repeating the manipulation, the cartilage could apparently be felt, slipping in and out of position.

For a time the patient was much relieved. At first there was much fluid in the joint, but this disappeared under massage and passive movement. She was able to walk, although there was a little tenderness on pressure over the internal condyle. The only movement that caused real pain was full flexion, which always gave rise to aching at the back of the joint. Full extension (which would tighten up the posterior ligament of the joint, and press upon the cartilage if it were still displaced) could be quite painlessly performed. The pain persisted, and it was found that the knee was still an inch larger in diameter than the opposite one, even though no fluid could be demonstrated. Tuberculosis or osteo-arthritis was then suspected, and a skiagram was taken. It showed a clear, well-defined cavity in the interior of the internal condyle of the femur, which was somewhat expanded; the wall of the cavity was thinned out and quite even in outline. There was no blurring of the definition of the parts around, nor any of the "fuzziness" that is so characteristic of tuberculosis. On careful examination the plate also showed a fracture of the internal condyle, involving the knee-joint, but this was missed by everybody at the time. Had it been observed, it might have led to a more detailed diagnosis being made before operation.

It was decided that the case was one of endosteal sarcoma following the injury of December, 1913. Mr. R. P. Rowlands, who saw the patient in consultation, concurred in this suggestion, and advised that the limb should be amputated, inasmuch as it was not possible to perform any conservative operation that would not entail much subsequent deformity and disability.

On May 2nd, the patient was anaesthetized with Barker's stovaine-glucose solution by spinal injection, and rendered just unconscious with a minimal amount of ether, given by the drop method. She had also had morphine, gr. $\frac{1}{2}$, and atropine sulph., gr. $\frac{1}{100}$, an hour previously. Axillary saline infusion was also administered, and Dr. George, assisted by Dr. E. C. Andrews, amputated the limb through the thigh by means of unequal anterior and posterior flaps. At the conclusion of the operation the patient's pulse was strong and regular (70), the colour was good, and there were no signs of shock. Within half an hour of leaving the theatre the patient was talking comfortably to her nurse. The after-history was uneventful, and up to the present time no recurrence has taken place.

On examination of the part removed, it was found that the internal condyle of the femur was occupied by a cyst containing fluid blood, not under pressure; the cyst-wall was composed of dark, soft, maroon-coloured membrane, which could easily be stripped off and showed, on histological examination, the characteristic structure of a spindle-celled sarcoma, intermixed with a number of giant cells. The bony wall was so thin that it could easily be indented with the finger in several places, and there was a supracondylar fracture which had involved the knee-joint. A thin membrane stretched across the line of fracture, showing that union was at any rate tending to occur. The structures outside the internal condyle, in its immediate vicinity, were involved in an extension of the growth, as was demonstrated by the microscope as well as by the naked-eye appearances, but there was no extension towards the popliteal space, or up the thigh.

Looking back upon the case, one realizes that more importance should have been attached to the persistence of localized tenderness upon pressure over the internal condyle—a very valuable sign of a fracture in many cases. Such tenderness, moreover, is often seen in cases of endosteal sarcoma. Local tenderness betokens a local lesion. If the case had been one of tuberculosis, it is extremely improbable that it would have remained localized to one part of the joint for any length of time; it would have involved the whole cavity, and flexion, pain on movement, or pyrexia would have ensued. Possibly, also, on very detailed examination under the anaesthetic, the isolated movement of the internal femoral condyle might have been observed, if the idea of fracture had occurred. A skiagram taken then would have led to an earlier diagnosis of the existence of the growth. For it seems probable that it was the initial injury, the striking of the knee against the stone step, that gave rise to the sarcoma, and that the second trivial accident caused a pathological fracture. On reflection, it seems hardly possible that a mere step from a stationary bus to the ground could have caused such severe symptoms as were present in this case, unless some major injury had occurred, and perhaps the diagnosis of pathological fracture should at once have been discussed. At any rate the case is very instructive, though it is easy to be wise after the event.

As regards the technique of the operation, it is only necessary to comment upon the importance of the measures that were employed to abolish shock. Anxiety beforehand, and pain afterwards, were alike avoided by the use of morphine, and unconsciousness was induced and maintained throughout a fairly lengthy operation by the use of only two ounces of ether, even though given by the

open method. The conjunctival reflex was brisk throughout, and the anaesthesia was so light that the patient was constantly moving her head and fingers; nevertheless, the relaxation of the lower limbs was absolutely perfect, she was receiving no painful stimuli whatsoever, as the nerve-blocking by the stovaine interrupted them, and therefore her pulse never exceeded 70, and shock was entirely absent. The combination of spinal analgesia with the lightest possible general narcosis is the ideal anaesthesia for these high amputations.

TREATMENT OF DRY PLEURISY BY TEMPORARY PARTIAL ARTIFICIAL PNEUMOTHORAX.

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THE following case well illustrates the benefit which may be derived from temporary separation of the two inflamed surfaces of pleura in a case of long-standing dry pleurisy by a layer of nitrogen, which in this way acts as a pneumatic splint, by means of which the inflamed parietal and visceral pleura may be put at complete rest, and conditions are produced under which repair and recuperation may be brought about—a condition which is not allowed them by Nature whilst they are in actual apposition. The length of time for which the so-called splint may be applied may be regulated by the requirements of the case.

My object in publishing this case is not by any means to advocate this method of treatment for every case of dry pleurisy, it is intended merely as a suggestion that the method might be well worth trying in similar cases of obstinate and long-standing dry pleurisy, where more recognized and better known means of treatment have failed.

A lady, aged 50, was sent to this sanatorium on May 7th, 1914. The recent medical history bearing on her present illness was that the right kidney had been removed for tuberculous disease in 1911. She had a sharp attack of dry pleurisy in September, 1913, the pain from which had continued ever since.

In January, 1914, four small haemoptyses occurred, for which the patient was confined to bed for a month. There was a further small haemoptysis in the beginning of March, and since then the patient had been living quietly at a South Coast watering-place.

Examination of the chest on admission revealed a healed tuberculous lesion at the left apex. There were signs of much dry pleurisy over the middle and lower lobes on the right side, a coarse leathery rub being audible from the fourth rib in front and the sixth dorsal vertebra behind, downwards to the base of the lung. Acute pain was complained of over this site. The patient was kept at rest in bed, and the usual palliative methods of treatment adopted, without bringing about any amelioration of the symptoms. Throughout this period the temperature and pulse-rate were normal.

After a lapse of ten weeks—no improvement being apparent—it was thought that gentle exercise might prove beneficial, and walking exercise, in gradually increasing distances, was commenced until a distance of two miles was reached. Still the pain proved most persistent, and as it was materially interfering with the patient's rest at night, she expressed her anxiety that something "radical" might be done to improve matters for her. The possibility of producing a partial temporary artificial pneumothorax was suggested, and the pros and cons were put impartially before her; after some consideration and consultation with her relatives, she requested that this treatment might be attempted.

On October 11th, 1914, under the influence of 0.5 c.cm. of omnopon-scopolamine, given half an hour previously, and a local injection of novocain, a Saugmann's needle was introduced into the sixth right intercostal space in the posterior axillary line. No difficulty was experienced in finding the interval between the parietal and visceral layers of the pleura, and 200 c.cm. of nitrogen were introduced. On the following day the patient still complained of pain, and on October 13th a further injection of 300 c.cm. of nitrogen was given at the same site. On the day following, auscultation showed the breath sounds over the right base

to be distant and no pleural rub was audible. Pain was distinctly relieved, though still present at the end of a very deep inspiration. On October 18th a further quantity of 300 c.cm. of nitrogen was introduced, which had the effect of entirely abolishing the pain, even at the end of deep inspiration. On November 1st a final injection of 400 c.cm. of nitrogen was given, after which the manometric readings of the intrapleural pressures were 0 and -3 cm. of water.

At no time during the periods of injection of nitrogen were there any signs of intrapleural fluid, nor was there any disturbance of the temperature or pulse-rate.

The after-history of the case was uneventful; there was no return of pain, and the patient was able to leave on February 8th, more than three months after the last injection, entirely free from symptoms. The physical signs at this time were those of slightly thickened pleura. The breath sounds were normal. The nitrogen had evidently become absorbed and the pleural surfaces were presumably in apposition again.

NOTES ON TWO CASES OF ANGIO-NEUROTIC OEDEMA.

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On the morning of August 21st, 1914, I was called to see X., a clergyman, aged 49.

He told me that his throat had given him trouble during the night. The right tonsil and adjacent parts were somewhat swollen and congested. I prescribed a gargle of tannic acid and alum, advising him to rest his voice and to remain indoors. He then drew my attention to his hands and fingers, which, he said, were burning and pricking, and felt stiff and swollen. Some of the fingers certainly appeared a little swollen and reddened, but I suspected that the patient had probably scratched them in the endeavour to allay the itching, and I ordered an ointment of hazeline. Next morning I found the patient in his bedroom not feeling well enough to get up. The throat appearances were quite normal, but he had passed a wretched night owing to intense irritation of the hands and feet. All the fingers and both hands as far as the wrists, and all the toes and both feet as far as the ankles, were considerably swollen, reddened, and oedematous, especially over the dorsal surfaces. The patient could not refrain from rubbing and scratching them. I now recognized the nature of the affection. For local application I ordered a calamine and zinc lotion. Internally I gave an aperient and a mixture of sodium bicarbonate and rhubarb. By the next morning, the swelling and irritation of the hands and feet had very considerably subsided, but the penis and scrotum were enormously swollen and oedematous, the skin and subcutaneous tissue being so pale and translucent as to look like a bladder. The patient said that the swelling had been even greater. I ordered the same lotion and continued the medicine. On the morning of August 24th the hands, feet, penis, and scrotum appeared practically normal, though there still remained a feeling of tightness in the fingers and toes on movement. But the lower lip had now become enormously swollen; it was very tense and hard, and the patient said that it felt as if it were going to burst. I now ordered calcium chloride, gr. xv, t.d.s., and aspirin, gr. v, every four hours. By the evening the lip had returned almost to its normal condition. On August 25th and 26th the patient complained of some slight sensation of irritation about the feet and knees. I detected, however, a distinct puffy swelling on the right side of the neck, about 3 in. long and 2 in. wide, commencing at the lobule of the ear and extending vertically downwards. This swelling was not the seat of any pain or irritation, so that the patient had been unaware of its existence. On the morning of August 27th the upper lip commenced to swell and in a few hours reached a condition exactly similar to that of the lower lip on August 24th, yet by the evening the lip had almost regained its normal appearance. The swelling noticed in the neck the previous day had entirely disappeared. I ordered a diet of milk, farinaceous foods, and white meats, and advised him to avoid tea, coffee, and eggs. At 6.30 a.m. on August 28th I received an urgent message and asked Dr. Harrison, the principal medical officer, and Dr. Cassel, the assistant colonial surgeon, to accompany me. At 8.30 a.m. we found the patient with a general enlargement of the tongue, which could with difficulty be protruded. It had begun about 2 a.m., and there was for a time the greatest difficulty in swallowing, while speech was impossible. Nevertheless, the swelling had subsided considerably, although we noticed that speech was indistinct and heavy. Menthol, gr. ʒ, in pill t.d.s., and sodium sulphate and sodium sulphocarbonate in mixture were prescribed. During the whole illness the temperature varied from 99° F. to 100° F., and the pulse from 90 to 100. The urine was examined several times and always found to be normal. Dr. Cassel very kindly examined a blood slide and found nothing abnormal. There was never any

abdominal pain or vomiting, but the patient suffered from attacks of nausea at times, and remained listless and disinclined for physical exertion. The heart and other organs appeared quite healthy. As the sodium sulphate mixture was causing much relaxation of the bowels, I prescribed, after a couple of days, a colchicum mixture and a tonic of iron and quinine with a saline aperient each morning. On September 4th his condition was unaltered. He felt disinclined for exertion, though he slept well and ate fairly well. Temperature 100° F. I advised a return to his usual diet. At about 3 a.m. on September 10th the patient awoke and found his tongue swollen; I saw him at 8.30 a.m., and found the left half of the tongue considerably enlarged, whilst the right half looked almost normal. The swelling, he said, had already subsided very considerably, and by the evening it was gone. On September 14th the patient left Belize for a sea voyage. On October 3rd, 1914, Dr. J. Edward Austin of Porto Cortez, Republic of Honduras, wrote saying that, "On September 18th I was called to attend X. He presented one of the most typical cases of Quincke's disease—angio-neurotic oedema—that has ever come under my observation, the gastric crises being especially severe. I have always found that calcium lactate controlled the manifestations better than any other remedy." This was the first and sole occasion that the typical abdominal pains were experienced. In a later communication Dr. Austin, who had practised for many years in Porto Cortez, stated, "I have seen in practice probably nine or ten cases, most of which were adult men." The patient returned to Belize on October 25th, and I saw him the next day. Dr. Austin administered calcium lactate with some benefit, although the swellings still appeared on the tongue at intervals of a few days. On the day he landed in Belize he had a similar attack affecting the tongue only. When he reached Bluefields, Nicaragua, as there was no calcium lactate in the town, a doctor put up a mixture containing calcium glycylo-phosphate, and as the patient thought that this preparation had more effect in controlling the symptoms I advised him to keep on with it. Two weeks before the present illness, when in Corozal, a small coast town in the north of the colony, he awoke at 4 a.m. to find his tongue so swollen as to make it impossible for him to speak or to swallow. The previous evening he had gone to bed feeling perfectly well. He got some lotion from a chemist and by noon the swelling had subsided. About two months previous to the attack at Corozal the tongue was affected in precisely a similar way. The patient was born in British Guiana. From the age of 18 to 23 he remained in England, and after that, until the present illness, he had lived in the West Indies, but had made periodical visits to England, the time so spent amounting in all to about seven years. There is no history of any illness at all resembling this complaint in any member of his family, either on the maternal or paternal side; neither had the patient himself ever had an attack previous to his arrival in this colony some two years ago. He tells me that he has always been of a nervous and sensitive nature, but in general appearance is strong and healthy. His daughter, aged 23 years, has suffered for many years from very severe asthmatic attacks. The only illness he himself remembers to have had was an attack of dysentery in 1883, which became chronic and continued for about one year. Four years ago, when boarding a steamer in a storm, he received a severe blow on his back, followed by lameness and shrinking of the muscles of the right leg. This condition lasted for about one year, during which period he was not confined to bed. The leg is now strong and well.

The special features in the case were: (1) The rapid onset of the swellings, the speed with which they attained their maximum development, and their rapid subsidence. The duration of these swellings in the case under review was from six to ten hours. (2) The time of appearance of the swellings, almost invariably during the small hours of the morning. (3) The orderly progress of the swellings. The right tonsil and side of the throat were first affected, till the general march of the swellings was from the feet upwards, the last part affected being the tongue. (4) The muscular weakness which the patient experienced, not only during the attack, but after the acute symptoms had passed off. (5) Those parts which had been the seat of swellings were never attacked a second time, with the single exception of the tongue, and it would seem that this organ is peculiarly liable to suffer, in view of the fact that on two previous separate and distinct occasions it was affected and during the present illness it was attacked over and over again.

The above is an almost exact clinical picture of the disease as it affected the writer of this article in September and October, 1913, on his return to Belize after three weeks' camping out in the forest.

I was engaged in entomological research in the extreme south of the Colony on the banks of the Sarstoon River, and experienced, as was to be expected, many discomforts. The weather was very bad, torrents of rain fell every day, making the forest tracts almost impassable; the shelter I occupied leaked badly through roof and sides, and of course mosquitos played their part and bit viciously by day as well as by night. The food consisted of tinned