cough and no expectoration. An effective pneumothorax has enabled this soldier, who a few years ago was attacked with tuberculosis, to take part in a campaign for a month under extremely trying circumstances, and it still finds him in excellent health after such experience.

At the front tuberculous soldiers are not found in the line of the Allies alone. They are just as numerous, if not more so, among the Germans. In the *Times* of February 13th "Eye-Witness," who is at present with General Head Quarters, in describing operations at La Bassee, says:

It has already been mentioned that some of the prisoners captured by us lately have been of comparatively poor physique. In this connexion it is interesting to note that during the last few days a dead German was found having two medical certificates in his pocket stating that he was suffering from consumption. They are both signed by a doctor and are accompanied by an application from the father that his son should not be sent on active service as he was suffering from lung trouble.

No doubt the conditions under which the present war is being carried on are more hygienic than in previous campaigns, but the physical hardships and the mental strain are greater. There is little leisure, little chance of physical repose unless when the men are in the trenches, and even then not always.

The interesting point is that men who are the subjects of tuberculosis have been able to undergo all the hardships of war, and that in the case of the French and British soldiers whose cases I have detailed they have passed through battle unscathed. A circumstance such as this, by robbing tuberculosis of some of its terrors, ought to carry hope into the breast of many a tuberculous subject and let him feel that his day of usefulness has not yet come to a close, but that he is capable of undertaking out-of-door employment even of a harder nature than as a profession we have hitherto been disposed to allow. This ability to endure says much for the present treatment of pulmonary tuberculosis by sanatorium and the open-air method, and is also strong evidence in support of the treatment of suitable cases by the production of artificial pneumothorax.

REFERENCE.

¹ *Presse Médicale*, November 19th, 1914.

THE TREATMENT OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

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IN view of the cases of cerebro-spinal fever occurring in the army and the sporadic cases which are cropping up in different parts of England, I think it may not be out of place to draw attention to the very good results obtained by Drs. Shircore and Ross in the treatment of this disease by soamin in British East Africa. As this paper, which was published in the *Transactions of the Society of Tropical Medicine and Hygiene* (vol. vii, No. 2, December, 1913, p. 83), may not be readily available by all who may be called upon to treat cases of this malady, I will quote fully from it here.

So far as I can discover in looking up the literature of the treatment of epidemic cerebro-spinal meningitis, the first person to use soamin was Dr. T. Arnold Johnston, senior house-physician, Leicester Infirmary. In the *BRITISH MEDICAL JOURNAL* (January 22nd, 1910, p. 193) he reported having injected soamin intravenously in 2 cases of cerebro-spinal fever, one of which was very severe, and both of which recovered. He was led to adopt this line of treatment because of the favourable results reported by officers of the R.A.M.C. in syphilis when this drug was used, and also by others in trypanosomiasis (sleeping sickness). At the end of his paper the author says:

That the recoveries were entirely due to the remedy cannot be proved from such a limited number of cases. The disease certainly was influenced by the injections, and the result compares favourably with the reported cases of serum treatment in cases of equal severity, as described in the papers of Robb, Currie, and Macgregor. As a treatment it is not expensive and the technique is simple.

Epidemics of cerebro-spinal fever are not uncommon in tropical Africa; they have been reported in West Africa

(Gold Coast), Egypt, the Anglo-Egyptian Sudan, and in British East Africa. A well-marked epidemic occurring in the last-named colony in 1913, Shircore and Ross were enabled to study the disease carefully and also to try on a large scale the effects of different lines of treatment. Three methods were adopted: (1) Soamin, (2) serum, (3) lumbar puncture. Here again the authors were led to try soamin because of its value in trypanosomiasis, and also because at first no serum was available.

Out of a total number of admissions to hospital of 143, 127 were treated with the drug (though this is not stated, I believe it was injected intramuscularly), 37 of these being malignant cases, or cases on the third, fourth, or fifth day of the disease. Those dying within 60 hours, that is, a little over two days after admission, are excluded; they never regained consciousness, and though in some a marked reaction to the soamin took place, death always occurred. Such cases the authors believe are beyond any known line of treatment. Excluding the above, then, the remaining cases numbered 90, and of these 56 were discharged cured, while 34 died; this gives a percentage of 62.22 of recoveries. Clinically improvement in the symptoms was seen after the injections, and researches on the cerebro-spinal fluid showed that the meningococci were reduced or even, in some instances, disappeared.

As regards the use of serum, this was found to be disappointing, and after the value of soamin was demonstrated it was given up. When one of the authors unfortunately contracted the disease himself the question of administering serum was not even considered by his colleagues; the soamin treatment was adopted and he recovered.

Lumbar puncture was found useful in relieving headache and restlessness, and the authors thought it might help the action of the soamin.

These results have been confirmed by Dr. Gilks, who also treated some cases of the disease in the same epidemic.¹ Eight cases amongst Europeans were treated, with only one death. Treatment was in every case by intramuscular injection of soamin, which was usually administered in 5-grain doses on each of the first two days after commencement, followed by 3 grains on the fourth day; while, if irregular temperature persisted, occasional further doses were given. No bad effects occurred from the use of the drug. Though the diagnosis of all this series of cases reported by Gilks was not confirmed bacteriologically, yet there is no doubt from the clinical signs that they were examples of the disease.

An analysis of this work would seem, then, to show that soamin has a distinctly beneficial effect upon epidemic cerebro-spinal meningitis, and, such being the case, an extended trial of it in cases now occurring might, it is to be hoped, give results of considerable value.

As soamin is a purer preparation than atoxyl its use is to be advocated.

In the small doses given over the short period indicated by Dr. Gilks, and in those now often employed in human cases of trypanosomiasis, there is apparently no danger, optic neuritis and lesions of this nature only occurring when large doses of the drug are given over prolonged periods.

As regards the method of administration, intramuscular injections seem to act quite well, but perhaps intravenous injection may ultimately prove to be better. A trial on large numbers of cases would be required to decide this point.

REFERENCE.

¹ *East Africa Protectorate, Annual Medical Report for the year ending December 31st, 1913*, p. 90.

DR. SCUDDER, of Boston, Mass., writes in the *Boston Medical and Surgical Journal* (February 4th) on the significance of x-ray examination following operation for congenital pyloric tumour. Posterior gastro-enterostomy does not ensure the disappearance of the tumour, and in three authentic cases the tumour discovered at the operation was detected within nine months after a plastic operation. He collected twenty-six cases in which x-ray examinations were made during the after-treatment. The tumour did not vanish, or at least the pylorus remained obstructed, while the stoma was the only exit for the bismuth meal from the stomach. He thinks that the tumour itself and the changes in the mucosa explain the obstruction in all cases, and that the hypothesis of pyloric spasm must be set aside.