

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."¹ Since then,

¹ Jour. Am. Med. Assn., Dec. 10, 1910, p. 2028.

Verhoeff and Bell have reported¹ 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 vitreous 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

¹ Proc. Am. Acad. Arts and Sciences, July, 1916, vol. 51, No. 13.

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 overstimulated. This is one cause of headaches and tired eyes."¹

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

¹ School Hygiene, Brief Course Series in Education, edited by Paul Monroe, Ph.D., 1916, pp. 235-236.

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.

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,
