ABSTRACTS

I.—TRACHOMA


(1) Finoff and Thygeson give the results of their experimental work in a long and interesting paper. Their conclusions are as follows:—

(1) A minute Gram-negative motile rod, apparently identical with that described by Noguchi under the name of Bacterium granulosis, has been recovered from five of thirteen white persons, and from one Japanese with advanced trachoma. The objections raised by Lindner regarding the original Indian cases studied by Noguchi cannot be applied to our cases because of the presence of pannus and advanced scarring in all but two cases. Bacterium granulosis was recovered also from two of fourteen trachomatous Indian children studied. (2) The bacterium is either rare or absent in non-trachomatous diseases of the conjunctiva. (3) Bacterium granulosis may be considered more characteristic of trachoma than the inclusion bodies of Prowazek or the initial bodies of Lindner, since it can be recovered from patients having advanced disease at a time when the inclusion bodies and initial bodies are usually absent. (4) The probable reason for the failure of former investigators to discover the organism lay in their use of unsuitable media and their failure to cultivate at the optimum of 30°C. (5) The bacterium was not agglutinated by serum that was tried from a single case of trachoma. (6) Skin tests with Bacterium granulosis antigen have been uniformly negative, with one exception. (7) Bacteria morphologically identical with Bacterium granulosis have been seen on and in the epithelial cells in smears taken from trachomatous patients and from animals having the experimental disease. (8) Inoculation of Macacus rhesus monkeys with suspension of Bacterium granulosis has resulted in the production of a granular conjunctivitis identical with that described by Noguchi and also with that resulting from the injection of human trachomatous material. (9) Contact infection occurred in one of two monkeys exposed. (10) The bacterium has been successfully recovered from two animals having an advanced disease. (11) Our results would seem to confirm those of Noguchi in all essential respects. (12) Because of the fact that trachoma in monkeys is not identical with that in human beings, it may be necessary to resort to human inoculations to prove or disprove conclusively the aetiological relationship of Bacterium granulosis to trachoma.

One interesting point is that Bacterium granulosis is sensitive to cocaine in quite low concentrations, though it is resistant to
procaine hydrochloride in higher concentrations. This fact may account for the failure of some observers to isolate the organism from cases of trachoma in human beings.

F. A. W-N.


(2) The hope that was raised two years ago, that this problem was to be solved by the discovery of Noguchi, has not been fulfilled. In this paper, Cucco reviews the various communications which have appeared since 1928, and concludes that Noguchi’s bacillus is not the specific cause of the disease; he bases this opinion chiefly on the fact that the conjunctivitis following inoculation has never given rise to those cicatricial changes which are characteristic of true trachoma, but has been followed often by spontaneous cure without any trace of scarring.

HAROLD GRIMSDALE.

(3) Addario (Cantania).—The aetiology of trachoma and the new views of diagnosis, treatment, and prophylaxis, which arise therefrom. (L’Etiologia del Tracoma ed i Nuovi Criteri Diagnostici, Terapeutici e Profilattici che ne Derivano). Ann. di Ottal., December, 1930.

(3) Addario takes a very different view (cf. No. 2, supra); for him, Noguchi has proved the Bacterium granulosis to be the true cause of trachoma. Addario has infected a blind eye, with the patient’s consent, with a culture of Bacterium granulosis sent from New York, and has watched the development of true trachoma. This is an observation of great importance, and one that must have weight in forming judgment.

Addario lays stress on the double process involved in trachoma, the one neoplastic, the formation of the granules, and the other inflammatory; from the interaction of these two processes springs the polymorphism of the disease. He points out that in the early stages, the disease gives rise to few urgent symptoms; the sufferers then, when adult, feel no necessity to stay away from their work, and grudge the time necessary to attend at clinics for treatment; it is essential, therefore, that any form of treatment shall be simple, and possible to use at home without too great inconvenience; Addario recommends an ointment of 10 per cent. copper in vaseline, to be used every evening after return from work. In schools the daily treatment may be carried out for the children by a nurse. If trachoma is treated efficiently in the early stages, all corneal complications will be averted and there will seldom be necessity for operative interference on the lids.

HAROLD GRIMSDALE.

(4) The conflicting opinions held on the method of treating trachoma by cold is recalled by Sjögren who strongly supports it, as a result of his experience with 42 cases. In the author's opinion the technique employed explains the divergent views. For successful results he advocates the application of a pencil of CO₂ snow for 15-20 seconds: each part of the tarsal conjunctiva and fornix to have the pencil firmly applied for this period. Until it has thawed the lid should not be allowed to come in contact with the cornea, otherwise pain is experienced. In the subsequent oedema or even formation of pseudo-membranes the superficial follicles become extruded and the deeper ones absorbed. The usual after-treatment with perchloride and copper should be continued after the subsidence of the reaction. The application of CO₂ snow may be repeated after 7-10 days. In no case did the author observe scar-formation on the conjunctiva, but the cases were not followed up long enough: although no scars are formed the follicles do not re-appear.

**Arnold Sorsby.**


(5) The writer of this paper has practised for many years in an area in which trachoma is common. Since 1924 this disease has been listed as notifiable in France and measures designed for its control and eradication are being pursued. Roche after remarking that "whatever administrative measures we may adopt we cannot obtain complete control of trachoma (as indeed of any contagious disease) until we possess exact knowledge of the modality of its contagion," proceeds to discuss some of the perplexities concerning the propagation of this disease and the various explanations which have been offered. He submits four propositions based upon observation in his own practice and appends clinical evidence in support of each one.

1. Isolated cases of trachoma occur in localities in which the disease is unknown.
2. In large families dwelling in insanitary homes a single member of the household is affected.
3. Cases occur, and are not very exceptional, in which the disease is strictly unilateral.
4. Persons who for years are in daily contact with trachoma remain free from the disease.

The most surprising of these observations, in the author's
opinion is number 2, in which perhaps the mother of a large poor family is attacked, while the father and all the children escape. It seems unlikely that such a statement would be true of any other contagious disease, and it is not surprising that such observations have originated an idea that trachoma is not contagious. Its contagiousness, however, has been established beyond question.

The contagion of trachoma may appear to us mysterious or at least capricious, in its behaviour, and it is not easy to explain some of the apparent contradictions often observed. Various hypotheses have been offered to account for its vagaries. The author discusses several and rejects them all, though he suggests that the hypothesis which best explains the observed facts is that which assumes the existence of an intermediate host such as has been demonstrated in malaria and other diseases. His own theory, which is "contrary to universally accepted ideas" is that the period of contagiousness of trachoma is of short duration, perhaps anterior to the appearance of the granulations. This hypothesis he thinks may throw light upon some of the problems concerning the spread of trachoma, such as the difficulty in discovering the pathogenic agent, the variation and uncertainty in the results of experimental transmission, etc. Moreover, it is in no way adverse to the existence of a specific microbe, or of its persistence in the conjunctiva; a microbe which loses its virulence rapidly, or which has need of an associate, of ephemeral character, in order to be transmissible.

J. B. Lawford.

II.—RETINA


(1) Luntz has performed cautery puncture on the eyes of six rabbits and one monkey. A cautery of 1 mm. point was used, and the choroid perforated with the cold point.

In five eyes removed five to seven days after the operation, the track was found to be filled with vitreous or blood; no granulation tissue was present. In two eyes removed after 22 days there was an ingrowth of episcleral tissue in the track. The sclera was necrotic for an area of 0.5-1 mm. around the hole; the choroid was destroyed for a similar area but the retina was reduced to a thin membrane for an area of 3.5 mm. No other results besides these purely local ones were observed.

No difference could be detected in the results, whether the cautery
employed was red-hot or glowing white. Likewise it made no difference whether it was applied for two seconds or for 20.

A point of significance is the relatively extensive destruction of the retina, for this may explain why fresh holes are formed at the site of the puncture.

Arnold Sorsby.


(2) Amsler describes a case of iritis with glaucoma in an eye almost blind, in which he performed experimental cautery puncture by Gonin's method fifteen days before enucleation. It had been decided to remove the eye on account of pain. The tension had remained at about 40 mm. mercury by Schiötz tonometer for some days, but the day following the operation the tension rose to 60 mm. after the usual extreme fall due to the puncture. The tension fell gradually in three days to below 30 mm. and then to about 12-15 mm. until the eye was excised. Amsler regards the occurrence of low ocular tension after cautery puncture as a powerful argument against the theory of pathogenesis of retinal detachment supported by certain ophthalmologists, in which the detachment is regarded as being due to the low tension.

The main points of interest emerging from the examination of this eye are (1) the existence of a thin thread or band in continuity with the vitreous (fixed in formalin) holding the retina in contact with the cicatrix, and (2) the extent of the cicatricial vascular granulation tissue on the inner surface of the sclerotic at the site of puncture—3.5 x 5 mm.

Humphrey Neame.


(3) The communication deals with questions of technique in treatment rather than of pathology.

The position of the retinal tears is discussed, and then the most important question of localisation, the determination of the degree of longitude and latitude. A sufficiently accurate marking of the longitude is not difficult and Rubbrecht shows by diagrams how he deals with this, but the exact definition of the latitude is more difficult, but according to the writer is not necessary if his method of cauterization is employed.

Retrobulbar injection is employed and is useful for the slight exophthalmos as well as for the anaesthesia.
The internal or external rectus is resected, and the stump gives a good purchase for rotation of the eye. The conjunctival incision is then continued parallel to the limbus in the required direction, and the sclerotic can be exposed as far back as is needed by means of a retractor. The meridian of longitude is then marked out with Indian ink along the guiding thread in the usual way, and the distance previously estimated, measured out from the limbus and marked. The scleral incision is made on either side of this mark, 4 mm. in length, and this tends to neutralize the error which must be present in the measurement of the meridian of latitude.

The sclerotic is divided slowly and carefully in the whole 4 mm., and when the dark choroid appears this is incised and the subretinal fluid escapes. A fine cauter is then passed along the whole length of the incision.

Rubbrech uses the galvano-cauter and deprecates the plunging of the point into the eye.

The divided muscle is then sutured, and the patient remains in bed for eight days only.

O. GAYE MORGAN.


(4) Amsler has designed a series of markers for indicating and marking with Chinese ink the point on the sclerotic corresponding with the retinal hole at which cautery puncture has to be made in cases of detachment of the retina. A battery of thirteen markers has been made. Each consists of a handle, a corneal portion to overlie the cornea, a curved scleral portion to overlie the sclera and a beak at right angles to the curved portion. The beak is of 2·5 mm. length and is grooved to hold the ink. The scleral portion varies in the different markers from 10 to 22 mm. in length to suit every case. The whole instrument is of rustless steel (M. N. Dugast, 108, Boulevard St. Germain, Paris). The illustrations indicate clearly the properties and method of using the markers.

HUMPHREY NEAME.


(5) Hamilton at the beginning of this paper briefly reviews some of the events and discussions which have led to the adoption of Gonin’s operation for the cure of idiopathic detachment of the retina. He was senior house surgeon at the Moorfields Eye Hospital when the first sixty patients suffering from detachment of the retina were treated by Gonin’s method and it is mainly
from this wealth of clinical material that he has made his observations.

He describes the methods of localizing retinal apertures and of marking these on the exterior of the globe; the types of hole encountered, and a reflection on those that he considers suitable or unsuitable for this operation.

In referring to a hole at the macula he states that this is "a position quite inaccessible."

The operative technique and post-operative treatment are well described, and much valuable information of a practical nature is given. This paper is well worth reading in the original. It is obvious that Hamilton has had much experience of this operation and has made some sound observations about its technique and prognosis.

H. B. Stallard.


(6) Redslab describes in detail the results of his examination of an eye of a child, aged five years, that had suffered from an acute illness at the age of two years. The child had shown evidence of a meningitis with fever, also albuminuria and a purpuric eruption of the skin. In the course of the illness endophthalmitis developed in one eye, and a secondary cataract supervened. At the age of five years the eye was excised for glaucoma.

The feature of special interest was the hyperplasia of neuro-epithelium in the ciliary region. The retina was found to be detached. In the pars plana ciliaris the inner layer of ciliary epithelium had proliferated to a remarkable extent. Two especial forms of modified cells were found in addition to considerable neuroglial proliferation. There were cylindrical cells arranged in tubule formation with a definite lumen and also greatly elongated cells with long protoplasmic fibres anastomosing with one another. Redslab compares these cells (1) with the cylindrical cells which line the primitive neural cavities and (2) with spongioblasts which in a later stage of development form a framework of anastomosing fibres and extend from the inner surface of the primitive neural cavity into the deeper layers of cells. These cells as a result, it is assumed, of inflammation have undergone proliferation in the direction of taking up the functions of primitive neural cells. In none of this proliferation was there the slightest evidence of malignant growth. Redslab compares his case with one reported by Fuchs of a similar nature but in which the cells showed evidence of malignant growth. He makes the suggestion that not only
malignant growths such as this affecting the ciliary neuroepithelium but also the less rare neuro-epithelioma (syn. glioma retinae) may perhaps be the result of a previous inflammation occurring in intra-uterine life.

Humphrey Neame.


(7) Pelláthy records the findings in three children, two sisters and a brother, who became blind within the first 18 months of life. There was no consanguinity amongst the parents, whose history is quite negative. There were no other children. In the two elder children, aged 6 years and 3 years respectively, the eyes were in an advanced stage of shrinking. Dense vitreous opacities precluded a good view of the fundus, though retinal detachment could be diagnosed. In the youngest, aged 6 months, serous retinal detachment could easily be seen; vitreous opacities and choroidal lesions were likewise observed. The children were mentally and physically backwards. No history of stigmata of degeneration in the family could be obtained. The author sees in foetal uveitis the cause of the ocular degeneration, and recalls similar cases recorded in the literature.

Arnold Sorsby.


(8) The good results obtained at Lindner's clinic by Gonin's operation for detachment have not been maintained, for recurrences have often taken place owing to fresh hole formation at the site of the cautery scar. Furthermore vitreous haemorrhage induced by the reactionary vascularity at the site of the cautery scar produces a vicious circle if further operation is necessary. These difficulties led Guist to search for a less drastic procedure than thermo-cautery. From experiments on rabbits he found cauterization with a caustic-potash stick much milder and safer, sufficient reaction being produced to cause an adhesive exudate to seal the hole with but little destruction of tissue; there is little danger of vitreous haemorrhage.

The main points in the technique are:

(1) Having localized the hole, the corresponding area on the sclera is trephined (after a conjunctival flap has been dissected up).

(2) Haemorrhage at the trephine hole having been controlled a paraffin-mounted caustic-potash stick freshly sharpened (this
being necessary owing to its hygroscopic nature) is introduced into the hole for one or two seconds. The choroidal area thus treated is immediately counter-treated with 0·5 per cent. acetic acid applied by means of a moistened probe.

(3) The choroid is then perforated with a blunt probe, thus establishing contact with the subretinal space, the retina itself not being touched.

(4) If a large hole has to be sealed, one or two trephine areas at the margin of the hole must be thus fully treated, though some more trephine holes may have to be cauterized (without actual perforation of the choroid).

ARNOLD SORSBY.

BOOK NOTICES


The authors of this book are physicists engaged in the research laboratory of the General Electric Company of America, at Nela Park, Cleveland. Much of the most valuable research work on the problems of lighting have emanated from this laboratory in recent years. So far as the physical problems of lighting and vision are concerned the authors are thoroughly reliable. They have not neglected the more outstanding physiological and psychological problems, but on these they write with less authority. The book is a valuable compendium of miscellaneous information dealing with visual acuity, contrast, brightness, adaptation, glare, fatigue, and so on. Some parts are very elementary and others are platitudinous. The most valuable parts require a considerable knowledge of physics and can only be thoroughly grasped by those having facility in the reading of graphs.

Dr. Luckiesh is a prolific writer on these subjects—16 books published between 1915 and 1930 are advertised in this volume. The bibliography in this book consists of 48 items, all of which are American with the exception of two (König and Helmholtz).


This tribute to Professor Haab, "in his honour and in commemoration of his 80th birthday," is from the pen of a former pupil: it has been conceived in a spirit of sincere admiration for a greatly respected ophthalmologist and teacher, and will be read with appreciation by many in the world of ophthalmology who have no personal acquaintance with the Professor.