

(February 22, 1915.)

Are the Tropics Unhealthy for Germans?

BY DR. J. L. TODD.*

AT a regular luncheon of the Club, held on the 22nd February, Dr. Todd said:

Mr. President, and Gentlemen,—I thank you, Mr. President, for the kind way in which you have introduced me, and you gentlemen for having received me so cordially. The President said I was going to give you the scientific names of things, but as we are here for pleasure I will do my very best to avoid technicalities.

Some time ago, your Secretary asked me to address you; the title was to be, "Are the Tropics Unhealthy?" When it was chosen it seemed possible that an address on that subject might supply us with a satisfying half hour; but the war has changed everything.

The last generation, in the United States, was accustomed to fix all points in time according as they occurred before or after their great struggle. Something has happened in our lives which is going to have a similar effect for us and our children, and we are going to think of things as having happened before or after the war. So it was, when the time came to consider precisely what was to be said to you, that there was absolutely no heart in me for the task, and it seemed very plain that the subject chosen could not give pleasure nor could be interesting to you.

So I asked and received permission from your President and Secretary to change the title of the address to "Are the Tropics Unhealthy for Germans?"

I want you to realize, before going farther, that I have written out everything I want to say, for the reason that when a man is speaking off hand there is a tendency for him to say things that may not be perfectly accurate. But what I say is measured, and said in all earnestness; for everything written here, word, chapter and verse can be given; every fact can be substantiated.

*Dr. Todd is Professor of Parasitology at McGill University, and is an authority on diseases peculiar to tropical countries. He recently made known the result of his investigation into the "Sleeping Sickness."

Our question, "Are the Tropics Unhealthy for Germans?" is in reality a double-barreled question: First, are the tropics unhealthy for men; then, are they unhealthy for men actuated by German ideals? Perhaps it will increase your interest if we say at once that the answer is,—the tropics are healthy for men, but not for men who are governed by German ideals.

Let us begin with the first of these questions; it is, after all, by far the most important one, since this war is only a matter of three, four, five or six years, but the tropics will endure while the world lasts. What do we mean when we say, are the tropics unhealthy? Look at your maps: the temperate climates, within which it is commonly agreed that the European races can alone thrive, extend only, shall we say, in Europe from somewhere about Petrograd in the north down to the Mediterranean; and in the western hemisphere from about Edmonton to somewhere about the Gulf of Mexico; in the southern half of the world the most southerly parts of Australia, Africa and South America are included. These are the temperate zones. Many people believe that these are the only parts of the world where white people may settle and live successfully.

In a word, until recently, popular and instructed opinion were practically at one in agreeing that the tropics were uninhabitable for Europeans, and by the tropics were understood the enormous belts of territory on either side of the equator. They included over one-fifth of the total land surface of the globe. That opinion is fast being discredited, and at the present time there are many who know that European peoples can be established and thrive in most places within the tropical zones. When it was said that the tropics were unhealthy, they were said to be unhealthy because of the climate; nowadays we know and realize that it is not because of the climate,—that is because of the purely physical influences of heat, cold, or humidity,—but because of diseases peculiar to the tropics.

Many of these diseases are absolutely preventable, and, with their disappearance, the countries formerly thought deadly for Europeans have come to be almost salubrious. Take the most remarkable instance of this, the Panama Canal. France bankrupted herself and lost twenty thousand lives in failing to build the Canal; the Americans constructed it, and at a cost of less than one cent per man per day for every man working in the Canal Zone the Americans made the death rate there actually less than is the death rate in New York! As a result, to-day it has become quite the thing for a physi-

cian in New York who has a patient who should go away for his health to send him in the winter time on a trip to Panama, once called the deadliest place in the world! (Laughter.)

The history of the study of tropical medicine and of the researches which among many similar results made the Panama Canal healthy, is extremely interesting. As is so often the case with anything that leads to immediate and practical results, we find that the credit for providing the first impetus for the work and for achieving by far the major part of the discoveries which have done so much to make the tropics healthy, belongs entirely to Great Britain. (Applause.)

When Mr. Joseph Chamberlain was Secretary for the Colonies, he perceived what an extraordinary barrier unhealthiness presented to the commercial exploitation and to the settlement of tropical colonies. When Sir Patrick Manson, who was medical advisor to the Colonial Office, urged upon Mr. Chamberlain the advisability of establishing in England schools for the study and teaching of tropical medicine, he found in Mr. Chamberlain a very eager listener. The result was the establishment in 1898 of schools of tropical medicine in London and Liverpool. These were the first to be established, but at the present time there is hardly any University of any importance in any part of the world that has not a chair or a complete school for the purpose of studying tropical medicine. The head of the London School was Sir Patrick Manson; Sir Ronald Ross, who had just discovered that mosquitoes transmit malaria, was the head of the Liverpool School.

To a Toronto audience it is of especial interest to know that a young Canadian physician,—not this Dr. MacCallum, but another,—provided the impetus for most of this work; he made a discovery which was just like the kick-off at a football game. It was the commencement of everything. During the summer holidays he made some investigations near Norval on a malarial parasite of birds, which is found in many Canadian crows. He discovered an interesting stage of its development; it furnished the key to similar occurrences in the parasite of human malaria, which previously were inexplicable.

I heard someone grumbling, to-day, about all the money that is being spent by the Province on Toronto University. The greatest of French kings said that no knowledge was useless. It would be a great thing if everyone could realize that, in dollars and cents, alone, the work which that boy did in his summer holidays by studying crows, has created more values in the world than everything that Toronto has done in the twenty years since he made his discovery. (Applause.)

Since 1898 almost innumerable scientific expeditions have been sent by Governments and by institutions to all the tropical countries; these expeditions have ensured the study of tropical diseases by an increasing number of scientific investigators. Their work has not been without success, and, as a whole, the study of tropical medicine provides one of the most remarkable examples of the way in which success is certain to be achieved, sooner or later, by every wisely regulated scientific investigation.

By ascertaining the cause and the method of transmission of tropical diseases it has become possible to prevent some of them; by the discovery of methods of treatment efficient as remedies, we have been able to cure others.

Let us take malaria. Before 1898 very little was known about it. It annually incapacitated or killed millions of people. It was supposed to be caused by miasma—something like a bad smell. Everybody objected to the suggestion that a microbe, a microscopic creature, could cause it. The idea that it could be due to a protozoan parasite was derided, and there was absolutely no knowledge of the way in which such an infecting agent could get into a man's body. Now, we know that a protozoan parasite does cause malaria, and that it can be acquired by man only through the bite of a mosquito. Its prevention, consequently, becomes simple: kill all mosquitoes, and there can be no malaria; if that is impossible,—for it is difficult sometimes to do so,—prevent mosquitoes from biting men, and men can never have malaria!

In the same way mosquitoes transmit yellow fever, dengue, and elephantiasis, as well as certain other diseases. Therefore, you will realize that the destruction of mosquitoes and protection from mosquito bites are now counted among the most important points to be observed in tropical sanitation. How successful these simple measures can be, has been proved for all time by the record of the Panama Canal zone alone. Malaria, yellow fever, and dengue have been abolished there, just as similar results had been achieved previously in the Suez Canal zone, in Havana, and in the Straits Settlements. Nowadays the destruction of mosquitoes is recognized as of more importance in the work of the sanitary department of a large tropical town than even the disposal of refuse and excreta.

Most of you have heard the doggerel, "The Bight of Benin, and few come out that ever go in." At one time the West Coast of Africa, where Benin is, was called "The white man's grave." It was popularly assumed that every British colony on the coast had three Governors, one on his way out

on a steamer, one carrying on the government of the colony, and the third on his way home in the handsomely appointed coffin which the Government had provided for him! (Laughter.) Even Africa and the tropics were said to be unhealthy because of fevers. The fevers, if one asked what they were, were broadly said to be malarious; and few were bettered by the quinine with which they were all treated. It is now known that there are many fevers other than those caused by malaria, in the tropical world. Like malaria, many of them are transmitted by insects. Sleeping sickness, which is well known largely because novelists and newspaper writers find capital in its unusual name, is one of the best known of these. Sleeping sickness results when a man is infected by a microscopic animal, a protozoan parasite, which is called a trypanosome. The parasite is transmitted by the bites of a fly, the tsetse fly. Sleeping sickness in man is practically identical with the very fatal disease which tsetse flies cause in cattle and other domestic animals. Sleeping sickness, and tsetse fly disease occur throughout tropical and sub-tropical Africa. They still annually kill many men and make it impossible for domestic animals to be introduced. Diseases of a very similar nature exist and are of considerable importance in South America and Asia. Fifteen years ago practically nothing was known of them beyond the bare fact that some of them existed. Now, the nature of the parasites producing them and the method of their transmission has been learned; also, quite an efficient treatment for them has been discovered. Through this knowledge it has been possible to devise methods of prevention and treatment which, not so completely as in the case of malaria, have done much to make it possible for Europeans and for their animals to live in the tropics.

These are extremely important diseases. Had it not been for them, when Saracen power was at its height, Arab civilization would have dominated the whole of the African continent; and the history of the world would have been changed by the existence there of a huge Mohammedan empire. But the domestic animals of the Arabs could not live when tsetse flies were present. The Arabs were unable to exist without their animals, so their spread towards the South was stopped so soon as they came in contact with that fly. So it is interesting to know that the spread of the Saracens to the South was stopped by insects in a rather more precise way than their invasion was checked by insects in the North. Everyone knows that the turning point of the battle, in which Charles Martel broke their European advance, came when the French women threw beehives into the Saracen ranks. The fact that

insects played such an important part in defeating the Arabs will give you some idea of the great economic importance of insects. (Laughter.)

Among the most interesting of tropical diseases are those which are caused by spirochaetes, also protozoan parasites, and also transmitted by the bites of insects. Some of these are acute fevers, such as famine fever or relapsing fever; they still occasionally occur in Europe. Others are characterized by their long duration and by horrible ulcerations. Some of these diseases are transmitted by contact between infected and healthy individuals; in others the little spiral, thread-like microbe, the spirochaete, is transmitted by ticks or by lice. You all know how difficult it is for soldiers to keep themselves free from vermin; just because of that fact, relapsing fever or famine fever, is one of the most feared of the diseases of armies. The past fifteen years has created a precise knowledge of the nature of many diseases caused by spirochaetes, of the means by which they are transmitted, and of a very effectual means of treating them. A successful remedy for dysentery, another important disease of armies, has also been discovered. Five years ago doctors were almost powerless before these diseases; now they can be cured in a week or two.

Just one other example. All of the diseases which I have described so far are caused by microscopic animal parasites, each of which consists of a single cell. Larger animal parasites, consisting of many cells, are also the cause of important diseases, which contribute considerably to the unhealthiness of the tropics. Elephantiasis is a disease in which legs, arms and other parts of the body become so huge that the name is an apt one. Elephantiasis is one of the most picturesque of the diseases caused by worms. One of the most important of them is the hookworm disease. Everybody has heard of the "poor whites," or "crackers," of the Southern States. Nothing is more certain than that the shiftlessness and physical inertia, which made them a derision to their neighbors, is in great part really a symptom of chronic, almost universal, infection by hookworms. The work of the Rockefeller Commission in investigating and treating this disease is beyond praise. Through its work the eradication of the hookworm from the Southern States is quite possible, and that at no distant date. The economic revolution which will follow its disappearance will be, near home, an example of the revolution which is everywhere changing the tropics.

Time does not permit a detailed mention of the many other instances in which increased knowledge has made it possible to prevent or to cure tropical diseases. What has been said,

however, will be enough to prove to you that much has already been done to make the tropics healthy, and to convince you that the studies which have already done so much will not be unproductive in the future.

And what, in its widest sense, is the result of all this? It means that the tropics are healthy. It means the opening up of a new continent for settlement by European civilization. Research has opened to our farmers a whole new world for colonization. Already the French, the Germans, the English and Belgians are pouring into Africa. We won't be dead before we see cattle coming down the Nile and putting the Chicago meat packers out of business! (Applause.)

From that indefinite time when primitive men are supposed to have wandered out from a birthplace somewhere in Central Asia, the history of our civilization is accompanied by the story of a constant succession of migrations westward. In the course of centuries, with increasing population, western and eastern civilizations have spread, until they have met again on the shores of the Pacific. Our Western civilization can go no further to the West; it is stopped by the shores of the Pacific Ocean. Since it can go no further to the West, if it is to increase, it must turn towards the tropics; and that is as true of the South Temperate Zone as it is of the North. Many times, already, has European civilization attempted to gain a foothold in the tropics and failed. In succession, the Phoenicians, Greeks, Romans, Portuguese, Spanish, Dutch, British and French have attempted to found colonial communities in the tropics. For various reasons, though some were for a short time successful, all failed. Their failure it was that gave the tropics their reputation for unhealthiness. But modern research has proved that tropical unhealthiness is due practically entirely to the diseases that are peculiar to the tropics. Research has shown how to overcome those diseases, and so, the unhealthiness being removed, has opened the tropics to European colonization.

Why, then, should Germans not be able to get the place in the sun for which they are clamoring? What is to prevent the success of German tropical colonies?

The reasons why the tropics are unhealthy for German colonies are precisely those which have caused Germany to make war upon all European civilization other than her own.

Nothing is more certain than that, to-day, most instructed Germans believe that they fight with right on their side; they believe it because, for more than a generation, Germans have been taught to believe that they are the most perfect of the human race, and that in their culture civilization has reached

its highest development; believing this they are quite logical in their determination to prevail over, and in spite of, all who may lie in their way.

Let us examine what grounds there are for these assumptions. Are Germans physically better than other men? Scarcely; most of the heavyweight champions are Irish! (Laughter.) Intellectually, are they supremely superior? Decidedly not. The German would be the first to acknowledge that the highest faculty of human intelligence is the creation of new knowledge. What race has contributed most to the knowledge of mankind by its discoveries? A little poem, called "Not Germany," recently published in "Life," did a good deal to make the answer to that question better known.

The fact is, that astonishingly few of mankind's great discoveries have been German. Run over the list: Pasteur, Lister, Ross, Bruce, Reed, Morton, these names spring to the mind, as inseparably associated with the great advances in modern medicine; with the birth of the age of steam and machinery are connected those of Stephenson, Watt, Arkwright; in the sciences of chemistry and physics, and the application of scientific discoveries to the practice of everyday living, we have Bell, Volta, Faraday, Perkins, Avogadro. These are only a few of the names which jump at once to the lips of everyone. They are not German names. True, Helmholtz was a giant: but where are his companions? (Applause.)

It is true that there is an extraordinary thoroughness in German works of reference, and the excellence and organization of German teaching are unique. For that reason, for a generation, more of our students have gone to Germany for higher instruction than to any other country in the world; but the fact remains that, in spite of its opportunities and its many advantages, German intelligence has not been so productive of new knowledge as it should have been. You can realize this from your reading. If you don't believe it, go home and look at your works of reference; you will be surprised and proud to find how impossible it is for you to read for long on any subject without coming to some important British name. (Applause.)

This point is worth dwelling upon, for the reason that the Germans have never ceased to express such high appreciation of their own learned men, that most of us had come to believe that the last word on most questions was German. Young nations are prone to self-advertisement. They do it designedly, to foster a national pride; they must teach the ideals of patriotism; it is unnecessary for older nations to do so. You

must remember that Germany is a young country, organized in 1871 and, therefore, a whole century younger than the United States. The creation in Germany of an unflinching and absolute belief in German pre-eminence has been one of the greatest cares of the German Government. Proofs of it are everywhere in the speeches of German publicists, from the Kaiser downwards, and in German publications of every description.

Let me give you one instance of the working of that desire to insist upon the idea of national pre-eminence. In the early days of Bacteriology, when Pasteur was working in the institute with which the French Government supplied him, Koch was working in the Institute for Infectious Diseases, at Berlin, upon tuberculosis. The present Kaiser came to visit him. The Kaiser was exceedingly anxious that something should be produced in the German institution to offset the discoveries which were being given to the world from Paris. Koch told him of his hopes that a cure for tuberculosis might be found in tuberculin. The Kaiser ordered and insisted upon immediate publication. You all know the result of so mistaken a course: his premature announcement brought pain and disappointment to thousands who believed him and hoped for relief.

Since there is no proof that German bodies and German minds are better than those of other men, what is there in German culture to give it right of domination? How does it differ from our own? That very clamor by Germany for a place in the sun,—for colonies,—affords the best example of the essential differences between the culture of German civilization and our own.

Official Germany looks with longing eyes from her own densely settled country and rapidly increasing population to the enormous tracts of sparsely settled land over which France and Britain hold title. They have between them about one-quarter of the total land surface of the globe. To-day, Germania does not hesitate to assert her right to take, by force if need be, from those who have no present use for it, land needed by her people, and with it to form colonies.

There is something in the claim. There is not a Canadian who would deny land to a homesteader; but the German idea of a colony is not our idea. And because of that difference, German colonies cannot succeed.

Experience has told us that a colony exists only for the advantage of those inhabiting it, that free men will be free men, whether bred at home or abroad. (Applause.) Ger-

many, as a young nation, lacks experience, and has not imagination to profit by the experience of other people; she still holds to ideas we British learned a century and a half ago were wrong. She wants colonies in order that they may be tributary to and be a benefit to the home land.

In urging her plea for room for her increasing people, Germany deliberately ignores the fact that Germans are as free as are English, Scotch or Irish to become citizens in the colonies which enjoy independence under the ægis of Imperial Britain. She suppresses all knowledge of the thousands who have done so. Germany points, with tears in her eyes, to the millions of people of German descent who are citizens of the United States; and pretends that she has been peculiarly injured in their presence there. She has made so much noise about it that few would guess that if two represents the number of persons in the United States who came from, or of whom one parent came from, Germany, three represents the number of those of similar British origin; there are half as many again people of immediately British origin in the United States as of similar German descent!

Britain doesn't make any fuss about it; why should Germany? The reason is just this: simply because of the fundamental difference between the German theory of civilization and our own. For us, the State is an artifice designed to secure the wellbeing of the people in whom that State exists and has its being. For the Germans, the State has a personal existence apart from those composing it, and individuals exist only to secure its benefit. For us, our King—God bless him!—is an honest, hard-working man, trained in the traditions of worthy kingship. We acknowledge and honor him as the head of a State to which he, as well as ourselves, is subject. If all the British but himself were dead there would be no British Empire and Mr. George Guelph Wettin would be out of a job. (Laughter.) For the Germans, in theory as in fact, their Kaiser in himself has a personal and inherent right to direct, according to his wisdom, the destinies of the people who are his. If all the Germans were dead, Wilhelm, under divine approval, would still be *Deutscher Kaiser und Koenig von Preussen!* The German Empire would still exist, for Wilhelm is himself the State.

That is why the Hohenzollern and the Prussian nobles, with whose help he rules the German people, object to emigration. When a German leaves Germany, though it be for his own personal and individual benefit, the State suffers the loss of a man; in his emigration something in which the Kaiser

has a rightful property passes from the power of the German State. At the price of their necks, a Louis and a Charles abolished such appallingly mediæval ideas from France and from Great Britain!

Consider the conditions existing to-day in Germany as a result of these ideas. In 1862 Bismarck said to the Prussian King, "Be a Prussian, and rule!" In spite of the vote of a Parliament which had been elected on the basis of manhood suffrage and which voted 380 to 10 against him, the Prussian King, with Bismarck and the army at his back, ruled Prussia, collected the taxes, and ran the government without reference to the people, until in the course of time, after 1870, the people came to his way of thinking. Their opinion changed as a result of three deliberately designed and successful wars, against Denmark, Austria and France, and as a result of the miseducation of the German people by a most craftily carried on newspaper campaign. That campaign has continued from 1870 to the present day, both by everything that could be printed, and by the voice of men prominent in every phase of German life, it has had for object, self-avowed, the leading of the nation to a point where it would tolerate an assault on the British people; an assault designed solely for the sake of the material advantage which might be obtained from it; an assault planned precisely as the German robber barons planned their raids in the middle ages. If preparation and education during so many years, for such a purpose, seems deliberation too diabolical to be true, read current history. One of the best new books that the war has produced is "Britain's Case against Germany," by Ramsay Muir; in the *Memoirs of Bismarck* and of *Hohenlohe*, out of its own mouth does the German idea stand condemned!

As we have seen, in 1862 the Prussian King overrode the popular voice at the instigation of Bismarck. The organization of the new German empire in 1870 was designed and carried out, in large part, by that same Bismarck. It is not surprising that he made Prussia, and the Empire over which Prussia holds hegemony, an absolute autocracy. Bismarck placed absolute power in the hands of one man, the Emperor.

True, in form, the Germans have representative government. Their system provides for three representative bodies which are supposed to have governmental powers. The first of these, the *Landtag*, is something like a Provincial Legislature; but the people are elected to that by a vote allotted by the amount of income tax paid! In one town, for example, two men have the same right, in voting power, as two hundred

others, and there are in addition a large number of persons living in that district who have no vote at all. Poor men have about as much chance of making their opinions felt there as snowballs have in summer time. (Laughter.) A second elective body, the Reichstag, corresponds in some ways to the Dominion Parliament; but it has absolutely no power, and is nothing but a debating body. It is only a matter of a few months since that the Kaiser was advised to turn its members into the street by a squad of soldiers, because they ventured to express disagreement with governmental actions. The third representative body is a sort of Federal Council. It has fifty-eight members; but the Kaiser has himself the control of twenty of their votes, and he has never had any trouble in getting the two other votes necessary for a majority from the remaining States. This body meets in secret.

Is it necessary to go further? Could colonies governed by methods such as these succeed in this year of our Lord, in the tropics or anywhere else? Could any men who were not blinded by a vicious system of education and by misrepresentation, endure such a government?

There are lots of good men in Germany. Canada knows well how good the stock can be. Think of the men of thrifty, industrious Waterloo and Berlin; of Adam Beck and Kirchofer. Consider the exodus of Germans who, from 1848 to 1850, and again in 1862, went from their country, many of them to Canada and to the United States, because they had failed to gain personal and political liberty at home.

Could men of this stock remain contented with the German system of government, once the larger life and freer air of a colony in a newly settled land had purged them of their education and awakened in them a sleeping sense of personal responsibility, of individual liberty?

The answer is plain; colonies of German men and women will succeed anywhere; but it is the German people who will succeed, and not the mediæval ideals by which some of them are still ruled and driven. (Applause.)
