Studies on the Physiology of the Eye. By J. Grandson Byrne.

This volume contains experimental studies in certain physiological phenomena of the eye. It is divided into four parts. Part I is concerned with paradoxical pupillary phenomena following lesions of the afferent paths; part II deals with preliminary palpebral widening, paradoxical palpebral and lens phenomena and inherent tonus phenomena; part III describes certain stimulation experiments; and part IV is devoted to a discussion on inherent pupillary constrictor tonus and the mechanism of the still reaction, sleep, dreams, hibernation, repression, hypnosis, narcosis, coma and related conditions.

Part I has been published in the American Journal of Physiology, 1921-29, and except for the experiments on the "functions of the cervical sympathetic as manifested in its active currents" (Chapter VII) done in collaboration with Professor Willem Einthoven, of Leiden University, this work is solely the product of the author's own thought and research experiences.

Each chapter contains a brief survey of the literature pertaining to the subject, an account of the methods used in the animal experiments the author has performed and the facts gleaned from these experiments, followed by a discussion of their significance. A summary and the relevant bibliography is appended at the end of each chapter.

The author has endeavoured to show the levels or stages in the development of the ocular effector mechanisms from the primitive type in which activation is effected by chemical means to the intermediate or chemico-neural type in which neural impulses initiated in the related centre are the effective agents, and thence to the higher level where the effector mechanisms are of the neuro-neural or reflex type in which activation is brought about by afferent and efferent impulses. The widening and narrowing of the palpebral fissure and the pupil, retraction and proptosis of the eye, the changes in the curvature of the lens, and the reciprocal relations of the effector mechanisms are studied.

A number of animal experiments traumatising peripheral nerves, muscles and viscera are described to illustrate that reflex palpebral and pupillary narrowing and retraction of the eye are activated from the afferent side by proprioceptive impulses of the preponderantly critical variety which pass through the parasympathetic system. Reflex palpebral and pupillary widening and proptosis are activated by afferent impulses of the preponderantly affective variety through the sympathetic system.
The physiological phenomena in the mechanisms of approach, avoidance and standstill (still reaction) and the inception of a psychic element in these is discussed.

Whenever possible the author has endeavoured to explain certain physiological facts which may have some clinical diagnostic significance, but the book will interest chiefly the research worker in physiology rather than the physician, ophthalmic practitioner and student. There are a number of illustrations mainly photographs of cats, drum-tracings and diagrams. The paper and print are good and the book well produced.

The Injured Workman. By G. F. Walker, M.D., M.R.C.P.


There are few medical practitioners, consultants and specialists who are not brought, at sometime or other, into contact with the machinery of the Workmen's Compensation Act. In such cases the responsibilities of a medical practitioner are not confined only to careful diagnosis and treatment, but extend further and require an accurate and detailed representation of the injured workman's claims before those individuals, employers, corporations, insurance companies, and Courts of Law whose duty is the settlement of compensation.

The author of this book Dr. G. F. Walker, and his collaborators have given much useful advice concerning the types of workmen who apply for compensation. Some of these cases are simple and straightforward but others are rendered complex by the workman's belief that his injuries are more serious than they are actually; by "ergophobia" and malingering. The authors avoid too great an emphasis on the malingering tendencies of the British Workman but consider the possibility of this, and throughout the book maintain a fair and balanced view in this respect.

In the first chapter the main features of the Workmen's Compensation Act are presented admirably by Mr. J. Harvey Robson, a barrister-at-law, who gives good advice about the conduct and behaviour of the medical witness. The second chapter is devoted to a description of the injured workman and the effects of shock, rusting, brooding, neurasthenia, hysteria and malingering on his physique, personality and temperament.

Chapters have been contributed by a general surgeon, an ear, nose and throat surgeon and by an ophthalmic surgeon.

J. Foster (Leeds) has written about injuries to the eyes. He has endeavoured to describe in a limited space the nature, complications and end-results of traumatic lesions in the various tissues of the eye, and to assess the percentage disability and loss of earning powers following certain injuries. An account is given of the 'cyclopaean state' and its limitations and handicaps in some forms of work, and
the tests for the diagnosis of malingering are discussed. His contribution to this book is well planned and interesting but its value might have been further increased by short descriptions of the various types of manual and technical employment in which eye accidents are most prevalent and occupational eye diseases such as miners’ nystagmus, glass-blowers’ cataract, furnace workers’ cataract, keratitis in straw-hat makers, oyster openers and caisson workers. Its interest would also have been enhanced by notes illustrating the medico-legal problems in some of the more complex cases.


In the 4th edition of this work the authors have introduced brief accounts of recent advances in ophthalmology particularly where biochemistry, physics and biology have played a part in bringing it into closer contact with general medicine and the basic sciences. The chapters on glaucoma, retinal diseases and heredity bear evidence of these changes.

Some of the authors’ views are heterodox, in particular those concerning the aetiology of glaucoma which state that “drainage of the intra-ocular fluid takes place through the cornea which is freely permeable to water and dissolved substances especially at the filtration angle. Schlemm’s canal also plays a part in the mechanism of drainage.” And also that “glaucoma may thus be caused by a diminished permeability of the cornea.” Although these conceptions may be justified by certain experimental facts their acceptance is not universal and is indeed criticised by some authorities and for this reason it might have been more prudent to have presented them to the student more tentatively and less definitely.

Chapters are devoted to the methods of examination, elementary optics and refraction, the diseases of the various structures of the eye and its adnexa, the eye in general disease, heredity in ophthalmology and operations.

The book is well produced, neatly and concisely arranged and the illustrations are good. It will be valuable to general practitioners and medical students but is too brief for the post-graduate student of ophthalmology.

The student’s guide to fundus appearances is in a separate small volume which consists of a small atlas of 12 fundus paintings, two of which are composite sketches, showing the more common diseases that affect the fundus of the eye. Thirteen pages of text are devoted to descriptions of these illustrations followed by a brief discussion of their main features. The illustrations are excellent, well produced and will be a great aid in teaching students.
The author has intended this little book for the use of general practitioners attending eye cases in Cottage Hospitals, house-surgeons new to ophthalmology and nurses in charge of eye patients. It contains useful practical information about the examination of ophthalmic cases and their immediate treatment prior to being seen by the "specialist." The author points out the serious consequences that delay, inefficient treatment and lack of preparation for the administrations of the ophthalmic surgeon may cause to eye patients who present themselves at hospitals where the immediate services of an ophthalmic surgeon are not always available.

The author makes no attempt to describe at length diseases of the eye but confines his remarks to the examination and immediate treatment of common eye injuries and urgent non-traumatic conditions such as mucopurulent conjunctivitis, hypopyon ulcer, acute iritis, acute glaucoma, keratitis, lacrimal abscess and a few other diseases.

Part of the book is devoted to a description of the preparation of patients for eye operations, the sterilization and care of instruments, anaesthetics, post-operative complications and convalescence.

In a pocket at the end of the book there are three tables to which a casualty officer or nurse can refer quickly for information about urgent non-traumatic eye cases, common eye injuries, and operations. In a tabular form details about the methods of examination, clinical signs, treatment, instruments required, pre-operative and post-operative care, nursing and convalescence are briefly given.

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CORRESPONDENCE

THE RETINAL VISUAL CELLS IN MAN AND IN FRESH-WATER FISH

To the Editors of The British Journal of Ophthalmology.

Sirs,—Mr. M. S. Mayou's paper on: "The Retinal Visual Cells in Man and in Fresh-water Fish" has recently come to my attention, and I feel impelled to bring to attention certain errors therein, which, if allowed to stand, will lead to misconceptions of the comparative histology of the retina.

Mr. Mayou seems to doubt the validity of the Duplicity Theory, but I know of no single point against it. Arguments against the