

WHAT EVERY ONE OUGHT TO KNOW ABOUT GERMS.

By William C. Miller, M. D.

With few exceptions, the communicable diseases, those which you term "catching," are contracted by breathing in or swallowing germs.

Your town, your home, your body can be protected from germs, first, by the strict enforcement of public health laws; second, by the intelligent precautions which you take as an individual.

"Germs" is the common term applied to the different forms of bacteria which produce disease.

If your imagination has pictured disease germs as fantastic shapes with forked tongues and lashing tails, the glamour will fade when you view them under the microscope, for there you will see only objects which look like finely chopped hair, groups of dots, or pale corkscrews. They cannot be seen except by the aid of a high power microscope. Some are so small that 10,000 can nestle comfortably on a fine line an inch long.

They are vegetable in character and reproduce by dividing in half. In about thirty minutes the two germs thus formed will be fully developed and ready to divide again. In the next half hour the four thus produced become eight, and so on. Billions are lost in the struggle for existence, but a pencil and paper calculation of the 24-hour progeny of a single germ will astonish you.

HOW GERM DISEASES ARE CONTRACTED.

If you breathe in or swallow some of these microscopic germs they may find lodgement in your system. When an individual is "fit," as we say, the natural power of resistance is often able to prevent disease germs from finding such lodgement. When, however, the vitality is lowered or the membrane of the mouth and nose is irritated by a cold, the likelihood of infection is greatly increased.

The dread communicable diseases against which all public health agencies are fighting are: Bubonic plague, cholera, leprosy, small-pox, typhus fever, yellow fever, anthrax, infantile paralysis, cerebro-spinal meningitis, chicken pox, German measles, glanders, diphtheria, malarial fever, measles, mumps, relapsing fever, scarlet fever, typhoid fever, and whooping cough.

You may smile at those words, "bubonic plague, cholera, typhus fever, small-pox and yellow fever," and say that American sanitation has stamped them out. In America, to a large extent, yes.

But in Europe, war and revolution swept, plagues are raging. Men, women and children are dying by hundreds of thousands. And on two oceans, steamers are plying between insanitary Europe and Asia and sanitary America. In every American port, health officials are scrutinizing incoming passengers for disease carriers, killing rats which might carry plague from steamships to piers, and delousing those wretched immigrants whose bodies and garments might be infested with the insects which carry the deadly typhus germs.

An eminent public health expert who recently visited the plague swept countries of Europe has stated that if typhus be permitted to touch the port of New York, it will claim millions of victims in the metropolis, and sweep across the North American continent like a prairie fire.

Therefore, it behooves every citizen in every city, town, village and rural community to turn from the picture of horror and death in Russia, Poland and the Far East to reinforce community and individual household protection against other germs.

Pure water and pure (pasteurized) milk are almost infallible protection against typhoid fever.

A BIG "IF."

You will reduce danger from these: If you rid your town of these: Bubonic plague, typhus fever, yellow fever, malarial fever, relapsing fever, rats, lice, mosquitoes, flies, ticks, fleas, bedbugs.

When you think of the rats in the alley and the flies at the market house it may appear a hopeless undertaking, but begin today clearing your town of both.

The scope of this article will not permit details as to the methods of ridding communities of rats, flies, mosquitoes, or that variety of vermin the presence of which the housewife is wont to regard as a reflection upon her administrative ability, but it is quite possible to get rid of the entire lot. Write your State Department of Health for instructions.

The spread of more common diseases, such as infantile paralysis, scarlet fever, diphtheria, measles and whooping cough, can be checked quickly by intelligent co-operation between public health officials and individual citizens. The agencies used include strict quarantine, injections of toxin and anti-toxin, and the simplest precautions on the part of individuals.

The start or first symptom of many a serious illness, especially among children, is the so-called "cold in the head."

Just how much blame for the distribution of diseases may be placed at the door of the "common cold" no one can say. When the public shall have been educated in protection against colds, we shall probably know.

In the meantime an outline as to how colds are conveyed from one person to another may be taken as an example for the transmission of other diseases, such as meningitis, diphtheria, measles, scarlet fever, mumps, whooping cough, etc.

In common cold the mouth, nose and throat contain myriads of germs which at the earlier stage of the disease are especially active and virulent. When the patient coughs or sneezes, droplets often so small as to be invisible, yet loaded to the full with the germs, are thrown into the air. If breathed in by another person of low resistance, there will be a new case of cold in the morning. If a person with a cold puts his hands to his mouth or nose, and then shakes hands with a friend, there is a

transfer of germs of which neither is conscious, and the next day another man comes down town with a red nose. Persons who have colds should avoid crowds and public conveyances, and, if possible, stay at home until recovered. They should always cough or sneeze into a handkerchief. Lowered vitality because of a cold renders the individual much more susceptible to other infections.

YOUR OWN DEFENSE AGAINST GERMS

In all communicable diseases there is a similarity of defense as well as attack.

When the hostile germs succeed in entering the system, with their increase in the numbers they throw off, into the blood stream, waste substances which, because they are poisonous to the body, are called toxins. These stimulate the protective functions of the body and the blood begins at once to produce substances to overcome them. These substances are called anti-bodies, or anti-toxins.

If the patient has average strength and the disease is not too virulent, enough anti-toxins, or anti-bodies will be made to neutralize the disease toxins, and the result will be recovery. Because some anti-toxins remain in the blood, you do not get certain diseases a second time.

The blood of animals inoculated with disease toxins, also makes anti-toxins. The use of diphtheria and other anti-toxins, from the blood of the horse, is widespread. However, when animal anti-toxin is used, as for instance in diphtheria, while its action is the same as that of the anti-toxin which might have been made by the patient, had there been time, it soon passes out of the system and permanent immunity cannot be promised.

PERMANENT IMMUNITY AGAINST DIPHTHERIA.

There is a way to establish permanent protection against diphtheria. If you would do your bit toward checking disease you will join the forces which are trying to eliminate diphtheria from the category of diseases by making the administration of toxin anti-toxin a requirement for admission to school, just as vaccination against small-pox is now compulsory in many States.

SCHICK TEST.

The injection between the layers of the skin of a minute quantity of a special laboratory product will show within 48 hours, by the presence or absence of reaction, whether or not the person so treated is susceptible to diphtheria, a disease to which many are naturally immune. This is known as the Schick Test, and it should be administered only by a physician.

TOXIN, ANTI-TOXIN.

If the Schick Test shows that the individual would probably contract diphtheria if exposed to it, then toxin anti-toxin should be administered. This means that enough prepared diphtheria toxin is injected beneath the skin to stimulate the natural manufacture of anti-toxin by the blood and to produce permanent immunity. Mixed with the toxin is a sufficient amount of anti-toxin to render it harmless.

It is given in three doses, a week apart.

Babies under six months, on account of a temporary immunity to diphtheria derived from their mothers, often fail to respond to the Schick Test, and thus may be created a false sense of security, which experience does not justify.

It is not a bad practice to administer toxin anti-toxin without the formality of the Schick Test, to babies between six months and two years of age.

(Concluded next week.)

Wearing of Parachutes Ordered by Government.

All persons riding in government-owned aircraft are now required to wear a parachute on every flight, according to officers at Chanute Field, at Rantoul, Ill. A parachute course has been added to the train-in courses at the field and during the last year, fifteen Naval Air Service and Marine Air Service men came from the United States and Hawaiian department for instruction in this course.

The course is extended over ten weeks of intensive training during which time each student is required to make several jumps and is instructed in the care, construction, repair and use of the parachute.

The Air service has adopted two styles of parachutes, according to the

officials. One is the seat pack and the other the lap pack. The seat pack folds up and acts as a cushion for the men to sit on. Both styles are about twenty-eight feet in diameter when open and are made of a high grade of silk, having a tensile strength of forty-five pounds to the square inch. These styles have been in use for about one year and to date have never failed to open, according to the officers, who state that thousands of tests have been made under every possible condition, such as tying knots in the cords, folding the parachute in tangles and releasing them in all kinds of weather. It is stated that when the trip cord is pulled the parachute will open in about three-fifths of a second and with a two hundred pound weight attached will fall at the rate of about sixteen feet a second.—Exchange.

State Will Pay \$25 for eBars.

If bears are too plentiful in Potter county, Pa., this year, the Game Commission will allow their capture for stocking purposes in other counties of the State, but otherwise the game limit is the same as elsewhere.

If "search and seizure" is desired by the denizens, the commission will so order, and pay \$25 for each bear caught in log traps delivered crated at the nearest railroad station for shipment May 1st to October 31st.

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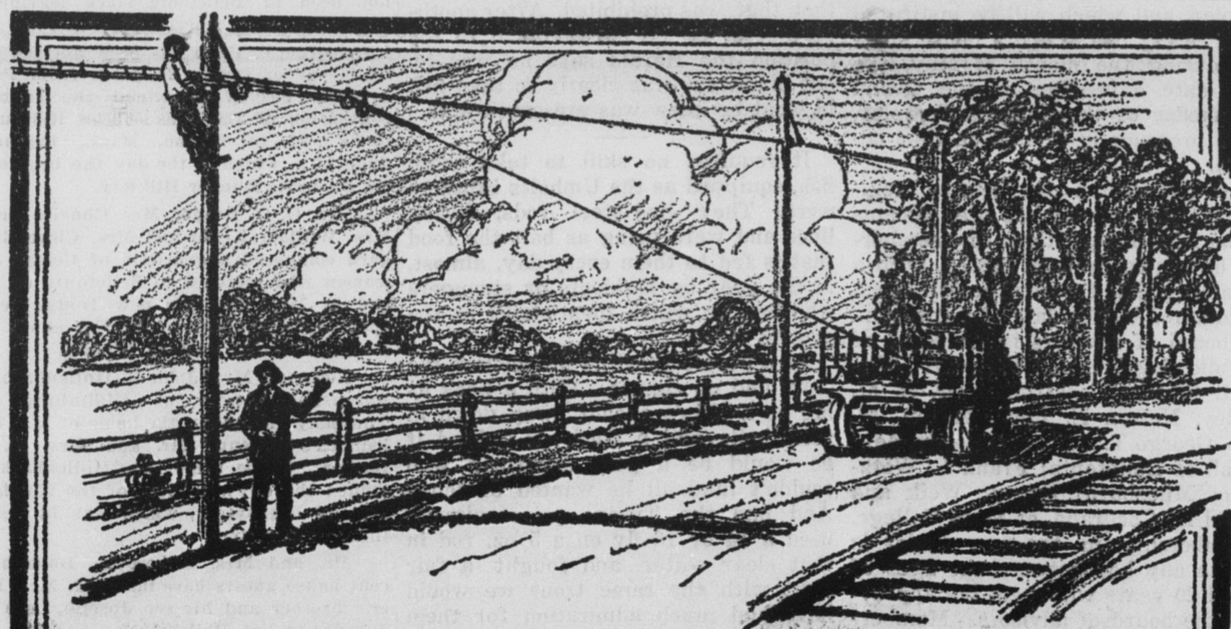


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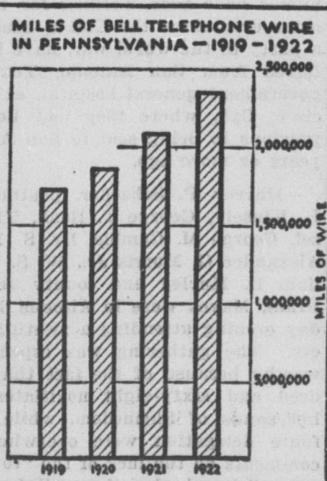
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