

PART I.

HISTORY AND DISTRIBUTION OF PLAGUE.

CHAPTER I.

PLAGUE FROM THE EARLY CENTURIES TO THE NINETEENTH CENTURY.

PLAGUE in the modern acceptation of the term is a specific and infectious disease affecting man and some of the lower animals, and possessing certain definite and well-marked symptoms which are always more or less present in every outbreak. These symptoms in man are fever, severe headache, giddiness, congested eyes, extreme mental depression, stammering, incoordination of the voluntary muscles when called on to act, staggering gait and bodily weakness, accompanied by painful swellings, with effusions into the surrounding tissues, in the groin, armpit, neck, or other regions of the lymphatic glandular system, and with an occasional eruption on the skin of so-called carbuncles or pustules. They end in death in a large percentage of cases in the course of three to five days, or even in a shorter period. The swellings or buboes which are so characteristic of the disease, and which contain a special micro-organism recognised by its bipolar staining, may be absent in a varying proportion of cases. In the pneumonic variety of plague, which primarily attacks the lungs, there are no buboes, or only a late development of them as secondary manifestations of the disease. In the fulminating or septicaemic plague, which is another rapidly fatal variety, there are seldom any buboes to be detected. Plague may be therefore with buboes or without buboes. This fact has always rendered the diagnosis of plague very difficult and uncertain in the early stages of an epidemic, though as the epidemic develops the types without buboes may be recognised clinically, especially the pneumonic type with its fever, spitting of blood and great

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prostration. Even the laity who have seen much of plague are able to distinguish this form in its most severe manifestations. Since the discovery of the plague bacillus both the pneumonic and septicaemic types can be as readily recognised as the bubonic by the tests which bacteriology has recently placed in the hands of the physician. The sputum of the one type and the blood of the other contain the plague bacillus.

Accompanying or preceding plague in man there is usually an outbreak among the lower animals, particularly among rodents such as rats and mice. In these the same micro-organism is to be found as in man and is the causal agent of the disease. This causal agent is transportable from place to place, carried by infected persons or animals or by articles soiled by the infection, and may thus set up in a fresh centre plague which may manifest itself in a sporadic epidemic or pandemic form and may assume a mild or virulent type.

It is not in the above restricted sense of a specific disease that ancient writers on epidemics and epizootics use the term plague. With them it implies something more general and is applied to any pestilence in man or beast with a high mortality. Dysenteries, famine fevers, the fevers of armies, typhus fever, small-pox, and other fatal maladies in man are included in the older designation of plague as well as the disease which is now being dealt with. Under these circumstances it is almost impossible to determine which of the pestilences that prevailed in the Assyrian, Macedonian, Egyptian, Roman, and Grecian empires were due to true plague and which were due to those other diseases which went under the same general designation.

That plague in the specific sense understood in the present day did exist, especially in Mesopotamia, there can hardly be any doubt. Occasionally it is recorded that the Assyrian kings were deterred from visiting certain places because of the prevalence of plague. The historian seldom describes the symptoms of any pestilence which he mentions, being content with relating that an epidemic raged at a certain time and describing its effects on the inhabitants. To assume that most of the epidemics thus referred to were plague is to give an exaggerated notion of the prevalence of the disease in the different centuries, while to recognise as plague only those epidemics in which the disease is unmistakable from the description of its symptoms would be to give a very inadequate conception of its prevalence and importance.

A middle course is probably the safest, with the qualification that plague epidemics of a severe type were not nearly so numerous as is generally supposed. The long interval between the appearance of plague

in Europe and its present threatening aspect, or between its occurrence in India in the 18th century and its serious prevalence now in that country during the past eight years is merely a repetition of its behaviour in earlier times. The disease appears to come in cycles between which the intervals are of considerable duration. Papon¹, who has collected a chronological list of great pestilences, gives 41 epidemics of plague as occurring in the course of 1500 years before the Christian era, among the empires and nations the shores of whose countries bordered on the Mediterranean sea; 109 during the first 1500 years of the Christian era, and 45 from the year 1500 to 1720, when plague ravaged Marseilles, Aix, and Toulon.

Plague as stated manifests itself in the sporadic, epidemic, and pandemic forms, and it is only severe epidemics or pandemics which receive the attention of the historian. Even in modern times severe epidemics in one part of the world escape attention in another part, and it is not to be expected that under the conditions of the early period of the world's history, mention should be made by the nations bordering on the Mediterranean of epidemics in remote and unexplored places. With all the advantages of modern life, with its rapid communication and telegraphic news, how little is known or heard of the plague prevailing in China at the present day or of the plague in India which for some months this year caused some 5000 deaths a day. If India were not a dependency of Great Britain we should hear still less. The details are in the archives of the Government of India.

However uncertain may be the nature of the majority of pestilences of a bygone age it is certain that plague is a disease of great antiquity, for occasionally in some of the oldest records the description is sufficiently explicit to remove all doubt as to the disease being plague.

The Levant and the countries adjoining have been the centres of plague for at least 3000 years, the first notice of the disease being in Syria. Plague is mentioned in the Bible as occurring centuries before the Christian era in the land of the Philistines, having broken out in Canaan² during military operations against the Israelites. The inhabitants of the cities of Ashdod, Gath, and Ekron as well as those of Beth-shemesh were attacked with "emerods" or tumours in their secret parts, the pestilence causing a deadly destruction. It is related that in Beth-shemesh over 50,000 persons died.

¹ *De la Peste, ou époques mémorables de ce Fléau.* Par J. P. Papon.

² 1 Samuel, chaps. v. and vi.

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Even at that distant date the disease was observed to be accompanied by an epizootic among mice, for it is recorded that in order that the plague might be stayed the Philistines made propitiatory offerings to the Lord of Israel, of golden images of their tumours and golden images of their mice that marred the land.

On another occasion the retreat from Pelusium of Sennacherib's army is attributed to a pestilence in which field mice are stated to have played an important part, and in commemoration of the event, according to Herodotus, a stone statue of Sethon stands in the Temple of Venus with a mouse in his hand, with the following inscription, "Whoever looks on me let him revere the gods."

There are earlier references in which the Israelites are threatened with the botch of Egypt and with emerods, the disease being apparently well known. Hippocrates gives no description of the disease. He however states that "all fevers complicated with buboes are bad except ephemerals," which may possibly be considered as evidence that he was acquainted with plague.

With the exception of the biblical record there is no known trustworthy account of the disease until we come down to the works of Oribasius in the 4th century A.D. in the reign of the Emperor Julian. In this collection of ancient authors there is a fragment on plague by Rufus of Ephesus, who lived in the time of the Emperor Trajan and wrote at the beginning of the 2nd century B.C. He not only refers to the plague of his own time, but also to that described by writers who lived at least a century before him. Rufus says, "¹The buboes that one calls pestilential are very acute and often cause death. It is especially in Lybia, Egypt, and Syria that they are seen to occur. Dionysius Curtius the Humpback has referred to these buboes. Dioscorides and Posidonius have referred to them at length in their treatise on the plague which in their time raged in Lybia, and they have said that it was accompanied by an acute fever, intense pain, perturbation of the whole body, delirium, eruption of large buboes hard and without suppuration, developing not only in the usual places but also in the popliteal space and elbow, although in general such inflammations do not form in these places." A treatise on plague written in the 3rd or 4th century B.C. indicates a fairly ancient history.

The identity of the disease thus described with plague admits of no doubt, while to complete the picture Rufus further states that "one can

¹ *Œuvres de Oribase, Bussemaker et Daremberg, livre XLIV. c. xvii. p. 608.*

foresee a plague which approaches by paying attention to the bad condition which the seasons present; to the manner of living less profitable for health, and to the death of animals which precedes its invasion."

The evidence is sufficient to establish the fact that plague is of great antiquity and that it prevailed in Lybia, Egypt, and Syria at an early period of the world's history when these countries on the southern and eastern shores of the Mediterranean played a leading part in the civilisation of the day and their towns were important centres of commerce. Plague has always been more or less connected with great commercial centres.

At intervals down to most recent times Lybia, Egypt, and Syria have been the scenes of plague prevalence. Situated in a unique position, at one time centres of powerful empires and always the gateways between the East and the West, it was there the commerce of the world converged during the ancient and middle ages. The marts of the ancients and of the middle ages centered here. It was immaterial what nation wielded the sceptre of commercial supremacy, the land and sea routes by which the produce from Asia and Africa was brought remained the same. For thousands of years the Arabs were the principal carriers of merchandise to and from the shores of the Mediterranean. They brought the rich produce of the East on camels and in caravans over the old caravan routes to Tyre and Sidon, to Pelusium, to Alexandria, to Syria, and to Constantinople, the great marts of which were the binding links between the East and the West. It was there that the merchants exchanged the produce of the West for the produce of the East, and it was there that the commerce of the cities of Africa and Europe met that of the cities of Asia. In times of peace the highways were thronged with caravans and merchants, but in times of war they were the roads traversed by invading armies.

The first well-authenticated pandemic of plague is recorded to have originated at Pelusium in Egypt in the year 542 B.C. Pelusium was in those days a large commercial entrepot to which the merchandise from Aethiopia, Mesopotamia, and the East was brought and there exchanged for the merchandise of the West.

In a busy and crowded mart of this kind where merchants from every commercial nation of the time were gathered together for barter, conditions were favourable not only to the formation of a dangerous focus and to the extension of the disease, but also to the disease attracting more attention than its occurrence in some obscure village or

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town. Pelusium was fixed upon by the historian as the starting-point of the epidemic, but plague was more or less prevalent in Lybia, Egypt, and Syria for centuries, and possibly in Aethiopia an endemic centre. One author distinctly states that it arose in Aethiopia.

Plague seldom arises in the town in which it assumes such dimensions as to attract more than local attention. The pandemic of the present day is generally traced back to Hongkong and Canton, two commercial cities, one of which is generally supposed to be its source, whereas it will be seen later on that the actual origin was from the Chinese endemic centre of Yunnan. As a general rule the distributing centres are mistaken for the source.

The disease was slow in travelling in those days, as it is in these. It took two years to reach Constantinople from Pelusium. Procopius of Caesarea in his history of the Persian war gives a vivid account of the epidemic which attacked Constantinople. For accuracy and faithfulness in detail it might without difficulty even after 1400 years apply to some of those towns which have been severely affected in the present day. Transcribed the account is as follows:

Account of the plague at Constantinople by Procopius. “¹About the same time arose a pestilence which all but entirely destroyed the whole human race and, as it happens, men of over-confidence in their own ability referred its origin to things which pour down secretly from the heavens, and, indeed, those who profess a skilfulness in these matters do often love with marvellous vain speaking to mention causes for them absolutely incomprehensible by the human mind, and to devise certain strange arguments concerning nature, knowing full well that they are saying no word of truth but quite content if they can deceive the average man by their contentions. But, of a truth, no cause for this pestilence can be given or imagined except God. For it did not make its attack in one quarter of the world or against any one race of men, or at any certain time of the year, whence any specious reasons for its cause might be given. Spreading throughout the whole world it attacked people of every race however far removed from one another, sparing neither age nor sex. For whether they differed from one another in dwelling-places or in manner of living, or in their pursuits or any respect whatsoever, so long as the plague prevailed the difference availed them not. Some it attacked in summer, others in winter, some at one time, others at another. Let the sophist discuss the matter, let the

¹ Procopius, *De Bello Persico*, lib. II. cap. xxii. et xxiii.

meteorologist take his view each in his own way, but I am going to relate where this pestilence began and in what manner it destroyed mortals.

“It arose in Egypt, with the inhabitants of Pelusium, then dividing, it spread one way through Alexandria and the rest of Egypt, the other into Palestine which borders on Egypt, and then travelled over the world, always advancing with a progress marked by certain definite spaces of time. For it seemed to advance by a certain law and to demand a certain space of time in every country, discharging its venom against no one on the way casually, but spreading on this side and on that to the uttermost ends of the world, as if it feared lest incautiously it should pass by any corner or recess upon earth. It spared neither island nor cave nor mountain top where men dwelt. If it passed over any place, only slightly or mildly touching the inhabitants, it returned there afterwards, leaving untouched the neighbours against whom it had spent its rage before, and it did not depart from there before it made up the full measure of the dead in proportion to the amount of destruction which it had brought on its neighbours. Always beginning at the sea coast it spread into the interior. In the second year it reached Byzantium about the middle of the spring, where, as it happened, I was staying. Such was its origin.

“Many persons saw visions of spirits arrayed in human shapes. Whosoever came across these visions fancied that they were struck in this or that part of the body by some man who met them, and as soon as they had met the spectre they were smitten with the plague. And in the beginning those whom ghosts of this sort met, tried to avert them by imploring the most holy names and by unceasing expiations, as long as each of them could. But it was all in vain; for many died even in the temples into which they had fled for refuge. Others, shutting themselves up within their chambers, would not listen even to friends, and although the doors were broken in, pretended they could hear nothing, fearing evidently that they were being called out by one of the demons. Some did not catch the disease in that way, but when a vision presented itself in the form of a dream, suffered the same as those awake or seemed to hear a voice which proclaimed to them that they were enrolled in the ranks of the dead. Many, seeing no vision, either when awake or asleep, as a warning of the future, the disease attacked generally in the following way. On a sudden they became feverish, some immediately on awakening, others while walking, others while doing one thing, others another. There was no change in their colour and the body did not burn as if attacked by fever; no inflamma-

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tion was apparent, but from morning until evening the fever was so mild that neither the patient nor the physician who felt the pulse had any suspicion of danger; and none of those who caught the plague thought of death. But, in some cases, on the same day, in others on the next, in others in a few days after there arose a bubo, not merely on what is called the groin, but under the armpit; in some cases the bubo appeared behind the ears and in other parts.

“What I have mentioned happened in pretty much the same way to all who contracted the disease. As to the ensuing symptoms, I cannot say whether the difference between them arose from a difference of constitution or from the mere will of the Author of the plague. Some were stricken with a heavy lethargy, others with raving madness, but each and all suffered what was in keeping with these results. Those who were weighed down with lethargy always seemed to be asleep, forgetful of their usual avocations. If there was anyone present to look after them they would take food at times: those who had no one to attend to them perished for want of food. But the delirious, unable to sleep and thinking everyone ready to murder them, were struck with terror and shrieking horribly tried to flee away. Those who attended upon them, distracted by the trouble, suffered terribly, so that people pitied the nurse as much as the patient, not because the nurses caught the disease by coming near the patient, for neither the physician nor layman caught the disease by touching the sick, for many who attended upon or buried others, contrary to general expectation, remained unharmed at their post, and many without running any risk were seized and died very soon, but because they were so terribly fatigued. For they had to put back the sufferers who threw themselves out of bed and rolled upon the floor, or had to drag them back and restrain them by force when they wished to throw themselves out of window, when they found water they burned to throw themselves into it, not from a desire to drink, for men threw themselves into the sea, but moved by their delirium. Nor was the struggle in the matter of food less, they would not take it if they could help it.

“With some of those who were not suffering from lethargy or delirium the bubo disappeared and agonies greater than they could bear took away their life. Some one may conjecture that the same thing happened to all the rest, but since they were not conscious they felt but little the sense of pain which their delirium took away from them.

“The physicians being in darkness as to these attacks of plague and thinking that the fountain-head of it was to be found in the buboes

determined to examine the bodies of those who died of it; they therefore opened several of them and found a growth of foul carbuncles.

“The malignant violence of the disease killed some at once, others after many days; with some, all over the body black pustules, as large as a bean broke out. These could not survive even for a single day, but in the same hour as the pustules appeared they breathed their last. Many dropped down dead from a sudden vomiting of blood.

“This I can truly and sincerely affirm, that the most celebrated physicians predicted the death of several who, soon after, contrary to the general opinion, recovered, and on the other hand predicted the recovery of many who were on the point of death.

“So in the matter of this plague, no cause was reached by man’s reason. In every case the result was something out of the usual. A bath did one patient good; it did another just as much harm. Of those who were left destitute of all help many died and many escaped without it. In a word no one had discovered any way by which either by precaution one might avoid the plague, or when the plague had once been caught might avoid death. That one man should fall sick was unexplainable; that one should escape seemed a mere matter of chance. If a pregnant woman caught the plague death was sure and certain. Some miscarrying, others fairly delivered perished forthwith. Yet it is said that three women in labour survived, though the children perished; on the other hand, in one case, the mother died but the child lived.

“Those with whom the bubo swelled and filled with pus recovered from the plague because the violence of the carbuncle had grown less and passed into pus, and experience teaches us that this is a sign of recovering health. Those with whom the bubo remained unchanged the sufferings mentioned above came upon. With some of them the thigh became completely dried, and so however much the bubo swelled it gathered no pus. There were some who escaped with a defect in the tongue, so that as long as they lived they stammered or stuttered in such a way that they could not be understood.

“The plague lasted four months in Byzantium; it was at its height for something like three. At the beginning only a few more persons died than ordinarily, but afterwards as the evil increased, the number of the dead reached 5000 a day and subsequently 10,000 and even more than that. In the early days of the plague a man buried his own people and cast the corpses either stealthily or perforce into graves belonging to others; but afterwards everything was in utter confusion.

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For slaves were left deprived of their masters, and citizens who had previously been in the highest consideration found themselves destitute of the services of their domestics, some of whom were suffering from the plague, while others had succumbed to it. Many houses were left absolutely empty; and it came to pass that many people from want of relatives or servants lay unburied for several days.

“To deal with this the Emperor as was fit and proper charged Theodorus with the business and supplied him with soldiers and money from the Treasury. Theodorus was in charge of the ‘Emperor’s answers,’ laying before him the quests of petitioners and conveying to them the Emperor’s answers. The Romans call this officer in Latin *Referendarius*. Those whose houses had not been made entirely desolate buried their friends and relations themselves. Theodorus, paying out the Emperor’s money and adding sums of his own, saw to the burial of the dead belonging to the needy. When all the burial-places which were in existence were filled with dead bodies they buried the dead bodies wherever they could round the city, and other buriers pressed under the numbers of the dying, ascended the towers of the Sycean walls. Removing the roofs of these towers they cast their dead into them indiscriminately and packing them wherever they could, when they had filled all of them almost full they placed the roofs upon them again. The awful stench from these dead spreading over the city at all times, but especially when the wind blew from the direction of the towers, became daily more harmful and distressing to the citizens.

“All rites connected with the burial of the dead were neglected. The corpses were not carried out with the usual funeral procession or funeral hymn, it was thought enough to carry the dead to the sea shore and cast them out there, and these they heaped up in piles upon barges to be carried out whither hazard would take them. At that time, too, the various factions into which the people had been divided, laying aside their natural hatred attended to the funerals of their dead in common and even buried those with whom they had no communion, and moreover those who had been given over to profligacy and who delighted in wickedness and unbridled licentiousness of life, began strenuously to practise piety, not because they had unlearned wickedness and acquired self-control and had become all of a sudden lovers of virtue (for the evils which either by nature or long-continued habits or tradition have become ingrained in man, cannot easily be altered unless some spirit of holiness has breathed into them), but because in most cases they were appalled by the calamities before their eyes and