the respective muscles being cut away by the second operation. The sight of the diseased eye, entirely lost at the time when the patient entered the hospital, now returned so far as to enable him to read the large print No. 16 of Jaeger's test-type.

This is a brief history of the case. May I be allowed to say a few words concerning the frequency of this disease in different countries?

It is very difficult to give approximately exact figures in respect to the frequency of echinococcus disease, for there exist very few notices on it. That Iceland is the land where it most frequently occurs is a well-known fact. Therefore some forty years ago the Government of Denmark found it necessary to send some medical men into that country to study the nature and the causes of this disease, and also, if possible, to find some means of preventing it. The result of the investigation of this first explorative mission was that in that country out of six or eight people one was affected with this disease. Later experiences proved that this proportion was greatly exaggerated. Dr. Jonassen, the latest investigator of the sanitary conditions of Iceland, found one diseased among sixty-one people.

Another country well known to be very much visited by echinococcus disease is the colony of Victoria, in Australia. In the *Edinburgh Medical Journal* of 1867, p. 529, Dr. W. Lindsay Richardson gave some notes on some of the diseases prevalent in Victoria, and noticed among these the exceedingly common occurrence of "encysted hydatid tumours," which, examined with a glass of 200 or 300 diameters, were found to contain the echinococcus. This affection, as he remarked, has become so prevalent of late years that it may be called as well in Victoria as in Iceland an endemic disease. Sheep are found to suffer there from the same disease in about 4 or 5 per cent. of the flock (Hudson).

"Investigations of the Year 1879" (*Lancet*, March, p. 297) stated that within the ten years, 1868 to 1877 inclusive, there have died 307 people of the hydatid disease among a population of about 860,000; that means one death among 280 people annually. This is a small number in comparison with the frequency in Iceland, but, nevertheless, an exceedingly great number in comparison with other countries.

The occurrence of echinococcus has occasionally been noticed nearly everywhere in Europe: in Italy, France, England, and especially in Germany; but nowhere, except in Iceland and in Victoria, has any attempt been made to give statistics as to the frequency. Professor Madelung, of Rostock, suggested to the medical profession of Mecklenburg to unite in making a collective investigation of all cases which have come under their own observation. Through this collection it is stated that 196 cases of echinococcus have been seen and treated by the now living medical profession of this land, which has a population of about 700,000 inhabitants. It was also stated that, through 1,026 *post-mortem* examinations made within about twenty years in the institute for pathological anatomy of the University of Rostock, there were found 25 cases of echinococcus (2.43 per cent.). This is a very high rate, not nearly reached by any other German university, the next to it being Greifswald, in Pomerania, with 1.47 per cent.

It is very remarkable that this high percentage seems to be limited on Mecklenburg and its eastern neighbourhood; whereas in the north of it, in Denmark (Professor Krabbe) and in Norway (Rolfen), and in the west of it, in Lübeck (Hinkeldeyn) and in Hamburg (Schede) the echinococcus disease is said to be very rare. Moreover, it is remarkable that the before-mentioned 196 cases are not distributed over the whole land in an equal proportion, the northern and eastern parts of it being much more infected than the western and southern parts. These northern and eastern parts of Mecklenburg belong to the alluvial land, with fertile soil and beautiful pastures, whereas the southern and western parts are more sandy, stony, and sterile. It is of some interest to notice that in these more fertile parts of the country, with good pastures, there are kept much larger flocks of sheep than in any other part of Germany. The proportion is between 160 and 180 sheep to 100 inhabitants, whereas in the whole of Germany there is an average proportion of only 42 sheep to 100 inhabitants. These sheep, as it is well known, suffer very often from a particular disease, called in German "Drehkrankheit," a disease generally produced by echinococcus in the brain. It is quite possible that there exists a common cause which produces echinococcus both in the brain of sheep and in the human body. This connection it may be supposed is this: It is almost certain that there is no domestic animal except the dog which is apt to harbour the tapeworm of echinococcus (*taenia echinococcus*); hence the infection of the human body will not be possible except by the intervention of dogs harbouring the tapeworm of echinococcus; and those dogs harbouring the tapeworm of echinococcus will certainly be found in the largest proportion where

there is the best and easiest opportunity of becoming infected with hydatid cysts. It is impossible to state with exact figures whether the dogs of the northern and eastern parts of Mecklenburg are afflicted with *taenia echinococcus* in a larger proportion than elsewhere, but it is very likely to be so, because of the greater opportunity in finding and eating the diseased brain of sheep.

I think this is a very imperfect, to be sure, but at the same time a very interesting result of the researches of the medical profession in Mecklenburg; and I am sure that people as well as governments will henceforth be impelled to secure further researches, and to use proper measures to avoid this evil.

ON THE TREATMENT OF STENOSIS OF THE NASAL DUCT BY THE INTERMITTENT NOCTURNAL USE OF REMOVABLE STYLES.

By ARTHUR H. BENSON, M.A., F.R.C.S.I.,

Ophthalmic and Aural Surgeon to the City of Dublin Hospital; Assistant Surgeon to St. Mark's Ophthalmic Hospital; Examiner in Ophthalmic Surgery, Royal College of Surgeons, Ireland.

STENOSIS of the nasal duct, occurring as it does from so many and various causes, cannot be rationally or successfully treated by any single method. Each case must be separately considered, and that method adopted which, for that particular case, seems most suitable.

I have no intention of entering at large on a consideration of the various causes of stenosis, nor yet of considering all the methods of treatment that from time to time have been practised or recommended, but shall confine myself to a method which has, in my hands, proved of great service in a certain number of cases, and which is, I think, capable of considerable extension.

All who have much experience of lachrymal obstruction must have now and then come across cases where the ordinary methods of treatment failed to procure a permanent passage through the nasal duct. As long as the patient was under treatment, and could have the probe passed once a week or even once a fortnight, all went well; but when he went home to the country (for it is in the case of those living at a distance from town that the greatest difficulties arise) the old trouble returned, and, three or four months later, the patient whom you marked off as cured reappears with the tears still flowing over his cheek, with the same trouble present in every particular, for which he sought relief at your hands only a few months before. You have then to cut and probe as before, and commence again the tedious and painful treatment, your patient having less confidence, and you less assurance of success.

After some weeks or months of this treatment your patient again goes home, soon to experience afresh the old trouble, for the treatment of which he will probably then seek relief elsewhere. Few patients will return a third time to undergo a painful course of treatment which has failed to give adequate relief.

In a certain number of cases passing probes (after division of the canaliculus) for a few days or weeks gives permanent relief, and nothing further is necessary; but, in a large majority of cases, especially where there is old standing fibrous thickening of the lining of the duct, or where there is bone disease (caries) in the immediate region of the sac and duct, the treatment has to be continued for months, or even years, before a really permanent channel has been provided for the tears. It is in such cases that disappointment and discontent affect equally the surgeon and his patient, and it is for these cases that I have sought a remedy in what I have called "removable styles"—removable, I mean, by the patient himself.

At the Brighton meeting of this Association last year I ventured to suggest the plan of teaching the patient to introduce and remove his style himself; I had then only tried it in a very few cases. The Section greeted my suggestion with but slight favour, and thought it a dangerous innovation to allow a patient to have anything to do with the treatment of his own case.

Since last year I have taught a considerable number of patients, both private and hospital, to manipulate their styles with ease, and have had the great pleasure of seeing some most obstinate and, I may say, almost incurable cases under the old method continue ever since free from trouble, the patient wearing the style at night and removing it again each morning.

The method which I adopt is to slit the canaliculus, either upper or lower, with Weber's knife, and pass probes in the ordinary way for some days or weeks or months as required. If the case is one of extensive narrowing, or if there is much bone disease, I often leave in a

lead style for some days, removing it now and then for the purpose of syringing and cleaning. As soon as the tenderness resulting from the first operation had subsided, I get the patient to remove the style himself, and when he has gained some confidence in doing this he can readily be induced to attempt the introduction of it. If he is, in the first case, shown before a looking-glass the way you put it in, he will soon get into the way of doing it himself. It is advisable at first to remove the style only for a few hours, and gradually increase the time till it can be kept out all day. When well in practice a patient can introduce and remove his styles without the aid of a looking-glass at all. As soon as he is able to do this for himself I allow him to go home to whatever part of the world he came from, fully assured that so long as he can introduce the style each night he will have no return of the obstruction. My directions then are to introduce the style each evening on going to bed, and to remove it in the morning when dressing, before putting in his artificial eye and false teeth, and he finds no greater difficulty in doing one than the other. If at any time he does experience difficulty, or fails to introduce the style, it is time for him to come up again to have it examined into; but so far my experience has only afforded a single case where the patient, once skilled in the use of the style, failed to get it in at home, and I am therefore convinced that there is no real difficulty in the operation after the initial timidity of the patient has been overcome. As well might a dentist require his patients to come to him to have their false teeth put in, or an oculist require his cases of enucleation to attend each morning and evening to have their artificial adornments adjusted, as a style-wearer be required to dance perpetual attendance on us to have his tear passage styled each day.

As the style is only required to be worn by night it is not necessary to risk anything for appearance, hence it may be left long, and bent with a good curve over the lid, so that there is no fear whatever of the style getting lost in the sac, an accident of not infrequent occurrence where a short style is used with a large sac.

Lead is the material of which I make the styles; common lead wire of different sizes, which can readily be cut to length, moulded to shape, and smoothed off in any desired way to suit each case.

When the style has thus been used nightly for some months, according to circumstances, it may be worn at longer intervals every second night, once a week, once a month, until finally abandoned, to be again resumed should the slightest evidence of narrowing of the passage appear.

The following are brief notes of some of the cases which I have taught to use the removable style. I hope others will be induced to try this plan, which only requires a little intelligence on the part of the patient, and a good deal of patience on the part of the surgeon, to make it a success.

CASE I.—Miss K. P., aged 20, from County Limerick, had been under treatment for some years for stenosis of both nasal ducts. I first saw her in June, 1885, and found one canaliculus had already been operated on (slit) by her previous attendant. I passed probes and forced the obstruction; the other canaliculus was slit, and probes were used there also at intervals for six weeks, after which she left for home apparently cured. She came back again in February, 1886, that is, about six months after her return home. She stated that for some time she had felt the eye quite well, but that gradually it got back into its old way, and was then, on her return, as bad as ever. Six weeks more of the same treatment, and she again returned home, thinking that now for certain she was well, but the same sequence of events necessitated her return again in a few months (August, 1886). This time I taught her to use the style herself; she readily learned to do so, and in a short time returned home, and has since then—a year ago—had no need to return, as she can herself put the style in and take it out quite easily. I saw her in April last, and since heard from her; she could introduce the style easily, and had left it out for some months at a time, and again used it without difficulty. There was still some slight tearing, but the canal was pervious, and no accumulation occurred.

CASE II.—Mr. H., aged 38 (prox.), of Dublin, had been under various practitioners, and had had his right canaliculus slit and probes passed many years before for the cure of stenosis of the duct. When I first saw him, January 15th, 1884 he had a free opening into his right sac, the inferior canaliculus having been slit. Pus was freely secreted by the dilated sac, and regurgitated into the conjunctiva. The left sac was also distended, secreted pus, and was cut off from communication with the nose by a dense fibrous stricture. Both ducts were treated by probing in the usual way, and repeatedly syringed with astringent and antiseptic applications, etc. Leadon styles were introduced and left in for a week at a time, and by slow degrees the case got better, till, in July, 1886, he left off using probes

or styles at all, and everything seemed well till November, 1886 (that is, four months after he ceased to have the probes passed), when he returned with the old condition re-established. I then taught him to use the removable style himself; he very quickly became skilled in introducing it, and has since had no trouble whatever with his eye, that is, for nine months. I saw him quite recently, and his eyes are looking perfect. He can put in and take out the style with ease, and does so each night and morning into the left eye, but for the right eye he now requires no style.

CASE III.—Mr. J. G., aged 36 (prox.), of Dublin, was sent to me by my friend Dr. Wallace Beatty in September, 1885. For four years he had been affected by stillicidium of the right eye. He had been operated on by an eminent oculist a year before, and his right canaliculus was slit, probes were passed, and temporary relief experienced. About six weeks before he came to me the trouble had recurred as badly as ever. I found a total closure of the right duct low down. The canaliculus had partly closed, and had to be reopened and the stricture forced with probes. The sac was very much enlarged and filled with a muco-purulent discharge. After more than a year's treatment with probes, syringing, etc., I taught him to use the removable style, and so great was his delight at being able to manipulate it himself that, like a child with a new toy, he actually enjoyed the process from which he had previously shrunk with almost hysterical horror.

Once (about a month after) he had to come to get the style fixed, as he failed to return it one evening, but since then he has worn it with satisfaction, removing it each morning.

CASE IV.—P. G., aged about 22, had been for some time in Barrington's Hospital, Limerick, under treatment for abscess of the lachrymal sac, and caries of the bones in its immediate neighbourhood. He was admitted under my care into the City of Dublin Hospital in September, 1886. His canaliculus was slit, probes were passed, and the diseased bone was treated in the usual way for six weeks. He was then taught to use the removable style, and he went home in November, 1886. Some months after he writes: "My eye is improved wonderfully since I left the hospital. I can take out the style and put it in quite easily. I leaves it out from six to eight hours daily, but I am sure to put it in at night-time." In April, 1887, he again writes: "I still pass the style every night without difficulty." I advised him to continue wearing it for a while longer, as in his case the diseased bone makes the final healing of the case exceptionally slow.

CASE V was that of a boy, A. W., aged 12, admitted into St. Mark's Ophthalmic Hospital, October 9th, 1886, with chronic stenosis of the nasal ducts. The canaliculus was slit, probes were passed, and the boy was taught to use the removable styles. He returned home in eighteen days from the date of his admission, using the styles himself. Of this case I have not since heard.

CASE VI.—Mrs. W., an old and very nervous lady, had been under my care for the last six months with stricture of both ducts, and purulent lachryocystitis and disease of the bone on one side. She wished to go abroad for the summer, but could not do so without danger of the ducts closing up, as they had a very great tendency to do. I easily instructed her daughter, who was going with her, to introduce the removable style and syringe the dilated sac, and she has gone abroad without fear of the ducts closing up.

I have never heard of any ill result occurring from a patient using the style himself, and fear none, once he has, under the eyes of the oculist in attendance, learned what to do. I do not for a moment pretend that all patients can be taught to introduce a style, nor is it in all cases, perhaps, advisable that they should; but my contention is that most patients can be taught, and that many who would otherwise have to remain uncured, can by this method obtain permanent relief.

It is especially in the case of persons residing far from town, and with limited means, that the difficulties attending the constant introduction of the probe by the surgeon are most felt, for many of these cases are so tedious that the requisite time cannot be devoted to their cure, and the patient returns home little, if at all, benefited in compensation for the pain, expense, and loss of time to which he has been subjected.

SUCCESSFUL VACCINATION.—Mr. Richard Bryden, M.R.C.S., L.S.A., has received for the fourth time the Government grant for successful vaccination.

CENTENARIANS.—The *Times* announces the death of Mrs. Louisa Webber, a widow, at 5, Upper Woburn Place, on November 2nd, aged 100 years.—Mrs. Drew, a widow, died on October 31st, at Thurles, aged 105, without ever having required the services of a medical man.