

upon wounds of the cornea, lens or lens-capsule. The location of the pain will also serve as a guide, so will, too, the age of the patient, as it is usually found in middle-age, rarely in young children or persons advanced in years. From choroiditis, by the early appearance of floating opacities in the vitreous, the fact that myopes are often attacked, and that it usually follows debilitating diseases, such as small-pox, septicæmia, typhoid fever, etc., and occurs at all ages. It is often due to syphilis, rheumatism, gout and mechanical injuries. From papillitis by the normal condition of the tension, pupil and anterior chamber, the enlarged size of the blind-spot, while the vision may not be impaired, and the fact that both nerves are usually affected, and that the affection is generally due to intra-cranial disease such as cerebral tumor or abscess. From atrophy of the optic nerve, by the impaired color vision, at first having difficulty in recognizing green, then red, and next yellow. This progresses gradually until nothing is left in the field but blue. There is no pain nor unpleasant symptoms present except a delicate haze which appears to be spread over the sight, and which gradually increases. Both eyes are usually attacked, and the pupils may be contracted or dilated, depending upon the seat of the cause. If the lesion is in the brain the pupils will be dilated, if in the cord, contracted. Fifty per cent. of the cases of atrophy of the optic nerve are due to diseases of the brain or spinal-cord, and therefore we should look for signs of ataxy, knee reflex, etc. The symptoms of this affection are constant. Central vision is affected and grows worse as the disease advances. The ophthalmoscope will show the cupping of the disc peculiar to atrophy.

We now come to the consideration of the causes, and, as Noyes says, we here enter upon the field of speculation. That we have an increase of the intra-ocular fluids causing tension, I have no doubt, but just what causes or produces that increase is still an open question. We have nearly as many theories as authors, but those looked upon with most favor are hypersecretion and retention, the latter having the most adherents, although open to objection. Von Graefe believed the tension and disease were due to serous choroiditis; Donders, Hippel, Grünhagen to irritation of the fifth pair of nerves; Mauthner to some lesion of the optic nerve, and a peculiar form of choroiditis;

Jaeger to some primary optic nerve disease; Stellwag to rigidity of the sclera; Lange to disturbances of the circulation. Knies, of Vienna, and Weber, of Darmstadt, to adhesion of the periphery of the iris to the border of the sclero corneal junction. Weber believed that this was occasioned by swelling of the ciliary processes. Priestly Smith, of London, says it is due to narrowing of the circumlental space in consequence of the gradual enlargement of the lens, which takes place as we grow older. Noyes, like Priestly Smith, believes in the retention theory. Stotting says it is due to strain upon the ciliary body which sets up an inflammatory process in the choroid, thereby blocking up the lymph streams about the venæ vorticosæ and thus lessening the circumlental space, which is followed by retention (same as from enlargement of the lens, according to Priestly Smith's theory), and consequent pushing forward of the lens-system and closing the canal of Schlemm. Schœn holds that the constant strain on the ciliary muscles while endeavoring to overcome the presbyopia creates irritation and causes thickening of the zonula and capsular leaflet, and finally the muscle weakens and the lens-system is pushed forward, closing up the excretory channels. Rheindorf has practically the same opinion. Brughsch thinks that a small cornea is a predisposing cause, and believes that to be the reason why the Semitic is more prone to this disease than any other race. He has carefully measured the corneas of a large number of Egyptians and found them smaller than those of the Anglo-Saxon race. He noticed that the artificial eyes sent from Europe were furnished with too large a cornea to correspond with the normal Egyptian eye. Schnabel condemns the whole pressure theory. Glaucoma is met with more frequently in Europe than America. It may be hereditary, and it may be brought on by certain exciting causes, as over-indulgence in stimulants, tobacco, and by excessive exercise, mental anxiety, injuries, etc.

The prognosis in this disease is unfavorable, as its tendency in all forms is to total loss of sight. It may be years creeping towards the dreadful end, or it may destroy the vision in a few hours. Sight may be lost for a time, during an acute attack, but after the subsidence of the inflammation it may return again, generally somewhat reduced in quantity. Both eyes will in time be affected.