Hospital for Ophthalmia Neonatorum

On several occasions we have drawn attention to the necessity of making provision in large towns for the collective treatment of cases of ophthalmia neonatorum, thus following the example of Liverpool and Glasgow. It may be recalled that under the impetus afforded by the Report of the Departmental Committee on the Welfare of the Blind, issued in 1917, the Local Government Board requested the Metropolitan Asylums Board to provide hospital treatment for certain cases of the disease. The latter body arranged to establish two hospitals, one north and the other south of the Thames. One of the two institutions, formerly St. Margaret's Home, belonging to St. Pancras Union, was opened on September 15 last. It is called St. Margaret's Hospital, and is situated in Leighton Road, Kentish Town, and provides accommodation for about thirty infants and for rather more than half that number of nursing mothers. Cases are admitted on application to the central offices (Embankment, E.C. 4) in much the same way that infective diseases generally are received into the Asylums Board's other hospitals. The Board's ambulance service is available for purposes of transport. Mr. M. S. Mayou has been appointed visiting ophthalmic surgeon, and Dr. C. G. May, visiting gynaecologist to the new institution.

ABSTRACTS

I.—THE EVOLUTION OF LIGHT AND OF COLOUR SENSE

Hess, C. (Munich).—The evolution of light sense and colour sense in the animal kingdom.

Hess delivered a lecture on the evolution of light and colour sense in the animal kingdom at the Eighty-fifth Congress of the Society of German naturalists and medical men held in Vienna in 1913, a translation of which has kindly been furnished to us by Mr. D. V. Giri. The pressure on our space prevents us from publishing it in full. Hess insists on the importance of working with proper spectral colours the luminosity of which is sufficiently accurately known for the human eye under different conditions. He gives details of various experiments carried out with different animals. In dealing with vertebrates he tested monkeys by putting grains of rice on a black surface and illuminating them with the spectrum. The monkey picked up the grains of rice exactly as a human eye
saw them under various strengths of light and conditions of dark illumination. A hen, when tested in the same way, gave evidence of considerable shortening of the violet end of the spectrum. The same result was obtained with the tortoise. Hess explains this as due to absorption of the short waves by the so-called oil globules to be found in the cones of the sauropsids. The fishes conduct themselves altogether differently from the other vertebrates. Those fishes that are guided chiefly by sight in obtaining food seem to have a distinct shortening of the red end of the spectrum. Hess found that certain fishes always swam towards the brightest light, and that in many species surprisingly small variations of luminosity suffice to collect them in what appears to them the brightest part of their receptacles. By experimenting on these lines he finds that the green part of the spectrum is the brightest to them, and not, as in the human eye, the yellow. He comes to the conclusion that the colours of the spectrum have the same relative luminosity to the fishes as to the totally colour blind human eye. The strong absorption of the red light at even moderate depths renders this colour of little value to fishes. All fishes do not serve equally well for these experiments as certain of them are guided by the sense of smell, rather than that of sight, in obtaining their food. In the amphioxus, the lowest known vertebrate, light-calls forth movements and these are more lively as the light is brighter. Here, again, it is the green part of the spectrum that elicits most movement, next the blue, while the red rays have almost no effect. Similar results are to be obtained in cephalopods, and in these animals the results can be checked by the pupil reaction which is found to correspond. Hess says he finds that the pupil of the totally colour blind human eye behaves in a similar way.

The same results were obtained with caterpillars and gnats. Bees, like the other animals experimented on, also make for the brightest illumination. If one half of their receptacle is illuminated with red, and the other half with blue, the former has to be made much brighter to our eyes before the bees will go to it. Hess has something to say about fluorescence, a property possessed to a surprisingly high degree by the crystal cones in the eye of the arthropod. He suggests that the prevailing luminosity at the depths at which some of these creatures live is very low, and that the short length waves of light which produce the fluorescence penetrate furthest.

He concludes as follows:

"In the aquatic animal or organisms the specific energies of the nervous substance of the visual organs invariably takes into account only the impression of the colourless luminosities; in the vertebrates, with the transition into aerial life and the consequent subjection to the influence of the much greater variety of the
radiations reaching the visual organ, these specific energies have undergone transformation in virtue of which they now bring into consciousness not only the colourless luminosities, but also the variegated colours. This, however, is not in the sense that altogether different energies displace the original ones, for the latter reappear in the remarkable abnormality we know as total colour blindness."

Numerous photographs illustrating his experiments accompany the paper.

II.—OPERATIONS

Cataract.


(1) Elschnig lays down the contra-indications to simple extraction. There is only one which is absolute: if the pupil fail to dilate with homatropin, the iris is rigid; simple extraction must not be chosen.

The chief objection to this method of operating is the comparative frequency of iris prolapse. In spite of careful selection of cases, this complication was recorded by the author in 4.7 per cent. of his simple extractions. Haessig, of Basle, noted 25 per cent.; Hesse, 8.8 per cent.; Marshall, 13.86 per cent.; and de Wecker, 3.4 per cent. The statistics for the combined method are much better; Haessig, 1.9 per cent.; Hesse, 3.3 per cent.; and Knapp, 8 per cent. Elschnig does not excise a prolapse. He prefers to incise it and then to replace it within the eye. He has never seen any ill effect follow reposition.

In order to avoid prolapse, Hesse performs a peripheral iridectomy which has reduced his prolapse figure to 0.66 per cent.

Elschnig, before Hesse published his method, had occasionally made an incision into the iris root, but after reading Hesse’s paper, he made it a constant part of his simple extraction. The result has been to reduce the number of prolapses to zero.

The procedure is carried out in the following manner.—The section is made with a conjunctival flap, and the capsule removed with capsule forceps. The edge of the conjunctival flap is seized with forceps, and the iris root exposed. The iris is now pierced close to the scleral edge of the wound, a fold raised up, and the
OPERATIONS

The incision is about one millimetre long and is parallel to the edge of the cornea.

Elschnig prefers his incision to Hesse’s basal iridectomy. It is easier, trauma is less, and there is no chance of the lens entering the coloboma rather than the pupil.

T. HARRISON BUTLER.


(2) Constantinescu believes that he has found in the covering of the incision with conjunctiva a protection against post-operative infection in cataract cases which he has not obtained by means of prophylactic serums, etc.

His method of incising the conjunctiva along the limbus, undermining it, and subsequently drawing it down over the wound by means of sutures, is not entirely new; but he lays particular emphasis on the necessity for dissecting up the conjunctiva only, without the submucous tissue, since the elastic fibres of the latter cause retraction of the flap from the wound.

A. J. BALLANTYNE.


(3) Under novocain anaesthesia the external canthus, including the orbicularis muscle, is divided almost as far as the orbital margin. Bleeding is checked by swabbing with perhydrol and the extraction is proceeded with. This measure is recommended in cases where the palpebral fissure is very narrow, and in certain cases in elderly people in which the speculum causes the skin at the outer canthus to become elevated above the level of the cornea. No untoward complications need be anticipated, and the operation is facilitated in timid or refractory patients.

H. M. TRAQUAIR.


(4) Occasionally, after extraction of soft cataract by a keratome incision, either in traumatic cases or following discission, the iris may become drawn up towards the wound. To remedy this, Elschnig introduces a fine needle into the anterior chamber from the side and, passing the point upwards, divides the tissue on the surface of the contracted part of the iris. If a tag of capsule is adherent to the cornea it may be divided. If the iris tissue itself
is involved the point of the needle may be inserted into its superficial layer and the iris levered downwards so as to replace its pupillary margin. Eserin is used for the first day, afterwards atropin. It is claimed that the operation is safe and its results lasting. The possibility of producing iridodialysis is the only danger, and this is not regarded as serious. Elschnig has been successful in five cases.

H. M. Traquair.


(6) Knapp, in this paper, gives notes of two cases of disturbance in the formation of the anterior chamber after cataract extraction. The first case was that of a woman, aged 53 years. She was in an anaemic and depressed condition as a result of profuse menorrhagia. A preliminary iridectomy a month before the extraction was accompanied by a good deal of haemorrhage. The extraction (no details are given of the operation) was followed by no reaction and, after needling three weeks later, vision of 2/3 was obtained. Six weeks later she returned with a collapsed anterior chamber and a tension of minus 2. Vision was reduced to 1/4. A fine fistula could be seen in the middle of the scar. This was twice cauterized with a successful result. Three months later the fistula reappeared and the anterior chamber again collapsed. Cauterization and transplantation of a conjunctival flap met with no success, but three weeks later the anterior chamber suddenly re-formed with an acute glaucomatous rise of tension. This yielded to treatment with miotics. One year later the eye was in good condition and the other eye was successfully operated on. The author considers that the defective condition of the general health was responsible for the breaking down of the scar.

The second case was that of a woman, aged 67 years, on whom a preliminary iridectomy had been done six years previously. The extraction was made with a conjunctival bridge, and a large piece of the anterior capsule was removed with capsule forceps. No inflammatory symptoms followed, but the anterior chamber failed to re-form. The pressure was slightly raised. As the chamber had not re-formed after three weeks, and a glassy-looking spot could be seen in the middle of the scar, Knapp considered that there might be some capsule caught up, especially as the corneal astigmatism amounted to 10 D. He cauterized it energetically, but without result. Vision with correction was 0'4. Tension remained
high, but there was no pain or steaminess of the cornea. As eserin had no effect, Knapp performed a posterior sclerotomy and allowed some vitreous to escape. The same evening the tension was still higher and the cornea hazy. As there was no improvement a fortnight later, he trephined the eye and made a small iridectomy. Temporary improvement followed, but the condition relapsed and a fortnight later he again trephined the eye with a larger trephine and did a liberal iridectomy. As a result of this the same evening the eye was stone hard with a very deep anterior chamber. Two days later the conjunctiva over this second trephine hole gave way, and the eye was obviously infected, with exudation in the anterior chamber and acute iritis. The conjunctiva was separated from the hole which was deeply cauterized and then the flaps replaced as well as might be. The next procedure was a large iridectomy at the opposite side of the eye. This also proved useless, so a third trephine operation also with iridectomy was performed. It seems a little difficult to see how any iris could still be left. Success attended this final attempt, and four months later the vision was 0·8 and Jaeger 1, pressure normal.

E. E. H.


(7) Mulock Houwer describes the operation in general use in cases of lamellar cataract at the Amsterdam Clinic. The object aimed at is to get the nucleus of the lens into the anterior chamber. He explains that by nucleus he means the central clear portion, as a genuine anatomical nucleus does not exist at the early age at which such cases are usually submitted to operation.

The procedure is as follows: A straight or bent discission needle is inserted subconjunctivally through the temporal side of the limbus after the pupil has been fully dilated with atropin. The anterior capsule is freely opened and the anterior layers of the lens stirred up. The next step consists in manipulating the point of the needle so as to coax the lens centre forward into the anterior chamber. No hard and fast rule can be laid down as to the best way of doing this. If the anterior layers have been thoroughly broken up in the first stage of the operation there should be no special difficulty. This ends the operation. In some cases the lens fragments absorb without giving rise to any trouble. Since the lens fragments are all in front of the iris there is not the same tendency to cause a rise of tension as in the ordinary operation, in spite of the very free discission. In any case the author claims that should it be necessary to let out the lens matter there is less risk of prolapse of iris than when the swollen and partially
disintegrated lens lies behind the iris. Should it be considered necessary to let out the lens the incision is made at the limbus. As no mention is made of the possibility of an anterior synechia, we presume that the Amsterdam Clinic is lucky enough not to have met with this complication. The reviewer has always preferred to make the section at the junction of the middle and outer third of the cornea so that this complication when met with may be easily treated, which is not the case with a peripheral adhesion. The author points out that when evacuating the lens it is neither necessary nor advisable to try to remove all the swollen material.

He also, and as we think wisely, advises a discussion of the posterior capsule, even when the vision is good, should the patient be likely to be unable to get skilled advice easily in the future.

The practice at Amsterdam is to operate on all cases whose vision is 1/4 or less, but some attention must be paid to the social position of the patient. The poorer classes may prefer to have less vision rather than go to the trouble and expense of glasses.

From 1910-1916, 26 operations for lamellar cataract were performed. These operations were performed on 15 patients, 11 of the operations being bilateral. The only case which got acute glaucoma was one in which the manipulation failed to bring the nucleus forward. In this case the iris prolapsed after the evacuation and a sclerectomy had to be performed before the tension remained low.

Lamellar cataract seems to be much less common in Amsterdam than in London.

E. E. H.


(8) A. S. and L. D. Green have succeeded in taking moving pictures of the operation of intra-capsular cataract. In the present article a selection of negatives from the film has been reproduced after enlargement. The reproductions are excellent and give a better idea of the steps of the operation than pages of writing. The authors have studied at Jullundur under Smith and are convinced of the superiority of the operation. At the end of the paper they say that they have now performed the operation in about 150 cases of Americans for senile cataract, and propose at a later date to publish a detailed analysis of their results.

E. E. H.

(9) Barraquer and Anduyned (Barcelona).—An extremely gentle method for the extraction of cataract “in toto.” (Un procédé d'extrême douceur pour l'extraction “in toto” de la cataracte.) *La Clin. Ophtal.*, June, 1917.
(9) One has so often thought that the ideal has at last been reached, and has so often found that a "new" method was either very old, or useless, or both old and useless, that sometimes one is tempted to treat with scant notice what seems too ideally good. The reviewer is unable to say whether the procedure here described is new, but it is so, as far as his knowledge goes. At any rate, the arguments of the authors seem so sound, and the method appeals so forcibly to one's surgical sense that every prominence should be given to publication of the article, albeit it is of the most modest dimensions.

The authors begin by stating, what is obviously true, that extraction of cataract in the capsule is the ideal operation provided the loss of vitreous can be avoided, and that such loss of vitreous is the stumbling block to its general adoption. This loss of vitreous is due to the application of a dangerous amount of force or to the employment of a zonulotome blindly between the iris and the lens. If the coats of the eye of a cadaver be carefully removed, leaving the vitreous and lens together, one can separate the lens from the fossa patellaris by drawing on it with forceps, breaking the zonule without breaking the hyaloid. One can then take up the vitreous and pass it from hand to hand without any fear of loss unless one presses it or pricks it. Such pressure or pricking is exactly what takes place in the operation of extraction of the lens in its capsule by the recognized method. The authors seek to imitate the experiment applied on the cadaver, of drawing the lens gently away from the vitreous, and the method they have evolved is the introduction of a sucker (ventouse) into the anterior chamber. This sucker, attached to a pneumatic apparatus, is made to apply itself to the lower portion of the lens in its capsule and the lens and capsule are gently withdrawn. The following are the exact words:

"The procedure is extremely simple. A flap having been cut, with or without iridectomy, one so places the sucker that it occupies the lower part of the pupil and passes behind the iris in order to get a grip on the lower part of the lens. But it is not necessary to go quite to the periphery: it is enough that the instrument be placed a little lower than the centre of the lens and behind the pupillary border. This stage having been reached the vacuum is made, and with the instrument the lens is rocked (basculer) so that its upper edge is advanced a very little (un tout petit peu). The traction necessary to make the zonule yield should be very slight, much more so than in the anatomical experiment to which we have referred, because the vitreous has the resistance of the ocular membranes behind it. The most striking thing is that one does not observe the least indication of violence and does not appreciate the least resistance. The operation is much facilitated by strong cocaine mydriasis."
The authors call the operation "facodialysis," though "phacodialysis" would appear to be a more correct spelling. There is a plate showing the steps of the procedure, although this seems hardly necessary, and another showing some of the details of the pneumatic apparatus. This is not of the first importance because, if the principle of the operation be correct, the details of the exact apparatus used are bound to be modified by individual surgeons. One can foresee such modifications almost by the dozen. Have we arrived at the proper method of extraction within the capsule?

Ernest Thomson.

Iridotasis


(1) Verhoeff describes the histological findings in an eye in which iridotasis failed to relieve tension. The operation, which is comparatively little known in England, consists in "withdrawing the iris through a keratome incision, beneath a large conjunctival flap, and allowing it to remain there; the iris is grasped near the pupillary margin, so that when it is withdrawn the pigment is opposed to the anterior lip of the wound, and thus prevents the latter from uniting with the iris."

In the case under discussion, Verhoeff found the iris cyst in free communication with the anterior chamber; outside the iris tissue was a thick layer of newly-formed fibrous tissue, which gradually lost itself in that of the episclera, and which was in a state of active cell proliferation. This adventitious coat effectually shut off the fluid of the anterior chamber from the subconjunctival space. Verhoeff calls attention to the fact that the case was one of advanced, chronic, congestive glaucoma, "just the kind of case in which Borthen states the operation is likely to fail." Verhoeff gives his views as to the sequence of events in this case: "Traction of the sphincter pulled the pupillary margin downwards until it came in contact with the anterior lip of the wound and adhered to it. As a result, all drainage was cut off, and the prolapsed iris simply formed a distended cyst."

To the reviewer's mind, too little stress is here laid on what he regards as the principal factor, viz., the action of the encircling layer of newly-formed connective tissue, thrown out from the episclera. The same thing is seen after trephining, Lagrange's operation, or any similar procedure, and at least breathes the suggestion that asepsis has not been perfect. Be it remembered, however, that the very nature of the affection may have precluded a perfect asepsis.
before the operation was even begun. In conclusion, one can only express regret that able and experienced ophthalmologists can still be found to approve of operative procedures which aim at the deliberate inclusion of iris tissue in the wound. The reviewer holds that these procedures are wrong in principle and dangerous in practice, and that they should be eliminated from our list of operations.

R. H. Elliot.


(2) Stieren thus describes Borthen’s operation of iridotasis.—"The eye is cocainized thoroughly, and a conjunctival flap made as in the trephining operation. The flap need not be as large, nor is it necessary to carry the dissection to the corneal layers; but the flap should contain all the subconjunctival tissue down to the sclera. A small keratome incision is then made under the conjunctival flap just behind the limbus, and just large enough to admit the iris forceps. The pupillary edge of the iris is grasped and gently withdrawn, and when released outside the corneal incision it will be noticed that the under surface of the iris is now uppermost. The conjunctival flap is stroked back into place and the speculum carefully removed, the operation requiring not more than five or six minutes to perform."

Borthen recommends that a drop of 1 per cent. atropin be instilled into the eye half an hour before operation, so as to prevent the iris falling back into the anterior chamber; but Stieren finds this unnecessary if the corneal incision is small, not over 5 mm. in length. The conjunctival flap is adherent after twenty-four hours, and there is no need to keep the patient in bed after that time.

Relief of pain and enlargement of the visual field are immediate. These prompt results are ascribed equally as much to the stretching of the iris, thereby keeping open the filtration angle at this site, as to the subconjunctival drainage. Several American surgeons have adopted the operation,* and Borthen claims to have done the operation 206 times without a failure. Verhoeff uses it as a substitute for trephining, and states that he will continue to do so until he finds some objection to it, of which he is not at present aware. There appears to be only one contra-indication to the operation, and that is where the iris is so atrophic and friable that it cannot be drawn into the wound as it tears into shreds with each grasp of the iris forceps. Stieren reports six operations on four patients, and the results seem to justify the writer's advocacy of the operation.

J. Jameson Evans.

* See Ophthalmoscope, May 1916, p. 259.

Since Borthen described iridotasis in 1911, Harrower has performed the operation upon 23 patients, with improvement in eyes which retained vision, increase of the fields, and lowering of the intra-ocular pressure. Much abbreviated, the cases are as follows: (1) Male, aged 65. Seen in March, 1916: R.V. (corrected), 15/50; L.V. (corrected) 15/20; R.E. tension 30, and L.E. tension 57. Ordered 1 per cent. pilocarpin. In February, 1917, iridotasis. May, 1917: R.V. 15/40 and tension 22; L.V. 15/20 and tension 25. (2) Male, aged 61. November, 1916: R.V. (corrected) 15/200; L.V. 15/50. Pilocarpin. March, 1917: iridotasis on R.E. April, 1917: iridotasis on L.E. May, 1917: R.V. (corrected) 15/100, tension 25; L.V. 15/50, tension 25. (3) Male, aged 67. L.E. simple glaucoma, tension 70. October iridotasis. End-result, tension 10. No note of vision or of field. In the present communication he reports details of the three cases as typical of all he has so far operated upon.

Method of operation as follows.—Atropin (1 per cent.) fifteen minutes before operation. Eye anaesthetised with 4 per cent. cocain. Incision, about 10 mm., from cornea through conjunctival and subconjunctival tissue down to sclera. Separation of tissues to sclero-corneal junction, using inverted scissors for the purpose. Incision, about 4 mm. in length, just behind sclero-corneal margin. Pupillary edge of iris seized with forceps, and iris withdrawn into scleral opening. Conjunctiva smoothed back into place. Borthen's view is that extra-ocular filtration is only one of the factors involved in the reduction of tension by his operation. He attaches more importance to the traction exercised upon the iris, and its consequences.

S. S.

(4) **Roy, Dunbar (Atlanta).—Late infection following an operation of iridotasis for chronic glaucoma.** Enucleation. *Ibidem*, p. 126, and *Arch. of Ophthal.*, January, 1918.

(4) Roy reports the first instance of late infection following the operation of iridotasis. Almost five years after the operation one eye was affected with panophthalmitis, and removed. The specimen was examined by Verhoef, and the pathological diagnosis was, "Iridotasis, with late infection with pneumococci. Advanced purulent endophthalmitis." The illustration which accompanies the communication shows that the lens is subluxated, but curiously this fact is not mentioned in the pathological report. Roy very candidly states that he made two operative mistakes which may have led to the bad result, namely (1) no suture was used to the
conjunctiva, and (2) too wide an opening was made before inserting the iris forceps.

III.—Enucleation, etc.


(1) Weigelin is convinced that any of the fanciful methods of formation of stumps by such methods as grafting of cartilage, etc., as well as exenteration, are not advisable in war injuries. In his experience at the Tübingen war hospital he has seen such stumps give considerable trouble and has had to remove them. Moreover, even when successful, a longer stay in hospital is necessary and the ultimate result is not so superior to that of the ordinary operation.

As regards evisceration, he gives notes of one case in which sympathetic disease followed. The remains of the globe contained a considerable amount of uveal tissue. He has also found that even satisfactory evisceration stumps frequently give trouble later and do not tolerate an artificial eye. They then have to be removed. He considers that the cosmetic result of the safer and simpler operation of enucleation is little, if at all, inferior to that obtainable by the more complicated methods that have been advocated.

E. E. H.


(2) Duverger strongly advocates this method in cases of bullet or shell wounds of the eyeball which can be dealt with immediately or shortly after the injury. In many such wounds there is no hope of recovery of sight, and although vision is lost the globe is not wholly destroyed; the lesions, too severe to permit conservation of the organ, are yet limited to the anterior segment. To such cases Duverger applies the surgical rules which govern the treatment of other regions, viz.: immediate intervention, resection of all the wounded tissue and retention of all undamaged tissue.

In 150 cases of penetrating wounds of the eyeball, he has adopted this procedure 24 times, compared with 10 enucleations and 7 eviscerations. All his cases were operated on within 48 hours of the infliction of the wound.
Local anaesthesia was employed in all except one case by means of novocain, usually preceded by an injection of morphia.

The scleral section should be not less than half a centimetre posterior to the limbus. It is generally made entirely with scissors, the existence of a perforating wound rendering this possible.

Two sets of sutures are employed, fine catgut to unite the edges of the sclera, silk stitches in the conjunctiva. The latter are removed about the fourth day.

A rigorous asepsis is indispensable; the writer hesitates to emphasize this, but adds, "tout le monde admet l'asepsie si peu respectée dans la pratique."

Contra-indications to the performance of this operation are, general infection of the eyeball, very extensive laceration of the coats, the presence of an intra-ocular foreign body which cannot be extracted before or during operation.

In all Duverger's cases, healing was complete from the eighth to the twelfth day and except when detained by other wounds, the men were discharged on the twelfth day. As is well known, the resulting stump after such an operation is the best possible.

Accompanying the paper are clinical notes of twenty cases; in the remainder, four in number, no written record could be obtained.

J. B. Lawford.

Lacrymal Operations


Calderaro discusses the question of removal, partial or complete, of the lacrymal gland in cases of persistent epiphora following removal of the sac. He describes eight cases in which he has performed the operation, and gives an account of the anatomy of the removed glands and the subsequent condition of the ocular secretion from chemical and bacteriological points of view. This description is long and does not lend itself to abstraction. He comes to the following conclusions:

1. Abundant and continuous epiphora, persisting after destruction of the lacrymal drainage system, in the majority of cases, depends on an abnormal hypersecretion of the lacrymal glands.

2. That disturbance ceases with the ablation of the orbital portion of the lacrymal gland, and, with still more certainty, after the removal of the palpebral portion.
3. The latter operation, an easier and more rapid one to perform, is always more efficacious, since, owing to the destruction of the excretory ducts, it at the same time suppresses the function of the orbital portion.

4. The lubricating liquid of the conjunctiva, after the extirpation of one of the two glands just mentioned, remains alkaline from the presence of chlorides; it contains traces of albumen.

5. Since the removal of the orbital gland reduces the lacrimal secretion to lower than the physiological normal, we are forced to admit that the function of the gland consists, although only to a small extent, in the continual lubrication of the conjunctiva apart from any abnormal stimuli.

6. After removal of the orbital gland there is a period of two to six days during which the conjunctiva is not at all, or only very sparingly, lubricated; the condition then improves and the moisture becomes sufficient to keep the conjunctiva in its normal condition. The quantity of the lacrimal secretion can then be diminished by the instillation of cocain, and increased by local or reflex stimuli; but that increase is always less than can be produced by similar stimuli under normal conditions.

7. The removal of the palpebral portion of the gland produces an abrupt disappearance of the lacrimal secretion owing to the simultaneous suppression of the contribution from the orbital portion. There is then a period of about ten days, during which the lubrication of the conjunctiva is absent, which structure thus becomes xerotic; if the conjunctiva is in a healthy condition the lubrication slowly improves owing to a hypersecretion of the sub-conjunctival glands. This hypersecretion also responds to cocain and local or reflex stimuli.

8. Lacrymation in weeping is much diminished after removal of the orbital gland and completely absent after removal of the palpebral portion.

9. In inveterate trachoma alterations in the structure of the sub-conjunctival glands are always present, frequently leading to their atrophy and complete destruction; in such a case removal of the orbital gland, and still more of the palpebral one, exposes the eye to the risks of atrophic xerosis of the conjunctiva.

10. The microbial content of the conjunctiva, in the case of abundant epiphora following removal of the sac, even after prolonged bandaging, is very scanty and inactive; on the other hand, after removal of one of the two lacrimal glands the microbial content, specially of pathogenic organisms, is increased (hence the frequency of various forms of conjunctivitis in this connection).

11. When the conjunctiva is affected with trachoma the microbial increase is still greater, so much so as to compromise the integrity of the cornea.
12. Ablation of the palpebral gland can be done with impunity if the conjunctiva is normal; it is always contraindicated in extensive and deep forms of cicatricial degeneration of the conjunctiva (trachoma, etc.); in such cases surgery should be confined to destruction of the lacrimal drainage apparatus as opposed to such conservative measures as probing or Toti's operation." E. E. H.

BOOK NOTICE


This volume of the International System of Ophthalmic Practice is one which will appeal both to the physician and ophthalmic surgeon. Written by an ophthalmic surgeon, it impresses one with the wide medical outlook and interest of the author and his extensive knowledge of diseased conditions with which ocular and ophthalmoscopic changes are associated. The plan of the book is simple, but comprehensive. It consists of fifteen sections, of which the first is an important one, dealing exhaustively with the anatomy and physiology of the structures related to vision. The other sections deal with different classes of disease in which ocular and visual changes occur: diseases of the nervous system, of glands with internal secretion (thyroid and pituitary), infectious diseases, diseases of the heart and circulation, respiratory and digestive diseases, anaemia, renal disease and diabetes, poisons, skin and bone diseases, female diseases, and hereditary eye conditions. It will be seen that little has escaped the fine-meshed net of the author; indeed one is occasionally somewhat overwhelmed by the wealth of detail, especially statistical detail. But reading it, as the writer has done, in a somewhat discursive yet critical fashion, is scarcely the way to do it justice, or to appreciate properly its value. It is really a valuable book of reference, in which will be found succintly yet clearly set out all the varied information obtainable on the subject about which it is consulted. Occasionally one comes across a somewhat dogmatic statement of which a contradiction is found later. Thus on p. 169 it is stated "every primary atrophy is now considered a symptom of tabes or paresis," and yet on p. 214 it is quite correctly stated, in reference to ophthalmoscopic changes in chiasmal tumour that "simple optic atrophy is the most frequent." A misspelling also is sometimes met with, e.g. "Jessup" for "Jessop," and "Stevenson" for "Stephenson." But these are