

DISEASE AND HISTORY

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HISTORY is the story of mankind, the record of human experience. The modern conception of the universe is very different from former conceptions. Everything is in motion, nothing is fixed, nothing is final. It is the same with mankind. We regard society as an organism ever striving to adapt itself to its environment and always lagging behind, for the environment itself constantly changes. These two processes of change are interactive; an altered environment compels an attempt at adaptation, which—if it succeeds—produces further change of circumstance requiring further adaptation, and so on for ever. When we regard history in this light, we see that it means much more than a mere record of events. We become deeply interested in the state of society and in the underlying causes that drove people forward to success or sunk them in defeat, causes that determined the course of events and the line of development.

A short historic survey of the influence of disease will present a somewhat unfamiliar side of the past, and one of enormous importance for present and future generations. Disease means a breaking down of the machinery of life under adverse conditions. The breakdown is usually more or less repaired until that final failure which we call death. The present paper will enquire whether these two occurrences in the human mechanism—disease and death—have had any marked effect in determining social history. The review must, of course, be very rapid and very cursory, a little suggestive perhaps, but with no pretence to completeness. Numerous dramatic instances will occur to the reader in which individual calamities of this kind have seemed to affect the course of history as a whole, disease stepping in—like the villain in the plot—to mar the tale.

In B.C. 335 Alexander the Great came to the throne of Macedon, was recognised as captain-general of the Greeks against the barbarians, and set out to conquer the world. In 324 he was resting at Susa in Babylonia, having apparently accomplished his task. The work of organization had still to be done. It was a great chance to Hellenize the world. Alexander laid wide and deep his plans for consolidating his empire and fixing the Greek stamp upon mankind. The power was his, and the will. Moving down in state to Babylon

in the spring of 323, he planned to set out once more on his enterprise on June 20. But on June 17 he developed a fever, and on the 28th. he died. The opportunity for a Greek world-empire had gone. The parts indeed remained, but they were still in character just the old eastern despotisms, and collapsed in due time before the onset of Rome. Can anyone doubt that a man such as Alexander was at the age of thirty-three would, if he had lived, have changed the destiny of the eastern world?

When Napoleon returned from Elba to find Europe in arms against him, he had the prospect of saving the throne for himself, concluding an honourable peace, and reigning as a constitutional monarch content with the natural bounds of France. But he chose to attempt first a military success. The campaign ended at Waterloo and he lost all. He might have won Waterloo, and—though he had not the resources or the men for conquest—he might in the humbler rôle of king over an undivided France have perpetuated his house upon the throne to this day. There is no doubt that Napoleon was not at his best during this critical campaign. He made numerous errors of judgment in the political conduct of affairs. He selected the wrong commanders, and wrote equivocal orders to his marshals, so that at Waterloo the Allies miscalculated his intentions and divided their forces. For example, Wellington had his own army deployed to meet an enveloping movement on his right, and had his left miserably undefended. Napoleon attacked on the left, and his troops actually captured in the beginning of the fight the position at La Haye Sainte which was the key to the battle, but Napoleon took no advantage of this. He was actually asleep during part of the action, and seemed unable to give the decisive orders. We now know that he died at St. Helena of cancer of the liver. We also know that at Elba a few months before he had several attacks of jaundice, showing that even then the derangement of the liver had begun. He went through the Waterloo campaign a sick man, and depressed in his vital energies as liver disease can depress. The history of France would without doubt have been different if Napoleon had been at his best in the summer of 1815.

Disease can depress nations as well as individuals. The Greeks achieved for civilization perhaps more than any other people in history. They came near to subduing the world and imposing the Greek spirit upon all Europe. How comes it that the European world is Roman and its spirit is Hebrew? What became in a few years of the Greeks, and where are they now? Their intellect and their art quickly disappeared, but the race is with us still. What has happened to them?

Malaria is a disease caused by a blood parasite that is transmitted by the anopheles mosquito. It was always known in Greece, but its action has varied in intensity as it does to this day. At times the whole population of a malarial country becomes infected, as has happened again and again both in Greece and elsewhere. The effects are in loss of vitality rather than in death. A malarial district is peopled by a depressed, anaemic, worn and weary army of chronic invalids. A race like the Greeks could not maintain its high standard in the face of such an insidious, devitalising foe unless some means were found of conquering it.

Rome suffered a like fate. The Romans are still in Italy, but they no longer rule the world. A little people in the beginning by its courage and energy and masterfulness set the greatest peoples of the east at nought. In its turn, in spite of wealth and discipline and natural defences and mercenary armies it fell a prey to the onset of barbarians. How much of this is to be attributed to the devitalising power of the malarial parasite upon the population of Italy? The energies, the will to power, had gone from the Roman people, and others ruled in their stead.

One might cite many instances in which disease played a decisive part in warfare, modifying and even terminating campaigns. About B. C. 710 Sennacherib was threatening Hezekiah in Jerusalem; "And it came to pass that night that the angel of the Lord went out and smote in the camp of the Assyrians an hundred, four score and five thousand. . . . So Sennacherib, king of Assyria, departed and went and returned and dwelt at Nineveh." This is probably a case of bubonic plague in which an army was destroyed. Two hundred and thirty years later another eastern potentate was warring with disease. Xerxes with his million men was threatening the life of Greece. More formidable to him than the valour of the Greeks was the frightful epidemic of dysentery that prostrated the Persian host and swept away enormous numbers. Perhaps the whole history of Europe was determined by the defeat of Xerxes, and the defeat in turn was in the main determined by disease.

During the twelfth and thirteenth centuries in the same region disease was fighting against a western foe. The Crusaders found plague a worse enemy than the Saracen. In the first Crusade we read of fifty thousand dying of plague before Antioch, and in the last—under Saint Louis of France—occurred the ravages of that pestilence which carried off Louis himself. Disease, too, fought on the side of Rome during the barbarian invasions. In A. D. 538, during Theodebert's invasion of Italy, a third of his army perished of dysentery, and he was compelled to abandon his enterprise.

In every age malaria has been epidemic in armies, and it has often modified military operations or brought about their failure. Rome was saved by an outbreak of malaria among the Gauls when Brennus threatened to overthrow the imperial city. On the other hand the Roman army in Scotland is reported to have lost from fifty to eighty thousand men from the same disease. Typhus was a decisive factor during the sixteenth century at the siege of Granada, where Ferdinand and Isabella were at death grips with the Moors and this fever carried off some seventeen thousand. In 1528, when the army of Francis I. of France was besieging Naples, five thousand of the French nobility together with nearly the whole of the army were wiped out by the same scourge, so that the French were driven from Italian soil. A few years later, during the wars in Flanders, Charles V. was winning great success against Francis and had even got within forty-five miles of Paris when he was compelled by the ravages of typhus to make a hasty peace. After the death of Francis, Charles seemed about to restore the empire of Charlemagne. His first step was to advance against the Protestants of Germany, whom he defeated at Muhlberg in 1547. Henry II. declared himself the protector of German liberties and took possession of Metz. Charles besieged the city, but after losing thirty thousand men from typhus he abandoned the siege and abdicated the imperial throne, dividing the empire between Philip of Spain and the Archduke Ferdinand. From that day the vast dominions of the House of Austria were divided. Thus the whole history of Europe was influenced by a pestilence.

The significance of disease during the campaigns of Napoleon was enormous. In the siege of Saragossa fifty-four thousand are said to have perished from typhus. In the Prussian campaign of 1803 vast numbers were similarly sacrificed. In May 1812 Napoleon levied a Bavarian army of twenty-eight thousand, and by the following February only two thousand five hundred remained. Of the Prussian allies one-sixth died in the month of August. In Mayence during the same year, out of sixty thousand French soldiers typhus swept away twenty-five thousand, and after the retreat from Moscow forty thousand are said to have succumbed to this disease in the neighborhood of Paris. Can anyone doubt that here lay an important cause of Napoleon's loss of power? The point might be further illustrated by the analogy of our own ill-fated Walcheren expedition. In three months, out of an army of thirty-nine thousand men, twenty-three thousand lost their lives through malaria, and the whole expedition was a disastrous failure. Thus too the Crimean campaign was largely a failure from disease. The French

lost seventeen thousand from typhus in three months, while scurvy is reported to have killed some forty thousand French and English and to have practically annihilated the Turkish forces.

Disease has been at least as conspicuous a factor in civil as in military history. The most important social change that followed upon the fall of the Roman empire was the rise of nationalities. Germany, France, Italy, Spain, Britain, the Netherlands, Austria, all took on distinct and characteristic national features, which time has so accentuated that now the idea of national character as opposed to geographical boundaries is becoming the dominant principle of political rearrangements. It is becoming more and more evident that political control of territory in western Europe should be determined by the type of people who live there. Parallel with this, an *economic* change is to be observed. It began with the rise of the towns, followed by the growth of the industrial community and the extension of commerce. Our modern civilization is in the main industrial and commercial, and its advancement has proceeded step by step with the advancing prosperity of urban life. How far has this progress been influenced by disease?

During the centuries from the fifth onward, western Europe was adapting itself to its new conditions of life as an organism adapts itself by the process of evolution to changes in its environment. Mankind had to acquire the power to live and thrive in industrial communities, and the chief obstacle to success seems to have been the incidence of disease. The difficulties were increased by an extraordinary development in the practice of asceticism. Men had come to believe that the body and its wants were to be despised, that comfort and well-being were wiles of the devil and ought to be spurned, that poverty and self-abnegation were the most precious of virtues. As a result we find the common people submerged in what might be called the age of dirt. The cities were loathsome slums, no sanitary precautions were adopted, so that over-crowding and squalor prevailed to an extent not known at any other time. The natural consequence was the age of pestilences. In this matter the history of bubonic plague is most instructive. This disease has always been endemic in the East,—in India, Egypt, Persia, Syria. In A. D. 542 an epidemic began in Egypt, and in the following year ten thousand persons are said to have died from it in Constantinople in one day. The ravages extended over Italy and Gaul. By 565 the mortality had become so great among the Italians that their country fell an easy prey to the Lombards. Great and wide-spread pestilences marked the thirteenth century. In the fourteenth century a cycle of epidemics raged under the name of "Black Death."

It began in China, where the mortality figures stagger the imagination, and gradually spread all over Europe. In Oxford two-thirds of the academic population are said to have perished from plague in 1352. The records of the awful year 1665 in the city of London are but a sample of what happened from time to time all over the world. Some have estimated that one fourth of the population of Europe died in the first cycle of the plague. One might extend the melancholy list almost indefinitely by considering the statistics of typhoid, dysentery, Asiatic cholera, malaria, and other disorders which wasted the civil population just as they wasted armies.

In short, under pestilence the western world must have withered like an orchard under the blight. The parallel is almost perfect, for those minute animal and vegetable organisms which we call bacteria and plasmodia are similar to many of the parasites which infect plant life. The newly organised societies had first to conquer the enemies that fastened upon their citizens from the air they breathed and the water they drank, before they could advance to the conquest of the powers of Nature. In the long struggle against the terrors of these dark ages Europe won its way to civilization. The overcoming of each foe was a step upward in this wonderful development. Few of us realize, I think, how much has been achieved by the struggle against disease towards making modern life what it now is. It was in the hard school of necessity, of self-preservation, and against the blank ignorance and perversity of the mass of the people, that civil societies learned their lesson of cleanliness and order. All that we know of public preventive medicine was acquired by such bitter experience in the past. Every lesson was bought at a fearful price, and —when forgotten—was learned again at a further terrible cost. Only as we keep these things in mind, never remitting either our vigilance or our effort, can we still hold the enemy at bay.

In all large cities of the modern world this fight is now being fiercely waged. At every great seaport the out-posts of civilization, like watchful sentinels are ever on guard to drive back those pestilential enemies that come up as they did in the past out of the dark places of the East, and in many cases the battle is nothing more than an affair of out-posts. Every year there are in India and the near East over a million victims to the "Black Death", but how great a proportion of people in Europe and America sleep safely in their beds utterly neglectful of the wisdom and knowledge that guard them from harm. Each great state has learned that its strength lies in its people, and that—under modern social and economic conditions—its future rests upon a steady growth in population. Everyone knows how anxiously statesmen study the birth-rate and

the death-rate, for on the excess of the former over the latter all national growth depends. In the early centuries, owing to the excessive death-rate, nations grew very slowly. The most striking phenomenon of the nineteenth century was the enormous increase of population among the great western nations, and a most significant cause was the diminished death-rate. With expanding population came increasing employment in industries that have become faster and faster organised and developed. The effects ramify in many directions. Agriculture has received a great impetus from the increase in town populations that have to be fed, so that the land is being more and more developed for food-products, and territories previously unexplored are being rapidly peopled. The surplus population of the old world has emigrated to the free spaces of the new, and is building up there a civilization of ever varying character and beauty. Mankind is thus marching forward to a fulness of life that the past never dreamed of.

But all the while vast portions of the earth have lain under a blight. The tropical regions are in many respects the most desirable. Life there has more comforts. Nature is more lavish in her bounties, and the problems of maintaining a happy, contented existence are less exacting than in the colder spots. Why are these blessed climes the most backward of all, and why is life at its lowest where it should be at its highest? The answer is in one word—*disease*, and disease of one kind, the contagious. The tropics still lie under the black cloud of death. In northern and central Africa life in all its expansiveness is impossible to the white man, tolerable only to the natives. Whole populations lie sunk in the paralysing deadly grip of sleeping sickness, malaria, beri-beri, and other lethargising diseases. The people are devitalised, and for centuries no progress has been possible. But no one can doubt that with the growth of knowledge these magnificent regions will in time be made the seat of happy civilized states, where life will be at its fairest and best, and new gorgeous civilizations will arise as they have arisen under favourable circumstances in the past.

All economists agree that ocean transportation has counted for a great deal in the development of the world, and still has a commanding significance in its work. At first the chief retarding influence was disease. The early voyagers had to fight scurvy and ship fevers. Yellow fever came near to preventing the growth of Atlantic commerce, and did a great deal to destroy the empire which Spain had so gloriously built up. With the final conquest of these diseases maritime expansion became practicable. In improved conditions of seafaring life we see the first step, and the step vitally necessary,

for still further developing modern commerce. The need for fighting disease was the motive which initiated progress, and upon the prevention of disease our hopes for the future must be pitched. Without this basis our modern life in all its manifold excellences would rest upon a quick-sand and would ever stand upon the brink of death.