is eventually present it is due to the admixture of ordinary micrococci with the special actinomycetes.

Of the 75 cases recorded, 29 were inoculated in the neighbourhood of the lower jaw, floor of the mouth and throat, 9 in the upper jaw and cheek, 2 in the oesophagus, 1 in the tongue, 11 in the intestine, 14 in the air-passages and lung, 7 unknown; 55 were males, 21 females.

Actinomycosis of the upper jaw appears to offer a worse prognosis than that of the lower jaw. In the majority of cases the individuals affected belonged to callings which did not bring them into direct contact with diseased cattle.

The cases observed in the *Tübingen clinique* were 10 in number; to these is added 1 from Königsberg. Of these 11 the disease started in the lower jaw in 6; in the upper jaw in 1; in the cheek over the upper jaw in 2; in the lungs in 2. In 4 of the 6 cases in which the disease began in the lower jaw the onset was accompanied by severe toothache; the same was the case with 2 out of 3 of the upper-jaw cases. It started just as frequently around sound as carious teeth.

The first visible evidence of actinomycosis is always a hard, smooth, or elastic (often painless) tumour, apparently seated under the periosteum. This swelling spreads to the soft parts around, sooner or later, either by direct extension or through lymphatic channels, and forms nodular masses with white shreddy or granular foci. On incision into the swelling, serum containing little white granules escaped, but no pus in simple cases. In one simple case with sinuses the temperature was normal. In another, where sinuses had formed, there was high fever.

All the jaw cases recovered after operation except one (upper jaw), the two lung cases died.

The operative measures embraced incision and thorough scraping with sharp spoons.

When starting in the jaws the inoculation always appeared to take place around a molar tooth.

The characteristic actinomyces were demonstrated microscopically in every one of Moosbrugger's cases.

ACUTE OSTEITIS OF THE NECK AND HEAD OF FEMUR.

By C. MACNAMARA, F.R.C.S., F.C.U.,

Surgeon to Westminster Hospital.

ACUTE inflammation of the neck and head of the femur, occurring in young people, is not unfrequently met with, the severity of the disease varying under conditions which are but little understood. Osteitis in this locality, however, is always alarming, as it may lead to suppurative inflammation of the bone and synovial membrane, and so to dangerous septicæmia. In the majority of these cases the symptoms are preceded by an injury to the joint in a child or young person; the soft and growing tissues at the junction of the neck with the epiphyseal disc of cartilage of the head of the bone is bruised, and there seems reason to believe that in the injured tissues a specific micro-organism finds a congenial soil in which to grow; rapid suppuration follows, with its attendant evils. In these cases, therefore, we have not only to deal with the suppurative synovitis of the hip-joint, but also with an acutely inflamed portion of bone, and it is this complication which renders these cases so difficult to treat with success. The joint can be drained without trouble, but I have failed as yet, in disease of this kind, efficiently to drain the head and neck of the femur. The following case demonstrates the advantages attending excision of the affected bone in an early stage of the affection.

E. E., aged 14. This girl was sent into the Westminster Hospital by Dr. Ferris, of Uxbridge, on the 12th of March, 1887. Her family history was good; her parents are alive and healthy, and the patient had always enjoyed excellent health until the commencement of her present illness. A fortnight before E. E. came into the hospital she injured her right hip in jumping off a dust heap, but the pain passed away in the course of a short time, and she ran about as usual during the remainder of the day; at night, however, she awoke with violent pain in the hip-joint. The following day the pain was worse, the patient was unable to leave her bed, and was seen soon afterwards by Drs. Ferris and Davidson; she had high fever, and in the course of a few days there was great swelling of the soft parts about the hip-joint. The medical men in attendance on the patient recognised the necessity for the speedy and effectual drainage of the joint; they therefore arranged for her being removed to the hospital.

E. E. was admitted under my care on March 12th. Her temperature was 105°, the heart's action extremely feeble. She was somewhat delirious and in intense agony. The right hip was greatly swollen,

and deep fluctuation could be felt in the part. The patient was at once removed to the operating theatre, and, an incision having been made over the greater trochanter of the femur, the joint was opened. About an ounce of pus escaped outwards. On introducing the finger into the joint, the neck of the bone was found denuded. The external incisions were therefore enlarged, and the femur was divided below the greater trochanter, and the head and neck removed.

The relief of pain and other symptoms was marked from the time of the operation, and the patient has since made an uninterrupted recovery, leaving the hospital for the seaside on May 14th; but the wound had completely healed three weeks previously, and she has considerable movement in the hip; in fact there is every reason to believe that, with a properly made boot, the patient will have perfect use of the limb.

The fresh pus taken from this patient's joint was immediately examined by Dr. Hebb, and found to be crowded with micro-organisms (*staphylococcus albus*?). On making a section through the head and neck of the bone, the soft tissues within its cancellous tissue, especially those in contact with the epiphyseal cartilage, were in a state of suppuration. The fresh pus within the bone was swarming with micro-organisms. The neck of the femur was entirely denuded of soft tissues.

In several instances of this kind I have endeavoured to save the head and neck of the bone by drilling into them and draining the cancellous structure through the greater trochanter, but I have not as yet succeeded in thus effecting a cure in a severe case of acute osteitis. Sooner or later the head and neck of the femur have had to be removed, generally after the patient has gone through great suffering and danger to life. It was this consideration which induced me to excise the parts at once in this case, and the result has certainly been most satisfactory. It is remarkable that two days after E. E. was admitted into the hospital another child suffering from acute osteitis of the diaphysis of the left fibula was placed under my care. In this instance the whole of the diseased bone was immediately removed, and the patient made a rapid and satisfactory recovery. I found the pus both outside and within the bone crowded with micro-organisms. The tibia, fibula, and most of the long bones can be successfully drained in the early stage of acute osteitis; but I think, when the head and neck of the femur are affected in this way, unless the symptoms yield speedily to treatment, it is advisable to excise the diseased bone without delay.

ON SOME OF THE RARER FORMS OF RECTAL FISTULÆ.

By F. SWINFORD EDWARDS, F.R.C.S.,

Surgeon to the West London and St. Peter's Hospitals; Assistant Surgeon to St. Mark's Hospital.

BEFORE entering upon the subject with which this paper more especially deals, I would like to say a few words on the diagnosis and treatment of fistula in ano generally. At St. Mark's Hospital I am constantly reminded of the fact that medical men and, indeed, hospital surgeons, do not take sufficient pains when operating upon fistula to lay open all sinuses. The one most often left is that which extends from the internal opening upwards under the mucous membrane, though I have frequently met with cases in which other tracks have been overlooked. In speaking thus I am not referring to those cases of extensive fistulæ which one now and then meets with in hospital practice where the buttocks are riddled with sinuses, resembling, as one author puts it, a rabbit warren. Here we must use our judgment as to how much cutting the patient can stand; for, as a rule, such cases are of long duration, and the patient is often much weakened from continuous discharge. It is better, under these circumstances, to lay open the main track with one complete division of the sphincter, and trust to injection of the branch sinuses with some stimulating fluid to effect a cure.

Another common error in operating is not keeping to the fistulous track, but, either owing to impatience or insufficient delicacy in manipulation, the point of the director is thrust through the sinus-wall, and is then free to roam whither the operator wills in the cellular tissue of the part. In this way I have seen a portion of the main track of the fistula left, whilst considerable incisions through skin and subcutaneous tissue have been made which were wholly unnecessary.

This accident can always be avoided by taking plenty of time over the operation, and by careful sponging of the track already laid open, which ought always to show the granulation-tissue lining it.

With regard to the sinus which extends above the internal aperture, here authorities differ as to the proper course to pursue. Some insist upon its being laid open; others, equally well qualified to give an opinion, hold the opposite view. To my mind it all depends upon the position of the sinus with regard to the muscular coat. (See Figs. 1 and 2.) If it is submucous, there can be no reason why it should not

Fig. 1.

Fig. 2.

be freely laid open, and this, I think, is the best method of dealing with it; but if it extends outside the muscular layer it is better left alone, especially if its division involves also that of the internal sphincter, for where both sphincters have been divided incontinence may follow, and the patient be placed in a most uncomfortable and distressing position. Where this or any other sinus has been left I find the injection of the tincture of iodine every other day or twice a week a capital plan. Of course, care must be taken that it is the sinus and not only the bowel which is receiving the injection. This vulcanite syringe, with a long, thin, bent, nozzle, is what I use. The left forefinger, passed into the bowel, can, with a little practice, easily guide it into the sinus; by this means the use of the speculum (which patients look upon with no favourable eye) is obviated. In this way I have cured several cases of these sinuses high up in the bowel.

The most frequent form of fistula which is overlooked is the blind internal, and this happens every day both in hospital and private practice. The patient's anus is inspected, and nothing abnormal presents itself to view. A finger is then possibly—I say this advisedly—introduced, and the internal opening remaining undetected the patient is assured he has no fistula; whereas, had pressure been made carefully all round the anus, an induration, perhaps deep-seated, but always present in these cases, would have been felt.

My colleague, Mr. Goodsall, points out that there often seems to be a definite relation between the external and internal orifice of a fistula; for fistulae, having their external aperture situated behind a plane passing transversely through the centre of the anus usually have their internal orifice in the middle line posteriorly, and therefore have a somewhat curved course; whereas those which are anterior to this supposed plane generally have their internal opening immediately opposite the external, and on the same side, thus forming the simplest form of complete fistula. You will frequently find that these simple fistulae run over, and not under, the external sphincter, so that when they are laid open no division of the sphincter takes place. Nor does it in these cases seem necessary to incise the muscle, though to make assurance doubly sure, what is known as Salmon's "back cut," namely, incision of the floor to a limited extent, which would involve some of the sphincter's superficial fibres, might be employed, just as one does in operating for fissure.

The recognition of this relationship between the external and internal orifices of a fistula helps one greatly to find an internal orifice when it is small and not well marked, its site can then be confirmed by the passage of a probe-pointed director through it.

Speaking of directors I cannot lay too great stress for convenience and success in operating on being provided with several probe-pointed steel directors of various shapes. Silver ones are not of much good, on account of their pliability, and many of the steel ones sold are clumsy, with too thick a point. This may be considered a small matter, but I can assure you I have seen it make all the difference between failure and success.

I will not take up time by going into the question of dressings, excepting to say that the surgeons attached to St. Mark's rely entirely on cotton wool, generally dry, though sometimes soaked in a stimulating lotion, if the wound needs it.

I will now turn to the consideration of the so-called horse-shoe fistula. This is a term given to a fistula having one or more external orifices (marked B) on either side of the anus, and an internal one (marked A) in the middle line behind (see Fig. 3). The outer

openings may be equidistant from the anus, and situated quite anterior to it, or they may be of different distances, and placed wide from the anal orifice far out on the buttock.

Fig. 3.

The abscess which precedes and gives rise to this variety of fistula is situated at the lower and back part of the bowel, and instead of breaking through the skin immediately over it (being stopped I presume by the fibrous raphé extending from the tip of the coccyx to the anus, also by the insertion of the levator ani and superjacent sphincter), it courses forwards on either side, escapes from under the sphincter, and breaks through the subcutaneous tissue and skin.

Now a casual observer might think he had two separate fistulae to deal with and operate accordingly, or even were he to recognise that he was dealing with a horse-shoe fistula, if he followed the usual plan he would slit up first one sinus and then the other; by this means dividing the sphincter in two places and, mark, obliquely through its fibres, proceedings generally fraught with dire consequences to the patient (Fig. 4).

Fig. 4.

Fig. 5.

If this fistula can be laid open in such a way as to entail only one division of the sphincter, and that at right angles to its fibres, there will be a minimum amount of risk of subsequent incontinence. It can be done in this way (Fig. 5). First pass a probe-pointed director through the internal aperture and on to its point incise the skin in the middle line behind; now push the director through and slit up. Secondly, slit up the lateral sinuses on directors passed in at the external openings and brought out at the dorsal incision. These lateral sinuses may take either a straight, curved or even rectangular direction. Here are diagrams of fistulae where they may take these different courses, and incisions recommended for the same (see Fig. 6).

The first incision will have divided the sphincter, but the other two will only have divided tissue external to it. Should the external apertures be so placed that were a straight line drawn from one to the other it would pass behind the anus, the steps of the operation could be reversed, and a director be passed in at one external orifice and out at the other, and the tissues divided. Now pass the director from the wound in the middle line into the bowel, through the internal opening, and slit up the tissues with the included sphincter. In this way the incisions will be found to be more or less T shaped, the stem of which will correspond to the dorsal cut. I am not aware that this method, of some importance it seems to me, is to be found described in any of the text-books or monographs on the subject; for neither Allingham, Cripps, Hy. Smith, nor Van Buren mentions it. Indeed these authors, with the exception of Van Buren, are anything but clear in their description of this form of fistula; and concerning the operative treatment, one says nothing about it, another recommends laying open both sinuses into the gut, whilst the other two advocate incision of one sinus only, and drainage of the opposite one.

I think, then, that my readers will agree with me in saying (whether they approve of it or not) that the operation I have brought before them is a new one; at all events, as far as the literature of the subject is concerned. My friend and colleague, Mr. Goodsall, is the originator of it, and I should like to take this opportunity of thanking him not only for instruction in this matter, but also for much information on many points of rectal surgery.

I might mention that I have had several cases where this method has been employed with great success, but time does not permit of my going into detail concerning them now.

Fig. 6.

The following case of fistula completely encircling the bowel is unique in my experience. Mr. D. consulted me some months ago for pain and discharge in the rectum. On examination I found an abscess on the left side externally and another only to be felt by the finger in the bowel situated dorsally and communicating with the gut. As the abscess on the left side was increasing in size and painful, I opened it with as little delay as possible. About ten days afterwards, when the parts had become quiet, the patient was placed under ether, and I was able to make a thorough examination of the bowel, with this result: Complete fistula on the left side towards the perineum; a dorsal abscess-cavity communicating with the bowel in two places; from these two internal openings a sinus ran round on each side of the bowel under the mucous membrane parallel to and on a level with the sphincter, terminating in the track of the complete fistula first mentioned. This, then, was a case of fistula running completely round the bowel, having three internal and one external apertures.

The operation performed was as follows: First, I laid open the complete fistula on the left side; this did not necessitate entire division of sphincter; secondly, a free incision was made dorsally, laying open the abscess-cavity, including both internal orifices. Finding now that the probe passed round the bowel on either side from one incision to the other, I hesitated to lay them both open, but contented myself with simply dividing the lower one, that is, the one on the left side. This incision was at the level of the muco-cutaneous junction. Had I incised the corresponding sinus on the other side, the mucous membrane of the gut would have been completely severed from the anal mucous membrane. The operation was completed by passing in a vulcanite rectal tube to arrest pretty free hæmorrhage, and around this dry wool was packed into the several wounds. The result has been all that one could wish, the sinus I left never having given any trouble, so much so that I am inclined to think I might with advantage have omitted interfering with the corresponding sinus on the opposite side.

The following is an example of a rare form of rectal abscess and resulting fistula:—

You are aware that rectal abscesses may be situated in four places, namely (1) subcutaneous, or marginal; (2) submucous; (3) ischio-rectal; (4) in the pelvi-rectal space, so called by Richet, who pointed it out thirty years ago (see Fig. 7). It is situated between the bowel and levator ani, which muscle, with its accompanying fasciæ, separates it from the ischio-rectal fossa. An abscess when it forms in this region, whether in male or female, usually bursts into the rectum, though the peritoneum is not out of harm's way. Having discharged itself into the bowel, it may continue suppurating for a long time, and so wear out the patient's strength, or it may travel downwards

and open externally, so forming a complete fistula. The symptoms are obscure, but the pain and discomfort about the rectum should lead to an examination. The finger being introduced will feel the rectal wall

Fi. 7

bulging inwards with feeling of fluctuation. The proper course is to incise the abscess at once through the rectum, and pass in a large sized drainage tube, bringing it out at the anus, which, with advantage, should have been forcibly dilated. If this cavity be carefully washed out daily, no further operation may be necessary, but if the rectal opening should be allowed to close up either partially or entirely the abscess may burrow and so require opening outside, with a subsequent operation for fistula.

Such was the course of events in the following case:—Mr. M., aged 25, was sent to me by a surgeon in the country, under whose care he had been for two months for urethritis. He now complained of weight and uneasiness about the bowel, and it was a question as to whether he had not some prostatic affection. On passing my finger into the bowel, I at once came upon a semi-elastic swelling about two inches up on the right side, which clearly contained fluid. Accordingly, two days afterwards, with the aid of his medical man, I freely incised the swelling from the bowel, and gave exit to quite a teacupful of pus. A roll of cotton-wool was passed through the opening in order to keep it patent, and removed the following day by his doctor, who was to syringe the cavity out daily with some antiseptic solution. After a few weeks he appeared to be quite well, and remained so for five or six months, when I again saw him on account of a tender and indurated spot to the right of the anus. This was evidently the original abscess about to break externally. As it appeared that an extensive operation would be required I took him into St. Mark's, and on June 22nd of last year, the patient being under ether, I incised the indurated spot, evacuating some pus. A probe-pointed director was then passed through this opening, and through an internal aperture high up in the bowel. With some force I was able to turn the point out at the anus, and so divide the included tissues. On examining again, another internal aperture above the first was found, and this I laid open by means of Salmon's scissors. The overlapping edges of skin and mucous membrane were then trimmed off, and the cavity and wounds carefully dressed with wool, which, after the first four days, was carried out daily with the addition of an iodine injection into the abscess cavity. The case did uninterruptedly well, and left the hospital in six weeks, convalescent. The cavity and deep incision through the sphincter were steadily granulating up, and in another six weeks completely healed over. Although both sphincters were divided, the patient has regained complete control even over flatus.

FIRE IN A HOSPITAL.—A fire which broke out recently on the second-floor of the Children's Hospital, Goldsmith's Row, Hackney, was fortunately extinguished before the flames had had very much time to spread.

PRESENTATION.—Dr. J. G. Symes, who is retiring from the post of Medical Superintendent of the Dorset County Asylum after nearly thirty-three years' service, has recently received a handsome testimonial from the officers and staff.

LARYNGOLOGY IN BERLIN.—A new clinical institute is to be opened in Berlin next week. It is to be devoted to the study of diseases of the nose and throat. Professor B. Frænkel will lecture on laryngoscopy and rhinoscopy, and on the local medication of the upper air-passages.