For many years I determined, when a suitable case of sarcoma of the fibula presented itself, to excise the upper half of the bone instead of amputating the leg. In November, 1895, Dr. McDowell consulted me in regard to a woman aged 23, who had a swelling on the outer side of the leg, a little distance below the knee, which we had no difficulty in recognising as a periosteal sarcoma of the fibula. As the patient suffered a great deal of pain in the leg she did not hesitate to submit to operation.

The tumour was exposed by a longitudinal incision on the outer side of the leg, and the musculo-cutaneous nerve, which ran in the groove shown on the surface of the tumour (see figure) was divided and the ends turned aside in order to facilitate the dissection and preserve the nerve from injury. The anterior tibial nerve and artery were, unfortunately, so incorporated in the tumour that they were sacrificed. The superior tibio-fibular ligaments were cut through

Periosteal sarcoma of the fibula, entire and in section.

and the fibula, with the tumour, freed from the interosseous membrane and surrounding muscles; great care was taken to avoid injury of the posterior tibial vessels and nerve. The bone was divided a little below its middle. Many vessels required ligature, and the two ends of the musculo-cutaneous nerve were united with fine catgut. The various layers of muscles were sutured with catgut and the skin secured with silk. The wound was drained, dressed, and fixed on a splint.

On the third day the tactile sensibility was tested and found normal everywhere on the leg except the narrow territory supplied by the anterior tibial nerve. Healing was rapid and recovery satisfactory. In consequence of the implication of the anterior tibial nerve there is talipes equinus, but this has been rectified by an orthopaedic arrangement which enables the patient to walk excellently. On microscopic examination the tumour was found to be a round-celled sarcoma.

It is noteworthy in regard to operations for very deadly tumours that it is easy to collect a score or more of cases in which the subsequent history of the patient is known. Thus

our knowledge of the remote results of excision of the tongue for epithelioma, or the kidney for sarcoma, is full enough. The clinical records of sarcomata of long bones are very extensive, but when they come to be analysed it is easy to find complete records of ten or more cases of periosteal sarcoma of the humerus or femur. By a complete record I mean a history of the case, the operation, an account of the tumour, including its microscopic characters, and the subsequent history of the patient, including the mode of death, and a description of the condition found *post mortem*.

In the case of the fibula I endeavoured, before carrying out a method of treatment so contrary to the traditions of surgery, to collect the complete histories of six cases of periosteal sarcoma of the fibula in order to ascertain if my proceeding would be justifiable. I failed after a rigorous search to find three records complete in the sense indicated above. This paucity of records in a way indicates that periosteal sarcoma of the fibula is neither a common nor a very malignant tumour; by this I mean it does not run its course so rapidly as to kill within two years of a timely operation. The infrequency of periosteal sarcoma of the fibula may be estimated in this way: A surgeon may be in active operative practice for a quarter of a century in a hospital situated in a large town, and not be called upon to deal with more than three examples.

THE ECONOMY OF THE TREATMENT OF WOUNDS AND ULCERS BY OXYGEN GAS.

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THE above treatment has proved so successful that now, after more than a year's experience of it, it is thought desirable in this present paper to bring one aspect of it before the medical public. Let us lay aside for the present its humanitarian aspect; the relief of suffering that it gives; the cessation of foul smells and discharges that it causes; the rapid healing it promotes of what had hitherto been considered incurable sores, and which had resisted all other forms of treatment; and let us shortly consider its manifest economical advantages, its money-saving power both to individuals and to institutions, infirmaries, hospitals, homes, etc., where such cases are treated.

We can best appreciate these points by the consideration of two cases which are samples of many others, though perhaps in a more marked degree.

The first is one in which the oxygen treatment was carried out in a metropolitan infirmary by the permission of the medical superintendent. The patient, S. E., aged 58, had suffered for thirty years from a chronic ulcer of the leg. The ulcer was most painful, and prevented him from working, which he was otherwise able and quite willing to do—in fact, the ulcer was the sole cause of his being idle, and costing the rates about fifteen shillings a week. He had been in the infirmary for eighteen months at the time the oxygen treatment was commenced, and after six months under the treatment he left with the ulcer completely healed.

Now it is fair to expect that if the oxygen treatment could have been applied when he first entered the infirmary, the ulcer would have been healed in six months, and the rates thus saved his expenses for eighteen months, *minus* the cost of the treatment—that is, about £50.

The second case is as follows:—The patient, a man, received a wound on his leg fifteen years ago, and an ulcer gradually formed. For ten years the ulcer prevented him from working, and was a source of constant pain. For many years he had been an inmate of the British Home for Incurables at West Norwood, and it was there, under the care of Dr. Rugg (whose permission I have to publish the case), that the treatment was carried out. The ulcerated surface extended from a little below the knee, nearly to the middle of the instep, and in some places right round the leg, the extreme measurements being 13 inches by 7 inches (*vide* Fig. 1 on p. 1088). There was a profuse discharge, and so foul smelling was the leg, that the patient had to be kept in a separate room with carbolic sheets hung over the door. The patient suffered constant and acute pain. Under the oxygen treat-

ment the foul smell disappeared in two weeks' time, and the leg was completely healed in six weeks (*vide* Fig. 2 below). Only a little tenderness remained over the inner

Fig. 1.

ankle. The dressing of this leg with antiseptic dressings (and it was most carefully attended to) did not cost less than 1s. a day, and now the institution is saved, at the rate of 7s. per week, equal to £17 per annum for the rest of the patient's life, and he may live ten or fifteen years to come.

Fig. 2.

These cases speak for themselves, and many such cases could be quoted, but it would seem to any unprejudiced person that the above are sufficient to encourage all Boards of Guardians and committees, etc., to start the treatment in their hospitals, infirmaries, or homes, or wherever such cases are received.

It is reported that Mr. Peter Coats, of Ferguslie Thread Works, has promised a donation of £10,000 towards the sum required to build a new hospital at Paisley. Mr. Coats previously subscribed £5,000, and is also building a nurses' home at a cost of about £10,000.

SUPRARENAL EXTRACT IN ADDISON'S DISEASE.

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I HAVE recently had a case of Addison's disease in which suprarenal extract certainly seemed to cause improvement for some time, but did not arrest the disease or avert a fatal issue. The patient, A. M., was a young man, aged 25, a grocer's assistant, married but childless. There was no tuberculous history in the family. He dated his illness back to an attack of influenza in February, 1895, but his family noticed the darkening of his complexion two or three months before that. During the spring and summer he had occasional attacks of vomiting, and grew weaker and thinner. In August he came to stay at his father's house for change of air. The darkening was attributed to "biliousness" or "sunburn."

I first saw him on September 1st, 1895, when he was suffering from vomiting. He was much emaciated. The whole skin was darkened, but the bronzing was more noticeable round the eyes, on the backs of the hands, nipples, navel, and axillæ, and on certain moles about the face and neck. Inside the mouth there were spots on the mucous membrane of the lower lip, the under surface of the tongue, and at the junction of the hard and soft palates. There was no abdominal tumour, and the urine contained neither sugar nor albumen. He was languid, and felt faint on the least exertion. The pulse was small and weak, the temperature was 98°. Vomiting during the last three days had quite prostrated him.

He was kept in bed, and ordered light diet. On September 3rd he commenced taking Burroughs and Wellcome's suprarenal tabloids (5 grains of the dried gland in each tabloid), three daily. Retching ceased altogether on September 5th. On September 9th he was able to take solid food, but was still faint when trying to stand up. He was ordered cod-liver oil and syrup of hypophosphites, and he increased the tabloids to six every day. He improved in strength, and walked into the garden on September 16th without assistance. On the other hand, several black freckles had appeared on the face, ears, and wrists, and there was some darkening at the bend of the elbows. A small spot had appeared on the mucous membrane of each cheek. On October 1st it was noted that he was gradually leaving off the cod-liver oil, etc., but had continued the six tabloids a day. On October 7th he walked into the town for the first time for over two months, and felt stronger and brighter. On October 16th he weighed 8 st. 12½ lbs., being 2½ lbs. more than on October 7th. There was less pigmentation about the hands and face, and no fresh spots had appeared. The pulse was good. On October 23rd he weighed 9 st. 1½ lbs. He persisted in returning to London in search of employment. While in London the improvement was maintained; he continued to take the suprarenal tabloids. On November 17th he returned to his father's house, having "caught a cold." He had sore throat and nasal catarrh, but recovered in a few days. The bronzing was distinctly less marked on the hands and face, and most of the freckles had died away, but the interior of the mouth showed no change, and his complexion remained muddy.

He went back to London, and remained well till Christmas week, when he began to lose appetite and get weaker and thinner again. An attack of vomiting, accompanied by faintness, came on at the end of the month. On January 5th I saw him, in consultation with Dr. Roe, of Kennington Road. He was in a very weak state. Fresh patches of pigment had appeared on the mucous membrane of the cheeks, but there was no perceptible increase elsewhere. Vomiting recurred during the next few days, and he died rather suddenly on January 9th, 1896.

In his address on Physiology, at the meeting of the British Medical Association, Professor Schäfer asserted that some cases of Addison's disease were distinctly benefited by suprarenal extract. In the BRITISH MEDICAL JOURNAL of August 24th and 31st, Dr. Lloyd-Jones and Dr. Oliver recorded successful cases. It would be interesting to learn whether the improvement they mentioned is being well maintained.