CORRESPONDENCE

PRESERVATION OF THE ANTERIOR CHAMBER

To the Editorial Committee of the British Journal of Ophthalmology

Sirs—The preservation of the anterior chamber is of great importance in many surgical procedures inside it. Thus the discission of cataracts, capsulotomies, removal of capsular tags after an extracapsular extraction, division of anterior synechiae, and goniotomy are all very easy with an intact anterior chamber, but very difficult when the anterior chamber is prematurely lost.

A device to reform the anterior chamber at will while working inside it, which could be incorporated in such instruments as the discission needle and the capsule forceps, would be of great assistance to surgeons.

I would suggest to the instrument makers to design these instruments with a hollow needle running through the body of the discission needle or through one of the arms of the forceps in such a way that its one end opens into the intra-ocular part of the instrument and the other can receive the end of a dropper filled with sterile normal saline and having a rubber teat.

It should be quite easy for the operator or his assistant to inject the required quantity of saline into the anterior chamber to reform it while operating.

Yours faithfully,

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BOOK REVIEWS


Not very long ago a book on the visual pigments would be relatively small: to-day, although the subject is specialized and has attracted comparatively few research workers, the story is constantly becoming more complex and fascinating. Until recent years two pigments only were recognized: rhodopsin (visual purple) found in the rods of mammals, birds, amphibians, and marine fishes, and porphyropsin, found in fresh-water fishes; to-day quite a number of new and related pigments associated with the retinal rods has come to light, while the presumptive pigments associated with the cones are essentially unknown. The demonstration of the relation of one class of pigments with vitamin A₁ and of the other with vitamin A₂ has opened up a new chapter in biochemistry of more than usual interest and wide implications in which much still remains unsolved. The subject is a difficult one, partly because the pigments can be obtained only in minute amounts from a reasonable number of eyes, partly because they are so unstable, and partly because no simple solvent is known in which they can be easily manipulated. The usual chemical methods of study have therefore a limited application. Despite these handicaps, by deduction from diverse data, by inference, and sometimes by guess-work, our knowledge is growing apace.

This story is told in a lucid and interesting manner in the present volume by one who has spent many years in its study and has himself contributed largely to the rapid progress now being made. The most important of this family of pigments is visual purple, a chromoprotein, the molecule of which consists of a chromophore attached to a protein (or "opsin"). The chromophore is the reactive part of the molecule, responsible for the preferential absorption of light and the initial site of the photochemical changes. The protein acts essentially as a support and seems to vary from species to species. The chromophore belongs to the family of the carotenoids, and when exposed to light is broken down through transient orange intermediaries to the yellow retinene, and eventually to the colourless vitamin A₁, a process which is reversible.
After an initial chapter describing the methods used in extracting visual pigments and identifying them by the measurement of absorption and difference spectra, the various pigments so far isolated and identified by the spectral location of their maximum absorption are described, together with the products of their bleaching. One of the most interesting chapters is that dealing with the physical chemistry of visual purple—its photochemistry wherein the kinetics of its bleaching by light are discussed, and its thermochemistry, for it has long been known that thermal decomposition, which increases rapidly with a rise of temperature, involves bleaching with the same end-products. There follow a discussion of the molecular structure of the visual pigments and the isomerism that may occur in the various types. A chapter deals with the technical problems of determining the homogeneity of solutions of pigments, as measured by their spectral absorption curves, when the pigments are bleached in instamets. A final chapter touches on methods of study other than the standard technique of measuring the density spectra of solutions; these include the photometric investigation of suspensions of the visual cells (in which it would be expected that the natural environment would be more nearly approached than when the pigments are studied in solution), the study of the optical density of the pigments present in excised retinas, and the direct observation of events as they occur in the living eye. These methods are yet in their infancy but are yielding results of great interest. It is obvious that the story of the visual pigments is by no means finished. For a summary of our present knowledge presented with fair and impartial criticism, Dartnall's work is unique and of quite unusual value.


In an interesting survey the author reports the x-ray findings in 114 cases of unilateral exophthalmos seen within 20 years at the neuro-surgical clinic in Zürich. Conventional x-ray pictures give sufficient information in changes affecting the bones of the orbit and nasal sinuses, but the use of radio-opaque substances is necessary in cases where the tumour had not produced changes in the bone. In cystic tumours the injection of air gives satisfying pictures. The injection of contrast substances containing iodine may be dangerous in orbitography. The author recommends the percutaneous injection of Urografin (Schering) into the carotid and into the angular vein. Details of the technique of the angular vein injection are given. The ophthalmic artery with its branches and the orbital veins can be made out quite clearly in most of the x-ray pictures. Instructive angiograms show changes and deviations in these vessels due to varicose dilatations of the orbital veins, aneurysms, and tumours.

**BOOKS RECEIVED**


This is the translation made by Dr. Hans Gehne from the original French edition published in 1953. *(Brit. J. Ophthal., 1953, 37, 700.)*


This is the approved translation of the original French edition which appeared as Volume 2 of "Optique physiologique". Some additions have been made to include recent developments but generally the translation follows the original version closely.


This book will be the subject of an abstract in *Ophthalmic Literature* (Vol. 11, No. 3, March, 1958).