

THE CONQUERED AND THE UNCONQUERED PLAGUES

BY VANCE THOMPSON

EVENTS have this likeness to wild geese—they do not come one by one; they advance in flying triangle; always there is one in the lead; always the others crowd after it in fan-shaped battalion. This is an old truth. It is embedded in popular wisdom, like an ancient toad in a stone. "Misfortunes never come single," croaks the proverb.

There is never a single earthquake; no sooner is one born than others, hearing his voice, break through the crust of earth and hail him tumultuously. On the boiling strait of Messina is raised the answering cry to San Francisco. Chile, Vesuvius, Mont Pelée join this chorus of the Cyclops.

Time is a sort of rotary printing-press, which gathers up the endless white paper of the future, prints it, dates it, and tosses it into the archives of the past. The man who studies those archives need not go through life wholly unprepared. He will have learned that Nature, now and then, loses patience at the slow ordinary march of life and death, and throws down catastrophe into the world.

Yet even in these splenetic outbursts there is order. In cycles, so vast that it is difficult to plot their curves, these revolutions recur; and science is beginning to understand the law of their recurrence. Earthquake and flood, in the past, have been followed by pestilence; pestilence has been followed by war.

This law of sequence the pathological historians have laid down. You may see it in the years of seismic disorder, of plague and war, in the fourteenth century, when the black death rode abroad. Earthquakes shook the world from China to England. Volcanoes, long sleeping, woke and roared to one another like blind lions in the desert, their stone jaws frothing lava.

Then came strange pests of insects, the harbingers of plague; and atmospheric deterioration, of which history speaks darkly. At last the pest woke in its oriental home. To-day it is known as the bubonic plague; then men called it the black death. By caravan and ship it journeyed through Asia to Egypt, to Constantinople, to Cyprus, to Marseilles, to Germany, to Scandinavia, to Russia, to England; it went on steadily until in forty years it had well-nigh circled the globe, ending its journey on the banks of the Volga.

And see the dead it left moldering in its way—in Florence sixty thousand, in Venice a hundred thousand, in Marseilles sixteen thousand in one month, in Paris fifty thousand, in London at least a hundred thousand; and so you might follow the death-list into every city and town. Nature impatiently swept away millions upon millions of human lives. Europe had at that time less than a hundred million inhabitants; twenty-five millions were slain by the black death.

The moral effect upon the nations was no less striking. The plague gave rise to mob-tumults; rebellion succeeded rebellion; civilization was shaken with successive convulsions of anarchy and tyranny. And the last result was a strange recrudescence of new and mystic religions. Fantastic prophets arose; the dancing mania was born, and hordes of fanatics danced over Europe—as to-day the Dukhobors dance in the snow of Russia and Canada.

Medical science, even in the fourteenth century, was not wholly without wisdom. It recognized the contagious character of the bubonic plague, and fought it with methods of isolation, of sanitation and diet. It lanced the inflammatory boils and cauterized the black spots which

mark this plague. But in the end it acknowledged that the black death had come upon humanity like storm or earthquake, and, like them, had passed in its own good time.

THE BLACK DEATH OF TO-DAY

Now once again the bubonic plague is scourging the Far East. Curiously enough, it was first heard of in our day at Vetlianka on the Volga, the very point where it stopped on its way round the world six centuries ago. It appeared there in 1878; by 1894 it had reached China, touching Canton, Hong - Kong, the isles of Annam and Formosa; two years later it was in Bombay; and in 1897 Hindu pilgrims had carried it to the shores of the Red Sea.

Traveling from the south of China, the plague reached Japan in 1899. In the other direction, it made its way into Persia, Kurdistan, Astrakhan; there has been a notable outbreak in Arabia, south of Mecca. In a word, the black death is abroad once more in the eastern world.

What steps have been taken to stop it?

It is here our interest lies.

Yersin discovered the microbe of the bubonic plague in 1894. He described the three forms of the disease. The common kind begins with chills and fever; the patient falls into a swoon and has terrible hallucinations; blue streaks appear on the tongue; then the buboes—the swollen glands—appear here and there on the body, and death comes. A milder form, called the ambulatory plague, is distinguished by smaller buboes; only about sixty per cent of the victims are doomed to die. The most intense form is the "lightning plague"; it kills in an hour or two, before even the buboes have had time to show themselves; ninety-five per cent of its victims certainly die.

The Japanese, those marvelous little yellow men, have proved the best plague-fighters. To those two medieval remedies, isolation and disinfection, they have added the use of Yersin's serum. Their first and most urgent care was to establish quarantine-stations at all their seaports. They allowed no ship to land until it had been disinfected, and until its rats had been destroyed. For the pest is spread in two ways—first, by

direct contagion of plague-stricken voyagers; second, and more commonly, by infected merchandise—and in this case the rats carry it far abroad.

By way of protection, nothing has been found except Yersin's antipest vaccin. In China it lowered the death-rate from ninety-five per cent to seventy-six per cent. A Japanese physician informs me that he inoculated himself with antipest serum and found himself immune. Those stricken down with the pest are given great quantities of the serum—as much as two hundred and forty cubic centimeters—and where this is done at a very early stage of the disease, nearly one-half recover. In addition, the Japanese doctors employ the medieval method of extirpating the buboes by the surgical knife. Where the plague has broken out in a family, they burn down the house.

Ships infected with plague by the rats of Asiatic harbors have several times carried the disease to European ports. It is no longer a vague, indefinite evil, which humanity must fight; the rat is the enemy. Can he be slain? Since 1900, many millions of rats have been killed in Tokyo alone; and still, it is said, the wooden city swarms with the vermin.

BERIBERI AND THE SLEEPING SICKNESS

There is another plague going its way in the world to-day; it is called beriberi, or the sleeping sickness—for the two are so near akin that they may be reckoned as one. Scouts of the health-bureaus have signaled this destroyer in South America, in Japan, in India, in Africa, in China, in Polynesia, and in the Antilles. Home-coming wayfarers have brought it into France; and yesterday I stood by the bedside of a gaunt man who was dying of it. His eyes were shut, his face was the color of impure wax.

"But what is this ghastly disease?" I asked.

And Dr. Metchnikoff, the famous head of the Pasteur Institute of Paris, made answer:

"Ah, that is what we do not know!"

Its cause has been discovered. It is a fly that lights on man, stings him slightly, and goes its way. Then the

man's nerves and muscles degenerate; the blood circulates dully and fitfully; sensibility becomes deadened; he drops his eyelids over his heavy eyes, and drowns away into death.

I can tell you the learned medical name for it—a generalized infectious polyneuritis. You have marked the word infectious; that is its great characteristic; it is indeed extremely infectious. A man comes home from the fields; though he knows it not, the beriberi fly has touched him; he kisses his wife and children; one and all, they lie down, and their sleep is heavy with death. A convoy of prisoners from Indo-China carried the disease into New Caledonia; and the natives slept and died. There are no statistics of the mortality in tropical Africa, but it is there that the plague of sleep reigns almost unchecked.

Dr. Koch declares that his remedy, ataxyl, is a preventive and to some extent a cure. By inoculation he can render man immune. But who is to inoculate the millions of black Africa and the yellow East? And beriberi's emissaries of death are the flies of the air, innumerable, intangible; it would seem easier to fight the rats of land and sea.

LEPROSY, THE WHITE DEATH

The three deaths—bubo and beriberi, and, last of all, the white death, which men call leprosy! You had thought leprosy long banished from the world, had you not? Long, long ago, down the roads of the Middle Ages the lepers went, sounding their wooden clappers and crying, "Unclean! Unclean!" You ask yourself, do they still walk the world? There are scores of them in New York. They slip about the streets with no warning outcry and no noise of wooden rattle; for it is the optimistic theory of the health board that leprosy is not contagious—in New York.

Possibly that is true, for reasons of climate; another story, however, comes from China and Hawaii, from South America, from Italy, Sicily, Rumania, and many another part of Europe. Father Damien, that saintly priest who carried comfort to the lepers in their colony of Molokai, died of the disease in spite of all the preventives of science. Even in New York, physicians have

arisen to combat the careless theory of the uncontagious character of leprosy. They point out, truly enough, that its spread is very slow. Colombia, beginning with a dozen lepers, took forty years to build up its present colony of forty thousand. Norway has been years creating her lepers; still, she sent three hundred to the United States without missing them.

China, Japan, the Philippines add their contributions. Here and there, all over the United States, there are plague-spots of leprosy; it is thought that there are one hundred lepers in New York; Louisiana alone has four hundred. And still the government has not established leprosy-camps or colonies, nor reinstated the wooden clapper.

Like every other plague, the white death has its emissaries. Fleas, mosquitoes, flies, verminous things that have touched a leper, carry far abroad the pestilence; so, you see, not even direct contact is necessary. Such, by the way, is the opinion of the scientists of Europe—and daily they have to fight this plague. Only the other day it was signaled in Switzerland. Along the Mediterranean it has never been stamped out; but within the last few years this ancient plague, like his two brother deaths, has shown strange new vitality.

Once more he is walking the highways of the world, but very softly. Better, far better, were it that he raised the old sad cry of "Unclean! Unclean!"

THE CONQUEST OF YELLOW FEVER

It was a thought of Leonardo da Vinci that we should make our life out of the death of others. That is a little the way of the scientists. They have learned the laws of life in the charnel-house. Little by little they are finding adequate methods of applying their knowledge, and of aiding man in his unending battle with disease and the parasites of death.

Ronald Ross, completing the work of Pasteur and Koch, found that malaria was due, not to miasmata exhaled from swamps and poisonous soil, but to a wretched little spotted-winged mosquito; then both cure and prevention became medical possibilities. So, too, the mosquito that spreads the infection of yel-

low fever has been discovered—a brindled insect that bites only at night and never by day. Strangely enough, this mosquito rarely bites a negro. Its favorite home is in the countries round about the Gulf of Mexico; it inhabits, however, Senegambia and the Philippines, and almost all tropical lands.

Once propagated by the mosquito, yellow fever is very contagious. Ships are the greatest carriers of the infection. Not long ago a fever-stricken ship sailed into a Brazilian port. Those vessels which lay in the path of the wind blowing from the infected ship caught the disease; the others did not. A description is almost unnecessary, so commonly known are the symptoms of yellow fever. It starts, usually at night, with chills and fever; the face takes on a yellow hue; on the eighth day the patient either dies or begins to recover.

Since the discoveries of Koch and Ross and Bignami, yellow fever is no longer a lamentable visitation; its existence in any given spot is a crime. A few years ago the Ross method was applied in Havana by Surgeon-General Gorgas, of the United States army. One year of his mosquito work sufficed practically to blot out yellow fever—only five cases were signaled. The second year there was not one case. The victory was absolute and complete.

THE WAR WITH PHTHISIS AND CANCER

Another scientific triumph may be near at hand. Professor von Behring, of Marburg, hopes soon to convince the world that at last the battle against human phthisis is in the way of being won. Already Dr. von Behring has given us a sero-therapeutic cure for diphtheria. With infinite hope, humanity awaits his remedy for consumption. Near Paris, at Melun, the experiments are being carried out on cattle. So far what has been demonstrated is this—young cattle, after vaccination, show a *marked resistance* against bacillary infection. This is only a step on the way; it has not yet been found possible to render young cattle immune to the tuberculous bacillus; but, at least, the bovo-vaccin fortifies them against it. And bacteriologists believe that Dr. von Behring will destroy that awful disease,

consumption, even as Jenner destroyed smallpox.

Side by side with the battle against tuberculosis goes the fight against the malignant neoplasms of cancer.

Is this disease, also, contagious? German physicians assert it; they point out one house where every inhabitant has been cancerous. In any case, the microbe of cancer—the *micrococcus neoformans*—needs very little aid to establish himself in the human tissues. A carious tooth makes all the necessary preparation for cancer of the tongue. A simple lesion prepares a ready ground for the microbe.

And has science found the cure?

At all events, the microbe has been discovered; and that is the beginning. The honor of this discovery is due to Dr. Doyen, of Paris. It is still a moot point whether his serum is an efficient remedy or not; the doctors are still arguing over it and knocking one another about the ears with erudite pamphlets. Dr. Doyen himself states the case thus:

“We shall not be able to cure all those afflicted with cancer, but I have shown that it is possible to arrest the evolution of cancer in a certain number of cases, if they are treated in time.”

After all, the message is one of hope; it is not a victory of science, but here—as in the case of consumption—the scientists are in the way of finding the long-sought cure.

These things I have learned from the wise men—bacteriologists of good repute; they sum up what is exactly known of the great plagues, the black and white and yellow deaths, that are now abroad in the world; and, withal, what is exactly known of such ancient ills as consumption and cancer. But when you ask them why the black death should have wakened on the banks of the Volga, where six hundred years ago he ended his journey, and began to walk the world again, they shake their heads darkly and confess a skeptical ignorance.

Only the star-gazing astrologer knows. He plucks your sleeve and whispers:

“Saturn’s year has come again, and its shadowy attendants are plague and pestilence, even as they were of old!”

And he offers to cast your horoscope for a louis d’or.

THE HAND-CAR GANG

BY GEORGE RANDOLPH CHESTER

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A YELLOW flare from the mouth of the deserted lime-kiln streamed out upon the railroad-track and across to the marshy lowland beyond, glowing with a particularly lurid brightness because of the darkness of the early autumn night, and foretelling, to the lone wayfarer who trudged around the curve of the railroad, that company awaited him. One just behind him would have seen that his shoulders were exceptionally broad, and that his arms hung tensely as he swung them. His gait had neither the stoop nor the slouch that belong to the habitual criminal class; though, silhouetted against the flood of light, the outline of his hat and coat and trousers suggested the well-known wrinkled, rusted, and worn variety that is found upon the felonious tramp.

As he neared the lime-kiln, and entered the first yellow tinge of its illumination, a sprawling blue scar could be distinguished upon the man's left cheek—so prominent a disfiguration that it gave to his face a most sinister aspect, and made one overlook the broadness between the eyes, the strong chiseling of the nose, the firm, clean cut of the lips, the determined jaw, and the square, dimpled chin.

He paused, for a moment only, before turning from the track toward the lonely retreat, in order to inspect the place and get an estimate of its occupants. The kiln had been a small one built into the side of a hill, and was a yawning, fireplace-like structure, built up of rough stones, about ten feet square inside, with its front now entirely open. The opening was arched over at about seven feet above the ground, and a little higher up the entire structure began to draw in until it terminated in a chimney, coarsely constructed of flat stone. This had been

disintegrated by wind and storm until its top now came but a little above the ridge of the hill, which, extending out in a straight arm, had formed an admirable support and protection for the whole. The chimney, indeed, now projected so little above the ridge that a man who clambered up the steep slope could place his hands upon the top of the stack and look down into it.

The picturesque ruin had but little interest for the man with the blue-gray scar upon his face, for he had seen it before, both by day and by night; but the five men it at present contained were an absorbing study to him. The fire had been built just underneath the arch, and by its glow two men were silently playing cards. A third, with a broken nose, and with eyes set villainously close together, was watching them with indifferent interest as he smoked a short, black pipe. The two others of the party were lying upon newspapers spread above the floor of lime and detritus, which, from long weathering, had been washed down to an even slope from back to front. One of these men was asleep, with his hat down over his eyes; while the other, a bloated and dissipated-looking ruffian with a grizzled mustache, had his hands beneath his head, and was gazing moodily out upon the two or three brighter stars which, low down toward the horizon, had managed to peep beneath the misty curtain that dimmed the sky.

The five men were a rough-looking set, and one who was used to paths of guarded safety might have hesitated to venture among them. The man outside, however, was apparently satisfied, for, with a slight shrug of his shoulders, he suddenly wheeled from the track and strode up the embankment.

"Hello, bo's!" he saluted them.