been considerable difficulty with micturition; she had had leucorrhoea for some time, but no history of gonorrhoea. A tumour was present, reaching a hand's breadth above the umbilicus. A thrill was felt, and a diagnosis of ovarian cyst made. At the operation both tubes were found matted together and communicating, and contained together 3 pints 4 oz. of pus.

I think the entire absence of symptoms in my case was very remarkable; for until the patient had retention of urine, one week before seeking advice, she had shown no symptoms which pointed in any way to her possessing either abdominal or pelvic tumours. The absence of all vaginal discharge and attacks of abdominal or pelvic pain seem to me to be against the probability of the pyosalpinx being gonorrhoeal in character. On the other hand, if the origin was tuberculous, so far as I can discover, she has no other focus of disease at the present time.

I should like to express my best thanks to Miss Aldrich-Blake for her kind help and assistance, both before and during the operation, and also to Mrs. Keith for giving the anaesthetic for me.

SQUAMOUS EPITHELIOMA OF THE LARYNX IN A MAN AGED 24: THYROTOMY: EXCISION OF THE LARYNX.

By G. VICTOR MILLER, M.D.,

Ophthalmic and Aural Surgeon to the North Ormesby Hospital and
North Riding Infirmary, Middlesbrough.

THIS patient was under my care for some time at the North Ormesby Hospital, Middlesbrough, and afterwards under the care of Mr. H. Alexis Thomson at the Edinburgh Royal Infirmary, to whom I am greatly indebted for many notes of the case.

J. W. G., aged 24, engine driver, was admitted into North Ormesby Hospital on May 29th, 1900, suffering from difficulty of breathing.

I was asked to examine him next day, and found him breathing with great difficulty; the condition had come on rapidly in the course of a few days. On examining him with the laryngoscope I recognized a large growth occupying the region of the right cord, and almost completely blocking the glottis. I advised tracheotomy, which was done the same evening, while the patient was unconscious from impeded respiration. Six days later the patient was well enough to be examined with the laryngoscope.

I now found the right arytenoid region markedly swollen and oedematous. The oedema was red and fiery looking, and not like the oedema of phthisis laryngea. A view of the interior of the larynx could not be obtained. The chest was carefully examined and found to be healthy, and there was no family history of phthisis. The onset of the trouble dated from August, 1899, when the patient began to have hoarseness without any apparent cause. There was no pain or other symptoms. The hoarseness gradually got worse, and in May, 1900, he began to have shortness of breath and difficulty of breathing in attacks for twenty minutes at a time, also some difficulty in swallowing, so that he took smaller quantities of food, and lost flesh.

A fortnight after admission I performed thyrotomy, and a large growth springing from the right cord was found filling the larynx. The growth was rough on the surface and of firm consistency. It was cleared out with Volkmann's spoon, and a large abscess in the hyoid region evacuated.

For two or three weeks after this the patient could breathe without the tracheotomy tube, which was left out at intervals. The cords could now be viewed fairly well when laryngoscopic examination was made. Portions of the growth were sent to Professor Greenfield, of Edinburgh, for examination, and he reported that it was a malignant papilloma.

Obstruction to breathing rapidly developed again after the interval named, and I advised the patient to have the whole or half of his larynx removed. To this he would not submit, so I again did thyrotomy, cleared out the growth, and cauterized the area from which it sprang. Patient was well for a short time then obstruction rapidly returned again. I advised him to go to Edinburgh and see Mr. Alexis Thomson, and he left North Ormesby Hospital on September 20th, 1900.

Under Care of Mr. Alexis Thomson.

On admission to the Edinburgh Royal Infirmary the patient appeared quite well apart from his throat. The tracheotomy tube gave him no trouble; the region of the larynx was generally full and swollen. There was an enlarged gland on the right side over the body of the hyoid. With the laryngoscope only the epiglottis could be seen, which was very greatly swollen from oedema and drawn down to right side, so obscuring the glottis. Dr. McKenzie Johnstone confirmed this. We could not be sure of epithelioma so it was decided to repeated thyrotomy.

On October 1st thyrotomy and division of the hyoid was performed. A large quantity of pus escaped from the posterior wall of the larynx; its exact source could not be seen, as the whole larynx was filled with a soft, friable growth like granulation tissue, which was not at all like usual epithelioma. The granulation tissue perforated the box of the larynx on the right side between the thyroid and cricoid. A lot of bleeding occurred as the granulation tissue was scraped away, but no blood got into the trachea, because the tube was surrounded with gauze. The wound was stuffed with worsted. The patient was none the worse. Dr. Fleming made sections of the tissue, and found it to be a very cellular squamous epithelioma. The enlarged gland was normal.

On October 4th laryngectomy was performed. A fresh opening was made in the trachea lower down. The entire larynx was removed with the muscles attached to it, with the anterior wall of the pharynx, which was also extensively diseased. The epiglottis was also removed. The trachea was sutured to the wound, and a tube passing into the gullet was secured in the wound. The wound was loosely packed with iodoform worsted, otherwise was freely open. As the tube in the gullet was causing sickness it was removed, and only inserted every four hours for feeding. The wound healed rapidly. The patient was up within a week and gained flesh rapidly. He was able to pass the tube himself. He smoked with great satisfaction.

On November 7th he began to swallow by the mouth solids and fluids, and progressed excellently. His voice was very whispery.

On December 5th the wound was almost healed. A little granulation tissue protruded between the edges of the wound. He spoke quite distinctly with whispered voice. The consonants were given very clearly. He did not put his finger over the mouth of the trachea in speaking, as it did not improve. He was only able to whistle a week ago. He did not speak well if he was nervous. He was now fat and strong, and was returning home.

On January 12th, 1901, the patient wrote to say that there was recurrence in the scar, apparently in the region of the external wound, which was rapidly growing, and that he was losing strength and flesh rapidly.

He died on June 14th, 1901. Before death he suffered a good deal from haemorrhage and foul discharge where the growth had returned in the region of the operation wound.

FOUR CASES OF MASTOID ABSCESS.

By RICHARD LAKE, F.R.C.S.ENG.,
Surgeon, Royal Ear Hospital, London.

IN two of the four following cases of mastoid abscess, all of which appear to be due to an attack of influenza, there was transient middle ear suppuration, and in two there was no evidence of any previous middle-ear inflammation.

CASE I.—An actress, aged 25, sent to me in April, 1900, by Dr. Gould May, had had influenza about one month previously, with suppuration from the right ear for a few days. She also had had at that time some involvement of her chest. She now complained of a dull feeling behind the ear, together with most annoying tinnitus. On examination of the ear itself nothing abnormal was observed in the drum or meatus. Careful palpation behind the ear revealed a tender spot midway between the site of the antrum and the tip of the mastoid process. This was definitely located by firm and deep pressure. Diagnosis of suppuration of a mastoid cell in this situation was made, and the patient was anesthetized and the bone cut away from the infected area. Within a short distance of the cortex a large cell was found filled with pus. It was not found necessary to open the antrum in this case. The healing was rapid, and at the end of five weeks there was little trace of the operation.

CASE II.—A child, aged 1 year and 7 months, was brought to me in February of this year by Dr. C. L. Achard with the following history: On December 24th, 1901, the child had earache on the right side and a

small amount of discharge. Since then the child has had no signs of any ear trouble. On February 15th, 1902, it was noticed that there was puffiness above and behind the right ear. On February 17th, when he was brought to me, the ear was protruding from the side of the head. There was a large, hard, diffuse swelling over the whole of the temporal bone, with no obviously soft spot to be detected. He was admitted into hospital, and on February 18th an incision was made behind the ear over the swelling, in one part of which fluctuation was now detected. There was a little pus under the periosteum, which was enormously thickened, a sinus leading into the antrum, the whole of which, together with the attic, was filled with gelatinous granulation tissue. All granulation tissue was carefully removed and the wound plugged. The child was under treatment some time, but is now quite well.

CASE III.—A boy, aged 6, was brought to me on February 21st, 1902, by Dr. E. A. Snape, with the following history: Three weeks previously he had suffered with an attack of influenza, but had rapidly recovered. During this time he made no complaint of any aural trouble, but for the previous ten days his temperature had been elevated at night, the temperature chart having given rise to a suspicion that he was suffering from tuberculosis, besides which, the boy had lost his appetite and become very anæmic. His parents had always allowed his hair to be long, but it was now cut short for hygienic reasons. When this was done a swelling was noticed lying well behind the mastoid process and extending a little upwards over the skull. This was obviously an abscess, and was incised under an anaesthetic. The abscess cavity was thick-walled and lined with granulation tissue, while a large sinus led directly into the bone, which, when followed up, showed disease of the temporal bone for a considerable area, at least $\frac{1}{2}$ in. of the lateral sinus being laid bare, the outer walls of which were covered with granulation tissue. In this case also no changes were visible in the tympanic membrane. The wound healed rapidly under the usual treatment.

CASE IV.—A boy aged 4 was sent into hospital by Dr. R. Purdie. The left ear projected forwards, and there was obviously pus beneath the deep tissues. The posterior wall of the meatus was reddened and projected somewhat, but the drum itself was perfectly normal. The only history which could be obtained was that of a transient earache a few days previous. The abscess cavity was incised and a sinus was found leading into the bone close behind the external wall of the meatus at about its centre. No communication could be detected with the antrum, so this was not explored. The wound healed remarkably quickly, and the child was discharged from the hospital in less than four weeks.

The pathology of the condition appears to be simple though in the absence of a necropsy it is perhaps to a certain extent speculative.

There obviously was a transient otitis in Cases I and II, which had, however, left no trace in the drum; this we know is a not uncommon occurrence. It is therefore quite possible that in Cases III and IV there might have been some slight infection of the middle ear, though it is not necessary that this should have gone on to perforation of the drum. In fact, unless we admit the probability of such an infection, one must presuppose that the infection in the mastoid was due to micro-organisms carried there in the blood stream, a condition which it is hardly necessary to suppose when the other possibility is so much more probable. So, as we have said, there must in all of these cases have been a transient otitis media; in two of them perforation of the membrane occurred, in two of them it did not. The inflammation of the middle ear then extended to the antrum, and we are justified in supposing that by the time the antrum was reached the inflammation in the middle ear itself was subsiding, whilst from the antrum again a small amount of infected secretion percolated into one or other of the adjacent aërial cells, and there, while the inflammation of the attic was subsiding, suppuration was set up, the lining membrane of the cell becoming swollen; communication with the antrum was thereby shut off, and an isolated abscess resulted.

In those cases where the patients were young and the surface resistance low, perforation of the cortex resulted, and a subperiosteal abscess was formed in addition.

In Case III, in which the mastoid was formed to some extent of air cells, these had all become infected, and had the mastoid process been more fully developed it would in all probability have been made up entirely of air cells, and suppurative otitis media would have produced a Bezold's mastoiditis.

From these cases one is able to say that it is not necessary to do more than open the abscess cavity itself where there is no discharge of pus from the middle ear, but that we are able to treat such cases as isolated abscesses of the temporal bone.

THE X-RAY TREATMENT IN LEPROSY.—According to *American Medicine* the Territorial Board of Health of Hawaii is about to begin a series of experiments with the object of determining the value of x rays in the treatment of leprosy. Application has been made for a medical officer from the United States Marine Hospital Service, and for an expert from a medical school.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

SALOL IN THE TREATMENT OF SMALL-POX.

SUBSEQUENT to Dr. Begg's advocacy of salol in the treatment of small-pox—based on its effects as observed by him in the East—a short account of a few cases was published by one of us (J. B.) in conjunction with Dr. Napier Jones. These cases ran an exceptionally favourable course.

In the present epidemic we have, with the co-operation of Drs. C. Fraser and C. M. Heanley, treated a series of 1,000 cases at the Dagenham Hospital. The common dose for adult patients, other than those suffering from a mild type of the disease, has been 15 gr., given every two hours, and the majority have borne this dose well. The salol was given in the form of crushed tablets. There was evidence of absorption, but when the work was drawing to a close salol was found abundantly in the motions of some patients. This fact is suggestive in view of the general tolerance of such large doses, and the unequal results obtained in individual cases of the series.

Taking the results as a whole they are very disappointing in comparison with the first small group of cases, and do not justify detailed publication. Nevertheless, we believe that the treatment has a limited value. In many cases there appears to be lessened irritation and mitigation of the secondary fever. Prescribers of salol who anticipate more definite effects are likely soon to abandon the treatment, and we write with the hope that a recognition of its limited utility will ensure for it a continued trial by others.

Plaistow Hospital, London, E.

JOHN BIERNACKI.
J. C. MUIR.

REMOVAL OF EPIGLOTTIS AS A PALLIATIVE MEASURE, IN A CASE OF INOPERABLE MALIGNANT DISEASE OF LARYNX.

A CASE of extensive malignant disease of the larynx recently came under my notice in which the chief trouble complained of was the distressing dysphagia due to considerable involvement of the epiglottis; and it occurred to me that removal of the organ might be a useful palliative measure by relieving the distress and difficulty of swallowing, and so enable the patient to take ordinary food with comfort. This idea was suggested to my mind by Lake's successful experiences of epiglottis removal in relieving similar symptoms in cases of laryngeal phthisis. The case was one of rapid growth in a man, aged 48. On repeated questioning I could not elicit a history of more than four months' duration from the onset of symptoms of trouble in the throat. The growth was extensive, involving the epiglottis, left side of the larynx, and the tissues external to it, there being practically a continuous infiltration between the thyroid cartilage and a large hard gland at the posterior border of the sterno-mastoid. Respiration was not interfered with. The difficulty and pain on attempts at swallowing solids were such that the patient refrained from taking solid food altogether, and for two months previous to my seeing him had had nothing but liquid diet. He stated that he had lost weight to the extent of 3 st. An ordinary oesophageal bougie passed easily. On May 13th, having painted the parts with cocaine solution, I removed the greater part of the epiglottis with a galvanocautery snare; a portion, about one-fifth of the whole, was left, owing to inability to include the whole structure in the loop. This I contemplated removing at a second sitting, but, finding that relief was afforded to such an extent as to enable the patient to swallow solid food with comfort, I abstained from further interference. The operation of alternately tightening and heating the wire was almost painless, though the patient suffered some pain, owing to the barrel holding the wire, not being insulated, becoming heated, and slightly burning the base of the tongue. There was no hæmorrhage. The patient complained of his throat feeling sore for a day or two, but on May 18th was able to eat an ordinary meal (roast beef and vegetables, etc.) without difficulty.