

or not. A good deal also depends upon the colour of the subjacent fluid, and upon contrast with parts of the fundus which present the usual appearance.

"The papilla has a red appearance in various diseases, owing to increased vascularity of its surface; but its colour varies considerably in the normal state, often resembling grey cerebral substance, and it is sometimes pinkish. Some parts of it appear to reflect more light than others—a fact which is attributable to our being often able to see back to the lamina cribrosa. The more brilliant parts correspond to those in which fibrous tissue predominates, and the darker ones to the transparent substance of the nerve-tubes along the axes of which we look.

"The papilla sometimes appears abnormally large and vascular, viz., in cases of staphyloma posterius at a certain stage where the sclerotic appears around the optic disk in consequence of atrophy of the choroid; and small retinal vessels, which cannot be distinguished on the orange ground in a normal eye, come into view. Eyes affected with this disease are more or less myopic; and the optic disk proper appears hardly so white as the surrounding sclerotic denuded of the choroid.

"The choroid hardly comes to the margin of the place of entrance of the optic nerve, even in a normal eye, and on this account the nerve substance may be much atrophied, according to Liebreich, without an apparent diminution in the diameter of the disk.

"The papilla optica, which does not really present the form of a globular elevation during life, sometimes appears as if it did so when it is observed by means of the ophthalmoscope. One cause of this has been pointed out by Liebreich, who has drawn attention to the fact that the distribution of dark and light coloured parts resembles that in a representation of a sphere well executed on a plane surface.* When the optic nerve is cupped or excavated, as in glaucoma, this appearance comes out more strikingly, especially when the indirect method of examination is employed, because we are then subject to another optical illusion depending upon the reversal of the image, and similar to that in consequence of which the inverted image of an intaglio produced by a biconvex lens, resembles a cameo; the shadow thrown by the margin of the cup or excavation appearing to be on the side opposite to that from which the light comes to it instead of on the same side.† This illusion is, for obvious reasons, most striking when the image of the disk is near to one side or other of the observer's field of vision.

* Grafe's Archiv, Bd. i., Abt. ii.

† See "A Fragment on Glaucoma," by Dr. Mackenzie, in No. xi. of the London Ophthalmic Hospital Reports.