

The Black Death and Societal Change: Medicine, Labour and the State in Fourteenth-Century Europe

Soumyajit Mukherjee

Ph.D Researcher of History, Jadavpur University, Kolkata

Abstract: *The Black Death is often esteemed in European historiography as “a conjunctural catastrophe” to the structural crisis of the medieval West. This article shows how the European institutions — such as physicians, medical schools, and the States— responded to the time of the Black Death and after. It offers source-based analysis and argues that the Doctors’ prescriptions and the recommendations of the medical schools expounded their dependency upon age-old medical theories and dogmas rather than conducting a practical experiment. On the contrary, the State —as an ‘intervening variable’ —successively transformed the medicine into a professional field, and made the way to the birth of ‘public health’. By analyzing the ubiquitous impacts upon labour economy and the production system ranged from agriculture to maritime shipping, this article goes against a traditional interpretation of economic history where labourers revolted for wages or living standard, rather establishes the gradual decline of their social status in the late fourteenth century what is being called ‘social stigma’, ultimately erupted in the shape of popular uprisings. One-third of depopulation in Europe, caused by the plague, created a 20 percent shortage of labour force, whereas it increased 250 percent real wages and 220 percent purchasing power. Although, the European labourers were still unsatisfied and revolted against the authority.*

Keywords: Black Death, Epidemics, Great Mortality, Labour economy, Medieval medicine, Plague

Historians of world history often tend to think of a ‘long century’ just as the thirteenth century to Lopez, the sixteenth century to Braudel, and the nineteenth century to Osterhammel, or the liberal historians of globalization. On the contrary, some scholars go opposite and construct a ‘short century’ as Hobsbawm did for the twentieth. But historians of medieval Europe are hesitant whether to term the fourteenth century - a ‘calamitous’ or not. Can the fourteenth be called ‘progressive’ as many of its crisis enshrouded positive changes in society as crises often do? This article is a little try to answer this question by exploring the impacts of the Black Death (also known as the *Great Mortality*) on two major fields: medicine and the labour.

The Black Death comprised of three related diseases- pneumonic plague, septicaemic plague, and bubonic plague. Transmitted by fleas and hosted by rats, it affected the lymphatic system of the human body. The name ‘Black Death’ is derived from the fact that the disease left large black sores and bruises in the diseased body. Almost every historian affirms that the disease originated in the East, probably in China (Gobi Desert) ^[1], then transmitted through the trans-maritime trade in which the Europeans achieved great success in the middle ages. Gabriele de’ Mussi, an Italian notary, was present on the ship that returned from Caffa to Constantinople with a darker cargo in 1347. In his account *Historia de Morbo*, he mentioned that during the journey sailors fell suddenly ill, and disease spread to the European ports within a short period.^[2] An alternative explanation says it was the Tartar armies who intentionally infected the inhabitants

of an occupied Genoese trading outpost in Crimea and soon after, some Genoese who escaped themselves by fleeing on a ship, stealthily brought the plague in Europe.^[3] From the Black Sea ports, the disease reached Constantinople, and by 1347 it spread to Genoa, Sicily and Venice, the major port towns of Italy. At the end of 1347, it reached Marseilles, a French port. After that it quickly reached Avignon, and by 1348 it spread into England. Within two years, the plague touched the countries of northern Europe and Russia.^[4] The Europeans who once experienced such plague in the sixth century in the age of Justinian assumed that it was God's wish. A first-hand Russian description of the plague may be helpful to reveal people's attitudes towards the disease: "It (the plague) came on us by God's loving-kindness, and in his righteous judgment, death came upon people."^[5]

The Modernization of Medicine:

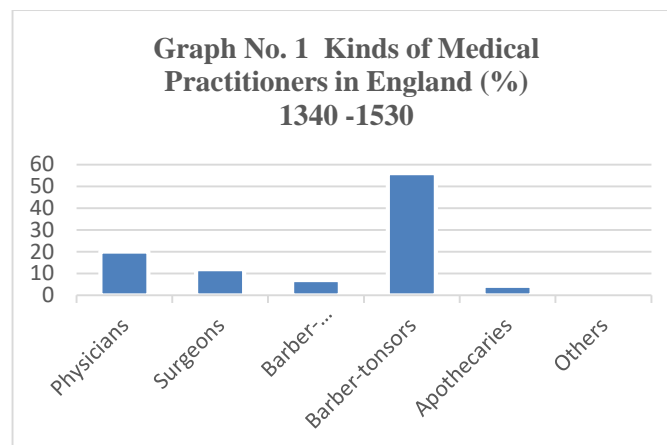
Now we will look into the sphere of medicine and the activities of physicians during the Black Death. Truly speaking the period before the Black Death appeared in the west as an endemic could be remarked as the 'professionalization of medicine' in medical history.^[6] Students of medical history must be surprised by the following facts: by 1150, the Europeans were familiar with clinical medicine; by 1170, the Christian West compiled the earlier surgical treatises (*Practica chirurgiae*); by 1286, Europe witnessed the first post-mortem examination; and by 1290, the professional physicians of France became well accustomed with surgery since the first recognized text of surgical work (*Chirurgia magna*) was written and later recognized by the University of Paris.^[7] There were several important changes occurred in the field of medicine. Let's discuss them in detail. The *first* and foremost was the changing nature of the medical practice. Earlier, the clergy under the supervision of the church used to practice medicine and often cultivate medical plants to preserve medical knowledge. By 1200, the medical practice became completely out of the receptacle of any religion and got a secular character. Process in the field of medicine and healing also developed. The Jewish physicians translated many important Greco-Arabic medical treatises and circulated oriental medical knowledge to the west. The *Second* important change was the initiation of the government's restriction towards limiting the medical practice among physicians. For instance, Roger II of Sicily, by implementing a special license restricted medical practice in his State. *Thirdly*, the most important was the professionalization of medicine by making it a special subject in universities.^[8] By the middle of the thirteenth century in Oxford, Paris, Bologna, Padua, or Rome, almost all famous towns of Europe had their medical school. Roman emperor Frederick II took the necessary step by implementing a rule (later published in 1240-41) that all physicians who wanted to practice medicine publicly must get admitted to the medical school of Salerno. For the first three years, they had to study natural science and philosophy, then were allowed to study medicine for another five years. After passing two examinations, they could practice medicine publicly for another year under an experienced physician.^[9] According to James J. Walsh, it was the 'earliest modern law for the regulation of the practice of medicine.'^[10] Here the extract from the original proclamation of Frederick II would be relevant in this regard:

no one who claims the title of physician, shall exercise the art of healing or dare to treat the ailing, except such as have before-hand in our University of Salerno passed a public examination under a regular teacher of medicine and been given a certificate, not only by the professor of medicine but also by one of our civil officials, which declares his trustworthiness of character and sufficiency of knowledge...no surgeon shall be allowed- to practice unless he has a written certificate...no one in the kingdom shall undertake to give lectures on medicine

or surgery...violation of this law is to be punished by confiscation of goods and a year in prison for all those who in future dare to practice medicine without such permission from our authority.

Diplomatic History of Frederick II. with Documents - Huillard Brehollis (Paris, 1851-1861)

Fourthly, the sphere of medical science broadened as from then it started to treat common people rather than merely for royal service. One surprising fact is that the government of European cities in the late middle ages paved considerable attention to the poor, especially in Christian Spain where physicians were paid twenty-pound (£20) annual salary from the municipality. They had to check up on the sick people thrice in a month without taking fees. (somewhere they were waived from paying taxes). Physicians enjoyed a good social reputation, received international prestige. How public health was becoming a serious social responsibility to the State could be seen easily by the work of contemporary physician Petrus Hispanus's *Thesaurus Pauperum* (Treasure of the Poor), the then most popular sourcebook of medicine (popular as there were plenty vernacular translations of it). The statement of Arnold of Villanova, the most famous doctor of that time may be cited here. He learned and taught medicine at several prestigious medical schools. Once he warned King James II of Aragon that unless he protected the poor against the rich, he would go to hell.^[11] In England, a special hospital was set up at Canterbury (1084) for the people who could not pay fees for treatment.^[12] Overall the medical progress of Europe before the Black Death, as Hastings Rashdall noted, "represents a retrogression in medieval theory, though an advance in Surgery and Anatomy."^[13]



Representation is done by using the data provided in, Robert S. Gottfried, 'English Medical Practitioners 1340-1530', *Bulletin of the History of Medicine*, Vol. 58, No. 2, 1984, pp. 164-182.

The Medical job was becoming lucrative and professional. Specialization in medical works further proliferated this field (Graph No.1). Women's participation in the medical profession was also remarkable. A true example is the University of Salerno, where women participated in a considerable proportion.^[14] Hospital as an independent medical institution grown up in Europe long before the Black Death and the ideas of its special role as a building or home for treatment circulated widely all over Europe. In the thirteenth century, Germany alone had more than 100 hospitals. These were some of the fields in medicine where medieval Europe was developing noticeably. Although in the sphere of street sanitation Europe was far backward, we have lots of complaints of so many Muslim visitors to European towns about the uncleanness of the city (and vice versa!).^[15]

Doctors, the State and the Treatment:

Apart from this above picture of progress and prosperity in medicine, the European physicians in general, at the time of the Black Death were depended more upon theory rather than practical knowledge.^[16] As Christianity was incapable of providing any medical knowledge of the human body,^[17] the European physicians had to depend on the translated works of some Greek theorists on medicine (Arabian doctors often translated them into European language). In this process, many mistranslations were conducted.^[18] According to the doctor and epidemic historian I. F. C. Hecker,

the physicians during the Black Death did what human intellect could do in the actual condition of the healing art; and their knowledge of the disease was by no means despicable. They, like the rest of mankind, have indulged in prejudices.^[19]

The Contemporaries accused the doctors of this time and hated them as they did not visit the affected people in fear of infection.^[20] The nature of their medical advice was general (according to Boccaccio, the medical profession was being hijacked by many unskilled people and thus they were unable to recommend a needful cure).^[21] The great contemporary doctor Gui de Chauliac who served as a physician of three Popes recommended to flee or escape from affected areas, purify the air with fire, taking of pills of aloe, and consume fruits. He believed that the conjunction of Saturn, Jupiter, and Mars was the cause of the *Great Mortality*.^[22] Such attitude of the physicians, their nature of medical advice and the limitations all are explicit in the opinion or decree of the medical faculty of Paris (the then most reputed in Europe) during the Black Death as following:

Any kind of poultry, waterfowl, suckling pig, fatty meat should not be eaten. Daytime sleeping is dangerous; one should awaken either at dawn or shortly thereafter. Fresh foods accompanied by wine is harmless. Without wine, it could be harmful, do not eat fish (unless it is a small river fish). Avoid exercise; consumption of olive oil and bathing is fatal, fat people should take sunlight as much as they can, any kind of sexual intercourse with women will be lethal. Do not sleep in any woman's bed. Diet should be simple, people should be cautious in avoiding exposure in the cool of the evening, at night and in the morning. Wine with water should be taken. Rainwater cannot be used in cooking.^[23]

A twenty-first-century observer may question the intellectual level of the fourteenth-century doctors but if we closely observe these recommendations, we will find reasonable logic behind and it is arguably a truth that often doctors of the modern days prescribe the same norms what faculty of Paris did 600 years back. With a deeper look, one conscious observer may find that the restrictions on food habits and bathing were to increase immune systems and partly due to limiting the chance of the spread of infection among people (as bathing was public at that time). A professor of medicine at the University of Lérida, Spain (1349) argued that during bathing people usually undressed and it's the time when corrupt air could enter into the body.^[24] Independent doctors often suggested such recommendations of food control.^[25] The contribution of Foligno, a University lecturer in Italy, can be cited here. He was one of those doctors of his age who emphasized or induced practical knowledge for treatment rather than propping ancient theories. When almost every medical institution in Europe banned autopsy (mentioned earlier), he publicly conducted several dissections. One special feature of his work is that he recommended prescriptions in the form of answering the questions raised by the public during the Black Death. He recommended a special antidote, the *theriac*. It was a composition of dozens

of ingredients but mainly of snakeskin and presumed that it could destroy the deadly poisonous elements of the disease in a human body. ^[26] Doctors of the North of the Alps frequently prescribed a special type of medicine - the Armenian Bole (a form of clay high in iron oxide).^[27] Perhaps it was widespread in Europe during the Black Death. Sometimes recommendations also came from out of the medical institutions: one professor named Gentilis of Foligno based in Perugia, Italy declared on 18th June 1348 that disease spread due to the putrid corruption of the blood in the lungs and heart and therefore purification must be done by arranging a large fire in the air. ^[28] Another doctor from Spain recommended bleeding (two or three times a day), as the most suitable remedy for it. ^[29]

Whether the recommendations of the physicians worked out or failed, we have sufficient digits of death tolls in Europe. The information on the number of dead people is varying from text to text and therefore historians encounter great difficulty. ^[30] Between the tenth century and the period of the Black Death, the population of Europe dramatically increased by 300 percent. ^[31] The plague wiped out approximately 30 percent population in Europe. 2/3 population of Central Italy, 50 percent of inhabitants of Lombardy, Spain, France, England, and Germany and 2/3 people in Scandinavian countries lost their souls. European towns also faced a dramatic depopulation: Florence 80,000; Paris over 50,000; and Vienna 40,000. In London, there were 200 deaths each day. ^[32] Two contemporary writers gave an exaggeration. According to Boccaccio, Florence lost its 100,000 souls ^[33] where Machiavelli estimated it 96,000. ^[34] The effect felt more in the countryside than the towns, and so the poor than the rich*, the young than the old. Perhaps one out of three persons died. After consulting contemporary literature, court rolls, payment of frank-pledge dues, post-mortem inquisitions, episcopal register, etc. the modern historians estimated that almost 30 million people died all over Europe. ^[35]

In this connection of the *Great Mortality*, ethics and moral values in European life also got

* The readers should concern with the fact that in the entire medieval west, only one king died of plague/Black Death (Alphonso XI of Spain, on 26th of March, 1350 at Gibraltar).

affected. Boccaccio remarked that 'a dead man was then of no more account than a dead goat would be to-day.'^[36] The following passage could be a cross-reference against the moral impacts of the death tolls. Chronicler Agnolo di Tura del Grasso observed:

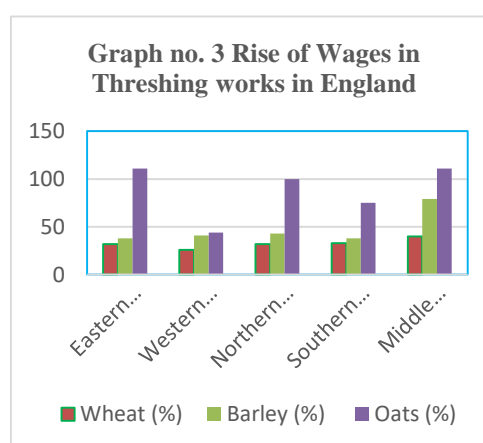
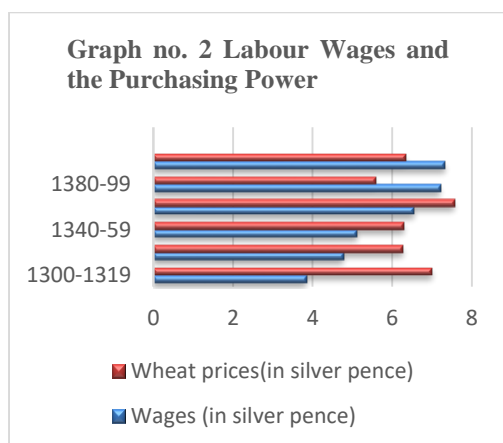
Father abandoned their children, wives left their husbands, brothers forsook each other; all fled from each other. One could not find people to carry out burials for money or friendship.... large deep ditches were dug for the great numbers of dead, hundred died day and night, and all were thrown into these pits. ^[37]

As the rate of contagion was increasing rapidly and the disease was spreading which resulted in the myriad of death tolls, European States began to enforce certain restrictions to prevent the disease. The first regulation of this kind was implemented on the 17th of January 1374, thanks to Viscount Bernabo (1323-1385) the Italian Statesmen who enforced it. Under the regulation, those who got affected by the plague were taken out of the city and kept in open fields either to die or to get recover. Persons having contact history with plague patients had to remain dissociated. ^[38] Few decades after when the plague again returned in Italy, Viscount John ordered the administration of the city to keep all the gates in strict vigilance and well-guarded so that strangers from infected areas could not enter. Houses of the plague patients were purified by fire

or aromatic materials. Bedsheets were kept in sunlight or rain for four days. ^[39] As most of the Italian City-States dealt with the Orient in maritime trade, the Genoese administration started to forbid the entrance of suspected ships into the ports so that any ship that may host the plague could not enter. When the scale of the devastation of plague reached its peak, Italian City-State Milan finally forced to establish a special Health Council at Venice consisting of three members. Initially, the Council tried to prevent the disease and later it received a special right, 'the right of life and death over those who violated regulations'. Hospitals (*Old Lazarettos* for 1st phase and *New Lazarettos* for 2nd Phase of detention) were set up in distant islands for treatment of the patients and their families. ^[40] Such regulations were improved by years and gradually new verdicts were promulgated by the Statesman or the medical councils. In due course, other commercial nations adopted those regulations and increased their rigours. ^[41]

Economy: A Golden Age of Labour?

Alike medicine, there was another field which got affected more by the devastating impacts of the Black Death- the overall economy of Europe. As Europe witnessed a massive population decline during the disaster, it impacted two chief economic systems: the manorial agriculture, and trade and commerce. Here massive population decline created a sudden labour shortage in the manor which in turn increased labour wages. As for commodity, the price of agricultural production decreased with declining demand while the price of manufactured goods increased. The landlords had to pay more wages, but in return, they got less price for the production. They were forced to release the *demesne* (special lands) for getting liquid cash. In that chaotic situation, the governments of Europe tried to restrict the mobility of labour and had to fix wage-price by implementing pronged legislations: The Ordinance of Labourers (1349) in England, the Statute of Labourers (1351) in France, the Ordinance of 1352 in Germany, and *seismarias* in Portugal (1375) were among the most notable examples of this kind. The Council of Siena in Italy implemented such regulations for restricting labour mobility and welcomed labour immigration. ^[42] According to Philip Ziegler, it was the radical changes as for the first time in medieval Europe the labourers could determine their employment terms. ^[43] Labour historian of medieval Europe Stephen A. Epstein marked it 'a watershed in the history of labour in Europe'. ^[44] In estimation, it has noted that a ploughman would have earned almost equal to the profit one could earn from eight-hectare land. ^[45] C. M. Cipolla mentioned a report (1356) where the managers who supervised the work of mint in Florence raised their concern and informed the City Council that the labourers, before going to the work, demanded high salaries, claimed better advantages. They behaved rudely with arrogance even after fulfilling their unjust demand. ^[46]



Source: Data in Table no.1 is based on the Bishops of Winchester's estates. The graphical representation is done by the author of this article. Derived and rearranged from M. M. Postan, *Essays on Medieval Agriculture and General Problems of the Medieval Economy*, New York, Cambridge University Press, 2008, p. 191; Helen Robbins, 'A Comparison of the Effects of the Black Death on the Economic Organization of France and England', *Journal of Political Economy*, Vol. 36, No. 4, 1928, pp. 447-479; E. H. Phelps Brown and Sheila V. Hopkins, 'Seven Centuries of the Prices of Consumables, Compared with Builders' Wage-Rates', *Economica*, Vol.23, No. 92, 1956, pp.296-314.

Well, the story is more complicated as further study is revealed. Economic historian Michael Postan proved that the rising trends of the wages were not due to the Black Death. Graph no.2 clearly shows the rise of wages had already started since the beginning of the fourteenth century and steadily increased until the end of the fifteenth century. It explores another interesting fact: the rising of wages and the falling price of wheat simultaneously. It means, as Postan calculated, the purchasing power of wages between 1300 and 1480 rose dramatically by 220 percent.^[47] By providing a list of increased wages in other professions (carpenters, tilers, thatcher's, masons, etc.), Postan further proved that it was not confined only within agriculture, which means a clear indication of 'general rise.'^[48] The rising wages also had regional or demographic variations. For instance, it increased in those areas which were densely populated, whereas the less populated western counties in England had very low-level rates (Graph no.3). Also, due to the lower density of the population, the countries of Eastern Europe did not encounter the shortage of labour force, hence the labourers or the peasants missed the opportunity of increasing their purchasing power.^[49] Population reduction also fostered the elimination of wage gaps between skilled and unskilled labour. Some guilds forced to waive or reduce their entry requirements for employing more apprentices.^[50] Although according to Gerald Hodggett, it was the falling of commodity prices from which the labour got benefited.^[51]

Interference of the State to control the wage curve sometimes made the picture worst. The more rigours were the ordinances, the more invective the reactions were and that ultimately turned into a series of peasant revolts: the *Jacquerie* in France (1358), revolt in Florence (1378), the French revolts (1382), and the great Peasants' Revolt of England (1381).^[52] Perhaps the labourers or peasants were not satisfied or truly benefited from the wage rise. 'We are made men in the likeness of Christ, but you treat us like savage beasts' - it was the complaint of the peasants during their revolt in England (1381).^[53] Historians who tried to explain the nature of these uprisings are pretty confused about whether to term it as class consciousness or something else. J.M. Roberts disagreed to say it a 'nascent socialism.'^[54] Some Marxist historians colourized these revolts as 'timeless characteristics of class warfare' (Perry Anderson mentioned these revolts as class struggle)^[55] while others dismissed this by claiming it 'outburst anger without a future.'^[56] Another possible reason for their agitation might be the extra tax that many European governments imposed upon them (as in the case of the Council of Siena).^[57] Although, it is unclear to us how much the ordinances were effective. For instance, the Florentine guilds in Italy during the Black Death restricted the volume of wool production to maintain the quality of their products and to retain the demand. The annual higher limit was 220 clothes per member. Surprisingly between 1350s and 1360s cloth production in Italy increased threefold!^[58] In Siena, the Council did not renew Labour Mobility Legislations yearly.^[59] So, there might be some drawbacks of those legislations. The Black Death also accentuated labour shortage in other fields like in maritime trade and the service for galleys in the Mediterranean. Iberian ports suffered a huge decline in the maritime population.^[60] Shortage of oarsmen felt in such a degree that once the medieval Venice invited the fugitives to serve the maritime sectors.^[61] And such endeavour

of Venice perhaps worked out since many contemporary Arabic texts mentioned the arrival of European merchants and Venetian galley/ships to the port of Alexandria even in the period when the plague was at its height. Near Eastern historian Eliyahu Ashtor assumed that Black Death could not break regular trade relations between southern Europe and the Levant.^[62] Black Death fostered one peculiar business in Europe, the business of prostitution. One such is the *Prostibula publica*, the licensed public brothels and it had spread in most European towns. Its cause was due to the rapid decline of moral authorities and institutions.^[63]

Concluding Remarks:

It is observed in historical time that great political catastrophe caused changes in medieval and pre-modern societies. Here for the first time, as this essay has established, a 'societal transformation' occurred by 'external apolitical force'. In this respect, James W. Thompson of the University of Chicago wrote an important article on the effects of the Black Death. In contrast with the works of earlier historians where little attention paid to the Black Death, and of those traditional works narrating dry chronology of events, Thompson first introduced the readers to the long-term culminating effects of the Black Death on society.^[64] By comparing the Black Death with the Great War of 1914, he perpended its every kind of effects that altered the existing social structure, negatively or positively. He argued, the most positive effect of the *Great Mortality* was it hit the European governments. The people questioned the ability of the governments and protested against the political corruption that ultimately gave birth well trained and skilled officials persisted until the outbreak of the Great War. This essay has explored that the *Great Mortality* came at a time when Europe was developed in the economy and rich in population, medical science was gradually improving, medicine was getting its professional form and was out of religious influence. But during the Black Death, doctors did little remedies. Many of them were fond of religious belief. Statements of two contemporary famous doctors justify the judgment when we see that physician Abu Jacfar Khatima of Spain said, "Rely on God; He is the best and most compassionate protector."^[65] Even Foligno, who believed in a practical experiment claimed, "We pray God that He may improve men's health". It is also found in this study that the Black Death severely affected the European economy, mainly the production system and the labour economy. The commodification of Labour weakened the basic structure of European feudalism: lords-villein relationship. Excessive rise in wages demanded extra money for labour payment that fostered money liquidity and resulted in the growth of *bastard feudalism*, one of those outcomes, *inner alia*, that nourished the process of weakening feudal order and institutions in Europe. Excessive depopulation in European cities sometimes altered existing urban morphology that could be categorized as 'urban replacement'. At least, taking the radical changes in mind that the Black Death fetched with, one cannot agree with the judgment what great medievalist Robert S. Lopez in his magisterial account *The Birth of Europe* made: "a whole Hampshire in crisis". The entire controversy and the findings of this study fit well with one saying of Nietzsche,

The children were playing by the sea – then came a wave and swept their
toy into the deep; now they cry. But the same wave shall bring them new
toys and spill before them new shells of many colors!

(Thus Spoke Zarathustra)

Notes and References

[1] Plague Historian McNeill's assertion can be worthy. He noted, "Yet it is impossible to believe that the plague did not affect China, India, and the Middle East." See, William H. McNeill, *Plagues and Peoples*, New York, Anchor Books, 1978, p.165. George D Sussman rather argued in an excellent article, that the firsthand sources concerning the plague in Asia revealed no presence of strong evidence of serious endemic both in fourteenth-century India and China. George D Sussman, 'Was the Black Death in India and China?', *Bulletin of the History of Medicine*, Vol. 85(3), 2011, pp.319-355.

[2] Charles King, *The Black Sea: A History*, Oxford, Oxford University Press, 2011, pp. 92-93. English translation of the original text in Rosemary Horrox (ed), *The Black Death (Manchester Medieval Sources)*, Manchester, Manchester University Press, 1994, pp.14-26.

[3] Cynthia Clark Northrup (Ed), *Encyclopedia of World Trade: From Ancient Times to the Present, Vol.1*, New York, M. E. Sharp, Inc, 2005, p.111.

[4] Brian Tierney and Sidney Painter, *Western Europe in the Middle Ages 300-1475*, Fifth Edition, New York, McGraw-Hill Inc, 1992, p. 479.

[5] *The Chronic of Novgorod 1016-1471*, Trans, Robert Michell and Nevill Forbes. In Basil Dmytryshyn (ed), *Medieval Russia A Source Book, 900-1700*, New York, Holt Rinehart and Winston Inc., 1967.

[6] Scholars of medical history did not recognize these changes as revolutionary which occurred long before the so-called 'public health' introduced in modern/colonial society. One exception is the work of Roger French in which he demonstrated these changes as 'professional'. See his, *Medicine before Science: The Business of Medicine from the Middle Ages to the Enlightenment*, New York, Cambridge University Press, 2003, p.91.

[7] Will Durant, *The Age of Faith; (The Story of Civilization: 4), A History of Medieval Civilization-Christian, Islamic, and Judaic: A.D. 325-1300*, New York, MJF Books, Hardback Edition, 1950, pp.1000-1001.

[8] One noticeable information regarding the professionalization of medical work was that few specialized jobs concerning healing developed in European society. For instance, the name *Trotula* circulated in several Salernitan scattered sources as 'a midwife' (nurse in the modern sense). At Salerno, the treatise concerning the job entitled *Trotula on the Cure of Disease of Women* was compiled.

[9] Will Durant, *The Age of Faith, Op.cit.*, p.999.

[10] James J. Walsh, 'The Earliest Modern Law for the Regulation of the Practice of Medicine, *Bulletin of the New York Academy of Medicine*', 11(8), 1935, pp. 521-527.

[11] Will Durant, *Age of Faith, Op.cit.*, p.999.

[12] *Ibid.*, p.1002.

[13] Hastings Rashdall, *The Universities of Europe in the Middle Ages, Vol. 1*, New York, Cambridge University Press, 2010, p.86.

[14] *Ibid.*

[15] Will Durant, *Age of Faith, Op.cit.*, p.1003.

[16] Joseph A. Legan, 'The Medical Response to the Black Death', James Madison University Thesis, 2015.

[17] It is understandable from the proportion of surgeons among physicians. In England, it was very little, less than 13 per cent since the beginning of the fourteenth century, and after the *Great Mortality*, it even declined. Robert S. Gottfried, 'English Medical Practitioners 1340-1530', *Bulletin of the History of Medicine*, Vol. 58, No. 2, 1984, pp. 164-182.

[18] Nigel J Shanks and Dawshe Al-Kalai, 'Arabian medicine in the Middle Ages', *Journal of the Royal Society of Medicine* Vol.77, January 1984, pp.60-65; Hastings Rashdall, *The Universities of Europe in the Middle Ages*, *Op.cit*, p.85.

[19] I. F. C. Hecker, *The Black Death of the Fourteenth Century*, London, 1835. Later reprinted as a part in Benjamin Guy Babington and Justus Friedrich Carl Hecker, *The Epidemics of the Middle Ages, Volume 1-2*, USA (place of publication not mentioned), Nabu Press, 2010, p. 129.

[20] Gui De Chauliac, *Grande Chirurgie (Great Surgery)*, 1363 A.D., Trans, John Aberth, *The Black Death: The Great Mortality of 1348–1350 A Brief History With Documents*, New York, Palgrave Macmillan, 2005, pp.64-65.

[21] Giovanni Boccaccio, *Decameron*, 1349-51 A.D., Trans. G. H. McWilliam, London, Penguin, 2003.

[22] Although, the exception is everywhere! Alfonso De Córdoba, a doctor in Spain, at least described the Plague as artificial or man-made rather than natural or act of god- "Experience teaches us that this pestilence does not proceed from some constellation [of the planets] nor as a consequence of any natural infection of the elements, but it proceeds out of a deep-seated malice through the most subtle artifice that can be invented by a profoundly wicked mind", Alfonso De Córdoba, *Epistola et Regimen de Pestilentia (Letter and Regimen concerning the Pestilence)*, 1348/49 A.D., Trans, John Aberth, *The Black Death*, *Op.cit*.

[23] Clifford R. Backman, *The Worlds of Medieval Europe*, Second Edition, New York, Oxford University Press, 2009, p.472; I. F. C. Hecker, *The Black Death*, *Op.cit.*, pp.130-35.

[24] Jacme D'agramont, *Regiment de preservacio a epidimia (Regimen of Protection against Epidemics)*, 1349 A.D., Trans, John Aberth, *The Black Death*, *Op.cit*.

[25] Abu Ibn Khatima, *Tahsil algharad al qasid fi tafsil al-marad al-wafid (Description and Remedy for Escaping the Plague)*, 1349 A.D., Trans, John Aberth, *The Black Death*, *Op.cit*.

[26] Foligno, *Consilium contra Pestilentiam (Casebook against the Pestilence)*, 1348 A.D., Trans, John Aberth, *The Black Death*, *Op.cit*.

[27] *Ibid*.

[28] I. F. C. Hecker, *The Black Death*, *Op.cit.*, pp.137-38.

[29] Abu Ibn Khatima, *Tahsil algharad*, *Loc.cit*.

[30] Surprisingly, some scholars did not pay adequate attention to the *Great Mortality* in Europe. For example, Lewis Mumford, the most famous historian of urban and population history, made a silly judgement on the effects of the depopulation of Black Death. He wrote, 'it caused only a temporary recession', See Lewis Mumford, *The City in History-Its Origins, Its Transformation, and Its Prospects*, New York and London, A Harvest Book Harcourt Inc., 1989, p. 260.

[31] Lester K. Little, *Religious Poverty and the Profit Economy in Medieval Europe*, New York, Cornell University Press, 1983, pp.22-23 (for the population of European cities before the Black Death).

[32] P. Boissonnade, *Life and Work in Medieval Europe*, Trans. Eileen Power, London, 1927. Reprinted, New York, Dover Publication, 2002, p.285.

[33] Boccaccio, *Decameron*, *Loc.cit*; Will Durant, *The Renaissance (The Story of Civilization: 5)*, *A History of Civilization in Italy from 1304-1576*, New York, MJF Books, Hardback Edition, 1981, p.30.

[34] Niccolò Machiavelli, *Istorie fiorentine (Florentine Histories)*, Trans, 1532 A.D., Book 2, Chapter IX; Will Durant, *The Renaissance*, *Loc.cit*.

[35] Norman Davies, *Europe A History: A Panorama of Europe, East and West, from the Ice Age to the Cold War, from the Urals to Gibraltar*, New York, HarperCollins, 1998, p.412. In *Oxford Dictionary of World History*, it is claimed that almost 25,000,000 people died in the Black Death which is far greater than the combined casualties of the two World Wars (p.74). Cf. I. F. C. Hecker, *The Black Death*, *Op.cit.*, p. 77. One Contemporary doctor named Abu Ibn Khatima described how the contagion was severe. He noted, "if he(the patient) is hoarse, the other will be too; if the first had buboes on the glands, the other

will have them in the same place; if the first one had a boil, the second will get one too". Abu Ibn Khatima, *Tahsil algharad, Loc.cit.*

[36] Boccaccio, *Decameron, Loc.cit.*

[37] Peter Denley, 'The Mediterranean in the Age of the Renaissance, 1200-1500', in George Holmes (Ed), *The Oxford History of Medieval Europe*, Oxford, Oxford University Press, 2001, p.249. Cf. Gui De Chauillac, *Grande Chirurgie, Loc.cit.*; Lorenzo di Filippo Strozzi, *Pistola fatta per la peste*, Trans, William J. Landon, *Lorenzo di Filippo Strozzi and Niccolo Machiavelli: Patron, Client, and the Pistola fatta per la peste*, Toronto, University of Toronto Press, 2013.

[38] I. F. C. Hecker, *The Black Death, Op.cit.*, p. 159.

[39] Gui De Chauillac, *Grande Chirurgie, Loc.cit.*; I. F. C. Hecker, *The Black Death, Op.cit.*, pp.162-63.

[40] I. F. C. Hecker, *The Black Death, Op.cit.*, p.165-67.

[41] Regulations and restrictions of the European States to prevent the plague became fundamental in the field of medical science for later development. Such Regulations were often the parameters in State policy. When the Ottoman State suffered several plague attacks in the sixteenth century, the central administration adopted such restrictions, like the observation of the patients and their houses, monitoring death toll daily, cleanliness of urban areas, and most notably the implementation of public health policy. One reputed scholar has marked these developments as 'early modern public health administration'. See, Nükhet Varlik, *Plague and Empire in the Early Modern Mediterranean World: The Ottoman Experience 1347-1600*, New York, Cambridge University Press, 2015, pp.248-49.

[42] *Ordinance, City Council of Siena*, May 1349, Trans, John Aberth, *The Black Death, Op.cit.*

[43] The hypothesis of labour shortage and its connection with the increase of wage promulgated mainly by a professional medievalist Professor Thorold Rogers. To validate the argument, he contextualized the increasing wage amount of a ploughman based in Cuxham, a village in England. The Ploughman earned 2s per annum before the Black Death, 7s in 1349-50, and 10s 6d in 1350-51. Later, Philip Ziegler has nullified the thesis. Ziegler argued, the declining trends of both the population and the economy had already started before the Black Death. For the debate, readers should consult Philip Ziegler, *The Black Death*, Gloucestershire, The History Press, 2010, pp.199-215.

[44] Steven A. Epstein, *Wage Labour and Guilds in Medieval Europe*, Chapel Hill, University of North Carolina Press, 1991, p.232.

[45] Gerald A. J. Hodgett, *A Social and Economic History of Medieval Europe*, New York, Harper Torchbooks, 1974, p.209.

[46] Carlo M. Cipolla, *Before the Industrial Revolution: European Society and Economy 1000-1700, Third Edition*, New York and London, W. W. Norton & Company, Inc., 1994, pp.203-04.

[47] M. M. Postan, *Essays on Medieval Agriculture and General Problems of the Medieval Economy*, New York, Cambridge University Press, 2008, p. 191.

[48] *Ibid.*, pp.199,202.

[49] Cynthia Clark Northrup (Ed), *Encyclopedia of World Trade, Op.cit.*, p.112.

[50] *Ibid.*

[51] Gerald Hodgett, *A Social and Economic History of Medieval Europe, Loc.cit.*

[52] Martine Scott, *Medieval Europe*, New York, Dorset Press, 1986, pp.310-11.

[53] J. M. Roberts and Odd Arne Westad, *History of the World*, Sixth Revised Edition, New York, Oxford University Press, 2013, p.508.

[54] *Ibid.*

[55] Perry Anderson, *Passages from Antiquity to Feudalism*, London and New York, Verso, 2006, pp.203-07.

- [56] Norman Davies, *Europe A History*, *Op.cit.*, p.413.
- [57] *Ordinance, City Council of Siena, May 1349, Loc.cit.*
- [58] Steven A. Epstein, *Wage Labour and Guilds, Loc.cit.*
- [59] *Ordinance, City Council of Siena, May 1349, Loc.cit.*
- [60] Archibald Ross Lewis and Timothy J. Runyan, *European Naval and Maritime History 300-1500*, Bloomington, Indiana University Press, 1990, pp. 145,154.
- [61] Frederic C. Lane, *Venice A Maritime Republic*, Baltimore, Johns Hopkins University Press, 1973, pp.169-70.
- [62] Eliyahu Ashtor, *Levant Trade in the Later Middle Ages*, New Jersey, Princeton University Press, 1983, reprinted as *Levant Trade in the Middle Ages*, under Princeton Legacy Library Series, 2014, p.71. Here the rapid appearance of the plague (1359, 1468, 1469, 1476-77, 1492, 1498) called as *ta'un* in the Near East also fostered depopulation in both villages and cities. (pp.433-34.)
- [63] Norman Davies, *Europe A History, Loc.cit.*
- [64] James Westfall Thompson, 'The Aftermath of the Black Death and the Aftermath of the Great War', *American Journal of Sociology*, Vol. 26, No. 5, 1921, pp. 565-572.
- [65] Abu Ibn Khatima, *Tahsil algharad, Loc.cit.*