
(1) Noting the fact that an increase and decrease in the size of scotomata frequently occurs simultaneously with a parallel variation in the height of the intraocular tension, Wegner asks himself the question: can the formation of scotomata be correlated with an increase of intraocular pressure alone? An experimental inquiry has led him to answer the query in the negative.

In a series of normal individuals the intraocular tension was taken and varied by Bleidung's apparatus (Arch. f. Augenheilk., XCIV, p. 198, 1924), in which, after the principle of the sphygmomanometer, the eye is enclosed by a circular air-cushion applied to the orbital margin connected to a bellows and a manometer, in the centre of which cushion is a pane of glass through which either the patient or the experimenter may look. The tension of the eye may thus be raised to, and maintained at 100 mm. Hg. Scotomata and blind spots were charted by perimetry. In normal individuals, he finds that even after maintaining the tension at 30-40 mm. Hg. for half an hour, the size of the blind spot is unchanged, or increased to an extent so small as to be negligible. On the other hand, after subconjunctival injections of sodium chloride, whereby the ocular tension is only raised by 8-10 mm. Hg., a very definite enlargement occurs, which is apparent 10-20 mins. after.

A second series of experiments deals with a series of five cases of simple glaucoma, which were subjected to the same procedure. The first two had normal fields, the third had a vertically enlarged blind spot, and the fourth an enlarged blind spot with a ring scotoma; in all these four the tension was about normal; in none of them did the raising of the ocular tension induce any change either in the field, or in the blind spot, or in the scotoma. The fifth had a higher tension which could readily be raised or lowered by the exhibition of miotics or mydriatics; in this case the raising of the tension induced a corresponding change in the size of the scotoma.

From his investigations Wegner concludes that the formation or variation of the size of scotomata does not depend on a raising of the ocular tension alone, but that other complicating factors enter
into the case. The first four cases of glaucomatous subjects he
considers in a stable phase of the disease, and these, as in the
case of normal subjects, do not react; the last is in a labile phase,
and in this condition factors such as retinal oedema and transuda-
tion play the determining rôle in the phenomenon, a condition
induced also by the subconjunctival injection of salt.

His findings thus agree with those of Samojloff (Klin. Monatsbl.
f. Augenheilk., LXIX, p. 59, 1922; LXX, p. 655, 1923), and can
be correlated with the clinical reports of: Rönne (Klin. Monatsbl.
f. Augenheilk., XLVII, p. 12, 1909), Löhlein (Arch. f. Augenheilk.,
LXXVI, p. 165, 1914), Seidel (Arch. f. Ophthal., LXXXVIII,
p. 102, 1914), v. Szily (Klin. Monatsbl. f. Augenheilk., LI, p. 196,
1913).

W. S. Duke-Elder.

(2) Goslich, H. A.—A method of treatment preparatory to opera-
tion for glaucoma. (Über vorbereitende Massnahmen von
Glaukom-operationen.) Zeitschr. f. Augenheilk., Vol. LVI,
Pt. i, 1925.

(2) Goslich gives the results of the treatment of 19 cases of

glaucoma by osmotic therapy, undertaken as a means of reducing
the intraocular pressure prior to operation. In some cases sodium
chloride was administered by the mouth in doses of 25 grams

dissolved in a draught of 200 c.c. water, which the patient was

persuaded to drink within a period of from one-quarter to three-
quarters of an hour; in others an intravenous injection of 130 to

200 c.c. of a 10 per cent. solution was given; in most cases operation

was performed one to one and a half hours later.

An analysis of his results shows: Chronic Glaucoma: 8 cases,
of which seven received salt by the mouth, and one intravenously.

All responded with a lowering of tension, in the most marked case
of 21 mm. Hg., in the least of 7 mm. (This last eye had an initial
tension of only 25 mm., which was thus reduced to 18.) Glaucoma
Simplex: 2 cases, salt by the mouth. In one a fall in tension
of 16 mm.; in the other no reaction. Subacute Glaucoma: 2 cases, by
the mouth. In one a fall of 30 mm. in the other of 17 mm. Acute
Glaucoma: 2 cases. In one, after an iridectomy the tension was
still about 44 mm.; salt by the mouth induced a fall to 38 mm. In
the other, an acute attack came on ten days after a trephine opera-
tion; intravenous salt had no effect. Glaucoma Complicata (Iritis):
2 cases. In one, salt by the mouth: fall of 18 mm. In the other,
intravenous salt; fall of 20 mm. Haemorrhagic Glaucoma: 2 cases.
In one, intravenous salt; no effect. In the other salt by the mouth;
fall of 9 mm. Secondary Glaucoma: 2 cases. One, traumatic sub-
luxation of the lens; intravenous salt; tension fell from 78 to
18 mm. Schiötz, and remained so for ten days when it rose again;
injection repeated; similar result; second exacerbation; reduced again by injection; operation. The second, contusion with rupture of iris; intravenous salt; tension, 44 to 36.

Goslich expresses himself as satisfied with the results, and concludes that the method forms a valuable addition to the therapy of glaucoma, especially as an antecedent to operation. He recommends intravenous administration in youthful patients, and oral administration in the aged. [The importance of Goslich's paper lies in the fact that sufficient clinical experience in this method of therapy in glaucoma has not yet been gained to enable an exact estimate of its value in different types of the disease to be made. It is to be noted that he got more satisfactory results in chronic cases than in acute—an experience opposite to that of Weekers (Arch. d'Ophthal. XL). Goslich used large quantities of a comparatively dilute solution (10 per cent.), wherein the quantity of water introduced tends to defeat the object of the treatment; Weekers used a very small quantity (5 c.c.) of a concentrated solution. With the technique recommended by the reviewer (Brit. Jl. of Ophthal., p. 30, 1926), an as yet small experience has suggested that both types of the disease may similarly be influenced, while at the same time keeping within the limits of safety.]

W. S. Duke-Elder.

(3) Schoenberg, Dr. Mark J.—The Knapp adrenalin mydriasis reaction in direct descendants of patients with primary glaucoma. Arch. of Ophthal., May, 1925.

(3) Arnold Knapp published his article on the adrenalin mydriasis reaction in the Archives of Ophthalmology, November, 1921. There is no doubt that the test is positive in a large majority of glaucoma patients, and that susceptibility to adrenalin may be present long before the clinical signs of glaucoma. Schoenberg, having been impressed with the hereditary factor in this disease, decided to test the descendants of glaucoma patients with adrenalin. The test is performed as follows: After taking the tension with a Schiötz tonometer, and measuring the size of the pupil, one drop of fresh adrenalin solution 1 in 1,000 is instilled every few minutes for five times. After half an hour, the measurements of the pupil and of the ocular tension are again taken. Schoenberg found it advisable to use holocain before putting in the adrenalin. His paper gives the results in the 35 sons and daughters of 13 patients, with primary glaucoma. The descendants who were examined were all free from clinical signs of the disease but 50 per cent. of them were positive to adrenalin, 20 per cent, being strongly positive. He does not regard this observation as necessarily proving that the positive cases will develop glaucoma, and concludes by saying that his paper merely establishes a fact, the
interpretation of which will have to be postponed until more experience and study concerning this problem are available.

F. A. WILLIAMSON-NOBLE.

(4) Curran, Dr. J. (Kansas City).—Subconjunctival cauterization of the sclera over the ciliary body with the galvano-cautery to reduce intraocular pressure in advanced glaucoma. Preliminary report. Arch. of Ophthal., July, 1925.

(4) Curran has so far tried this operation only as a last resort in cases of advanced glaucoma and has not yet had sufficient time to estimate its value. He evolved it as a result of seeing a case where there was deep cupping of the disc and obvious signs of old glaucoma. The intraocular pressure when the patient was seen was only 3 mm. above normal, and there was a large ciliary staphyloma due to an old gumma. Curran was led to believe that this staphyloma had acted in the same way as a decompression acts in the skull and cast about for some means of artificially producing such a lesion. He tried cauterizing various parts of the eyeball with no success until he attempted it in the ciliary region. Here he found that although no staphyloma was produced—at least in the beginning—the tension fell markedly in each case, sometimes permanently, sometimes temporarily. He attributes the result to the heat conducted to the ciliary body, putting it out of function and thus bringing about a diminution in the amount of aqueous formed. Atrophy of the iris has already been recorded in cases where thermophore treatment has been applied to the cornea. Technique of the operation:

The eye is cocainized and a subconjunctival injection is made in the area selected for operation. The incision is 15–20 mm. long, and a flap of conjunctiva is dissected up to the limbus without splitting the cornea. The sclera is exposed, and an area 6-8 mm. antero-posteriorly by 10 mm. laterally is cauterized. The lower edge of this area should be 2 mm. from the corneal margin. The cautery wire should be 1.5 mm. thick; it is heated to a dull red, and allowed to cool. As soon as it becomes black it is made to touch the sclera and to remain there for ten seconds. This is repeated until the whole area has been gone over. The sclera is therefore not perforated but it is charred, and no attempt should be made to remove the charred tissue. The conjunctiva is sutured back into position and a reduction in tension becomes apparent in about twenty-four hours. The paper concludes with an account of the results of 12 cases (16 eyes) all under high pressure for a long time, and with little or no vision. In five eyes the results appear to be permanent, with filtration through a spongy area over the place of cauterization. In seven cases there was a fall of pressure for seven weeks with a tendency to rise again. In one
case perforation occurred and a sudden loss of aqueous with intraocular haemorrhage. In two cases there was no improvement. In the last case there was a small staphyloma formed, and the intraocular pressure kept down for three months, after which it rose again.

F. A. WILLIAMSON-Noble.


(5) Larsen collected and analyzed a number of cases of iridocyclitis with secondary glaucoma for the purpose of comparing the relative value of treatment with mydriatics and miotics, and he found that better results are obtained with the former, because by means of them the tension can be reduced to normal more frequently and more rapidly, and the inflammation dies down better through immobilization of the iris and ciliary body: with mydriatics, too, there is less risk of relapses of inflammation. It should also be remembered that the tension not infrequently rises after the use of miotics while this rarely occurs with mydriatics.

The reason for the former preference for miotics arose from the fear that atropin would have the same disastrous effect as it has in primary glaucoma. The rise of tension in irido-cyclitis, however, is in the author's view due not to blockage at the iris angle but to hypersecretion of aqueous; hence the value of atropin in reducing the tension by its immobilization of the inflamed iris and ciliary body and check on the secretion of aqueous. Watch therefore should be made on the tension not with the object of substituting a miotic for the atropin but of using the latter more energetically.

In every case of irido-cyclitis Larsen recommends the energetic use of atropin in order to procure complete immobilization of the iris and ciliary body. If in spite of this the tension rises the atropin should be used still more freely and if it fails one must have recourse to operation—trephining he considers the best procedure—followed by continued use of the mydriatic in order to get control of the inflammation before filtration through the operation fistula ceases.

Thos. Snowball.

(6) Zavallía, A. U.—Primary ocular hypertension as an initial manifestation of Zoster Ophthalmicus. (Hipertension ocular primitiva como manifestación inicial del Zona Oftalmico.) Arch. de Oftal., Hisp.-Amer., Vol. XXVI, p. 157, March, 1926.

(6) Zavallía describes two cases wherein an attack of raised tension preceded the onset of a typical attack of herpes by some days. A review of the literature brings out the following points connected with the coincidence.
Herpes may be associated with either a raising or a lowering of the tension of the eye.

The hypotonia occurs under the following conditions:
1. As a consequence of an iritis or cyclitis accompanying the lesion.
2. Without irido-cyclitis, probably to be associated with a paretic lesion of the sympathetic.

There are two distinct conditions of hypertony corresponding in their aetiology to the above: a primary one, due to an irritative sympathetic condition, and a secondary one, following an associated irido-cyclitis. Usually the hypertension comes on during the course of the disease, very rarely it is a prodromal symptom.

The course and the prognosis of this herpetic hypertension varies with the condition of the eye: if this is normal, miotics readily control the tension, recovery is rapid, and the prognosis is good; if, however, the eye is glaucomatous or predisposed thereto, there invariably develops a typical acute or subacute attack of glaucoma, requiring radical surgical measures to preserve vision. In the development of a sudden attack of hypertension the possibility of herpes should never be lost sight of, especially when a unilateral headache persists after the tension has been got under control. Conversely the tension should be carefully watched in those cases of this disease where atropin is being used.

W. S. Duke-Elder.

II.—MISCELLANEOUS


(1) Gjessing has made a study of the incidence of senile cataract and Haab’s senile degeneration of the macula, which is of considerable theoretical interest in view of the theory put forward by van der Hoeve on the influence of the abiotic action of light in the aetiology of these two diseases (Arch. f. Ophthal., Vol. XCVIII, pp. 1-6, and 40-60).

The essential feature of van der Hoeve’s theory is that the lens is optically heterogeneous, that light falling upon it is partially dispersed and partially passed on to the retina, that a large moiety of the dispersed light is thrown on to the ciliary body and there,
largely through a heating effect (Parsons), influences adversely the production of aqueous, which in turn induces lenticular degeneration. The more heterogeneous the lens is, the more light is dispersed, the greater the effect on the ciliary body, and the more likelihood of cataract formation: the more optically homogeneous the lens is, the more light passes undisturbed to the retina, and the more likelihood of the development of macular degeneration. The two diseases are therefore both due to the abiotic action of light, and they tend to be mutually exclusive—a heterogeneous lens exposing itself and protecting the retina, a homogeneous lens protecting itself and exposing the retina.

Setting out to determine whether or no this relation obtains statistically between the two abiotrophies, Gjessing has examined 2,259 cases, involving 4,381 eyes, between the ages of 55 and 97. With deductions for other pathological conditions whose occurrence would interfere with the unbiased consideration of the problem, he makes use of 2,014 individuals, involving 4,015 eyes. He finds that cataract as an isolated condition is most common in the age-period 55-59 (90 per cent. of pathological lesions), and lowest in the period 85-89 (27.3 per cent). Senile degeneration of the macula, on the other hand, as an isolated condition, is rarest (6.4 per cent) in the age-period 55-59, and commonest (29.0 per cent.) in the period 70-74: in the period 85-89 it had much the same incidence—24.0 per cent. The incidence of cases showing a combination of the two rose gradually with advancing years, from 2.1 per cent, in the first period considered to 30.0 per cent. in the seven year interval 90-97.

Over the whole series the following relation obtained: Total occurrence of cataract, 56 per cent.; isolated lens opacity, 38 per cent.; lens opacities combined with macular degeneration, 7.1 per cent.; isolated macular degeneration, 10.2 per cent. Total occurrence of macular degeneration, 17.3 per cent.

Gjessing therefore concludes: (a) that senile macular degeneration is in advanced years (i.e., over 55) a disease of by no means uncommon incidence. It has on the whole a more deleterious effect upon vision than has opacity of the lens; (b) that there is a relative antagonism between the incidence of the two diseases, and the theory of van der Hoeve is supported by statistical evidence.

W. S. Duke-Elder.

(2) Marquez (Madrid).—A case of cisticercus extracted from the eye. (Sobre un caso de Cisticercus extraído del ojo.) Arch. de Oftal. Hispano-Americanos, Tomo XXV, pp. 585-595, November, 1925.

(2) A case of the extraction of an intraocular cisticercus by Marquez is of some interest. The patient, a male, aged 32 years, complained of loss of vision in the left eye, which had progressed
for some years without any other symptoms, objective or subjective, beyond an occasional conjunctival injection. Central vision was "fingers at one metre," and the upper and inner field was lacking. Examination revealed, in the lower part of the globe, immediately behind the ciliary body and lens, a clear vesicle about the size of a pea, with a segmented appendage, bent upon itself, running upwards towards the lens. No movements of the parasite were observed, but ocular movements were communicated to it. Underneath the parasite was a considerable amount of exudation, both in the vitreous and underneath a detached area of the retina.

Operative removal was undertaken under local anaesthesia, an incision being made through the conjunctiva and sclera downwards and outwards beyond the region of the ciliary body at about the position of five o'clock. A pair of fine forceps was introduced, and, with the loss of a very small amount of vitreous, the cyst was extracted. Afterwards there was considerable pain which the author considers due to an aseptic inflammation comparable to that experienced after the removal of a hydatid from the abdominal cavity. In a few days this subsided, and the eye cleared up. Ophthalmoscopic examination then revealed the heaped up mass of exudate, and what appeared to be the scolex form of the parasite. A second operation was undertaken with a view of removing this, but, owing to the extremely friable nature of the mass, was found to be impracticable and the attempt was abandoned.

Subsequently the vision and tension improved, and the eye made a good recovery.

W. S. DUKE-ELDER.


(3) This is a series of microphotographs of the eye, of the ciliary region, peripheral region of the retina, external layers of the retina, fovea, and macula in sagittal section, and transverse sections of the layer of rods and cones in the peripheral part of the retina, macula, and fovea. They are of the highest excellence both as regards the sections and the reproductions of the photographs.

In the matter of technique, Fincham fixes in Kaiserling's solution (a mixture of formalin, potassium nitrate, and potassium acetate), which has been known up to the present as a solution useful for preserving museum specimens as it has the property of retaining the natural colours of the specimens.

An eye preserved for 48 hours in this solution shows on opening the eye the yellow colour of the macula and the pink colour of the remainder of the retina due to the visual purple. The shape of the eye is not well maintained.

In making sections of the retina the eye was first divided after fixation and the vitreous removed, a step necessary to prevent the
shrinkng vitreous from pulling the retina from the choroid. These small pieces of retina with adherent choroid and sclera were embedded in paraffin and then cut with a Cambridge microtome. The sections were stained with acid fuchsia or with a mixture of this and orange G. These give beautifully sharp differentiation of cytoplasmic structures.

CHARLES GOULDEN.

(4) van der Hoeve, J. (Leiden).—Skiagraphy of the optic foramen in tumours and diseases of the optic nerve. (Röntgenphotographie des Foramen opticum bei Geschwülsten und Erkrankungen des Sehnerven.) Arch.f.Ophthal., Vol. CXV, 1925.

(4) van der Hoeve illustrates by two cases, one of neurofibromatosis of the optic nerve, the other an endothelioma of the optic nerve sheaths, the information, valuable both for prognosis and treatment, that is obtainable from a study of skiagrams of the optic foramen. Apart from its value in detecting fissures, fractures, or callus in the bone surrounding the optic foramen, or in suggesting the probability of a new-growth by the presence of abnormal shadows, skiagraphy may be usefully employed to study the size and shape of the foramen, particularly when the photographs are obtained by the method of Rhëse for examination of the ethmoidal cells, because it may have a bearing both on diagnosis and treatment.

As to diagnosis, in cases where there is a suspicion of tumour of the optic nerve an unduly large foramen indicates the great probability that the tumour is penetrating through the optic canal into the cranial cavity: the absence of any enlargement, however, does not negative the invasion of the canal by the new-growth or disprove the possibility of an intracranial and an intraorbital growth. The author emphasizes the necessity of making an X-ray examination of the optic foramen at intervals in cases of optic nerve tumours in order to detect any increase in the size of the foramen, which would indicate an increase in the tumour.

An abnormally small or much deformed foramen in cases of optic atrophy and neuritis, or in disease of the optic nerve in tower-skull may be suspected as a predisposing factor in the causation of the change in the nerve. As regards treatment, where the optic canal is enlarged or constricted one must consider whether it is desirable to remove the roof of the canal or to attack the new growth. The indications for such procedure must be controlled by the danger to the life or vision of the patient. As regards the vision, van der Hoeve thinks the operation should be undertaken only when total blindness is threatened.

THOS. SNOWBALL.
Blatt (Roumania).—The problem of the partial and total transplantation of eyes. (Das Problem der partiellen und totalen Augentransplantation.) Arch. f. Ophthal., Vol. CXIV., 1924.

Blatt was induced to repeat the experiments made by Koppányi (vide Brit. Jl. of Ophthal., Vol. VIII, p. 486, 1924), who claimed to have transplanted eyeballs in toto with great success from a functional as well as an anatomical point of view, and in recording his results he first gives a wide survey of the whole question of regeneration and transplantation in the lower animals and in man.

The author employed 400 freshwater fishes, eighty rabbits, and forty fowls, and out of these the transplanted eyes were retained, with slight changes in the refractive media, in 26 fishes and only two rabbits. In the case of the fishes observations to test the re-acquisition of vision in the transplanted eyes were made on their behaviour in the presence of a bright light and on feeding, their attitude in swimming and their change in colour and it was definitely found that they behaved in exactly the same way as blind fishes. The same negative result as to vision was obtained in the two rabbits in which the eyes were retained. In the fowls the transplanted eye was in every case lost.

Heteroplastic transplantation of an eyeball, the author adds, has been tried in man but never with lasting success and on theoretical grounds as well as on account of the technical difficulties involved it is very questionable whether the homoioplastic method would be attended with better result.

THOS. SNOWBALL.

BOOK NOTICES

Disc-shaped Degeneration of the Central Parts of the Retina. (Die Scheibenformige Entartung der Netzhautmitte.) By PAUL JUNIUS and HERMANN KUHTNT. Berlin: S. Karger, 1926.

This book is a very remarkable example of perfect production. The paper, printing, and the excellence of the many coloured illustrations, are extraordinarily good. We gather from a note in the introduction that the cost of production was partially defrayed by a “German Science Necessities Fund.” This fund apparently is prepared to help in the production of scientific work which would be impossible on ordinary commercial lines.

In essence the book consists of a full description of ten cases of this rare affection. There are also references to cases from the literature. Under the description “Disc-Shaped Macular Disease”