

# THE SCIENCE NEWS-LETTER

*A Weekly Summary of Current Science*

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## MEDICINE MUST ASSUME OFFENSIVE SAYS PRESIDENT OF BRITISH SCIENTISTS

The British Association for the Advancement of Science opened its session at Toronto with the inaugural address of the President, Major General Sir David Bruce, K.C.B., F.R.S., chairman of the governing body of the Lister Institute of Preventive Medicine, who outlined the new strategy of medical science in its efforts to prevent the disease and disability which cause a direct loss annually amounting to \$750,000,000 in England and \$30,000,000,000 in the United States. When the British Association first met in Canada forty years ago, "we were," said the speaker, "still in the gloom and shadow of the dark ages. Now we have come into the light. Man has come into his heritage and seems now to possess some particle of the universal creative force in virtue of which he can wrest from Nature the secrets so jealously guarded by her and bend them to his own desire."

What has been and can be accomplished in the way of prevention where the causes of disease are known was illustrated by many cases of army experience where complete and comparable statistics are available. For instance, in the South African war at the beginning of the century where the British had only 208,000 troops, there were 58,000 cases of typhoid fever and 8,000 deaths. But in the Great War on the western front with an average British strength of one and a quarter million, there were only 7,500 cases of typhoid and 266 deaths. That is, after inoculation with injections of dead typhoid bacilli, there were fewer cases of the disease in the Great War than there were deaths from it in the African war. In the French army there were 96,000 cases and nearly 12,000 deaths in the first sixteen months before the French adopted anti-typhoid vaccination.

Trench fever, which was unknown before the war and of which the germ is still unknown, caused more than a million cases of illness in the Allied armies before 1918 when it was discovered that lice carried the invisible virus. When the louse was eliminated the trench fever went with it. During the first two months of the war, nine or ten of every thousand of the wounded were infected with tetanus and 85 per cent of these died of it. After the introduction of anti-tetanic serum the cases fell to about one per thousand and the mortality to less than half.

Typhus fever is also carried by a louse; Rocky Mountain fever by the wood-tick; malarial and yellow fevers by mosquitos, the African sleeping sickness by the tsetse fly, and in all such cases the disease may be eliminated or kept down by getting rid of the insects.

But tuberculosis is not so easily dealt with. In fact, if any country should succeed in clearing itself of the tubercle bacillus it would be dangerous for any of its inhabitants to travel abroad for they would very likely fall victim

to the disease. What Sir David Bruce says on this important question should be quoted directly, since the British Government has adopted very extensive and expensive measures to prevent tuberculosis:

"In regard to the tubercle bacillus it is so widespread, so ubiquitous in civilized communities, passing from one infected host to another, that it would seem impossible under existing conditions to prevent its spread. At present it is taught, and on what seems good evidence, that the majority of the population of our crowded cities has at one time or another been attacked by this disease. But in every hundred men who die in England, only about ten die of tuberculosis, which shows that a large percentage of the population successfully resists the tubercle bacillus.

"When this occurs it means that the person attacked possessed powers of resistance which enabled him either to destroy the invading bacilli or to otherwise deal with them so as to render them harmless.

"A point of importance in this connection is that it has recently been demonstrated that the disease is usually acquired in childhood. The fact is of capital significance, for if the disease is recognized sufficiently early, and the child is placed under good hygienic conditions, there is a very good chance of effective resistance and immunity against a second attack being set up. The present evidence goes to show that the presence of latent tubercles prevents a second invasion.

"The preventive measures against tuberculosis at the present time are, in the first place, improvement in the general hygienic conditions. Thereby individual resistance - and communal resistance - can be remarkably increased.

"In the second place, as every case of tuberculosis must arise from a previous case, either human or bovine, it is very necessary that methods of early diagnosis, preventive treatment, and segregation of the more infective types may be provided for. This is done by the setting up of tuberculosis dispensaries, care committees, sanatoriums, hospitals and colonies."

Enough is now known about the essentials of health and the causes of disease to secure for the next generation sounder bodies and safer lives, if man could be allowed to work out his salvation in peace, but as Sir David said:

"To saddle the country with a million and a half of unemployed, with the consequent poverty, insufficient food, clothing and housing, is not calculated to further the prevention of disease and raise the standard of health. It is too much to hope that sometime in the revolving years a time may come when by a Confederation or League of Nations the world may be so policed that no one country will be able with impunity to attempt the destruction of its neighbor? Until this happens it is difficult to see how rickets, tuberculosis, and other diseases can be adequately dealt with in our city population."

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