

the eye would have been comparatively superfluous. "In much wisdom is much grief" indeed, as far as the organ of sight is concerned, in modern times at least. It is a fact of which educators, parents, and all interested in general progress cannot be too well aware that: (1.) In general weakness of the organ of vision, and in short-sightedness, there is a notable increase in the number of persons affected throughout the civilized world. (2.) This is most marked in the most highly civilized countries; lands in which illiteracy is least common, and in which the highest learning abounds, notably in England, France, America, and Germany, especially the latter. (3.) The age at which short-sight commences and reaches a most inconvenient degree of development is constantly and rapidly lessening; so that now a vast number of very young children are near-sighted. (4.) In both the number of persons affected and in the age at which the disease or infirmity appears, there is a marked change for the worse within the past decade. The aim of the writer, in this paper, will be to so far deal with the subject and so explain in a brief and popular way the anatomy and physiology of the eye that those of his readers who may not perhaps be fully aroused to the importance of the subject already will feel that it is one of those matters which should daily influence the actions of educators who may, by a few common-sense safeguards, assist in preserving the most valuable of our organs of sense, and thus confer on their students a lasting benefit.

*Anatomy and Physiology of the Eye.**—Let any student who desires

to understand the anatomy of the eye and have therefore a sure basis for a sound physiology, obtain two ox's eyes, the large size of which is an advantage in this case; boil one until it is quite solid throughout, and preserve the other for use in the natural state: both should be fresh. Divide the boiled one with a sharp knife in a direction from before backwards; this will show the relative position of the different parts, especially of the various bodies that act as lenses; while a transverse section of the un-boiled eye (best made with a sharp scissors) will present a more truthful and detailed picture of the general appearance in life. The following, to describe briefly, may be observed, and the appearances are sufficiently like those of the human eye to answer almost every purpose; 1. Entering at the back, nearer the internal than the outer part of the ball the *optic nerve*: afterwards expanding as the innermost coat or tunic of the eye, is the *retina* which is almost transparent and of very delicate structure; its purpose the reception of impressions from the rays of light. 2. Next to this, passing outwards, the *choroid coat*, thicker than the preceding and rendered quite opaque by abundance of black pigment; its purpose the absorption of rays of light passing through the *retina*, so that they may not be refracted and thus blur the image; this is also the *vascular* coat, or that in which blood-vessels are most abundant. 3. Outermost, the dense, tough, inelastic, thick *sclerotic* tunic; whose great purpose is to confine, keep in place, and protect the more delicate parts within. 4. All these tunics end abruptly anteriorly, where, like a segment of a smaller sphere set into a larger, or like a watch crystal in its case, we see the thick but perfectly transparent and colourless *cornea*, which is without blood-vessels and in structure allied to cartilage. 5. Sus-

* The reader is earnestly urged to pursue the study of the eye by the dissections proposed, as difficulties will then disappear that will otherwise be insurmountable. The technical terms are not essential to a correct understanding of the subject; but are inserted for those more especially who may wish to have their knowledge in a scientific form.