ABSTRACTS

I.—LENS

(1) **Rötth, A. (Pécs).—On the significance of cataract remains. (Ueber die Bedeutung der Starreste.)** *Arch. f. Ophthal.*, Vol. CXXII, p. 34.

(1) It is recognised that in certain cases intra-ocular inflammation following cataract extraction is set up by lens substance, and the theories put forward to explain it are threefold, (*a*) mechanical, (*b*) chemical, and (*c*) anaphylactic.

Rötth made a series of experiments to test all three theories, and from his first series (re *c*) came to the conclusion that the inflammation is in all probability not anaphylactic in character.

As regards the mechanical or toxic action of lens substance his conclusions are that lens cortex in the anterior chamber of a rabbit's eye, like the protein bodies of the cortex (crystallins α and β), produces no appreciable mechanical or chemical irritation. A small particle of lens nucleus, however, sets up a fibrinous iritis, usually more violent than when it is introduced into the anterior chamber in suspension. This pronounced reaction is mechanical and probably also chemical in character, due to the albumoid or its derivatives.

The nucleus, especially when in suspension, leads to increased tension. It is possible that the nucleus sets up various forms of secondary glaucoma not only by blocking of the filtration angle but also through the products of its decomposition, *e.g.*, after dislocation of the lens into the vitreous or in spontaneous absorption of senile cataract.

The substances obtained from the digestion of lens matter by trypsin produce a toxic action on the iris, setting up a plastic iritis the intensity of which is directly proportional to the concentration of these substances.

Of the known products of digestion of protein, peptone usually causes a marked reaction in the iris. Of the amino-acids of the lens protein, introduced into the anterior chamber in quantity equivalent to one-half lens, arginin produces a moderate inflammation in the iris, and lysin in less degree, if care is taken that pH is constantly 7·3. As to the insoluble substances, the introduction of tyrosin and cystin in minimal quantity is followed by a marked reaction.

As to the origin of intra-ocular inflammation in man after cataract extraction cortical remains are seldom the cause. It is suggested, however, that the products of decomposition stored up in the hypermature cataract have a toxic action on the iris, when the capsule is

opened, owing to their great concentration; in other cases these toxic substances diffuse through the capsule and set up iritis, because owing to the slow exchange of the aqueous their concentration increases—a view that is supported by clinical observations.

It is probable that the products of chemical change in the lens may cause chorio-retinitis.

The author finally points out that cataract remains form an excellent medium for the growth of conjunctival bacteria, a fact of much greater importance than their chemical action; a comparison of the results of cataract extractions in and out of the capsule, as performed in the Pécs clinic, affords ample proof that extraction in the capsule is an important prophylactic against post-operative inflammation.

THOS. SNOWBALL.

II.—RETINA

(1) **Junius, P. (Bonn).—Some remarks concerning the conditions known as Coats's disease, retinal degeneration with multiple aneurysms (Leber) and the so-called angiomatosis of the retina (von Hippel's disease). (Bemerkungen zum Krankheitsbild der "Retinitis (Coats)," der "Netzhautdegeneration mit multiplen Aneurysmen (Th. Leber)" und der sog. "Angiomatosis retinae (Czermak-von Hippel.")** *Zeitschr. f. Augenheilk.*, Vol. LXVIII, p. 208, 1929.

(1) In an article which well deserves perusal in the original, **Junius** gives a critical survey of the present state of knowledge concerning that ill-defined group of vascular lesions with which the names of Coats and of von Hippel are particularly associated. The recent work of Lindau is recalled, which clearly established the close connection between angiomatosis of the retina with similar lesions in other parts of the central nervous system, well illustrated by a case described by Cushing and Bailey. This case, a patient aged 30 years, first came under observation with a diagnosis of cerebellar tumour; operation showed it to be a vascular mass. Apart from an " enormously tortuous and dilated vein " there was seen nothing of import in the fundi. This was in 1922. Six years later the right eye showed extensive changes in the calibre and character of the arteries and a definite angioma of the retina of the left eye. This is the type of association brought out by Lindau, who also showed that these cases may have cysts of the pancreas and hypernephromata (" Lindau's syndrome "). Lindau regards the vascular lesions as haemangioblastomata arising out of congenital rests, which are often multiple in nature and as far as the

eyes are concerned tend to develop in the third decade of life. The vascular lesion he regards as the primary and the glial new formation as secondary. Lindau draws a clear distinction between angiomatosis of the retina (v. Hippel) which he places in the above described class of haemangioblastomata, and Coats's disease which he considers of a different aetiology altogether.

That angiomata in general are not necessarily isolated lesions is supported by a series of observations drawn from other writers. The work of Brushfield and Wyatt is referred to, in showing the association of cutaneous naevi with hemiplegia and mental defect in children. The association of naevi with vascular tumours of the brain has further been shown by Cushing and Bailey, and a recent case of Parkes Weber is of interest in that it not only showed an associated cutaneous and cerebral haemangioma, but the further association of buphthalmos on the side of cerebral naevus. Reference is also made to the case recently reported by Foster Moore in which an haemangioma of the visual cortex was associated with a coloboma of the optic disc and naevus of the face.

These observations, whilst they do not solve the pathology of von Hippel's disease, tend to bring this angiomatosis of the retina in line with other naevi, and the multitude of names under which this condition has been described by different observers represent but the different clinical stages in which it has been described. Junius leaves it an open question whether Lindau's conception of angiomatosis as the result of activated congenital cell rests is the correct explanation. More data on the earlier stages of von Hippel's disease are required.

Coats's disease represents great difficulties in the multitude of appearances it may show. Even Coats held that essential links were still missing to correlate the various appearances into a distinct clinical entity. As for the aetiology this is quite unknown: one cannot even say whether the lesion is of a purely local or of general origin.

As for the condition described by Leber as retinal degeneration with multiple aneurysms, there are no substantial reasons for regarding this as a separate clinical entity.

Junius points out that the conditions described by Coats, von Hippel and Leber have this in common: that it is especially the small vessels that tend to be affected, and that in all these conditions aneurysms, tortuosity and irregular constriction of the arteries are to be found. In favour of regarding von Hippel's disease as distinct from Coats's there is the evidence of Lindau's work, and the fact that there appears to be a familial tendency in this affection. But, on the other hand, it is of interest to note that it shares with Coats's disease the characteristic of chiefly affecting males between the ages of 3 and 30.

Junius suggests that some disturbance in the nerve supply of

vessels may be the underlying cause of all these conditions with their associated lesions—just as the association of buphthalmos with neurofibromatosis finds a parallel explanation.

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ARNOLD SORSBY.

(2) **Pressburger, E** (Vienna).—**Cystic degeneration of the peripheral retina. (Ueber die zystoide Entartung der Netzhautperipherie.)** *Zeitschr. f. Augenheilk.*, Vol. LXVIII, p. 331, 1929.

(2) The pathology of cystic degeneration of the retina is unknown, though the condition is so very common in old people as almost to be regarded as a normal senile change. **Pressburger** reviews the literature on the subject and records the results of his own examination of thirty eyes of different ages. His conclusions agree in the main with those of earlier observers.

To the clinician the condition is of little importance as it does not affect vision and owing to the fact that as it involves the region of the ora serrata it is beyond the reach of the ophthalmoscope. The affection spreads but rarely beyond the equator, and the temporal side is more frequently affected than the nasal side. The site of election for the pathological changes would appear to be the inner nuclear layer. The author agrees with a recent writer (Ochi, *Amer. Jl. of Ophthal.*, March, 1927) that the condition is by no means a senile manifestation, and though it is decidedly more frequent with advancing years, it does appear in young people and even in children. Pressburger finds no support for the suggestion that the condition is secondary to choroiditis, nor for the converse

that it excites inflammatory lesions in the choroid. The localisation of the affection to the neighbourhood of the ora serrata is difficult to explain. Oedema, falling more heavily on the periphery; the nearness of the ora serrata to the ciliary body (with its secretion) and the greater intimacy of the periphery of the retina with the vitreous have all been suggested. The author draws attention to the fact that the space formation in cystic degeneration of the retina is very reminiscent of the spaces normally present in the ciliary body, and that these two sets of spaces merge imperceptibly one with the other. Because the fluid in the spaces in the degenerate area stain a good red colour with eosin, it is held that the fluid is richer in albumen than aqueous, and is probably a transudate. Pressburger has failed to find any evidence of cystic degeneration in embryonic eyes.

ARNOLD SORSBY.

(3) **Holloway, T. B. (Philadelphia) and F. H. Verhoeff (Boston).—Disc-like degeneration of the macula.** *Arch. f. Ophthal.*, February, 1929.

(3) **Holloway** and **Verhoeff** describe cases of macular disease in old people. The salient points are as follows:—

Case 1 was a man aged 77 years with some general arteriosclerosis and a greyish yellow discoid area in the macular region of each eye. The retinal vessels were very sclerosed but there were no fresh haemorrhages.

Case 2 was a man aged 68 years who had retinitis circinata in the left eye with yellowish-white dots scattered about inside the circle of exudate. During the next few months the circinate patch became more yellow and " a vague exudate " developed inside it, while during the next two years fresh haemorrhages kept forming within and about the circinate lesion, exudates disappearing and reforming.

Case 3. A woman aged 75 years had a circinate patch in the right eye, the upper portion of which had almost disappeared in 18 months, while the lower portion became less evident.

Case 4 was somewhat similar.

Case 5, a man aged 79 years, in addition to retinitis circinata, had a greenish yellow mound of exudate over the macular region which, during the next two months, became more circumscribed and spherical while there was partial absorption of the circinate exudates.

Case 6 was one in which retinitis circinata was seen to develop over the site of a circinate mass of haemorrhage.

Case 7 was one in which the eye was obtained for histological investigation an hour and a half after death; a yellowish-white

mass having been observed in the macular region during life. This mass was found to consist chiefly of hyaline connective tissue, situated between the retina and choroid. Its outer half was supplied with blood vessels which had come from the choroid through small defects in Bruch's membrane, but the inner half was almost avascular. The neuro-epithelium of the portion of retina which lay over the mass was completely destroyed. Holloway and Verhoeff suggest that the mass was formed by proliferation of cells of the pigment epithelium, because, at the periphery, all transition stages from normal pigment cells to pigmented spindle cells, and finally into unpigmented cells indistinguishable from connective tissue cells, could be made out. This metaplasia of the pigment epithelium was probably due to impaired nutrition consequent on choroidal vascular sclerosis.

F. A. W.-N.

BOOK NOTICE

Benevenutus Grassus of Jerusalem. *De Oculis Eorumque Egritudinibus et Curis.* Translated, with notes and illustrations, from the First Printed Edition, Ferrara, 1474 A.D., by CASEY A. WOOD, M.D., LL.D. California: Stanford University Press, and London: Humphrey Milford, Oxford University Press. Pp. 13 and 101. 1929. Price, 23s.

We extend a cordial welcome to this work which reflects the greatest credit on Dr. Casey Wood and, indeed, on all concerned in its production.

Ophthalmic surgeons should be proud of the fact that among the incunabula, *i.e.*, books printed before 1500 A.D., and thus in the swaddling-clothes stage of printing, two, the Ferrara Grassus and Anton Sorg's finely printed edition of the *De Oculo Morali* of Archbishop John de Peckham, should find a place. The latter work is not the work of a practical ophthalmologist, and in it, as Dr. Casey Wood says, "the eye serves as a peg on which to hang saintly saws and religious dogmas." Grassus, on the other hand, was for more than 500 years the most popular text-book on ophthalmology, holding its own throughout the Middle Ages. It is an intensely practical work and well repays study even to-day. Some of the descriptions of disease, notably those of trachoma and pterygium, would pass muster even now. Grassus recognised seven types of cataract, four of which were curable and three incurable; he issues a warning against operating on unsuitable cases which may be