Epidemics in Ancient Greece
The Great Pestilence in Athens
(430 B.C)

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The term (NOSOS)[1] by which Thukydides identified the great epidemic or disease, which began for the first time to show itself among the Athenians[2], had formerly been a term of common use.[3] The term was used widely denoting sickness, diseases of both body and mind, the plague, fever and epidemics. Sometimes (LOIMOS) or (PURETOS) are almost synonymous terms in use, but it is obvious thet (NOSOS) was much common in use.[4].

The first mention of (PURETOS), the most general term for fever[5], is in Homer[6] who states that the Dog-Star brings much PURETOS upon

1. Due to Difficulties in printing Greek letters, I hereby will transliterate Greek terms or names into English.
2. Thuk., II. XLVII. 3.
3. Thuk. used the same terms to describe some other diseases such as fever, and throat and with problems, due to the Lack of medical terms.
   Adam Parry, The Language of Thucydides, a description of the plague, Bulletin of the Institute of Classical Studies, XV (1969), pp. 106-118. Cf. Vivian Nutton, Murders and Miracles, Lay Attitudes Towards Medicine in Classical Antiquity, reprinted from "Psychens and Practitioners", edited by Roy porter, Cambridge University Press (1985) pp. 23 – 53.
4. For NOSOS see:
   Il., I. 10; Od., IX. 411, XI. 172;
   Aesch., Pers., 473, 750; Xen., Cyr., VIII.3.41;
   Herod., I.22; Soph., Aj., 185;
   Euripid., Hipp., 767; Orest., 10;
   For LOIMOS see :
   Il. 1, 61; Herod., VII.171; Aesch., Pers., 715;
   Plato, Symp., 201D; Diod. Sic., XII.45, 58, XIV. 70; For PURETOS see :
   Il., XXII. 31; Aristoph., Wasp., 812;
   Xen., Mem., III. 8.3, III. 8.7.
5. According to lack of therapy in ancient Greece some kinds of fever were taken as epidemics and sometimes endemics, particularly Malaria and Typhoid.
   cf. W.H.S.Jones, Malaria and Greek History, to which is added':
   The History of Greek Therapeutics and the Malaria Theory,
   by E.T Withington, AMS Press, New York 1977. Reprinted from the edition of 1909 published by the University Press, Manchester.
   pp. 127 – 129, 131 – 133 and passim.
6. Il., XXII. 31.

miserable mortals, and the verb (PURESSW) occurs for the first time in Euripides Cyclops.[7]

Again we meet with (PURETOS) in Aristophanes Wasps while the chorus of the play talking about the juryman Philocleon who "may be now lies sick of a fever" [8]

In the Memorabilia of Xenophon, Socrates is represented answering the questioner who asked him if he knew anything good, "good for what? for fever?", answered Socrates.[9]

The term (LOIMOS) was mentioned in Hesiod "Works" where it was coupled with (LIMOS) denoting famine[10].

Again (LOIMOS) occurs in the Oedipud Tyrannus[11] of Sophocles in the context of description of a pestilence which was the first of its kind in non-medical writings, great epidemic has fallen upon Thebes : "Blighted are the fruits of the earth, blighted the herds of cattle and the barren pangs of women. Withal the fever-god swooping down, a dreadful plague, is ravaging the city".[12]

In Plutarch's Vitae[13] Pericles "seems"[14] to have died of an attack of (LOIMOS)[15].

7. Eur., Cycl., 228; cf. Athen., III. 75.
8. Aristoph. Wasps, 281; cf. Ibid., 812.
9. Xen., Mem., III.8.3., III.8.7.
   cf. Plato, Tim., 86A, Ident, Phaedo, 105C; where PURETOS and NOSOS coupled together. For more details about the term PURETOS cf. Jones, op. cit., pp. 41 - 59.
10. Hesiod, Works, 243.
11. The play was put by Jebb between 429 and 420 B.C, but most of the critics put it about 429. This seems to be more reasonable because of the vivid description of the pestilence which suggests a relation between it and the great epidemic that beset Athens the year before (430).
    For various opinions about the date of the play
    cf. Cedric Whitman, Sophocles, a study of heroic humanism, Harvard University Press, 1951, p. 55.
    Jacques Lacariere, Sophocle, Paris 1960, p.33.
12. Jones translation, op. cit., p. 33, who suggested that pestilences was Malaria because of the effect upon child-birth mentioned in the lines quoted above, op. cit., p. 34.
13. Plut., Vitae, Pericles, 38.
14. At the same passage Plut. did not guarantee the truth of the statement. XXX
    cf. Frederick F. Cartwright, Disease and History, London 1972, p. 8, who adopts the theory that "Pericles may have caught the infection, for he is supposed to have died of Plauge in 429 B.C.".
15. LOIMOS was coupled with NOSOS giving the same meaning in Plut., op. cit., loc. cit., Again Jones identified the disease as Malaria according to symptoms given by Plut.,
    For frequent mention of LOIMOS in other sources
    Cf. Homer, IL., 1.61; Hdt., 7.171; Aesch., Pers., 715;
    Plato, Symp., 201D. Diod. Sic., XII. 45, 58. XIV. 70.

As far (NOSOS) it appeared for the first time in the Iliad when Homer described the disease which infected the Greek Army before Troy[16]. Then in Herodot the term occurs again when he stated the incident of the Greek crew trained by Dionysius of the Phocaeans for the resisting of the Persians, during their course of training, many of them had fallen ill and the rest were expecting the same end.[17]

THERMAN NOSWN appearewd in the third Pythian Ode of Pindar, for the first time, the noun NOSOS is connected with an adjective "therman" meaning "hot", THERMAN NOSWN was the disease that Hiero of Syracuse was suffering from.[18]

The appearance of epidemics and acute infectious diseases, such as plague, cholera, small-pox and typhus, throughout the ancient world and middle ages was of unsuspected results, these epidemics spread rapidly with countless victims, wiping out, sometimes, the entire population in some certain areas.[19]

Epidemics and infectious diseases were much more dangerous than today. Their true nature, cause and the way they spread were unknown, so much so that ancient populations were unable to defend themselves against them.[20]
However, ancient writers did their best to find an explanation for those infectious diseases.

16 Homer, IL., I.10.

17 Hdt., VI.12.
Cf. Strabo, V.251, who speaks about healthy and unhealthy districts in Posidonia.

18. Pindar, Pyth., III.66.
It is a pure guess but may be Hiero was suffering from a kind of fever, according to the "THERMAN NOSWN" or the "hot disease".
NOSOS appeared frequently in the ancient sources the same as PURETOS and LOIMOS.
Cf. Thuc. II.34, 52; Diod Sic., XII. 45, 58, XIV, 70; Plut. Vitae, Pericles, C.34; Dionys. Halic., Ant. Rom., X. 53.

19. During the fourteenth century in Europe 25,000,000 died from plague.
Cf. Srboljub Zivanovic, Ancient Diseases, the elements of Paleopathology, translated by Lovell F. Edwards, Methuen 1982, p. 217.
With one of these epidemics which appeared in Florence in the year 1348 the "Decameron" of Boccaccio opens.

20. Ibid., Loc. Cit.

For example, Hippocrates[21] ... sought the cause of infection in the air, as well as climatic factors.[22]

The Hippocratic idea of an "Epidemic Constitution" is that particular years are of their nature subject to particular diseases.[23]
Hippocrates was the first to show a genuine interest in the prevalence of infectious diseases. The first half of airs, Waters and Places is the Hippocratic traetise on endemic diseases. It sets out thediseases associated with different climatic conditions and with different places.
The two books which really form one treatise known as Epidemic I and III give forty-two clinical case histories, and discuss the four "Constitutions" with the epidemic diseases prevalent in each.
These constitutions were not seasons of the year, but varying periods of time presumably occuring in different years. Mumps and malaria can be clearly recognized in these descriptions.[24]

Infectious diseases break out when three basic conditions are fulfilled. These are : the existence of a parasite, conditions favourable for the

21. For Hippocrates see:
Guido Majno, The Healing Hand. Man and Wound in the Ancient World, Harvard University Press 1975, pp. 147 – 148. it is stated that "Greek Physicians spent much of their time travelling – or to use their term ... doing epidemics, the word has radically changed its meaning, for it meant (visits to places)" ... several Hippocratic books are titled Epidemics.
Cf. Hippocratic writings, edited with an introduction by G.E.R. Lloyd, Penguin 1983, pp. 9 – 12, 21 ... 36, 51 – 59 and passim, also Cf. Henry Sigerist, A History of Medicine, Vol. II, Oxford University Press 1961, pp. 269 – 270, for how Hipp. was honoured by the Athenians, and for his collection of Hippocratic writings see p. 260 ff.

22. Roman authors as Varro (116 – 27 B.C.) and Columella (first century A.D.) tried to find out the causes of infection and concluded that tiny living creatures called Bestiolae were unseen by men and were perhaps the carriers of infectious diseases.
Cf. Zivanovic, Op. Cit., pp. 217 – 218.

23. Charles Singer, E. Ashworth underwood, A Short History of Medicine, Oxford 1962, p. 106.

24. Ibid., p. 728.
The difficulty in diagnosing the diseases mentioned in non-medical writings lies in the vagueness of nomenclature, where specific names or detailed descriptions are rare. As for medical writings, some other difficulty arises, specific terms are common enough, but they do not always correspond to modern equivalents. The Greek Physician classified diseases according to their symptoms, the modern way is to classify them according to the micro-organisms that are their primary cause, except for those of nervous origin which can be classified symptomatically.
Cf. Jones, Op. Cit., p. 61.

development of that parasite and its transmission to the host, animal or human. In other words, the requirements for the spread of an infectious disease are a source of infection, a suitable carrier of the germs and an organism susceptible to the attack.[25]

These conditions seem to be almost fulfilled in Athens in 430 B.C., the second year of the Peloponnesian War. Due to the Peloponnesian invasion of Attica the Athenians followed the advice of Perikles, all the population retired within the city walls, and the outcome was a terrible pestilence or epidemic that broke out fiercely and unexpectedly at Athens.[26]

A clear and impressive description of this pestilence has been left by Thukydides, himself not only a spectator but a sufferer. The observations which follow attract particular attention.[27]

He said : [28] (I shall describe the disease actual course, explaining the symptoms, from the study of which a person should be best able, having knowledge of it beforehand, to recognize it if it should ever break out again. For I had the disease myself and saw others sick of it.[29] .... Suddenly and while in good health, men were seized first with intense heat of the head, and redness and inflammation of the eyes, and the parts inside the mouth, both the throat and the tongue, immediately became blood - red and exhaled an unnatural and fetid breath.

25 Zinsmeister, Op. Cit., p. 218.

26. Diod. Sicul., XII. 45., stated that

For since a vast multitude of people of every description had streamed together into the city, there was good reason for their falling victim to diseases as they did.

George Grote, A History of Greece, London 1930, p. 401 and note 2. Although the Athenians and their property were locked in within the walls, they had not driven in their sheep and cattle, these were earlier transported over to Euboea and the neighbouring islands. In this way a serious aggravation of the epidemic was avoided. The accumulation of great numbers of cattle, along with human beings during the epidemics which ravaged Rome under similar circumstances worsened the calamity.

Cf. Thuk. II 14, Livy, III. 66. ; Dionys. Hal., Ant. Rom., X. 53. There were epidemics in Rome between 436 - 432 B.C.

Cf. Livy, III. 66, IV. 21, XXV. 26.

For other dates of other epidemics in 293 B.C., 542 A.D., 684 A.D. see

Guido Maino, Op. Cit., pp. 339, 500 - 501 note 125

Singer, Op. Cit., pp. 25, 68, 498.

27 Grote, Op. Cit., p. 401.

28 C.F.Smith translation, Thuk., Loeb I. 1969.

29 Thuk. II XLVIII. 3.

In the next stage sneezing and hoarseness came on, and in a short time the disorder descended to the chest, attended by severe coughing. When it settled in the stomach, that was upset, and vomits of bile of every kind named by physicians ensued, these were also attended by great distress : and in most cases ineffectual retching followed producing violent convulsions, which sometimes abated directly, sometimes not until long afterwards.

Externally, the body was not so very warm to the touch ; it was not pale, but reddish, livid, and breaking out in small blisters and ulcers. But internally it was consumed by such a heat that the patients could not bear to have on them the lightest coverings or linen sheets, but wanted to be quite uncovered and would have liked best to throw themselves into cold water, indeed many of these who were not looked after did throw themselves into cisterns, soTormented were they by thirst which could not be quenched ; and it was all the same whether they drank much or little.

They were also beset by restlessness and sleeplessness which never abated. And the body was not wasted while the disease was at its height, but resisted surprisingly the ravages of thedisease, so thatwhen the patients died, as most of them did on the seventh or ninth day from the internal heat, they still had some strength left ; or, if they passed the crisis, the disease went down into the bowels, producing there a violent ulceration, and at the same time an acute diarrhoea set in, so that in this later stage most of them perished through weakness caused by it. For the malady, starting from the head where it was first seated, passed down until it spread through the whole body, and if one got over the worst, it seized upon the extremities at least and left its marks there ; for it attacked the privates and fingers and toes, and many escaped with the loss of these, though some lost their eyes also.
In some cases the sufferer was attacked immediately after recovery by loss of memory.[30]

30. Thuk., II. XLIX.
For a similar description of the pestilence but with some differences in symptoms. Cf. Diod. Sicul., XIV. 70. 4 – 6, 71.
Who mentioned similar distresses in the Carthagian army besieging Syracuse, during the terrible epidemic with which it was attacked in 395 B.C., he stated that :
(The plague began with a catarrh, then came a swelling in the throat, gradually burning sensations ensued, pains in the sinews of the back, and a heavyfeeling in the limbs; then dysentery supervened and pustules upon the whole surface of the body.... some

For the origin of such a devastating epidemic, Thuk. said:
"The disease began, it is said, in Ethiopia beyond Egypt, and then descended into Egypt and Libya and spread over the greater part of the king's territory. Then it suddenly fell upon the city of Athens, and attacked first the inhabitants of the Peiraeus".[31]

Ethiopia and Egypt seem to be not the only possible origin for the disease, especialy because there is no account of such an epidemic or endemic diseases in Herodote History about Egypt. Carthage was also a possible place of origin for the disease in Rome, and from Rome it fell upon Peiraeus and Athens as Thuk. said.[32]

Apart from moral, social and religious results, which will be discussed later on, this pestilence had terrible consequences, it lasted three years, continuously during the entire second and third years of the war, after which followed a period of relief for a year and a half, then it revived again for another year with the same severity,[33] though no exact estimate of the

became mad and totally lost their memory.) (XIV. 71. 2 - 3).

Diod., thought the place where the Carthagians camped to be responsible for the disaster "since the terrain was marshy and in a hollow" (XIV. 70. 5).

We have to be aware however that he gave the same factor as a main cause for the epidemic in Athens. (XII. 58. 3 - 5), he seems to be echoing the Hippocratic idea of an "Epidemic Constitution".

31. Thuk., II. XLVIII. 1 - 2.
Cf. Frederick Cartwright, Op. Cit., p. 7. who adopted the same theory.

32. The statment mentioned by Thuk. that the disease appeared first in Peiraeus suggests that this disease was an outcome of the relation between Greece and the outer world especially Egypt, Carthage and Magna Graecia.
I recommend Italy as an origin for the disease and Magna Graecia as a way of transportation to Peiraeus, according to Dionys. Halik. and Livy who mentioned epidemics in Rome that had similar symptoms and results between 436 - 432 B.C.
Cf. Dionys. Halik., Ant. Rom., X. 53;
Livy, IV. 21.
Compare Holm (GK. Hist., II. p. 346 N 3)
apud Grote, Op. Cit., p. 401 N 1.

33. Diod. Sicul., XII. 58.
Cf. Grote, Op. Cit., p. 403.
This revival proves Zivanovic theory about infectious diseases which Philistus may regard as controllable while they are in fact smouldering, waiting for an opportunity, when circumstances are unfavourable to men, they awaken once again, burst out and gather their tragic harvest. Zivanovic, Op. Cit., p. 218.

number of deaths can be made, perhaps at least a third of the population died[34].

Diagnosing the disease, the only fully described symptoms were given by Thukydides (a historian) who was an eyewitness and a sufferer[35].

Some hold that this was a highly malignant form of Scarlet Fever, other authorities have suggested Bubonic Plague, Typhoid, Malaria, Typhus, Small - Pox, Measles, and Anthrax of unusual virulence[36].

Out of these diseases Malaria, Typhoid, and Bubonic Plauge deserve some particular attention[37].

Malaria and Typhoid correlate with some of the symptoms given by Thuk. and vary in others. for Malaria the distinguishable symptoms are a fluctuating high temperature and a severe headache, the same as for Typhoid, plus vomiting, white tongue, no appetite and diarrhoea at times[38].

Both in Malaria and Typhoid there is no inflammation of the eyes, sneezing and hoarseness, the reddish, livid body with blisters[39] and ulcers.

These symptoms suggest plague as an identification for the disease and

34. Frederick Cartwright, Op. Cit., p. 7.
Thuk. (III. 87.) said that 300 hersemen all among the rich men of the state, died of the epidemic, besides 4.400 hoplites and ahumber of the poorer population, so great as to defy computation.
Diod. Sicul., (XII.58. 2), raised the number of poor dead population over 10.000 which Grote thinks to be greatly beneath the reality, (p. 403 N 3).
Cf. Dionys. Halic. mentions that the number of deaths in Rome (451 B.C.) due to a similar epidemic was great, almost all the slaves were carried off by the pestilence and about one half of the citizens, Ant. Rom., (X. 53. 1.).
35. Hippocrates who lived at the time of the disease in Thessaly left no description of it. Even the Physicians, Thuk. stated, were unable to cope with the disease, since they had to treat it without knowing its nature. (II. XLVII. 4).
36. Frederick cartwright, Op. Cit., p. 8.
37. Typhus, Small-Pox, Measles and other diseases are out of question because they differ widely in their symptoms from those given by Thuk. For the symptoms of those diseases see:
A.B. Christie, Infectious diseases, Epidemology and Clinical Practice, Churchill Livingstone, Longman 1974, Passim.
38. Ibid., passim.
39. Which are of some other kind than those of Small-Pox.

especially the Bubonic Plague as a disease of terrible consequences[40]

There remains the possibility that the disease was one which so far is unknown[41]

This murderous plague yielded terrible results both on physical and moral status, the first has been already discussed; as for Morals, the bonds both of law and morality became relaxed, amidst such total uncertainty of every man both for his own life, and that of others[42].

The picture of the Athenian society under the pressure of such a terrible plague with its train of physical torment, wretchedness and demoralization, has been drawnobjectivelyby Thukydides who stated that:

"For the calamity which weighted upon them was so overpowering that men, not knowing what was to become of them,became careless of all law, sacred as well as profame. And the customs which they had hitherto observed regarding burial were all thrown into confusion[43].

They saw how sudden was the change of fortune in the case both of those who were prosperous and suddenly dies, and of those who before had nothing butin a moment were in possession of the property of the others. And so they resolvd to get out of life the pleasures which could be had speedily and would satisfy their lusts, regarding their bodies and their wealth alike as transitory[44].

No fear of Gods or law was felt, on the one hand, seeing that all men were perishing alike, they judged that piety and impiety came to the same thing, and on the other, no one expected that he would live to be called to account and pay the penalty of his misdeeds.

On the country, they believed that the penalty already decreed against them, and now hanging over their heads, was a far heavier one; and that before this fell it was only reasonable to get some enjoyment out of life"[45]

40. I conclude that this disease is Bubonic Plague on the basis of the symptoms given by Thuk. compared with those mentioned in the text medical books of Epidemics and Epidemology and as a result of long discussions with experts inEpidemics and Tropical Diseases.
41. Frederick Cartwright. Op. Cit., p. 8.
42. Grote. Op. Cit., pp. 402 - 403.
43. Thuk., II. LII. 3 - 4.
44. Ibid., II. LII. 1 - 3.
45. Ibid., II. LIII. 4.