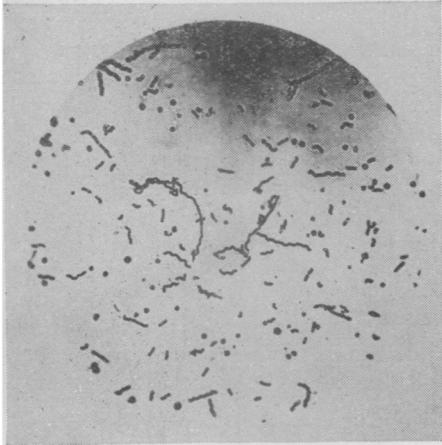


What Plague Will Follow the Next War?

Hygiene



ASIATIC CHOLERA, one of the scourges of ancient times, is caused by these cork-screw-shaped organisms

By JANE STAFFORD

Suppose another world conflict with its marching hordes, strife and death, overtakes us. What then will follow and blast the health of the earth's teeming millions?

A new plague of germs, made more deadly by evolution's transmutation. An epidemic of insanity, like shell shock, conquering the civilian population. An epidemic of vitamin hunger. A new disease of nutrition that will fell thousands. A pestilence of the air, brought by winging planes that deal death in a new form as they drop bombs and poison gases and blockade the sun's rays with smoke screens.

Such are the cold-blooded, conservative estimates, deliberately made by public health experts who are calmly considering possibilities and carefully laying plans for defense, just as are military and naval experts.

For there will surely be another dreadful plague. Some pestilence will overwhelm the earth, cutting down the population and weakening those who are left by disease and hunger and want.

If men have learned anything from the past they have learned that following every great war came a great epidemic. Plague and cholera followed the Crusades when West fought East for possession of Palestine. Plague and smallpox and typhus fever followed the wars between England and France that gripped Europe for a hundred years. Our own Civil War was followed by such disease that the numbers who died

in hospitals of sickness far outnumbered those who were shot and died in battle. Even as late as the Spanish-American and Boer Wars typhus fever and typhoid and dysentery devastated the ranks of both troops and civilians.

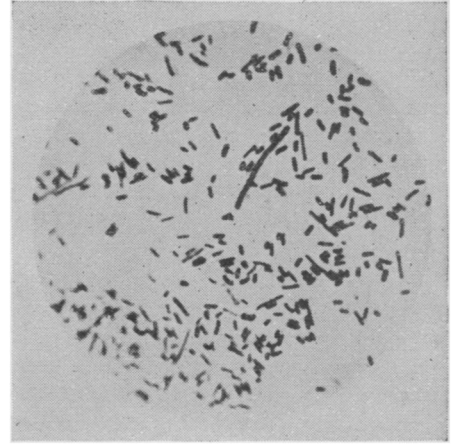
The World War was the first in history in which the number killed by shot and shell exceeded the number who died of disease and pestilence. A triumph indeed for medical and sanitary science, which physicians and public health surgeons are anxious to see repeated after the next great conflict.

So, while military experts are planning fleets of airplanes, these other experts are wondering what the effect of thousands of these planes will be on the earth's population.

Great smoke screens, laid by planes, might keep the sun's beneficent rays from a locality for protracted periods. The harm this would do may be conjectured by considering the present condition of industrial workers in large cities, particularly in England, where they are deprived of sunshine most of the year. Immigration officials who examine thousands of people annually, have noticed that immigrants from Liverpool, for instance, almost all have false teeth, even young men and women 21 or 22 years old.

If airplanes blockade a country from the sun, the children of that country will grow up, if they grow at all, with weak, malformed bones and brittle, decaying teeth. To prevent such a possibility, scientists are at work, standardizing cod-liver oil, the bottled sunshine, and experimenting with lamps that produce artificial sunlight. These measures of substituting sunlight are being used now for children and adults who are sick or have been deprived of their due amount of natural sunlight. In the event of war, such measures would need to be expanded to embrace an entire nation, perhaps.

Another danger from planes is the possibility of disease as a result of exposure to irritating chemicals spread over a city. Fancy living in an atmosphere like that of a railway tunnel for weeks at a time. Besides the discomfort, the air passages, always delicate and easily injured, would suffer lasting harm. Tuberculosis would probably follow such irritation of the lungs. If the irri-



WHEN TROOPS DIED from dysentery, it was often due to these bacilli in impure water and food supplies

tating substance did not penetrate to the lungs, it might cause disease of the bronchii, which are the tubes leading to the lungs. Or people might become permanently hoarse and speechless as a result of injury to the larynx.

The great plagues of the past have all been germ-borne. As soon as scientists learned the germs of the diseases, and how to kill them or keep them away from man or how to protect man from them by vaccines and antitoxins, the danger of world-wide plagues disappeared. The reason such plagues have followed wars is that they have followed the lines of travel. Citizens visiting military encampments or returning soldiers brought the disease germs with them. They carried the germ that causes typhus fever in the lice on their bodies, they brought germs of typhoid fever and dysentery in their intestines and spread them with their body discharges. They brought germs of cholera and smallpox and venereal diseases which they passed on to the civilian population at home. And because scientists were still groping in the Dark Ages of Science these diseases spread and spread and killed hundreds of thousands of people, many more than ever died of wounds or were shot in the wars.

When the Crusaders went to Palestine they knew how to fight with sword and buckler, but they didn't know a thing about sanitation or how to keep a pure water supply. They didn't even have such things at home, so how were they to maintain them when away fighting? (Turn to next page)

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When American marines and soldiers fought the Spaniards in Cuba, six centuries later, they had Springfield rifles and armored battleships, but one out of every seven men had typhoid fever, one out of every 71 soldiers died of it, and untold numbers came home, typhoid carriers, to spread the disease throughout the country, because the protective antitoxin for this disease was not known then!

During the last war we knew all these things and knew how to protect soldiers and civilians from smallpox by vaccination, from water-borne diseases by purification of water supplies. Every unit had a canvas bag of the precious solution, sodium hypochlorite, a few drops of which made water safe for drinking. There were delousing stations that protected from typhus, there were prophylactic stations for venereal diseases.

Then when everyone thought we were safe, danger came from an unexpected quarter, as danger always does. In a few places cases of influenza of a particularly virulent type broke out, and suddenly the disease spread like wildfire all over the civilized world. Again it was a germ-borne disease, following lines of travel. Again it was a disease of which scientists knew very little, nothing definite about what caused it or how to prevent it, except by complete isolation of all influenza patients.

Just when it seems that science has conquered the bacteria and their relatives that carry disease, new diseases appear. Before 1912 no one knew of tularemia and now it is widespread. Rocky Mountain spotted fever is another new disease. Are new bacteria springing up to take the places of the vanquished? Or are the old ones changing their forms, disguising themselves, only to break out in some new type of disease? The fact that some diseases, like smallpox and scarlet fever and diphtheria, are occurring in milder form points to a change or weakening in the micro-organisms causing the diseases. Some scientists believe the second theory is true and are working now to find proof for it. If they are successful, they will have to work harder than ever to outwit these resourceful organisms, to discover what form each is going to take next and how, in their new, or transmuted, forms, they may be killed or their

evil effects neutralized by antitoxins and vaccines.

The stay-at-homes during a war have always suffered from nutritional diseases. All the fresh, nourishing food is devoted to the fighters. In addition, much food is destroyed, wantonly or accidentally. If the next war is so increasingly great in scope as the last one was, this destruction of food will be so great as to cause a widespread nutritional plague.

What if scientists have discovered vitamins in tomatoes and oranges. If tomatoes and oranges are destroyed or captured by an enemy, where will we turn next for our vitamins? Pellagra seems now to be conquered, so does scurvy; so does rickets. That is, scientists have found the causes of these dire diseases and have been able to prevent and to cure them. But they still exist, just as do cholera and plague and typhus fever in various parts of the world. When a great war breaks out and men and women are striving with might and main to defend themselves, who will remember to watch the danger spots all over the globe? Who will remember to see that little children and women who are not useful for fighting get enough vitamins, get fresh fruits and vegetables, get yeast, the pellagra preventive?

But perhaps the greatest menace, one that threatens civilization itself, one that is hardest to prepare for, that will be hardest to combat, is a great plague of some mental or nervous disease. Such a disease seems the most likely candidate for the position of the plague that will follow the next great war.

Rumblings of such a disaster have already been heard. After and during the last war we had a condition called shell shock, though it had mighty little to do with shells and was found, under one name or another, in homes and offices far from the firing line. In fact, it was only when this condition appeared among people who were remote from the fighting that it was recognized for a condition of mental or emotional collapse due to great mental and emotional strain. Broadly, this is hysteria. Its symptoms are many and varied. Lack of emotional stability, lack of mental training are thought to be at the root of it.

The last generation, reared in stolid, prosperous respectability, was in many cases not able to cope with

the conditions of the war. The personal conflict of adjustment was too much for that emotional and mental equilibrium. How will the next generation fare in the next war?

Psychologists and psychiatrists, the new order of scientists, are at work now studying the behavior of animals and human beings, both child and adult. They have found many reasons for our conduct under varying situations. They can even predict what we will do under certain conditions. They can show that people of certain intelligence levels will get along well living quiet lives, performing tasks of a routine nature. But when the routine of life is disturbed, by war or sickness or any other outside force, these people collapse, mentally and emotionally. Some of them proceed to almshouses, some to insane asylums, some to jails. Psychologists are even able to predict, to a certain extent, which direction these people will take when the crisis comes. But as yet they have found no sure way of helping them through such a crisis, or of restoring them to normality afterwards.

The danger from such a widespread plague of mental disease becomes greater as the danger from infectious disease lessens. The more people who survive or escape typhus and cholera, the more who will be left to face mental and emotional strain and readjustment.

The great danger is not from the individual who becomes incompetent to earn a living and must be supported by public funds, but from the vast numbers who develop twisted, hideously perverted minds, in whom all moral sense is suddenly lacking, who are ready to commit any crime.

The situation is fairly acute even now. If the barriers of civilization are let down any further, after another war, will there be any civilization left?

We must look to psychologists and psychiatrists to save us from this, as we look to bacteriologists and sanitarians to save us from plagues of typhus, cholera, etc.

They are working hard, these scientists. They are having opposition in many quarters, much help in others. They alone can foretell the plague of the next war. They alone can prevent or check it. These are the possibilities that scientists now see. Preventive work is being done along all these lines.