ABSTRACTS

I.—THERAPEUTICS


Gifford finds that trichloracetic acid is a useful reagent for dealing with deep lying dermoid cysts, especially when diverticula branch off from the main cavity. He gives a report of a man aged 27 years, who had had a swelling over his right eye all his life in which there had been several unsuccessful attempts at removal. The author opened up the cavity which was filled with the characteristic sebaceous contents and found several diverticula extending backwards and filled with granulation tissue. The cavity and the more obvious extensions were wiped out and packed with gauze. Two days later this was removed, the walls were scrubbed with trichloracetic acid and repacked. Three days later still another pocket was found and treated in the same way, the main body of the cavity being filled with thymol iodide (U.S.P.). The wound closed slowly and completely and three years later there had been no recurrence. In his comment on the case, the author emphasises the principal advantage of trichloracetic acid which is that it can be used freely, to destroy all epidermal tissue in regions which are surgically inaccessible, after which the wound can be sutured.

F. A. W-N.

(2) Kyrieles, Werner (Würzburg).—Experiments on the action of strychnine in so-called pupillotomy.—Incidentally a contribution to the problem of the action of strychnine on the normal and pathological pupil reaction. (Versuche über Strychninwirkung bei sog. Pupillotomie. — Zugleich ein Beitrag zur Frage der Strychninwirkung auf die normale und pathologische Pupillenbewegung.) Arch. f. Ophthal., Bd. CXXIII.

Behr defines pupillotomy as a typical pathological entity in which the pupils are generally widened, inactive to light, slowly contracting on convergence and, either persisting contracted for a considerable time after cessation of convergence, or beginning very slowly to widen with the cessation of convergence, so that the original width of the pupil is regained only after many seconds or minutes.

After injecting subderrmally 1.0 mg. of strychnine nitrate, Kyrieles used a stimulus of constant intensity—the light from the
corneal microscope lamp—to watch the reaction of the pupil at regular intervals over a considerable period. A series of normal pupils and six cases of one-sided pupillotony were investigated.

His findings are: The effect of strychnine on the normal pupil is characterized by its quickened reaction to light—*reactio celer*. Observations of pathological reactions of pupils make it appear most probable that strychnine exerts its effect on the linking cell mechanism (*Schaltzellen-apparat*) in front of the oculomotorius nucleus.

In pupillotony, strychnine brings about an improvement in the previously very feeble light reflex, which becomes marked by repeated illumination and in some circumstances could even be raised almost to normal reaction. This fact speaks for Behr's theory that the cause of pupillotony is the functional subnormality of the region of the oculomotorius nucleus and proves that the linking cell mechanism is involved in the pathological process. The improvement in the function of the chain of linking neurons effected by strychnine leads further to heightening of the central sphincter tone which finds its expression in the narrowing of the pupil and facility of the convergence reaction.

D. V. Giri.


(3) In considering the treatment of malignant lesions of the eyelids Benedict and Knight-Asbury class the lesions as basal-celled epitheliomata or rodent ulcers and squamous celled epitheliomata of three grades depending on the malignancy of the lesion. They have found the most effective method of eradicating malignant lesions to be excision followed by radium, by surgical diathermy or by fulguration.

Small basal-celled epitheliomata may be successfully treated by radium but efforts should be made to excise all forms of squamous epitheliomata. Of less value still is radiation by X-rays.

Their figures show the results obtained with various lines of treatment for the malignant lesions of varying malignancy.

R. C. Davenport.


(4) The technique of Denig's operation originally published in the *New York Medical Journal* for 1918 is as follows:—The conjunctiva and subconjunctival tissue is excised along the edge
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of the diseased area, if necessary, all round the limbus, over a width of 6—8 mm., taking care to lay the sclerotic entirely bare. A mucous membrane graft is taken from the lower lip or the inside of the mouth, trimmed with scissors and secured to the bared area of sclera with sutures. If a graft has been made so as to encircle the limbus, it is best cut in two separate portions. The after-treatment consists in bandaging both eyes for five days. The dressings are renewed daily and secretion is wiped away but the patient is not allowed to open either eye. The sutures are removed on the tenth or twelfth day. The operation is used for cases of burns, dystrophic processes of the cornea, pannus and herpes.

F. A. W-N.

II.—Anatomy

Beauvieux, Professor (Bordeaux).—The exact origins of the common oculo-motor nerve in the cat. (Les origines réelles du moteur oculaire commun chez la chat). Arch. d'Ophthal., July, 1929.

The exact origin of the third nerve in man is still not free from obscurity, especially since a portion of its fibres (the iridociliary fibres) have been assigned to the sympathetic system, under the name parasympathetic, and the nerve described as a mixed (motor-sympathetic) nerve, a pathway for the irido-ciliary motor fibres of the sympathetic. The uncertainty of the origin of the parasympathetic fibres, about which there is diversity of opinion among investigators, led Beauvieux to undertake the research here recorded. He gives a detailed account of his examination, anatomical and histological, with two diagrams. His conclusions are:—In the cat the topography of the nuclei of origin of the common oculo-motor nerve is almost identical with that which Bechterew has described in man, and does not agree with the somewhat schematic description of Kahler and Pick, Hensen and Walker. There is a principal nucleus with large cellular elements having the form of a horseshoe, the two branches of which are directed downwards beneath the aqueduct of Sylvius. A median nucleus with small cells fills the little space left free by the arms of the principal nucleus, which in effect forms two lateral nuclei, homologous with the fellow-nuclei described by Bechterew, in man.

There are no large groups of cells placed antero-superiorly towards the middle ventricle, resembling the nuclei of Darkschewitz or of Edinger-Westphal.
Contrary to the expectation of Beauvieux this careful anatomical examination has failed to furnish information as to the localization of the parasympathetic (irido-ciliary) fibres which, in this animal, whose pupillary movements show an unusual intensity, should predominate over the extrinsic fibres. Nothing in the histological appearances enables them to be differentiated, and probably only physiological experiment, or pathological degeneration of the centres will reveal their origin. Even if their seat is hypothetical, their existence is certain.

J. B. Lawford.

III.—CORNEA


(1) Two of the syndromes due to disease of the lenticular nucleus, are associated at times with a characteristic peripheral pigmentation of the cornea. They comprise Wilson's disease and pseudosclerosis. Holloway and de Long's case was a woman aged 34 years with generalized tremor of six month's standing which was manifest on the slightest mental or physical exertion. During her stay in hospital, she became progressively worse both mentally and physically. There was a greenish brown discoloration of the upper and lower quadrants of the cornea at the limbus of each eye. With the slit-lamp, this was seen to be due to formation of brown pigment in Descemet's membrane which did not extend as far as the angle of the anterior chamber and faded out towards the pupil. The lens was not involved. Several cases of this sort have been described by other observers, the first being in 1902 by Kayser. Hall cites 68 cases of hepato-lenticular degeneration in which pigmentation was found in 22. The ring may be complete or incomplete and may easily be missed if the slit-lamp is not used for examination of the eye. Several histological studies have been made of the condition, and the pigment has been found to consist of rounded and angular greenish brown granules, situated in Descemet's membrane. The membrane of Bruch was also found to be pigmented but the lens capsule was free. In no cases have the chemical reactions corresponded with those of any normal body pigment or of any pigment found in the commoner pathological conditions, but spectroscopically the
absorption bands resemble those of bilirubin or of urobilin. Vogt is of opinion that the pigmentation is due to deposition of colloidal silver.

F. A. W-N.


(2) Both from experimental results and theoretical considerations, Alajmo concludes that opacification of the cornea by lime is due to chemical combination of the calcium hydrate with the organic colloids of the corneal substance, and not due to precipitation of the former as calcium carbonate. He believes that the combination is an unstable one at first, and that if immediate action is taken, it is possible to eliminate the calcium in a soluble form. For this purpose neutral tartrate of ammonia may be used, but neutral citrate of sodium is more active and better tolerated. It should be applied in eight per cent. solution, isotonic with the tears.

R. A. Greeves.


(3) "The clinical picture of primary (primitive) argyrosis of the cornea (without alteration of its surface) has been known only for the last few years, thanks to slit-lamp examination." In these words Bruckner and Knapova introduce the subject and commence by dealing with the cases reported by Subal (1922), Ascher (1924), Blind (1926), Metzger (1926) and Steindorf (1927). These observations related to cases which were either exogenous in origin (Subal and Steindorf), at the same time exogenous and endogenous (Blind and Metzger), or endogenous only. In the case here described by the authors it is certain that the origin was exogenous, the history being one of prolonged use of silver in trachoma, and the slit-lamp picture almost identical with that of previous writers. Considerations of space forbid the transcription of the slit-lamp findings. The authors are in no doubt as to the pathogenesis in their case, but apparently are not sure of the exact localization of the grey-green appearances of a honeycomb-like pigmentation which they saw, nor is the detail of the mechanism of penetration exactly known. The explanation given by Knies, which the authors think may apply to their case, is that the salt
of silver penetrates the cornea as an albuminate of silver and becomes reduced either to metallic silver or to an oxide. This is an article of 13 pages, with bibliography, and will repay close study by those interested in an uncommon condition.

With reference to the title of the foregoing article the reviewer would like to make some remarks which, while exposing his ignorance of the latest anatomical views, may be of value to others also. The membrane of Descemet used to be called the posterior elastic lamina, but now Bruckner and Knapova talk of the membrane of Descemet and of the elastic lamina of the cornea. Reference to the third edition of Fuchs’s Text-book (Duane’s Translation, 1908) shows that Descemet’s membrane is called the "lamina elastica posterior." In 1914, it is still called a homogeneous elastic lamina (American Encyclopaedia of Ophthalmology). In Fuchs’s Eighth Edition (Duane’s, undated but probably 1924) the word elastic is discreetly omitted, and now, in 1929, we find an elastic layer separate from the membrane of Descemet. Bruckner and Knapova, in the course of their discussion of this case, refer to the work of Seefelder who, incidentally, says:—"Immediately in front of the membrane of Descemet there is a special layer of elastic fibres comparable, in principle, to the elastic lamina (lame élastique) of the choroid and to which one can best give the name "lamina elastica corneae.""

The wording of the title of this article thus seems to be explained.

Ernest Thomson.

IV.—LENS

(1) Shastid, Thomas Hall; Duluth (Minnesota).—The treatment of incipient cataract. _Amer. Jl. of Ophthal._, August, 1929.

(1) Shastid has thought for a long time that senile cataract may be produced in the following way—"as the aged lens increases in size, the ciliary processes contract the lens equator and thus produce more or less disintegration of the capsule. A minute but persistent absorption of aqueous follows, and then comes cataract." A similar theory has recently been published by Lasareff. Shastid has therefore treated incipient senile cataract by a slight over-correction (about 0.5 D.) for presbyopia and instructing his patients to read at the ordinary distance. The effect of this is to prevent contraction of the ciliary muscle and so avoid the occurrence of disintegration of the capsule. He is of opinion that, "in a number of instances the results were plainly and remarkably good."

F. A. W.-N.
In recent years numerous observers have noted the occurrence of cataract in various dystrophies, congenital and acquired. In the subjects of myotonic myopathy this association is well recognized and recorded examples are to be found in neurological and ophthalmological journals. In these cases the usual syndrome presents three essential features: myopathy of a distal type, myotonic reaction with abolition of the tendon reflexes, and a specialized dystrophy. Terrien and his colleagues publish a full clinical report of a case conforming to the above type and exhibiting also bilateral cataract. Five illustrations show the results of the muscular disorder, and the appearances of the cataractous lenses as seen on examination by the slit-lamp.

The patient was a man aged 37 years; his right eye squinted in childhood and was amblyopic, his left had normal vision until 29 years old, since then it has progressively failed until it could barely count fingers at 30 cm. Apart from the lens changes the eyes appeared healthy. Examined with the slit-lamp these changes resemble closely those described by other observers in the cataract of this form of myopathy. In the superficial layers of the anterior cortex can be seen a multitude of punctiform white opacities compared by the writers to the "milky way." They are close to the capsule and no free space between them and the capsule (as described by Vogt) can be distinguished. The nucleus is entirely free. The superficial layers of the posterior cortex are uniformly altered, the reflex from them being yellow. In the uniform change a few radial opacities are visible. The opaque points with a red and green sheen (mentioned by Vogt) are not present.

The man showed accentuated muscular atrophy, the onset of which dated from the age of 20 years, and at first affected only the lower limbs. The face was expressionless and smooth, the eyelids drooped. He could whistle, though not forcibly; speech was normal. He could not stand unsupported, and walked with difficulty with the body bent forward and legs widely spread. The muscular atrophy was more advanced in the lower extremities; in the upper it was of about three years' duration and most marked in the forearms.

All the tendon reflexes were abolished, but the cutaneous reflexes were normal; tactile sensation was unaffected.

There was an absence of definite signs of endocrine disturbance; the thyroid was slightly enlarged, there was no loss of hair on the face or trunk, the genital organs were normal and there was no evidence of suprarenal insufficiency. Wassermann reaction was negative.
The family history was unimportant; the father and a paternal aunt had senile cataract.

A fairly complete bibliography is given at the close of a discussion concerning pathological and aetiological problems arising in the group to which this case belongs.

J. B. Lawford.

V.—MISCELLANEOUS


(1) Gager is of opinion that the evidence found in the fundus speaks more definitely even than functional tests, for the progress of hypertension and its benign or malignant character. This is particularly evident in cases where fall of blood pressure has followed cardiac failure. The renal genesis of high blood pressure has now been abandoned by most workers in the case of vascular kidney disease or nephrosclerosis, and by a considerable number now, even in nephritis, the explanation being that it is brought about by a widespread constriction of the arterioles of the body which leads only secondarily to structural change. The ophthalmoscopic changes are divided by the author into two groups, vascular and inflammatory. The former comprises (1) spasm of the arterioles (2) sclerosis and (3) haemorrhage; the latter (1) oedema, retinal and papillary (2) spots of varying form, colour and size which are called exudate. Proliferative, degenerative and atrophic changes are secondary and are not discussed. The branches of the central artery of the retina can be regarded physiologically, as arterioles. They thus constitute neuro-muscular organs responding to weak or strong stimuli with dilatation but to the usual moderate stimuli of environment with contraction. Spasm is therefore the first phenomenon of hypertensive nature to be found in the retinal arteries and is followed later by sclerosis. If a patient has high blood pressure but the fundi disclose no disease it is reasonable to assume that the hypertension is of short duration and the prognosis correspondingly more favourable. If, with well defined vascular changes, there is low or normal blood pressure, it is usually evidence of myocardial disease. Finally, if haemorrhage is also present, it suggests exacerbation of a relatively benign process or the occurrence of malignant type of hypertension. If exudation be present without the signs of retinal arteriosclerosis, a purely inflammatory process, including nephritis is likely, while if there is sclerosis as well, it is evidence of an advanced stage of hypertension.

F. A. W.-N.

(2) Horniker here discusses a form of retinitis, illustrated by the history of a series of cases, which he considers not so rare as might be inferred from the meagre notice that it has received in the literature.

This retinitis is confined to the macula and its immediate neighbourhood, and the changes found in this area are best studied by ophthalmoscopic examination in red-free light and the observation of the entoptic phenomenon; the presence of punctate opacities in the lens and less frequently, of degenerative changes on the back of the cornea (which he terms the "vasoneurotic sign"), as seen with the slit-lamp, occurs with such regularity in these cases that they constitute an indicator of these changes in the retina.

The patients affected were mostly between 30 and 40 years of age and invariably showed signs of an angioneurotic diathesis. This question was discussed by Horniker in a previous article in the Arch. f. Ophthal., which was reviewed in this journal (Vol. XIII, p. 329, 1929).

The retinal changes are the result of a disturbance of the circulation in the terminal vascular zone at the macula (the condition is not a true inflammation). The disease is not due to any one aetiological factor, but is the expression of a pathological reaction in the blood vessels, based on an inherited constitutional idiosyncrasy.

As to symptoms, the most prominent is the sudden impairment of vision, like scintillating scotoma, varying in degree, often preceded by temporary obscurations and followed by headache; a mist, variable in colour, in front of the centre of the object fixed, with sensations of movements within the mist, and an increase in the size of Maxwell’s spot.

Among the changes observed at the macula are oedema, haemorrhages, blurring of the central reflex, and Gunn’s dots. Various alterations in the vessels are described.

The prognosis is generally good, but there is a great tendency to relapse.

The treatment mostly used was papaverin with atropine, in the form of aspastin, and calcium.

THOS. SNOWBALL.

(3) Loddeni, Giovanni (Turin).—Granuloma of the iris. (Granuloma Dell’Iride). Lettura Oftalmologica, Anno VI, No. 9, October, 1929.

(3) A description of a case of a tumour of the iris occurring in an eye which had been injured in an explosion some years
previously. A traumatic cataract was present, and a small scar on the sclerotic. The tumour was diagnosed as a cyst of the iris, and on removal was found to be solid, and to consist of granulation tissue.

R. A. Greeves.

(4) Fuchs, Ernst (Vienna).—The ciliary body in luxation of the lens. (Der Ciliarkörper bei Luxation der Linse). Arch. f. Ophthal., Vol. CXXII, p. 86, 1929.

(4) In this short paper Fuchs discusses an abnormal position of the ciliary processes in ectopia that is of infrequent occurrence and has been seldom mentioned in the literature—the ciliary processes, all round the circumference with the exception of the upper part, being directed backwards and having the appearance of being pressed together.

The author had at first formed the opinion that it occurred only in congenital dislocation of the lens, and that it probably represented an error of development, but later he found it present in acquired luxation.

In all his eight cases the ciliary muscle showed an absence of the circular fibres, as seen in high myopia.

In explanation of this condition he puts forward the view that in ectopia lentis the zonule becomes gradually lengthened, so that the lens sinks until it touches the tips of the ciliary processes and presses them downwards. The edge of the lens then glides still further downwards and backwards on the surface of the ciliary processes, and pari passu the zonule, at first in the vertical position, becomes directed horizontally and later downwards and backwards; the further this process goes on, the more it drags the ciliary processes backwards and presses the lens against them. This view explains too why the displacement backwards of the processes is not seen in the upper part.

The condition described is infrequent, probably because through the constant movement of the dislocated lens the zonule fibres become ruptured before the traction they exert on the processes has been sufficiently long continued to produce an adhesion of the individual processes.

Thos. Snowball.


(5) This paper by Prof. Fuchs treats of the (senile) sclerotic changes that occur in the branches of the ophthalmic artery, to which, apart from those in the central vessels of the optic nerve
and those in the choroid connected with nephritis and syphilis, little attention has been given in the literature.

He gives a detailed description of the normal anatomy of the ciliary vessels. As regards the arteries he found that their walls, instead of being thin as stated by some authors, are thicker than those of arteries of similar calibre in other parts of the body. He refers to the great variability in thickness of the tunica adventitia, to the variation of the entry of the arteries into the sclerotic, and to the fact that within the sclera they do not lose their coats so completely as has been sometimes stated.

The senile changes occurring in the ciliary arteries consist in the formation of a subendothelial connective tissue layer and the thickening of the inner elastic lamina with the formation of new elastic membranes in the subendothelial layer; these together he includes under the name of sclerosis.

These two signs of sclerosis, while they usually occur together, may be found either singly or in different degrees of development, a fact which is taken to indicate for them a different pathogenesis.

Later senile changes are lipoid infiltration (which is only slight, occurring in any of the coats and only in advanced age), hyaline and amyloid degeneration, and calcification (rare).

The arteries are less affected by sclerosis when they reach the choroid, a fact which is in marked contrast to their condition in nephritis and syphilis.

The veins normally vary much in the size of their lumen and the thickness of the wall.

In the large veins the wall consists of endothelium and a connective tissue layer, the fibres of which intersect in all directions and send offshoots into the surrounding tissues, an arrangement which prevents the collapse of the lumen. Muscle fibres when present are not disposed as a regular ring, but form a close meshwork with the connective tissue fibres.

The small veins differ from the larger in the regular arrangement of the connective tissue fibres forming the wall: there is an absence of elastic or muscle fibres.

The veins, apart from the central vein of the optic nerve, exhibited no changes pointing to senile sclerosis that were comparable to those found in the arteries.

Senile sclerosis of the choroidal arteries is too insignificant to be seen ophthalmoscopically. If it were possible to detect it, the author thinks it would be represented by the atrophic patches frequently observed in the extreme periphery of the choroid in the otherwise healthy eyes of old people.

THOS. SNOWBALL.

(6) Adams finds no support for the view that senile cataract is an expression of latent tetany associated with low blood calcium. On the contrary, in patients with senile cataract the serum calcium is appreciably higher than normal. This higher rate is not a senile change, for age has no effect on serum calcium. The exact relationship between the raised serum calcium and cataract is not clear, for calcium salts acting on fresh ox-lenses do not cause opacity except in unphysiological concentrations, and furthermore the experimental production of a persistently raised blood calcium neither causes cataract nor accelerates the development of naphthalene cataract, although it causes a corresponding rise of calcium in the aqueous humour. But that calcium is somehow concerned in senile cataract is further shown by the fact that the calcium content of cataractous lenses is much greater than that of normal lenses, in which the calcium content does not vary with age. The excess of calcium in the cataractous lens is not of a uniform rate, individual cataracts showing wide variations. Associated with the excess of calcium in the lenses is a decrease in the potassium content.

ARNOLD SORSBY.


(7) Cords gives an interesting and critical paper on the types of nystagmus which may develop after various injuries to the skull. He classifies these as follows:—

1. Following injury of the labyrinth and the vestibular nerves. In these the horizontal component of the nystagmus is due either to a lesion of the brain-stem or to the labyrinth itself. The distinguishing feature of the labyrinthine type of nystagmus is its disappearance within a period of a few weeks.

2. Nystagmus following injury to the optico-motor cortex and the optico-motor centres in the cerebrum. Here the nystagmus gradually disappears and may be replaced by compensatory jerks accompanying homogeneous deviations of the eye, the movements being almost entirely horizontal.

3. Nystagmus after meningitis complicating fracture of the skull appears when the meningitis becomes purulent and involves the fourth ventricle.

4. Nystagmus due to injury of the brain-stem is usually slight but protracted and may even be permanent, in contra-distinction to that following lesions of the cortex and labyrinth which tend to be temporary.

W. S. DUKE-ELDER.