my invariable custom, I gave him liberty to lie in whatever position he found to be most comfortable. He made no complaint, and seemed to be doing quite well. The following morning I was summoned urgently to see him. On my arrival in his room I ascertained that about two in the morning he had suddenly been seized with very acute pain in the neighbourhood of the stomach; this had lasted for some considerable time, and had been followed by severe vomiting. The matters vomited had been retained, and I found on inspection both of the contents of the vessel and of the bed-clothes, which had been stained by some of the vomited matter, that there had been severe haematemesis. The coloration of the vomited matter was dark brown, but in the vessel I found also some fresh blood. I immediately availed myself of the services of a physician, who gave him a prescription, chiefly consisting of bismuth, and gave directions as to the feeding. When I saw him in the morning after the vomiting I found him considerably collapsed, and complaining of great weakness. Evidently he had suffered very severely from pain. Fortunately there was no recurrence of the haemorrhage, and ultimately, as already intimated, he made an excellent recovery. In view of the communication already referred to, the possibility of the case having been one of oesophageal post-operative digestion cannot be overlooked. Such severe symptoms after cataract extraction was an entirely new occurrence in my experience.

ANTIMONY IN LEPROSY.

BY

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In view of the reported benefit derived from the antimony treatment of some Indian lepers at Durban in 1920,¹ Dr. F. G. Cawston asked me to give antimony a trial on a more extensive scale amongst natives at the Amatikulu Leper Institution in Zululand. No special treatment for the disease had been used there, reliance being placed on fresh air, good food, careful dressing of ulcers, cod-liver oil, and to a lesser extent chaulmoogra oil by the mouth.

I decided to test oscol stibium in the treatment of twenty of the worst cases, mostly cripples who were being housed in the central hospital while awaiting death. The majority of these cases received doses of the drug intramuscularly, 2.5 c.cm., 3 c.cm. and 6 c.cm. on consecutive days. Three weeks later 4.5 c.cm. and 6 c.cm. were given on consecutive days. This series of two doses was repeated during the next two months, making a total of about 40 c.cm. injected.

Beneficial effects were seen in the relief of paralysis, drying of the ulcers, and in the general condition of all the patients treated except one, who has shown no change at all so far. Similar successful results were obtained from the use of Crookes's colloidal antimony, which proved more toxic and more effective; equally good results were obtained in a few cases treated with tartar emetic intravenously.

Over 1,000 injections have been given at the Amatikulu Institution during the last six months; there has been no serious local inflammation and no abscess. In each case the needles and syringes were sterilized before use by means of mercury biniodide in methylated spirit followed by pure methylated spirit, and the site of the injection was sterilized by mercury biniodide solution.

Though antagonistic to the treatment when first adopted, these leper patients have developed a great belief in its efficacy, and in most instances have themselves requested that it should be continued. In the case of Zulul this request is very significant—they do not like medicine injected.

At the present time (July) 98 female natives and 131 males are being treated with various preparations of antimony; 4 of these have recently been treated with ethyl esters after two series of injections with antimony, and their progress points to the efficiency of the combination.

Although still in its early stages, the results at the end of six months have been very encouraging, and suggest antimony in considerable doses for short periods, with intervals of three weeks between each series, as a great help in treating leprosy and possibly as a cure in some cases. It is also useful in combination with ethyl esters and sodium hydnocarpate.

The following cases illustrate the use of the drug, especially in very severe untreated cases.

CASE I.

Native male; on January 20th, 1920, he was not expected to live much longer. He was partially paralysed in both legs and had lost all the toes on one foot. There was marked paralysis of the face and eyelids, so that he could close his mouth only by means of his hand. Dry keratitis had supervened as a result of the facial paralysis, but was not advanced. He received 2.5 c.cm., 3 c.cm., and 6 c.cm. oscol stibium on three consecutive days. Three weeks later the paralysis of the legs had much improved, he had taken food better, put on weight, and felt more comfortable in every way. Since then he has received four more series of injections, 3.5 c.cm. and 6 c.cm. being given intramuscularly on consecutive days. To-day (July 20th) he can walk regularly to the dispensary, a distance of 200 yards or more, and is to be seen walking about the place continually. He can close his mouth without help and chew his food. His eye condition is much improved, but he cannot yet quite close the lids. The treatment is being continued.

CASE II.

This is also a case of maculo-anaesthetic leprosy, showing partial paralysis of the legs and face with conjunctivitis. He received the same treatment and no other during the last six months. The eye condition has entirely cleared up and the lids have returned to normal. Although there is still some weakness of the legs, he is now able to walk without difficulty and has considerably improved in general health. Both these cases showed lepra bacilli in scrapings taken from the nasal septum and were passed as lepers by several boards. Without treatment both would certainly have died before now.

CASE III.

This native female was very emaciated and feeble. She had also been placed in the hospital to die. There was no paralysis. The macular areas were raised over nearly the whole of the back about one-eighth inch above the normal skin; they were rough and one of them covered a square foot of the surface of the back. She received the treatment outlined above. After the first series of injections the most remarkable results became evident, the whole area desquamating and leaving patches of healthy skin with small ulcerated areas. A somewhat similar result was obtained by Dr. Cawston in the treatment of Naukaklia, as reported in the *BRITISH MEDICAL JOURNAL* on December 4th, 1920, pp. 855 and 856. The skin of this Amatikulu patient was anaesthetic throughout, but after the injections the affected areas began to itch and caused her to scratch herself. On July 19th the skin was almost normal, a trifle lined, with a slight mottling of colour only. She is now walking about easily, is eating well, and feels well.

CASE IV.

This native woman was also in a dying condition; she was a case of maculo-anaesthetic leprosy with enormous discharging ulcers extending from the knees to the feet. She was very thin and weak. She received the same doses. The ulcers cleared up very rapidly at first, and, although there are still a few small sores, the extensive ulceration has healed up much more rapidly than a burn over such a large area would have been expected to do. To-day (July 19th) she feels well and walks about easily all over the place. Throughout the injections the ulcers have been treated locally, as they were treated before the commencement of the antimony course.

CASE V.

On January 20th this native boy of 11 years was considered to be dying. He had enormous tubercles all over the face which might be described as confluent. On one of the feet there was a perforating ulcer 2 inches in diameter. He was given 2.5 c.cm. of colloidal antimony intramuscularly. This dose gave rise to a very severe reaction and for a week his condition was very grave. At the end of the week, however, he felt so much better that he requested me to continue the injections and 3.5 c.cm. were injected without ill effect; 6 c.cm. were given on the following day. All the tubercles shrunk immediately so that their summits looked feathery as a result of acute desquamation. This desquamation has occurred after the other series of injections. On July 19th the tubercles, though present, were much smaller and retracted. The boy is taking his food well and feels well. The ulcer on the foot healed rapidly and has not caused any further trouble.

CASE VI.

This native man showed macular areas all over his face and body, these leprosy areas were depigmented and anaesthetic. He improved very rapidly after the first series of injections in February. The spots began to regain their pigment and the sensation of pain returned. The sweat glands returned to normal in the leprosy areas, so that the skin regained its normal appearance and became shiny. To-day there is only a slight mottling of the skin to indicate previous disease.

At a later date it is hoped to give a more extensive report of the effect of antimony on a large series of cases, but at the end of six months' treatment one can say without fear of contradiction that antimony has a very decided value in the treatment of leper patients, more particularly those who are exhibiting severe manifestations of the disease. Dr. Andrew Balfour of the Wellcome Bureau saw these cases when visiting Natal, and they have been inspected by a considerable number of medical men from various parts of South Africa who are interested in the progress of the treatment.

¹ See *BRITISH MEDICAL JOURNAL*, July 17th, 1920; December 4th, 1920; March 19th, 1921.