to the papilla either vertically or slightly concentric to it, thus involving the area of greatest density of the choriocapillaris.

The peculiar way in which the formation of reflex lines begins is best studied in young subjects after contusio bulbi. The lines appear a day or two after the contusion, sometimes much later. At first they are irregular and gradually develop their typical form. They persist for days, weeks or even months, often with slight variation of their course. Whether the folds give reflexes and double contours or are reflexless and dull depends on the age of the individual, the kind of light used and its angle of incidence on the folds. Reflexes are seen mostly in young individuals. The same folds could appear dull in long-waved light and shiny in short-waved light.

These investigations lead Vogt to the conclusion that both the reflexless folds and the reflecting ones have, in the majority of cases, if not in all, one and the same basis. They owe their origin to the optical plane forming the boundary between the retina and the vitreous, i.e., the anterior surface of the membrana limitans interna. The index difference between vitreous and limitans interna plays an essential rôle in the production of reflexes.

He refers at length to similar ophthalmoscopic observations by other authors and their views as to their causation.

In the body of the paper there are reproductions of two microphotographs of sections of the retina and one ophthalmoscopic diagram. There is a plate at the end giving nine fundus pictures in colour.

This is Vogt's concluding contribution on the subject.

D. V. Giri.

BOOK NOTICES


This book as indicated by the author, comprises a study from the anatomical, physiological, and pathological points of view, of the corneo-scleral segment of the eyeball, or as he terms it "la calotte cornéo-sclérale." Except in the last chapter on "Ruptures and Penetrating Wounds" of the eyeball, it deals only with those structures, cornea, sclera, and ocular conjunctiva, which are accessible to external examination, and in which pathological changes are, as a rule, easily discoverable. The book is divided into two main parts, preceded by a few pages on embryological and anatomical "generalities." The first part of 68 pages is entitled "Anatomical and Physiological Characters,
and Clinical Examination." It deals with (1) the macroscopic, and (2) the microscopic characters of the cornea, sclera, and ocular conjunctiva; (3) the physiology of the anterior segment of the globe; (4) the clinical examination of the cornea and sclera under diffuse and focal illumination, by the corneal microscope and slit-lamp and by transillumination. The second part, extending to 142 pages, is devoted to diseases of the structures under consideration, the cornea, the limbus, the anterior portion of the sclera and episclera, and the ocular conjunctiva. This is followed by a section on Ruptures and Wounds of the Eyeball, including the radiography and treatment of intraocular foreign-bodies, and a few paragraphs on compensation for damage to or loss of sight, according to the French law of 1898.

This book, planned on somewhat novel lines, is one of more than usual interest, and will repay its readers. It is well and clearly written, and contains much clinical and pathological information not to be found in ordinary text-books. The chapter on examination of the sclero-cornea by the most recent and accurate methods is especially commendable. The illustrations in the text are numerous, well chosen and most of them are very good.

The reviewer is inclined to question the author's judgment in adding the section on ruptures and wounds of the globe; that subject, including the treatment of penetrating foreign bodies, has been so often and so fully dealt with elsewhere. For the rest of the volume the reviewer has nothing but praise. Those familiar with the French tongue will enjoy and benefit by its perusal.


The writing of such a book as this must be a matter of considerable difficulty. It is not easy to decide how much to include and how much can be safely omitted. There is on the one hand the danger of devoting so much space to neurological material as to make the volume unnecessarily burdensome and complicated for the student of ophthalmology, for whom it is obviously intended; on the other hand, the intelligent student will not be satisfied with a bald recital of facts unaccompanied by any attempt at their rational explanation. This again requires an adequate summary of the anatomy and applied physiology of the nervous system, of which there may easily be too little or too much.

The method of presenting the subject must be another difficulty; it may be dealt with primarily from the ophthalmological side, the various symptoms due to lesions of the nervous apparatus
of vision and of the mechanism for the control of the movements of the eyes, being dealt with separately and systematically; or on the other hand, the text may be based on a neurological classification, and consist mainly of an examination of the ocular symptoms and complications that occur in different nervous diseases.

The authors of this text-book must be congratulated on the success with which they have surmounted these and other difficulties. The anatomical and physiological introductions to the different sections are on the whole adequate, and yet do not occupy too much space at the expense of clinical material.

The main point of unfavourable criticism is the very little attention that the pathology and pathological anatomy of the various lesions receive; thus no mention is made of the nature or cause of tabetic optic atrophy, and "optic neuritis" is simply divided into inflammatory and oedematous types without any discussion of the pathogenesis of either type. Though pathology may not have entered the authors' scope, some space at least might have been devoted to it in a text-book extending to over 400 pages.

There are also curious lapses in the book; all forms of optic atrophy, for instance, are dealt with in less than two pages, and no attempt is made in it to give a rational or systematic description of classification of the nature, symptoms or course of its different clinical forms. The subject of scotometry and perimetry might have received more attention, and the symptoms of disease of the optic chiasma certainly deserve more than a single paragraph in a volume of this size.

The first part of the volume is devoted to the anatomy and physiology of the mobility of the eye, the methods of its examination and the symptomatology of external and internal ocular palsies. Then there follows a discussion of the various disturbances of vision due to local and other lesions of the visual system, which is on the whole very fully and carefully dealt with. The sensory, vasomotor and secretory disturbances of the eye occupy the next two chapters.

The second section of the book describes the symptomatic disturbances of the ocular system which occur in various diseases of the nervous, digestive, respiratory, and circulatory systems, and as a result of intoxications and infectious diseases, for the book, despite its title, is not merely a text-book of ophthalmological neurology. These chapters dealing with general medical ophthalmology are so sketchy and incomplete that it is regrettable that they have been included in a volume which is otherwise so complete and reliable.

There is a sufficiency of well-chosen illustrations, both of diagrams and of clinical subjects, and a fairly complete index.