patient treated him successfully at home, and her last report was that he was reading his newspaper and book type without the use of his glasses.

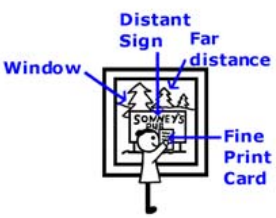
I realized more and more that if Dr. Bates could live until the end of time that it would be his cured patients who would advertise him in the right and only way. Times without number there have been magazine and newspaper writers, as well as authors of books who were cured after being treated by Dr. Bates who offered to advertise him in the way that they thought best.

Many years ago, without realizing that it would harm him, Dr. Bates allowed these grateful patients to advertise him in their own way. They unintentionally caused him much worry and concern with the medical profession. The only way to make Dr. Bates' work known to the world is to have his cured patients talk about the benefit they received and in that way help others who are suffering from defective vision. (Optical Industry Trying to Hide Bates Method From the Public.)

During the last treatment I gave my patient she read the various test cards, 15/15, with the exception of the black card with white letters, which she was able to read 15/10. Also, the floating specks had entirely disappeared after her third treatment. This case was very interesting, because it is seldom that one has presbyopia and myopia simultaneously.

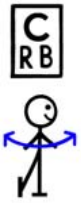
To carry out treatment successfully, I try to be careful to vary the method of treatment at each lesson. I find it true also that if I try out things by myself, without the help of Dr. Bates, or his suggestions in the matter, that I fail sooner or later. Our students will benefit greatly by doing the same thing always. If the student is in doubt as to whether he or she can cure a difficult case, it is always best to write or come directly to headquarters and find out what is wrong. It is Dr. Bates' desire *always* to help the students to cure any case which may be difficult.

School Children
By Emily C. Lierman
Davey



Practice switching from a fine print card to a distant sign outside a open window;
+Shift on letters on the fine print card.
+Switch to the distant sign and shift on letters on the sign.
+Switch back to the fine print. Repeat shifting on letters on the close fine print card and distant sign.

Sway in front of the eyechart, shift on letters, blink and read a fine print card, then switch to the distant eyechart and shift on the letters, then back to the fine print. Repeat.



Swing in front of the eyechart and glance at letters.

Davey, eight years old, was very near-sighted, and the glasses he was wearing, made him nervous and irritable. His father had been told about the Bates Method and what could be done to restore perfect sight without wearing glasses. Davey's father brought the boy to me, although he was skeptical and his mother was even more so. I could tell by the little boy's attitude toward me that the Bates Method had been much discussed in the home circle, and that I was considered a sort of mystic worker.

The first question Davey asked me was, "What are you going to do to me?"

I answered, "I am not going to do anything to you, but I will try to do a whole lot for you. I will help you to get rid of your thick glasses that I am sure you don't like."

His answer was, "O, yes, I would like my glasses if I could see out of them. Father said that if you don't help me, he will try to find other glasses that will help."

I let the little fellow talk for a while, because I thought it would help me to understand him better. I told him I was especially interested in children and that it was always my delight to give school children better sight. I said I would not interfere with him, if glasses were what he wanted most. He said that he was afraid to play baseball or other games which might not only break his glasses, but perhaps hurt his eyes.

I tested his vision with his glasses on, and found that at ten feet from the regulation test card, he could see only black smudges on the white, but no letters. Then I placed the card six feet away. All he could see at that distance was the letter

on the top of the card, seen normally at two hundred feet. I then had him take off his glasses to see what he could read without them. He could not see anything at all on the card. I asked him to follow me to the window and to look in the distance and tell me what he could see. To the right of me, about one hundred feet away, there was a sign. The letters of this sign appeared to be about three feet square. One word of the sign had four letters. The first letter was straight and the last was curved, and had an opening to the right. I explained this to Davey, as I told him to look in the direction in which I was pointing, and then to a small card with fine print that I had given him to hold. I told him to read what he could of the fine print. He read it at two inches from his eyes. Under my direction, he alternately followed my finger as I pointed to the fine print and then to the building sign. He told me he could not see anything in the distance.

Davey felt very uncomfortable because of his poor sight and became rather restless. I told him to hold the fine print card closer, and not to read the print this time, but to look only at the white spaces between the sentences, and to blink often. He shifted from the white spaces of the fine print to the sign in the distance, watching my finger as I pointed, first to the near point and then to the distance. Suddenly, he got a flash of the first letter of the first word on the sign. This practice was continued for twenty minutes, and then we had a rest period. Davey sat comfortably in a chair and palmed his eyes. Children are very apt to become bored with anything that takes time and patience, and I know that Davey had little patience with anything regarding his eyes.

I asked him questions about his school work, and what subjects he liked best. He said he just loved arithmetic. I asked his father to give him an example to do while he palmed. The little fellow thought this was great fun, and without hesitation he gave his father the correct answer for each example. This gave Davey a rest period of fifteen minutes. His mother remarked that this was the first time she had ever noticed him sit quietly for so long a time.

Long Swing and Sway

Davey was then shown how to swing, by moving his body slowly from left to right, and getting only a glimpse of the letters on the card, at six feet. When he looked longer than an instant at the card, he leaned forward and strained to see better, but failed each time. When he learned not to stare, but to shift and blink while he swayed, his vision improved to 6/50. We returned to the window. I told him to shift from the white spaces of the fine print, which I held close to his eyes, then to the distant sign, and he became able to read all of the sign without any difficulty.

Much had been accomplished in one treatment and both parents were grateful. Davey was given a card with instructions for home practice. He returned three days each week for further treatment. Every time he visited me, I placed the test card one foot further away. Eight weeks after his first treatment, he read all of the test card letters at ten feet. This was accomplished by reading fine print close to his eyes, then swinging and shifting as he read one letter of the card at a time.

This boy has sent other school children to me as well as a school teacher with progressive myopia, who practiced faithfully until she was cured. Every week, she sent me a report about her eye treatment and the progress she made. Her pupils noticed that she had discarded her glasses, and after school hours she invited some of them, who had trouble with their eyes, to practice the Bates Method with her. In eight weeks' time, her vision became normal, and all her pupils, with the exception of three, are improving their vision without the use of glasses.

Test Card Practice

By Emily C. Lierman

My experience with school children and with people who are advanced in years has proved to me that daily test card practice is the quickest way completely to relieve eyestrain and imperfect sight. It is the custom always to give a patient a large test card with a small pocket size test card for home practice. Patients are encouraged to write for more help if needed further to improve their vision if they no longer come to the office for treatment. There is not a day goes by but that a patient will report that he did not have time to practice reading the test card for the improvement of his sight.

This is a natural thing, because most of us have more plans made for the day than we have time to carry out. For that reason we find the miniature test card very valuable. The card is just large enough to be placed in a dress or coat pocket. It is not necessary to spend any extra time at home in practicing with this card if the patient has a journey before him in going to or from business. Riding in trains, taxicabs, the subway or surface cars will give the patient time enough to improve the vision by practicing with the little card, even if it is only for ten minutes at a time.

If one is riding in the subway, either sitting or standing, one can use the small test card by holding it about six or eight inches away and shifting from a letter of the card to a sign directly opposite. If the print of a sign looks blurred, the print will soon clear up if one practices shifting and blinking from the letter of the card up close to the letter of the sign.

Many people whom I have helped in this way have enjoyed practicing with the signs and small test card because by the time they arrived at their destination their eyestrain was entirely relieved. It is so much easier then to use the memory for objects seen without effort or strain. One can remember part of the sign which was seen in the subway and if during the course of the day there should be a strong desire on the patient's part to put on glasses again, all he has to do is to close his eyes for part of a minute and remember that sign. Instantaneous relief sometimes follows and this encourages the patient to practice. These small test cards are always available at the Central Fixation offices for a very small sum and there is always someone there to explain how the card can be used successfully.

Children like the small test card with numerals. The numbers are distributed so that wherever the eye glances there is always some number which can be seen perfectly within a normal distance from the eyes. Children, as a rule, are not satisfied until the card can be read normally with each eye separately. Over each line of numerals there is a small number

indicating at which distance the normal eye should read it. School children who have never been to the office or seen Dr. Bates or myself have been able to improve their imperfect sight to normal by the daily use of this small card.

Sometimes children do need encouragement from their parents or from their school teachers, because they forget just as grown folks do when a thing should be done for their benefit. I have been asked this question many times: "How about younger children who cannot read or write?" For them we have a card called the "pothook" card which contains inverted "E's." It does not take long for a two-year-old to be taught how to say which way the "E's" are pointing. Children soon learn how to say whether the "E's" are pointing up, down, left or right. By shifting from one "E" to the other, they notice the white spaces between the lines of "E's." Unconsciously they notice that the black letter "E's" become blacker or appear to, which is a good thing for the sight.

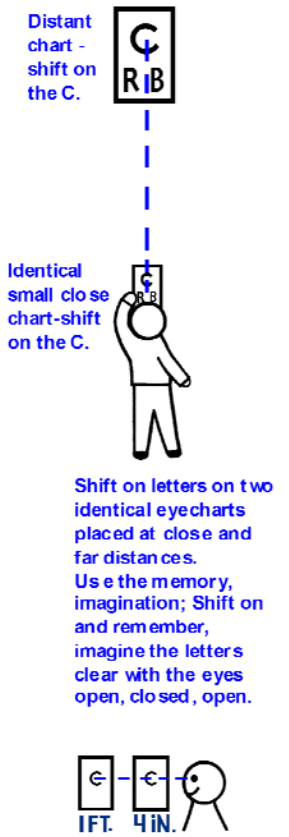
The "pot hook" test card is also used for sailors who have difficulty in reading flag signals at sea. Many mid-shipmen from Annapolis are at the present time using this card for the benefit of their sight.

There is a small black card with white letters for those who are partially blind, which is of great benefit to them. Such a patient is placed with his back to the sunlight and while the sun is shining on the black card, the white letters appear more clear and white and by closing the eyes often, avoiding the stare, the vision is not only improved, but if there is any pain or discomfort it soon disappears. The patient is advised to hold the card up close to the eyes and while the card is moved slightly from side to side about an inch or two, relief soon comes. The patient is then advised to hold the card a little further away day by day.

Patients to whom the large test card beginning with the letter "C" is given at the first visit find the pocket size test card, which is a duplicate of the large one, a great help. They shift from the small card, which is held in the hand, to the large card which is placed ten, fifteen, or twenty feet away. The patient looks at a letter of the small card, closes the eyes to rest them for part of a minute and then looks at the card in the distance and sees the same letter on the same line, (Switching close and far on identical familiar objects) which in most cases becomes clear and easy to see without strain.

For those who do close work, more than one small test card is used. During work hours two cards can be placed on the desk, for instance, or near to their work. One is placed to the left and the other to the right at an even distance of about two or three feet, or a little closer. The shifting, which is done rapidly and only takes a second to do, is done by first shifting from the work to the card at the left, back to the work, over to the card on the right and back to the work.

The patient soon notices that the small letters which were not seen clearly appear distinct. There are times when patients become discouraged because the sight does not appear to improve as rapidly as they expect. Sometimes the vision even becomes lower, which is discouraging. If those patients who have been to Doctor Bates can get in touch with him and explain just where the difficulty lies, the advice that will be given is sometimes all that is necessary.



I hesitate to mention my book to the subscribers of our magazine, but I always mention it to my patients. In it I have described as carefully as I could how important it is for patients to continue practicing after they have seen the Doctor. It is written so that everyone with eye trouble will find an article which will apply to his case. Those who have Dr. Bates' book find my book of additional help, and it is because of this that I mention it at this time. At the time the articles for my book were written, I had some blind and partially blind patients, an account of whose cases can be found in my book. Since the book has been written I have had further experience in treating difficult cases, which I try to explain in each number of the magazine.

I have found that practice with microscopic type is most helpful in near-sightedness. The patient holds the fine print as close as he can, looking at the white spaces between the black lines of type while blinking and then looking out of a window, for example, or at a distant corner of the room. Then looking at, shifting on the black fine print, remembering, imagining and seeing the fine print dark black and clear, then looking to the distant object and remembering, imagining, seeing it clear. Practice shifting on, remembering, imagining the fine print, then distant object, then fine print again, then distant object again… clear with the eyes: open, closed, open. Practice with both eyes together, then one eye at a time, then both together again. If vision is less clear in one eye, practice extra time with that eye to bring the vision equal, perfect in both eyes. Patch the eye not in use.

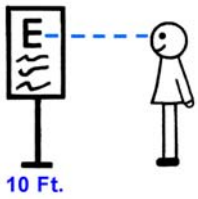
As I have said in this magazine before, all cases cannot be treated alike. There may be in one room at the same time ten or more cases of myopia, cataract, glaucoma or any other disease of the eye, and yet perhaps only one of the group would respond to one kind of treatment. For that reason, all cases have to be studied by the doctor or teacher and if one method of treatment does not help, another method must be applied immediately, so that the patient does not become discouraged. It takes just as much time in a great many cases to cure a simple case of imperfect sight as it does a more

serious eye trouble, and yet it does not require a college education to be able to be cured of imperfect sight by the Bates Method.
Switching, shifting on letters on two – three identical eyecharts (or 2-3 identical fine print cards) at two-three different close distances improves close vision and reading distance.

Test Card Practice

***By* EMILY A. BATES**

Editor's Note—The following is taken from Mrs. Bates' (Lierman) book, "Stories From The Clinic". Although the majority of our subscribers have Mrs. Bates' book, we believe that these suggestions can always be re-read with benefit.



Read the test card daily in good light, sunlight is best. Shift on a letter and remember, imagine it clear, correct with the eyes open, then in the imagination with the eyes closed, then with the eyes open again. Repeat. Blink. Practice on smaller letters. Practice with both eyes together, one eye at a time, then both eyes together again. Practice with the chart at various distances 5 ft. to 200 ft. + Practice on fine print at 20 inches and closer to 3, 2, 1, inches from the eyes.

1. Every home should have a test card.

2. It is best to place the card permanently on the wall in a good light.

3. Each member of the family or household should read the card every day.

4. It takes only a minute to test the sight with the card. If you spend five minutes in the morning practicing, it will be a great help during the day.

5. Place yourself ten feet from the card and read as far as you can without effort or strain. Over each line of letters are small figures indicating the distance at which the normal eye can read them. Over the big C at the top of the card is the figure 200. The big C, therefore, should be read by the normal eye at a distance of two hundred feet. If you can read this line at ten feet, your vision would be 10/200. The numerator of the fraction is always the distance of the card from the eyes. The denominator always denotes the number of the line read. If you can only read the line marked 40 at ten feet, the vision is 10/40.

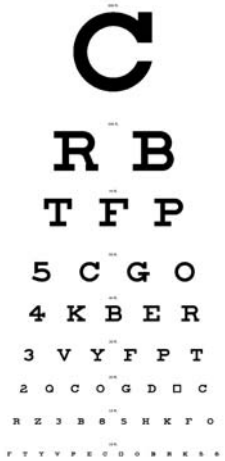
6. If you can only see the fifth line, for example, notice that the last letter on that line is an R. Now close your eyes, cover them with the palms of the hands and remember the R. If you will remember that the left side is straight, the right side partly curved, and the bottom open, you will get a good mental picture of the R with your eyes closed. This mental picture will help you to see the letter directly underneath the R, which is a T.

7. Shifting is good to stop the stare. If you stare at the letter T, you will notice that all the letters on that line begin to blur. It is beneficial to close your eyes quickly after you see the T, open them, and shift to the first figure on that line, which is a 3. Then close your eyes and remember the 3. You will become able to read all the letters on that line by closing your eyes for each letter.

8. Keep a record of each test in order to note your progress from day to day.

9. When you become able to read the bottom line with each eye at ten feet; your vision is normal for the distance, 10/10.

10. The distance of the Snellen test card from the patient is a matter of considerable importance. However, some patients improve more rapidly when the card is placed fifteen or twenty feet away, while others fail to get any benefit with the card at this distance. In some cases the best results are obtained when the card is as close as one foot. Others with poor vision may not improve when the card is placed at ten feet or further, or at one foot or less, but do much better when the card is placed at a middle distance, at about eight feet. Some patients may not improve their vision at all at ten feet, but at one foot. While some patients are benefited by practicing with the card daily, always at the same distance, there are others who seem to be benefited when the distance of the card from the patient is changed daily.
Experiment with the test card placed at a variety of close, middle, far distances.



Better Eyesight in Schools

By a Superintendent of Public Schools

Editor's Note -The following was written by a superintendent of public schools who not only helped his own eyes, but also helped the nurses to help the children. Permission was given these nurses to attend the clinic so that they could test the vision of each child and make records accordingly. Further advice was given by Dr. and Mrs. Bates and the work was carried

on so that within a year's time it was noticed by those not interested in the Bates Method that there were less eye-glasses being worn by the school children.
UNDER the direction of our school nurse, a Snellen test of the eyes of all our pupils was made. A novel health experiment was begun, a campaign for "Better Eyesight." A second test was made in order to verify the value and progress in this phase of health work which showed marvelous, practical, successful results. Only the skepticism of principals, teachers and pupils, and the lack of faithfulness in carrying out its conditions, prevented the wonderful results achieved from paralleling those of an Arabian Night's story.

A Snellen test card was placed permanently in the class rooms. The children were directed to read the smallest letters they could see from their seats at least once every day, with both eyes together and with each eye separately, the other being covered with the palm of the hand in such a way as to avoid pressure of the eyeball. Those whose vision was defective were encouraged to read it more frequently, and in fact needed no encouragement to do so after they found that the practice helped them to see the blackboard, and stopped the headaches, or other discomfort, previously resulting from the use of their eyes.

Some years ago the same system was introduced into some of the schools of New York City with an attendance of about ten thousand children. Many of the teachers neglected to use the cards, being unable to believe that such a simple method and one so entirely at variance with previous teaching on the subject, could accomplish the desired results. Others kept the cards in a closet except when they were needed for the daily eye drill, lest the children should memorize them. Thus they not only put an unnecessary burden upon themselves, but did what they could to defeat the purpose of the system, which is to give the children daily exercise in distant vision with a familiar object as the point of fixation. A considerable number, however, used the system intelligently and persistently, and in less than a year were able to present reports showing that of three thousand children with imperfect sight over one thousand had obtained normal vision by its means.

Not only does this work place no additional burden upon the teachers, but, by improving the eyesight, health, disposition and mentality of their pupils, it greatly lightens their labors.

9 - SUNLIGHT, Sunning

Sun-Gazing

***By* W. H. BATES, M.D.**

IT is a well-known fact that the constant protection of the eyes from the sunlight, or from other kinds of light, is followed by weakness or inflammation of the eyes or eyelids. Children living in dark rooms, where the sun seldom enters, acquire an intolerance for the light. Some of them keep their eyes covered with their hands, or bury their faces in a pillow and do all they possibly can to avoid exposure of their eyes to ordinary light. I have seen many hundreds of cases of young children brought to the clinic with ulceration of the cornea, which may become sufficient to cause blindness. Putting these children in a dark room is a blunder. My best results in the cure of these cases were obtained by encouraging the patients to spend a good deal of the time out of doors, with their faces exposed to the direct rays of the sun. In a short time these children became able to play and enjoy themselves a great deal more out of doors, exposed to the sunlight, than when they protected their eyes from the light. Not only is the sun beneficial to children with inflammation of the cornea, but it is also beneficial to adults.

When the patient looks down sufficiently, the white part of the eye can be exposed by gently lifting the upper lid, while the sun's rays strike directly upon this part of the eyeball. In most cases it is possible to focus the strong light of the sun on the white part of the eyeball with the aid of a strong convex glass, being careful to move the light from side to side quite rapidly to avoid the heat. After such a treatment, the patient almost immediately becomes able to open his eyes widely in the light. Plain sunlight (without use of the convex glass) is also very effective. Glass filters the light causing unbalanced, unhealthy (not full spectrum) sunlight to contact the eyes. The convex glass is only used by a experienced eye doctor and only in cases of extreme vision impairment, blindness and is not applied too often.
Looking at the bright area of the sky on a sunny day,(not directly into the sun) and closed eye sunning while facing directly at the sun are safer alternatives. **MOVE THE EYES, HEAD WHEN SUNNING**.

Demonstrate
Sunning and use of the Sunglass

1 - That sun treatment is an immediate benefit to many diseases of the eye.
Before the treatment, take a record of your best vision of the Snellen test card with both eyes together and each eye separately without glasses. Then sit in the sun with your eyes closed, slowly moving your head a short distance from

side to side, and allowing the sun to shine directly on your closed eyelids. Forget about your eyes; just think of something pleasant and let your mind drift from one pleasant thought to another. Before opening your eyes, palm for a few minutes. Then test your vision of the test card and note the improvement. Get as much sun treatment as you possibly can, one, two, three or more hours daily.

When the sun is not shining, substitute a strong electric light. A I,000 watt electric light is preferable, but requires special wiring. However, a 250 watt or 300 watt light can be used with benefit, and does not require special wiring. Sit about six inches from the light, or as near as you can without discomfort from the heat, allowing it to shine on your closed eyelids as in the sun treatment.

2 - That the strong light of the sun focused on the sclera, or white part of the eyeball, with the sun glass, also improves the vision.

After the eyes have become accustomed to the sunlight with the eyes closed, focus the light of the sun on the closed eyelids with the sun glass. Move the glass rapidly from side to side while doing this for a few minutes. Then have the patient open his eyes and look as far down as possible, and in this way, the pupil is protected by the lower lid. Gently lift the upper lid so that only the white part of the eye is exposed, as the sun's rays fall directly upon this part of the eyeball. The sun glass may now be used on the white part of the eye for a few seconds, moving it quickly from side to side and in various directions. Notice that after the use of the sun glass, the vision is improved.

Myopia and Presbyopia Relieved By Treatment

Floating Specks Relieved

By Emily C. Lierman

A woman, aged 51, whose vision had been impaired for a good many years, thought that she would try the Bates treatment and see if she could in time discard her undesirable glasses. When I tested her eyes, her vision was 15/70 with the right eye and 15/200 with the left. When I first meet a person I have an unconscious habit of looking at the eyes and I noticed particularly that this woman seldom blinked. She had worn glasses for twenty years, but recently she had worn them only at the theater, movies and in places where the light was dim.

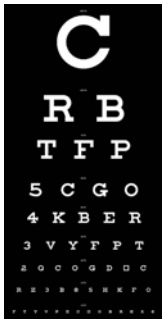
She complained of floating specks which at times seemed to her like miniature airplanes or tiny round white circles with gray centers. She boasted about being able to multiply these imaginary things floating before her eyes and to see them just as clearly with her eyes closed as she could with them open. It is hard to even imagine how terribly she strained in order to bring about such a condition.

She told me that previous to her coming to me she had visited an eye specialist who examined her eyes thoroughly and who told her that he could see no condition of her eyes that would cause floating specks, and that the retinas of her eyes were perfectly clear. He diagnosed her case as progressive myopia and then gave her a stronger pair of glasses than she had been accustomed to wearing. It was because of these stronger lenses and the discomfort that she experienced in trying to get accustomed to the wearing of them that prompted her to come to me.

The black card with white letters was used in testing the sight of my patient. While she was resting her eyes by palming, I placed the test card ten feet from her eyes instead of fifteen, just to see how much more she could read at a nearer distance. After a short period of palming, I asked her to read the card again and her vision had improved to 10/50. I was glad to see this improvement even though it was slight. However, I thought that it might have been her right eye which was reading the 50 line, even though she was reading the card with both eyes.

I wanted to be sure that improvement had been made, so I asked her to cover her right eye and read the card again with the left. She read up to the 50 line just the same, which I thought was a good improvement in so short a time. I told her how other patients had improved by practicing many times a day at home and that if she would follow my directions, and come to see me for a few lessons that she would make steady progress.

A few days later she came again and I noticed that she had acquired the habit of blinking. This was encouraging, because it is not often that patients who have only had one treatment can remember to keep up this good habit (correct vision habit) which is done unconsciously by people who have no trouble with their eyes. I did not mention this to the patient because I was afraid to make her conscious of the fact and again unconsciously get into her bad habit of staring. However, I made note of this in my record and the last time I saw her I drew her attention to it, which pleased her.



Look at the white spaces between sentences of fine print at a close distance to relax the mind, eyes and then look at, shift t on letters on a distant eyechart and see the letters clear.

Read fine print close to the eyes, in the sunlight daily or a few times a week for clear close and distant vision.

During her first treatment I did not make any special effort to relieve her trouble with the floating specks, nor did either one of us mention it. Before I tested her sight at her second treatment, she said she had something to tell me. She noticed for the first time that in trying to increase the number of floating specks which she formerly was able to do, she had produced a terrific pain in both eyes and so she stopped doing it.

At my patient's second treatment I used the black test card and I gave her a card with diamond type to hold near her eyes. I gave her the usual advice, saying that she was not to try to read the print but only to look at the white spaces between the lines of fine type. Closing the eyes often and remembering the white spaces helped her to see the letters of the distant card, seeing one letter at a time and then looking to the white spaces of the fine type. She read 10/40 with each eye separately, seeing each letter clear and white. She remarked that the whiter the letters appeared to her, the more black became the background of the card.

At her first treatment I noticed that the sclera or white parts of both her eyes were bloodshot and looked as though she did not get enough sleep. I wrote this in my record of her case, but I said nothing about it to her. At this, her second visit, I noticed that the patient's eyes looked clear and the white parts were as white as my own eyes.

I placed her before a mirror and told her to blink and to look at her right eye and then at her left. This helped her to see that her eyes were moving while she blinked. It was then that she remarked how white the white parts of her eyes were. I enjoy treating a patient like her because there is a great deal of satisfaction in having the patient know that there has been an improvement in so short a time. She told me that her husband had read to her for one whole hour while she was palming or just keeping her eyes closed and resting her arms on her lap or on the arms of her chair.

I gave her more advice about what she was to practice at home and then two days later I saw her again. This time I asked her to hold the fine print as close as she could read it and to read what she saw on the little card. During her first treatment, I did not ask her to read the fine print because I thought she would have no trouble in reading it. I was much surprised to hear her say that she could not read it.

I was out-of-town treating patients at this time and as I was away from Dr. Bates, I was not allowed by the medical authorities to use a retinoscope or an ophthalmoscope, or to do any examining of the eyes of any kind. I was perfectly willing to abide by the law and was told particularly by Dr. Bates himself to do so. Therefore, I could not determine just what was wrong and why, when she was myopic, she could not read fine type as most myopic patients can. However, that did not worry me in the least because all the articles comprising my book were reports of cases treated by me during more than nine years when I did not at any time use any apparatus in the treatment or in the cure of these cases. I did, however, use a sun glass.

Sunlight Treatments

Sunning - Face the sun, eyes closed and move the head slowly side to side.

Sunglass - Eyes closed. Head still. Sunglass with sunlight shining through the glass is moved quickly, 1-2 seconds on the eyelids.

Sunglass with eyes open - Head still. Eyes looking down, pupil under eyelid, away from the suns light. Sunglass moves the sunlight quickly, 1-2 seconds on the sclera, upper white area of the eye.

Sunglass is used only in cases of blindness, by an experienced ophthalmologist, only when other methods have not helped restore the vision.

Sun Treatment

Pull the upper eyelid up, look down, pupil away from sun, let the sun shine directly on the upper white area of the eye. Then, release the upper lid, look up, head back and pull the lower lid down and let the sun shine on the lower white area of eye.

This patient was sitting near a window with her back to the sun. I asked her to stand up while I turned the chair the opposite way and told her to keep her eyes closed as she sat in the sun, while I used the sun glass on her closed eyelids. I timed this treatment and gave her exactly eight minutes of the sun, focusing the sun glass on the closed eyelids, at the same time advising the patient not to open her eyes even for a second. Then I pulled down the shade to shut out the sunlight and immediately after opening her eyes she became able to read all of the fine print. And this with just that one treatment with the sunlight. After that she gave her eyes sun treatment many times a day and remained in the sunshine as much as possible, discarding her parasol which she usually carried with her and also leaving off her hat whenever it was possible.

All patients do not have the advantages which this patient had, I know. Yet patients are cured who have no chance to take sun treatment during the day except at their lunch hour. Patients who have found it impossible to get any sun treatment during the day have been successfully treated and cured of their imperfect sight by the use of a strong electric light.

While I was away from Dr. Bates, doing his work at the seashore and in other places, it was astounding to see so many people wearing dark glasses called "sun glasses" to protect their eyes from the glare of the sun. What a mistake it is to wear these glasses, even though so many specialists advise such a procedure! One cannot always wear them; therefore it is best for the human eye to get accustomed to all kinds of light without protection of any kind.

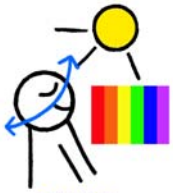
During the time I was treating this patient, while she was rapidly improving at each lesson, I had the great pleasure of meeting a noted criminologist who was very near-sighted. He had difficulty in seeing things clearly while driving his car and doing other necessary things which required good sight, unless he wore his strong glasses. This man mentioned the case of his brother, who had read Dr. Bates' book, "Perfect Sight Without Glasses" and practiced the methods advised.

Sunning

He said that every day he practiced in the hot sun in the desert where all he could see was sand, distant mountains and the sky; he would close his eyes and allow the sun to shine on his closed eyelids, then open his eyes and look off at the distant mountains, alternately shifting from the saddle of his horse to the distant mountains. He was not only cured of his imperfect sight, but also became able to look at the sun by shifting and blinking without any tearing of the eyes or any discomfort whatever. He also noticed, being an expert in the different breeds of horses, that those which had blinders put on them acquired cataract, or could not see as well as horses who were free from any incumberance as far as their eyes were concerned. After reading Dr. Bates' book he wrote to his brother and said that if the strong light of the sun was not injurious to an animal, why should it be injurious to the human eye? He was convinced that imperfect sight was caused by strain or an injury and if there were any sight at all that it could be improved by natural methods and not by the use of glasses.

Sunning
Face the sun, eyes closed, move the head side to side moving the sunlight over the entire retina.

To go back to my patient. She came for four days in succession for treatments, being encouraged at the progress she had made. At each treatment she improved, reading another line of the test card, by first reading the fine print as close as she could get it to her eyes. Shifting from a blank wall to the test card while she was standing and swaying her body slowly from side to side also helped in the improvement of her sight for the distance.



Sunning
+Face the sun, eyes closed, move the head side to side, up and down, circular...
Do the Sway.
+Open the eyes and look away from the sun to the bright sky, clouds, tree tops.
+Go outside in the sunlight daily.
Full spectrum sunlight contains all wave lengths, frequencies, colors, mixtures of colors of the light spectrum.
Full spectrum sunlight, not filtered through eyeglasses, contacts, sunglasses, windows keeps the eyes, brain, body healthy and vision clear.

Switch Visual Attention to Close and Far Distances

Each day I varied the treatment. One day I placed her by a window and had her shift from the fine print up close to her eyes to the distant signs which I called to her attention, and to tops of houses and other buildings. An American flag waved in the distance and shifting from the flag to the flagstaff helped her to see the staff more clearly and by keeping up the constant sway of the body, blinking easily, but steadily all the while, she became able to see the harbor in the distance and also the boats which were moored near the shore. She told me that this was the first time in her life that she could ever see at such a distance.

She was the means of changing the mind of a skeptical husband who thought that the Bates treatment was a myth or something like it. However, he decided that if palming and swinging was a good thing for his wife and could make her so much more contented in her home duties than she was before, that perhaps it would help him to be a more agreeable person in his office as well as in his home. With just a few suggestions from me, my patient treated him successfully at home, and her last report was that he was reading his newspaper and book type without the use of his glasses.

I realized more and more that if Dr. Bates could live until the end of time that it would be his cured patients who would advertise him in the right and only way. Times without number there have been magazine and newspaper writers, as well as authors of books who were cured after being treated by Dr. Bates who offered to advertise him in the way that they thought best.

Many years ago, without realizing that it would harm him, Dr. Bates allowed these grateful patients to advertise him in their own way. They unintentionally caused him much worry and concern with the medical profession. The only way to make Dr. Bates' work known to the world is to have his cured patients talk about the benefit they received and in that way help others who are suffering from defective vision. (Optical Industry Trying to Hide Bates Method From the Public.)

During the last treatment I gave my patient she read the various test cards, 15/15, with the exception of the black card with white letters, which she was able to read 15/10. Also, the **floating specks had entirely disappeared after her third treatment.** This case was very interesting, because it is seldom that one has **presbyopia and myopia simultaneously.**

To carry out treatment successfully, I try to be careful to vary the method of treatment at each lesson. I find it true also that if I try out things by myself, without the help of Dr. Bates, or his suggestions in the matter, that I fail sooner or later. Our students will benefit greatly by doing the same thing always. If the student is in doubt as to whether he or she can cure a difficult case, it is always best to write or come directly to headquarters and find out what is wrong. It is Dr. Bates' desire *always* to help the students to cure any case which may be difficult.

Dark Glasses Are Injurious

He was a very intelligent chauffeur, and very polite and popular with most people. I enjoyed listening to his experiences in driving various types of cars. Nothing seemed to give him so much pleasure as to get into a "jam" and get out without suffering any injury to his own car or without tearing the "enemy" apart. The "enemy," as he explained, were the numerous other cars which were driven by chauffeurs who did not understand their business very well and who enjoyed teasing the inexperienced drivers.

One day we were driving to the seashore. The sun was very bright and the reflection of the light from the sun on the water was very strong and made most of the occupants of the car very uncomfortable. Personally I enjoyed the strong light of the sun. The chauffeur did not wear glasses for the protection of his eyes from the sun or dust and I asked him if he had ever worn them. He very promptly answered me by saying that he had worn them at one time, but discontinued wearing them because he found that after wearing them for a few days, his eyes became more sensitive to the light than they were before. He said he could not understand why it was that when he wore glasses to protect his eyes from the dust he accumulated more foreign bodies in his eyes than ever before. This seemed strange to the people in the car and they asked him to explain. It was decided that when the dust got into the eyes, the glasses prevented the dust from going out.

The eyes need the light of the sun. When the sun's rays are excluded from the eyes by dark glasses, the eyes become very sensitive to the sun when the glasses are removed.

Eye doctors sell sunglasses knowing it will lead to unclear vision, prescriptions for eyeglasses, eye surgery. Lack of sunlight causes cataracts and other eye problems.

The Sun as a Cure for Imperfect Sight

***By* EMILY A. MEDER**

The article reprinted below gives us the opportunity to dwell in a little more detail on the benefits of the sun for all cases of defective vision. Although this subject was discussed in the January issue, too much stress cannot be laid on it:

SIGHT RESTORED BY SOLAR ECLIPSE

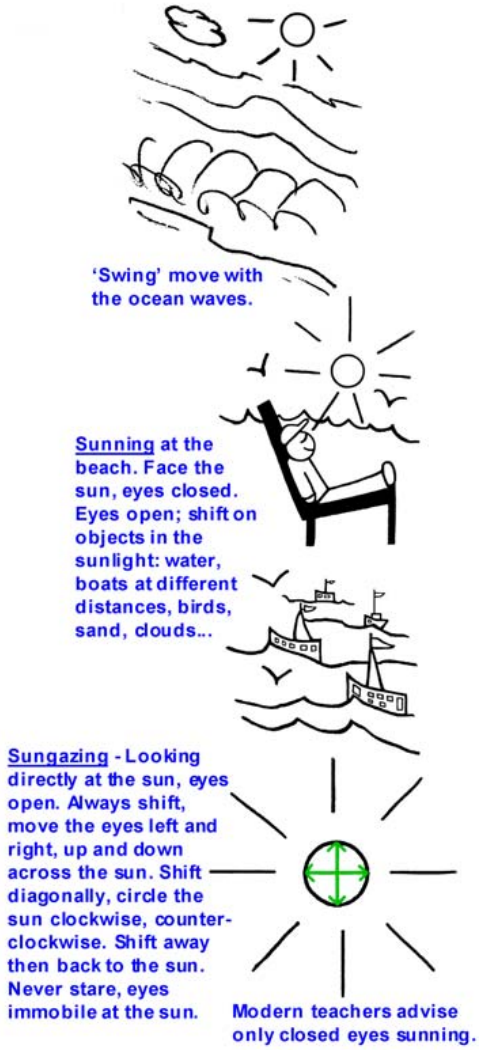
Lodi, N. J, January 27.—As the result of looking directly at the eclipse of the sun last Saturday, Louis Pretola, 54 years old, professes to have regained his sight after having been unable to see without glasses for seven years due to cataracts.

Pretola had undergone four unsuccessful operations for removal of the cataracts.

After he had gazed at the sun without smoked glasses he suffered severe pains, but within a few hours his sight began to return to normal and he discarded the strong glasses he had worn for seven years.—Cincinnati "Inquirer."

Note by Clark Night; Eye Doctors have stated for years that looking at a solar eclipse without eye protection can cause eye/vision impairment.

I do not advise looking at a eclipse, even though in this case it helped the persons vision.



I HAD an experience last week, which served to bring home more forcibly, the great healing, alleviating power of the sun.

I was to spend a few days at the ocean-side, and arrived in the midst of a terrific storm. The sky was black, the rain came down in great sheets, and the waves beat ceaselessly against the rocks under my window. It was a little frightening, watching this, but soon the rhythm of the gathering, rising, and receding of the huge billows seemed to form a natural swing. I could relax by moving forward and backward, almost imperceptibly, with the rise and fall of the waves.

The next day was beautiful, with the ocean smooth and peaceful, and the sun shining gloriously on everything. I left the hotel for a stroll along the boardwalk, but upon emerging from the dim light into the blazing sun, I was blinded. I tried to open my eyes but found them straining to close, and it seemed as though a great flashlight was being focused on my eye-balls. The sudden strain brought on a severe headache. Perhaps it was the glare of the sun on the water, or it may have been the intensified brightness after a dark and gloomy day that caused the sudden blindness.

There was a summer house about fifty yards off, overlooking the ocean. I made for that, and sat down, facing the water,

and with the sun beating down on my closed lids. After about fifteen minutes of this sunbath, I was able to open my eyes with comfort, and look across the water. The glare was gone, but I found it difficult to look directly at the sun. I just lazily shifted my glance from one object to another. A flock of sea-gulls amused me for about an hour. In my interest in them, I forgot about the sun's effect on my eyes, and caught myself glancing straight up, watching the flight of a particularly energetic pair of birds. There were so many of them, they were all so busy and active, that my eyes were not still for one moment.

I palmed again for about ten minutes, and when I removed my hands, I saw a fleet of four sailing ships away off in the distance. I could barely discern the outline, but this was more remarkable, because I did not see them when I first sat down, and they were much nearer then.

Before I left, I could look directly at the sun for about five seconds, but had to keep it swinging. Another unusual feature was that the sun, instead of being a blazing red, as it first appeared, changed to a silver or white color. This was more relaxing and soothing. Dr. Bates informed me that the sun always looks white to those with perfect sight.

That first attack was the only one I had during my stay. I enjoyed the sun and glanced up at it whenever I thought to do so, without discomfort. Pain and tension immediately disappeared.

With the spring on the way, there will be more opportunity to give your eyes a sun treatment. Try it.

Modern Scientists warn to never look at the sun during a eclipse. It can harm the eyes.

Read all directions for correct Sunning, Sunlight, Sun-Gazing Treatments in this book. Keep the eyes closed, move the eyes, head, face side to side. Avoid sunburn, overexposure.

#10 - FINE PRINT, Reading, Clear Close Vision

Fine Print a Benefit to the Eye

Its Effect the Exact Contrary of What Has been Supposed

Seven Truths of Normal Sight

1—Normal Sight can always be demonstrated in the normal eye, but only under favorable condition.
2—Central Fixation: The letter or part of the letter regarded is always seen best.
3—Shifting: The point regarded changes rapidly and continuously.
4—Swinging: When the shifting is slow, the letters appear to move from side to side, or in other directions, with a pendulum-like motion.
5—Memory is perfect. The color and background of the letters, or other objects seen, are remembered perfectly, instantaneously and continuously.
6—Imagination is good. One may even see the white part of letters whiter than it really is, while the black is not altered by distance, illumination, size, or form, of the letters.
7—Rest or relaxation of the eye and mind is perfect and can always be demonstrated.
When one of these seven fundamentals is perfect, all are perfect.

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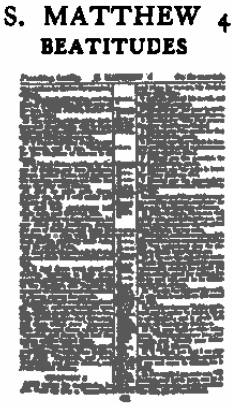
When one of these seven fundamentals is perfect, all are perfect.

It is impossible to read fine print without relaxing. Therefore the reading of such print, contrary to what is generally believed, is a great benefit to the eyes. Persons who can read perfectly fine print, like the above specimen, are relieved of pain and fatigue while they are doing it, and this relief is often permanent. Persons who cannot read it are benefited by observing its blackness, and remembering it with the eyes open and closed alternately. By bringing the print so near to the eyes that it cannot be read pain is sometimes relieved instantly, because when the patient realizes that there is no possibility of reading it the eyes do not try to do so. In myopia, however, it is sometimes a benefit to strain to read fine print. Persons who can read fine print perfectly imagine that they see between the lines streaks of white whiter than the margin of the page, and persons who cannot read it also see these streaks, but not so well. When the patient becomes able to increase the vividness of these appearances [see *Halos*, February number] the sight always impro

Read Fine Print

Shift dot to dot (part to part) on the C. See one small part of the C darkest black and clearest at a time in the center of the visual field. The center of the visual field moves with the eyes as the eyes shift part to part on the C. Shift point to point on the top right hook in the blue circle.



ALL of our imperfect sight is just the result of our using our eyes wrong, and permitting bad habits to grow on us. Staring is only a bad habit, but it causes a great deal of trouble. When it is stopped and the eyes are rested by palming and blinking, the sight is immediately benefited.

Bad habit number two: The reading of large type in preference to finer print. It requires more of an effort to see a large letter than a small one, strange as it may seem. When you look at the big C on the Snellen Test Card, you don't see it all at once. You have to look at one part best, the hook on the upper right hand corner or the curve on the left side. You cannot look at the hook, the space on the right and the curve on the left side all at once. Some people think they see it at the same time, but they do not. Their eyes shift from one point to another, unconsciously.

Fine print is a benefit because it cannot be read while the eyes are under a strain. They have to be relaxed. For instance, in reading the chapter printed below, you cannot accomplish anything by staring at the letters, or screwing your face into a knot. Do not look at the letters but at the white spaces between them, and imagine them whiter than the margin. Blink and shift constantly to avoid the stare. If your eyes feel strained, stop and palm. You will notice that where it all looked blurred before, a word will appear clear and distinct. By constant practice more words clear up, until the entire chapter can be read easily.

RELAXATION FROM FINE PRINT

Fine print card placed in front of the eyes, lower part rests on nose, upper part on eyebrows. Look at the card without trying to see. Relax. Move the card side to side, slowly, a short distance. The print becomes clear when the eyes, mind relax. Microscopic vision.

+ A BUSINESS card, 3" x 2" with fine print on one side is held in front of the eyes as near as possible, the upper part in contact with the eyebrows, the lower part resting lightly on the nose.

+ The patient looks directly at the fine print without trying to see. Being so close to the eyes most people realize that it is impossible to read the fine print and do not try, in this way they obtain a measure of relaxation which is sufficient to benefit the sight very much.

+ The patient moves the card from side to side a short distance slowly and sees the card moving provided the movement is not too short or too slow. The shorter the movement and the slower it is, the better.

+ Some patients, although the card is held very close, note that the white spaces between the lines become whiter and the black letters become blacker and clearer. In some cases one or more words of the fine print will be seen in flashes or even continuously as long as no effort is made to see or to read the fine print.

+ This movement of the card should be kept up to obtain the best results, for many hours every day. The hand which holds the card may soon become fatigued; one may then use the hands alternately. Some patients vary this by holding the card with both hands at the same time.
(This does not need to be done for many hours a day. Just a few minutes is beneficial.)

The amount of light is not important.

READ FINE PRINT

Many nearsighted patients can read fine print or diamond type at less than ten inches from their eyes easily, perfectly and quickly, by alternately regarding the Snellen test card at different distances, from three feet up to fifteen feet or further. The vision may be improved, at first temporarily, and later, by repetition, a permanent gain usually follows.

It is a valuable fact to know, that when fine print is read perfectly, the near-sightedness or myopia disappears during this period. It can only be maintained at first for a fraction of a second, and later more continuously.

Nearsighted patients and others, with the help of the fine print can usually demonstrate that staring at a small letter always lowers the vision, and that the same fact is true when regarding distant letters or objects.

With the help of the fine print, the nearsighted patient can also demonstrate that one can remember perfectly only what has been seen perfectly; that one imagines perfectly only what is remembered perfectly, and that perfect sight is only a perfect imagination.

A great many people are very suspicious of the imagination, and feel or believe that things imagined are never true. The more ignorant the patient, the less respect do they have for their imagination, or the imagination of other people. It comes to them as a great shock, with a feeling of discomfort, to discover that the perfect imagination of a known letter improves

the sight for unknown letters of the Snellen test card, and for other objects.

It is a fact, that one can read fine print perfectly, with perfect relaxation, with great relief to eyestrain, pain, fatigue and discomfort, not only of the eyes, but of all other nerves of the body.

Fine Print

When the vision for distance becomes nearly normal, the vision at the near point can then be improved to normal. Hold a card of fine print about ten inches from the eyes. Do not look directly at the letters. Imagine that where the bottom of the letters comes in contact with the white space between the lines, that the whiteness is increased, and with practice your can become able to imagine a thin, white line, which is below the letters and whiter than the rest of the white space. When this thin, white line is imagined white enough, the letters are imagined black enough to be read.

If you fail to imagine this thin, white line, with your eyes open you may be able to imagine it with your eyes closed. Then open your eyes and imagine it as well as you can. Close your eyes and remember or imagine the thin, white line whiter. Then bring the card up an inch or two closer and imagine the thin, white line as well with the eyes open as you can remember it with the eyes closed. By alternately remembering, with the eyes closed, the thin, white line quite perfectly at ten inches, it becomes possible to imagine it with the eyes open at nine inches or six inches, or even nearer, and to imagine it as well with the eyes open as with the eyes closed. When you become able to imagine the thin, white line as well at six inches with the eyes open, as you can remember it with the eyes closed, the hypermetropia is usually corrected. This treatment has cured hypermetropia of 16 D.S.

SUN TREATMENT (with Memory, Imagination and Palming) : An important part of the routine treatment is the use of the direct sunlight. The patient is told to sit in the sun with his eyes closed, moving his head a short distance from side to side, and allowing the sun to shine directly on his closed eyelids. He is instructed to forget about his eyes, to think of something pleasant and let his mind drift from one pheasant thought to another. Before opening his eyes, he palms for a few minutes. When the sun is not shining, a strong electric light (I000 watts) is substituted. The patient sits about six inches from the light, or as near as he can without discomfort from the heat, allowing it to shine on his closed eyelids as in the sun treatment.

FINE PRINT: If the patient has presbyopia, he is directed to practice with the fine print in the Fundamental card in the following way: The card is held at first at the distance from his eyes at which he sees best. He is told not to look directly at the letters, but just at the white spaces between the lines and imagine that they are perfectly white - whiter than the margin. He is asked if he can imagine that there is a thin, white line beneath each line of letters, and that it is whiter than the rest of the white spaces between the lines.

When this line is imagined perfectly white, the eyes then shift to, look directly at the letters and the letters are read without effort or strain. If the patient cannot imagine the white line easily, he is told to close his eyes and think of a series of white objects; he may recall a white-washed fence, a snow drift, several pieces of white starch, or a pot of white paint. He is then directed to open his eyes again and look at the white spaces, imagining them to be as white as the white objects he remembered. He is told to close his eyes again and imagine that he has a pot of white paint and a fine pen and that he is drawing a thin, white line beneath a line of print, then to open his eyes and imagine that he is drawing a thin white line beneath each line of letters on the Fundamental card, as he moves his head from side to side. He is told to blink as he shifts from one end of the line to the other, to occasionally look away and to close his eyes frequently for half a minute or so to rest them. Imagining the white spaces and white line perfectly white causes the mind, eyes to remove the 'grey blur' and other incorrect images from the white page in and around the black letters, words. The brain imagines the page the way it truly appears; clear and white. This causes the letters to be seen dark black, distinct, and clear.

By practicing in this way, letters which could not be seen before appear black and distinct. As one's ability to read is improved, the card is brought closer and the patient is instructed to practice in this way, until the entire card can be read at six inches from his eyes. If it is impossible for him to do this during his treatment at the office, he is directed to practice in this way every day at home. The patient is told that fine print cannot be read when an effort is made see it and that it can only be read when the eyes are relaxed. For this reason, the reading of fine print is helpful in producing relaxation.

Take a break anytime and look at the white spaces, thin white line to relax the eyes, mind. Shift on them. Avoid staring, eye immobility.

Use the soft end of a white imaginary feather (nosefeather) to imagine painting the white spaces and thin white line with bright, glowing, pure white paint.

BLIND FOR FIVE YEARS

(This case should encourage those who have only slight perception of light.)

A few weeks ago there was lead into the Clinic a man of 65 who told us he had been blind for five years and the doctors at the hospital had told him nothing more could be done for him, as his case was hopeless.

On testing his sight we found the right vision 3/80 and the left vision only just perception of light.

He was eager to know if we thought he could be helped and listened attentively while he was being told how to palm and how to strengthen his eyes by splashing them with cold water. He started right away palming and was left to amuse himself in this way, while other patients were attended to, and afterwards he said his eyes felt rested and much easier. He was asked what he was to do at home during the week to see if he had remembered the directions given to him, and then went home in a very hopeful frame of mind.

The following week he came along and looked rather more cheerful and was very excited to tell us that he thought he could see a little with the blind eye. Both eyes were tested, the right one was now 3/60, and with the blind eye he could see the big C, the 200 line when the Chart was held close.

Two weeks later we held the Clinic in another room and we were amazed to see him walk boldly in alone. He was looking much better and very proud of himself. He had been under the doctor's care for the last two or three months as he was generally run down, and this week he was delighted to tell us that he had caught his doctor napping. His doctor had greeted him one morning by saying how much better his eyes were looking, how much brighter and more alive. "Yes, because I am having treatment for them," said our friend. He told the doctor of the treatment, whose reply was that it was rubbish and could not possibly do any good. "Well, you said yourself how much better they were looking, and they must look very different for you to notice them and remark on them, and besides I can see more than I did."

He continues to be very much in earnest and is now able to see 3/30 with the right eye, and can read the 40 line quite easily close up to the other eye which previously had only perception of light.

A MAN WHO HAS WORN GLASSES FOR 60 YEARS

This man without his glasses was very helpless. He had no vision at all with the right eye, just perception of light, but very slight. The left eye was such that he could read with difficulty the 60 line at 6 inches. In three weeks the vision with both eyes was improved, so that at 6 inches he could read the 20 line comfortably and the 15 line with difficulty. The right eye is better but the improvement is not so marked as that of the left. It is a great joy to help this man, he is so grateful for the smallest thing that one does, and his childlike faith and obedience is something rarely seen. The reason he has made so much progress in so short a time is due to the fact that he cooperates willingly and with pleasure and is really interested in getting his sight.

One notices that on the whole people with slightly imperfect sight are not sufficiently interested in getting their sight normal to take much trouble. If it could be done for them they would not mind; but they do not like to bring it about themselves. The continuous relaxation practiced by those with imperfect sight is a joy to see and they are well paid for it.

Fine Print

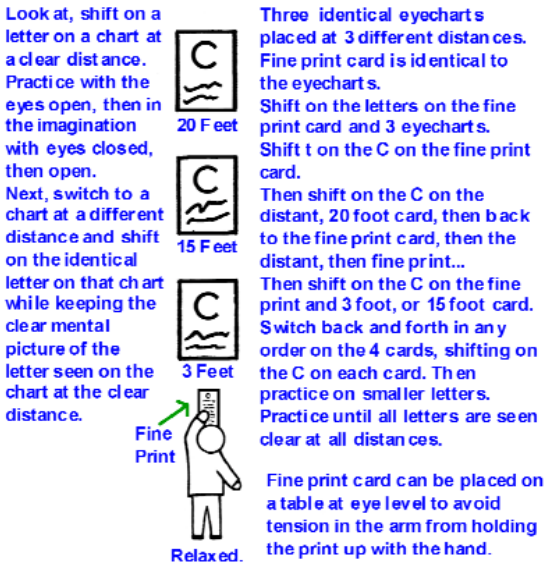
By W. H. BATES, M.D.

THE photographic reduction of the fine print can be used with great benefit to patients suffering from high degrees of nearsightedness. At first it has to be held at a certain close distance from the eyes and cannot be seen so well if placed an inch further or an inch nearer. When read easily or perfectly the white spaces between the lines appear much whiter than they really are and the card seems to be moving from side to side or in other directions, if one takes the trouble to notice it. The eyes are blinking frequently and this is also usually an unconscious act.

More perfect rest or relaxation of the eyes is obtained by reading this fine print perfectly than by doing some other things. By alternately looking at the large letters of the Snellen Test Card at five or ten feet or further and reading the fine print close to the eyes, one can obtain flashes of improved vision at the distance. By practicing, these flashes become more frequent and the letters are seen more continuously. The method is to be highly recommended because it seems to be one of the best methods of improving the distant vision. (Fine print also improves close vision.)

Fine Print

By W. H. BATES, M.D.



MANY near-sighted patients can read fine print or diamond type at less than ten inches from their eyes, easily, perfectly, and quickly by alternately regarding the Snellen Test Card at different distances, from three feet up to fifteen feet or further. The vision may be improved, at first temporarily, and later by repetition, a permanent gain usually follows.

It is a valuable fact to know that when fine print is read perfectly, the near-sightedness disappears during this period. It can only be maintained at first for a fraction of a second, and later more continuously.

Near-sighted patients and others, with the help of the fine print can usually demonstrate that staring at a small letter always lowers the vision and that the same fact is true when regarding distant letters or objects.

With the help of the fine print, the near-sighted patient can also demonstrate that one can remember perfectly only what has been seen perfectly: that one imagines perfectly only what is remembered perfectly: and that perfect sight is only a perfect imagination.

A great many people are very suspicious of the imagination and feel or believe that things imagined are never true. The more ignorant the patient, the less respect do they have for their imagination or the imagination of other people. It comes to them as a great shock, with a feeling of discomfort and annoyance that the perfect imagination of a known letter improves the sight for unknown letters of the Snellen Test Card.

It is a fact that one can read fine print perfectly with a perfect relaxation, with great relief to eye-strain, pain, fatigue and discomfort, not only of the eyes, but of all other nerves of the body.

Regarding fine print, even when not read, is also of use in improving the distant vision of the Snellen Test Card, and the ability to read at a near point in patients whose imperfect sight is caused by Astigmatism, Hypermetropia (far-sight), Presbyopia and others.

Reading fine print brings clear close and distant vision.

This simple, effective cure has been hidden from the public by the optical/medical industry for years!

Presbyopia: its Cause and Cure

By W. H. Bates, M.D.

Most people, when they reach the age of forty years or older, become unable to read or see things clearly at the near point, while their sight for distance is usually good. This is called presbyopia or middle-aged sight. It is sometimes, although infrequently, found in children.

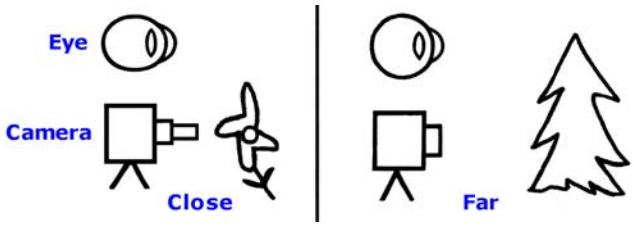
Old Gentleman Cures Unclear Close Vision by Reading, Writing Fine Print

While it is sometimes very difficult to cure presbyopia, it is, fortunately, very easy to prevent it. Oliver Wendell Holmes told us how to do it in "The Autocrat of the Breakfast Table," and it is astonishing , not only, that no attention was paid to his advice, but that we should be warned against the very course which was found so beneficial in the case he records:

"There is now living in New York State," he says, "an old gentleman who, perceiving his sight to fail, immediately took to exercising it on the finest print, and in this way fairly bullied Nature out of her foolish habit of taking liberties at the age of forty-five or thereabouts. And now this old gentleman performs the most extraordinary feats with his pen, showing that his eyes must be a pair of microscopes. I should be afraid to say how much he writes on the compass of a half dime, whether the Psalms or the gospels, or the Psalms and the gospels, I won't be positive."

Presbyopia Cure

Persons, whose sight is beginning to fail at the near-point, or who are approaching the presbyopic age should imitate the example of this remarkable old gentleman. Get a specimen of diamond type, and read it every day in an artificial light, (sunlight is best) bringing it closer and closer to the eye till it can be read at six inches or less. Or get a specimen of type reduced by photography until it is much smaller than diamond type, and do the same. You will thus escape, not only the necessity of wearing glasses for reading and near work, but all of those eye troubles which now so often darken the later years of life.



Reading fine print prevents cataract and other eye problems. The smaller the print, the more vision improves. Shifting point to point on tiny details of small objects; stone, jewelry… at close distances from the eyes also improves close vision. Practice relaxed, no effort, no force.

I remember an old darkey who said he was a hundred and six years old, who was quite blind for distant objects, and was unable to read an ordinary newspaper at one foot or further. With the aid of eye education, his vision for distance soon became normal, and his vision for near point also improved so that he could read diamond type at six inches without glasses.

The cause of presbyopia has been ascribed by most authorities to a hardening of the lens of the eye, so that the focus of the lens cannot be readily altered. This theory is incorrect. When the lens has been removed for cataract or some other reason, most cases have become able, by education, to read fine print at six inches or less without glasses.

Authorities on ophthalmology have always claimed that the focus of the eye was benefited by a change in the curvature of the lens. The evidence that the lens is not a factor in accommodation has only been recently proved. The eye changes its focus by a change in its length, brought about by the action of the muscles on the outside of the eyeball. In near-sightedness, the eyeball is squeezed by the external muscles and the optic axis is lengthened, i.e., the eyeball becomes elongated.

The human eye acts in the same way as a photographic camera acts. If a picture is taken at the near point, the bellows of the camera is lengthened in order to focus the near object, while to focus objects at the distance the bellows of the camera is shortened. When the eye is at rest, it has the form of a perfect sphere. See more info on the lens, outer, inner eye muscles, accommodation in the July, 1926 'The Great Delusion' issue of Better Eyesight Magazine.

Fine Print

When people are able to read fine print with perfect sight at six inches or further, the white spaces between the lines are seen or imagined whiter than the rest of the card. The ability to imagine the white spaces between the lines to be very white is accomplished by the memory of white snow, white starch or anything perfectly white, with the eyes closed for part of a minute. Some patients count thirty while remembering some white object or scene with the eyes closed. Then, when the eyes are opened for a second, the white spaces between the lines of black letters are imagined or seen much whiter than before. By alternately remembering something perfectly white with the eyes closed and opening them for a few seconds and flashing the spaces, the vision or the imagination of the white spaces improves. One needs to be careful not to make an effort or to regard the black letters. When the white spaces between the lines are imagined sufficiently white, or as white as they can be remembered with the eyes closed and with the eyes open; then, look at the black letters, see them clear, the black letters are read without effort or strain, or without the consciousness of regarding the black letters.

Read fine print for clear close vision.
See the 'Swing':
Place the fine print 6 in. from the eyes and the thumb 5 in. from the eyes in front of the fine print and 1/4 in. to the left of a letter. Move the head and eyes side to side and see the thumb move opposite the movement of the head/eyes and the fine print move in the same direction with the head/eyes. This prevents staring, keeps the eyes moving, relaxed and vision clear. See the thin white line.

The Thin White Line

Many people discover that they can imagine a thin white line where the bottom of the letters comes in contact with the white spaces. This thin line is very white, and the thinner it is imagined to be, the whiter it becomes. When it is imagined perfectly, the letters are read without the consciousness of looking at them and the vision or imagination of the white is very much improved. This thin white line can be imagined much whiter than any other part of the page, and is more easily imagined or seen than any other part. Of course, the eyes have to shift from the thin, white line to the letters in order to see them, but the shifting is done so readily, so continuously, so perfectly that the reader does not notice that he is constantly shifting. When the vision of the thin, white line is imperfect, the shifting is slow and

imperfect and the vision for the letters is impaired. The memory or the imagination of the thin, white line is usually so easy, so perfect and so continuous that everything regarded is seen with maximum vision. Patients with cataract who become able to imagine this thin, white line perfectly, very soon become able to read the finest print without effort or strain, and the cataract always improves, or becomes less. Patients with hypermetropia, astigmatism, squint, diseases of the retina and optic nerve are benefited in every way by the memory or the imagination of the thin, white line. Reading fine print with perfect sight benefits or improves all organic diseases of the eye.
Another reason Dr. Bates has the person remember, imagine and look at the white spaces, white line is that: white functions as/with 'light', and activates the eyes retina. For this reason there are eyecharts with white letters printed on a black, blue… background. They are easier to see and relaxing especially for patients with low vision.

FINE PRINT. When school children are able to read fine print at the distance from their eyes at which they see it best, the eyestrain is relieved as fine print cannot be read with an effort. The distance where fine print is seen best varies with people. All children should not be encouraged to see fine print at the same distance from their eyes.
With practice, relaxation, people can see fine print up close to the eyes, even seeing it in a 'microscopic view' close to the eyelashes of one eye at a time. Bates teaches to switch back and forth, close and far, shifting on the fine print up close and a distant object with both eyes, then one eye at a time, then both together again. Switching on two fine print cards at close distances about 3 inches to 1 foot apart also improves close vision. See the 'correct vision habits card' in our other book.

FINE PRINT: If the patient has presbyopia, he is directed to practice with the fine print in the Fundamental card in the following way: The card is held at first at the distance from his eyes at which he sees best. He is told not to look directly at the letters, but just at the white spaces between the lines and imagine that they are perfectly white - whiter than the margin. He is asked if he can imagine that there is a thin, white line beneath each line of letters, and that it is whiter than the rest of the white spaces between the lines.

When this line is imagined perfectly white, the eyes then shift to, look directly at the letters and the letters are read without effort or strain. If the patient cannot imagine the white line easily, he is told to close his eyes and think of a series of white objects; he may recall a white-washed fence, a snow drift, several pieces of white starch, or a pot of white paint. He is then directed to open his eyes again and look at the white spaces, imagining them to be as white as the white objects he remembered. He is told to close his eyes again and imagine that he has a pot of white paint and a fine pen and that he is drawing a thin, white line beneath a line of print, then to open his eyes and imagine that he is drawing a thin white line beneath each line of letters on the Fundamental card, as he moves his head from side to side. He is told to blink as he shifts from one end of the line to the other, to occasionally look away and to close his eyes frequently for half a minute or so to rest them. Imagining the white spaces and white line perfectly white causes the mind, eyes to remove the 'grey blur' and other incorrect images from the white page in and around the black letters, words. The brain imagines the page the way it truly appears; clear and white. This causes the letters to be seen dark black, distinct, and clear.

By practicing in this way, letters which could not be seen before appear black and distinct. As one's ability to read is improved, the card is brought closer and the patient is instructed to practice in this way, until the entire card can be read at six inches from his eyes. If it is impossible for him to do this during his treatment at the office, he is directed to practice in this way every day at home. The patient is told that fine print cannot be read when an effort is made see it and that it can only be read when the eyes are relaxed. For this reason, the reading of fine print is helpful in producing relaxation.
Take a break anytime and look at the white spaces, thin white line to relax the eyes, mind. Shift on them. Avoid staring, eye immobility. Use the soft end of a white imaginary feather (nosefeather) to imagine painting the white spaces and thin white line with bright, glowing, pure white paint.

SUGGESTIONS

1. If the vision of the patient is improved under the care of the doctor, and the patient neglects to practice, when he leaves the office, what he is told to do at home, the treatment has been of no benefit whatever. The improved vision was only temporary. Faithful practice permanently improves the sight to normal.
2. If the patient conscientiously practices the methods, as advised by the doctor, his vision always improves. This applies to patients with errors of retraction, as well as organic diseases.
3. For cases of squint we find that the long swing is beneficial to adults and to children.
4. When a patient suffers with cataract, palming is usually the best method of treatment, and should be practiced many times every day.
5. All patients with imperfect sight unconsciously stare, and should be reminded by those who are near to them to blink often. To stare is to strain. Strain is the cause of imperfect sight.

The following rules will be found helpful if faithfully observed:—

6. While sitting, do not look up without raising your chin. Always turn your head in the direction in which you look. Blink often.
7. Do not make an effort to see things more clearly. If you let your eyes alone, things will clear up by themselves.

8. Do not look at anything longer than a fraction of a second without shifting.
9. While reading, do not think about your eyes, but let your mind and imagination rule.
10. When you are conscious of your eyes while looking at objects at any time, it causes discomfort and lessens your vision.
11. It is very important that you learn how to imagine stationary objects to be moving, without moving your head or your body.
12. Palming is a help, and I suggest that you palm for a few minutes many times during the day, at least ten times. At night just before retiring, it is well to palm for half an hour or longer.

AIDS TO PERFECT SIGHT BY TREATMENT WITHOUT GLASSES

Psalm 23
A Psalm of David

S. Matthew 4
Beatitudes

Psalm 119

INSTRUCTIONS

Dr. W. H. Bates has made many remarkable discoveries relative to the prevention and cure of imperfect sight without the aid of glasses during his thirty-eight years of research and experimental work. Among the most important of these discoveries, and one that he has proved again and again, is the following:

FINE PRINT IS A BENEFIT TO THE EYE—LARGE PRINT IS A MENACE.

It is impossible to read microscopic or very fine print by **making an effort to see it.** It can only be read when the mind and eyes are relaxed.

The above chapters are written in diamond and microscopic type. At first it may seem difficult to become accustomed to the fine print, but by looking at it without trying to read it, the print will become discernible.

Some people find it beneficial to imagine the white spaces between the lines, whiter than the margin. When one imagines the white spaces perfectly white, the print becomes very black and legible, apparently of its own volition.

Large print is detrimental to perfect sight because the eye tries to see the whole letter at once. When one is looking at an object, for instance, a chair, the object blurs if the whole is seen at once. You cannot possibly see the arms, legs, back and body of a chair all at once. You either see the back first or the seat. This is Central Fixation. Seeing best where you are looking.

We know that if these instructions are carefully followed, the above articles will prove extremely beneficial.

TEST CARD PRACTICE

1. Every home should have a test card.
2. It is best to place the card permanently on the wall in a good light.
3. Each member of the family or household should read the card every day.
4. It takes only a minute to test the sight with the card. If you spend five minutes in the morning practicing, it will be a great help during the day.
5. Place yourself ten feet from the card and read as far as you can without effort or strain. Over each line of letters are small figures indicating the distance at which the normal eye can read them. Over the big C at the top of the card is the figure 200. The big C, therefore, should be read by the normal eye at a distance of two hundred feet. If you can read this line at ten feet, your vision would be 10/200. The numerator of the fraction is always the distance of the card from the eyes. The denominator always denotes the number of the line read. If you can only read the line marked 40 at ten feet, the vision is 10/40.
6. If you can only see to the fifth line, for example, notice that the last letter on that line is an R. Now close your eyes, cover them with the palms of the hands and remember the R. If you will remember that the left side is straight, the right side partly curved, and the bottom open, you will get a good mental picture of the R with your eyes closed.

This mental picture will help you to see the letter directly underneath the R, which is a T.

7. Shifting is good to stop the stare. If you stare at the letter T, you will notice that all the letters on that line begin to blur. It is beneficial to close your eyes quickly after you see the T, open them, and shift to the first figure on that line, which is a 3. Then close your eyes and remember the 3. You will become able to read all the letters on that line by closing your eyes for each letter.
8. Keep a record of each test in order to note your progress from day to day.
9. When you become able to read the bottom line with each eye at ten feet, your vision is normal for the distance, 10/10.
10. The distance of the Snellen test card from the patient is a matter of considerable importance. However, some patients improve more rapidly when the card is placed fifteen or twenty feet away, while others fail to get any benefit with the card at this distance. In some cases the best results are obtained when the card is as close as one foot. Others with poor vision may not improve when the card is placed at ten feet or further, or at one foot or less, but do much better when the card is placed at a middle distance, at about eight feet. Some patients may not improve their vision at all at ten feet, but are able to improve their sight at twenty feet, or at one foot. While some patients are benefited by practicing with the card daily, always at the same distance, there are others who seem to be benefited when the distance of the card from the patient is changed daily.

Fundamentals

By

W. H. Bates, M. D.

1. Glasses discarded permanently.

2. Central Fixation is seeing best where you are looking.

3. Favorable conditions: Light may be bright or dim. The distance of the print from the eyes, where seen best, also varies with people.

4. Shifting: With normal sight the eyes are moving all the time.

5. Swinging: When the eyes move slowly or rapidly from side to side, stationary objects appear to move in the opposite direction.

6. Long Swing: Stand with the feet about one foot apart, turn the body to the right—at the same time lifting the heel of the left foot. Do not move the head or eyes or pay any attention to the apparent movement of stationary objects. Now place the left heel on the floor, turn the body to the left, raising the heel of the right foot. Alternate.

7. Drifting Swing: When practicing this swing, one pays no attention to the clearness of stationary objects, which appear to be moving. The eyes wander from point to point slowly, easily, or lazily, so that the stare or strain may be avoided.

8. Variable Swing: Hold the forefinger of one hand six inches from the right eye and about the same distance to the right, look straight ahead and move the head a short distance from side to side. The finger appears to move.

9. Stationary Objects Moving: By moving the head and eyes a short distance from side to side, being sure to blink, one can imagine stationary objects to be moving.

10. Memory: Improving the memory of letters and other objects improves the vision for everything.

11. Imagination: We see only what we think we see, or what we imagine. We can only imagine what we remember.

12. Rest: All cases of imperfect sight are improved by closing the eyes and resting them.

13. Palming: The closed eyes may be covered with the palm of one or both hands.

14. Blinking: The normal eye blinks, or closes and opens very frequently.

15. Mental Pictures: As long as one is awake one has all kinds of memories of mental pictures. If these pictures are remembered easily, perfectly, the vision is benefited.

SUN TREATMENT

Most ophthalmologists prescribe dark glasses to nearly all of their patients who suffer from the brightness of light. This practice, in my opinion, has been overdone. I remember one patient who was in the hospital for two years in a dark room, with both eyes bandaged with a dark binding day and night continuously. When she left the hospital she was in a very pitiable condition. She was practically blind in the bright sunlight. She went to a great many clinics and eye doctors and all they did for her was to give her stronger dark glasses. In time these dark glasses did not give her any relief. Instead of being helpful to her weak eyes, the glasses had the effect of making them more sensitive to the light than they had ever been before. It has been my experience that all persons who wear dark glasses sooner or later develop very serious inflammation of their eyes. The human eye needs the light in order to maintain its efficiency. The use of eye-shades and protections of all kinds from the light is very injurious to the eyes.

Sunlight is as necessary to normal eye as is rest and relaxation. If it is possible, start the day by exposing the eyes to the sun—just a few minutes at a time will help. Get accustomed to the strong light of the sun by letting it shine on your closed eyelids. Later, when you can look down sufficiently, by gently lifting the upper lid the white part of the eye can be exposed, while the sun's rays strike directly on it. It is good to move the head slightly from side to side while doing this, in order to prevent straining. One cannot get too much sun treatment.

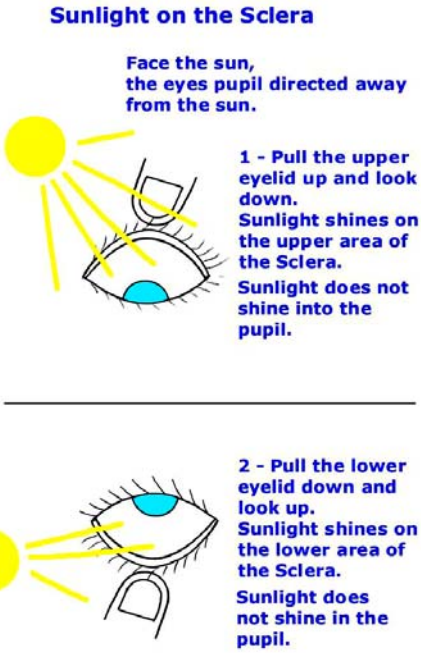
DR. BATES SUNLIGHT TREATMENTS
(As described in Better Eyesight Magazine)

Shining direct sunlight on the sclera, the outer white part of the eye is a old treatment Dr. Bates applied to bring life, health, activity to the retina and its cells, cones, rods, nerves, blood vessels. Dr. Bates cured unclear vision and other eye problems, diseases with this treatment. People that were blind or almost blind would begin to see light and obtain clear vision as result of this treatment and other Bates activities.

Directions

1 - Face the sun with the eyes pupil directed away from the sun. Allow full spectrum sunlight to shine directly on the sclera, (white part of the eye) by pulling the upper eyelids up while looking down. The sun shines on the upper white area of the eye. The eyes pupil is down, under the lower eyelid to prevent direct sunlight from shining into the pupil.

Move the eyes and head/face side to side to move the sunlight over the entire sclera and retina, lens through the sclera. Keep the sunlight moving on the sclera for a few seconds. Then stop, rest. Repeat if comfortable. Do not overdo it. Movement of the eyes, light places sunlight on all areas of the eye, retina, improves absorption, use of the light, activation of the retinas cells, light receptors... and prevents overexposure, concentration of the light, sunburn on the eye.



When pulling the eyelid; do not touch the eye or eyelid. Pull on the skin above the eyelid. Keep fingernails very short. Wash your hands first. Avoid chemical based soap.
Do both eyes at the same time; left thumb pulls left lid, right thumb pulls right lid. Pull gently.
This treatment also helps the eye build normal tolerance to sunlight, improves health and color of the sclera, perception of light, color, clarity of vision.

2 - Now, direct the sunlight onto the bottom of the sclera; Pull the lower eyelids down, move the eye/pupil up in the opposite direction so the sun shines on the lower area of the sclera and not directly into the pupil.
Move the eyes, head/face side to side. Keep the sunlight moving on the sclera for a few seconds. Then stop, rest. The head/body may need to be tilted back a bit to keep sunlight on the lower sclera and away from the pupil. Practicing this treatment repeatedly can tense the eye muscles and the pull of the fingers irritate the eyelids, skin. Use it occasionally.

Sun-Glass Treatment

Dr. Bates cured advanced eye problems, blindness by the sunlight methods and, also applying the use of the Sunglass to increase the strength of the sunlight on the eyes sclera and retina through the sclera. He moves the sunlight through the Sunglass quickly over the sclera for only a second, few seconds. He also moves the sunlight through the Sunglass on/over closed eyelids. Light is not directed into the pupil.
The light is kept in movement and moved quickly on the sclera and not for too long; only a few seconds in order to prevent over concentrating sunlight on any one or more areas of the eye, to prevent overexposure, sunburn on/in the eye. Distance of the glass must be correct or the eye can be burned.

The patient is exposed to plain sunlight first, without the glass to get the eyes adjusted to the light before using the sun-glass.
Do not do this at home without an eye doctor's direction. Done incorrect, it can burn the eye.

THE USE OF THE SUN GLASS

In using the sun glass, it is well to accustom the eyes of the patient to the strong light by having him sit in the sun with his eyes closed, and at the same time he should slowly move his head from side to side, in order to avoid discomfort from the heat. Enough light shines through the eyelid to cause some people a great deal of discomfort at first, but after a few hours' exposure in this way, they become able to gradually open their eyes to some extent without squeezing the lids. When this stage is reached, one can focus, with the aid of the sun glass, the light on the closed eyelids, which at first is very disagreeable. When the patient becomes able to open the eyes, he is directed to look as far down as possible, and in this way the pupil is protected by the lower lid. Then by gently lifting the upper lid, only the white part of the eye is exposed, while the sun's rays strike directly upon this part of the eyeball. The sun glass may then be used on the white part of the eye. Care should be taken to move the glass from side to side quickly. The length of time devoted to focusing the light on the white part of the eye is never longer than a few seconds. After such a treatment the patient almost immediately becomes able to open his eyes widely in the light.

Most Modern Natural Eyesight Improvement Teachers do not apply the Sunglass Treatment -(Mainly due to fear of the AMA.) Ophthalmologist Bates cured many vision problems, eye diseases, various types of blindness with the Sunglass and Sunlight, Sunning Treatments. Try plain Sunning, Sunlight first.

The Sunglass treatment is be done by a Bates Method Experienced Ophthalmologist and only if necessary in cases of blindness, extreme vision impairment and only after closed eyes sunning, daily sunlight exposure; eyes open (not staring into the sun), yes; looking at, shifting on the bright sunny sky, clouds, trees and other Bates Method Treatments have been tried first.

If these have not brought vision improvement, the Sunglass Treatment may.

Be aware that certain types of glass act as a magnifying glass. The Sunglass is a magnifier and sunlight passing through the Sunglass can burn the eye.

Only a professional should apply this method;

The glass is never still; the glass is moved continually side to side causing the light to move quickly on the white area of the eye. A short time; only a few seconds of light is placed on the eye. Do one eye at a time.

(Patch the eye not being worked upon with a white eyepatch to prevent the eye, pupil from moving into the light of the Sunglass. Keep the patch open on the outer side away from the glass to allow plain daylight into that eye to keep both brain hemispheres, eyes active. Do not wear any type of eyeglasses, contact lenses, sunglasses, tinted, UV blocking lenses when using the Sunglass, Sun-gazing, Sunning.)

Distance of the glass from the eye must be exact, a specific distance and the time the light is on the eye (white area, sclera only, through or under eyelids) must be brief, few seconds or the eye can be burned. It is a certain type of magnifying glass;

Type, size, thickness, curvature... of the glass, distance, angle from the eye, strength of the sun affects the strength, intensity, concentration of the light ray beam, heat of the sunlight through the glass. The heat increases with the amount of time the light is on the eye. The correct amount is relaxing, healthy for the eye. The light must never shine on/into the eyes pupil. Keep the light away from the pupil, iris. Keep the eye, pupil far down, under the lower lid to prevent the light beam from shining into the pupil. Do not move the eyes when the Sunglass light is on the eyes.

Start with eyes closed, look far down. Bring the glass, light beam close, but a safe distance from the eye. Move the light beam on the white area of the eye through the eyelids. The movement helps to prevent too much heat. Test the intensity of the light, heat, distance of the glass... on the closed eyelids first. See the size of the light spot on the eye and the blood vessels... in the eyes sclera, retina. Keep the light moving, move it quickly on the sclera for a few seconds.

Then, repeat with the eyes open; still looking far down, eyes pupil under the lower eyelid, protected from the light; lift the upper eyelid, open the eyes and move the light quickly side to side, a few seconds on the white area, sclera of the eye. Then repeat the steps with the other eye.

The Sunglass is a glass. As described in other chapters; All glass, plastic..; eyeglasses, windows, sunglasses block out part of the sun's light spectrum causing unhealthy partial spectrum, unbalanced light to exit the glass and shine into the eyes, travel to the brain, body. This impairs health, function of the brain, body, eyes and clarity of vision. For this reason the sunglass is only used to get the cells, light receptors, capillaries... in the eye, retina, lens back to full life, activity, bring the vision back. Then the glass is not used. Plain sunlight not passing through glass is used by practicing Sunning, Sun-gazing... as described in this chapter.

Read more directions for Sunning, Sun-Gazing, Sunglass Treatments in the PDF Natural Eyesight Improvement E-book; Ophthalmologist Bates 'Better Eyesight Magazine' describes this treatment.
See; Better Eyesight Magazine; April, May, June, August, October, December, 1926 and November, 1924 and

other 'Use of the Sunglass, Burning Glass' articles. Better Eyesight Magazine article June, 1926 in original form is shown on this page.
I place the instructions here due to the many cures Dr. Bates, Emily Lierman, Bates, other doctors obtained with the Sunglass and to enable persons to know if their Eye doctor is doing the treatment correct, safe.

Sun-Gazing; Looking into the sun with the eyes open, while moving the eyes, head/face side to side, keeping the eyes, head/face in movement 'shifting' is still done by some people in various countries, cultures.
For sun-gazers that do look at the sun with the eyes open; Practice only for 5-10 seconds occasionally, always moving the head/face, eyes; shifting side to side, top and bottom... across the sun. Blink often.
Never stare into the sun. Application time may vary with certain cultures, countries, treatments by experts.
Avoid areas where the sunlight is concentrated or the ozone layer is depleted.
Looking at the sun at sunrise, sunset in safe areas of the planet is allowed as long as staring, over-exposure is avoided. People have been looking at the sky, sunrise, sunset for millions of years.

Due to the depletion of the ozone layer, Modern Bates Teachers do not advise looking into the sun with the eyes open. Closed Eyes Sunning only is practiced.
Looking at the bright areas of the sky, clouds, tree tops with the eyes open on a sunny day is allowed.
Never look at or near the sun during a solar eclipse of the sun.

Good nutrition is necessary to maintain the eyes natural protection and tolerance to sunlight.
Sunlight through the eyes and on the skin is also necessary for the body to absorb, create, function with nutrients, vitamins, vitamin D, calcium.., minerals, to help protect the eyes, skin from sunburn, overexposure to sunlight, to produce, balance, control hormones, chemicals in the brain, body, body organs, systems, including melatonin for a normal sleep cycle and serotonin, tryptophan... for a positive state of mind, good mood, positive thoughts, emotions. The eyes need sunlight to remain healthy, keep the vision clear.
Most drugs and some herbs impair the vision, eye health, natural tolerance, protection from over-exposure to sunlight.

Sunlight contains all colors, frequencies, energy of the light spectrum.

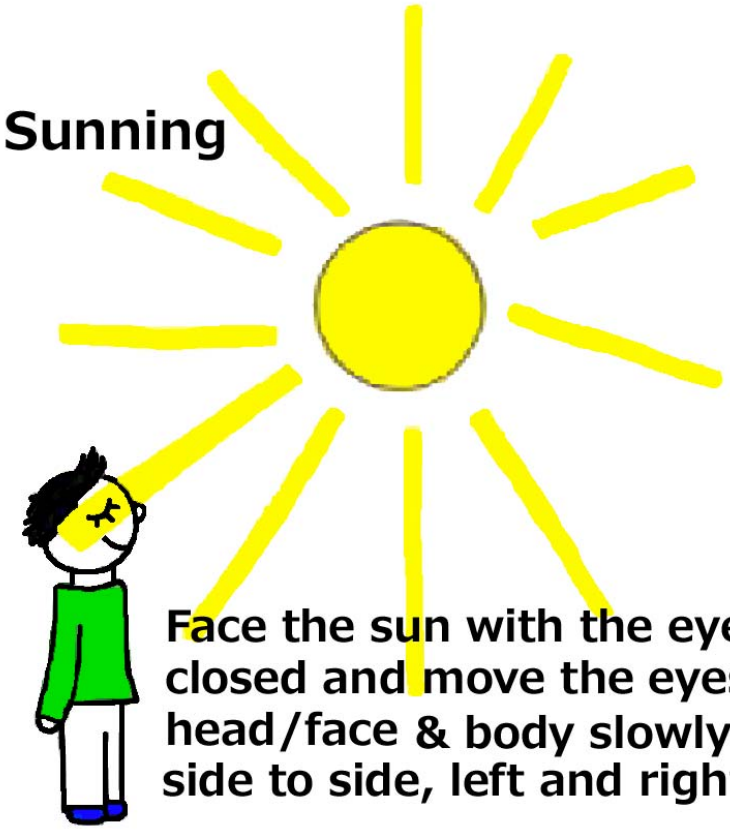
5. SUN TREATMENT. The eyes need sunlight. People who work in mines, where there is no sun, sooner or later develop inflammations of the interior of the eyes. The cloudiness of the lens from cataract is lessened by exposing the eye to the direct rays of the sun. When using the sun treatment, it is best to let the eyes become accustomed to the sun by mild treatment at first. Have the patient sit in a chair with his eyes closed and his face turned toward the sun. He should slowly move his head a short distance from side to side. The movement of the head prevents concentration of the sun's rays on one part of the eye. After some days of treatment, or when the patient becomes more accustomed to the light, one may use the sun-glass with added benefit. Direct the patient to look far down and while he does this, lift the upper lid gently, exposing to view the sclera or white part of the eye. Now, with the aid of the sun-glass focus the sunlight on the forehead or on the cheek, and then rapidly pass the concentrated light over various parts of the sclera. This requires less than a minute of time. It is

not well to be in a hurry. One should wait until the patient becomes sufficiently accustomed to the sun to permit the upper eyelid to be raised while he looks far down, exposing the sclera only. It is important that the patient be cautioned not to look directly at the sun.

Prognosis

The cure of cataract is usually accomplished more quickly than the cure of some other diseases of the eye. My assistant, Emily C. Lierman, has had unusual success in treating cataract cases, as she adapts my methods to each individual case. In her book, "Stories from the Clinic," the treatment is described in detail.

Sunning

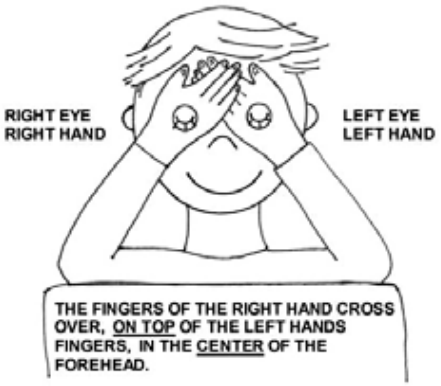


Face the sun with the eyes closed and move the eyes, head/face & body slowly side to side, left and right.

PALMING

PALMING

TO COVER THE CLOSED EYES WITH THE PALMS OF THE HANDS WHILE RELAXING AND THINKING SOMETHING PLEASANT.



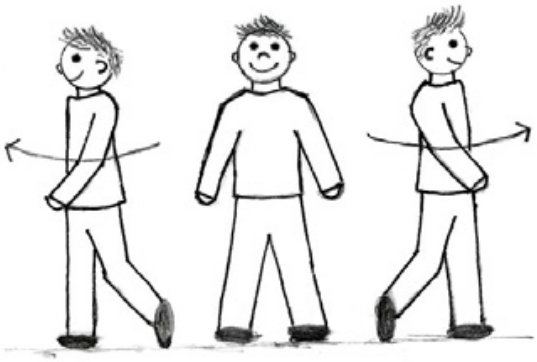
THE FINGERS OF THE RIGHT HAND CROSS OVER, ON TOP OF THE LEFT HANDS FINGERS, IN THE CENTER OF THE FOREHEAD.

THIS PICTURE SHOWS THE LEFT AND RIGHT HANDS/EYES OF A PERSON FACING THE READER.
TO SEE HOW THE READERS HANDS ARE PLACED; VIEW THIS PICTURE IN A MIRROR OR PLACE THE PICTURE OUTWARD ON THE CHEST AND LOOK DOWN AT THE PICTURE FOR A SECOND.

PALMING RELAXES THE MIND, BODY, NECK, EYE MUSCLES, EYES, AND WHEN COMBINED WITH SUNNING IMPROVES THE EYES/RETINA, BRAIN AND BODY'S ACTIVATION/REACTION TO SUNLIGHT AND ABSORPTION, USE OF SUNLIGHT. THIS IMPROVES FUNCTION, HEALTH OF EYES, BRAIN, BODY.

THE LONG SWING

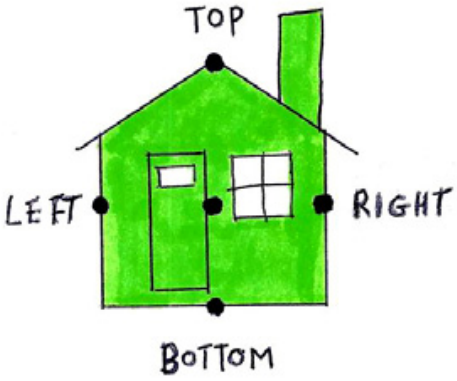
THE LONG SWING



TURN AND SWING RIGHT | CENTER | TURN AND SWING LEFT.

SHIFTING – EYE MOVEMENT – THE EYES/VISUAL ATTENTION/CENTER OF THE VISUAL FIELD SHIFT/MOVE FROM POINT TO POINT, PART TO PART ON A OBJECT AND FROM OBJECT TO OBJECT.

SHIFT ON THE HOUSE, DOT TO DOT.



SHIFT IN ANY DIRECTION/PATTERN.

THE DIAGRAM ABOVE SHOWS A EXAMPLE OF THE NATURAL SHIFTING PATTERN OF THE EYES.. NOTICE THE EYES MOVE FREELY ON THE HOUSE IN A VARIETY OF PATTERNS, DIRECTIONS.

CENTRAL FIXATION

BIRD IS SEEN CLEAR BY
PLACING IT IN THE CENTER
OF THE VISUAL FIELD

SUNNING

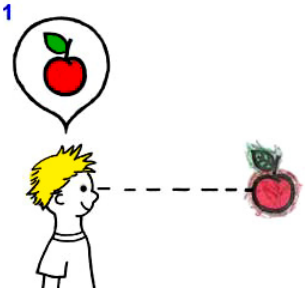
When looking at the bird;
Place it in the center of the visual field.
Shift part to part on the bird, moving the exact center of the visual field part to part.
Do this for any object the eyes look at; shift part to part on the object. Blink, relax.
Move the head/face, body with the eyes, in the same direction.
The center of the visual field moves with the eyes from object to object, part to part.
Use perfect, exact central fixation; shift small point to small point on objects and small parts of objects.

MEMORY AND IMAGINATION – CLEAR MENTAL PICTURES

REMEMBERING, IMAGINING OBJECTS CLEAR IMPROVES FUNCTION OF THE BRAIN WITH THE EYES AND CLARITY OF VISION.

EYES OPEN
APPLE SEEN UNCLEAR.
APPLE IN MIND,
IMAGINATION IS CLEAR.

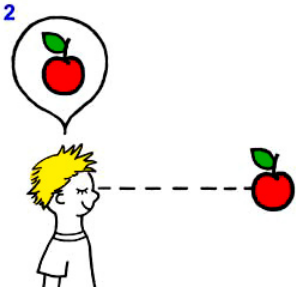
1



REMEMBER, IMAGINE THE
APPLE CLEAR.
SHIFT FROM PART TO PART
ON THE UNCLEAR APPLE
AND REMEMBER, IMAGINE
THE APPLE CLEAR.

EYES CLOSED
APPLE IN MIND,
IMAGINATION IS CLEAR.

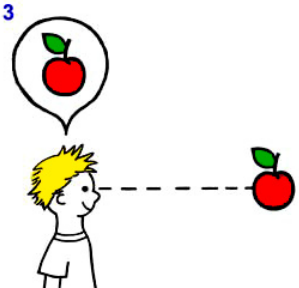
2



SHIFT FROM PART TO PART ON
THE APPLE IN THE MIND,
IMAGINATION AND REMEMBER,
IMAGINE THE APPLE CLEAR.

EYES OPEN
APPLE IS SEEN CLEAR
APPLE IN MIND,
IMAGINATION IS CLEAR.

3



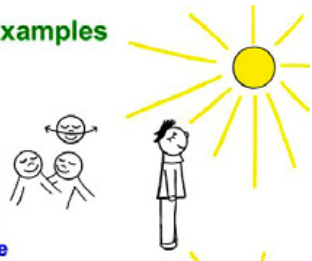
SHIFT FROM PART TO PART ON THE APPLE
AND REMEMBER, IMAGINE AND SEE THE
APPLE CLEAR.
REPEAT STEPS # 1,2,3.

USE THE IMAGINARY NOSEFEATHER WITH STEPS # 1,2,3. (SEE NOSEFEATHER, CHAPTER ---)
REMEMBER, IMAGINE, SEE THE APPLE CLEAR WITH THE EYES OPEN, CLOSED, OPEN WHILE SHIFTING FROM PART TO PART ON THE APPLE WITH THE NOSEFEATHER. TRACE AROUND THE EDGES OF THE APPLE, STEM, LEAF WITH THE END OF THE FEATHER. TRACE SMALL PARTS OF THE APPLE.
PRACTICE STEPS # 1,2,3 WITH BOTH EYES TOGETHER, THEN ONE EYE AT A TIME, THEN BOTH TOGETHER AGAIN.
PRACTICE ON ANY SIZE OBJECT; LARGE, MEDIUM, SMALL, TINY AT CLOSE, MIDDLE, FAR DISTANCES.

Remembering, imagining any pleasant object, scene, happy memory, fantasy relaxes the mind, body, eye muscles, eyes resulting in clear vision.
Remembering, imagining the objects, scene clear while relaxed, easy, without effort improves the clarity of vision.
If the boy remembers, imagines a different object, any happy memory, image, scene (playing baseball, a favorite adventure...) with the eyes open looking at the apple, shifting on it and when the eyes are closed shifting on the imaginary image: when the eyes are opened - the apple will be seen clear. He can remember, imagine the apple or any pleasant object clear, shift on it in his mind and the apple will be seen clear.
Palming with the eyes closed combined with the memory imagination activity brings clear vision.

Sunning Examples

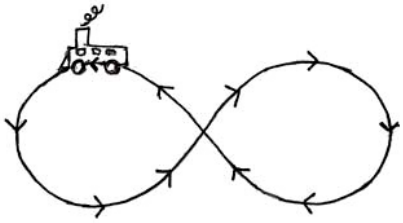
Face the sun with the eyes closed and move the head/ face slowly, relaxed side to side; left, right, left, right... Feel and see the sun move across the face/closed eyes. Then, move the head/face up and down, then circular; trace around the sun counter clockwise, clockwise. The eyes, head/face (and body) move together, at the same time, in the same direction.



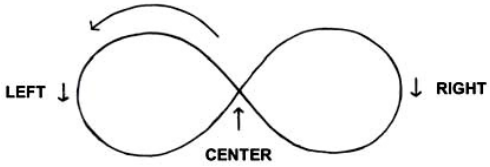
Do the rock while sunning; Face the sun with the eyes closed and rock the entire body side to side, left and right.
Do the long swing.

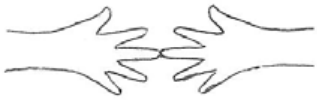
Sit facing the sun, relax, eyes closed and daydream pleasant thoughts. Occasionally move the head/ face side to side.

FIGURE EIGHT



THE FIGURE EIGHT

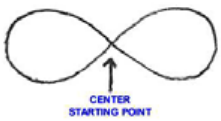


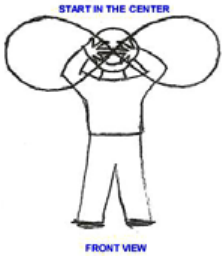


THE FINGERTIPS OF THE 3RD FINGER OF THE LEFT AND RIGHT HANDS TOUCH WITH THE PALMS FACING IN TOWARD THE FACE.
THIS IS THE START POSITION AT THE CENTER OF THE FIGURE EIGHT.

THE FIGURE EIGHT – INFINITY SWING

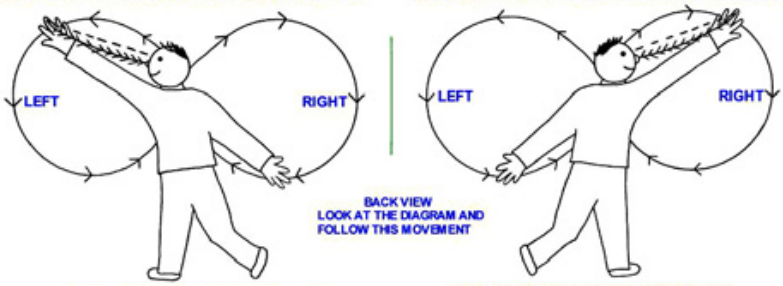
DRAW THE FIGURE EIGHT WITH THE EYES, HAND AND END OF THE NOSEFEATHER WHILE DOING THE LONG SWING.
FOLLOW THE ARROWS - START IN THE CENTER AND DRAW UP THE CENTER AND TO THE LEFT FIRST. DRAW THE LEFT SIDE AND BACK UP THE CENTER. THEN DRAW THE RIGHT SIDE; DRAW LEFT, RIGHT, LEFT, RIGHT...





DRAW THE LEFT SIDE FIRST WITH THE LEFT HAND.
SWING, TURN LEFT AND LIFT THE HEEL OF THE RIGHT FOOT.
EYES LOOKING AT/SHIFTING ON AND MOVING WITH THE CENTER FINGERTIP OF THE LEFT HAND AS THE HAND DRAWS THE EIGHT.
THE END OF THE NOSEFEATHER AND EYES (VISUAL ATTENTION) ARE ON AND MOVING WITH THE LEFT HANDS CENTER FINGERTIP.
PALM OF HAND IS FACING IN TOWARD THE FACE WHEN IN THE CENTER, THEN MOVES OUT STRAIGHT WITH THE ARM AS THE HAND DRAWS THE LEFT SIDE..

DRAW THE RIGHT SIDE WITH THE RIGHT HAND.
SWING, TURN RIGHT AND LIFT THE HEEL OF THE LEFT FOOT.
EYES LOOKING AT/SHIFTING ON AND MOVING WITH THE CENTER FINGERTIP OF THE RIGHT HAND AS THE HAND DRAWS THE EIGHT.
THE END OF THE NOSEFEATHER AND EYES (VISUAL ATTENTION) ARE ON AND MOVING WITH THE RIGHT HANDS CENTER FINGERTIP.
PALM OF HAND IS FACING IN TOWARD THE FACE WHEN IN THE CENTER, THEN MOVES OUT STRAIGHT WITH THE ARM AS THE HAND DRAWS THE RIGHT SIDE.



LOOKING, MOVING LEFT WHEN DRAWING THE LEFT SIDE ACTIVATES THE RIGHT BRAIN HEMISPHERE AND CLEAR DISTANT VISION.

LOOKING, MOVING RIGHT WHEN DRAWING THE RIGHT SIDE ACTIVATES THE LEFT BRAIN HEMISPHERE AND CLEAR CLOSE VISION.

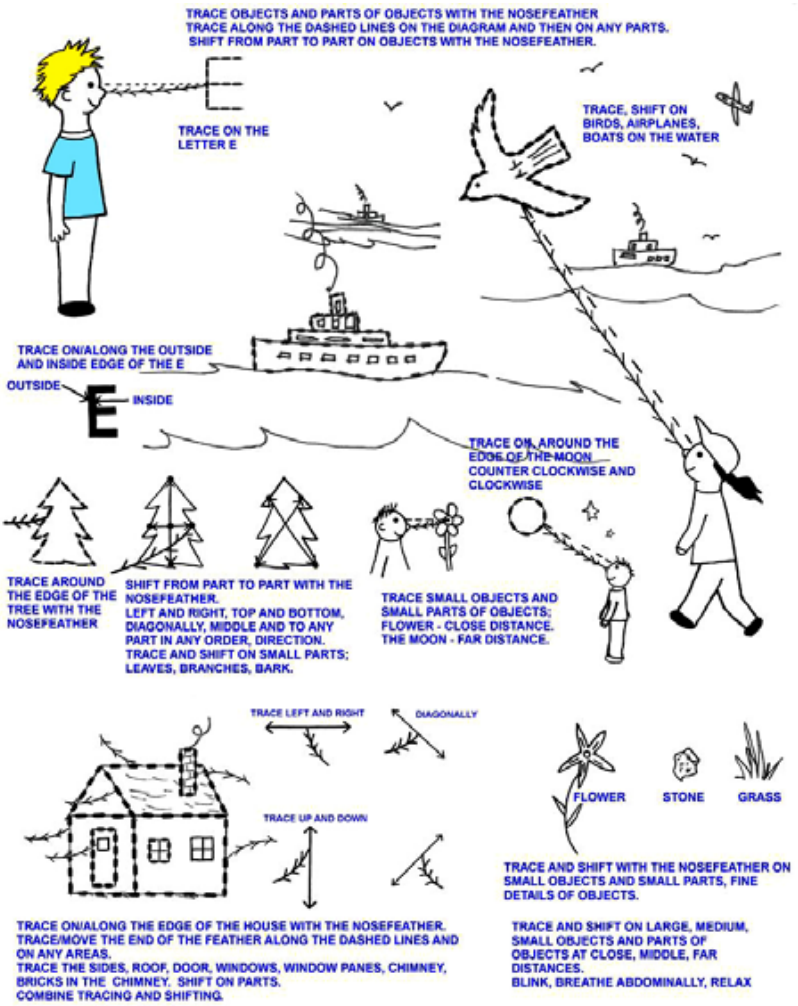
MOVING BACK AND FORTH; LEFT, RIGHT, LEFT, RIGHT AND PASSING ACROSS THE CENTER OF THE EIGHT (MIDLINE/CENTER OF THE BRAIN AND BODY) ACTIVATES AND INTEGRATES THE LEFT AND RIGHT BRAIN HEMISPHERES, CLEAR CLOSE AND DISTANT VISION AND EQUALLY CLEAR PERFECT VISION IN THE LEFT AND RIGHT EYES.

DRAWING THE FIGURE EIGHT RELAXES AND BRINGS MOVEMENT TO THE EYES, HEAD/FACE, NECK, BACK AND BODY AND ACTIVATES CORRECT VISION HABITS.
THIS ALSO IMPROVES THE CLARITY OF EYESIGHT.

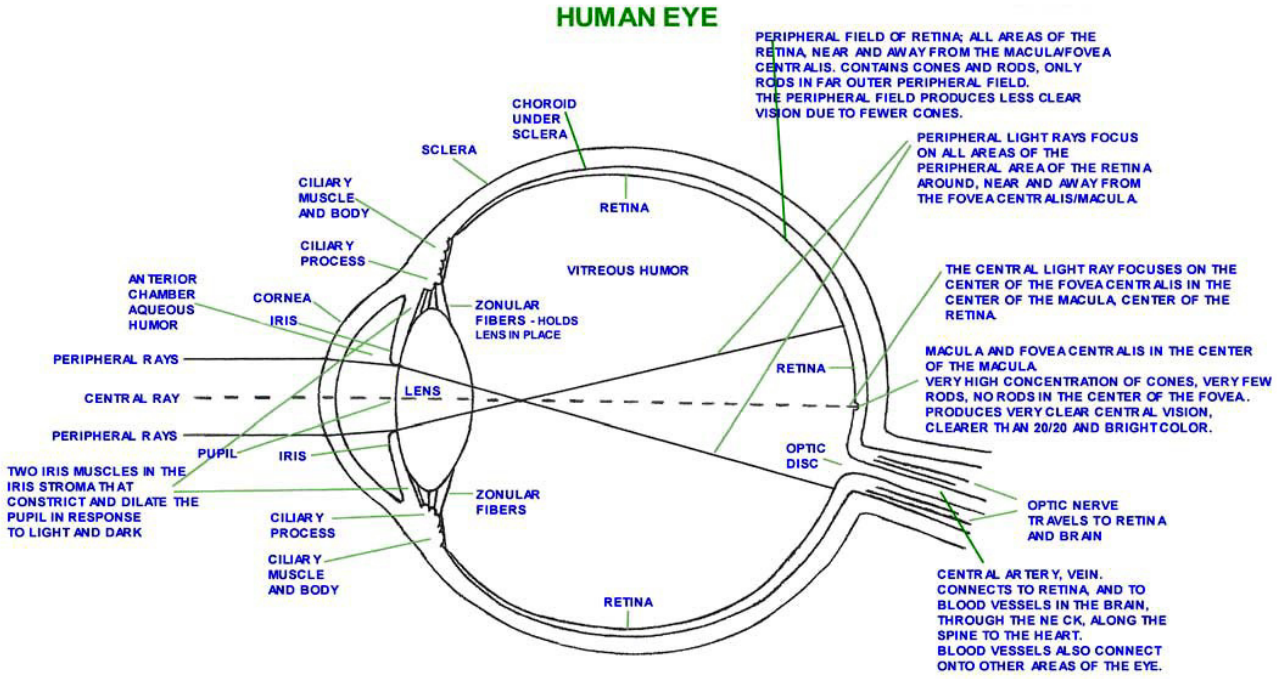
The Figure Eight - Infinity Swing

THE NOSEFEATHER

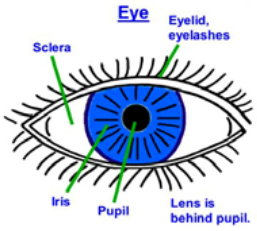
THE MAN IS TRACING AROUND THE EDGE OF THE TREE WITH THE IMAGINARY NOSEFEATHER.
THE END OF THE FEATHER EXTENDS OUT FROM THE END/CENTER OF THE NOSE AND BENDS UP TO EYE LEVEL TO TOUCH THE PART OF THE OBJECT THE EYES ARE LOOKING AT IN THE CENTER OF THE VISUAL FIELD.
THE FEATHER IS VERY THIN AND THE END FORMS A VERY SMALL POINT WHICH IS THE SIZE OF THE EXACT CENTER OF THE VISUAL FIELD PRODUCED BY THE FOVEA CENTRALIS IN THE MACULA, CENTER OF THE EYES RETINA.
MOVE THE POINTED END OF THE NOSEFEATHER AROUND THE EDGE OF OBJECTS AND PARTS OF OBJECTS.
THE EYES, END OF THE NOSEFEATHER, HEAD/FACE AND BODY MOVE TOGETHER, IN SYNCHRONIZATION; SAME TIME, SAME DIRECTION.
THE NECK IS RELAXED AND MOBILE.
BLINK, BREATHE ABDOMINALLY, RELAX.
THE NOSEFEATHER IS ALSO USED TO SHIFT FROM POINT TO POINT (SMALL PART TO SMALL PART) ON A OBJECT.
THE NOSEFEATHER IS USED TO SWITCH FROM CLOSE OBJECTS TO DISTANT OBJECTS AND DISTANT TO CLOSE, MIDDLE...
THE FEATHER BECOMES LONGER WHEN LOOKING TO THE DISTANCE AND SHORTER WHEN LOOKING AT CLOSE OBJECTS.
THE NOSEFEATHER ACTIVATES EASY USE OF CORRECT VISION HABITS; SHIFTING (EYE MOVEMENT), CENTRAL FIXATION, MOVEMENT OF THE HEAD/FACE, BODY WITH THE EYES, RELAXATION AND MOVEMENT OF THE NECK.
THE FEATHER CAN BE IMAGINED AS BEING INVISIBLE.
THIS ALLOWS THE BRAIN TO IMAGINE, REMEMBER THE OBJECT THE EYES ARE LOOKING AT CLEAR WITHOUT BEING DISTRACTED BY THE IMAGE OF THE FEATHER.

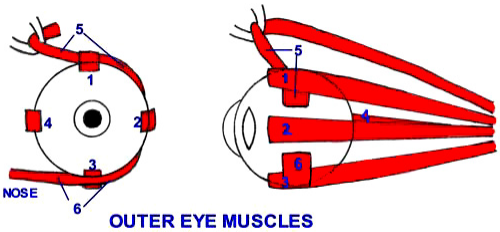


CENTRAL FIXATION - SEE CLEAR WITH THE CENTER OF THE VISUAL FIELD



THE RETINA CONTAINS CONES AND RODS - LIGHT, ENERGY RECEPTORS.
CONES PRODUCE VERY CLEAR VISION - CLEARER THAN 20/20 AND BRIGHT COLOR.
RODS PRODUCE LESS CLEAR VISION (20/400) - RODS PERCEIVE GREY/BLACK/WHITE, LIGHT AND DARK BUT NO OTHER COLORS. RODS DETECT MOVEMENT OF OBJECTS IN THE VISUAL FIELD AND CONTINUE TO FUNCTION IN ALMOST COMPLETE DARKNESS.
THE FOVEA AND MACULA IN THE CENTER OF THE RETINA CONTAIN MANY CONES, (ONLY CONES IN THE CENTER OF THE FOVEA) AND PRODUCE VERY CLEAR VISION IN THE CENTER OF THE VISUAL FIELD.
THE PERIPHERAL FIELD OF THE RETINA AROUND, NEAR AND AWAY FROM THE FOVEA/MACULA CONTAINS LESS CONES AND MORE RODS, AND ONLY RODS (NO CONES) IN THE FAR OUTER PERIPHERAL FIELD.
THIS RESULTS IN LESS CLEAR PERIPHERAL VISION, THE FAR OUTER PERIPHERAL FIELD BEING MOST UNCLEAR.
SEE CLEAR WITH CENTRAL FIXATION - A CORRECT VISION HABIT - PLACE THE OBJECT OF VISUAL ATTENTION IN THE CENTER OF THE VISUAL FIELD.
WHEN THE EYES USE THE CENTER OF THE VISUAL FIELD, THE CENTRAL RAY FOCUS PERFECT ON THE CENTER OF THE FOVEA CENTRALIS, RAYS CLOSEST TO THE CENTRAL RAY FOCUS ON THE MACULA, AND PERIPHERAL RAYS FOCUS PERFECTLY ON THE PERIPHERAL FIELD OF THE RETINA RESULTING IN PERFECT CLEAR CENTRAL VISION, CLEARER THAN 20/20 AND MAXIMUM CLARITY AND FUNCTION OF THE PERIPHERAL FIELD. THE CLARITY OF THE ENTIRE VISUAL FIELD IMPROVES.

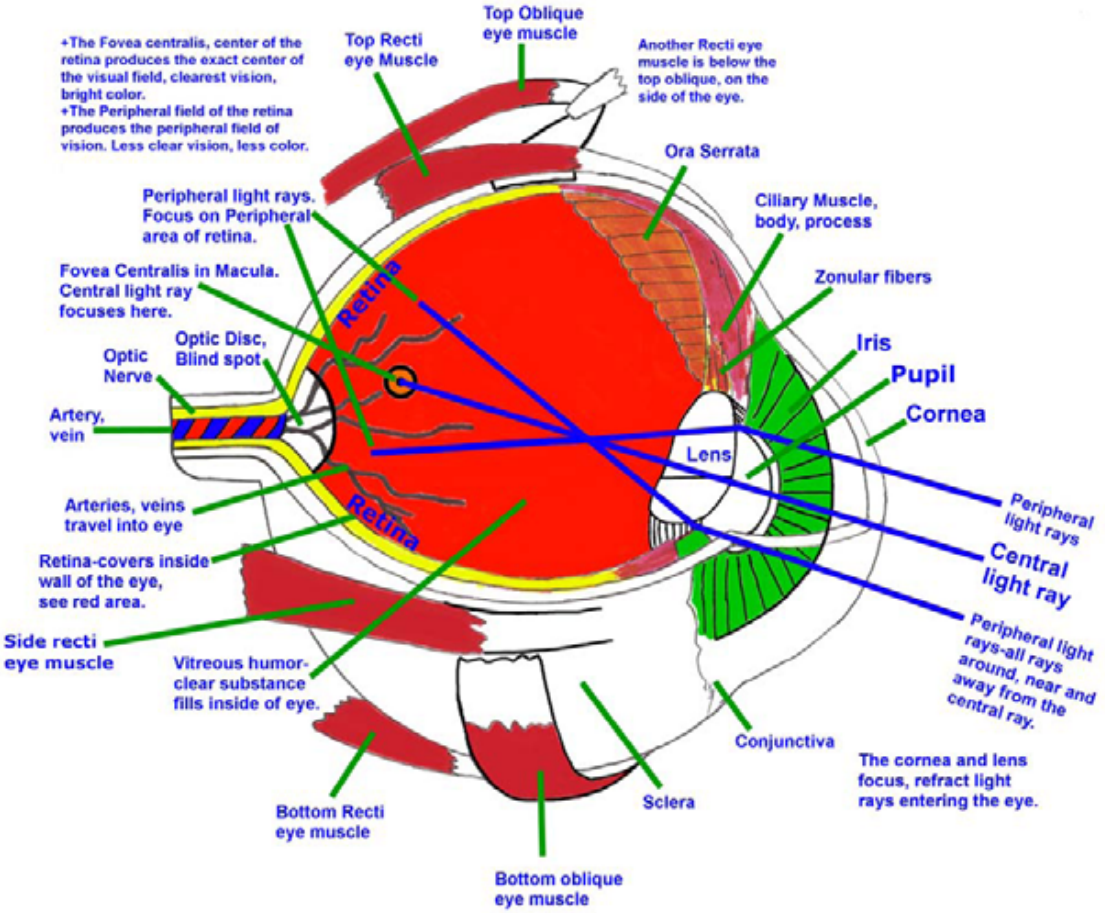


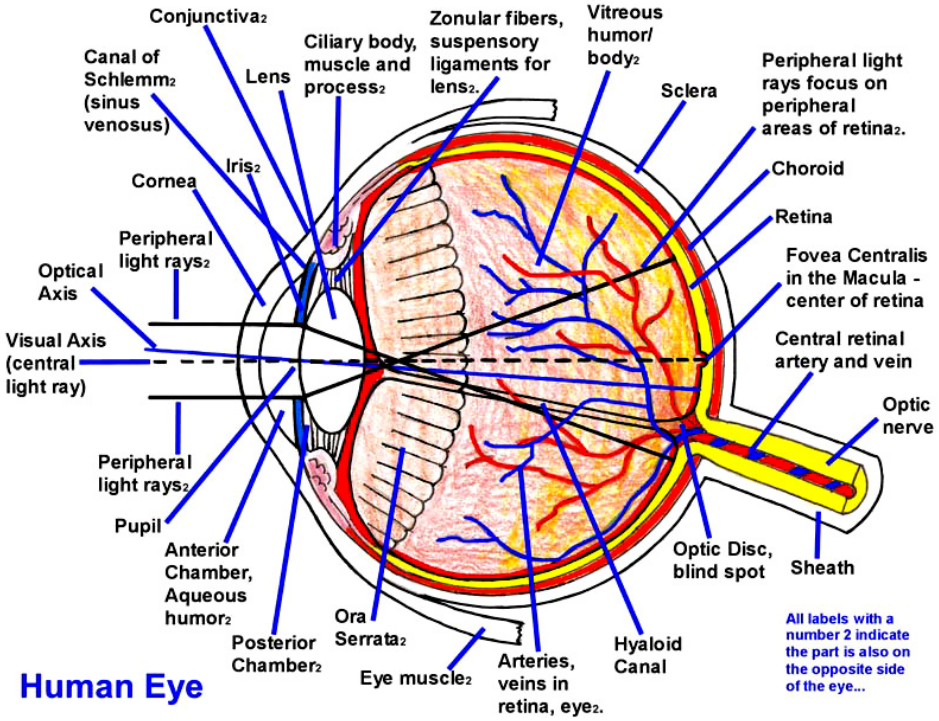


OUTER EYE MUSCLES
RECTI - # 1, 2, 3, 4
OBLIQUE - 5, 6

Video - http://www.youtube.com/watch?v=nIrKuQEJ6y4

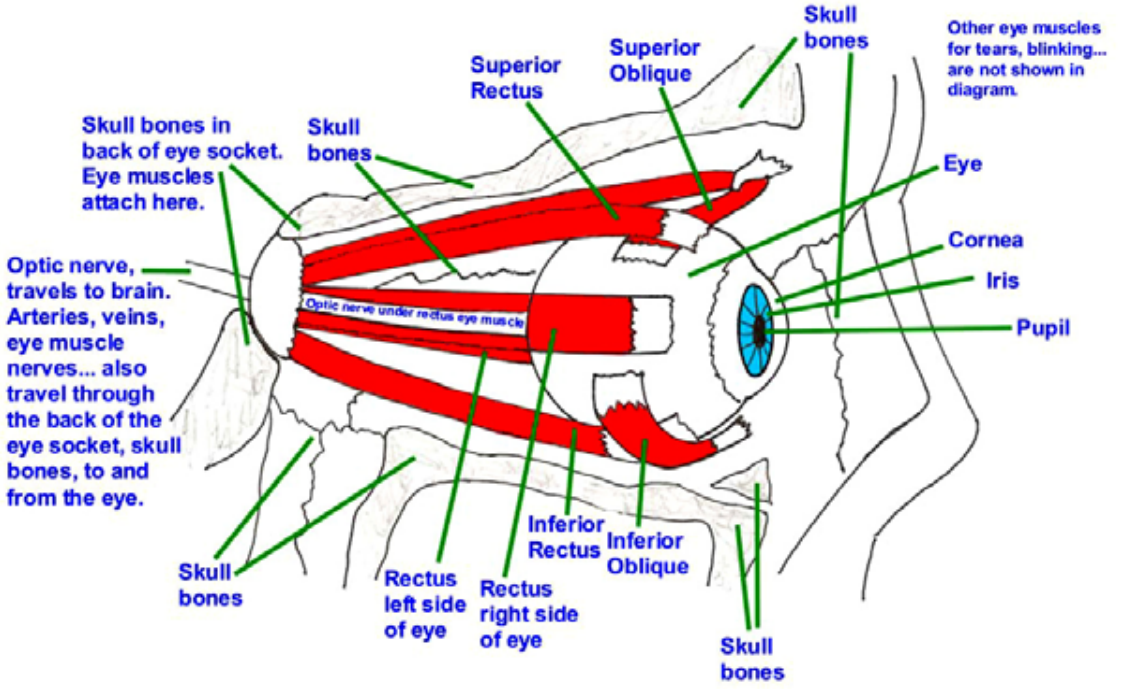
The retina contains cones and rods, light receptors. Cones=very clear vision, bright color. Activated in light. Stops functioning in almost complete darkness. Rods=Less clear vision, grey, white color. Also senses movement in the visual field and continues to function in very dim light, almost complete darkness. The macula contains many cones, and a few rods. The fovea contains a high concentration of cones and no rods. The peripheral field of the retina contains many rods and some cones with less and no cones into the far outer peripheral. This is why the center of the visual field is clearest. See clear by using the Macula, Fovea Centralis, center of the visual field. See much clearer, fine details, brightest color by using the fovea, exact center of the retina, visual field. The center of the visual field moves with the eyes from object to object, part to part on objects keeping the vision clear.



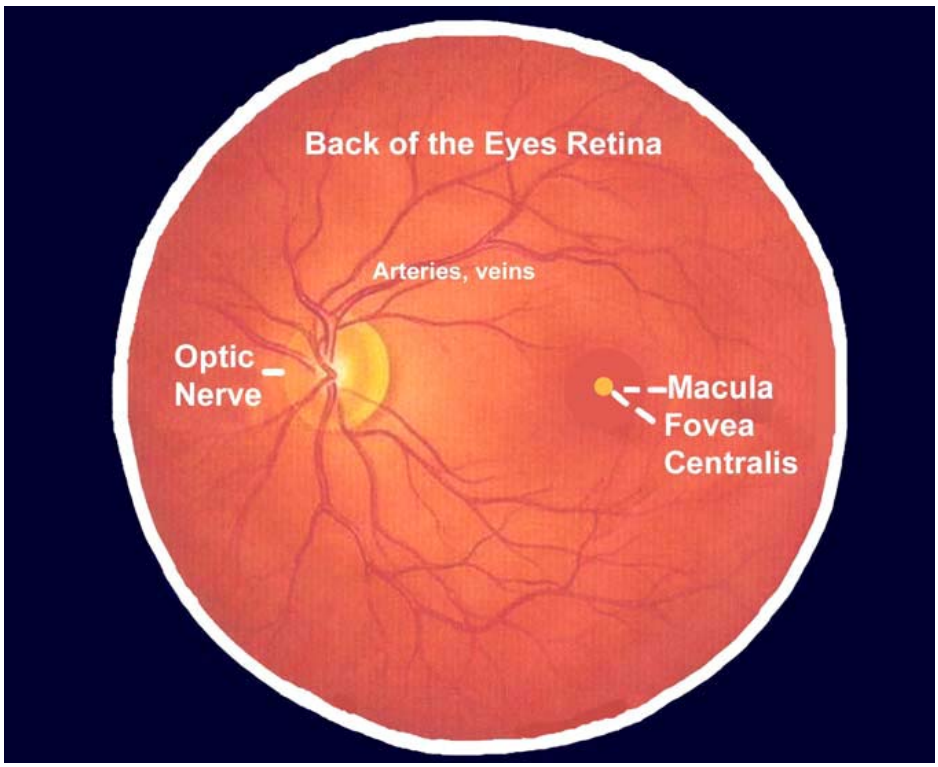


Human Eye

Eye socket, bones, eye, eye muscles, optic nerve.

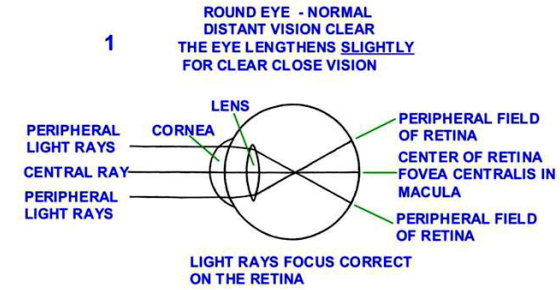


Notice that the eye socket is composed of bone segments, aligned, grown together. These are part of the skull bones. Eye muscles attach to the skull bones in the back of the eye socket. Misalignment of the eye socket or skull bones due to accidents, birth trauma, forcep, suction delivery... can mis-align the bones, place pressure, tension on/in the eye, optic nerve, eye muscles resulting in crossed, wandering eyes, imperfect convergence, divergence, accommodation, un-accommodation, unclear vision, astigmatism and other abnormal eye conditions. Special chiropractors (Cranial, Cranio Sacral Therapy, Osteopathy) can re-align the bones of the skull if needed. Often, use of the Bates method alone can correct eye function and clarity of the vision.

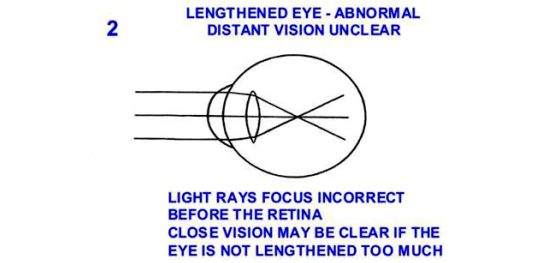


MENTAL STRAIN, EYE MUSCLE TENSION, ABNORMAL EYE SHAPE CAUSES UNCLEAR EYESIGHT - Dangers of, Vision Impairment Caused by; Laser Cornea Eye Surgery, Eyeglasses & Contact Lenses

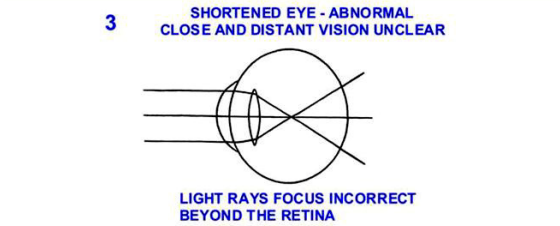
Strain, tension in the mind, visual system, incorrect posture, shoulder, neck muscle tension, Incorrect Vision Habits cause eye muscle tension.
Tension in the outer eye muscles places pressure on/in the eye causing abnormal eye shape, incorrect focus of light rays in the eye and unclear vision. Muscles inside the eye also become tense-function of the lens iris, retina are impaired.



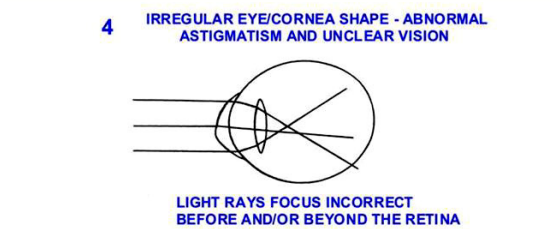
+Picture # 1 shows the normal round eye shape.
Eye muscles are relaxed.
Light rays focus correct on the retina.
+ The central light ray focuses on the center of the fovea centralis in the macula in the center of the retina.
This produces the center of the visual field.
+ Peripheral light rays focus on the peripheral areas of the retina (all areas around, near and away from the macula and fovea) which produces the peripheral field of vision. Distant vision is clear.
Bates Teachers state; 'The oblique muscles around the outside of the eye contract to slightly lengthen the eye to accommodate, focus divergent light rays on the retina for clear close vision. (Like a camera.) They un-contract, return the eye to a round shape for clear distant vision'.



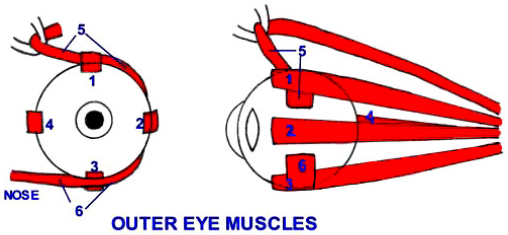
+Picture # 2 shows a abnormal lengthened eye shape.
The eye is lengthened too much and is kept in this state due to tension in the oblique outer eye muscles.
Light rays do not focus on the retina.
Light rays focus incorrect before the retina causing unclear distant vision.
Close vision may be clear if the eye is not lengthened too much, but it is never perfectly clear when the distant vision is unclear.
Increased eye muscle tension causes increased lengthening of the eye resulting in unclear distant and close vision.



+Picture # 3 shows a abnormal shortened eye shape due to tension in the recti outer eye muscles pulling back on the front of the eye.
Light rays focus incorrect beyond the retina.
In early stages of eye muscle tension the eye may stay in a round shape unable to lengthen slightly when looking at close distances resulting in unclear close vision.
Distant vision may be clear, but is never perfectly clear when the close vision is unclear.
As muscle tension increases, the eye is pulled into a shortened shape causing unclear close and distant vision.



+Picture # 4 shows a irregular, uneven eye shape caused by tension in one or more outer eye muscles, oblique and/or recti.
The shape of the cornea is also uneven. Astigmatism, unclear vision.
This condition can occur with a abnormal lengthened or shortened eye shape. Light rays focus incorrect; all or some light rays focus incorrect before and/or beyond the retina. The central ray might focus incorrect onto the peripheral area of the retina. Peripheral rays might focus incorrect onto the fovea centralis in the center of the retina.
This impairs both central and peripheral vision and causes astigmatism and unclear vision at close and/or far distances.
Eye movement: shifting and convergence, divergence may be affected in pictures 1, 2, 3, 4. Incorrect focus of central and peripheral light rays onto the peripheral and central areas of the retina can also occur when the eye is abnormally lengthened, shortened without a uneven shape. See the E-book For full information.



EYECHARTS

Letter size for the charts on the following pages are approximate; print from the PDF E-Book and resize with a copy machine for exact measurement. Print the 20/20 line 3/8 inches. When letters on that line and below are clear; vision is clearer than 20/20 for distant vision at 20 feet and farther. Print the charts small and fine print for close vision practice at 5 feet and up to 1 inch from the eyes.

Read, See Small letters Clear on a Familiar Eyechart Daily;
Both eyes together, one eye at a time, both eyes together again.

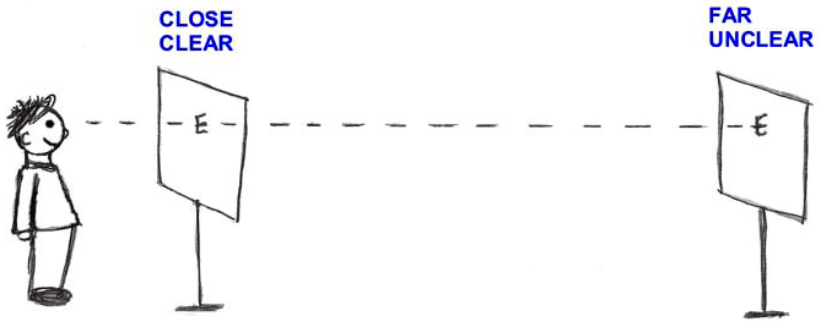
Eyechart Videos

Videos are on Youtube. Download with Real Player SP.
Watch on computer. Can also be converted for television.

http://www.youtube.com/watch?v=sM-EHgC-J6w&feature=channel
http://www.youtube.com/watch?v=863yFmc-Ius&feature=channel
http://www.youtube.com/watch?v=mYpsYPPV_hg&feature=channel
http://cleareyesight.info/id79.html

EYECHARTS TO TEST AND IMPROVE CLOSE AND DISTANT EYESIGHT

SWITCH AND SHIFT ON LETTERS ON TWO IDENTICAL EYE CHARTS PLACED AT CLOSE AND FAR/ CLEAR AND UNCLEAR DISTANCES.



SHIFT FROM PART TO PART (DOT TO DOT) ON THE E'S

TOP AND BOTTOM | LEFT AND RIGHT | DIAGONALLY CORNER TO CORNER | MIDDLE | SHIFT FROM PART TO PART IN ANY DIRECTION

Videos - http://www.youtube.com/watch?v=863yFmc-Ius

Meaning of 20/20; (for Distant Vision)
+The top number indicates the distance the person is standing from the chart.
+The bottom number indicates the size of the letter, the line the eyes are looking at. A 20/20 letter is 3/8 inch. high.

E This E is about 3/8 inch. on 100% computer screen.

+The bottom number also indicates the distance that a person with clear vision sees the letter clear.

Example; the 20/20 line on the test chart for distant vision;
+The top number, 20 indicates; the person is standing 20 feet away from the letter on the eyechart.
+The bottom number, 20 indicates the person is looking at the 20/20 line, 3/8 inch. letter and, that; a person with clear 20/20 vision can see the letter clear at 20 feet away.

The eyechart is placed at 20 feet to test distant vision because the eyes do not need to un-converge, un-accommodate any further when looking at about 20 feet and farther into the distance. If the letters are seen clear at 20 feet, they are seen clear at all distances beyond 20 feet.

Here's another example; 20/200;

+The top number (20) indicates the person is standing 20 feet away from the eyechart.
+The bottom number (200) indicates the size of the letter, line the person is looking at.
The 200 line letter is the largest letter on the top of the chart. A 20/200 letter is 3 ½ inch. high.
+The bottom number, (200) also indicates that a person with

Distant vision - Big C eyechart with a small 5 line added at bottom.

CLEAR

20 = 20 feet
20 = 3/8 inch letter - 20 line.
Normal, clear vision.

20 = 20 feet
5 = Smallest letter, bottom of chart - 5 line.
Clearer than 20/20.

40 = 40 feet
5 = Smallest letter, bottom of chart - 5 line.
Most clear vision, much clearer than 20/20.
Person sees 5 line at 40 feet away.

UNCLEAR

20 = 20 feet
200 = Largest letter, top of chart - 200 line.
Most unclear vision for this eyechart.

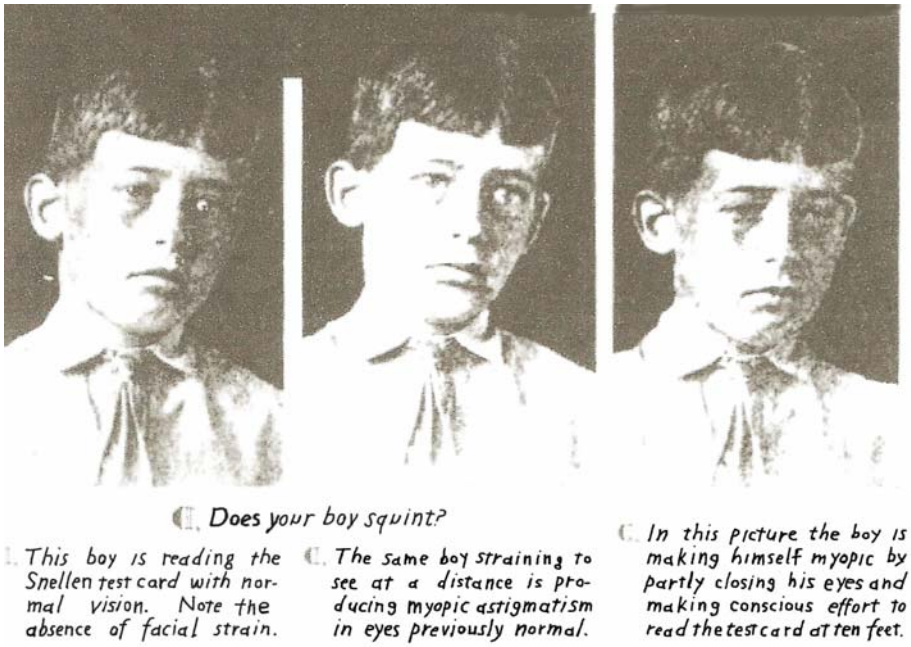
5 = 5 feet
200 = Largest letter, top of chart.
Vision more unclear.
The person must stand closer to the chart, at 5 feet, to see the 200 line letter clear.

20 = 20 feet
300 = Letter larger than 200 line.
More unclear than 20/200.
Person cannot see the 200 line clear.
A larger, 300 size letter is seen clear.
The 200 and other lines might be seen clear at closer distants to the chart.

clear 20/20 vision can see the letter clear at 20 feet and up to 200 feet away.
A person with 20/200 distant vision can see the large 20/200 letter at 20 feet but cannot see it clear farther than 20 feet. It may be seen clear at closer distances.
Smaller letters below the 20/200 line are not seen clear at 20 feet and farther away.
20/200 vision is very unclear, much less clear than 20/20.
Vision can be more unclear; 20/300, 5/200... Many people with 20/200, 300 and more unclear vision have attained 20/20 and clearer vision with practice of the Bates Method.

20/40 vision is clearer than 20/200 but less clear than 20/20. 20/40 is considered legal for driving in most states. 20/40 is close to 20/20 clarity and people can function comfortably with 20/40 vision without wearing eyeglasses. 20/30, 20/25 is clearer than 20/40 and almost 20/20.
When vision is less clear than 20/40; 20/50, 70, 100... it is still best to avoid wearing eyeglasses as much as possible. Eyeglasses maintain and increase the eye muscle tension and blur. When glasses are avoided the eyes, eye muscles, mind/brain, (visual system) relax, correct vision habits are easily applied and clarity of vision improves.
Close vision is tested with smaller letters with the eyechart placed at various distances closer than 20 feet. Reading vision is tested at 3 ft. to 6 inches and closer to the eyes with small and fine print. Seeing fine print clear at 5 to 1 to 1/4 inches from the eyes is very clear vision. Healthy for the eyes.

Relax and Shift, Blink when Reading the Eyechart. Use Central-Fixation



Immediate Production of Myopia and Myopic Astigmatism in Eyes Previously Normal by Strain to See at the Distance;

Fig 1 - Boy reading the Snellen test card with normal vision. Note the absence of facial strain.
A boy with normal eyes reading the X line of the Snellen test card at 10 feet.
Notice the expression of the eyes with the focus completely relaxed.

Fig 2 - The same boy trying to see a picture at twenty feet. The effort, manifested by staring, produces compound myopic astigmatism, as revealed by the retinoscope. Simultaneous retinoscopy indicated compound myopic astigmatism. He was unconscious of the fact that his eyes were focused for a near point. Note the manifestation of effort by staring.

Fig 3 - The same boy making himself myopic voluntarily by partly closing the eyelids and making a conscious effort to read the test card at ten feet. Functional myopia produced voluntarily by partly closing the eyelids (squinting) and making an effort to read the Snellen test card at ten feet.

There are large and small close and distant eyecharts on the last pages of this book and in the PDF E-Book.

Fig. 43

Patient with atrophy of the optic nerve gets flashes of improved vision after palming.

It is difficult to print the exact, correct letter size from a computer. Try printing at 100% or larger.
The Big C and E charts print out on 4 separate pages, 11 x 8 ½ inches, landscape. Tape them together after printing.
If the print is too light, darken it to dark black with a black marker.
If they print too small or large; place them in a copier and use the zoom setting to enlarge or reduce the letters until all letters are the correct eyechart size. See correct sizes listed below.
Letters on the charts can be reduced to small and fine print for testing, improving close vision and reading vision distances, 3 feet, 20, 10, 7, 6, 5, 3... inches away from the eyes.
Small charts are also provided.
The charts can be printed from the PDF E-Book with white letters on a black, blue... background. White letters are easy to see and relaxing to the eyes. Color activates, is healthy for the eyes, brain, visual system.
The reader can also create small charts as a identical copy of the big C, E charts. Place the identical copy at a clear close distance and look at the identical clear letters to strengthen the memory, imagination of the same letter on the distant chart. If preferred, use a large close and distant chart.

The Big C chart is the eyechart Ophthalmologist Bates refers to in his Better Eyesight Magazine.
The large big letter E and C charts are for testing distant vision.
Print the chart with correct letter size;

Start with the big letter E (or C) at the top of the chart - 20/200 line;

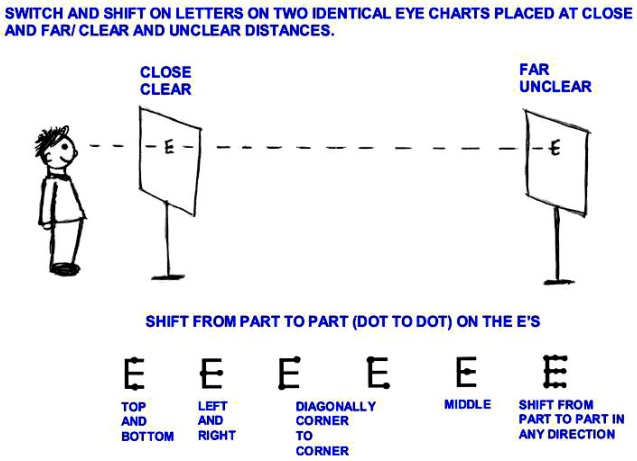
20/200 - 3 ½ inch. high
20/100 - 1 ¾ inch.
20/70 - 1 ¼ inch. **All numbers above 20/20 indicate vision**
20/50 - 7/8 inch. **less clear than 20/20.**
20/40 - 11/16 inch.
20/30 - 1/2 inch.
20/20 - 3/8 inch. ---------- Normal clear vision at 20 feet away.
20/15 - 1/4 inch. **All numbers below 20/20 indicate clearer**
20/10 - 3/16 inch. **than 20/20.**
20/5 - 3/32 inch.
20/4, 3, 2, 1... Letters are smaller. Very clear vision.

Standing farther away and seeing the letters clear;
Example 40/5; standing 40 feet away and seeing the 20/5, 3/32 inch letter and/or smaller letters clear indicates very clear vision, much clearer than 20/20.

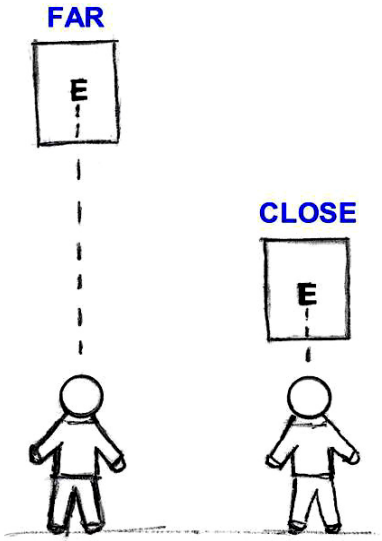
Practice Shifting, Central-Fixation, Switching Close and Far on the Eyecharts

Print the Eyecharts.

Make two identical copies of the chart, place them at close and far distances. Practice Correct Vision Habits: shifting, central-fixation... on the charts once or more per day.
Practice in the sunlight, sun shining over the shoulder onto the charts.
Shifting, switching on the two identical charts improves the memory, imagination, ability to remember, imagine and see the letters clear, improves the brains function of storing clear images of objects in the memory.
The eyecharts become familiar objects.
Familiar objects are relaxing to the mind, eyes and are seen clear. When a letter on the chart is seen clear at a specific distance; all objects at that distance are seen clear.



Practice Correct Vision Habits #1 to 8 on two identical eyecharts;
One chart is placed at a close distance.
The other chart is placed at a far distance. See picture.
Keep one chart at a clear distance.
When looking at a chart, place the chart at eye level, directly in line with the eyes, face.
The letter the eyes look at is placed in the center of the visual field; between the left and right eyes, at eye level.
The far chart is placed about 1 foot to the left or right (alternate) so the close chart does not block the view of the far chart.
When looking at a chart, maintain central-fixation;
when looking at the close chart - stand directly in front of it.
When looking at the far chart - move and stand directly in front of it.
See picture on right.



Shift on letters on the clear and unclear charts and remember, imagine and see the letters dark black and clear.
Practice with the eyes open, closed, open.
Practice with both eyes together, then one eye at a time, then both eyes together again. If vision is less clear in one eye, practice extra time with that eye. Then again a bit with the other eye, then both eyes together again to keep the vision balanced, equal in both eyes.
Keep the letter between the eyes, at eye level, center of the visual field when using both eyes together and when using one eye at a time.
Cover the eye not in use with a eyepatch and keep the eye open under the patch when the eye in use is open. Blink and relax.

Example; Person needs distant vision improvement.
Place one chart at a far, unclear distance.
Place the other identical chart at a clear close distance.
Look at the letter E at the clear close distance; shift on the letter.
Remember, imagine, see the E dark black and perfectly clear.
Do this with the eyes open, then, in the imagination with the eyes closed, then with the eyes open again.

Then; switch to the unclear distant chart.
Look at the identical letter E.
Shift on the E and continue to remember, imagine the E is dark black and clear.
Practice with the eyes open, closed, open.

With practice the distant E will be seen clear.

Switch back to the clear close E.
Repeat; shift on the E, Remember, imagine, see it dark black and clear.
Practice with the eyes open, closed, open.
Looking at the clear close E reinforces the clear image of the E in the brain/memory and helps the brain and eyes work together to produce a clear image of the E when it is seen at the far distance.

Switch back to the E at the far distance.
Shift on it, remember, imagine and see it dark black and clear.
Blink, breathe, relax.
Practice switching, shifting on the close and far E's with both eyes together, then one eye at a time, then both eyes together again for perfect equally clear 20/20 and clearer vision in the left and right eyes at close and far distances. Example: Both eyes together, then one eye at a time: start with either eye: left, then right, then left, right... If vision is less clear in one eye, practice extra time with that eye. Then; end with both eyes together again.

Allow the eyes, head/face, neck and body to relax, move freely when looking at the letters. Relaxation and movement bring clear vision.
Eye, head/face, neck, body immobility, tension, staring, squinting, straining, trying hard to see the letters clear produces unclear vision.

Practice on other letters.
Practice on smaller letters.
Practice at a variety of close, middle, far distances for clear vision at all distances.
Practice on two identical fine print charts with medium, small, smaller, and fine print size letters.
Place the charts at two different close distances.

Memorize the letters on the chart. Memorizing the letters causes the chart to become a familiar object, something that is easy to see. Familiar objects relax the mind, eyes and activate clear vision.
When the brain memorizes the letters, becomes familiar with them, there is not any effort to see them, mental strain and eyestrain are avoided, the mind/brain, eye muscles, eyes stay relaxed when viewing the chart and the letters are seen clear. This relaxation and clear vision continues when looking at other objects.
When taking a eye test at the eye doctors office, the patient is often hurried, pressured to see the letters on a unfamiliar eyechart clear.
This causes temporary mental strain, leads to squinting, staring, effort to see the letters. This causes temporary eye muscle tension, slightly altered eye, cornea shape with incorrect focus of light rays in the eye causing temporary blur that results in a unnecessary prescription for eyeglasses and over-corrected lenses that are too strong and cause increased eye muscle tension, abnormal eye shape, mental strain, increased blur and future prescriptions for stronger eyeglass lenses.
If the patient knew the letters on the chart and was allowed to relax, and use Correct Vision Habits; shifting, central-fixation... on the letters; the mind, eye muscles, eyes would remain relaxed, the letters on the memorized and unfamiliar eyecharts would be seen clear and the eyeglass prescription would be avoided.

Place a familiar eyechart in the home, work, school and shift on the letters occasionally.
Practice all Correct Vision Habits on the letters;
Central-fixation; the letter the eyes are looking at is placed in the center of the visual field; between the eyes, at eye level.
Look at and see one letter darkest black, clearest at a time in the center of the visual field. The letter the eyes are looking at is in the center of the visual field and is clearest.
Other letters on the chart around and away from the letter are in the peripheral field and are less clear.
Avoid staring, squinting, trying hard to see letters clear. Blink, relax and combine shifting with central-fixation;
When looking at a letter; shift on it from small part to small part. Move the small exact center of the visual field part to part, (point to point) on the letters. Blink, let the eyes move. Shift relaxed, easy, continually, restful.

See Doctor Bates directions in his articles in the Close Vision chapter; 'The Menace of Large Print' and 'Think Right'.

See the 'Illusion of Oppositional Movement'; the letter appears to move in the opposite direction the eyes move to, a small, quick movement no larger than the size of the letter. 'The Swing.' See Better Eyesight Magazine and Chapter 6 - The Long Swing, Rock, Short Swing.

When reading a eyechart;
Don't spend a long time looking at a letter if it's unclear. Avoid staring, squinting, straining, trying hard to see it. Shift on it, then move, shift to a new letter. Shift on that letter.
Blink, breathe abdominally, relax.
Shift from letter to letter on the chart.
It is ok to stay on one letter if relaxation, eye shifting occurs. Relax, shift point to point-see small parts-let the eyes move on the letter automatically, on their own.
The eyes, head/face, neck and body are relaxed and move freely. Move the head/face and body with the eyes when shifting on a letter and from one letter to another.

When moving to a new letter, move the head/face, body with the eyes and look/face directly at the letter.
The center of the visual field is clearest. The center of the visual field moves with the eyes from letter to letter, placing each letter the eyes look at, one letter at a time, in the center of the visual field, keeping each letter perfectly clear.
The exact center of the visual field is most clear; place the part of the letter the eyes look at in the exact center of the visual field.
Shift the eyes (visual attention) from small part to small part, moving the small exact center of the visual field from small part to small part (point to point), seeing one small part (point) of the letter darkest black, clearest at a time in the exact center of the visual field. (The part (point) of the letter the central field is on, moving upon/over is clearest while the central field is on that part.)
Practice on small and fine print letters.

The exact center of the visual field; produced by the fovea centralis in the center of the macula, in the center of the eyes retina can be seen/measured by looking at a capitol letter E, 3/8" high, 20/20 line of the distant eyechart, from 20 feet away.
When looking directly at the E, the E occupies space in the center of the visual field produced by the macula and fovea. When looking at a small part of the E (Example; a part in the center of the E), that small part is in the exact center of the visual field produced by the fovea.
+Light rays from this part of the E focus on the center of the fovea when looking at this part, placing it in the center of the visual field.
+Light rays from other areas of the center of the visual field focus on the macula around the fovea.
+Light rays away from the E in the peripheral field of vision focus on the peripheral field of the retina around/away from the fovea and macula.
The fovea (especially the center of the fovea) produces the clearest vision, clearer than 20/20.
The outer fovea and macula produce very clear vision, clearer than 20/20, but not as perfect as the center of the fovea.
The peripheral field of the retina produces less clear vision.
The far outer peripheral field is the most unclear.

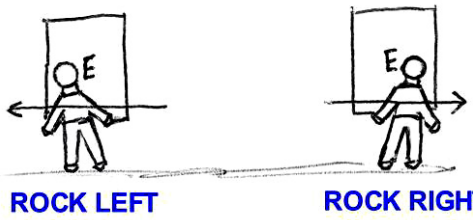
See a letter clear by placing it in the center of the visual field and then;
use the exact center of the visual field; place one small part of the letter at a time in the exact center of the visual field and see it darkest black and clearest.
Avoid staring; always shift the eyes to prevent staring, immobility; shift/move the eyes/visual attention (exact center of the visual field) from small part to small part on the letter; top to bottom, side to side, corner to corner, middle; shift from small part to small part in any direction on the letter.

Example; shift from dot to dot on the letter E. See picture on page 148.
As the eyes/exact center of the visual field move from part to part (dot to dot); see each part, one small part (dot) at a time darkest black, clearest in the exact center of the visual field.
The entire visual field moves with the eyes as the eyes shift from part to part;

Example;
Looking at the small part (dot) in the middle of the E.
This part is in the exact center of the visual field and is darkest black and clearest. All other parts are in the peripheral field and are less clear.
Now; shift from that small part in the middle of the E to a small part (dot) on the far edge of the top right side. The small part on the top right is now in the exact center of the visual field, its light ray is focusing on the fovea and it is seen darkest black and clearest.
The previous part and all other parts of the E are in the peripheral field and less clear.
Shift to a new small part; that new part is now in the exact center of the visual field and is darkest black and clearest. Blink.
The eyes can shift to a new part each second, fraction of a second, but, in that short time that a part is in the exact center of the visual field, it is seen darkest black and clearest. This is central-fixation.
When the eyes see the part/area of visual attention with the exact center of the visual field, central-fixation, the exact center is very clear, much clearer than 20/20, and the outer center of the visual field is also very clear, clearer than 20/20 and the peripheral field is normally less clear but is at its maximum clarity.
Seeing clear with central-fixation improves clarity and function of the entire visual field.

When the mind, body, eyes are relaxed the letters are clear.
Do the rock and long swing in front of the eyechart and do not try to see any letters clear. Just relax, rock or swing left and right and notice the soothing oppositional movement of the chart;
When the eyes, head/face, body swing left <; the chart appears to move right >.
When the eyes, head/face and body swing right >; the chart appears to move left <.
See chapter 6- rock, long swing.
Relax and rock or swing left and right without trying to see the letters.

ROCK LEFT AND RIGHT IN FRONT OF THE CHART
RELAX, DONT TRY TO SEE THE LETTERS CLEAR



Then, stop moving left and right. (Some small relaxed movement can be maintained.)
Look at the chart and shift on a letter for a second or two. Blink, breather, relax.

'The Short Swing'

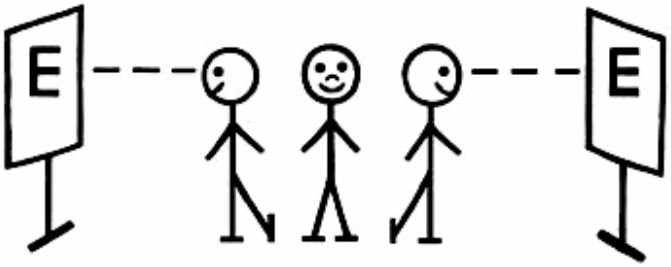
See the 'Illusion of Oppositional Movement' of the letter when the eyes shift on it;
+Shift from the left side of the letter to the right side > ;
the letter appears to move 'Swing' to the left <.
+Shift from the right side of the letter to the left side < ;
the letter appears to move 'Swing' to the right >.
Shift up, down, any direction and see the letter appear to move in the opposite direction the eyes/visual attention move to.
Practice shifting and seeing oppositional movement on large, medium, small and fine print letters at close, middle and far distances.
The movement of the letter is short, less than the width of the letter.
Blink and relax.
Seeing oppositional movement of the letter relaxes the mind and eyes, improves the clarity of vision.
Practice shifting on the letter and seeing the illusion of oppositional movement with the eyes open, then in the imagination (use memory, imagination) with the eyes closed, then with the eyes open again.
The long swing and rock are longer movements of the eyes, head, body and produce a longer (swing) appearance of oppositional movement.
Shifting on a small letter produces a smaller oppositional movement, a small Short Swing.
With practice, smaller shifts, on small letters, with a small appearance of oppositional movement Short Swing of the letter can be done. This greatly improves shifting, central-fixation and produces very clear vision. Short, small and tiny shifts, swings produce very clear vision, clearer than long, larger shifts, swings. All shifts, swings activate relaxation, movement and improve the vision.

Next; return to the rock or long swing.
The rock, long swing keeps the mind, body, neck, eyes relaxed, keeps the eyes shifting and vision clear. Stop rocking, swinging left and right every once in a while and then, shift on the letters on the chart again. Notice they are seen clear when the mind/eyes are relaxed and there is no effort to see.

Shorten the rock for a short shift, swing;
Rock left and right 2 feet, then 1 foot, then 6 inches, 4,3,2,1, ½... inch. Rock with a small movement ½ - 1 - 2... inches left and right and shift on the letters on the eyechart. See a small swing of oppositional movement of the letters. The rock keeps the eyes, head/face, neck, body relaxed, moving when looking at a letter. This prevents staring and blur. The small shift, swing also produces clear vision.

Practice Dr. Bates method of 'Flashing' the Letters; looking at, shifting on a letter for only a fraction of a second, then looking away to a different letter or object, shift on that object, then return to the letter, shift on it, fraction of a second, then look away, return, look away...
This prevents effort to see, prevents strain and blur; there is not enough time to strain, try to see any object so relaxation is maintained.
The normal eye moves continually, restful, shifting easy from point to point.

Practice The Long Swing with 2 Identical Eyecharts: Flashing, Shifting for a 'Fraction of a Second' on letters on the Eyecharts:



The Long Swing with Two Eyecharts
Identical eyecharts placed on left and right side of the body.
Swing and turn left and right and 'Flash' glance at, shift on a letter on the eyechart for a 'fraction of a second'-
Swing, turn left and 'flash' a letter on the left chart: Blink and shift quickly, easy on the letter. Do not stop swinging.
Swing and turn right and flash a letter on the right chart.
Keep swinging left and right, glancing at the letters. Relax, no effort to see - vision be comes clear.

Place 2 identical eyecharts on the left and right sides of the body.
Swing left and right and Flash a letter on the eyechart for a fraction of a second;
+Swing left < ; shift on, flash the letter for a fraction of a second on the left chart. Blink.
+Swing right > ; shift on, flash the identical letter for a fraction of a second on the right chart. Blink.
Then swing back to the left side, flash the same letter again... Repeat right, left, right, left...
Do this without stopping; keep moving, swinging left and right. Do not stop swinging when looking at the letter. The eyes, head/face and body move, swing and turn left and right together, at the same time, in the same direction. See The Long Swing.

The continual movement keeps the eyes, mind, body relaxed, left and right brain hemispheres integrated. The very short time the eyes, head, body are facing the chart prevents strain, staring at the letter. The eyes shift on the letter quick, easy, do not try to see it clear. Relaxation occurs and vision becomes clear. Practice on identical letters, then on any letters, then on smaller letters.

'Flashing the letters' = Shifting on a letter for a fraction of a second produces a 'Flash' of clear vision. The flash of clarity may last only a second but with practice, maintaining relaxation, the flashes occur more often, last longer, and vision remains clear.

Practice palming, covering the eyes, then reading, flashing the letters on the eyechart. Palming chapter 1.

+Palm for a while and relax.
+Uncover and open the eyes and look at a letter on the chart.
+Shift on the letter for only a second or fraction of a second.
No effort to see clear.
+Then cover the eyes and palm again. Think pleasant thoughts.
Remember, imagine shifting on the letter and see it dark black and clear in the mind. See the mental picture of the letter show oppositional movement as the eyes shift on the image of the letter.
+Uncover, open the eyes and shift on the letter again, fraction of a second.
+Palm again.
+Repeat palming and shifting on the letter (flashing the letter) for a fraction of a second.
This method keeps the eyes, mind relaxed, prevents effort to see, mental, visual strain and blur. Flashes of clear vision will occur.
When relaxation of mind, eyes continues, the vision, letters remain clear.

Shift top and bottom, left and right on the E. (Shift dot to dot). Blink.

Flash a letter -
+Shift on the E for a fraction of a second then
+look away from it to another object or close the eyes, palm and remember the E, shift on it in the mind. Or just think any pleasant thoughts with the eyes closed.
+Open, shift on the E fraction of a second,
+Close, repeat...

+Use the memory, imagination:
Remember, imagine the E is clear when the eyes are open and when closed. Practice on any objects, at any distance.

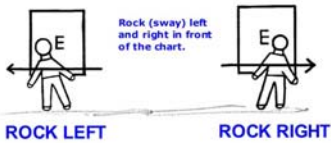
Rock, sway the body left and right in front of the eyechart again and see the chart, letters move, swing in the opposite direction.

Then; Reduce the length of the rock to 2-4 inches, moving left and right and shift part to part on a letter. Let the eyes move freely to another letter, then another as the body, head, eyes move left and right.
No effort to see. Just relax, shift, blink, breathe abdominally.

Rock up and down 1-2 inches. Rock on the feet 1-2 inches forward and backward.

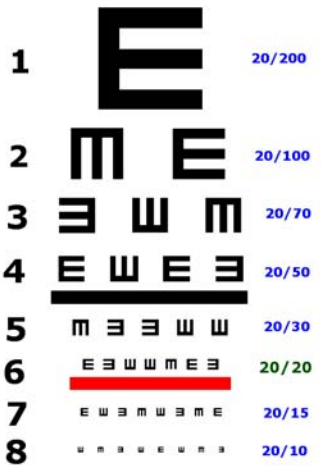
http://www.youtube.com/watch?v=863yFmc-Ius
http://www.youtube.com/watch?v=mYpsYPPV_hg

Click the links for YouTube Videos teaching Natural Vision Improvement with Eyecharts.



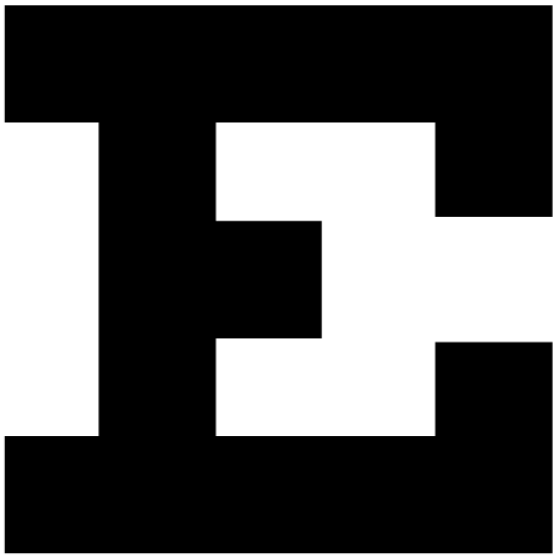
The pothooks eyechart is designed for children, adults that have not yet learnt to read the alphabet. The person points their hand in the direction the E is pointing.
Familiar objects relax the mind, eyes and keep the vision clear. This eyechart is easy to see clear because it is a familiar object: the person knows that every letter on the chart is an E. This makes it easier, more relaxing to look at the different size unclear E's and use the memory and imagination to see the E's clear: the person only needs to shift on the E, guess, imagine which way the E is pointing to see it clear.
When the brain remembers, imagines a clear, dark black letter E and guesses, imagines the E pointing in the correct direction; the brain, eyes relax, the brain directs the eye muscles, eyes to move, shift correct, directly on the letter E and the E is seen clear.
If the person guesses an incorrect direction, the E remains unclear because the eyes, brain are trying to shift on, see an incorrect image, trying to shift, move the eyes along areas of the white page away from the E. See the Pothooks Eyechart on the right.

Pothooks, Tumbling, Inverted E Eyechart



Read another example of guessing with the memory and imagination; looking at, guessing the # 7 on a bus; chapter 9 - Memory and Imagination.

20/200 at 200 Feet



20/100

F P

20/70

T O Z

20/60

P D C

20/50

L P E D

20/40

P E C F D

20/30

E D F C Z P

20/25

F E L O P Z D

20/20 Vision at 20 Feet

20/20 D E F P O T E C

20/15

L E F O D P C T

20/13

F D P L T C E O

20/10

P E Z O L C F T D

20/8

E D L T O Z F C P

20/6

L P C F E T O D Z

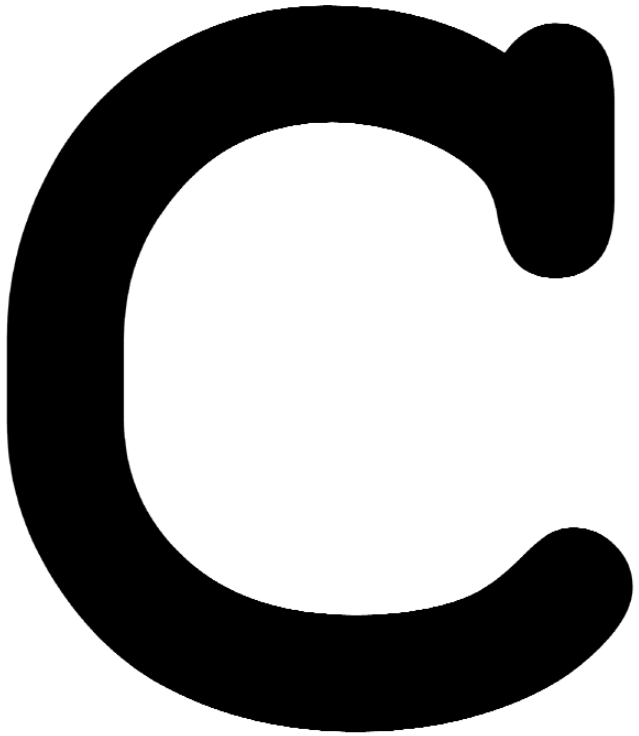
20/5

T F D O P Z L E C

Very Clear Vision, Small Print Clear at 20 Feet

Z C T L O P D F E

20/200 Vision at 200 Feet



20/100

R B

20/70

T F P

20/50

5 C G O

20/40

4 K B E R

20/30

3 V Y F P T

20/20

 2 Q C O G D □ C

20/15

R Z 3 B 8 S H K F O

20/10

F T Y V P E C □ O B R K 5 6

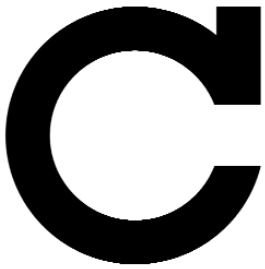
20/5

A B C D E F G H I J K L M N O P Q R S T

CLEAR EYESIGHT IS EASY WITH THE BATES METHOD

Very Clear Vision, Small Print Clear at 20 Feet

Big C Chart
From Better
Eyesight
Magazine



R B

T F P

5 C G O

4 K B E R

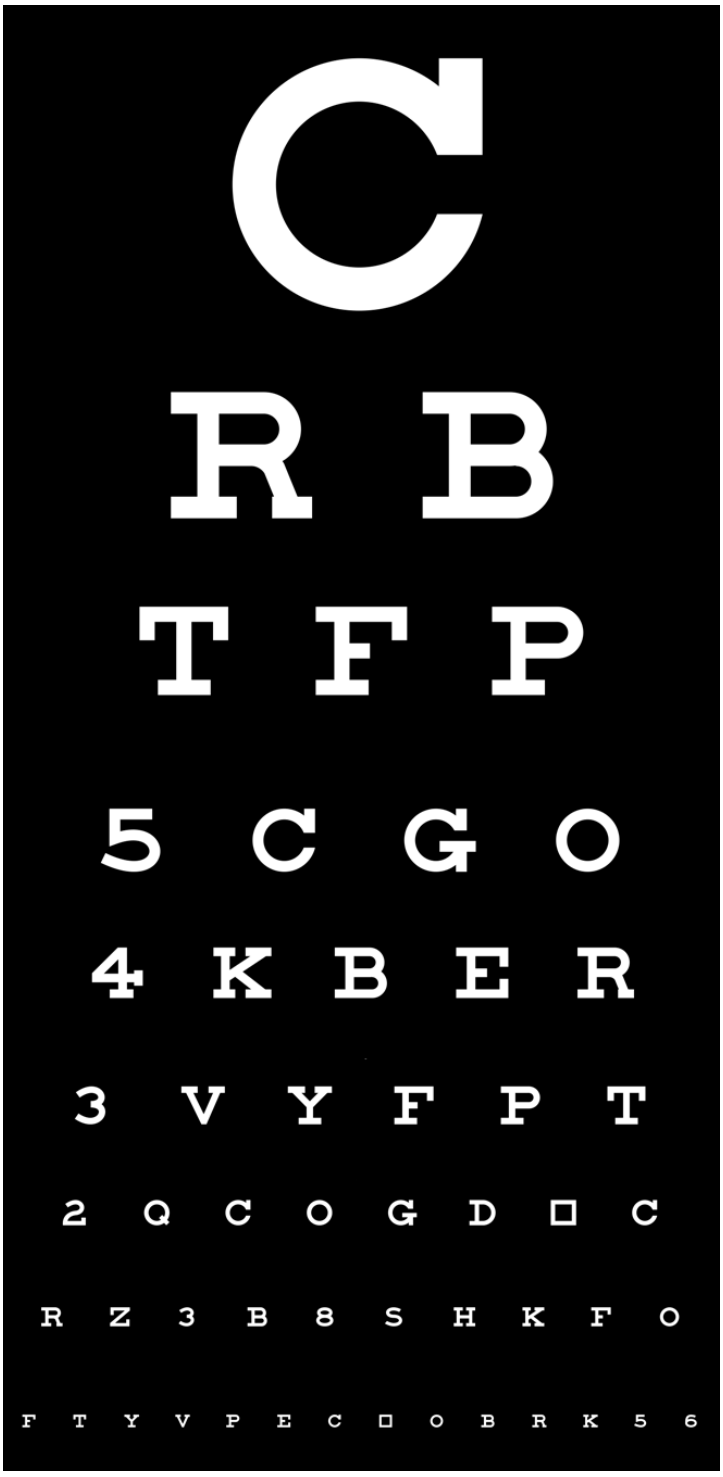
3 V Y F P T

20/20 2 Q C O G D □ C

R Z 3 B 8 S H K F O

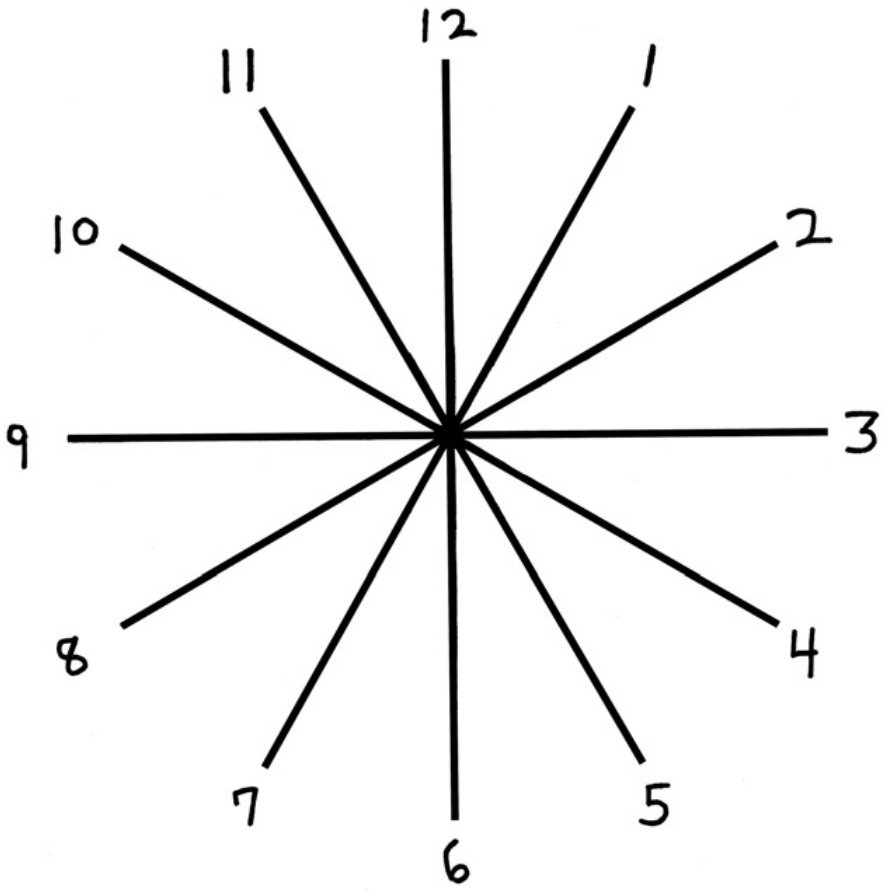
F T Y V P E C □ O B R K 5 6

White Print Relaxes the Mind and Eyes



20/20

Natural Eyesight Improvement astigmatism removal wheel



Shift on the lines;
Left and right - 9 to 3, 3 to 9
Up and down - 12 to 6, 6 to 12
Diagonally - 8 to 2, 2 to 8, 10 to 4, 4 to 10, 5 to 11, 7 to 1
Shift, trace on the lines in any direction; center to left or right, up, down, diagonally... and back to center.
Move the eyes/center of the visual field along the lines and remember, imagine, see the lines dark black and perfectly clear.
Central fixation; see one small part of a line clearest at a time in the center of the visual field and move the eyes/center of the visual field continually, easy, relaxed along the line from part ot part.
Blink. breathe slow, abdominally, relax.