welfare for reasons which have already been given both in the report of the Departmental Committee on the "Prevention and Causes of Blindness," and the report of the Council of British Ophthalmologists on "Sight-testing Opticians." At the same time we fully realize the desirability that opticians should hold some qualification for the making of optical instruments and appliances.

ABSTRACTS

I.—NEUROLOGY

(1) **Pesme, Paul** (Bordeaux).—Typical clinical characteristics of retrobulbar neuritis associated with ethmoidal and sphenoidal sinusitis. (Caractéres clínicos particulares de la neuritis óptica retrobulbar por etmoidoesfenoiditis.) *Arch. de Oftal.*, Vol. XXV, p. 18, January, 1925.

(1) Remarks on the difficulty of tracing the origin of many cases of retrobulbar neuritis, and on the harm of delay in attacking their primary cause, Pesme, from clinical observations, suggests the following syndrome as typical of a neuritis secondary to inflammation of the ethmoid or sphenoid cells:

1. An absolute central scotoma, for white and colours, leaving the remainder of the field normal.
2. Signs of inflammation at the papilla, with redness and oedema, instead of the classical picture of a normal fundus, or simply a pallor of the temporal segment of the disc.

This association of a central absolute scotoma with a papillitis, provides, in the author's opinion, sufficient justification for rhinological exploration.

W. S. DUKE-ELDER.


(2) Larsson discusses the occurrence of choked disc in nephritis generally and reports eleven cases in which he observed it. All the cases were examined with the Gullstrand ophthalmoscope, and all showed increased intracranial and intrathecal pressure, the latter being found in one case to be as high as 600 mm. fluid pressure. Many of the cases had good visual acuity, and in two it improved slightly after lumbar puncture.

He reviews the literature on the subject of the early diagnosis of choked disc and its distinction from purely albuminuric neuro-retinal changes and comes to the conclusion that the occurrence
of choked disc in certain cases of renal disease with high blood pressure is much more common than is usually supposed. It may be the only change in the fundus, but is more frequently accompanied by retinal changes. In some of the cases reported a post-mortem examination was performed and no sign of inflammatory change in the optic nerve could be found. Larsson considers that the nerve affection is a true papilloedema and that it cannot be explained by one or other of the theories advanced with regard to the retinitis of nephritis. He holds that at least part of the clinical picture of the retinitis may be due to increased intracranial pressure. Choked disc may occur too in cases with high blood pressure without there being any clinically demonstrable renal disease.

E. H. Cameron.


(3) Uhthoff draws attention to a group of cases of neuritis, and neuro-retinitis in which arterio-sclerosis must be taken as the cause. In a short survey of the known damage to the optic nerve trunk by sclerotic changes in the internal carotid and ophthalmic arteries, he draws attention to the visual disturbances as a result, and to the ophthalmoscopic changes. He expresses his conviction that a high degree of visual disturbance and a corresponding conspicuous atrophy of the optic nerve are not a result of this condition. Uhthoff in addition does not believe that sclerosis of the carotid or the ophthalmic arteries plays an essential part in the production of retrobulbar optic neuritis. There is a congenital condition of the intracranial portion of the optic nerve, where the nerve is bean-shaped in section with the ophthalmic branch of the carotid fitting into the recess. This condition is not sufficiently taken into account. The cases, however, where by such local pressure by the ophthalmic artery, real conspicuous neuritis and papillitis occur are rare. Oppenheim and Simerling found them anatomically; Stoelting describes bilateral neuritis which has a very chronic course and which shows little inclination to atrophy. In cases where there have been cerebral complications, from arteriosclerosis, such as softenings and haemorrhages, optic neuritis is rare. Uhthoff has observed only one group of cases, where, without any cerebral complications on the ground of arterio-sclerosis, there is a neuro-retinitis and a neuritis, and which is unilateral although it may be bilateral at intervals. This type has a rapid course and ends after a rapid retrogression of the inflammatory appearances,
leaving an optic atrophy. There is a resulting serious defect of the visual acuity, and a loss of visual field. The ophthalmoscopic appearances of neuritis disappear in such a relatively short time that often only the picture of atrophy with narrowed vessels presents itself. Inflammatory cloudiness affects the papilla and the retina adjacent, and it may cover the retinal vessels. The appearance of the structures concerned is greyish white, and suggests anaemia.

Uhthoff assumes that there must be an obstruction to the circulation in the central artery and also in the central vein, although this is not complete. The ophthalmic picture is one between thrombosis in the central artery, and a similar condition in the vein. The anaemic appearances do not reach so far into the retina as in a blockage of the central artery, and the cloudiness of the papilla is much more marked than in that condition. It corresponds more to the picture of a definite hindering of the venous reflux without leading to actual haemorrhages at the periphery. There must be an arterial as well as a venous hindering of circulation and a definite sclerosis in the vessels themselves. This is shown by the high blood pressure and other general arterio-sclerosis.

S. Spence Meighan.


(4) Elsberg's article is written from the point of view of the general surgeon. He begins by emphasizing the importance of the distinction between papilloedema and optic neuritis, and states that the former "must and soon will be considered a late symptom of brain tumour." This is particularly so in the cases of cerebello-pontine angle tumours when the physical signs are so typical that the correct diagnosis can be made before the occurrence of disc changes. The proper time for surgical treatment is before the tumour has become so large that it causes—directly or indirectly—pressure on the aqueduct of Sylvius, with a resulting hydrocephalus and papilloedema. The appearance of papilloedema in these growths may be sudden and its progression very rapid—a case is recorded where a swelling of 3D. increased to 6D. within four days. Of 30 patients examined and operated on, 19 showed a higher swelling on the side of the growth; 5, equal swelling in the two eyes and 6 none at all. In supratentorial growths the degree of swelling of the two sides varies greatly; this is due to the variety of factors causing increased intracranial pressure. These factors include: the amount of internal hydrocephalus, the degree of hyperplasia of the affected hemisphere, and the actual size of
the tumour. Distension of the contralateral ventricle is very frequent in unilateral growths, and is in all probability the cause of contralateral papilloedema. In some cortical and subcortical frontal lobe tumours, homolateral optic atrophy with contralateral papilloedema is not uncommon—this is of considerable localizing value, though of course the condition is well known in association with pituitary growths also. An important point is that this condition may be mistaken for changes due to ethmoiditis, and operation delayed in consequence. Tumours in the most anterior parts of the frontal lobes may reach a considerable size, and dense growths over some part of the motor area may cause advanced signs, before the occurrence of disc changes. Again, papilloedema may be absent in some cases of brain tumour because the growth has compressed a large central artery so that there is extensive secondary softening. The author regards papilloedema even of slight degree as a very serious matter demanding relief as soon as possible. He has never seen return of vision after it has once been lost, whereas, with early operative interference, blindness can be prevented in the majority of instances. The post-operative subsidence of swelling in cerebellar tumours is usually rapid at first, from 2-3D. diminution within the first week or fortnight, and thereafter the process is slow, some months passing before the discs become flat. In supratentorial growths the recession is more gradual, and occasionally may not begin for several weeks.

When the intracranial growth cannot be removed, the author considers that a properly placed decompressive operation will have a marked beneficial influence on the fundus changes, provided that these are not too advanced. Puncture of the corpus callosum is sometimes of value in these cases but very often fails to accomplish the desired result. With a view to reducing intracranial pressure during the time required for the necessary investigations preliminary to operation, the author mentions the following procedures:

(1) Repeated lumbar puncture, provided that the tumour is not in the posterior fossa. Should the tumour be located here part of the cerebellar lobes may prolapse into the foramen magnum, and exert pressure on the medulla with fatal results.

(2) Repeated withdrawal of fluid from the ventricles through a small trephine opening.

(3) Intravenous 5-15 per cent. saline or 25 per cent. glucose or dextrose.

(4) Administration of one ounce of magnesium sulphate by the mouth every four hours, or if the patient cannot swallow, 3 oz. of the salt in 6 oz. of water by the rectum four-hourly.

F. A. WILLIAMSON-NOBLE.

In his summary of an analysis of ten cases of tuberculous meningitis Igersheimer draws attention to the fact that in spite of the presence of solitary tubercle in the brain and the turbidity and increased pressure of cerebro-spinal fluid the optic disc may be anatomically as well as ophthalmoscopically normal: and further, that even a marked lymphocytic infiltration of the pia and septa in the retrobulbar portion of the optic nerve is not necessarily associated with any ophthalmoscopic change in the papilla.

In the cases where there is blurring of the disc the condition is often that of a combination of papillitis and papilloedema, or of the latter alone.

In none of his cases were histological changes of a specific character found throughout the course of the optic nerve: observations to the contrary in the literature of the subject must be regarded as exceptional. In his cases examination for tubercle bacilli was always made at different levels of the optic nerve and in several they were found in the orbital portion, but they were not necessarily the cause of the changes present.

Large mononuclear cells were regularly found in the subarachnoid space of the optic nerve (as well as in the exudate at the chiasma) their numbers diminishing anteriorly but usually increasing again in the cul-de-sac in front. Their number in the latter situation, however, had no apparent relation to the conditions in the optic nerve or disc.

The author does not think that these cells are derived from endothelial or adventitial cells in the orbital portion of the nerve: it is probable that, like the tubercle bacilli, they are carried forward mechanically into the subarachnoid space from the exudate at the chiasma.

It is difficult to say how far toxins were carried forward in the same way and set up changes. The slight inflammatory infiltration in the orbital part of the optic nerve might possibly be of toxic origin, but again it is impossible to say whether the toxins set free by the degeneration of cells in the chiasma exudate were of a specific character or not.


The two cases described by Greenfield and Gordon Holmes, in one of which a post-mortem examination is carefully detailed with a very comprehensive histological account, are of great value.
in the pathology of this rare disease. The original Tay-Sachs
disease was supposed to be confined to the Jewish race and to
appear at a very early age. Later observers, P. E. Batten among
the first, described cases with similar symptoms and with a similar
pathology, occurring at a later age and in non-Jewish races. The
cases here described belong to this type. The patients were both
members of one family of seven, the second and fourth respectively,
the remainder of which was healthy. The family history showed
no nervous stigmata. The first patient's history began at the age
of nine, the earliest symptom being that of defective vision. At
that time there were no definite ophthalmoscopic signs, but these,
in the shape of fine granular pigmentary changes in the regions
of both maculae, made their appearance a few months later.
Mr. Leslie Paton reported some two years later that there
was then extensive macular and perimacular atrophy of the retina,
extending up to the margin of the discs and for a corresponding radius round
the maculae. The disease rapidly progressed, the patient became
blind, paralysed and epileptic and died some five years after the
first symptoms. The second child also developed defective vision
at the age of nine and the disease ran a very similar course for the
three years he was under observation. He is at present in an
institution for mentally defective children.

The chief interest of the paper will be found in the careful
histological description of the material from the first case, which
is considerably assisted by numerous excellent illustrations. Any
useful abstract of this part of the paper is impossible; it must
be read in the original. The authors point out that the most
striking feature in the histological changes in the retina was
undoubtedly the degeneration of its outer layers and their replace-
ment by proliferated neuroglia, while the inner layers, that is the
nerve fibre, ganglion cell, inner reticular and inner nuclear layers,
remained intact or were affected much less severely. The fact that
even in the earliest phases of the disease degenerative changes were
recognizable in the internuclear layer, in which the efferent
processes of the rod and cone elements arborize, suggests strongly
that the disease first affected the cell-bodies of these elements and
thereby led to a degeneration of both their afferent and efferent
processes, or that it involved simultaneously the whole neuron
unit. The former view corresponds more closely with the neuronic
changes found in the rest of the central nervous system. The
next stage was the replacement of the degenerated external layers
of the retina by proliferating neuroglia, followed by a proliferation
of the pigment epithelial cells and an invasion of the degenerating
retinal layers by them. It is true that in a few places there was an
obvious loss of elements in the inner nuclear layer. As the only
nuclei affected were those of the outer border of the layer which
were in immediate contact with the degenerated tissues, and as these changes in the inner nuclear layer were found only where the glial proliferation was intense, they may be regarded as secondary. It could scarcely be expected that all these elements should persist unchanged after their processes in the sclerosed internuclear layer had been destroyed. In addition to these pronounced degenerative changes in the outer layers of the retina, there was an affection of the nerve cells of the ganglion layer similar to that which was found in the cells of the central nervous system.

Greenfield and Gordon Holmes then sum up the results of the observations of other authors and state that: "The retinal changes in the juvenile type of amaurotic idiocy may be therefore defined as a primary change in the ganglion cells, combined with an independent degeneration of the outer neuronic elements of the retina, which in some cases extends to the inner nuclear and inner reticular layers. This degeneration is followed by a glial sclerosis of the affected areas, and a proliferation of the pigment epithelial cells which wander into the degenerated tissue. It is this affection of the outer layers that distinguishes the retinal lesions of the juvenile from those of the infantile type of family amaurotic idiocy. In the latter, the essential changes are confined to the ganglion cell layer, though oedema of the internuclear layer has been described."

The paper includes a very complete bibliography and merits careful study by those interested in the subject.

E.E.H.


(7) The sixth nerve with its long intra- and extracranial course is the most susceptible of all the cranial nerves to secondary involvement. Behr enumerates from the anatomical point of view, the many symptom complexes in which it shares, and claims to have established a new syndrome of a very definite localizing value, which he illustrates by three cases.

He considers that an isolated and synchronous paralysis of the second division of the trigeminal and the abducens denotes a lesion in the upper part of the sphenopalatine fossa. The second division of the fifth nerve is involved after its exit through the foramen rotundum and before it enters the sphenoidal fissure, the sixth as it occupies the lowest level in the cavernous sinus. The lesion is paralytic in both cases, but in one of his patients the trigeminal involvement was accompanied by a neuralgia of
the anaesthesia dolorosa type. In the vast majority of cases such a lesion in this locality means a malignant tumour originating in one or other of the accessory sinuses.

By making use of the function of the sphenopalatine ganglion in the reflex secretion of tears he suggests a further refinement in localization which he has verified clinically. If, on the exhibition of, e.g., liquor ammoniae, reflex lacrymation is retained, the neoplasm is situated posterior to the ganglion in the upper part of the fossa; if the reflex is lost, it is in the upper and anterior part of the fossa. In the first case it is most probably a neoplasm originating from the sphenoidal sinus, in the second from the maxillary antrum.

W. S. Duke-Elder.


(8) Spiller's case is probably unique in that it represents the only case of ophthalmoplegia internuclearis anterior in which a complete necropsy has been performed. The various types of associated lateral ocular palsy are:

1. Neither eye when attempting to follow an object to one side—say the right—can move beyond the middle line, but the left eye can move to the right in convergence.

2. With both eyes open, neither can follow an object to the right, but the left can do so (by a convergent movement), if the right be covered.

3. The right eye can follow an object to the right, but the left cannot, except in convergence.

4. Both interni may be paralysed for conjugate movement.

5. Neither eye can follow an object to the right and the left cannot do so even in convergence.

The case reported occurred in a woman, aged 46 years, who died from heart failure, infarct of the lungs and a vascular lesion in the pontile tegmentum. The onset was sudden with a sensation of fullness in the head, of numbness down the left side, and slight interference with speech. There was marked divergent strabismus with complete loss of action of both internal recti in right and left lateral movements. In the associated movement of accommodation, however, both internal recti acted. Other movements were normal except for a possible paresis of the left superior oblique muscle which was difficult to detect on account of the patient's condition. There was no hemianopia and the fundi were normal.

Microscopic examination of the brain revealed the following:

1. Each abducens nucleus was normal together with its intrapontile fibres. There was no softening anywhere near the nuclei.
(2) There was softening of the posterior longitudinal bundle, but the upper level of this is not given definitely except that it corresponds to Obersteiner's Fig. 172 (Anleitung beim Studium des Baues der Nervosen Zentralorgane, 5th edition, 1912, p. 402.) At the level of the corpora quadrigemina the softening implicated the tegmentum on each side of the raphé to about the posterior fibres of the pyramidal tracts.

(3) The left nucleus trochlearis was destroyed in its lower part, the area of softening implicating the left posterior longitudinal bundle, and the ventral portion of the right.

(4) The oculo-motor nuclei were intact, but some of their fibres passed through the degenerated area.

(5) Many small haemorrhages were found round the vessels in the cerebral peduncles.

The author then proceeds to a critical examination of the reported cases of paralysis of associated lateral movements of the eye and notes that all the clear cases of ophthalmoplegia internuclearis anterior so far recorded lack any necropsy report.

F. A. Williamson-Noble.

(9) Valude, E., Cirot, L., and Schiff-Wertheimer.—The recovery of a case of total paralysis of the eyes and of the face following upon a confinement. (De l'évolution favorable d'une paralysie totale des yeux et de la face survenue après un accouchement.) Ann. d'Ocul., CLXI, p. 614, August, 1924.

(9) A case is described in detail, with clinical and laboratory investigation, of a woman, aged 20 years, in whom, eight days after confinement, Valude, Cirot, and Schiff-Wertheimer noticed the onset of diplopia. Gradually total paralysis of the extraocular muscles developed, excepting for slight power of elevation of the right eyelid. The vision was reduced to one-third. Eleven days after the first onset of paralysis of the eyes, there developed paralysis of the right side of the face, and a week later still, of the left side of the face. About five weeks after the onset, slight movements of the eyeballs reappeared. A few days later a course of treatment with radio-therapy for the whole of the skull was started. Within three months from the onset, with no special treatment apart from radio-therapy, complete recovery took place.

Various investigations are described. The Bordet-Wassermann reaction was negative. The diagnosis was considered to rest between that of cerebral tumour with haemorrhage, as causing the onset and in which recovery took place as the result of radio-therapy, and secondly of serous ependymitis.

Humphrey Neame.
Márquez, M. (Madrid).—The Argyll Robertson reflex. (Las Vias del Reflejo Pupilar a la luz y sus Alteraciones funcionales, especialmente el Síntoma de Argyll Robertson y sus diversas Variedades.) Arch. de Oftal. Hispan-Amer., pp. 57-91, February, 1925.

In a long and detailed paper illustrated by pertinent clinical cases Márquez discusses the anatomy and physiology of the pupillary reflex paths with special reference to the Argyll Robertson phenomenon.

The conclusions he comes to are these:

(1) The Argyll Robertson pupil is caused by an interruption of the pupillary reflex paths in the intermediate neurones between the corpora quadrigemina and the anterior part of the third nucleus; the motor paths uniting the cortex to the nuclei of accommodation and convergence are intact, as are also the peripheral neurones uniting these nuclei with the ocular muscles.

(2) Miosis, although a frequent accompaniment, is not a necessary or invariable one. It should be considered rather as a complication, the normal condition in the syndrome being a mild mydriasis.

(3) Syphilis, although the most usual, is by no means a constant factor in the aetiology.

(4) Depending on the site of the lesion between the primary optic centres and the third nuclei, especially in its relation to the decussation of fibres which occurs in this region, the following varieties are met with:

(a) Total bilateral—complete abolition of light reflex, direct and consensual; retention of convergence—the most common (esp. Tabes, G.P.I.).

(b) Total unilateral; rarer.

(c) "Unilateral simple"—on one side abolition of the direct reflex and conservation of the consensual on both sides—rarer still.

(d) A group of less typical and still less well-known anomalies, depending on a lesion in the neighbourhood of the decussation referred to.

(i) Conservation of the direct reflex on both sides, with abolition of the consensual.

(ii) Abolition of the direct and conservation of the consensual.

(iii) Conservation of the direct on both sides with abolition of the consensual on illuminating the temporal parts of the retina; abolition of the direct with conservation of the consensual on illuminating the nasal retina.

For the anatomical rationale of these various forms the original paper should be consulted.

W. S. Duke-Elder.

In this paper the notes of 20 cases with the results of treatment by X-rays are reported. The cases, which occurred in the Nerve Clinique of Dr. Flatau, are divided into three groups.

Group I contains ten cases of hypophyseal tumour. The results of treatment are considered encouraging by Skotnicki and are tabulated as follows:

In all there was improvement in the general condition with loss or diminution of headache and cessation of vomiting. In six cases there was definite improvement in vision, usually with enlargement of the field. In one case there was a notable gain in vision, but of brief duration, and in one case blindness ensued in spite of treatment.

Group II included three examples of cerebral tumour. In the first case the general condition improved but the optic nerves became atrophic; case 2 showed no improvement of any kind; case 3 lost the headache and vomiting and there was a steady gain in visual acuity.

Group III contained seven cases of tumour of the cerebellar or ponto-cerebellar region. In three of these amelioration of the symptoms occurred but in only one was it sufficient to enable the patient to resume his occupation.

J. B. Lawford.


Davis's account of this condition covers some twenty-eight pages and is well illustrated. He gives details of seven cases observed by himself within the last five years, the severity of the condition varying from a moderate defect in vision with slight skull deformity, to the most extreme type of pointed skull with marked optic atrophy. The deformity is defined as a congenital malformation of the skull due to premature synostosis of certain sutures of the base and vault, producing a high, pointed, or dome-shaped configuration of the skull, with varying exophthalmos and optic atrophy. With regard to terminology, Davis prefers tower skull to oxycephaly, dividing the cases into:

(1) The mild form, or dome-shaped tall head; and (2) the severe form, or high pointed type in which there is often a protrusion at the bregma. The condition consists essentially of a short, broad, and abnormally high skull: scaphocephaly, on the other
hand, is a long narrow skull, while plagiocephaly is one with asymmetrical synostosis. Premature synostosis being the basis of the condition, it is important to know the sutures most commonly affected. Dock finds that the sagittal suture is most commonly affected, Osler the sagittal and coronary, Schuller the transverse sutures and fissures, the sagittal remaining open and allowing the skull to develop greatly in height. Davis is inclined to agree with the last of these descriptions since early closure of the sagittal suture would probably result in scaphocephaly. Rickets is excluded as a cause of the premature synostosis because it was present in only 3.5 per cent. of the recorded cases, also because suture closure in rickets is usually delayed rather than premature. Syphilis, meningitis, pre-natal osteitis and pituitary disorders are all rejected by the author as possible causes, and he prefers to regard the condition as a developmental anomaly comparable with polydactylism, cleft palate, etc. The condition is commoner in males and some hereditary influence can often be made out. The chief signs and symptoms are:

1. Impairment of vision, usually more marked in one eye, advancing up to a certain point and thereafter remaining stationary. Papilloedema has been observed in the earlier cases, being due to increased intracranial pressure; the optic atrophy is said to be of the secondary type. Another aetiological factor, however, is the stretching and kinking to which the nerve is subjected.

2. Exophthalmos, frequently so marked that the lids cannot be closed. This is due to crowding down of the frontal lobes, causing the roof of the orbit to become almost vertical, and to bulging forward of the greater wing of the sphenoid which also causes shallowing.

3. Strabismus, usually divergent, though in a few cases it is convergent. The movements of the eyes are usually good.

4. Nystagmus, due to early amblyopia.

5. Skull deformities as seen by X-rays, comprise thinning of the bone with marked digital impressions from the underlying convolutions, and exaggerated vessel markings; displacement of the fossae, the anterior being distorted and shortened and the middle frequently pushed down to the level of the posterior. The frontal and ethmoidal sinuses may be obliterated in severe cases and there may be a definite protrusion at the anterior fontanelle. Suture obliteration is usually seen.

6. Headache is usually severe, rarely accompanied by vomiting and generally disappears about the age of eight.

7. Convulsions are rare and the patient's mentality is usually normal. With regard to treatment, subtemporal decompression has yielded some good results, but rather a large number of cases have had a fatal termination from meningitis, pneumonia, etc.
Hildebrand, as reported by Lerner, operated five times on three children with tower skull. The optic foramen was reached by separating the periosteum, chiselling a groove in the roof of the orbit to the foramen and gouging away its upper margin. Atrophy was arrested in his cases, and improvement of vision followed.

F. A. Williamson-Noble.

(13) Verhoeff (Boston).—The cause of keratitis after Gasserian ganglion operations. Amer. Jl. of Ophthal., April, 1925.

(13) Verhoeff is "convinced that neuroparalytic keratitis is essentially an exposure keratitis" because of the absence of dendritic or punctate lesions and because of the exact resemblance between the two conditions. The supposition that neuroparalytic keratitis is caused by diminished lacrimal secretion is dismissed on the grounds that, were it true, the occurrence of this form of keratitis should be the rule rather than the exception after operations on the Gasserian ganglion. Despite this statement, however, the author seems to favour acceptance of this theory. Thus, he mentions six consecutive cases of the disease in which no lacrimation occurred in the diseased eye on blowing smoke into the sound eye, whereas in seven patients with insensitive corneae, but no keratitis, lacrimation did occur. He suggests that the condition may be caused by interference with the great superficial petrosal nerve during its passage underneath the Gasserian ganglion, some of the fibres of this nerve being in all probability concerned with production of the lacrimal secretion. With regard to treatment no mention is made of the usual procedure of sewing the lids together, but a case is described where, by a special apparatus, the eye was kept constantly moistened with Ringer's solution and the corneal epithelium was restored within forty-eight hours. The apparatus then failed to function and the epithelium again came off. The conjunctival sacs were now filled with an ointment of vaseline 62 grams, Scharlach R. 10 grams, Ringer's solution 28 c.c., the eyes bandaged, and within three days, the corneal epithelium was again intact. This condition was subsequently maintained by dropping Ringer's solution into the eye every two hours during the day.

F. A. Williamson-Noble.

(14) Bruner (Cleveland).—Tumour of the pituitary body with unusual changes in the fields. Amer. Jl. of Ophthal., April, 1925.

(14) This interesting paper by Bruner serves to show how puzzling the diagnosis may be in an early case of pituitary tumour.
The patient was a male, aged 42 years, first seen in February, 1922, with a history of defective vision for two months. The vision of the right eye with -0.5D. sph. was 6/9 and that of the left 6/12. The discs were hyperaemic with hazy edges, but there is no mention of any swelling. Fields showed the outer limits for form normal in each eye, but in the right eye there was a large paracentral colour scotoma for red and blue, while in the left, there was a less definite paracentral one down and out. Tobacco, of which a considerable quantity was smoked, alcohol, and the fumes from accumulators were considered as possible causes of the condition. Thorough general examination was negative, except for the finding of slight secondary anaemia, and an X-ray examination of the sella revealed nothing abnormal. In April, the vision of the right eye was 6/9, of the left 6/36, and there was now a quadrantic paracentral scotoma down and to the right in each eye; the left nerve was possibly a trifle paler than the right. General examination again revealed nothing. In May, the vision was a little worse, and the scotoma larger, but there was no papilloedema. Six months later, the patient was vomiting frequently, was drowsy, and weak in the legs. The sella was normal by X-rays, and there was no bitemporal hemianopia. His vision improved somewhat during the next month and it was not until the following March that a partial bitemporal hemianopia developed. The radiographs were still normal, but an operation was performed in June and "a suprasellar cyst of the cranio-pharyngeal pouch variety" was found and removed almost in toto.

F. A. Williamson-Noble.


(15) Wilson reports a case of jaw-winking which he considers interesting from a medico-legal standpoint. The patient was aged 60 years. When speaking the right upper lid falls and covers the eyeball. When the patient stops speaking the eyelid is raised into its normal position. The lid also drops when he is eating. The interesting point is that the affection came on twenty years ago after the patient had been in a railway collision and had been in bed for several weeks, though he had no obvious injury. Wilson thinks that in this case "there has been a lesion or displacement of an upper neuron, permitting shunting, or escape of an impulse, from the line of the fifth nerve on to that of the third nerve."

Ernest Thomson.

This peculiar disease was first described by S. A. K. Wilson in 1912 (*Brain*, Vol. XXXIV, p. 295) and called by him "progressive lenticular degeneration." Barnes and Hurst consider that the title of hepato-lenticular degeneration is preferable since it indicates that the disease is complicated by the presence of cirrhosis of the liver. In their opinion the disease of the liver is really primary, evidence of which is carefully compiled in the paper. The chief interest of the disease to the ophthalmologist is the constant presence of the Kayser-Fleischer zone of corneal pigmentation in all cases of this disease manifest or latent, an appearance which has not been found in any other condition. In this paper an excellent coloured plate made from a slit-lamp drawing by Harrison Butler serves to illustrate the condition and should be referred to by all those desirous of recognizing this rare appearance.

E.E.H.

II.—GLAUCOMA


The lowering of intraocular tension in glaucoma by means of subconjunctival injections of adrenalin has of late excited a considerable amount of attention (*vide Brit. Jl. of Ophthal.*, Vol. IX, p. 308, 1925). The first report in Spanish literature of cases so treated comes from the clinic of Diaz Dominguez. He reports eight cases in detail of acute and chronic glaucoma. The dose given was 0.3 c.c. of 1:1,000 adrenalin (Parke Davis). In most of the cases a definite reduction of tension was obtained (90 to 45; 40 to 25; 55 to 28 mm. Hg., etc.); the average duration of the relief of tension was two to three days, after which time a repeated injection again produced a like result. In one case of acute glaucoma an adverse result followed. Pain and a rising tension followed a first injection, symptoms which were aggravated by a second injection although accompanied by the instillation of eserin, and iridectomy had to be resorted to.

The author summarizes his conclusions thus:

1. In glaucomatous patients the subconjunctival injection of adrenalin produces a lowering of tension which may last several days.
Eyes which ordinarily are resistant to treatment by miotics, are influenced by them when their action is reinforced by adrenalin.

Throughout the series no serious accident has ever occurred: but the method of treatment is contraindicated in acute glaucoma.

No detriment to vision, central or peripheral, follows the injection.

The precise action of the adrenalin is unknown; nor does it throw any light on the pathogenesis of glaucoma.

A new and successful therapeutic agent, whose exhibition is indicated especially in cases resisting miotics, and prior to surgical treatment. This last may in some cases be avoided, but only on condition that a constant watch can be held over the patient.

W. S. Duke-Elder.


Asthmolysin is described as a solution of extract of adrenal body in combination with pituitary. It has been used as a subconjunctival injection under holocain anaesthesia by Rotter in a series of eight cases of glaucoma, the majority secondary to iritis. The temporary reduction of tension obtained he ascribes mainly to the adrenalin, the presence or absence of pituitrin causing little effect. He shows that pituitrin, ergot, etc., on subconjunctival injection, do not seem to have the same effect on the unstriped muscle of the eye as they have in other organs, and that to obtain contraction of the pupil and consequent freeing of the angle of the anterior chamber, the best adjuvant to adrenalin is eserin or pilocarpin.

W. S. Duke-Elder.


The reviewer well remembers the insistence by Haab at Zurich on the value of sclerotomy, repeated if necessary, in the treatment of infantile glaucoma. Delord here relates a case in point. The infant was two and a half months old. The father, aged 36 years, had had a similar condition at six months old, and had been sclerotomized by Galezowski at nine months. In the father’s case the single operation seems to have sufficed for a cure; progress was stopped, and although the eye remained enlarged, the fundus was normal and the tension 20 (Bailliart). The other eye was normal.
In the case of the child now under consideration one eye was normal, the other manifestly increased in volume with high tension. For a week or two things seemed to improve under pilocarpin and mercurial frictions. Then there was an aggravation of the symptoms which could not be controlled by medicaments. An operation was decided upon and carried out some five weeks after the child's first attendance; a large anterior sclerotomy under local anaesthesia. Diminished tension, clearing of the cornea and reduction in size of the eyeball resulted. At the end of one month the symptoms recurred and the tonometer, now used for the first time, recorded 45 (Bailliart and Schiötz). A second sclerotomy was performed about two months after the first. The tension came down to 15, the eye cleared up, though the augmented volume persisted. Six months later the result was good, tension stabilized at 20, the same as the sound eye.

**ERNEST THOMSON.**

**BOOK NOTICES**


The first volume of this translation of "Helmholtz's Physiologische Optik" was reviewed in this journal last year (Vol. IX, p. 87). Professor Southall and his collaborators are to be very sincerely congratulated on bringing their difficult task to a satisfactory conclusion.

The first volume dealt with the somewhat antiquated description of the anatomy of the eye, and with dioptics. The second volume, about equal in size to the first, deals with the "sensations" of vision; and the original text is enhanced by very valuable appendices by Nagel on adaptation and the duplicity theory, and by von Kries on normal and anomalous colour systems and on various theories of vision. These are all derived from the third German edition, and have long been available to readers of German. They are masterly expositions which still merit the careful attention of physiologists and ophthalmologists, who need have no fear that they are by any means as yet out of date. An additional appendix by Mrs. Ladd-Franklin expounds her well-known views on the