ABSTRACTS

I.—CORNEA


Reid's modification of the design of Prof. Wessely takes the form of an electric cautery with thermometer attached. The instrument is provided with a resistance and it plugs into the mains. The point should be heated until the thermometer shows 75° C. and it should not be applied at over 85° C. The instrument is made by Down Bros.

ERNEST THOMSON.


Glimstedt reviews exhaustively the 117 cases of serpiginous ulceration of the cornea seen at Lund during the three years 1928-30; all were treated as in-patients. The peak months were March, June and August, and 67 per cent. of all cases were seen during the six summer months, March to September. The youngest patient was 9 years old and the oldest 86, but 88 per cent. occurred between the ages of 40 to 80, the greatest frequency being in patients between 60 and 70 years of age (27 per cent.). No case was seen between 20 and 30, and only 2·5 per cent. between 30 and 40. Only 31 per cent. of the cases occurred in women. It is mostly in landworkers that the affection is seen and 63 per cent. gave a history of trauma, generally caused by branches of trees or by chippings from stone. No basis for the view that focal sepsis is a factor could be found; infection was generally of local origin, either in the conjunctiva or lacrymal passages. In only 2·3 per cent. was full vision retained; in 4·5 per cent. the eye had to be removed; in 6·9 per cent. only perception of light remained; 61 per cent. retained useful vision (between 6/60 and 6/6).

In a critical review of recent methods of treatment the author considers moist heat useful. Optochin is of definite value but serum treatment disappointing. Only in eleven cases was the anterior chamber evacuated by section or trephine, in the latter procedure with simultaneous optical iridectomy. Local immuno-therapy after Besredka is favourably noted.

ARNOLD SORSBY.

(3) The fact that Peter has found 22 cases of this condition during 18 months of clinical work, shows that it is more common than is generally suspected. Basil Graves, in 1924, described it in detail in this Journal and little has been added to his exhaustive studies. The earliest stage causes no interference with vision and requires the slit-lamp for its detection, when large black, round non-reflecting areas can be found by the method of specular reflection. The condition is binocular and is most marked in the centre of each cornea. In the second stage, vision becomes affected and the dystrophy can often be recognised with an ophthalmoscope and a +20 D. lens, with which an appearance is produced resembling burnished copper. In the third stage the whole of the corneal endothelium becomes destroyed. In Peter's series of cases all but four occurred in females, at an average age of 61 years, 14 showed incipient senile cataract and eight nuclear cataract. Two cases had central toxic choroiditis, two a low grade of uveitis, and two advanced generalised arteriosclerosis. The dystrophy is probably an expression of a general lowering of tissue vitality, and for this reason healing after cataract extraction is a protracted process. Vision is reduced to 6/9 or so by the endothelial changes alone and the final stage of complete vacuolization is a stationary one.

F. A. W-N.


(4) The object of this communication by Aust is to bring to notice again a form of keratitis which was first described by Dimmer in 1905, although he did not give it at that time any distinctive name, and by an analysis of a number of cases to establish it as a definite clinical entity and bring it into line with the recognized varieties of keratitis. In order to avoid confusion with these, he has chosen this title, adding to the descriptive name "nummularis," that of his former chief.

This disease is found almost exclusively among young agricultural labourers, and occurs most frequently in the month of August. Such patients regularly give a history of onset 4 to 6 weeks previously with photophobia and lacrymation (not infrequently after a foreign body in, or slight injury to the eye), but it is only the impairment of vision for the preceding few days that prompts them to seek advice.

The condition is almost invariably unilateral, the eye when first seen usually showing little or no sign of inflammation.
The most characteristic feature is the appearance in the cornea of a varying number of circular opacities, \( \frac{1}{3} \) to \( 1\frac{1}{3} \) mm. in diameter, with slightly raised stippled surface; there is no regularity in their arrangement. Spots in different stages of development may be seen together, and fresh ones may be formed, which accounts in part for the characteristically prolonged course. The opacities all ultimately form facets, without any real preceding ulceration; these facets may continue unchanged for years.

With regard to the differential diagnosis, he points out the differences between this condition and Fuchs's superficial punctate keratitis, rosacea keratitis and keratitis disciformis, which resemble it in certain features.

THOS. SNOWBALL.


(5) Heintz reviews the literature on the subject of Mooréen's ulcer. Only 15 cases have been reported histologically, and the author adds three of his own, and also gives details of two more observed clinically. The various views on causation are discussed, and the author, disagreeing with the theories as to neurotrophic origin, holds that the lesion is caused by a non-specific bacterial infection, operating on a cornea rendered vulnerable by metabolic disorders—or possibly of local changes in the cornea, as is the case with trachoma. In three of his cases there was some general disturbance.

ARNOLD SORSBY.


(6) Prockosch recalls the value of contact glasses in determining whether the reduction in vision in cases of corneal opacities in the presence of lens opacities is mainly due to the lesion in the cornea or in the lens. If vision is improved by contact glasses it may be taken that the corneal scarring is chiefly responsible. On this principle the author has used contact glasses in cases of acute glaucoma; where the reduction in vision was caused chiefly by the corneal oedema, contact glasses improve vision and can be taken as a favourable prognostic sign and an indication for operation; when vision is not improved by the glass the prognosis should be guarded. Contact glasses have a further use in acute glaucoma, for the fundus can be seen through the glass during an attack.

ARNOLD SORSBY.

Pergola has made use of a combination of dionine and thiosinamin (under the name of leucolysin) and had considerable success in procuring clearing of the opacities and improvement of vision. The mixture was applied every day for a considerable period, often for two months, and in all cases there was some improvement.

HAROLD GRIMSDALE.


Fonzi has investigated in animals the results of covering corneal wounds and ulcers with conjunctival flaps. In making the flap he adopted in all cases, the method of Löwenstein; in this, an incision is made through the conjunctiva at the limbus in the region of the wound for about 10 or 12 mm.; from the ends of this incision, others are made at right angles to the first towards the equator of the globe; the flap thus limited is dissected up, brought down over the injured area and fixed at each side by deep sutures involving the episclera.

Fonzi finds that wounds protected in this way heal rapidly and show no tendency to lose the normal curvature of the cornea. He considers it an ideal method in such cases.

On the other hand covering by a conjunctival flap has no good effect on the course of infected ulcers, but apparently encourages greater virulence of the micro-organisms.

HAROLD GRIMSDALE.

(9) Focosi (Florence).—A case of mycosis of the cornea due to cephalosporium. (Su un caso di ceratomicosi da cephalosporium). *Boll. d'Ocul.*, December, 1932.

In this case an obstinate ulcer of the cornea with infiltrated edges was accompanied by wrinkling of the membrane of Descemet, much keratitis punctata, and many posterior synechiae; there was no hypopyon. In spite of vigorous treatment with the galvanocautery, the ulcer showed no sign of healing. Examination of the matter, taken from the base of the ulcer and cultivated, proved the agent to be a fungus which was recognised to be a cephalosporium. The patient was then put on increasing doses of potassium iodide and recovery followed.
Mycosis of the cornea is a rare affection though a considerable number of fungi are capable of producing it. They seem to be very slightly pathogenic. The infection is found in three forms. Ulcerative, in which the ulcer is generally discoid with an irregular base, and well-marked edges surrounded by a limiting furrow, having little discharge. There is often a halo of infiltration. Sometimes there is hypopyon.

The nodular form simulates a band keratitis but the raised roughness of the lesion, its sharp limitation, and the vessels running from the limbus make the differential diagnosis simple. The infiltrating form without ulceration is very rare.

The effect on the disease of treatment by iodide of potash also is characteristic, and may help in the diagnosis in doubtful cases.

Harold Grimsdale.


It has been generally accepted that a pterygium has a great effect on the corneal curvature, but few authors have investigated the subject with any care. Panico has Amsler's photo-keratoscope which gives permanent records of the image reflected from the corneal surface. In this paper several such photographs are given. Panico notes that the pterygium causes flattening of the cornea in the meridian of its insertion, and that the resulting astigmatism varies with the extent of the pterygium; it may be limited to the periphery of the cornea, or may affect the central region. The axis of the astigmatism is usually oblique corresponding to the oblique insertion of the pterygium. When the pterygium is removed the astigmatism diminishes.

Harold Grimsdale.


Roberti gives a short account of the innervation of the cornea showing how the ciliary nerves form various plexuses from which very numerous filaments are sent off, so that division of one branch has no effect in producing localized anaesthesia. Three forms of sensation may be recognised in the cornea, the sensation of touch, of heat and cold, and of pain. Pain is so closely allied to the others in the case of the cornea that some have denied any other form of sensation. Diminution of sensitiveness is always accompanied by loss of reflex, both motor and lacrymatory.
It is uncertain whether corneal sensation is lessened with age. The sensation and the reflexes are disturbed in various forms of nervous disease; local disease of the trigeminal is usually associated with anaesthesia of the cornea and loss of the reflex; in trigeminal neuralgia the sensitivity is often increased. In disease of the central nervous system the relation between sensitivity and the reflex is often disturbed. The reflex may be lost though sensation is preserved. When the corneal sensation on one side is lowered, a general anaesthesia of the whole of that half of the body is often found. This serves to distinguish a central anaesthesia from one due to lesion of the trigeminal.

In certain local disorders the sensitivity is changed; thus in glaucoma, it is constantly reduced. It is clear that this loss has some relation to the increase of intra-ocular pressure, but the mechanism is by no means certain.

**Harold Grimsdale.**


(12) Changes in the sensitivity of the cornea have been studied in connection with the introduction of new anaesthetics, diseases of the eye, general diseases, and after iridectomy and cataract operations. Spitzer has extended this investigation to the operations of Guist, Lindner, and Safár's diathermy for detachment of the retina.

She found that after all these operations a disturbance of the sensibility of the cornea occurs in the sector of the cornea corresponding to the field of operation. The loss of sensibility is most extensive after Guist's operation, less with Lindner's, and apparently least after multiple micro-coagulation. This disturbance diminishes in all cases in the course of time.

After Guist's operation distinct signs of regeneration of the sensitivity can be observed in five months, but for complete or almost complete recovery a further period of six months is required. After Lindner's undermining method a distinct improvement begins to show itself in three months; in one case the sensibility was normal after five months. The return of the sensibility appears first in the central portion of the sector affected, and extends from there towards the margin of the cornea. After Guist's operation, as after cataract operations, there are at times great variations from the average, not only in the duration of the disturbance but also in the appearance of small marginal ulcers in the horizontal meridian. These ulcers heal only after a considerable time without any untoward result to the patient. They also occur after the diathermy method. No definite connection between the age of the patient
and the rate of regeneration was observed, although it would seem that in a period of twenty weeks after operation the recovery was more rapid in patients between the ages of 20 and 35 than in those over 50. As regards the site of operation the loss of sensibility was more marked in cases where it was performed on the nasal or temporal side than above or below.

THOS. SNOWBALL.

II.—MISCELLANEOUS

(1) Weekers, L. and Hubin, R. (Liège).—A contribution to the aetiology of hereditary optic atrophy (Leber's Disease).
(Contribution à l'Etiologie de l'Atrophie héréditaire du Nerf Optique (Maladie de Leber). Arch. d'Ophthal., April, 1933.

(1) The notes in this communication by Weekers and Hubin relate to what might almost be called an "outbreak" of Leber's disease; the unusual circumstances connected therewith justify its publication. In the opinion of the writers this case "casts a notable light" on the problem of the aetiology of Leber's disease. The reviewer finds it difficult to accept this statement by reason of the absence of evidence concerning the ancestry of the female line. The family to which the males belonged had an accessible history dating from the 14th century. In these archives no trace of an hereditary ocular malady was discoverable.

At a known date three brothers in this family married three sisters. All these three unions were followed by the occurrence of Leber's disease in the offspring; the cases were limited strictly to the male sex.

In the family of the first couple all the males in the first and second generation, four in each, developed the disease, while the females numbering eight, were all unaffected. In the third generation only one male had reached an age of susceptibility; at the age of 25 he was free from symptoms.

The second couple had four children; one male who was the subject of the disease, three females who were exempt. No facts as to the second generation are available.

In the seven children of the third couple the two males were affected, the five females were immune. The second generation comprised thirteen individuals, four males, nine females. Three of the males were the subject of optic atrophy; no information concerning the fourth was obtainable. The females were all unaffected. The information concerning the third and fourth generation of this family is incomplete.

The incidence of the disease in these three families is shown in a genealogical diagram.

J. B. LAWFORD.

(10) Knapp’s paper is based on a series of 10 cases under observation for four years which showed optic atrophy, cupping, central or marginal, and field losses tending to be altitudinal in type. The intra-ocular pressures were normal. X-ray examination showed sclerosis affecting the ophthalmic arteries, optic atrophy being due to this condition. There is some doubt as to mechanism by which optic atrophy is brought about in such cases. The obvious explanation is that it is due to pressure on the nerve by the sclerosed artery and there are three places in which this may occur:—

(7) In the fibrous optic canal.  (2) In the falciform dural fold.  (3) Midway between the canal and the chiasma where the optic nerve is sandwiched between the internal carotid and anterior cerebral arteries. Wilbrand and Saenger, however, believe that the atrophy is due to nutritional disturbances of the optic nerve consequent on the smaller vessels being rendered impervious by sclerosis of their walls.

F. A. W-N.


(3) Elsberg, Hare and Dyke begin their paper with a survey of the literature bearing on this condition which shows that all authors are agreed that increase of intracranial pressure may produce an exophthalmos which may be unilateral or bilateral. In cases where there is direct invasion of the orbit by the tumour, the cause of the proptosis is obvious. The condition can occur, however, apart from orbital wall involvement and in such cases it has been customary to explain it as being due to pressure on the cavernous sinus bringing about venous congestion of the orbital contents, or to paralysis of the recti muscles allowing the globe to come forward. Neither of these explanations is accepted by the authors of this paper, one of the main arguments being the absence of congestion in the retinal veins in cases which did not show papilloedema. The true explanation is probably direct transmission of pressure from the middle cranial fossa, through the superior orbital fissure. In a series of 807 intracranial tumours, unilateral proptosis was found to occur in 15 cases and this was often—for a number of years—the only symptom. The growth which most commonly produced the condition was a meningeal fibro-blastoma which invaded the orbit.

F. A. W-N.

(4) v. Sántha examined anatomically the optical system in a male who, through an injury to the optic nerve, had been totally blind in the right eye for thirty-five years, and found in both external geniculate bodies an alternating simple atrophy of the cell laminae, i.e., on the left side an atrophy of all portions of the peripheral layer (the peripheral large cell lamina, the peripheral medium-sized cell layer and its intermediate continuation) with intact central layer, while on the right side the conditions were reversed—intact peripheral laminae, the central atrophied. This shows that the peripheral laminae receive the contralateral optic nerve fibres, the central laminae the homolateral.

These findings confirm those previously put forward by Minkowski, and give further proof of the fact that the optic fibres running back from both eyes have a distinct and separate termination in both primary optic centres, and do not intermingle as has been held by some writers.

The corpus pre-geniculatum on the homolateral side was practically intact, but showed marked changes on the contralateral side. This nucleus the author regards as a primary optic centre like the external geniculate body but differing from it in that it receives only crossed fibres.

The visual cortex showed no definite sign of atrophy on either side.

The author refers in a footnote to a valuable article on the same subject by Le Gros Clark which appeared in this Journal, May, 1932.

THOS. SNOWBALL.

BOOK NOTICES

Reports of the Committee upon the Physiology of Vision.
Vol. XII. Colour Vision Requirements in the Royal Navy.

The Reports of Committees of the Medical Research Council which have already been published have established a very high standard. It can be said without hesitation that the report on colour vision in the Navy does not fall short of its predecessors. Throughout its pages the reviewer has been impressed by the evidences of meticulous care and thoroughness in the investigations of matters under consideration: their concise and decisive statements arouse a