

## HYGIENIC MEASURES AND HOSPITAL ORGANISATION OF THE ITALIAN EXPEDITIONARY FORCES DURING THE ETHIOPIAN WAR, 1935-1936.

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(The paper, by Sir Aldo Castellani, which we print below, in abbreviated form, was read before the Royal Society of Arts on March 30th. It is of absorbing interest and importance).

The War began October 3rd, 1935, and ended May 9th, 1936, with the proclamation of the Italian Empire, four days after the fall of the Ethiopian capital, Addis Ababa. During this period the white troops on the northern front (Eritrea) and the southern front (Somaliland) numbered approximately 500,000 men, including the Militia and the Gendarmerie and other police forces, and naval ratings. It is, I believe, the first time in the history of the world that so large a mass of white troops has been transported to a tropical zone and for military purposes.

Articles appeared in many newspapers and magazines expressing the view that the Italian troops, even if spared by the Abyssinian bullets, would be destroyed by disease.

These prophecies were based on sound historical facts.

It was most fortunate that the head of the Italian Government realised immediately the enormous importance of medical preparation and organisation in a colonial war, and paid the same attention to it as to the purely military preparations. The requests made to him for medical personnel and hospitals were immediately acceded to, and were, in fact, often doubled at his express command. All the medical services—army, navy, air force, colonial—were placed under one joint direction. Vast supplies of quinine and other essential drugs, disinfectants, sera, vaccines, were despatched to Africa, as well as hospital, X-ray and laboratory equipment of every kind, and huge quantities of cotton wool, gauze and bandages. I can testify that on more than one occasion the despatch of medical and sanitary material took precedence over the despatch of munitions and war material.

By order of the Head of the Government all the army medical officers followed a course of instruction in the Hospital for Tropical Diseases in Rome, before leaving for Africa.

*Red Cross Nurses.*—There were 384 nurses serving on board the hospital ships and in base hospitals. Among them was the Crown Princess, an admirable nurse, who gave a fine example. She served as ordinary nurse, without enjoying or accepting any privileges whatsoever.

The Army and Navy Nursing Service in Italy may be said to have been created in 1911 during the Libian War, by H.R.H. Princess Helen of Savoia Aosta, Dowager Duchess of Aosta, who has remained at the head of it since then. The Marchesa di Targiani, most efficient Superintendent of the Red Cross nurses, directed that all nurses going to East Africa should first take a course in tropical nursing at the Hospital for Tropical Diseases in Rome.

Several months before hostilities commenced, the head of the Italian Government created the post of High Consultant and Inspector-General of all the medical units in East Africa and the Red Sea (Army Medical Service, Militia Medical Service, Naval Medical Service, Air Force Medical Service, Colonial Medical Service and Red Cross organisations) to direct generally and to co-ordinate their activities. I had the honour of being called to fill this post.

### The Health Organisation.

*Malaria.*—In many colonial and non-colonial wars of the past malaria has been the scourge that greatly interfered with war operations.

For example, in the Great War, the real cause that paralysed for so long the advance of the Allied Armies in Macedonia was malaria. I have seen battalions with 95 per cent. of the soldiers and officers stricken with malaria a month after arrival.

In the East African Expeditionary Force in 1917 the average ration strength of the Expeditionary Force was 50,702 men and officers, and there were 72,141 admissions to hospital for malaria, with 499 deaths. With a White Army, approximating half a million men (in the Italo-Ethiopian War) there were 1,241 cases of primary malaria admitted to hospital and 1,093 admissions for relapse, with twenty-three deaths from pernicious forms, including blackwater fever, which was extremely rare.

Judging by the German East African Campaign during the Great War, we should have expected an enormous number of admissions to hospital for malaria, well over 300,000 and over 2,500 deaths from it.

What were the prophylactic measures taken?

From the beginning we insisted on quinine prophylaxis. (The method of administration is described in detail).

In Somaliland, a special anti-malaria service was instituted, with officers whose sole duty it was to prevent and fight malaria. The results were excellent.

*Dysentery.*—Dysentery has always been one of the worst scourges of the armies in wartime. In ancient times, generals feared the "bloody flux" more than they did the enemy.

During the Great War the British Expeditionary Force in Gallipoli, consisting of 112,677 men and 4,161 officers, had during the campaign, which lasted from April 24th, 1915, to January 8th, 1916, 29,728 cases of dysentery, with 811 deaths; more than a quarter of the whole force contracted the disease. If we add the 10,383 cases of diarrhoea admitted to hospital, we see that a prodigious number, more than a third of the army, suffered with severe intestinal trouble requiring hospital admission.

During the Italo-Ethiopian War there was a total of 453 hospital cases of dysentery, with no deaths.

What prophylactic measures were taken?

(a) Every effort was made to give the officers and men pure drinking water, local water obtained from rivers and wells being always purified by boiling or by some method of chlorination. Distilling plants were erected in several places both in Somalia and in Eritrea.

(b) The men were recommended to get into the habit of washing or disinfecting their hands with a 2 per cent. solution of lysol after visiting the latrine, and before having their meals. The lysol disinfection of the hands was strictly enforced on cooks and others working in the kitchens.

(c) A grandmotherly precaution was adopted. Each soldier was provided with and had to wear a flannel abdominal belt. I had the impression that this was a useful measure; it tended to prevent abdominal chills, thereby rendering the soldier less liable to develop dysentery.

Among the precautions taken, one of the most important was vaccination with mixed vaccines, great care being taken in the preparation of the vaccine, both in the laboratories of the Institute of Public Health and in private laboratories.

*Typhus.*—This is one of the most important diseases to which armies are exposed during wartime. Suffice it to remember the terrible epidemic in Macedonia when a quarter of the Serbian army was wiped out by typhus. In the recent war, the Abyssinian troops, according to reports given me by foreign doctors in Addis Ababa, had thousands

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