

an effort of the apparatus of accommodation, which is under control of the will, but is exerted almost unconsciously. For rays diverging from a point a foot or two away, as in reading, writing, sewing, and so on, it requires a greater effort of the muscles of accommodation to accomplish this, as the lens must be so strengthened as to both overcome the additional divergence and to bring them to a focus preternaturally near. This, by great effort of the muscles of accommodation, it can do for a short time, but unable to sustain the *strain* soon gives up, and the images become blurred or of indistinct outline.

Let us here infer the chief characteristics of oversightedness to be: (1) fair vision for distance; (2) good sight of near objects, but that only momentary or for a more or less short time, followed by blurring, mistiness, &c.; (3) great aching and weakness referred to the eyes if they be *forced* to go on with the work. In *shortsightedness* we have correspondingly (a) bad vision for distance; (b) good, and continuously good sight for near objects if they are sufficiently near; (c) aching eyes, but commonly not so great as in oversightedness, but this depends upon the degree of each. They are not to be compared in this respect unless each be of about equal degree.

In our remarks on nearsightedness it was stated to be progressive, its progress being hastened by the application needed in school life. Is this true of oversightedness? It is not, at any rate, nor to the same extent. True, the defect becomes more noticeable with advancing years quite throughout life; but this advance is not due to use of the eye, but to the fact that as we grow older our power to accommodate the shape of the lens diminishes, and that quite independently of overuse, and progresses even with the utmost care.

It may be asked why eye-balls are preternaturally short or long, and lead-

ing thereby to such serious discomfort. Is it an effect of modern civilization? No; it has always been so. "There is nothing new under the sun." Our eye-balls are long or short just as our noses are, depending upon ancestral peculiarities and inherited tendencies, for the evidence of hereditary influence is convincing. We often see several of a family having similar defects and may trace the same back a generation or two. Such defects existed long ago—at least what evidence we have favored that view. "If Gustavus Adolphus had had concave glasses I think he would not only have won the battle of Lutzen, but also saved his own life; but as he did not have them he was unable to distinguish his own colors and became entangled among the Austrians and was killed. His inability to see objects at a distance—and in those days there was no artificial aid to vision—led him to suppose that the enemy were his own men, and the life of a great general was sacrificed."* If these defects are (not more common, but) more noticeable now, it is because the influences of civilization, and notably school life, brings them to light. Science now maps out minor defects and names them; before, they were unknown.

Of 209 pupils in the District Schools of Cincinnati, Drs. Williams and Ayers found $6\frac{1}{2}$ per cent. oversighted. Of 210 scholars in the Intermediate Schools, 6 per cent. were oversighted. The same percentage was found in 211 pupils of the Normal and High Schools. The percentage is often higher than this would indicate. Thus, Drs. Prout and Mathewson found 34 per cent. of the pupils in the Brooklyn, N. Y., Polytechnic Institute, oversighted. Why this marked discrepancy? In the latter case the very smallest grades of the defect have been taken into account. There may be such a small shortening of the eye-ball as to be

*Dr. Roosa in N. Y. *Medical Journal*, 9th Oct., 1880.