

of whom presented them in fairly considerable numbers. The trichocephalus was found in two of the men, the ascaris in one man and one woman. Schistosoma and oxyuris were each found in one male person only. The smallest boy (Mongungu, aged 12 years) harboured all species except oxyuris. The schistosoma eggs were found in his faeces only; they were lateral-spined and rather scanty. In some specimens of urine (very small in amount) none could be discovered.²²

In size, shape, and structure of their contents the schistosoma eggs fully agreed with the ova of the Egyptian bilharzia; thus I have no doubt that they really belong to this species. As to the other kinds of eggs observed in the faeces of the pygmies, I was not so sure of their identity. There was naturally no doubt as to the genera of the parent worms, but all the eggs in their general appearance slightly differed from those of the well-known species infesting man elsewhere. The ascaris eggs, varying between 0.059 to 0.042 millimetre and 0.063 to 0.05 millimetre, and thus coinciding in size with the eggs of ascaris lumbricoides, differed from these by their paler and decidedly less refractive shell. The albuminous envelope raised in the characteristic tubercles was very thin and often quite absent. The protoplasm of the undivided egg-cell seemed to be markedly less granular than in the eggs of ascaris lumbricoides, the entire eggs becoming thus paler than usual. The trichocephalus eggs did not quite reach the size of those of trichocephalus trichiurus. In Egyptian specimens of this species I find the length of the eggs to vary between 0.063 and 0.067 millimetre and the breadth between 0.03 and 0.034 millimetre, whereas the eggs in the stools of the pygmies almost uniformly showed a length of 0.054 and a breadth of 0.025 millimetre. Moreover, their shell which, in trichocephalus trichiurus, is of relatively considerable thickness with strongly refractive outlines, was in the eggs yielded by the pygmies only about half as thick, the polar plugs but feebly developed and less refractive too. The ankylostoma eggs, finally, presented a striking difference of another kind. It is a well-known fact that the eggs of ankylostoma duodenale in faeces immediately after evacuation show the original egg-cell divided into four embryonic cells, eggs with fewer or more cells forming the exception to the rule. In the faeces of the pygmies, even when examined a quarter of an hour after evacuation, the great majority of the ankylostoma eggs exhibited an embryonic body composed of from eight to 16 cells, eggs with four cells being present also but by no means so frequently as in the case of ankylostoma duodenale. Measurements of a number of these eggs showed that, on an average, they also possessed slightly larger dimensions. Apart from some exceptional cases the eggs of ankylostoma duodenale vary in length between 0.056 and 0.061 millimetre and in breadth between 0.034 and 0.038 millimetre. The corresponding figures found on the eggs in the stools of the pygmies were 0.059 to 0.065 millimetre and 0.038 to 0.04 millimetre.

Owing to these peculiarities observed in the eggs it seemed worth while to try to obtain the full-grown worms. At my request Dr. Keatinge kindly agreed that the six people should undergo an anthelmintic treatment in the Kasr-el-Aini Hospital. A first "cure" was made with thymol in the usual way adopted in the hospital, but owing to the small size of the patients only four grammes of thymol were given. The result was almost negative, only two ankylostoma worms being expelled from the six people. Since it did not seem advisable to increase the dose I suggested that the "cure" should be repeated with the "white mixture" recently recommended for ankylostoma duodenale as both efficacious and harmless by Dr. Herman in Mons, Belgium. The mixture is composed of eucalyptus oil, 2 grammes; chloroform, 3 grammes; and castor oil, 40 grammes. The result was, so far as the ankylostoma worms were concerned, very satisfactory. The "cure" produced altogether about 150 worms and a repetition made after three days' interval about 30 worms more. All were still living when voided and thus furnished excellent specimens for anatomical research. Of the other species, the eggs of which had been found in the faeces, only one female trichocephalus was voided in addition to the few oxyurides mentioned above. Owing to this result I am as yet not able to

tell whether the differences observed in the ova have their cause in specific differences of the parent worms or whether they represent mere local aberrations.

A close examination of the ankylostoma specimens obtained by the treatment revealed them to belong to the species necator Americanus, the "New World hookworm," which was some years ago recognised by Stiles as a distinct species widely spread, in addition to the true ankylostoma duodenale, among the white and coloured population of the southern parts of the United States. The same species is also very common in South America and represents the "ankylostoma duodenale" mentioned by earlier South American, especially Brazilian, writers. I have made a careful comparison of North and South American specimens of the species with the specimens voided by the pygmies but have not been able to find any specific differences.

It may thus be considered as settled that the "New World hookworm," necator Americanus (Stiles), occurs also in natives of Central Africa. This fact is not without a certain interest from the point of view of the geographical distribution of the species. It is said that the pygmy people live scattered throughout the forests of the tropical belt of the African continent. The more or less frequent occurrence of "ankylostoma duodenale" has been reported from the eastern as well as from the western coast of Africa (Zanzibar, Uganda, German East Africa, Congo to Senegambia). Now there seems to be no just reason to assume that the necator should be restricted to the pygmies; it is, on the contrary, much more probable that its geographical range comprises the whole native population of the tropical belt of Africa—naturally, so far as the hydrographic conditions of the land allow of the propagation of the worm. If this be true—and I am almost convinced that it is—then it would follow that what, in the reports alluded to above, was considered as ankylostoma duodenale is in reality necator Americanus; if not exclusively, at least to some extent. So far as I can gather from the literature at my disposal in none of the respective cases has a minute examination of the anatomy of the parasite been made, its presence was only stated from the appearance of the ova in the faeces, or after finding the full-grown worms in post-mortem examinations. Since both eggs and parent worms of the two species resemble each other very closely on superficial examination—indeed, their definite distinction by Stiles dates back only three years ago—such a confusion is almost a matter of course. Since I propose to return to the fuller discussion of this subject on another occasion I abstain from entering into further details in this place. The principal object of this note is to state the occurrence of the "New World hookworm" in natives of Central Africa and to attract the attention to its probable occurrence in other parts, especially the coasts of tropical Africa. For physicians practising in these countries it would be an easy matter to settle the question, either by themselves determining the species of the parasite or by sending some well-preserved material for identification to experts. I myself would gladly undertake such work of identification.

Cairo.

FRONTAL SINUSITIS: TWO CASES OF DEATH AFTER OPERATION.¹

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WE in England have learned much from the French School of Laryngology in regard to the treatment of frontal sinusitis and one of the most valuable lessons has been the frankness with which unfortunate results have been put on record. In exploring any hitherto neglected corner of the body and in designing suitable operative relief it has unfortunately been impossible always to avoid a rate of mortality which has been greatly diminished after the region has been thoroughly surveyed. In these early investigations one of the principal helps towards progress

²² This assortment of species and the relative frequency in which the individual species occur agree fairly well with the results of similar researches recently obtained from natives of Uganda by Castellani and Low (see Parasites and Parasitic Diseases in Uganda, in Archiv für Schiffs und Tropen-Hygiene, vol. viii., 1904, No. 3).

¹ Translation of a paper read before the Société Française de Laryngologie on May 10th, 1905.

has been the record of any fatal cases and we all feel indebted to M. Luc for having published his fatal results, as we also do for the help obtained by the record of his successful cases. I am glad to think that the same frankness has also been shown by several of my British *confrères* and deaths following operation on the frontal sinus have been placed on record by Tilley,² Burghard,³ Lack,⁴ Milligan,⁵ and Logan Turner.⁶ I know that many others have occurred and trust that details of them may be published. It is only in this way that we can advance the subject by determining exactly whether the unfortunate results are due to incomplete diagnosis, selection of unsuitable cases, the order of procedure, defects in methods or technique, or the general condition of patients. In neither of the cases which have occurred in my own practice could death be attributed entirely to the operation. The fatal issue was determined by operative interference but in one case it was precipitated by operation on the maxillary sinus before the frontal sinus was interfered with and in the other by an incomplete operation on the fronto-ethmoidal cells, although the frontal sinus itself was quite satisfactorily dealt with.

CASE 1.—In August, 1899, a female, aged 27 years, was admitted under my care at the Throat Hospital for bilateral frontal, ethmoidal, and maxillary sinusitis. The Caldwell-Luc operation was first carried out on the left maxillary sinus and the patient left the hospital (Sept. 15th) with the intention of returning later for further treatment. But the day she left she was seized with acute pain round the left eye and on the left side of the head; there were epiphora and swelling of the eyelids on that side and on Oct. 6th she saw a medical man who made an incision below the left eye and evacuated pus. When re-admitted to hospital on the 15th she was very weak and worn out with pain and sleeplessness. Both lids of the left eye were swollen and inflamed. There was a small opening below the left eyelid through which a probe passed into the nose. The skin over both frontal sinuses was swollen and tender but not reddened. On the left side of the bridge of the nose there was a raised, reddened, fluctuating area, tender on pressure, and of the size of a sixpence. The temperature varied from normal to 100·8° F. and the pulse was from 70 to 90. The left frontal sinus was opened by an incision which passed through the swelling on the left side of the nose. This was found to be soft inflamed tissue, beneath which the frontal bone was bare. This was chiseled through and the frontal sinus was found to contain polypoid material. The naso-frontal canal was considerably enlarged and the cavity packed with gauze. The wound was not closed and the packing was changed daily. The operation was followed by what proved to be a deceptive calm. For nearly three weeks the notes report that she was "doing well." The temperature, pulse, and respiration were normal and the wound "looked healthy." Then neuralgia on the opposite—right—side of the face was complained of, the forehead became puffy and oedematous, the right frontal sinus tender, and the right eyelids swollen. The left eyelids were also slightly oedematous. It was evident that extension of mischief was taking place around the already opened frontal sinus and that a subacute infection was spreading from the unoperated one (the right).

On Nov. 16th a second operation was performed. A median vertical incision nearly four inches in length was made in the forehead. This was connected with the wound over the left frontal sinus and with a similar incision made over the right sinus. On reflecting the two triangular flaps the frontal bones were found carious over a semicircular area extending to a radius of one and a half inches from the fronto-nasal suture. In removing all this necrotic bone the rim and part of the roof of each orbit were removed and as part of the posterior wall of the frontal sinus was bare the dura mater over the left orbit was exposed. Polypoid hypertrophies were removed from the right frontal sinus and the recent granulations were scraped from the left. The fronto-nasal ducts were enlarged by freely curetting the ethmoid cells. The frontal septum was not interfered with, although part of it was seen to be carious. The vertical incision only was closed with sutures and each horizontal

wound was lightly packed with cyanide gauze. Again there came a period of deceptive comfort. For a week the patient was easy and all went well. Then came pain in the right temporal region and a fluctuating swelling in the right infra-orbital region. On incision pus was evacuated and bare bone detected. Evidently in the right ethmoidal labyrinth there was retention and infection. The ethmoidal cells on the right side were therefore again freely curetted from the frontal wound, part of the os planum being removed. After another week of apparent well-being the temperature rose to 103·4° on Dec. 4th, the patient complained of occipital headache, and became delirious at night and heavy and irritable by day. Still the wounds looked perfectly healthy, there was free drainage into the nose, and no puffiness or tenderness was detected anywhere. It was apparent that the septic process had not only passed through the bones of the skull but was threatening, if it had not already attacked, the meninges. Yet one more attempt was made to limit the septic invasion. On Dec. 5th the median vertical wound was reopened and the skin flaps were reflected. The frontal bones were found carious and were removed in the space included in a semicircular area with a radius of from one and a half to two inches from the root of the nose. This not only cleared away the posterior (cerebral) wall of each sinus but exposed the dura mater containing the superior longitudinal sinus. The septum between the two sinuses was removed as well as the orbital plates of the frontal, so that the contents of the orbit were in contact with the dura mater. No improvement followed this last effort to check infection. Although the large area of the wound looked well and the exposed dura mater began to be covered with small granulations, the symptoms of lepto-meningitis increased and after nine days of irritability, delirium, epileptiform seizures, drowsiness, and coma the patient died on the 13th, three months from the onset of symptoms and two months from the first opening of the left frontal sinus.

There was no post-mortem examination, but it was evident that meningitis was the cause of death following on osteomyelitis, due to septic absorption from chronic suppuration in the frontal and ethmoidal sinuses.

The following points appear noteworthy in the above case: (1) the traumatism caused by the Caldwell-Luc operation performed on the left maxillary sinus stimulated the latent suppuration in the ethmoid and frontal cavities of the same side; and (2) surgical treatment of the left frontal sinus led to septic absorption from the chronic suppuration going on in the frontal and ethmoidal sinuses on the opposite side.

CASE 2.—A girl, aged 17 years, came under my care in King's College Hospital in June, 1902, for chronic suppuration in all the accessory sinuses of the nose. She had previously attended the ophthalmic department, complaining of swelling above and below the right eye, with some pain. She first noticed pain 18 months previously and the swelling commenced nine months later. The pain was sharp and neuralgic but not constant, being sometimes absent for a week at a time. She had neither *cacosmia* nor *anosmia* and had paid little attention to the fact that she had a chronic discharge of "matter" from the nose. There was no diplopia. The examination of the eyes was negative but, as is shown in the illustration (Fig. 1), they appeared to be pushed apart by the broadening below the root of the nose. The maxillary sinuses were first drained through the tooth sockets. On June 13th, 1902, the right frontal sinus was opened by an Ogston-Luc operation; numerous polypoid hypertrophies were cleared away (Fig. 2) and the fronto-nasal duct was enlarged. Towards the end of the operation a sudden eruption of pus was noticed near the infundibulum. Its source could not be detected; there was no recurrence of it, and as the frontal sinus had been freely exposed it was concluded that it was simply some pus which had welled up from the nose. The wound was flushed out, only partially closed by stitches, and lightly packed with iodoform gauze, which was left projecting from the inner corner of the wound. As in the previous case, there followed a period of deceptive calm. For ten days the patient continued to eat and to sleep well. The gauze packing was changed daily; the discharge on it rapidly diminished and became mucoid; the drainage into the nose was so free that lotion easily passed down the fronto-nasal canal, and the patient could readily blow air up through it. The sinus was filling with some healthy-looking granulations, the pulse and temperature were normal, the patient got out of bed for a few hours, and nothing could promise better. Then some headache was

² THE LANCET, August 19th, 1899, p. 534; and Edinburgh Medical Journal, March, 1905 (two cases).

³ King's College Hospital Reports, vol. vii., 1899-1900, p. 242 (on case).

⁴ Edinburgh Medical Journal, 1902 (two cases).

⁵ Brit. Med. Jour., Jan. 28th, 1905 (two cases).

⁶ Edinburgh Medical Journal, March, 1905 (one case).

complained of and tenderness and a puffy swelling were detected over the forehead.

On June 26th—i.e., 13 days after the first operation—the patient was anaesthetised and a vertical median incision was made (as in the first case) so as to reflect up a triangular flap of skin from the right side of the forehead. The puffy swelling was found to be simply oedema; there was no collection of pus. The fronto-ethmoidal region was therefore

FIG. 1.



Showing broadening at the root of the nose in Case 2.

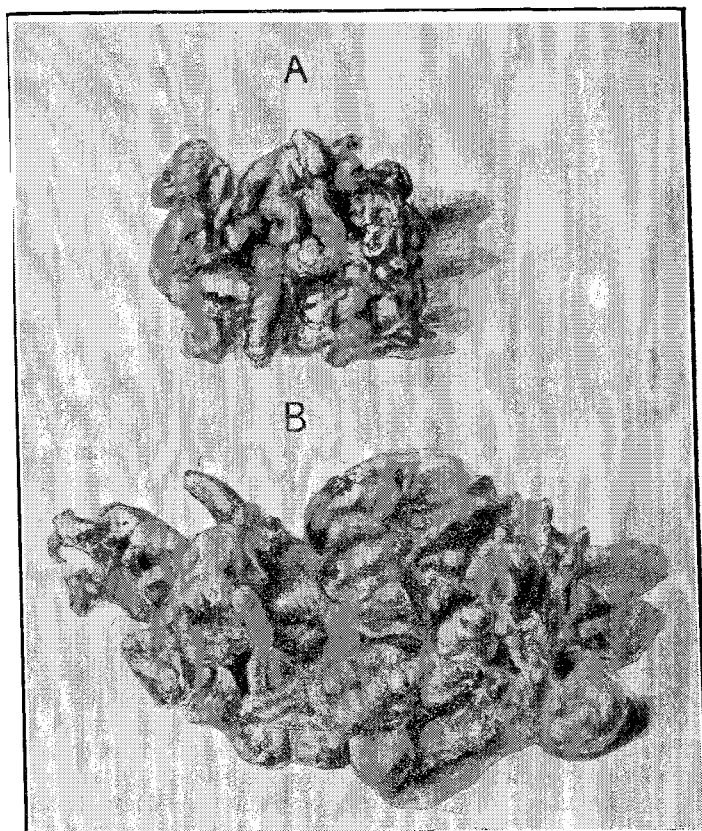
more carefully explored and two long tunnels were discovered, one running backwards below the floor of the frontal sinus as far as the sphenoid and the other running outwards below the floor as far as the external angular process. They were lined with polypoid hypertrophies and it was evident that it was from one of these digitations that the sudden eruption of pus took place at the end of the first operation. They were well curetted. While the septal wall of the sinus was being cleared a portion of bone broke down and so made an opening into the left frontal sinus. As a large quantity of pus escaped the left sinus was freely opened and treated as the right had been and particular care was taken not to overlook the long fronto-ethmoidal cells. On this side also they were found running outwards and also as far back as the sphenoid, forming a double roof to the orbit, a sort of honeycomb partition between the frontal sinus and the orbit. The fronto-nasal canal on the left side, which was blocked with polypoid growths (Fig. 2), was well cleared and the wound lightly packed but only partially stitched up. Again, there was a period of apparent progress but at the end of another 13 days there was puffiness of the right upper eyelid and on passing a probe along the wound in the direction of the external angular process a pocket of pus was discovered and a piece of bare bone was felt. On July 11th this collection was exposed and the underlying bone was found necrosed and removed. The whole of the orbital plate was loose and was taken away and another ethmoidal digitation was exposed running backwards and outwards behind the one already cleared. The patient again appeared to be doing well but owing to my enforced absence from London I had to transfer her to the care of my colleague Mr. F. F. Burghard. Fortunately she could not have been in better hands, for he is a skilled laryngologist as well as general surgeon. On August 8th he had to

perform an operation on the left side similar to the last one I had carried out on the right. The patient remained under Mr. Burghard's care for more than a year, during which time alarming symptoms recurred several times, to be relieved by evacuation of pus in the fronto-ethmoidal regions or even in subdural abscesses.

When I saw her again in the autumn of 1903 the frontal sinuses appeared obliterated, but there was a suppurating sinus at the inner corner of each frontal incision and at the outer corner of the left. I could not think they originated from any ethmoidal cells, so freely had they been dealt with, and my surprise therefore was great when the fronto-ethmoidal area was again laid open to discover more suppurating sinuses far back in the remains of a partition between orbit and frontal sinus, and one large tract low down in the remains of the division between the right and left side—a kind of supernumerary central frontal sinus but really a large fronto-ethmoidal cell. Again I had, for personal reasons, to hand over the case to my obliging colleague. He also was astonished that any ethmoidal recess could have escaped attention. In spite of his care further purulent collections took place, subdural abscesses and meningitis developed, and the patient died about one and a half years after the first operation.

In this case the maxillary sinuses were drained for some time before the frontal cavities were opened; when the latter were operated on they were opened completely; free drainage was established into the nose; the cavities were lightly packed; and the skin incisions were only partially closed. The complications which occurred therefore could not be attributed to incomplete operation on the frontal sinuses, premature closure of the wound, insufficient nasal drainage, too light packing, nor yet to reaction due to operation on the maxillary sinus. I think it is clear the troubles were all due to the fact that at the time of this operation—it is now three years ago—I had not realised the importance of thoroughly treating the fronto-ethmoidal cells

FIG. 2.



Polypoid hypertrophies of the mucous membrane from the right (A) and the left (B) frontal sinuses in Case 2. Life-size drawing.

nor was I prepared to meet with such a large, tortuous, and irregular labyrinth. Even had I been prepared for this, I would not have known how to deal with it satisfactorily, for Killian's method of operation was then unknown to me. In both these cases it is clear that the key of the whole matter lies in successfully dealing with the ethmoid. A simple suppuration in the accessible frontal sinus, with its dependent ostium, is much more easily dealt with than suppuration in the

deep, irregular, and thin-walled fronto-ethmoidal galleries, and I think our most brilliant cases have been those in which there has been little or no accompanying suppuration in the ethmoid.

The following conclusions may be drawn from these two cases:—1. In cases of multisinusitis it is well to drain the maxillary cavity some time before the frontal is operated upon. Both cavities may be operated on at the same time; but if only one sinus is operated on at a time it should be the frontal sinus, the lower cavity being drained until it can be opened. 2. In spite of free opening of the frontal sinus, the establishment of a large communication with the nose, and the avoidance of closure of the external wound a slow infection of the bone may take place leading ultimately to infection of the meninges. This may even be started in suppurating cavities on the *opposite* side to the one operated on. 3. The local condition of the wound, as well as the pulse, temperature, and feelings of the patient may fail to indicate the onset of mischief. After one to three weeks this is revealed by headache, pain, tenderness, and puffy swelling on the forehead or around the eyes. 4. When septic osteo-myelitis has started the most vigorous measures may fail to arrest it. It may last one and a half years before terminating fatally. 5. The chief danger appears to lie in the ethmoidal labyrinth, owing to its anatomical irregularities and to the difficulty of treating them satisfactorily. 6. Up to the present the operation which best meets these difficulties is that of Killian. In many cases a preliminary endo-nasal operation on the ethmoid is advantageous.

In conclusion I would point out that these two cases occurred six and three years ago and that in the meantime the study of fronto-ethmoidal suppuration has been greatly advanced. At the present time the subject is very much to the fore and I feel we are approaching a time when the condition can be treated with more certainty and safety. Meanwhile it is not free from anxiety and danger. These two cases may serve as a warning and as a guide to those who have not met with such complicated conditions and they go far to confirm the action of Dr. Luc in adopting Killian's modification of his own operation.⁷

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A CASE OF PAROTITIS DUE TO THE PNEUMOCOCCUS.

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ON May 13th, 1905, a man, aged 55 years, attended the out-patient department of the Middlesex Hospital complaining of swelling of the right side of his face. He stated that the swelling commenced with slight pain during the night of May 11-12th and that since that time he had been troubled with a continuous but not severe aching pain in the region of the swelling and, further, that it hurt him to open his mouth. On looking at the patient's face it became clear that the swelling was due to a general enlargement of the right parotid gland and firm pressure on the gland elicited slight tenderness. When the patient opened his mouth the septic condition of that cavity became evident. The teeth, especially the molars, were much decayed and there was a large amount of tartar, notably on both aspects of the lower incisors. In addition there was a certain amount of pyorrhoea with retraction of the gums, more marked in the case of the lower jaw. The left salivary papilla presented a normal appearance, but the right papilla was reddened, bled readily when touched, and was slightly more prominent than that of the opposite side. The patency of Stenson's duct was assured by noticing several drops of saliva exude from the papilla while the mouth was being examined.

⁷ At the meeting at which the above paper was read three other cases of death were reported after operation on the frontal sinus. In one (Dr. Mermod of Lausanne) the patient succumbed to acute leptomeningitis four days after operation by Killian's method. In the two others (Dr. Castex of Paris) death from meningitis occurred several weeks after operation.

On May 15th the patient returned to the hospital; the swelling on the right side of the face was much less but the left parotid was now for the first time noticed to be slightly enlarged. All pain had ceased. The right salivary papilla was only slightly inflamed and the left one seemed quite normal. On the following day all swelling on the right side had disappeared and the enlargement of the left parotid was only just perceptible. The patient's temperature was taken on this occasion and was found to be 98.6° F. and his urine tested for albumin gave a negative result. Five days after his first coming to the hospital all swelling and pain had disappeared from both sides and he seemed to have regained his usual health.

The treatment had been very simple and consisted of a purge, a mouth wash of mercury perchloride solution (1 in 2000), and a fomentation over the swollen parotid gland. Bacteriological examination was made of the saliva from the right gland on May 13th, when the patient first came to the hospital. The saliva was obtained by rubbing an ordinary "throat swab" over the salivary papilla after the inside of the cheek had been carefully swabbed. A nearly pure culture of a diplococcus was obtained from this in 48 hours' incubation at 37° C. It retained the stain when treated by Gram's method and it possessed a capsule. On May 15th, when the patient next attended, the mouth was swabbed out and then some saliva was collected from the right duct directly by passing a sterilised capillary tube into it and expressing the secretion from the gland. A "swab" was also taken from the left cheek over the duct on that side. The fluid from the right side furnished a pure culture of a diplococcus precisely similar to the organism obtained at first. Tubes inoculated from the left cheek remained sterile. Subcultures made from the second set of tubes showed that the organism would not grow upon or in gelatin at 20° C., or on potato or on inspissated horse serum at 37° C. On agar it appeared in the form of numerous discrete, minute, round, transparent colonies; but it would not grow under anaerobic conditions. It failed to ferment glucose but milk was curdled by it. Hanging drop preparations of broth culture after 24 hours showed numerous diplococci and short chains of 4-12 elements. Two experiments of intraperitoneal injection of mice with broth cultures failed to show pathogenic action. A third bacteriological examination of the patient's saliva a few days later showed the presence of the same organism but the colonies obtained were very much fewer in number.

There appeared to be no reason to doubt that the parotid swelling was inflammatory in nature and we would attribute it to the diplococcus which we obtained in pure culture in the secretion of the gland. This organism we recognised as pneumococcus but of a strain possessing little virulence.

ASPIRATION IN DISEASES OF THE EAR AND THE NOSE.¹

By DR. MED. R. SONDERMANN.

WHENEVER hollow organs of the human body are attacked by diseases accompanied by suppuration the evacuation of the pus is, beyond any doubt, the most important task of the medical art. If such an evacuation can be fully effected we not only notice an improvement but very frequently recovery ensues without the help of any other measures. The more deeply the pus is situated the more difficult it is, of course, to evacuate it, and especially is this the case in suppurative inflammations of the nose and the ear and their accessory cavities where there has until now scarcely been known a method by which thorough fulfilment of this requirement could be effected. Irrigation, which is employed for this purpose after more or less important surgical interference in cases of empyema in the antrum of Highmore and less frequently in other accessory cavities, is impossible in cases of acute suppurative inflammation of the middle ear and of the mastoid process as long as there only exists a small opening in the membrana tympani. In the same way

¹ Sondermann: Suction applied to Diseases of Cavities and to Lupus, a paper read at the meeting of physicians and naturalists, Breslau, 1904; Eine neue Methode zur Diagnose und Therapie der Nasenerkrankungen, Münchener Medizinische Wochenschrift, 1905, i.; Saugtherapie bei Ohrenerkrankungen, Archiv für Ohrenheilkunde, 64, i.