

express himself in severely technical language. On the contrary, anyone of average intelligence can, by the aid of a few columns of reading matter and a small number of diagrams, obtain a practical knowledge of the method—for method it is—employed by the eye in seeing.

First of all, let us examine the normal eye, which from the optical standpoint may be regarded as an irregularly shaped globe whose long diameter is about an inch. An organ of this proper shape and size is called the *emmetropic eye*.

I have begun by giving prominence to the idea of size and shape in the eye, because, as we shall afterward see, it is almost invariably deviations from the normal shape and the normal size, or deviations from both of these, that produce most of the ills to which human eyes are subject.

The contour of the healthy eyeball is that of a watch glass set upon a regulation baseball; the watch glass is the *cornea* or external transparent portion of the globe, while the almost complete segment of the larger circle is covered by the *sclera* or tough white coat.

Immediately behind the cornea is the outer plane of the *iris*, that beautifully tinted velvet-like curtain whose contraction and expansion regulate the size of the *pupil*. A very curious thing about the iris, and a fact not generally known, is that differences in the color of the eyes depend not upon *variety* in the iritic pigment, but in the quantity and disposition of the coloring matter of the iris. That is to say, the only difference between deep blue eyes, hazel eyes, gray eyes and the various shades of brown eyes is that each possesses a different quantity of pigment from the others. This coloring material is in all eyes a sort of dull brown substance whose appearance of brilliancy is produced by seeing it through the cornea and a certain fluid (called the *aqueous*) lying between cornea and iris. In much the same way bright color impressions are obtained in a certain kind of glass paper weight. When, however, the glass is broken, the optical illusion disappears and the colored background is found to be dull and commonplace.

Immediately behind the iris curtain lies a remarkable structure—the crystalline lens—a veritable double convex “magnifying glass,” inclosed in a thin capsule and held in position by innumerable “guy ropes” by which it is attached to the sclerotic. These strong, thread-like fibres are joined to a small but powerful and very active muscle (called the ciliary muscle). Owing to the attach-