to become of increasing significance with the approaching depletion of those resources most limited in quantity.

Finally the science of geology can be made of increased effectiveness in military activites through instruction of officers and military students in the elements of military geology. This may be acomplished at no great cost of time, by means of a brief and simple course of instruction given at military schools and training camps, supplemented by a manual which may be studied in the field. A knowledge of the properties and structure of the common rocks, and of the dependence of topography upon geologic conditions, would be of repeated usefulness to the officer and add to his efficiency. Some geological knowledge, at least, he must pick up in a practical way; its systematic acquisition might advantageously be made convenient for him.

Geology as a science is keenly alive to the military service it can render. Many of its members, its state and federal organizations, and its principal societies, are actively at work on plans for geologic research and the immediate application of geologic knowledge to the public welfare. But the most effective service can not come from individual or class initiative; it must await incorporation into the general plans of governmental organization, which to be effective will omit no advantage that any department of knowledge can give.

The problem facing the geologist, at the present moment, is not so much to apply his knowledge as to lead military authorities to see clearly the service that he is prepared to render.

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## SCIENTIFIC EVENTS

### TUBERCULOSIS AND THE FRENCH ARMY

Dr. Herman M. Biggs of the New York State Department of Health, in the *Survey*, discusses tuberculosis in France as influenced by war conditions. According to a summary in the *Journal* of the American Medical Association he states that while practically all epidemic diseases which have heretofore been scourges of armies in the field have been brought under control in the present war, tuberculosis has assumed a large part in the sanitary history of the present struggle. France is the country that has been hard hit in this respect, though Biggs says that from such data as are obtainable Austria, Hungary, Russia, and perhaps to a less extent, Germany, have likewise suffered. As contrasted with England with 1 death from tuberculosis per thousand, New York State with 1.5, France before the war had 3 deaths per thousand, and in many cities the rate was higher. Biggs attributes this largely to the fact that even before the war France paid little systematic attention to tuberculosis. It had not been recognized by the sanitary authorities, and even now it is not a notifiable disease. With the advent of the war and the rapid mobilization of the troops, with examinations which were not sufficiently rigid, and with the strenuous conditions imposed on troops in the field, latent or arrested tuberculosis manifested itself among the troops, and by the end of December, 1915, 86,000 soldiers had been returned to their homes with active tuberculosis. In February, 1917, it was estimated that 150,000 had been returned for this cause. Biggs believes that in addition 3 or 4 per cent. of the population who formerly lived in the departments now in German occupation have the disease, which would mean another 125,000, based on a population of 4,250,000. Half of these live back of the German lines, partly in their own homes, partly in concentration camps and partly deported into Germany, many of whom have been returned on account of illness which made them a burden to their captors. Biggs says that while he was in Switzerland, of 20,000 of these people returned, 5,000 were said to have tuberculosis, though the estimated infection among those deported into Germany has been placed at 5 or 6 per cent., which Biggs believes is conservative. Among the 350,000 or 400,000 French prisoners in Germany an estimate of 5 or 6 per cent. of tuberculous infection has

been made, although some French estimates run as high as 30 or 40 per cent. Among the four million men in the active French army at present it is estimated that ½ to 1 per cent. have tuberculosis. It is not believed that the cases of tuberculosis among the civil population have decreased since the war, and in the remaining 30,000,000 not accounted for in the foregoing figures, on a conservative estimate, taking as a basis the prevalence of the disease before the war, there would be at least 150,000 cases, making in all about 500,000 cases, or, say, 400,000, to be extremely conservative, to be dealt with if the war were terminated at once. To deal with this vast number of cases Biggs says there are at present the so-called sanitary stations with 11,000 beds, which number it is hoped to increase to 16,000 by the end of the war, and a dozen or so well equipped dispensaries. There are practically no trained nurses or social service workers, but a few women are being trained in a three months' course in the Laennec Hospital. Not more than a dozen physicians are said to have given any special attention to tuberculosis, few have had sanatorium experience and still fewer are at all familiar with the tuberculosis work of others. The outlook, Biggs feels, is not encouraging, though the French government has partially realized the situation and is trying to meet the problem by the organization of dispensaries in the populous regions of France.

## MEDICAL WORK IN BRAZIL

DR. GEORGE K. STRODE, a member of the International Health Board of the Rockefeller Foundation and who was one of the men sent to Brazil to make a study of medical conditions there, in a letter to Dr. David Riesman, which is quoted in *Old Penn,* writes in part as follows:

The work of the International Health Board is in the hands of two of us down here. We have just completed an infection survey in the state of Rio de Janeiro, which has shown among 7,000 examinations for uncinaria a percentage of positives of 82. Malaria, I believe, is almost as wide-spread, and the two are a heavy drain on the people. Our work will shortly be extended to the states of Minas Geraes and São Paulo, which means the board will be busy in this country for a long time. At the present moment we are instituting an intensive campaign in one county of the state which will aim to cure and eradicate the disease in that area. This we hope will serve as a demonstration and will stimulate the authorities to continue the work.

There are many diseases found here with which I am not yet familiar; most important are Chaga's disease (trypanosomiasis) and leishmaniasis. Tuberculosis is, however, more important than either of these and is being combated by voluntary organizations.

Medical schools are government institutions, and the four leading ones are quite good. Six years are devoted to the course, the first two being almost wholly given over to pre-medical work. The graduate is not required to serve as an interne, so that only about 30 per cent. take such work. Indeed, in most of the hospitals internships are not available. Research laboratories are few and far between; the most noted is the Oswaldo Cruz Institute, which I visited last week. Much good work is produced here, but it is unfortunately very narrow in scope, entomology and parasitology being the only fields that are tilled.

## RECOMMENDATIONS OF THE THIRD INTERSTATE CEREAL CONFERENCE

IN view of the world shortage of cereal food crops, which is likely to continue for an indefinite period, the Third Interstate Cereal Conference held at Kansas City, Mo., June 12–14, urges the greatest practicable enlargement of wheat acreage and would further make the following recommendations:

1. To encourage a larger wheat production, the producer should be guaranteed a minimum price, such price to continue at least one year after war is ended.

2. Early preparation of the land for small grains, where these do not follow cultivated crops, should always be practised. In the winter wheat area it is very important that this be done immediately after harvest.

3. Immediate action is required in providing seed for the next crop. At harvest time it is cheapest, and just before harvest seed in large bulk can best be selected. State and federal aid will be given in locating seed in localities of comparative abundance for use in localities where it is sorely needed. Clean seed, as free as possible from diseases, should be selected and arrangements be made for seed treatment.