

WHAT IS TUBERCULOSIS?

What this Terrible Disease is—Simple Facts about Consumption.

THE following is the first of a series of papers for the masses, designed to tell in simple, easily understood language the terrible menace that consumption is to the whole community and the simple steps that, if taken by the people, will result in the eradication of the disease. These papers are written by an expert member of the staff of the Pittsburgh Sanatorium for Consumptives of which Dr. William Charles White, an old Woodstock "boy"—a Canadian—is the Medical Director.

TUBERCULOSIS is a disease caused by a microscopic plant which grows in the body of animals as other plants grow in the ground.

The seeds of this plant are exceedingly small, so small in fact that if 3,000 of them were piled end to end, they would make only one inch in length. One may arrive at an idea of how large a magnification this amounts to by mentally trying to pile 3,000 men one on top of another. This would magnify a man's length into something over three and one-half miles. With this minuteness of size present in the mind it will be easy to understand how easily these seeds may be carried, floating around on even the slightest breath of air. The current which one makes in breathing air into the nostrils is quite sufficient to carry these seeds far into the air passages of the body where they lodge and proceed to grow.

These seeds of tuberculosis are four to five times as long as they are broad and thus make short rod shaped seeds. For this reason they are called bacilli, which simply means short rods—that is, these seeds are called bacilli of tuberculosis.

WHERE THE SEEDS GROW

The bacilli of tuberculosis find the conditions necessary for their growth inside the animal body just as other seeds find the conditions necessary for their growth in the earth. When they get into the body in any way they begin to grow there just as a seed planted in the ground grows, and form inside the body a sort of fungus.

THE NATURE OF A TUBERCLE

The animal body by nature objects to being made a growing place for a plant and seeks through its body cells to stop the growth of the plant. This it strives to accomplish by packing some of its body cells tightly around

these invading plant seeds wherever they have lodged. In each case where the body cells are packed around these growing tubercle bacilli we have a small pimple inside the body, each one about the size of a very small pinhead and each one of these is called a tubercle, which means a small pimple.

There is an old saying that one swallow does not make a summer nor one grain of wheat yield a harvest, and it is also true that one tubercle bacillus does not give tuberculosis. A body to have tuberculosis must have a large number of these tubercles in it.

NUMBER OF BACILLI NECESSARY TO CAUSE TUBERCULOSIS

It has been reckoned by careful observation in a German laboratory that it takes 80 or 90 of these bacilli of tuberculosis to give one guinea pig tuberculosis and as it is a general law that the number of bacilli necessary to cause a certain disease is more or less directly proportioned to the weight of the body in which they are to grow it may be reckoned how many bacilli would have to gain entrance to a man's body to cause tuberculosis there. Surely it would require a great many more than for a guinea pig. Now, when one considers that there are in Pittsburgh 20,000 or 30,000 persons with tuberculosis, the great prevalence of these bacilli may be guessed at.

TUBERCULOSIS AND CONSUMPTION

When a great many of the bacilli of tuberculosis get into the body and form a large number of these small tubercles close together they often fuse together into one mass just as a large fungus may be formed by the fusion of smaller fungus growth. When this fusion occurs the mass that is formed starts to rot in the centre because the tubercles in the centre can get no more food as no blood vessels and no lymph vessels go to the centre of these tubercles. This rotting goes on faster as the mass increases