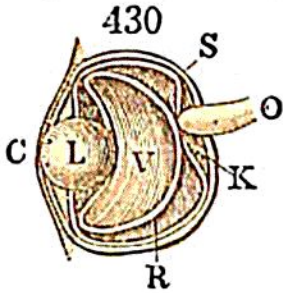


however convex, would be inconsiderable; and the chief agent for performing the requisite refraction of the rays is the crystalline lens. We, accordingly, in general, find the cornea nearly flat, and the globe of the eye approaching in shape to a hemisphere; while the lens itself is nearly spherical, and of great density. These circumstances are shown in the section of the eye of the *Perch*, Fig. 430.* The flatness of the cornea leaves scarcely any space for aqueous humour, and but little for the motions of the iris.

The surface of the eye in fishes, being continually washed by the water in which it is immersed, requires no provision



of a secreted fluid for that purpose; and there are consequently neither lacrymal apparatus, nor proper eye-lids; the integuments supplying only a thin transparent membrane, which passes over and protects the cornea, serving the office of a conjunctiva.

The eye retains its form by the support it receives from the sclerotic coat, which is of extraordinary thickness and density. In the *Skark* and the *Skate*, the eye is supported from the bottom of the orbit, by a cartilaginous pedicle, which enables it to turn as on a pivot, or lever.

Sir David Brewster has recently made an interesting analysis of the structure of the crystalline lens of the *Cott*, to which he was led by noticing some remarkable optical appearances presented by thin layers of this substance when transmitting polarized light. He found that the hard central portion is composed of a succession of concentric, and perfectly transparent, spheroidal laminæ, the surfaces of which, though apparently smooth, have the same kind of iridescence as mother-of-pearl, and arising from the same cause; namely, the occurrence of regularly arranged lines,

* In this figure, as in the others, c is the cornea; L, the lens; v, the vitreous humour; r, the retina; o, the optic nerve; and s, the sclerotica. There is also found in the eyes of most fishes an organ, lodged in the space κ, termed the *Choroid gland*, which envelops the optic nerve, is shaped like a horse-shoe, is of a deep red colour, and highly vascular; its use is quite unknown.