approval of the Committee, and on some such basis similar clinics should be established in all large centres of population.

6. The system adopted should also be available for use in isolated areas by ophthalmic surgeons recognized for the purpose of certification. Such surgeons should have power to refer doubtful cases to the nearest clinic.

7. The determination of the suitability of children of school age for special forms of education and of applicants for technical training under the Blind Persons Act, should be a function of the surgeons working the system.

8. Certificates of blindness, except such as are granted by ophthalmic surgeons working the system, should not be accepted by public authorities or by charitable agencies.

9. If such a scheme as is contemplated above can be adopted, the causes of blindness will be duly ascertained and recorded on a uniform basis for the whole Kingdom, and statistics of the most varied character will be available in a way unequalled by any other nation.

**ABSTRACTS**

**MISCELLANEOUS**


(1) Bailliart states that papillary stasis (oedema) is present in certain forms of general arterial hypertension, in some affections of the orbit, optic nerve and eyeball, and in myelitis though this is not always accompanied by increased intracranial pressure. He agrees that stasis of the papilla is a sign of increased intracranial pressure except when found without headache or without increased pressure of the spinal fluid. He quotes Oppenheim and Bollack who found in 100 cases of papillary stasis 90 of cerebral tumour, and Kampherstein who found 134 cases of cerebral tumour in 200 cases of papillary stasis. On the other hand, Guillain and Lagrange reported the absence of papillary stasis in 46 per cent. of cerebral tumours, and it is true that some such tumours give no indication of increased intracranial pressure.

In 1928, Bailliart reported his findings of retinal arterial pressure: diastolic 30 to 35 mm. of mercury, and systolic 70 mm. mercury. Claud, Lamarche and Dubar gave diastolic 35 to 40 mm.
mercury and systolic 75 to 80 mm. mercury, but the explanation of this inconsistency given by Bailliart is that the apparatus of the other workers gives an exaggerated reading. Recently, Berens, H. C. Smith and Cornwell gave the normal diastolic as 32.2 and the systolic 68.2 and 67.4 for the right and left eye respectively. On examining these figures, one notes that the retinal arterial pressure is to the humeral as 57 is to 100 (systolic) and 42 to 100 (diastolic.) In 1923, Bailliart calculated this ratio as 54 : 100, and 45 : 100.

In the normal, the diastolic retinal pressure never exceeds 50 per cent. of the humeral diastolic. If it does exceed this figure, increased intracranial pressure is indicated. Two series of cases of 13 and 26 respectively of increased intracranial pressure are referred to in which there was no papilloedema, but in all of them excepting two the retinal diastolic pressure was raised. Berens, Smith and Cornwell state that if the retinal diastolic pressure is 10 to 15 mm. above half the humeral pressure, there is a raised intracranial pressure. A negative result is considered to be of equal importance; that is to say, a retinal arterial diastolic pressure that is not raised indicates the absence of increased intracranial pressure. The administration of amyl nitrite, by producing general vasodilatation, causes a rise of spinal and retinal arterial pressure. Actions are reversed by oxygen inhalation which produces cerebral vasoconstriction. There is no parallelism in the degree of rise of retinal arterial pressure and intracranial pressure. In reduction of the intracranial pressure by lumbar puncture, it should be noted that generally a fall in retinal arterial pressure results but that occasionally a rise takes place, or a remarkable variability in rise and fall during several hours.

The practical utility of measuring the retinal arterial pressure lies in the indication it gives of rise or fall of intracranial pressure without the necessity for incurring the risk of repeated lumbar puncture. In addition, the readings of pressure by lumbar puncture and manometer are sometimes low owing to failure of the communications between the fluid in the subarachnoid spaces of the brain and the spinal fluid.

A peculiar and at present unexplained relationship between retinal arterial tension and papilloedema has frequently been reported. Although the arterial pressure may be raised and indicate increased intracranial pressure, this arterial pressure usually falls at the onset of papilloedema. In the absence of definite papilloedema the possibility of increased intracranial pressure cannot be denied except when it is found that there is no increase in retinal arterial pressure. In the latter case it is almost certain that the intracranial pressure is not raised. Conversely, if the retinal arterial pressure is raised it can be said that there is every
probability of a rise in intracranial pressure (1) provided that the retinal diastolic arterial pressure is quite definitely higher (say 10 mm.) than half the brachial diastolic, (2) if there is no optic atrophy, (3) if there is no general arterial hypertension. It is considered no exaggeration to regard the sign of increased retinal arterial pressure as indicating increased intracranial pressure in fully 80 per cent of cases.

As to technique, Bailliart considers that no difference results in taking readings with the patient seated or reclining. He quotes American oculists as stating that the reclining position raises the arterial pressure by 5 or 6 mm. He prefers the sitting position in all cases. The retinal arterial tension should be measured for each eye, for occasionally it is markedly higher on the same side as the tumour. Readings should also be repeated, especially at the first attempt on any individual patient, for excitement may produce a marked temporary rise.

**Humphrey Neame.**


(2) In an earlier investigation Creed and Granit working with white circular discs of 22' of visual angle as the stimulus, measured the latent period of the negative after-images following 30 seconds fixation of the white disc. They found that the latent period was longest at the middle of the fovea and that on passing out towards the periphery it shortened on a hyperbolic curve to a point at about 2° from the fixation point. Then followed a sudden lengthening of the latency, forming a "hump" at about 2° 30' from the fixation point. Beyond this, passing towards the periphery gradual shortening occurred.

Granit, Hohenthal and Uoti report a series of experiments undertaken to elucidate more fully these findings. By varying the illumination of their test objects they found that with weak intensities the latency shortened rapidly towards the edge of the fovea and then less rapidly to a point situated about 50° out in the periphery. In the middle of the fovea no after-image can be elicited with very weak stimuli. With strong stimuli the latent period of the after-images increases, the increase being more marked in the periphery than in the centre (2 to 3 times as against 1.3 times); the "hump" appears in the curve between 1° 30' and 2°. The lengthening of the latent period is accounted for by assuming a similarly increasing duration of the immediate positive after-effects of excitation; the much greater effect on the periphery is explained on the basis of experiments which show
that with strong stimuli the summative power of the periphery increases so as to overcompensate for its lack of sensitivity as compared to the centre; the "hump" is assumed to be due to interaction in the synoptic connections between the two types of receptors.

The authors also show that dark-adaptation influences neither the latency of the after-images, nor the size and localization of the "hump."

**ARNOLD SORSBY.**


(3) Fry has examined the course of the central retinal vessels by histological methods in 36 optic nerves, with the following results:—(i) In 42 per cent. the artery and vein pass through the centre of the nerve and at a variable distance behind the lamina, make a right-angled turn to gain the periphery of the nerve; (ii) in 58 per cent. the artery and vein pass to the periphery of the nerve in directions at right angles to each other; (iii) the vein usually reaches the periphery first, but whichever does so, the artery is always the first to cross the intervaginal space; (iv) there is a slight narrowing of the calibre of the vessels as they pass through the lamina cribrosa but no indication of any definite constriction; (v) at the point of exit from the nerve there are not only a number of acute angles, as many as four or five in the case of the vein, but at places, the lumen of the vein appears to be compressed. The latter observation is not surprising since the nerves came from patients who died of brain tumours.

**F. A. W.-N.**


(4) Gudjónsson reviews the literature on this subject and draws attention to the periocular reaction seen in vitamin A deficiency. This reaction consists of falling out of the hair over a fairly broad zone around the lids. The denuded surface becomes red and moist. Attention is also drawn to the appearance of proptosis of the eyes after feeding with vitamin A animals who had first been deprived of it. (The author calls the condition buphthalmos, but there is no evidence in the text that it is anything more than proptosis.) The article consists mainly of a series of annotated photographs—"not touched up or made up in any way whatsoever; that would be practising the art of photography and not science."

**ARNOLD SORSBY.**

(5) Safar reports a case of eye injuries caused by lightning striking an electric lamp and affecting a 16-year old girl who was near the lamp; the mother of the patient was in the same room but further away and escaped injury. The shock appears to have been a purely electric one, injury by light being excluded, for the lamp was broken and there was no flash of light; injury through heat is also excluded, for there were not the least signs of any burn. The patient is said to have been unconscious for three hours, and on recovery vision was found to be greatly reduced; there was also swelling of the lids. Fine changes in the cornea were shown up by the slit-lamp, on examination four weeks later. Lens changes were also seen mainly at the anterior and posterior capsule. Marked fundus changes resembling commotio retinae in the central area and choroido-retinitis peripherally, were present. In these manifestations there was no great departure from described conditions, but a point of interest was the appearance of hypopyon-iritis one week later still. This occurred in the right eye, the pupil of which was hardly responsive to homatropine and feebly responsive to atropine at the time of the first examination, when no cause for this behaviour could be established. Under treatment this complication rapidly cleared up.

Safar holds that this case illustrates that the injuries caused by electricity are not due to light or heat but to electricity itself. In the development of late hypopyon-iritis and the earlier observed modification in the pupil reaction, Safar sees clinical support for the experimental observation of Kiribuchi that the injuries produced by electricity find their origin in changes produced in the blood supply of the uveal tract (venous hyperaemia), retinal and lens changes being secondary features.

ARNOLD SORSBY.


(6) Fahraëns demonstrated in 1917 that the red corpuscles of citrated blood sink more rapidly in tuberculosis and in malignant disease than they do normally owing to the “suspension stability” of the blood cells becoming low. The test is, however,
not specific, for in pregnancy sedimentation is also rapid, as it is indeed in any condition where there is breaking down of tissues. The reaction apparently depends on the amount of fibrinogen and globulin in the plasma, a reduction in the suspension stability being brought about whenever the plasma content of fibrinogen and globulin is high.

Schmelzer has investigated the erythrocyte sedimentation rate in 800 eye cases and concludes that the value of the test in ophthalmology is more in the direction of prognosis than differential diagnosis. In glaucoma, the erythrocyte-sedimentation rate was found to be normal, any deviation being explained by associated general conditions (such as old tuberculosis). The findings were likewise negative in cataract. On the other hand the majority of cases of interstitial keratitis of syphilitic origin gave a moderately or greatly increased rate. The "rheumatic affections" (iritis, scleritis) were also associated with a high rate, which, however, returned to normal as the condition regressed. The "tuberculous and scrofulous" diseases gave but indefinite results, only a few cases giving an increased rate of sedimentation, and this rate returned to normal with improvement of the condition. A high rate was seen in herpes of the cornea and in serpiginous ulceration; return to normal also occurring with improvement. In acute dacryocystitis, in orbital cellulitis and particularly in panophthalmitis the rate is high. Melanotic sarcoma of the iris and also the majority of cases of affections of the choroid and optic nerve gave negative results.

Schmelzer believes that changes in the erythrocyte-sedimentation rate have a definite value in the prognosis of any particular case, though the author does not go as far as another observer (Franceschetti) who regards the variations of the sedimentation rate as significant as are the variations in bodily temperature during the course of a general disturbance.

Arnold Sorsby.

Book Notices


This history of the part played by women in the progress of medicine represents an extraordinary amount of historical research, going back to the earliest times of history and coming down to the end of the Great War. When one considers the difficulties under which Dr. Lipinska has done her work—she is completely blind