The 34th annual meeting of the Oxford Ophthalmological Congress was held on July 8th, 9th, and 10th. The increasing popularity of this conference necessitated a change of venue, and this year the congress was housed in Hertford College, while the proceedings were conducted in the School of Geography since the theatre of the School of Human Anatomy could no longer offer sufficient accommodation.

The Master, Mr. F. A. Williamson-Noble, opened the congress on Thursday morning with an address of welcome. After Dr. Arthur Greene made a presentation to Dr. F. A. Anderson, on his retirement as secretary of the congress, of a cheque subscribed by members in token of their appreciation of his untiring efforts and notable success in forwarding the interests of the congress for the past 12 years. Dr. Anderson expressed his thanks and the pleasure he had derived from his work as secretary.

The subject for discussion, "the use and abuse of topical ocular therapy," was opened by papers by Mr. F. Ridley, Dr. F. E. Preston and Dr. J. M. Robson. Mr. Ridley drew attention to the tear-film and described its anatomical position and physical properties. He emphasised that lysozyme normally kills all airborne bacteria and also the common pathogenic organisms, and that it is destroyed or inhibited by drugs containing free halogens and by acriflavine. The lysozyme content is reduced in interstitial and phlyctenular keratitis, and is increased by the use of atropine in these diseases, and a return to a high level presages the recovery of the patient. In the use of drugs in the conjunctival sac dilution occurs rapidly, and few drugs retain an effective concentration for long. Solutions are diluted by half every 45 seconds, but emulsions are retained longer. The latter should, when possible, be emulsion of oil in water, not the reverse, and thereby an increased corneal permeability is obtained. With reference to atropine irritation the approximate ratios of solutions, lamellae and serum of atropine and hyoscine were indicated, showing that lamellae hyoscine were eight times less irritant than solution of atropine. Mr. Ridley considered that irritation could almost invariably be avoided by the use of lamellae. Local sensitisation was due to the presence of histamine-like bodies in the tears, which are neutralised by the normal aqueous, but this mechanism is defective in certain diseases.

Dr. Preston considered ocular therapy as of two schools, the empirical and the rational. He noted that the secondary effects of drugs may sometimes prove more valuable than those of their original purpose. He then gave a number of specific instances of valuable applications in particular conditions.
Dr. J. M. Robson spoke of the value of local application in obtaining a higher concentration than could safely be reached by systemic therapy. The limiting factor in the value of many drugs was the rapidity of local elimination. He mentioned four methods of overcoming this difficulty by (1) iontophoresis, (2) deturgescant agents, (3) subconjunctival injection, (4) intra-vitreous injection. He considered that deturgescence of the cornea had been neglected clinically, and remarked that subconjunctival injection should be combined with vaso-constriction.

In the subsequent discussion the influence of allergy was referred to by Dr. Vera Walker, the value of powders by Dr. Traquair, injection into the anterior chamber by Dr. Huber, and the abuse of penicillin by Mr. J. P. F. Lloyd.

In the afternoon, Dr. J. J. Healy read a paper on "unusual ocular injuries," and members contributed a number of equally surprising experiences.

After this, Dr. Grant Peterkin contributed an interesting paper on "dermatological conditions affecting the ocular adnexa." He divided the conditions under review into (a) new growths, (b) oedematous swellings of the lids, (c) Tuberculosis cutis and allied diseases, (d) Systemic diseases; his descriptions were accompanied by numerous coloured illustrations. He laid stress on the frequency of contact dermatitis in many obscure cases of lid swelling and mentioned the characteristic features. His experience with acne rosacea had been variable and often disappointing. He had noted much dermatitis from the superficial application of sulphonamide and penicillin ointments and creams.

Mr. Dickson Wright then read a paper on the "approach to orbital tumours" in which he advocated a wide exposure from the lateral side with temporary removal of up to 1/3 of the orbital margin. This was replaced at the end of the operation and always took well with no tendency to absorption. A film was shown of the operative technique in two cases. Mr. H. B. Stallard also showed a film of the Kronlein operation and Mr. J. Foster gave the results of his own experiences with such cases.

On Friday, Mr. F. W. Law reported an unusual "case of retinoblastoma" in which the following points were notable, (1) The involvement of the second eye while under observation. (2) The apparent total destruction of the focus in this eye by diathermy. (3) Death by distant metastasis, though both optic nerves were apparently normal during life.

Mr. F. Ridley then gave a paper on "contact lenses" and dealt with recent developments in theory and practice. Improved methods of moulding were described and also a simplified method for accurate estimation of the curvatures required for correction. Veiling, caused
by the development of negative pressure and swelling of unsupported tissues by the action of lid pressure, could be relieved by the inclusion of channels at the lower end of the lens leading into the tear pool in the lower fornix. Photophobia, closely related to veiling, was more difficult to deal with, but tinted glasses would often help.

Dr. Z. A. Leitner described the value of Grenz rays in ophthalmology. Having only minimal penetrating power they were specially safe for the treatment of superficial lesions; 98 per cent. of the rays are absorbed before reaching the lens. Success has been obtained in the treatment of corneal ulcer, recurrent erosion, superficial punctate keratitis, and phlyctenular keratitis. Mooren's ulcer did not respond to Grenz ray therapy, and acne rosacea keratitis in some cases only.

The Doyne Memorial Lecture, delivered by Sir Stewart Duke-Elder under the title of "The Blood-aqueous barrier," described the latest work on the problem of the intraocular fluid. By the use of neutrons tracer elements could be added to substances and, by their radio-activity, their course after intravenous injection could be followed in the ocular tissues, and much less disturbance from the normal was possible in the animals used. The presence of $\beta$ particles in the aqueous was the basis of the examinations. From these experiments it appeared that water is derived by simple diffusion at a rate of 50 cu. ml. per minute and that the mechanism in Schlemm's canal is one of bulk flow. Water diffusion into the vitreous is $1/5$ the rate into the anterior chamber. Sugars reach the anterior chamber by simple diffusion, but the lower ratio in the vitreous argues an additional chemical barrier to this tissue. Experiments showed that sugar is metabolised in the eye chiefly by the lens and the retina. Nitrogenous substances did not enter the aqueous so well and also were affected by the vitreous barrier, while electrolytes, with the exception of phosphate, gave similar values to sugars. Sodium, potassium and chloride reach the posterior part of the eye solely through the ciliary body and pass the vitreous barrier slower than sugars vis-a-vis their molecular size.

The lecturer postulated a variation of the mechanism of transference in different parts of the eye. These recent experiments lead the lecturer to the conclusion that the capillary cells, not the interspaces, constitute the sole barrier and that these cells show variations in selective porosity. There seems however to be evidence that the ciliary epithelium in addition actively engages in the secretion of sodium chloride.

At the conclusion the Master presented Sir Stewart Duke-Elder with the Doyne Medal.

A discussion on the "operative treatment of glaucoma" was opened by Mr. Williamson-Noble and Mr. Maurice Whiting. The
Master revealed a catholic variety of choice with a preference for iridectomy or iris inclusion in acute congestive, and cyclodialisis or iris inclusion in non-congestive cases: for buphthalmos he commended goniotomy. In association with aphakia he had found trephining less disappointing than cyclodialysis, and thought a small flap sclerotomy worthy of trial in thrombotic glaucoma. He also gave a number of practical suggestions for pre- and post-operative treatment.

Mr. Whiting reviewed the indications for operation in chronic cases. He preferred trephining for most cases in spite of admitted drawbacks, with a preference of Herbert's sclerotony as an alternative.

Dr. F. A. Anderson mentioned the value of intravenous sucrose injections as a pre-operative measure, and described the technique of iris inclusion without introducing instruments intra-ocularly.

Dr. Traquair described his pilgrimage from trephining to cycloidialysis, thence to cyclodiathermy, and his final return to the trephine as the operation of choice.

Mr. E. G. Mackie was a frank advocate of iris inclusion and gave comparative figures of his results showing a high proportion of success.

Mr. A. G. Palin on the other hand favoured the trephine.

Mr. A. MacRae had come to prefer the modified iris inclusion operation described by Greenwood and Eggers, and gave illustrations of the technique together with a table of results.

Many other members took part in a free discussion which continued till the adjournment for tea.

On Saturday, Professor Loewenstein (Glasgow) demonstrated his theories on the anterior drainage system of the human eye by a series of beautiful slides. Mr. J. Minton (London) discussed occupational diseases of the eye in the glass and metal industries, caused by the short infra-red rays, incidentally showing the enormous decrease in glassblowers cataract since the introduction of automatic machinery in the bottle industry, and the high incidence of cataract among chain makers which is still a manual industry. Dr. Gunnar von Bahr described a method of accurate measurement of the thickness of the living cornea and its variations in response to solutions of varying osmotic pressure. His experiments supported the theory of Cogan and Kinsey bearing on the circulation of fluid in the cornea and its purpose in its metabolism. Dr. Winifred Fish (Oxford) read a paper on "hereditary mesodermal dystrophy," and Miss Margaret Dobson (London) on "dynamic retinoscopy."