purely retinal basis, and that the lesion was in Henle's fibre layer. Sections cut through the centre of a normal fovea centralis show that a few cone nuclei still remain internal to the external limiting membrane, with an occasional nucleus of a bi-polar cell. The fibres of the cone cells running up to form synapses with the bi-polars are shortest in the centre of the fovea. Going away from the centre the fibres gradually lengthen until they actually run parallel with the limitans for some distance, and it would appear that the longest fibres are those toward the periphery of the fovea. It is well known that Henle's fibre layer is prone to degeneration—in fact it appears to be impossible to fix this particular region successfully when preparing globes for embedding. The speaker suggested that the toxic agent causing the scotoma in these cases might have its first and greatest effect on the longest fibres of Henle's layer, a layer prone to degeneration because of its poor blood supply. As these fibres belong to the cones at the periphery of the fovea, the corresponding field defect is just within the five degree circle.

ABSTRACTS

I.—THERAPEUTICS

- (1) **Bloomfield, S. (New York).**—The use of tyrothricin, a bacterial extract, in the treatment of marginal ulcers of the cornea. *Amer. Jl. Ophthal.* Vol. XXVII, p. 500, 1944.

(1) **Bloomfield** comments that the antiseptic effect of tyrothricin is principally due to its gramicidin content. Tyrothricin is prepared from cultures of *Bacillus brevis*, an aerobic sporulating saprophyte commonly found in sewage and soil. It is a stable mixture of gramicidin and tyrocidine.

The author used drops of tyrothricin suspension in the affected eye every three hours, and tyrothricin ointment in the conjunctival sac at night time. He reports four cases of marginal ulceration of the cornea, resistant to other forms of treatment, which responded quickly to tyrothricin and were healed in 5 to 14 days.

H. B. STALLARD.

- (2) **Laval, T. (New York).**—Anterior chamber irrigation with sulfadiazine. *Amer. Jl. Ophthal.*, Vol. XXVII, p. 527, 1944.

(2) **Laval** describes the case of a woman, aged 60 years, who vomited after the section had been made in a cataract operation. Gastric contents entered the eye. The anterior chamber and the conjunctival sac were irrigated with sodium sulphadiazine 10 per

cent. The eye showed no reaction to this at any time. Sulphadiazine gr. 15 was given 5 times a day by mouth for 2 days after operation. Healing and convalescence were entirely uneventful.

H. B. STALLARD.

- (3) **Dubois-Poulsen.**—**Penicillin in ophthalmology.** *Ann. d'Ocul.*, Vol. CLXXVIII, p. 81, 1945.

(3) **Dubois-Poulsen** agrees with the current opinion held in England and in the United States, that penicillin is the greatest therapeutic discovery since the sulphonamides, and that it has indeed proved superior to that group of drugs. He reminds us that, in spite of wartime obstacles to the exchange of literature and experience between France and the English-speaking countries, he and other French workers were steadily conducting experimental and clinical investigations upon penicillin during 1943 and 1944.

Having reviewed the now familiar history of Fleming's great discovery, he mentions the main properties of penicillin, the methods employed in its mass production, and the devices by which it is assayed. He points out the ways in which penicillin is superior to the sulphonamides, and proceeds to consider its mode of action. He goes on to remark that the systemic administration of this drug within the customary limits of dosage does not secure an adequate penicillin-content in the ocular media. Among the local methods of applying penicillin, subconjunctival injection of 2,500 units, accompanied by 2 per cent. novocaine, is singled out for praise. The author emphasises, however, that parenteral administration should supplement these local injections if the *posterior* segment of the globe is infected. The introduction of penicillin into the anterior chamber is also mentioned as a suitable means of combating deep infections of the globe.

J. H. DOGGART

II.—RETINA

- Laval, T. (New York).**—**Coats's disease.** *Amer. Jl. Ophthalm.*, Vol. XXVII, p. 163, 1944.

Laval describes the pathological findings in the eye of a child, aged 10 years. Macroscopically the bisected globe showed occlusion of the filtration angle in the 7 o'clock meridian by a broad anterior synechia and posterior to this the retina was considerably thickened between the ora serrata and equator. The microscope showed marked proliferation of pigment on the anterior surface of the iris. In the affected area of the retina there was much connective tissue. "Goblet" cells were seen in the layer of destroyed rods and cones.

Clumps of pigment and perivascular lymphocyte infiltration were also present. Drusen bodies were seen in the lamina vitrea.

The author comments that in some cases vascular and haemorrhagic features are pronounced whereas in others these are minimal and inflammatory exudation and organization are more prominent. In discussing the pathology of Coats' disease the author says that "it may be stated that Coats' disease depends primarily on changes in the retinal arterial system."

H. B. STALLARD.

III.—MISCELLANEOUS

- (1) **Nicholls, John V. V. (Montreal).**—A survey of the Ophthalmic Status of the Cree Indians at Norway House, Manitoba. *Can. Med. Assoc. J.*, April, 1946.

(1) **Nicholls** gives the results of a survey of 300 Cree Indians within reach of Norway House in the Spring of 1944. The work was done between March 15 and 22. The land here is relatively unfertile, and the Indians are engaged mostly in hunting and trapping. Exposure to the rigour of the climate and deficiency in fresh vegetables, dairy products and meat are the rule. Some of those adults examined had been using vitamin supplements for the previous one to two years as a result of a nutrition study.

Of those under 18 years of age 59 were male and 58 female. Of the older cases 103 were male and 70 female. Pterygium was the commonest abnormality to be found. No case was found in the group under 18 years of age. One case was observed in a youth of 18 and another in one of 19. Thereafter the condition increased in frequency. Pingueculae were not found in the first decade of life, but became more frequent in the second decade, and practically universal thereafter. The author found that visual defects were twice as common in the older group than among the children of school age. Fourteen patients had $<6/60$ in one or both eyes. In three cases this was bilateral. In six cases dense corneal scars were the cause, four of which were due to lime burns. (The Cree Indians usually whitewash their houses). There were six cases of cataract, and one each of phthisis bulbi, strabismus, pigmented macular degeneration, primary optic atrophy and anterior staphyloma. There is a relatively high incidence of tuberculosis among these people. Active phlyctenular keratitis was found in two cases, and inactive in four, six in all.

The author states that those examined had basically good eyes and vision, but as age increases this picture changes owing to the effects of ocular disease.

R. R. J.

- (2) **Livingston, P. C. (London).**—The form and character of rod scotometry. *Amer. Jl. Ophthal.*, Vol. XXVII, p. 349, 1944.

(2) **Livingston** describes the technique of scotopic scotometry using self-luminous test objects of radium paint treated with varnish, their sizes being 1, 2.5 and 5 mm. and their luminosity between 6×10^{-9} and 40×10^{-9} candle power. The fixation light is a 1 mm. pencil shining through a deep-red filter approaching Wratten 89A. The test is confined to the 30 degree field on Bjerrum's screen at 1 metre.

There is normally a central egg-shaped scotoma within a circle of 2 to 3 degrees of the fixation spot, its major spread lying in the horizontal axis. The blind spot is always larger than that recorded in daylight and there is a scotoma in the upper part of the field 23 degrees from the fixation point. This is triangular in shape with its apex pointing down.

A contraction of the field with enlargement of the macular scotoma and blind spot is found in anoxaemia. The author illustrates by visual field charts defects found in vitamin A deficiency and diabetes. It is evident that by this technique central field defects will be revealed more readily and earlier than by the customary procedures.

H. B. STALLARD.

- (3) **Thornhill, E. H. and Anderson, B. (Durham, North Carolina).**—Extradural diploic epidermoids producing unilateral exophthalmos. *Amer. Jl. Ophthal.*, Vol. XXVII, p. 477, 1944.

(3) **Thornhill and Anderson** report a case of a rare tumour, an extradural diploic epidermoid affecting the roof of the left orbit and causing unilateral exophthalmos. This tumour arises from epithelial cell-rests, which remain quiescent in early life and for some reason become activated at maturity. X-ray examination shows a sharply defined, dense, white, scalloped margin. The author's patient was a white female, aged 24. The neoplasm was clinically and pathologically like a cholesteatoma. The inner table of the skull was eroded and the dura intact. There was no connection between the neoplasm and the accessory sinuses. The neoplasm was removed through the supra-orbital approach.

H. B. STALLARD.

- (4) **Reese, A. B. and Khorazo, D. (New York).**—Endophthalmitis due to *B. subtilis* following injury. *Amer. Jl. Ophthal.*, Vol. XXVI, p. 1251, 1943.

(4) **Reese and Khorazo** report the case of a farmer, aged 56 years, with an intra-ocular foreign body in the right eye the result

of chiselling a horse's shoe. He developed endophthalmitis. From the aqueous and vitreous there was grown a Gram-positive bacillus, isolated under aerobic conditions, whose cultural and morphological characteristics identified it as a member of the *B. subtilis* group. The organism was not pathogenic for guinea pigs, but induced endophthalmitis when injected into the anterior chamber of a rabbit's eye. An injection of a sample of the patient's vitreous into a rabbit's eye produced a vitreous abscess.

H. B. STALLARD.

- (5) **Kranitz, D. (Brooklyn) and Duest, L. T. (New Bedford, Massachusetts).**—Post-operative endogenous infection of the eye with recovery. *Amer. Jl. Ophthal.*, Vol. XXVII, p. 167, 1944.

(5) **Kranitz and Duest** report two cases of post-operative endogenous infection of the eye which ended satisfactorily. In one case infection was evident on the fourth day after a cataract operation. Sodium sulphathiazole solution 5 per cent. was instilled 2 hourly. One day later sulphadiazine gr. 15 was given 4 hourly for 6 doses and then $7\frac{1}{2}$ gr. 4 hourly. On the 10th day after operation the inflammatory changes began to decrease. Three months later after division of some organized inflammatory membrane in the pupil and anterior chamber the patient recovered 20/40 vision.

In the second case, also a cataract extraction, vitreous was lost. Post-operative inflammation appeared on the fifth day. He was treated by intravenous typhoid injections of 5, 10, 15 and 50 millions and sulphathiazole gr. 60 daily was given until the twentieth day. On the fourteenth day 10 c.c. of sterile milk were injected intramuscularly and this was given daily for the next 8 days. After discussion vision recovered to 20/10+.

The authors comment that post-operative endogenous infection is more likely to occur after severe or prolonged operative trauma.

H. B. STALLARD.

- (6) **Stewart, R. A. (Baltimore).**—The use of naphthocaine as a local anaesthetic in ophthalmology. *Amer. Jl. Ophthal.*, Vol. XXVII, p. 178, 1944.

(6) **Stewart** commends naphthocaine (mono-hydrochloride of betadiethylaminoethyl ester of 4 amino-1-naphthoic acid) as a local anaesthetic in ophthalmic surgery. It is soluble in distilled water, making a clear, pale yellow solution with a pH of about 4.4. There is little difference between the anaesthetic properties of 0.3 per cent. and 1.0 per cent. Anaesthesia is immediate. The author maintains that it is superior to procaine in that its effect abolishes pain when the superior rectus stitch is inserted and when an iridectomy is

done. Akinesia is excellent, and it has the advantage of delaying post-operative pain for 8 to 10 hours. No toxic symptoms have been reported to-date. It is used by instillation and injection.

H. B. STALLARD.

- (7) **Kronfeld, P. C. and McGarry, H. I. (Chicago, Illinois).—Present limits of gonioscopy.** *Amer. Jl. Ophthal.*, Vol. XXVII, p. 147, 1944.

(7) **Kronfeld and McGarry** discuss the value of gonioscopy as offering a simple mechanical explanation for certain cases of glaucoma. It may be helpful in choosing the type of operation suitable for the case under consideration, and in showing the causes of failure of glaucoma operations. It is of prognostic value in affording information about the state of a filtering cicatrix.

However, gonioscopy offers no explanation of the mechanism of certain types of glaucoma.

H. B. STALLARD.

- (8) **Sugar, H. S. (Vancouver, Washington).—Tarsosconjunctival sliding-graft techniques for eyelid reconstruction.** *Amer. Jl. Ophthal.*, Vol. XXVII, p. 109, 1944.

(8) **Sugar** describes with the aid of diagrams 8 methods of reconstructing defects in the eyelids, after trauma and excision of neoplasms, in which the surgical principles involved in closing the coloboma or repairing an almost total lid loss are as follows. (1) Splitting of the lid substance into two layers (a) skin and orbicularis muscle and (b) tarsus and conjunctiva. The latter was sutured to the edges of the coloboma and the former slid down into position where this was possible or alternatively (2) the skin defect was filled in by a sliding flap assisted by the excision of Bürow's triangles, a free-skin graft or a pedicle. (3) A free hair-bearing graft was used to reconstruct a line of lashes. This was taken from the opposite eyebrow. (4) At a later date the palpebral fissure was reformed by cutting through the full thickness of the reconstructed lids.

H. B. STALLARD.

- (9) **Flick, T. T. (Indianapolis, Indiana).—Tumour of the lacrimal gland.** *Amer. Jl. Ophthal.*, Vol. XXVII, p. 362, 1944.

(9) **Flick** describes the case of a lacrimal gland tumour, epithelial in type, which showed much pleomorphism. On several occasions the proptosed eye had been dislocated through the palpebral fissure and the eyelids had closed behind the eye. A general anaesthetic was necessary to replace the eyeball. Removal of the neoplasm was attempted through a transfrontal approach. The roof of the orbit was eroded. Three-quarters of the neoplasm was

removed. Proptosis and diplopia disappeared. The patient declined exenteration of the orbit and X-ray therapy. His condition was satisfactory 1½ years after operation.

H. B. STALLARD.

- (10) **Folk, M. R. (Chicago).—Optic nerve atrophy in malignant nasopharyngeal tumours.** *Amer. Jl. Ophthal.*, Vol. XXVII, p. 373, 1944.

(10) **Folk** describes two cases of optic atrophy associated with a malignant naso-pharyngeal neoplasm. The first case was a transitional-cell carcinoma in a 30 year old white woman and the second a spindle-celled sarcoma in a child, aged 5 years. The latter died.

Optic atrophy seems to have occurred as a result of compression of the nerve and not infiltration. The dural sheath of the optic nerve as well as the periosteum of the orbit and the dura is more resistant to malignant neoplastic infiltration than bone tissue.

H. B. STALLARD.

- (11) **Anthony, E. W. and Marshall, D. (M.C., A.U.S.).—Erythema nodosum episcleritis.** *Amer. Jl. Ophthal.*, Vol. XXVII, p. 398, 1944.

(11) **Anthony** and **Marshall** report a case of erythema nodosum episcleritis which affected the interpalpebral bulbar conjunctiva on the nasal and the temporal sides in both eyes. The lesions consisted of several small, raised, yellowish nodules surrounded by deep redness fading into a pink and then a slight bluish flush. The largest nodule was 1.5 mm. in diameter. These nodules were slightly tender.

H. B. STALLARD.

- (12) **Schoenberg, M. T. and Posner, A. (New York).—A report on defects found in tonometers examined at the checking station of the National Society for the Prevention of Blindness.** *Amer. Jl. Ophthal.*, Vol. XXVII, p. 368, 1944.

(12) **Schoenberg** and **Posner** discuss the major and minor defects discovered in tonometers sent by ophthalmologists in 17 different states and Canada. Among the major defects the weight of the plunger, load and lever was either too high or too low in 80 per cent. The weight of the entire tonometer was not according to standard in 29 per cent. and the radius of curvature of the testing block was incorrect in 80 per cent. The lever ratio instead of being 1 : 20 was defective in 61 per cent.

H. B. STALLARD.