To the Editor THE BRITISH JOURNAL OF OPHTHALMOLOGY

SIR,—A surgical instrument factory, of Freiburg (Germany), has just sent me a prospectus, quoting highly flattering remarks, signed Professor Dr. Landolt.

I sincerely hope that none of my colleagues who have received the same prospectus will confuse my name with that of this Professor Doctor.

Yours, etc.,

PARIS, Nov. 30, 1920.

Dr. EDMUND LANDOLT.

BOOK NOTICES

Fatigue of the Visual Apparatus in Miners. (La Fatigue de l'Appareil Visuel chez les Ouvriers Mineurs.) By Dr. M. STASSEN. Liège : Imprimerie H. Vaillant-Carmanne, Place Saint-Michel, 4. 1914-1919.

This book is the result of a close practical study of coal miners' nystagmus which the author has made over a number of years, interrupted only by the war.

In order to become thoroughly familiar with the condition under which work in metalliferous as well as coal mines is carried on, Stassen has frequently worked underground himself, and, in addition to this, he has had the advantage of an association with such an authority on the subject as Nuël; it is, then, not surprising that the result is a contribution to the present knowledge of coal miners' nystagmus which no one interested should be without.

Perhaps the most attractive portion of the book is that dealing with the pathogeny of the disease, a clue to which is found in the title, namely "Fatigue of the Visual Apparatus in Miners," for Stassen regards the nystagmic condition as essentially one of excessive fatigue.

To explain this theory, the physiology of vision, according to Nuël, is put forward at some length, thus: "The visual organ, like other sense organs, can be regarded as an ensemble of neurons through which the transformation of impressions into movement is effected.

"Apparently, the most voluntary of our visual movements must
be regarded as consequences of physiological, i.e., physical processes and not excited by conscious states.

"In man these physiological processes are undoubtedly accompanied by conscious phenomena, light sensations, etc., but these sensations are not the exciting causes of the movements observed, they result from nervous, i.e., physical processes of which sensation is a psychic epiphenomenon."

On this principle, the author regards all the motor phenomena of which the visual apparatus of miners is the seat, as reflex processes. The point of origin, and consequently, the centripetal route of these reflexes, may be very variable. Most frequently it happens to be luminous, vibrations striking the photo-receptor organ (retina) and causing there a physiological process, a movement or a molecular kinesis which Nuël has called "photo-reception."

In its turn photo-reception provokes in the optic nerve a further molecular kinesis which is propagated to certain central nerve-cells (probably modified) and thence by centrifugal nerve-fibres to muscles, glands, etc., where the kinesis is translated into a mass movement of the body as a whole, or of parts of the body (movement of the head, arms, eyes) or even a chemical movement (secretion).

These final movements, provoked remotely, which follow a photo-reception may be designated "photo-reaction."

Photo-reaction may be of two kinds: (1) Somatic (on the body or parts of the body), placing us in direct communication with the outer world. These are the true photo-reactions which exist in the lower animals to the exclusion of all others as reactions of attack or defence and which must be regarded as the physiological aim, the raison d'être of photo-receptions. (2) Ocular photo-reactions (on the eyes) are met with in man and in those animals which possess a motor system of the globes. It is to the question of ocular photo-reactions that the author more especially directs attention, for it is these which are chiefly involved in underground work.

The reflexes which concern the eye and arise from it he speaks of as "oculo-ocular reflexes." They are of two kinds: (a) The visual reflexes; (b) The reflexes of protection of the visual apparatus; (a) are those of lateral regard, convergence, and divergence, whilst (b) are the palpebral, pigmented, pupillary, Meibomian, ciliary, lacrimal secretory, and vaso-motor-reflexes.

In addition there are other ocular movements which are originated, not in the visual apparatus itself, but elsewhere, thus: labyrinthine excitation (sense of equilibrium) can reflexly determine ocular movements (ocular stato-reactions or labyrinthine nystagmus).

This equilibrium is achieved provided that the external agent does not make its influence felt for too long a time or too frequently. On the contrary, if its action persists or is repeated the disturbances in the working of the visual reflexes increase in intensity, and at
once the whole apparatus is deranged. This is, according to the author, just what occurs in miners and especially in coal-miners. In these workers the visual reflexes are submitted to violent and repeated shocks and efforts, for, even at the moment of descent into the mine, the rapid change of lighting and the increase in pressure place the mesocephalic co-ordinations of the ocular movements of the globe in unstable equilibrium.

The efforts of vision (accommodation, fixation, etc.) required by work in bad conditions of lighting are followed by disturbance of the function of these nerve centres.

The centripetal influences, visual, labyrinthine, static, etc. (photo- and stato-receptions), which provoke in daylight the normal action of the reflexes over which these centres preside are completely changed and at once give rise to phenomena of exaggerated fatigue, especially in individuals who are predisposed and who present a special fragility of these centres.

The fatigue which work in bad conditions of lighting imposes on the visual apparatus engenders morbid phenomena which together make up a nerve syndrome characterised by incoordination and the exaggeration of nervous reflexes.

The clinical symptoms of this syndrome may vary from one subject to another, but all bear the imprint of biological troubles provoked by accumulation of fatigue. The ocular oscillations of miners are really only the clinical manifestations of fatigue in the execution of ocular movements.

This gives an outline of the author's views on the pathogeny of the disease.

The first chapter is devoted to a historical survey, other chapters to statistical research, the physiological conditions of the miner's work, and a very fair description of the various forms in which the trouble may exist, with illustrative cases, etc.

With regard to treatment but little is said, as may be imagined; mention is made, however, of psychotherapy "even institutional treatment," and with the latter the reviewer is in accord. It must indeed have occurred to all who see these cases that the worst, at least, might be considerably benefited by admission into an institution somewhat on the lines of a shell-shock hospital, for nothing could be worse than the present method of leaving cases to their own devices.

BERNARD CRIDLAND.

Surgical treatment of Convergent Squint in the adult.
(Tratamiento quirúrgica del estrabismo Convergente en el adulto.) By Dr. ZAMORA. Valladolid. 1920.

This little brochure is the author's thesis for the degree of M.D. in the University of Madrid. Squint, as is well known, is very common in Spain, and in this work the ground is fairly covered;
the different methods of attacking the problem, with the advantages and drawbacks of each, are clearly described. Numerous illustrations of patients before and after operation, with a short résumé of the clinical history and the type of operation performed in each case, twenty-nine in all, form a useful appendix, while a bibliography is also appended; the only English authors mentioned in the latter being George Critchett and Sydney Stephenson; the work of Worth does not appear to have penetrated as far as Spain.

R. R. James.

NOTES

Obituary.

The death of Sir William de Wiveleslie Abney. K.C.B., F.R.S., occurred on December 3rd, at the age of 76. He entered the Royal Engineers at the age of 17, retiring in 1881, with the rank of Captain. He was elected a Fellow of the Royal Society in 1876, and was awarded the Rumford Medal in 1882 for his researches on radiation. He was a pioneer in the chemistry of photography, and wrote the first practical treatise on the manufacture of sensitive emulsions. In 1882 he delivered the Cantor Lectures of the Royal Society of Arts, choosing as his subject, “Recent Advances in Photography.” He was also a pioneer in the three-colour process. In addition to being President of the Royal Photographic Society, he also served as President of the Royal Astronomical and the Physical Societies. Sir William Abney was appointed Assistant Director for Science in the Science and Art Department of South Kensington in 1884, Director in 1893, and Assistant Secretary in 1899. In 1900 he was appointed Assistant Secretary to the Board of Education, and in 1903, scientific adviser to the Board. He was made C.B. in 1888, and K.C.B. in 1909.

Sir William Abney’s work on Colour Vision is his chief claim to recognition by ophthalmologists. In 1892 he gave a lecture at the Royal Society of Arts on “Colour Blindness.” In 1894 he delivered the Tyndall Lectures at the Royal Institution on “Colour Vision.” His original papers in the Transactions and Proceedings of the Royal Society are known to ophthalmologists. His researches were gathered together, and rendered more generally accessible in a volume entitled “Researches in Colour Vision and the Trichromatic Theory” in 1913. Sir William Abney carried on the tradition of Thomas Young, Clerk Maxwell, and Helmholtz, and added greatly to our knowledge of colour vision by researches inspired by the three components theory. Like his predecessors in this field he