the luminous rays which are always a marked feature of these short circuits.

Morax's conclusions are that after accidental electrocutions one can see supervene the signs of irido-ciliary inflammation preceding or accompanying the lens changes, the eyes being affected together or successively, the first signs being from ten days to three months after the accident. "The mere verification, or finding, of sequelae of iridocyclitis and of the lens lesions will not warrant the attribution of the ocular lesions to an endogenous infectious process." This, however, appears to be just the special difficulty of these two cases, notes of the third case not being given in the present paper.

W. C. SOUTER.

BOOK NOTICES

Ferraris' Dioptric Instruments, being an elementary exposition of Gauss' Theory and its Applications. Translated by OSCAR FABER, D.Sc., O.B.E. Printed at the request of the Ministry of Munitions. Published by H.M. Stationery Office, 1919. Price 4s. net.

In 1840, Gauss published in the Royal Society of Göttingen, a paper entitled "Dioptric Researches," tracing the path of the central rays of light through a homocentric system of refracting media. His method, which expounded the theory of cardinal or fundamental points, greatly simplified the theory of dioptric instruments. Previous researches fell into two groups—those in which the thickness of lenses was neglected and those in which it was not. The first group, in the hands of Coles, Euler, Lagrange, and others, led to simple formulae and graphic constructions. The second resulted in complicated formulae, little or not at all adapted to geometrical constructions. There was a natural tendency therefore to neglect the thickness of lenses in cases where this procedure was unjustifiable. Gauss' theory permitted of equal simplicity and accuracy in all cases. Of the cardinal points the foci were previously known, and Möbius, in 1830, described the principal points, but Gauss first worked out in detail their properties. In 1845, Listing did the same service for the nodal points, which had been previously noticed by Biot.

Carl Friedrich Gauss was one of the greatest mathematicians of his age, but he wrote in a difficult though precise and exhaustive style. Like most of his work, his theory of cardinal points remained buried and unknown to any but a few mathematicians, who had little interest in the practical applications. The analytical proof of
the theory of Gauss was applied to the eye by Helmholtz in his "Physiological Optics" in 1856. The geometrical proofs of the theory were worked out by Clark Maxwell (1858), Neumann, and others; but simple though they were, they were not rendered generally available to opticians until Ferraris published his treatise in Italian in 1876. This book marked an epoch in the history of the subject, and was translated into German by Lippich in 1878. It does not redound to the credit of British enterprise that so important a work did not find a translator into English until the exigencies of the War made this step imperative. The book has at last appeared in English—translated from the German edition by the son of a Dane, and printed at the request of the Ministry of Munitions.

The title is not one to attract the ophthalmologist, but he would be grievously mistaken if he concluded that it makes no appeal to him. It contains the simplest exposition of the optical properties of the eye, lenses, and optical instruments which is available to anyone who wishes to obtain a sound knowledge of the mathematical principles of the subject. There is nothing in the book which cannot be easily mastered by any student who has the most elementary acquaintance with geometry. It contains no calculus and practically no trigonometry.

In the first part the fundamental properties of the dioptric system are considered in general. The formulae expressing the relationships between focal lengths and conjugate points, and so on, are in each case accompanied by clear geometrical constructions. Telescopic systems—without principal points—are also discussed in an elementary fashion.

In the second part applications are made to the eye, to lenses, to those systems of lenses which are most commonly used in the construction of instruments, and eventually to the instruments themselves, including a theory of compound instruments in which the expressions magnification, Ramsden circle, brightness, and field of vision are dealt with in general terms and expressed by formulae applicable to all instruments, microscopes as well as telescopes, by inserting the correct values of the symbols used.


This substantial volume of 428 pages, includes the proceedings of the Ophthalmological Society of the United Kingdom during its Annual Congress in May, 1919, with the transactions of four of the five affiliated societies, namely, the Oxford Ophthalmological Congress, the Midland Ophthalmological Society, the Irish Ophthalmological Society, and the Ophthalmological Society of
Egypt. The whole forms a most representative volume. As regards the parent Society discussions upon the "Visual requirements of Aviators" and "Eyesight in connection with Education," together with the Bowman Lecture upon Plastic Operations upon the Orbit, etc., by V. Morax, are reported, together with papers and cases, as usual. It also includes the Doyne Memorial Lecture delivered by Mr. J. Herbert Parsons at Oxford in July last.

S. S.


Special attention may be directed to this number of our contemporary since it is devoted to ophthalmology and oto-laryngology. It is edited by Drs. A. Cantonnet and L. Baldenweck, both of Paris.

So far as ophthalmology is concerned, the former opens with a brief but interesting discussion, dealing with French eye work during the war, from 1914 to 1920. In the course of his paper, Cantonnet treats of many subjects, as, for example, ocular physiology, infections occurring in general infections (especially in war), injuries of the eye, radiography, sympathetic ophthalmitis, and such questions as aviation, treatment of the blind, and conservative surgery. Drs. Duverger and Mettey describe a method of muscular advancement whereby a result of 15° or 20° may be obtained by resecting about a centimeter of the body of the muscle. The tendinous insertion is not touched. In cases of purulent ophthalmia in adults, Aubaret advocates early and vigorous treatment on the classical lines, but when the cornea becomes involved recommends covering the cornea with the conjunctiva. According to Dr. R. de Saint-Martin's views, extirpation of the lacrimal sac must be undertaken in a systematic way in order to avoid haemorrhage, and should be followed by immediate suture. Drs. L. Vacher and M. Denis (Orleans) are of opinion that ablation of the lacrimal sac may be advantageously replaced by careful cauterization of the sac with chronic acid, of which they employ 1/3 c.c. of a 1/50 solution. In order to neutralize any escaping acid, one drop or two of pure oxygenated water should be placed in the conjunctival sac as the injection is made. Dr. Vinsonneau gives the common-sense advice that any medical man may remove a foreign body from the eye on the condition that it is placed superficially, and that it has not been present long. Dr. Chenet writes on hypopyon keratitis. Dr. Jeandelize (Nancy) advises that when an awkward socket remains after enucleation of the eye, the cavity be propressively dilated by the insertion of larger and larger vulcanite casts moulded for the purpose. Each is worn for from six to ten hours a day. The editor writes upon decompressive operations in chronic glaucoma,
and upon the advantages of iodine [equal parts of tincture iodine (codex), glycerine, and 90 per cent. alcohol according to Terrien] directly applied to the edges of the eyelids and the operative field. Provided the simple tincture is not older than a fortnight, he shows that it has no irritating action on the cornea. S. S.

NOTES

THE deaths are announced of the following American ophthalmic surgeons: C. Brote-markle, Salisbury, Md. Stephen O. Richey, Washington, D.C. James F. Smith, New York City. C. F. Sterling, Earrenton, Virginia, once Professor of the Eye and Ear at the University of Michigan. Francis Valk, aged 74, of New York City. Dr. Valk was for many years Professor of Ophthalmology in the New York Post-Graduate School.

Appointments

Charles Goulden has been appointed assistant ophthalmic surgeon to the London Hospital.

W. Niccol has been appointed ophthalmic surgeon to the Gloucestershire Royal Infirmary and Eye Institution.

F. D. Blaxland has been appointed honorary ophthalmic surgeon to the Rookwood State Hospital and Asylum at Lidcombe, New South Wales.

An X Ray Memorial

There is a movement on foot to establish a chair of X ray study at one of the universities and perhaps also an X Ray Research Institute in London, in memory of the late Sir J. Mackenzie Davidson.

Moorfields Dinner

We are now able to supplement the bare announcement of the Moorfields Annual Dinner for 1920, made in the last number. It will take place on Thursday, March 11th, at the Criterion Restaurant, at 7.30 p.m., Mr. William Lang in the Chair. Tickets 12s. 6d. each, exclusive of wine, may be obtained on application to Mr. Charles Goulden, 42, Welbeck Street, W.1.