I.—DISEASE OF LENS


Kennedy after a short outline of the embryology of this condition gives an interesting account of the work done by Stockard, who subjected young fish to exposure to heat, cold, chemicals, fumes, etc. He was able by such exposure to arrest development of the optic vesicles at various stages and to produce defects ranging from cyclopia to the development of practically normal eyes. The case reported occurred in a man, aged 47 years, whose eyesight had always been poor; there was no history of trauma. Both eyes were affected, the irides being treffulous and the lenses lying at the bottom of the vitreous chambers. They were firmly situated there and did not move about on movement of the eyes. The fundi were normal, and there were no colobomata. Vision of the right eye was 20/50, and of the left, perception of light. The patient had four boys and one girl. The eldest boy and the girl showed outward displacement of the lenses, the other three children being normal. There was also a history of “poor eyes” in the father and grandfather.

F. A. WILLIAMSON-Noble.


Rotth's article opens with a review of previous work on this subject which shows that the experimental production of phacoanaphylactic endophthalmitis with homologous lens protein is not proven. This is in direct conflict with the articles published by Verhoeff and Lemoine, so Rotth decided to investigate the subject for himself. A long series of experiments was performed with the following results: (1) Animal experiments. A series of guinea-pigs was given an injection of foreign lens protein (human and pig's lens matter) into the anterior chamber. In two cases out of thirteen there was a marked fall in temperature when foreign lens matter was given intravenously three weeks later. This proves that heterologous lens protein absorbed from the anterior chamber can cause hypersensitivity. In the next series of experiments, the second injection was made into the vitreous; this resulted in a severe ocular inflammation. In the third series a broad
piece of lens capsule was removed from the sensitized guinea-pig instead of injecting heterologous lens protein, and these cases showed no anaphylactic reaction, local or general. The corneal incision often gaped and the cornea itself became hazy but the same signs occurred in non-sensitized control animals. In one case a purulent keratitis spread from the corneal wound, due to a small polymorphous bacillus, and in another a staphylococcal iritis occurred.

The author's conclusion, therefore, is that in animals hypersensitive to heterologous lens protein, the broad opening of the capsule is not followed by any anaphylactic symptoms. In the next experiment an attempt was made to sensitize the animals to their own lens protein by tearing off a large piece of capsule. Subsequent intraperitoneal injection of lens matter obtained from the fellow eye caused no anaphylactic symptoms. A normal animal does not therefore produce anaphylactic antibodies to its lens protein.

(2) Experiments on patients. Intradermal injections of lens matter were made with Verhoeff and Lemoine's technique in 106 patients and the result was, in every case, negative, but, by increasing the dose of lens matter injected, 10 of the cases showed a positive reaction, and, on increasing it still further, a higher percentage of positives was obtained. Two of the ten patients mentioned were operated on for cataract, and made an uneventful recovery. A further point is that a real anaphylactic reaction should develop within twenty-four hours after operation, whereas in Verhoeff and Lemoine's cases, the reaction did not develop until three to five days later. The author therefore believes that "most cases of post-operative late iritis are caused by infection."

F. A. WILLIAMSON-NOBLE.


(3) Fradkine reports in detail the occurrence of binocular cataract in a boy, aged 13 years, caused by lightning stroke. He was first seen by Fradkine twenty-two days after the event and was then found to have a very violent irido-cyclitis in the left eye and binocular cataract. After eight months the irido-cyclitis had disappeared and had left no trace, but the cataracts were exactly as before. Fradkine's main object in recording the case is to study the pathogenesis. This study is preceded by a dissertation on the electrical resistance of the human body and enters, as the author remarks, into le domaine psychobiologique.

ERNEST THOMSON.
Knapp, Dr. Arnold (New York).—Late results of intracapsular extraction of cataract. *Arch. of Ophthal.*, May, 1926

Knapp has followed up, as far as possible 200 successive intracapsular cataract extractions performed by him between the years 1910 and 1919. The operation in all cases consisted of preliminary subluxation with blunt capsule forceps (*Arch. of Ophthal.*, 1915 and 1921). Eighty-five of these cases have been traced with the following results: 16 died, and in these vision at the last examination, or from report of relatives, had remained good. In 57 cases vision had remained as good as after operation or had improved; in five of these there had been vitreous loss. In these 57 cases, on slit-lamp examination, the vitreous presented in the pupil as a membrane bulged forward or more or less flat. In some cases it was intact and covered with a number of fine brown dots, or there were one or more irregular holes through which vitreous presented. This membrane was absent in cases of vitreous loss. There is no question that the vitreous is much more free from opacities in these cases than in the capsulotomy ones. With regard to complications glaucoma developed in one case six years after operation in association with heterochromic iritis, but its association with the method of operation was not definite. In two cases of chronic glaucoma and cataract the glaucoma was relieved after intracapsular extraction; in a third case, however, the condition persisted and required a second operation. Detachment of the retina was not observed in a single re-examined eye. Detachment of the choroid was observed in a number of cases and remained unchanged for a long time, often several months. With regard to inflammatory reactions the pupillary margin became attached to the underlying hyaloid to a varying degree, with faint opacities in the hyaloid and displacement upwards of the pupil (3 cases). In two cases the condition was more marked, the cornea becoming clouded and the periphery vascularized. The author’s conclusions are: (1) if the primary result is good, excellent vision is retained and the patients have surprisingly little trouble; (2) there is no degeneration of the vitreous; (3) there is remarkable freedom from glaucoma, retinal detachment, and from the sequelae of irido-cyclitis except for the serious, but fortunately rare complication of sclerosis of the cornea.

F. A. WILLIAMSON-NOBLE.

Cruickshank, Major M. M. (Rawalpindi).—Iritis following cataract extraction. *Indian Med. Gaz.*, October, 1926.

During Dr. Holland’s annual six-weeks’ clinic at Shikarpur, Northern India, at the beginning of 1926, Cruickshank examined 1,260 eyes at periods ranging from four to ten days...
after cataract extraction, for evidences of lower grade inflammations that might be classed as iritis. The object was to determine the influence of lens matter or blood left in the eye. The great bulk of the extractions had been intracapsular, but the exact figures are not given.

Eighty-two eyes were found free from kera tic precipitates and from tenderness on pressure, but with haziness and indistinctness of the iris pattern, with or without fibrinous exudate.

Seventy-five of the eighty-two inflammations followed intracapsular operations. Seventeen of these were attributed to infection of some kind, since no obvious local cause could be found. Eight cases, with clouding of the cornea, were attributed to entry of perchloride solution into the eye during operation.

Sixteen inflammations were associated with “retained capsule or cortex,” and were considered to be largely due to this retention. Nine others followed rupture of the lens capsule during expression, the capsule being usually successfully extracted. The lower rate of iritis in these cases in which the ruptured capsule was removed, led Major Cruickshank to a strange conclusion: “the figures therefore would point to capsule rather than to cortical matter being the irritant”! He found that “both in the intracapsular and the capsulotomy operations, where capsular remains were left behind, the percentage of iritis was equal in both cases, approximately 27 per cent.” (In obtaining this ratio for the capsulotomy operations, the whole of these operations that were complicated by iritis were for some unexplained reason not included; though naturally in all of them capsule was left in the eye.) Fifteen cases of iritis following removal of the lens in its capsule, in addition to the above, were associated with the presence of blood in the anterior chamber, and this was considered to be partly the cause of inflammation. The incidence of iritis after the intracapsular operation was 6.2 per cent., whereas after the capsulotomy operation it was 19.4 per cent.

Major Cruickshank finds that “in the majority of cases the iritis, which one sees from the fourth to the tenth day after extraction of the lens, is due to the retention of foreign material such as blood, capsule, cortex, or to traces in the anterior chamber of strong antiseptic fluids, used in cleansing the conjunctival sac.” This conclusion may be very comforting to intracapsular operators. But it entirely fails to reach the average ophthalmic surgeon, working under more settled conditions, who finds that when every possible care is taken to exclude external organisms, there is little reason to fear blood or cortex left in the eye. It seems hardly necessary to refer to unimpacted lens capsule as a cause of early iritis. It has long been accepted that after extraction in the capsule the eyes are, generally speaking, much freer from
evidences of moderate early reaction than after the old-fashioned operation, the difference being due to irritation from cortical remains in the latter operation. But this transient reaction, though it may include a temporarily muddy iris, with an unclean pupil and coloboma, is quite distinct from the much more prolonged trouble that is commonly recognized as iritis. Unfortunately, the periods of observation in Major Cruickshank's cases were too brief to be of value for the purpose for which they have been used, though the figures have much interest in a more restricted application.

H. Herbert.

(6) Ferrer, Dr. H. (Havana).—Pre-operative tonometry in cataract extraction. Revista de Medicina y Cirurgia de la Habana, Vol. XXI, p. 251, 1926.

(6) Ferrer, in a paper read before the Science Academy of Havana in May, 1926, strongly recommends the routine use of the tonometer before operating for cataract. He considers that the tonometer gives valuable information as to how the lens will behave when an attempt is made to extract it. His measurements were all made with the MacLean tonometer and the figures given in his conclusions apply to that instrument. They are as follow: (1) "the intraocular pressure of every cataract patient should be investigated; (2) the eye is in the best condition for extraction when the pressure lies between 23 and 33; (3) if the pressure is below 23, previous use of atropine is to be recommended, and, if over 38, then pilocarpine should be employed. If the pilocarpine fails to reduce the pressure then a preliminary iridectomy should be performed; (4) post-operative use of atropine is indicated if the pressure is below 28, if the pressure is between 28 and 35 atropine should be used with caution, and never if the pressure is above 35." He also points out the inadvisability of simple extraction when the pressure inclines to the higher figure of safety.

E.E.H.


(7) Coppez reviews the individual steps of the cataract operation as it is performed to-day by various operators and gives his opinions on some of these procedures. These must be abbreviated for reasons of space. With regard to anaesthesia the majority of authors, Coppez himself included, prefer cocaine in various strengths and spread over various periods. Neither retrobulbar nor subconjunctival injections find favour with the author:
on the other hand, he considers injections to paralyze the eyelids indispensable, and they should be carried out prior to the conjunctivo-corneal anaesthesia. Coppez prefers the supine posture but does not hesitate to operate on the sitting patient if obese or asthmatic. He prefers artificial illumination under intense light which causes pupil contraction. Coming to the actual operation the author discusses fixation rather fully. He makes (when using the von Graefe knife) a conjunctival flap after the method of van Lint, but considers a corneal suture to be a useless and dangerous complication. He gives the technique for the use of the keratome in cataract extraction: this does not seem to differ much from common usage. The section should extend half round the cornea. What Coppez has to say about iridectomy is interesting. Thirty years ago Snellen had said to him, "so long as you are under fifty you will do extraction without iridectomy; after fifty you will do iridectomy." However, the master's prophesy has not been fulfilled, for Coppez only does an iridectomy when he must, and he is over fifty, though how much over that age he does not inform his readers. The various methods of opening the capsule and expulsion of the lens do not seem to call for special remark but the method of dressing is interesting and may be given textually. "I then instil five to ten drops of oily solution of pilocarpine 2 per cent., so as to plunge the eye in a bath of pilocarpine. There are several advantages in this: the oil, efficiently protects the cocainized cornea from dessication, and the pupil is strongly contracted in a few minutes, thus reducing to a minimum the risk of hernia of the iris. Further, since the paralysis of the lids lasts for about a couple of hours the patient is unable, when the corneal anaesthesia passes off, to exercise pressure on the eyeball. . . . In short, the immobilization of the lids and the pilocarpine bath together give assurance of a normal recovery without fear of iris prolapse." An actual dressing is not usually employed; only a Fuchs' wire guard.

Finally, Coppez is no supporter of extraction in the capsule and considers that this operation is not progressing in favour. His reasons for disliking the operation may be given. "To say nothing of the frequent operative difficulties I have noticed even in the best cases the progressive drawing up of the pupil and entanglement of the iris in the days following the operation, and without apparent reason for it. Further, the anterior layers of the vitreous may become opacified and thus bring about a secondary pseudo-cataract. Lastly, Descemet's membrane is often damaged by the passage of the lens."

Ernest Thomson.

Hume's description of the intracapsular operation practised by the brothers Green (Louis and Aaron) in San Francisco, seems to suffer from lack of detail of the operation itself, although a detailed description is given of the method of orbital anaesthesia. The operation performed is a suction one but there is considerable difficulty in following the author's meaning in the description of the use of the suction cup: "It is of great importance to emphasize here that the technique of the Drs. Green differs very considerably from that of Barraquer. In the method just described (i.e., the introduction of the suction cup and the 'deft removal' of the cataract in its capsule) suction only is used to draw out the lens with its capsule, and no vibrations or trembling movements are required to rupture the zonule of Zinn." One feels that a more close description of details is badly required before the operation can be properly appreciated by ophthalmic surgeons.

Ernest Thomson.


Jacqueau and Bujadoux have developed their technique of retrobulbar anaesthesia in the cataract operation for two classes of case: (1) where one has to fear the restlessness or "indocility" of the patient; (2) in complicated cataract such as that associated with high myopia or old irido-choroiditis. There seems to be nothing very special in the technique which is essentially similar to that employed in the local anaesthesia employed in enucleation. A three centimetre needle is introduced 1.5 cm. to 2 cm. at the lower and outer part of the orbit, avoiding the periosteum. The anaesthetic may be whatever the operator prefers. The authors employ 4 per cent. scurocaine. The conjunctiva is anaesthetized in the usual way. Many French writers have a power of graphic description which is best appreciated in the original language, yet, although "scenes" in the operating theatre are probably less frequent in Britain than in France owing to temperamental differences between the peoples, the reviewer would like to attempt to convey the authors' description of a type of case which we have all come across now and then.

"... and when we speak of indocility we are not merely thinking of those agitated people who have passed a sleepless night and arrive in the operating room on the defensive, eyelids screwed together, starting wildly at the slightest touch, wailing and gesticulating as they lie on the table. We are thinking also
of the 'determinedly resigned' (résignés volontaires) type. They are most often men, men of intellect, men of affairs who look to the recovery of their professional position. They lie down apparently quite calm: it is a deceptive calm. The held breath, the monosyllabic reply, the slow response to instructions, the frowning brow, and the tremor of the eyelids, the tension of every muscle in the body, all show the power of the will contending with fear. These are the people who never relax until the operation is over: then a slow and deep inspiration relieves their feelings and shows, often, the danger from which the operator has escaped. And it is in fact these very patients, with all their apparent calmness, who will, when it is least expected, expel the vitreous without any contraction of the eyelids, owing to a condition of internal pressure which is apparently connected with turgidity of the choroidal vessels. . . . On one occasion we felt it coming, stopped the operation and made a retrobulbar injection which was entirely successful in producing absolute relaxation."

ERNEST THOMSON.

(10) Spilios, Charamis (Athens).—The most certain and effective procedure in the surgical treatment of cataract. (Le procédé chirurgical le plus sûr et efficace dans le traitement chirurgical de la cataracte.) Arch. d'Ophtal., July, 1926.

(10) This paper contains a valuable statistical record of Spilios' personal experience in the operative treatment of cataract. Analysis of his results has led him to a definite opinion as to the relative value of certain methods of operating.

His figures pertain to a period of twenty years during which 66,945 patients came to his clinics in Athens and the Piraeus. Of this total 2,375 cases of cataract underwent operation.

Three methods of operating were adopted: extraction without iridectomy; extraction combined with iridectomy; extraction after preliminary iridectomy.

The author's figures are noteworthy. Extraction without iridectomy was successful in 93 per cent.; extraction combined with iridectomy in 97 per cent.; extraction after preliminary iridectomy in (practically) 100 per cent. Of a total of 321 extractions by this last method 320 were "absolutely successful"; the one failure was due to "escape of vitreous followed by cyclitis."

No particulars are given of the age or other conditions of the patients, but in view of these striking results it is not surprising that the author is a convinced advocate of extraction after preliminary, or as he terms it, "preparatory" iridectomy.

J. B. LAWFORD.

(11) Sava-Goïou describes his operation as follows: “after full dilatation of the pupil by means of atropine the previous day a disc of anterior capsule is cut with a cystotome. The instrument is inserted in the usual manner, applied to the lens at its most inferior part (6 o'clock) close to the pupil margin, and made to describe a circle, either in one, or two movements. Kalt's forceps is inserted and the anterior capsule removed.” By this means it is claimed that the anterior capsule is removed nearly to the equator of the lens, that the lens is delivered almost complete with a minimal retention of soft lens substance. In the course of several years four hundred extractions have been performed by this means without the development of a single secondary cataract.

HUMPHREY NEAME.


(12) The term cataract expression, Green explains, denotes the removal of the lens by pressure after tearing the capsule. He is fully convinced of the supreme value of preliminary iridectomy. Besides surface anaesthesia by the instillation of 5 per cent. cocaine solution he gives a subconjunctival injection of three or four drops of novocaine 2 per cent.

The expression is carried out a month or so later. He fashions a large thick conjunctival flap before making his section and inserts a sclero-conjunctival suture through episcleral tissue and conjunctiva in order to close the wound after the operation, according to the method of Verhoeff. He uses capsule forceps to open the capsule. The lens is removed in the ordinary way. Two conjunctival sutures are inserted after the sclero-conjunctival suture has been tied.

His vitreous loss is 13 per cent. in 76 consecutive operations. He had no infections, in spite of the silk suture being left in contact with the lashes and eyebrows during the operation.

A. F. MacCALLAN.

(13) Marchetti, Alaimo (Girgenti, Sicily).—The abolition of the speculum in cataract operation. (Per l’abolizione del blefarostato nella operazione di cataratta.) *Atti del Cong. d’Oftal.*, Rome, 1925.

(13) Marchetti draws attention to an article which he wrote in 1902 pointing out the dangers which may arise from the use of
the speculum in cataract operations. He uses instead, to hold the eye open, loops of thread which he inserts in the lids near the edges. The loops take hold of a centimetre of skin and are 10 cm. long. The assistant who holds them has his hands well away from the field of operation; he can release them and allow the lids to close the moment this is necessary.

ARTHUR D. GRIFFITH.

II.—DISEASE OF CONJUNCTIVA

(1) Cange, A., and Duboucher, H. (Algiers).—An undescribed form of fungoid tarso-conjunctivitis. (Une forme non décrite de tarso-conjonctivite végétante.) Arch. d'Ophtal., October, 1925.

(1) In this paper Cange and Duboucher describe clinically and histologically a case of tarso-conjunctivitis which in their opinion cannot be classed with any of the known varieties of conjunctival disease. Their studies have been limited to one example; the reasons which lead them to label this an "undescribed" form are given at some length. Illustrations of the clinical appearances and of the microscopic characters of the disease are added and the following résumé completes a long paper.

Clinically the disease is characterized by: (a) the development on the tarsal conjunctiva of vegetations which though unequal and irregular are always voluminous; they are not confluent, are sessile at their bases and often flat at their summits, have a bright red colour and are fibrous in consistence; (b) large folds or cushions which, emerging from the conjunctival culs-de-sac, lie between the lids and the globe and spread in front of the ocular conjunctiva and the cornea; they are movable and imbricated; (c) diffuse and irregular infiltration of the tarsus, of a wooden hardness, and, by reason of the great thickening, an appearance of massive hypertrophy of the palpebral region; (d) the co-existence of chronic polyadenopathy in the area of efferent lymphatics. To this tetrad of fundamental symptoms must be added, the integrity of the cornea, the absence of local inflammatory phenomena, the slow evolution and the interminable duration of the disorder, the preservation of good health, and the absence of any known diathesis or antecedent malady.

Histologically the chief lesions are: (a) a diffuse and chronic inflammation of the subconjunctival, tarsal and epitarsal tissues which are abundantly infiltrated with lymphoplasmocytes but devoid of eosinophiles. In the infiltrated area are found basophile
collagen fibres which grow inordinately, lose their basophile characters and ultimately become transformed into a vitreous-like substance. These fibres are subsequently attacked by numerous plasmodia which become closely attached, and seem to be the agents of an important morphological change which leads to the formation of a vitreous substance with spaces in which circulates fibrinous lymph poor in plasmocytes; (b) the conjunctival mucous membrane is usually unaffected in its whole thickness, but if sometimes its stroma becomes infiltrated by cells from the deeper tissues its epithelial layers are but little altered; (c) such thickening as occurs in the conjunctival epithelium is only the result of the abnormal friction of this structure when pushed forward by the underlying inflammatory material.

J. B. Lawford.


(2) Berlin has been visited by several epidemics of swimming-bath conjunctivitis. During the period under review no fewer than 416 cases were notified to the authorities. The fact that in Berlin instruction in swimming is now obligatory in all schools renders the study of the disease rather a pressing matter. The symptomatology was first accurately described by Fehr in 1900, and this author definitely distinguished it from trachoma with which it has certain analogies.

Rohrschneider points out that the clinical picture of an early well-developed case is so typical that it is unnecessary to ask the patient whether he has recently patronised a swimming-bath. External inspection of the patient, who is generally young, shows a definite ptosis and only a slight secretion from the eye. Discomfort is slight and there is no photophobia. It is astonishing how slight are the subjective symptoms when closer inspection reveals massive swelling of the conjunctiva, not only the palpebral but also the bulbar and the plica semilunaris, which have a greyish-red oedematous appearance. The follicles of the tarsal conjunctiva and cul-de-sac are clearly seen shining through the conjunctival epithelium. They are mostly small and rarely confluent. Apparently the cornea is unaffected but examination with the slit-lamp, after staining with fluorescein, shows fine epithelial defects. The clinical picture has considerable similarity to that of trachoma with which indeed swimming-bath conjunctivitis has frequently been confused.
DISEASE OF CONJUNCTIVA

Epithelial inclusions were found in this disease by Hunte-müller and Paderstein, and it must be classed as an "inclusion conjunctivitis." The chief point of distinction from trachoma is the complete recovery; there is never any cicatricial network left in the conjunctiva and pannus is unknown. Here again we see the relationship with inclusion conjunctivitis of the ophthalmia neonatorum group described by Lindner as of genital origin. The inclusion conjunctivitis of the new-born is sharply separated from swimming-bath conjunctivitis by the abundant secretion of the former being absent in the latter. When the disease attacks adults the similarity of swimming-bath conjunctivitis is much greater. The patients described by Lindner who closely resembled cases of inclusion ophthalmia neonatorum showed "typical follicular trachoma" even in some cases with pannus, but in every instance recovery was complete with no formation of scar tissue.

Patients suffering from swimming-bath conjunctivitis are generally young, the majority of the cases being between ten and twenty years. Females are less liable to the disease, but in all probability because they do not dive so much or swim under water to the same extent. The incubation time is from one to two weeks, another point of similarity with the inclusion blenorrhoea of adults. Not infrequently one eye is affected before the other. The disease may last for several weeks, on an average for two months, but occasionally much longer. Cell inclusions in swimming-bath conjunctivitis seem to be less resistant than in ophthalmia and for this reason are not so frequently discovered. The following table gives the percentages in which inclusions are found in various conditions:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimming-bath conjunctivitis</td>
<td>33.75</td>
</tr>
<tr>
<td>Trachoma</td>
<td>44.75</td>
</tr>
<tr>
<td>Suspected trachoma</td>
<td>14.78</td>
</tr>
<tr>
<td>Ophthalmia neonatorum</td>
<td>34.48</td>
</tr>
<tr>
<td>Follicular catarrh</td>
<td>3.58</td>
</tr>
<tr>
<td>Other forms of conjunctivitis</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The author has found cell inclusions in 68 per cent. of his last 22 cases and he is of the opinion that at some time in the course of the disease they would invariably be found. All depends upon taking the material at the correct moment.

Treatment is of the routine type. For the first eight to ten days the lids are swabbed with a 1 per cent. solution of silver nitrate. Then this treatment is omitted on alternate days and the lids touched with the alum crayon. Copper sulphate is never employed nor is it ever desirable to express the follicles.

It is probable that the virus is contained in small masses of mucus floating in the water. Considerable success has been
achieved in the prevention of the disease by disinfecting the water with chlorine, but this method, successful in Berlin, was a failure in Magdeburg.

The author discusses the question of the genital origin of the disease, pointing out that cell inclusion urethritis has been shown by Lindner to produce a pathological picture indistinguishable from trachoma. It seems highly probable that swimming-bath conjunctivitis is closely connected with disease of the genital organs, and is due to the unpleasant habits of some of those who frequent public baths.

T. HARRISON BUTLER.


(3) This paper following the same lines as that by Rohrschneider and Sandmann comes to the same conclusions. He is emphatic that swimming-bath conjunctivitis is a cell inclusion disease.

T. HARRISON BUTLER.


(4) Offret began to study the action of vaccine on ophthalmia of the new-born so long ago as 1914. At that time in spite of good results he could not admit that the action of vaccine in gonococcal ophthalmia could be compared with that of Roux serum in diphtheria, and he would not recommend its use as a sole treatment, i.e., without the simultaneous employment of the classical treatment. But now he has had five cases treated by the local administration of the anti-gonococcic serum of Blaizot, and, so far as he is concerned, with nothing else. It is admitted that local treatment had been used before some of the cases were seen by Offret. Undoubtedly, the results are rather arresting. Case I was intense and bilateral with peripheral erosion of one cornea. Complete cure in five days. Case II, intense and bilateral. Acute stage past in twenty-four hours after commencement of treatment. Secretion persisted for eight days. Cure in ten days. Case III, medium intensity, bilateral. Infiltration of both corneae. Cure in two days. Case IV, medium intensity, unilateral. Cornea hazy. Cure in four days. Case V, slight intensity, bilateral. One eye treated with serum, the other with 25 per cent. protargol. Both eyes cured in four days. The gonococcus was identified in all five
DISEASE OF CONJUNCTIVA

cases. The author gives a description of the preparation of the serum which is put up in ampoule tubes (tubes ampoules de 10 c.c.). The serum is instilled practically continuously, that is every half-hour. No lavage is employed. The author says: “Each tube should be changed at least every twenty-four hours. In future it will be advantageous to make use of special flasks for the collyria.” Apparently therefore the serum is not at present readily obtainable. One naturally looks forward to further communications on this subject with considerable interest.

ERNEST THOMSON.


(5) This is a clinical article expressing Beauvieux’s views on the subject of diphtheritic conjunctivitis. The author divides true diphtheritic conjunctivitis due to the bacillus of Loeffler into two categories, the superficial or croupous form and the interstitial or deep form. The former with good prognosis is almost always observed in non-debilitated subjects whose general condition is good, the latter with bad prognosis for the eye and even for life occurs where the resistance is feeble. The superficial form is apt to occur in association with the usual saprophytes of the conjunctival sac and may follow the conjunctivitis of measles or scarlet fever. The interstitial, deep necrosing form is essentially, in the opinion of the author, who follows Sourdille in this opinion, associated with the streptococcus. The matter may be summed up in the words of Sourdille: “The more benign cases are those where the bacillus of Loeffler is associated only with the staphylococcus. Association with the streptococcus alone or with the streptococcus and staphylococcus is usually of much greater gravity. This association acts by increasing the virulence of the Loeffler bacillus or by uniting the respective virulence of the microbes concerned, or by making a large opening for the diphtheritic infection, it hardly matters which; the demonstration of the fact itself suffices.”

ERNEST THOMSON.


(6) Spaeth has been employed since July, 1925, in the Panama Canal Zone, when he was astonished at the extent of the growth in some of the pterygium cases under his care. The ordinary operations, while quite well adapted for the cure of slight pterygia,
were not satisfactory for the extensive cases, when the growth had extended well over the pupil, dragging the conjunctiva with it and displacing the caruncle for a distance of several millimetres. The following procedure was therefore evolved. The head of the pterygium was torn from the cornea by the usual method, with a stout silk suture, the raw area being carefully curetted with a sharp spoon. The body of the pterygium could now be regarded as included within a square of conjunctiva of which one side formed a tangent to the cornea. The margins of this square were cut through with scissors, sutures being placed to unite the top left hand corner of the conjunctival wound with the top right hand corner of the square, the bottom left hand corner of the wound with the top left hand corner of the square, and so on all the way round. The effect of tying these sutures was to rotate the square through 90° so that the pterygium was pointing upwards instead of towards the cornea. A variable amount of undercutting of the conjunctival square was necessary in order to allow of its rotation without putting undue tension on the stitches. A few additional sutures were necessary to secure coaptation of the wound, but the side tangential to the cornea was purposely allowed to gape a little in order to prevent the conjunctiva growing again over the cornea. A binocular dressing was applied for seventy-two hours, after which the eyes were washed out, and a second dressing applied for a similar period. Sutures were then removed and the patient allowed to go without a dressing. Sixty cases have now been dealt with by this method with eminently satisfactory results.

F. A. WILLIAMSON-NOBLE.

III.—DISEASE OF IRIS

(1) Fuchs, Ernst (Vienna).—On chronic infiltrating iritis. (Über chronische infiltrierende Iritis.) Arch. f. Ophthal., Bd. CXVI, H. 1, 1925.

(1) The type of iritis, of which Fuchs here treats, is characterized by a dense infiltration of the iris tissue with mononuclear cells. These cells are of two kinds: (a) lymphocytes, which are the product of proliferation of the adventitial cells of the blood-vessels and the mesenchyma cells generally; and (b) plasma cells, which are derived from lymphocytes. In individual cases one of these cell-types greatly predominates; the grouping of cases according to the cells does not absolutely exclude the presence of the other. The distribution of these cells varies according to the type present, in the case of the lymphocytes the infiltration is pretty
Disease of Iris

uniform, except for a few clumps which are mostly situated in the posterior layers of the iris, while the plasma cells frequently form long bands running roughly parallel to the surface of the iris or, if they are very close together, assume a pavement-like appearance, which under the microscope shows up very distinctly from the arrangement of the lymphocytes.

The stroma of the iris is not much altered by this infiltration—it may be normal, or show signs of oedema, or the chromatophores may exhibit more or less the stages of disintegration.

Extension of the infiltration into neighbouring parts may occur, but the main seat of it remains in the iris. Exudation on the free surface of the membranes is slight, being mostly confined to posterior synechiae and pupillary membranes and the characteristic precipitates on the back of the cornea.

The author analyzes his cases according to their endogenous and exogenous origin. As to the former class, he points out that there is no ascertainable determining factor of the production of lymphocytes or plasma cells, and he regards them as merely varieties of the same proliferating inflammation.

In the exogenous, or traumatic cases, the anatomical appearances are similar to those in the endogenous class, but are modified by the presence of other changes as the result of the perforating injury.

Clinically, these cases of infiltrating iritis are all characterized by a chronic course and the peculiar exudation, in the form of precipitates, on the back of the cornea, while the appearance of the iris itself is not characteristic. As regards the microscopical features of the endogenous cases, the infiltration of the iris with lymphocytes and plasma cells, its long duration, the slight alteration in the stroma of the iris, and the restriction of the inflammation mainly to the iris give the impression that they are the features of a distinctive type of iritis.

Thos. Snowball.

(2) Fuchs, Ernst (Vienna).—On lymphocytic infiltration of the choroid. (Über lymphocytäre Infiltration der Aderhaut.) Arch. f. Ophthal., Bd. CXV, 1925.

(2) Fuchs not infrequently found a collection of lymphocytes in an otherwise normal choroid in apparently normal eyes that had been removed from cadaver, a condition which he regards as pathological. This infiltration of small lymphocytes was situated mainly in the posterior part of the choroid, for the most part in the intervascular spaces of the great veins, though sometimes between the lamellae of the suprachoroida or in the capillary layer. These cells are the product of proliferation of the adventitial cells of the vessels and the mesenchyma cells of the connective tissue.
This condition cannot be diagnosed during life as it causes no disturbance of vision and is not seen by the ophthalmoscope. The cause of this infiltration is not obtainable in the eye itself, which showed no changes, but is to be found in the disease from which the patients died: toxins arising in the focus of disease, circulate in the blood, and pass from the capillaries of the choroid into its tissues and stimulate the cells to the formation of lymphocytes. The choroid probably reacts with a production of these cells, in the same way as internal organs do, owing to its reticulo-endothelial structure and its rich supply of blood-vessels.

In cases of leukaemia, not included in the above series, the infiltration of the choroid showed different features: (a) the frequent occurrence of large lymphocytes; and (b) in more advanced cases a disintegration of the walls of the veins, but the mode of origin was essentially the same as in other diseases.

This reaction in the choroid may also be produced from lesions in the eye: (a) in the choroid, where the toxins are carried along it in the lymph stream as in miliary tuberculosis of the choroid; or (b) lesions in the anterior segment of the eye, e.g., corneal ulcer or injury, where between the original lesion and the choroid affected there is an area free from infiltration. In this latter group the author thinks that, apart from those cases where the transmission of the toxins to the choroid is via the vitreous and retina, they are carried along the lymph sheaths of the veins of the ciliary body and choroid.

This infiltration may remain long after the signs of inflammation in the original focus of disease have disappeared, but it has no relation to sympathetic ophthalmitis.

A collection of lymphocytes of long standing is also seen in many cases of old retinal detachment, where the retina is separated at the ora serrata. Here the choroid is raised by traction of the retina and, the pressure being diminished, fluid and lymphocytes collect in and under the choroid.

**Thos. Snowball.**


(3) Rodin’s method of treating acute irido-cyclitis is as follows: Instillation of 4 per cent. atropine which is repeated every half-hour. If a good dilatation is not obtained within two hours a subconjunctival injection of atropine and adrenaline is given in the following manner. The eye is cocainized and a sterile solution of one part of 2 per cent. atropine to two parts of 1 : 1,000 adrenaline is sucked up into the syringe. Three minims of this solution are then injected subconjunctivally about 2 mm. below the lower
border of the cornea. If posterior synechiae are localized to a particular part of the iris, the injection is made along the limbus, close to the adherent part. The eye is then covered by hot applications for half an hour. If good dilatation is obtained the patient returns home and attends daily, for investigations into the aetiology, and treatment of the cause. If good dilatation does not occur he is admitted to hospital for further treatment. In patients over 45 years, or where there is increased intraocular tension, homatropine is used at first. If this produces a further rise of tension 6 minims of adrenaline solution are injected subconjunctivally and when the tension is reduced, atropine is used. Some cases of course require paracentesis, etc. This method of injecting atropine and adrenaline has little or no effect on old adhesions, but acts very powerfully on recent ones and is effective, even where crystals of atropine fail to dilate the pupil.

F. A. WILLIAMSON-NOBLE.

IV.—MISCELLANEOUS


(1) Woodruff's paper is of interest in connection with the aetiology of intraocular disease. He quotes a series of five cases. The first was a patient who had over twenty attacks of iritis in a period of fifteen years. The teeth were examined by X-rays, infected ones being removed, and he remained free from further attacks over a period of seven years. He also had diabetes and the author is inclined to attribute this disease to the presence of the dental infection. The second case was one of acute macular choroidoretinitis which cleared up after removal of tonsils infected with streptococci. The vision when first seen was 2/200 and eventually became 20/15. The third case was one of a copious vitreous haemorrhage which cleared up under local measures and the removal of dental infection, so that the vision seven and a half months later was 6/10. No recurrence had been noted up to date. The fourth case was one of left abducens paralysis and acute nephritis following acute tonsillitis and recovery after improvement of the latter, while the fifth one was a recurrent iritis which yielded to the removal of infection about the root of a tooth. The author quotes a report by Brown and Irons on the aetiology of 100 cases of iritis. Of these 23 were syphilitic and gonococcal, 8 tuberculous, 18 due to dental infection, 16 to tonsillar infection, 3 to sinus disease, 3 to non-venereal genito-urinary infection, 2 to other infections, and 17 to combined infections.

F. A. WILLIAMSON-NOBLE.

(2) Ophthalmologists make such free use of cod-liver oil in their practice that a short abstract of the investigation carried out by Peacock on the behaviour of cod-liver oil under ultra-violet illumination may not be out of place. Peacock (who is Vaughan Morgan Scholar and Margaret Butcher Scholar at the Middlesex Hospital) noticed, while carrying out an investigation of oils and fats, that cod-liver oil was markedly fluorescent under the action of ultra-violet light, but lost this characteristic with continued exposure to sunlight. The question suggested itself "has the phenomenon of delumination any relation to the vitamine content of the oil?" We need not describe the experiments and control experiments which were then carried out to determine the action of sunlight, and even of any source of white light of sufficient intensity, on the vitamine content. It was found that Vitamine A. was destroyed, in association with though not *pari passu* with, loss of fluorescence (the process being called by the author "delumination") and that, while fluorescence could be partly restored by keeping the oil in the dark the Vitamine A. could not be recovered. With regard to Vitamine D., experiments made in the laboratory of Professor C. J. Martin showed that there seemed to be no association between fluorescence and the anti-rachitic value of various oils and extracts. There was no evidence to suggest destruction of the anti-rachitic vitamine in cod-liver oil by sunlight.

The importance of this investigation is emphasized in the editorial columns of the *Lancet*.

ERNEST THOMSON.

(3) Zentmayer, W., M.D. (Philadelphia).—The prostate as a remote focus of infection in ocular inflammations. *Jl. Amer. Med. Assoc.*, October 9, 1926.

(3) Zentmayer reports four cases of metastatic infection in the eye in order to direct attention anew to the importance of searching further than the mouth, nose, and throat for the portal of infection, and to emphasize that it is not infrequently to be found in the prostate gland. A causal relation of a focus of infection to a metastatic inflammation is not often susceptible of scientific proof, but the author believes that the evidence is sufficiently circumstantial. He quotes freely and with approval from de Schweinitz's 1924 address to the Société française d'Ophtalmologie. He concludes that the prostate may be the source of certain ocular inflammations, which are more often non-gonococcal than gonococcal; also that persistence of an inflammation after removal of the primary focus, does not prove that this was not the primary source of infection, as the resistance of the tissues may have been so
reduced by this inflammation as not to be able to withstand the action of organisms or toxins of much less virulence from some other part of the body. It is only when a metastatic inflammation subsides after the removal of one possible source of infection that this is proved to have been the exciter.

A. F. MacCallan.

**BOOK NOTICES**


It is widely recognized that much of the progress in our knowledge of instinctive behaviour, sensation, and perception is attributable to the biological, physiological, psychological, and clinical researches of Lloyd Morgan, Sherrington, Rivers, and Head in Great Britain. To yet another of our fellow-countrymen—this time an ophthalmologist—we are indebted for attempting "to gather together," as he puts it, "some prolegomena to a treatise on perception and at the same time to formulate a working hypothesis."

Sir John Parsons has written an invaluable book. He has brought together all the relevant portions of the above-mentioned researches, together with those of Magnus, Piéron, Allen, etc.; he has described the most recent psychological views advanced by G. F. Müller, and by Wertheimer, and others of the Gestalt school; he has borrowed freely from the writings especially of Kappers on the comparative vertebrate anatomy of the nervous and sensory systems—in his very proper conviction that "psychology, as a science, can only be developed upon a sound biological basis"; and he has endeavoured to place our ideas of the process of perception on a scientific footing.

Sir John accepts Head's hypothesis of a dual sensory mechanism; but in place of "protopathic," he prefers to substitute the term "dyscritic." In addition to "dyscritic" and "epicritic," he introduces the term "syncritic" to denote those higher nervous integrations which may "become manifest in consciousness as conceptual thought." He believes that sensation is purely dyscritic in all vertebrates below the amphibia and probably in most of the amphibia, that is to say, that sensation is primitively characterized by an "all-or-none" character, by absence of gradation, crudeness of localization, vague diffuseness, and by a strong charge of affective tone. And he maintains that this view receives powerful support from the anatomical evidence which he is able to bring forward so interestingly and in such detail.