was near, had fastened a piece of red rag outside the door and scattered black beans upon the threshold, in accordance with Chinese superstition, to keep demons from entering to claim his soul. These proceedings are never resorted to until all hope is gone, the Chinese being seldom at fault in their prognosis on these occasions. He was given quinine and Dover's powder, and, as it was impossible to visit him more frequently, the amount of injection was increased to 2 c.cm., and the bromide and chloral discontinued. The next day his condition was greatly improved, and progress was from that day forward maintained uninterruptedly.

On July 9th, owing to severe illness amongst ourselves, it became impossible to continue the home visits, and the parents at last consented to his admission into the hospital. Upon admission, although he seemed in much pain, his condition was satisfactory, and he had borne the journey well. A more systematic course of the hypodermic injections was instituted at once, my colleague, Dr. Francis Cunningham, undertaking their administration. On the first two days after admission five injections were given, the dose being 1 c.cm. of a 5 per cent. solution, and after that four injections each day. No bromide or chloral was given. Every night for the first seven days after admission a grain of morphine c. atropine was added to the last injection of carbolic acid to ensure a sound sleep, for no injections could be given at night, owing to our insufficiency of staff. The morphine was then reduced gradually until the patient was able to sleep without it. The improvement was satisfactorily maintained, and on July 31st the patient got off his bed himself and walked a few steps alone. His condition seeming so favourable, and being a difficult subject for the injections, they were discontinued, the boy having received 103 injections in all. No toxic signs were observed at any time, but small, punched-out sores appeared at two or three of the hypodermic punctures. After discontinuing the injections he was given a daily dose of grey powder. The rigidity of his legs diminished by degrees, but persisted longer in the right leg than in the left, contraction of the tendo Achillis causing him for a time to walk on tiptoe; but this eventually relaxed also, and for the last two months he has been in full enjoyment of his normal health and strength.

This case from the very first presented several favourable features. The late onset of the disease (about the fifteenth day), the seat of the injury on one of the fingers, and the trifling nature of the traumatism itself, all pointed to a hopeful prognosis. The patient, moreover, was at a vigorous age, his appetite was good throughout, his pulse slow and steady, and temperature normal, except for a temporary rise on one occasion. Then, too, the Chinese temperament was probably a favourable factor, for being so much accustomed to all sorts of sounds and disturbances, the paroxysms were not so easily, if at all, excited by external stimuli as would be the case with a European subject.

As it was impossible to procure the antitoxin it was considered useless to give injections of magnesium sulphate, and owing to the extremely filthy condition of the patient's bed and home surroundings, spinal injections were abstained from altogether. The progress at first seemed so favourable that it was reasonably hoped that recovery would occur naturally, and it was only after the lapse of seven days, when the symptoms began to increase in severity and the paroxysms in intensity, and his life was despaired of, that recourse was had to the treatment by hypodermic injections of carbolic acid. There is no doubt that the effect of the injections was decidedly beneficial, as shown by the marked diminution in frequency and intensity of the paroxysms which followed immediately upon commencing the treatment, but it was not until it became possible to give the injections sufficiently often that a marked and permanent change for the better took place. One week after his admission the spasms had completely disappeared and his jaws could be separated widely and naturally, and mastication of food became possible. There remained only the rigidity of neck and limbs, and this diminished sensibly from day to day during a period of rapid convalescence. The Chinese, to whom the disease is a common, and, alas! too fatal one, regard his recovery as a miraculous manifestation of the agency of the devil! It is my intention, when again called upon to treat a case of tetanus, to begin the carbolic injections from the very first, though I do not think it can ever be necessary to administer enormous quantities or repeat the injection very frequently when a smaller dose can be found to suffice.

UNDER the auspices of the Ligue de Prophylaxie Sanitaire, the first hospital for skin and venereal diseases has recently been established at Cairo. The funds were provided by the State. The director of the hospital is Dr. N. Z. Joannides, a pupil of Professor Neisser.

CONGENITAL BLENORRHOEA OF THE LACRYMAL SAC.

By JOHN FOSTER, M.B., F.R.C.S. EDIN.,
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THE subject of blenorrhoea of the lacrymal sac in the newly born has not received the attention it deserves. It is due to catarrh of the mucous membrane of the sac, which, owing to obstruction somewhere in the nasal duct, most probably where it opens into the inferior meatus of the nose, results in accumulation of muco-pus or pus in the lacrymal passages above the stricture; this leads to distension of the sac, which discharges its contents through the lacrymal puncta into the conjunctival sac when pressure is made over the region of the lacrymal sac. In the textbooks little is said about the pathology, and not much more about the treatment. Two decidedly different lines of treatment are, however, usually followed by ophthalmic surgeons: the one based largely on the results of the treatment and experience in individual cases, the other based in a great measure on the results of embryological findings. The first is the expression treatment, which may be briefly described as consisting of frequent emptyings of the sac by pressing that structure against the lacrymal bone, coupled with the employment of zinc chloride or other astringent drops to the conjunctiva afterwards; the second method consists in slitting up the canaliculus and passage of a probe down the nasal duct into the inferior meatus of the nose.

During the last eighteen months I have met two cases of blenorrhoea of the lacrymal sac in babies so placed socially that it was possible to have the expression treatment well carried out and to keep the cases under careful and even exact observation. The results have tended to strengthen the view I had previously held, that, given the circumstances, which are generally to be found in a good home, the expression treatment is, ordinarily speaking, quite sufficient to cure absolutely the great majority of cases.

As regards the literature on the subject, a careful search unearthed only two papers, to which I would recommend anyone who is interested in the subject: the first is by Mr. Donald Gunn, published in the *Ophthalmic Review*, February, 1900; the second and more recent by Mr. Stephen Mayou in the *Reports of Moorfields Hospital*, 1908. Mr. Gunn, whose article is entitled "Lacrymal Obstruction in the Young," publishes an account of seven cases of this condition, in which, if I read him aright, he ascribes the condition to obstruction of the lower end of the nasal duct, where it opens into the inferior meatus of the nose, and the consequent distension of the passages by the accumulation of epithelial waste, which should have been removed in due course if no such obstruction had existed; the dilatation of the passage he surmised from the large amount of pus and proved actually by the use of the probe. Mr. Mayou does not quite agree with this view, as he considers that the discharge accumulates in the sac itself, which is capable of much distension into the orbit without producing much outward and visible sign. In six of the cases seen by Mr. Gunn he slit the canaliculus and passed a probe; he found dilatation of the nasal duct with obstruction at the lower end in all the cases, and they were promptly cured by this slight operation; the expression treatment was not systematically tried.

Mr. Mayou's conclusions, the result of examination of the heads of several fetuses, are as follows:

- That throughout development the lower end of the lacrymal duct is extremely small, and remains so at birth, being partially occluded by the inferior turbinate bone.
- That the duct is filled with debris, both the sac and canaliculi.
- That at birth the duct is either not patent or only partially so.

Mr. Mayou is apparently a believer in the passage of the probe.

I would submit to those who deal largely with the newly born, and have occasion to see conjunctivitis in its many phases, that they should constantly keep in mind the possibility of lacrymal obstruction as a probable cause, more especially if the attacks of conjunctivitis are

recurrent, as they frequently are, the condition clearing up under treatment, and recurring in a week or ten days. Pressure over the lacrymal sac, which is the simplest of procedures, will clear up the diagnosis almost to a certainty; should pus or muco-pus regurgitate through the puncta, the expression treatment should be at once instituted. This is easily carried out by a careful nurse or mother; the sac is evacuated five or six times a day, and a few drops of zinc chloride lotion applied to the eye by means of a dropper. In one case I found, in addition to the above, a few drops of 1 per cent. protargol twice a day help very markedly when the secretion was inclined to be purulent; this can be discarded as soon as the secretion becomes more mucoid. The parents can be assured that the case will gradually clear up, and they will not be slow to appreciate the fact that their offspring will get well without the use of chloroform and the knife.

It might not be inappropriate to say, before giving my cases in brief, that there is in the minds of some medical men, who are in general practice and therefore have not always opportunities of extensive study of eye disease, a little confusion as to pathological conditions which the terms "dacryocystitis" and "blepharitis of the lacrymal sac" represent. Briefly, blepharitis of the lacrymal sac is a catarrhal condition of the mucous membrane of the sac; this may vary from mucoid to purulent. If, however, through the action of pyogenic micro-organisms or their toxins, the epithelium lining the sac becomes destroyed at any point, invasion of the surrounding tissues results in the formation of a phlegmon or abscess, and this is dacryocystitis. Dacryocystitis may result from bone disease in the neighbourhood apart from blepharitis of the sac; blepharitis, however, is the common cause of dacryocystitis.

CASE I.—Margaret —, aged about 3 weeks, the daughter of a medical man, had had several attacks of muco-purulent catarrh, with the usual watery eye, even in the interval of freedom from conjunctivitis; repeated expression failed to elicit any discharge from the puncta; still, however, the expression was intermittently practised—that is to say, when the attacks of conjunctivitis occurred. Zinc chloride and boric lotions were used for several months, and silver nitrate gr. ij ad ʒj painted on the everted conjunctiva when thought necessary. When the child was about 5 months old all symptoms disappeared; she is now 18 months old, and presents no symptoms of former trouble.

CASE II.—George —, the son of another medical colleague, was about 10 days old, and was a typical case, much muco-purulent discharge being readily expressed from the puncta; frequent expression was instituted, the mother taking upon herself the duty, and so well was the procedure carried out that the baby never developed any conjunctivitis; zinc chloride drops were used after the expression and protargol 1 per cent. only when there was any sign of purulent matter in the discharge. This child was quite well at the age of 16 months, the obstruction disappearing along with the cessation of matter on expression of the sac.

The first case was a mild one, but was nevertheless a true case. Singularly enough the baby's brother had the same condition at birth; this child had no pus from the puncta, but had obvious signs (wateriness) of obstruction to the flow of tears; happening to be taken for a holiday to the south, he suddenly developed a marked and typical blepharitis, so much so that the surgeon to whom he was taken recommended and performed the slitting-up of the canaliculus and passing the probe.

A HOSPITAL, including a dispensary and laboratory, has recently been opened in New York under the auspices of the Neurological Institute. Among the trustees of the institute are a number of prominent citizens, and on its medical staff are Dr. Joseph Collins, Dr. Joseph Fraenkel, Dr. Pearce Bailey, and Dr. Smith Ely Jelliffe. The building, according to the *Medical Record*, is fully equipped with appliances for the use of hydrotherapeutic, electrical, and other special forms of treatment. In the prospectus is the following passage, to which we invite special attention: "Physicians are invited to send patients suffering from nervous, mental, and allied diseases to the dispensary for diagnosis and for treatment, or for admission to the wards. Patients bringing letters from their physicians requesting diagnosis or suggestions in regard to treatment will be referred to their physicians." Within the scope of the work of the hospital are included formal courses of instruction in neurology.

A CASE OF PERFORATING WOUND OF THE EYE: OPERATION: RECOVERY.

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THE history of the case about to be described is a remarkable instance of the recovery, with good vision, of a severely injured eyeball. I am often called upon to deal with gravely wounded eyes, and my experience has been that they are nearly always lost. Within a few hours of the accident inflammation sets in, sometimes purulent, but more often not; the vitreous soon becomes crowded with opacities; sight is destroyed; there is frequently great pain, and the usual termination is enucleation. Wounds involving the ciliary region or accompanied by great loss of vitreous are especially dangerous. The history of the case under notice is as follows:

On August 20th last, at about 6 p.m., I received a telegram from Dr. Temperley Gray of Lenham, requesting my assistance at the scene of a motor accident at Harrietsham. I arrived there about 7.30. The patient, a lady, was suffering from a perforating wound of the right eye, caused by a splinter of glass from the broken window of her landaulette, which had collided with another motor. She had been taken after the accident into a cottage. The wound in the eye began below and somewhat to the outer side of the cornea, proceeding tangentially to it across the eyeball in a slightly upward direction as far as the inner corneal margin; at this point it turned downwards and inwards, at an angle of about 145 degrees, across the ciliary region, to terminate in the neighbourhood of the lacrymal caruncle. The total length was about half an inch. The iris had prolapsed throughout the whole of the subcorneal incision, but from the point where the wound changed its direction perforation of the globe was incomplete, only the sclerotic and choroid coats having been divided, so that no prolapse of the ciliary body or loss of vitreous had occurred; moreover, the lens appeared to be intact.

In addition to the ocular injury there was also an incised wound in the right lower lid, about $\frac{1}{2}$ in. long, running parallel to the margin; the upper lid was obliquely divided just external to the upper punctum lacrimale; there was a linear abrasion on the bridge of the nose, and a small jagged laceration of the left temple. Careful search revealed no fragment of glass, either in the various wounds or in the conjunctival sac.

From the nature of the injury, it appeared that any attempt to save the eye would probably end in failure, but I tried to do the best I could under the circumstances. The first and most important step was to excise the prolapsed iris. This had to be done under conditions which did not favour an operation of such a delicate nature, but was fortunately successfully performed. The eye was then temporarily bandaged, and the patient transported to hospital, where she arrived at 10 p.m., being taken at once into the operating theatre. Sutures were placed in the wounds in lids and temple, and a conjunctival flap was dissected up and placed over that extending over the ciliary region. Both eyes were then bandaged, atropine having first been dropped into the injured eye.

The first night was passed without pain, and the patient slept well. On the fourth day after operation, as pain was complained of, the eye was inspected and found to be going on perfectly well; probably one of the conjunctival stitches had cut out and was irritating the eye. This was the only incident calling for notice, recovery being absolutely uneventful and unaccompanied by inflammation. The patient was allowed up thirteen days after the accident (September 2nd); a week later dark glasses were substituted for the dressings, and she was discharged on September 13th, after twenty-three days in hospital, with a perfectly healed eye, possessing practically normal vision.

Several factors contributed towards the successful result. In the first place, the injury, although extremely severe, had most fortunately left lens, ciliary body, and vitreous intact. Again, the fact that the patient was brought under treatment and an operation performed within two hours of the accident was of the utmost importance. I think, too, that the placing of a conjunctival flap over the inner end of the wound materially aided the healing process and ought never to be omitted in such cases.

Two more points should be mentioned. First, the behaviour of the patient, which was admirable both during the operations and throughout the whole period of after-treatment; had she been at all restless inflammation would probably have ensued, resulting in the loss of the eye. And secondly, the great pains and care taken by the nurse undoubtedly assisted towards the happy termination.