8. A Detailed Programme of the Meetings to be held and further arrangements in connection with receptions, excursions, etc., connected with the Congress will be sent to the members of the Congress only in the summer of 1929. To those who have not received this programme it will be handed at the beginning of the meetings. A third and last invitation to attend the Congress will appear in ophthalmological journals only in the spring of 1929. In the interests of the organisation of the Congress intending members are strongly recommended to send in their names at once, whilst applications for presentation of papers should be made as early as possible.

For the International Ophthalmological Council:

VAN DER HOEVE.

MARI.

For the National Committee of the Organisation of the Thirteenth International Ophthalmological Congress:

VAN DER HOEVE.

ZEEMAN.

ABSTRACTS

I.—LENS


(1) While this is an appeal to the general profession for closer co-operation in the work of the ophthalmologist there are points of interest in it to the specialist. McReynolds showed 200 cataractous lenses which he had removed in the unbroken capsules. He concludes that "the zonule can be successfully ruptured, without rupturing the capsule or the anterior hyaloid membrane, and the lens thus extracted in its entirety with considerable certainty in practically all patients after the age of 50. The zonule is usually so tough in the fourth decade of life that this procedure is possible of accomplishment, but with considerable difficulty, while in the third decade of life it is almost impossible, and for the earlier years absolutely impossible."

A. F. MacCallan.

Verhoeff in this paper describes some methods of suture in cataract extraction alternative to the one described at the previous meeting of the Society. The description is difficult to follow without the aid of the accompanying illustrations to which those interested should refer. Verhoeff claims the following advantages for the suture:—"It enables the operator to irrigate the anterior chamber, replace the iris, make the toilette of the wound, and remove the speculum with much greater safety. It makes relatively safe attempts to remove the capsule by introducing forceps into the anterior chamber after the cataract has been removed. It sometimes causes bulging vitreous to recede before it has an opportunity to escape. After loss of vitreous it closes the wound so that vitreous is less likely to be seen within it on the following day. It reduces the frequency of post-operative iris prolapse. It makes it safe for the surgeon to examine the eye twenty-four hours after the operation, and to replace the iris at any time, if it is found prolapsed. It often prevents intra-ocular haemorrhage and loss of sight in cases in which the patient has paroxysms of coughing or vomiting." He also draws attention to its special advantages in intracapsular extraction.

E. E. H.


Flurin and Molinéry state that they are not oculists, but that they have been asked by Rey-Pailhade to make enquiry among oculists and those interested in sulphur therapeusis whether "a treatment by sulphur might act upon the lens and if it would be possible to consider a prophylactic cure of cataract." They commence by stating that the only treatment of cataract is by extraction, which is not literally true as regards operative methods and which some will consider not true as regards non-operative treatment. Be that as it may, they recall that a sulphur body of a special nature has been obtained from the lens by Rey-Pailhade in France, and by Hopkins and Adams in England. This body is called "Philothion" by the former, and "Glutathion" by the latter. The amount of this substance in the lens varies under the influence of various agents such as heat, ultra-violet rays, oxygen and organic acids. The chemistry of these bodies, which are alike in constitution, may be read in the authors’ abstract or in
the original works which they quote. Essentially they are reducing substances, sulphur derivatives, which are remarkable "mobilisers of oxygen." In view of the facts that the lens is an epithelial structure and that dermatologists attach great importance to sulphur as a therapeutic substance the authors suggest that these substances, philothion and glutathion, might be remembered when studying the pathogenesis of an epithelial dystrophy such as spontaneous cataract.

Ernest Thomson.


(4) Adalbert and Stefan von Pelláthy have made a further contribution to the chemistry of senile cataract. In this question calcium salts have for some time excited interest, and have at various times been associated with an important part in the aetiology. They examined the blood serum in 45 cataract patients, aged 45 to 75. On the whole they found the difference from normal to be too small to bear any definite conclusion. The controls they used were, however, few. The results were certainly not definite enough to associate senile cataract with a parathyroid insufficiency, for, in such conditions as tetany the calcium value of the blood falls to 50 per cent. of normal.

W. S. Duke-Elder.

(5) Tassmann, Dr. I. S.—The proteins of the lens and their chemical changes in the pathogenesis of senile cataract. Arch. of Ophthal., July, 1928.

(5) Tassmann's paper consists in a comprehensive review of the literature on this subject. The lens proteins are divisible into two classes, soluble and insoluble, which are present in about equal amounts, the former consisting of α and β kristallins and the latter of albumoid. α Kristallin is more plentiful in the cortical part of the lens and β in the central. The sulphur containing amino-acid cystein is present in the lens and is responsible for the production of a violet-red colour when lens matter is mixed with sodium nitroprusside and ammonia. If sections of a normal lens are treated with these reagents, there is no difference in the peripheral and central layers, but in mature senile cataract the reaction is negative and in the non-mature form the reaction is given only by the unaffected lens matter. With regard to the different protein fractions, albumoid is negative, α Kristallin gives a slight and β a more positive reaction, which corresponds with their sulphur
content. It is, therefore, assumed that one of the changes in senile cataract is the disappearance of the kristallins, or their conversion into albumoid which does not contain cystein. It should be noted that two molecules of cystein may combine in the presence of oxygen to form a molecule of cystine which is negative to the nitroprusside test, the reaction occurring more quickly, the higher the temperature. Iron in small quantities also hastens the oxidation, but light and ultra-violet radiation have no influence whatever. These observations would seem to fit in with the aetiology of glass blowers' and iron puddlers' cataract. Woods, of Baltimore, has recently isolated the \( \alpha \) and \( \beta \) kristallins in a pure state. The \( \alpha \) form remained stable, but the \( \beta \) after a few weeks developed a tendency to spontaneous precipitation, which was lost if it were mixed with \( \alpha \) kristallin. The latter has, therefore, an apparent protective colloid action on the spontaneous precipitation of \( \beta \). Cataract may thus consist in gradual reduction of the \( \alpha \) factor, allowing the \( \beta \) to undergo spontaneous precipitation with clouding of the lens.

F. A. Williamson-Noble.


II.—CORNEA


(1) Since the introduction of the slit-lamp our knowledge of the pathology of the living eye has been considerably increased by the observations of many changes the nature of which was such as to elude detection by the more mutilating methods of morbid anatomy. In a long and interesting paper Fuchs has correlated some of the changes which are seen to occur in the endothelium of the cornea during life with their pathological appearance. In general terms the endothelium may be destroyed by a toxin, either bacterial, or, in the case of keratitis ex lagophthalmico (the author believes) a cyto-toxin. The rule is for the endothelial cells during the reparative process after injury to proliferate in much the same way as epithelial cells are already known to do. Thus, at the edge of a defect in the endothelium which may follow a suppurative inflammation of the cornea, such as a suppurating wound, a hypopyon ulcer, or a corneal perforation, proliferation of the endothelium tends to occur, which is evident clinically as a nodular yellow precipitate. It is true that an accumulation of pus cells may gather between Descemet's membrane and the proliferation of the endothelial layer, but the author draws the important conclusion that these so-called precipitates are clumps of
freshly formed living endothelial cells, and are not masses of dead and necrotic cells. Two processes by which the initial endothelial defect may be brought about are instanced. In the first place the cells may be killed directly and disappear owing to the action of a strong toxin: this, for example, probably occurs in the corneal necrosis which may accompany a degenerating intra-ocular sarcoma. In the second place the process may be more mechanical and may be directly referred to the lifting and tearing action of a bag of pus underneath the endothelium: this occurs in a less virulently toxic keratitis and is seen typically in cases of *keratitis ex lagophthalmo*. The article is amply illustrated with histological sections and illustrative cases and well repays study.

W. S. DUKÉ-ELDER.

(2) Juillerat and Koby (Bâle).—On the thickness of the central parts of the cornea as measured in the living subject. (De l’épaisseur, mesurée dans le vivant, des parties centrales de la cornée.) *Rev. gén. d’Ophthal.*, June and August, 1928.

(2) It is curious to think that for all the years that people have been cutting and examining histological sections of the eyeball they have not succeeded in obtaining exact measurements of the thickness of the cornea. So says Koby, who, with the collaboration of Juillerat has made a study of this subject in the living eye by means of the slit-lamp. The first of the published articles deals with the actual geometrical arguments and the methods of examination. It is fully illustrated with geometrical drawings and with equations which will no doubt receive careful study from those who are geometrically inclined, but about which, for most readers perhaps, the less said the better. In the second article Koby tabulates the results which have been obtained by calculation from the slit-lamp method, and finds that in 20 subjects with normal eyes the real thickness of the cornea is from 0.466 millimetre to 0.708 millimetre, that the most frequently recurring figure, which he calls the *mode*, is 0.583 mm. (7 cases out of 20), while the next following frequency is 5 out of 20 for the figure 0.641. The "classical" figure, repeated from book to book is 0.80 mm. As these measurements have been made after death they have not taken account of the increased thickness of the cornea due to imbibition of aqueous. The difference between the measurements by geometry and those hitherto made post-mortem Koby considers to be thus explained, and he believes that he has established as a certain fact that the thickness of the cornea in the living eye oscillates round the figure 0.58 millimetre.

We have purposely avoided mention of the difficulties which occurred in making these measurements because to condescend to one such point would involve a discussion of all. The practical
result seems to be that when dealing surgically with the cornea, at any rate with its centre, we have only something more than half the thickness to work with that we have hitherto assumed to exist, for is it not usual to say that the cornea is "about" a millimetre thick?

Ernest Thomson.

(3) Fietta, P. (Fribourg).—Interstitial keratitis as the initial localization in the course of a staphylococcaemia. (Kératite interstitielle, première localisation au cours d'une staphylococcémie.) Rev. gén. d'Ophthal., April, 1928.

(3) In an interesting short article Fietta first runs over the relatively numerous recorded causes of interstitial keratitis other than syphilis and tubercle. These are smallpox, influenza, parotitis, glomerular nephritis, meningococcaemia, epidemic encephalitis, malaria, dental or buccal infection; while sometimes the cause is obscure. As a general rule the keratitis accompanies or follows the disease. In the author's case the keratitis preceded the symptoms of staphylococcaemia by nearly two months. In a man aged 64 years who had always had excellent health, in whom the syphilitic reactions were negative and in whom no sign of syphilis or tubercle could be found, there occurred a very severe attack of interstitial keratitis and iritis of the left eye which proved completely rebellious to treatment. About two months later the patient had an attack of boils on the left cheek and ear. Blood cultures showed staphylococcus aureus. This condition was treated by injections of "staphylo-Yatrine." The boils quickly disappeared, but cultures remained positive and in due course further attacks of boils occurred. Each time the boils ceased the eye became quieter and each time the boils recurred the eye became more inflamed. From the history of the patient, the complete absence of any evidence of syphilis or tubercle, and from the parallelism between the behaviour of the eye condition and that of the micro-organism, the author feels justified in concluding that the keratitis was a first sign of the action of the staphylococcus in the blood. "It seems prudent," the author says, "when one finds a severe inflammation of the cornea, iris or ciliary body, and when clinical and laboratory methods of examination are persistently negative, to make a blood culture also. Doubtless this will be negative in the majority of cases, but sometimes it will be positive" and so permit of the correct treatment of the case. It is somewhat aggravating that the ultimate history of this patient is not vouchsafed and that the reader is left to speculate upon it. A bibliography of fourteen names gives the sources of the information on those unusual causes of interstitial keratitis mentioned by the author at the beginning of his article.

Ernest Thomson.

(4) Recurrent erosion of the cornea is generally taken as being traumatic in origin, but it is also known that not all cases can be thus considered. That there is a trophic basis in some cases has been suggested and it has been held that the neuralgia associated with this condition is in reality not the result of the lesion, but an expression of the underlying neurotrophic basis. Franceschetti goes further and brings forward a genealogy extending over six generations to prove that the disposition to this lesion may be inherited. It appears that the inheritance is of a simple dominant type, passing by direct transmission. The children of those that escape are free. In those who are affected the disease usually makes its first appearance between the ages of four and six years. The first attack is generally excited by trauma—not necessarily violent. As in the ordinary recurrent erosion, the recurrent attacks occur on waking—a classical symptom that is difficult to explain. The tendency towards recurrent attacks becomes less marked as the years go by, the attacks diminishing both in frequency and intensity. After the age of fifty attacks are rare. The presence of an hereditary factor in recurrent erosion brings it in line with several other lesions of the cornea where inheritance has been demonstrated.

A. Sourasky.


(5) Jameson here describes his method of dealing with those anxious cases in which corneal injuries are complicated by prolapse of the iris. As protection he prefers to make use of a double flap of conjunctiva. The diagrams that accompany the paper make the method of operation quite clear. "Three primary incisions in the conjunctiva are necessary: one straight incision, which starts from a point at the limbus corresponding to the top of the vertical meridian of the cornea and is carried back directly to the fornix, and two curved incisions around the limbus, one on the inner and one on the outer side. Variations as to the point on the limbus from which these incisions start can be made; but beginning, as above stated, a flap can be obtained to cover the entire cornea. The triangular flaps are now undermined from the points of the vertical incision at the limbus which form the apices of the triangle to their bases. This gives us two distinct flaps and a plentiful supply of conjunctiva. The apex of the first flap is drawn
over the cornea and sutured to the sclera at a point corresponding to the lower terminus of the limbal incisions on the opposite side from which the flap is derived, and is sutured to the episclera by two or three sutures. This firmly secures the base flap in position covering the cornea. The apex of the other flap, the superficial or supporting flap, is drawn over the cornea in exactly the same way to the opposite lower terminus of the limbal incision and sutured to the conjunctiva at the limbus, or conjunctiva and episclera. The edges of both of these flaps corresponding to the limbus incision are free, which admits of drainage through the wound underneath. The two triangular flaps thus sutured in situ can be described and outlined by drawing two lines from the top of the incision at the fornix to the lower end of each limbal incision—the bases by a line drawn from the ends of each limbal incision.”

As regards the treatment of the prolapse the author strongly favours replacement by traction from within by means of a counter-incision, a method described in this country by Goulden. Before replacement he advises that the prolapse should be sterilised by treatment with 0.5 to 1 per cent. silver nitrate, followed by irrigation with normal saline. Replacement should not be attempted in cases with much maceration and laceration of the iris, and, naturally the earlier the case is seen the more satisfactory will be the result.

E. E. H.


(6) The introduction of treatment by malaria of the early stages of syphilis (apart from its established use in general paralysis of the insane) has induced Schreiber to try it in congenital syphilis. His paper is a discussion on 23 cases (35 eyes) of interstitial keratitis subjected to this mode of treatment.

Artificially induced malaria differs in important respects from the natural variety. It is easily controlled by quinine, does not recur and cannot be spread by the anopheles. Four to ten days after the intravenous injection of 5 c.c. of malarial blood, its effects are seen. The treatment consists of six to ten attacks controlled by four doses of 5 c.c. of a 10 per cent. solution of quinine bi-sulphate injected intravenously. The treatment was combined with neo-salvarsan, the malaria being induced in the intervals of rest, so that the total treatment lasted many weeks. The usual local treatment was always carried out.

“After the first, second or third attack of fever, the photophobia, lacrymation and blepharospasm, which previously had
persisted, disappear in favourable cases. The intense injection becomes less marked, the eye becomes less red, and later quite white; the ground-glass appearance of the cornea, however, improves but little, or not at all. In some few patients the pupils could not be kept widely dilated by atropine before the injection of malaria, and posterior synechiae could not be avoided. Under the influence of malarial treatment it was easy to keep the pupil dilated with smaller doses of atropine; fresh synechiae never appeared during the fever treatment.” Tension too is favourably controlled.

An interesting feature is the persistence of the ground-glass appearance of the cornea at the time when the fever treatment has induced local anaemia of the eye. The cornea clears but slowly, though more rapidly than without malarial treatment. The local anaemia of the eye may be of only a temporary nature: vascular engorgement may return slowly after the last attack of fever.

There are no brilliant results to report. The course and complications of the disease are not radically influenced, but the treatment shortens the duration of the disease in some cases, and helps to tide over some moments of danger, such as those associated with increased tension and with severe types of iritis. “The nebulae seem to be less dense, and sometimes they disappear altogether.”

In estimating the value of malarial treatment of interstitial keratitis it must be remembered that in about 10 to 20 per cent. of cases of malaria ocular complications set in, among which keratitis profunda and iridocyclitis are known. Whilst so far only herpes of the cornea has been observed as a complication of artificially induced malaria, one case of the author’s is worth remembering, as it resulted in the calamity of the patient losing an eye. The case in question had malarial treatment for a severe attack of interstitial keratitis. After the sixth injection of malaria an ulcer developed on the cornea, leading to perforation within a week—and eventually necessitating enucleation.

A. SOURASKY.


(7) While experimenting concerning the absorption of certain drugs by the cornea, Rollet found that it was possible and easy to make true injections into the cornea. The essentials are a syringe working perfectly, a very fine needle with a short bevel, and local anaesthesia. The needle is entered tangentially as possible into the anterior layers of the cornea. Two or three drops of the solution are injected smoothly and gently. The fluid
becomes diffused, forming a rounded mound-like swelling, showing the tint of a coloured solution, or a greyish tinge if the solution is uncoloured. The subsequent progress can be well seen by the aid of the slit-lamp. Absorption is usually rapid, all trace of the injection disappearing in a few hours, though in some instances not for a few days. The site of the needle puncture, however, remains visible for some months, and perhaps permanently.

The writer discusses this method in relation to (1) experimental research, (2) therapeutic injections and (3) coloured injections for aesthetic effects in cases of leucoma corneae.

(1) This method is available in several lines of research; if the rabbit is employed the docility of the animal renders subsequent observation of the corneal changes by the slit-lamp easy.

(2) The method is worthy of consideration as a means of local therapy in ulcerative and other types of keratitis. Opinions may differ as to its value, but the author thinks it will prove superior to subconjunctival injections, the utility of which is generally recognised. His own experience is as yet too limited to enable him to express an opinion.

(3) In one case of extensive leucoma Rollet obtained an "entirely satisfactory" result by the injection of Chinese ink in solution. Rather to his surprise the injection was made into the cicatricial area without any difficulty.

J. B. Lawford.


(8) Gallenga reports four cases of sub-epithelial rupture of the cornea from blows from the lash of a whip. In all the cases, the whip-lash came across the open eye and the lesion was horizontal, or nearly so. The whole transverse diameter of the cornea from limbus to limbus was involved. The epithelium and Bowman's membrane were not ruptured so that the aqueous did not escape, but the rupture of Descemet's membrane and of the substantia propria gave it access to the corneal substance, and in the early days, after the injury, there appeared vertical striae in the cornea (at right angles to the line of the rupture). The cases all healed well, leaving a linear scar. The writer discusses the reason for the escape of the anterior layers of the cornea and compares such cases with the cases of rupture of Descemet's membrane in forceps delivery first described by Thomson and Buchanan.

Leslie Paton.
III.—TRACHOMA


(1) Noguchi's paper is divided into four parts. The first section deals with the investigation of the trachoma prevailing among the American Indians, and it is concluded that the disease is the same in all respects as that found in Egypt and Europe. A résumé of previous work on trachoma is given at the beginning of the paper and attention is drawn to the investigations of Hess and Römer who, in 1905, succeeded in transmitting a trachomatous disease to two baboons by direct inoculation with material from human trachoma, and transmitted a similar disease to another baboon three weeks after the primary inoculation.

Accepting this fact the author set out to investigate the bacterial flora of several cases of trachoma in the utmost detail using only well advanced untreated cases in which the diagnosis was unquestionable on account of the fact that scarring had already taken place. A very wide range of media and of temperature of incubation was employed and every organism that grew was separately cultivated and tested in pure culture for ability to reproduce the characteristic lesions in certain monkeys known to be susceptible. The number of organisms isolated was large and a full report is given in the paper in several pages of tables. Cocci, bacilli and sarcinae were found, but the only organism that reproduced the disease in monkeys was a peculiar Gram-negative motile bacillus of which two distinct strains were isolated. For an adequate description of the characteristics of this organism reference must be made to the original, in which the appearances, both macroscopic and microscopic, of the organism and of the trachoma produced are illustrated.

The second part of the paper deals with the experimental production of chronic granular conjunctivitis in *macacus rhesus* and the chimpanzee with *bacterium granulosis*, which is the name proposed for the causative organism. It is interesting to read that this organism, which was regarded as a form of *B. Xerosis*, was at first, considered to be of minor importance and relatively few animals were inoculated with it, so that it might possibly have been overlooked.

In the inoculation of the animals about 0.2 c.c. of a culture suspension were injected under the upper border of the tarsus into the subconjunctival tissues. The tarsal conjunctiva was also lightly scratched and punctured with the point of the charged needle.

Only in the case of the *B. Granulosis* was a persistent granular conjunctivitis, apparently identical with trachomatous granular...
conjunctivitis in man, produced. In many animals so infected it was observed that the uninoculated eye became infected spontaneously, and that it could be infected with great ease by transferring material from the infected eye to it. The histological changes of the experimentally induced conjunctival lesions correspond closely with those of human trachoma, and include the characteristic follicle and scar-tissue formation. Part II is concluded by a series of microphotographs of sections of the trachomatous lesions produced in monkeys.

Part III deals with the transmission of experimental granular conjunctivitis from animal to animal. This was done by inoculation of cultures from one monkey to another in a series of experiments up to the fourth passage, a large number of animals being used in this investigation.

Part IV is concerned with the isolation of B. *Granulosis* from the affected animals. This was achieved as early as the 37th day and as late as the 204th day after inoculation and in the second as well as in the first passage lesion. The pathogenicity of the *B. Granulosis* recovered from the experimental animals was also tested by inoculating the bacteria in pure culture into a further series of animals. After it had been shown that trachoma could be transmitted to animals by means of the smears from the bacillus described, an exhaustive search was made in films of conjunctival trachoma for a similar organism. The author is satisfied that such organisms can be found in the films if a sufficiently prolonged search be made. They are present, however, in extremely small numbers.

It is impossible, in a short abstract, to convey any impression of the vast amount of detail which is given in this monograph which must be read in order to appreciate its importance to ophthalmology. Previous references to Noguchi’s work will be found on pp. 98 and 387, Vol. XII, 1928.

F. J. RIDLEY.


(2) In this paper, after introductory remarks of considerable length and some “general considerations” upon the clinical and pathological conditions in trachoma, Ruata enunciates the following: (1) There is one variety of trachoma which is of recent development, and spreads superficially over the conjunctiva of the lids and fornix; this variety is quite amenable to cure by current therapeutic measures: (2) There is another variety, more advanced, in which the disease has extended deeply into the submucous
tissue and has invaded all the structures of the eyelids, the ocular conjunctiva and the cornea; this variety is usually resistant to all ordinary methods of treatment.

The reason for the failure of routine therapeusis in this latter form, in the author’s opinion, is to be found in the fact that salts of silver, copper, mercury, etc., exert a relatively superficial effect upon the diseased mucous membrane, and their penetration into the deeper tissues is very limited. Acting upon this opinion, the author and others have tried treatment by iontophoresis. Ruata has experimented on rabbits by ionisation with the above-mentioned drugs and examined the conjunctiva and subconjunctival tissues microscopically. He found very noticeable eosinophilia which lasted for several hours and was present in specimens which had regained a normal clinical appearance before removal, and widespread precipitation of the ionic molecules of metal in the tissues. These were very obvious in the palpebral conjunctiva and in the cornea of the rabbit. In the cornea they were concentrated at the anterior and posterior surfaces, i.e., in the epithelial and subepithelial layers, and on the membrane of Descemet. In the parenchyma they were less abundant. These changes are shown in three illustrations. Ruata has treated a certain number of cases of trachoma in man by this method, employing solutions of citrate or sulphate of copper, of picric acid and of thiosinamine. He gives some clinical details as to technique and frequency of treatment and results. He is at present able to report upon 48 cases of chronic trachoma with severe pannus so treated. In these 48 cases he obtained:

- Cure with cicatrisation of the corneal pannus, 24 = 50 per cent.
- Improvement, and voluntary abandonment of treatment before completion, 14 = 28 per cent.
- Negative results, 10 = 20 per cent.

He expresses the opinion that this method, when more widely known, will become a recognised and important measure in the treatment of severe chronic trachoma.

J. B. Lawford.


(3) Morax and Petit were requested to prepare a report on the prophylaxis of trachoma for the colonies and protectorates of France. The report makes the following recommendations:

1. The necessity of obtaining an idea of the degree of diffusion of the disease.
2. The creation of areas each containing a hospital with an ophthalmic service under the charge of an ophthalmic surgeon, who would train doctors and specialised male attendants. He
would organise dispensaries, inspection of schools, travelling and fixed ophthalmic units.

(3) Tracking out trachoma in the homes of those affected, and its prophylaxis, with the help of the visiting nurses.

(4) Special modes of dealing with the army.

(5) Examination of all natives leaving the colony where trachoma exists in an endemic state to see that they are not affected with active trachoma. If this were the case the individual would be detained.

Any one with old cicatricial trachoma would be furnished with a certificate to state that his condition is not contagious.

Natives coming from a trachomatous country would, on arrival in France, or in a French colony, be submitted to an analogous examination.

(6) The existing maritime sanitary regulations to be put in force.

(7) The need for concerted action by colonial administrations and private organisations.

A. F. MacCallan.


(4) "In the countries where trachoma is particularly formidable and virulent we think that it is proper to assist the cornea to rid itself of the vasculo-granular veil which tends to envelop it. With this in view one of us (Cuenod, *Soc. Française d'Ophtal.* 1907) tried, for the first time more than 20 years ago, an intervention, at first sight somewhat risky, namely, curettage of the cornea itself in the region invaded by the pannus." In view of the rarity in this country of such severe cases as those referred to by Cuenod and Roger-Nataf it does not seem necessary to occupy space in this journal with the details of the operation. The authors say that while the method may appear very "brutal" it has been used for long years on thousands of patients and has never made the pannus worse nor led to any complication whatever. On the contrary, if it has not led to a complete cure every time, there has always been, without exception, a notable improvement in the state of the lesions.

Ernest Thomson.


(5) Fehmi has had occasion to apply diathermocoagulation in fifteen cases of trachoma, stage 3, with a Koch-Stertzel apparatus. As active electrode he has employed a small piece of ebonite; as the other electrode he has employed a plaque of copper,
Trachoma

The palpebral conjunctiva is first anaesthetised with novocaine, the active electrode is applied to the everted conjunctiva, and the other to the back of the patient. The current is allowed to pass for 20 or 25 seconds, beginning with 100 and increasing to 250 milliampéres. Coagulation of the tissue occurs as seen by the blanching. The current is then broken and after a few seconds the electrode is applied at another region of the conjunctiva. Considerable oedema results after about 15 minutes and disappears in three or four days. A slough forms which disappears in three or four days leaving a supple cicatrix. The author repeats the treatment four or five times at intervals of several days, and states that by these means he is enabled to cure trachomatous lesions of the eyelids.

A. F. MacCallan.


(6) Those who practice in trachomatous districts will be much interested in Monbrun's methods of employing high frequency currents in this, to use the French term, "redoubtable" disease. Whether or not they will consider his statements exaggerated is difficult to say. These statements are emphatic and such as to suggest that chronic trachoma (acute conditions and secondary infections are excluded) is now entirely curable. And, indeed, the method described seems on the face of it to be a good one. The reviewer will endeavour to make the author's principal points clear and will leave the details to be read in the original. There are three methods which may be employed according to the importance and the site of the tissue to be destroyed. (1) By means of the active electrode and the indifferent condensing electrode (électrode indifférente condensatrice) (2) By means of the single electrode (électrode unique) (3) By means of the cool spark (étincelle tiède). These methods may now be explained:

(1) The classical method of applying diathermy is to use an active electrode and an indifferent electrode which consists of a large metallic plaque applied to a considerable surface of the skin. This is done away with, and in place of it (a) the chair or table as the case may be is metallic and is connected to one pole of the h.f. apparatus. (b) The patient is fully dressed. (c) The other pole of the h.f. apparatus is attached to the active electrode which consists of a sewing needle in a special ebonite handle, a fresh needle being used for each case. In this arrangement the patient and the metallic chair constitute the two plates of a condenser, while the patient’s garments are the dielectric. The method permits of extensive destruction of tissue.
(2) The foregoing method is not suitable where precise localisation of the coagulation effect is required. In the single electrode method the ampéreage is very reduced by abolition altogether of the indifferent electrode. Only one pole of the h.f. apparatus is employed and is attached to the active electrode (the sewing needle instrument).

(3) The third method, that of the cool spark (étincelle tiède) modifies the hot and very destructive spark obtained when applying the "classical" sparking method in which an indifferent electrode is used. The active electrode in this case is held at four or five millimetres from the tissues. This "classical" method is also very painful. In the cool spark application the single electrode as employed in method 2 is used, the indifferent electrode being abolished. The spark now will not jump unless the electrode is held one or two mm. only from the tissues. It causes very little pain and produces only very slight and superficial coagulation, being much less hot than the "classical" spark. It is the safest method to employ and can be applied in the case of fine granulations and of interventions on the cornea. At this point one must, out of consideration of space, refer the reader to the actual details of the use of these various high frequency methods in the original and very interesting article. It seems, indeed, to the reviewer that to the expert in the use of h.f. for surgical purposes the details of the treatment of trachoma are really simple, being concerned mainly with measurements of ampéreage and length of exposure. One great value of the method is that a great many patients can be treated in a short time and can return at once to their employment. The actual apparatus is not described in this paper. Some further details may be found in the article by Monbrun and Casteran in La Clin. Ophtal for September, 1927.

Ernest Thomson.

BOOK NOTICES


This book is essentially practical and the principal point which strikes one on reading it is that the author has been at great pains to avoid any bias in his writing of it. Thus the effect of small errors of refraction is rightly insisted upon, but we are reminded that there are often attributed to eye-strain more evils than can reasonably be laid to its account. A lurid picture is drawn of that