

Health and Disease in Medieval India

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Abstract: Health remained one of the prime concerns of all civilizations across time-periods. Civilizations developed their own understanding about the problem and tried to find solutions. Society in medieval India also faced several diseases and health issues and tried to overcome them. Contemporary writings are full of information about these diseases and the understanding of medieval Indian society about their occurrence and mechanisms to overcome them. The state appears to have intervened and tried to ameliorate the situation. Different types of hospitals were established and physicians tried different formulations to overcome the diseases. The present paper is an attempt to study such health issues in pre-colonial India and state's intervention during time of epidemics. The paper also provides an environmental perspective of the problem.

Keywords: Mughal India, Diseases, Physicians, Hospitals

Disease describes a physical condition which causes discomfort and hinders the normal functioning of the body of an individual. Its recognition, diagnosis, and treatment may vary from time to time. Medical science has over time realized that social conditions, especially poverty, are among the major determinants of

health. It has been noticed that people's health improves when the problems of basic requisites like nutrition, safe drinking water, and sanitation are solved.¹¹

During the reign of Babur and Humayun, Hakim Yusum bin Muhammad Yusufi,² was known to have knowledge of symptoms, therapeutics, ophthalmology, and general medicine. He discussed hygiene and therapeutics in his *Ilajul Amraz* and *Fawaid-ul Akhyar*.³ During Akbar's reign, Shaikh Bhina, Mulla Qutubuddin Kuhhal, Hakim Biarjiu, and Hakim Bhairon were well versed in surgery.⁴ A book on medical prescription, *Mujarrabat-i Shaikh Bhina*, was authored by Hakim Shaikh Bhina.⁵ *Muntakhab-ut Tawarikh* informs us that Hakim Ainul Mulk 'Dawwani' was an expert in ophthalmology and pharmacology.⁶ He also wrote a treatise in verse known as *Fawaid ul Insan*.⁷ Muqarrab Khan and Hakim Ali Akbar were both renowned physicians and experts in surgery during the reign of Jahangir.⁸ Muqarrab Khan and his nephew Hakim Qasim were well-known bleeders and experts of veterinary diseases.⁹ The *Ganj-i Bad Awurd* is a treatise on pharmacology and *Ummul Ilaj* one on purgatives by Amanullah Firoz Jung Khanzada Khan.¹⁰ A lot of work on medicine was done during the reign of Shah Jahan too. Hakim Masum's

Qarabadin-i Masum deals with the preparation of drugs and ointment from pulps, pastes, syrups etc.¹¹ Hakim Sanjak, an expert in the field of ophthalmic diseases, belonged to Aurangzeb's reign.¹² According to European travellers, Danishmand Khan was an expert in anatomy.¹³ During Aurangzeb's time, Nurul Haq Sirhindi's *Ainul Hayat* discussed about the remedies of plague.¹⁴ Testimonies of European travellers of the 17th century have, however, caused scholars to have reservations about the quality of knowledge of medicine in medieval India.¹⁵ Manucci believed that *tabibs* of the Mughal period had no knowledge of medicine and were not in position to cure stones, paralysis, epilepsy, anaemia, malignant fever, dropsy etc.¹⁶ He did, of course, appreciate the fact that they were well versed in the science of pharmacy.¹⁷

Plague:

Paleo-biologists are of the opinion that plague or *Y.pestis* 'originated in China or former Soviet Union more than 2,600 years ago and spread through multiple routes to Europe, South America, Africa and Southeast Asia'.¹⁸ Medieval accounts relate the spread of plague to rats, and it is now known that the bacterium *Pasteurrella prestos* or *Y.pestis* is carried by fleas from infected rats.

In medieval India, plague often appeared in epidemic form and seasonally; it occurred during the hot season and usually coincided with famines. Its recurrence indicates environmental conditions as an important factor. Ibn Batuta informs us that bubonic plague broke out at Bidar when Muhammad bin Tughlaq was camping there and it took a heavy toll on human lives.¹⁹ Mughal India too was not free from plague.²⁰ In 1548, a large number of people died every day in Sindh due to severe plague²¹ and the whole area became desolate.²² An important noble, Sheikh Ali, too died of it.²³ In 1556, during Bairam Khan's regency, most of the cities of northern India used to be affected by plague and a large number of people died of it.²⁴ In 1574-75, Muhammad Arif Qandhari rightly observed that 'plague and famine occurred not only on account of contamination of water and air but also because of the misrule and oppression of the Afghans, the Abyssians and the Mirzas. The epidemic, most probably plague, preceded famine. Calamity was widespread...and a large number of inhabitants of all classes left the province. Mortality was so high that on an average one hundred cart-loads of dead bodies were every day taken out for burial from the city of Ahmadabad alone, and it was impossible to find for them graves and grave-cloth. They were interred in pits with earth thrown over them. The severity was felt equally in the towns and the districts of Broach, Pattan and

Baroda, and in fact in the whole of Gujarat'.²⁵ Between 1595 and 1598,²⁶ the entire country was ravaged by a severe famine owing to scarcity of rain.²⁷ A kind of plague also added to the horrors of famine. Deserted towns and cities presented a ghostly picture; streets and roads were blocked up with human corpses. There was such a dearth of corn that people are reported to have resorted to cannibalism. Out of compassion for his miserable subjects, Akbar entrusted Sheikh Farid Bukhari with relief work.²⁸ Public kitchens were started and experienced officers were dispatched in every direction to distribute food to starving people.²⁹

During 1616-24, plague would appear at the commencement of winter and generally disappear at the advent of hot weather; at times, as in 1617-18, it would decline for a while during spring. In 1618-19, it devastated Agra and neighbouring areas but did not spread further than Amanabad in the west. Probably the complete desertion of this city, some eighteen miles from Fathpur Sikri, saved this old metropolis of India.³⁰ As regards the first outbreak which occurred in October 1616, Master Salbancke, writing to the East India Company about the 'wonderfully great plague', says that at times no less than one thousand people died a day. Sir Thomas Roe, in a letter to Pepwell, mentioned

that he received news of a great plague at Agra,³¹ and writing on 25 November 1616, notes that Master Crowther, coming from Agra, informed him that the 'plague was violent' there.³² Again on 15 December 1616, Master Fettiplace arrived from Agra being out of business and left all his goods with Master Salbancke who decided to lock up and get away to Fathpur on account of the vehemence of the plague. On 14 January 1617, Sir Thomas Roe recorded from Agra that 'plague was fallen to 100 a day and great hope of clearing of the town',³³ from which it may be inferred that mortality had been much higher in the months of November and December the previous year. Imperial officers at Agra, in the reports which they sent to the emperor, estimated the average daily mortality in the metropolis to be 100.³⁴

The social condition of the general masses of medieval India was far from satisfactory; and yet, epidemics were far too common. *Tuzuk-i-Jahangiri* records that the first great epidemic in Punjab in 1616 was bubonic plague. The calamity commenced in the *parganahs* of the Punjab and then spread to the city of Lahore. From there it then spread to Sirhind and the *Doab*, until it reached Delhi and the surrounding *parganahs* and desolated them.³⁵ Jahangir says that according to experienced men and old histories, this disease had never before shown itself in this country. Physicians and learned men failed to agree about

the cause; while some attributed it to lack of rainfall and drought for two successive years, others thought it was due to 'the corruption of the air', while others attributed it to yet other causes.³⁶

In 1617, Jahangir halted at the village of Barasinor (Balanisor) when he heard of plague having appeared in Kashmir. On the basis of reports he received, its symptoms were headache, fever, and profuse bleeding from the nose on the first day, with the patient dying on the second.³⁷ Whoever went near the sick or a dead body was affected in the same way. In one instance, when a dead body was discarded, a cow which fed on the grass nearby died, and dogs that ate the flesh died too.³⁸ Things came to such a pass that out of fear of death, fathers would not approach children and children would not go near their fathers. The emperor described strange things reported happening during the height of the plague. One morning there was a great fire; when the people of a city got up, they saw marks on their houses and on mosques, and there was a diminution of the plague. He, however, did not accept the connection between the two.³⁹

In 1618, Jahangir decided to remain at Ahmadabad instead of marching to Agra as he heard about pollution in the air there.⁴⁰ At Ahmadabad he received the news that signs of plague (*waba*) had appeared again at Agra, and people

were dying. Because of this, he decided to stay at Fathpur till the situation improved.⁴¹ Francis Fettiplace, writing on 1 December 1618, reported that ‘the plague is hot in Agra’.⁴² Terry, in his account of the year 1618, noted an outbreak of a disease in Ahmedabad – probably plague⁴³ -- from which the English suffered too. In Terry’s family, seven members died in nine days. It was so intense that within twenty hours of its appearance, people began dying in large numbers with black and blue spots on the chest and high temperature.⁴⁴

In 1619, again in Agra,⁴⁵ about a hundred people were dying daily. The buboes formed under armpits, in the groin, or below the throat, causing death. This was the third year that it raged during the winter and disappeared at the commencement of the hot season. It is strange that in all these three years infection spread to all towns and villages in the neighbourhood of the city, whereas there was no trace of it at Fathpur Sikri. It came as far as Amanabad, which was only about 5 miles away, and the people there abandoned their houses and went away.

In 1619, when Jahangir was at Fathpur Sikri, and the daughter of Asaf Khan, married to Abdullah Khan, came from Agra to welcome him,⁴⁶ she told him about a strange happening. She said: ‘One day in the courtyard of the house I saw a mouse rising and falling in distracted state. I said to one of my girls:

“Take it by the tail and throw it to the cat!” The cat was delighted, and jumped up from its place and seized it in its mouth, but immediately dropped it and showed disgust. The next day it was nearly dead, when it entered into my mind to give it a little treacle (*tiryaaq*, opium?). When its mouth was opened, the palate and tongue appeared black...After this the grain (*dana*) of the plague (buboes) appeared in the girl, and from excess of temperature and increase of pain she had no rest. Her colour became changed – it was yellow inclining to black – and the fever was high (*tap muhriq qardid*). The next day she vomited and had motions, and died. Seven or eight people in that household died in the same way...In brief, in the space of eight or nine days seventeen people became travellers on the road of annihilation.’ She also said: ‘Those in whom buboes appeared, if they called in another person for water to drink or wash, the latter also caught the infection (*sirayat*), and at last it came to such a pass that through excessive apprehension no one would come near them.’⁴⁷ The contemporary chronicler, Mutamid Khan, in his work the *Iqbalnama-i-Jahangiri*, mentions a similar story; according to him, ‘when [plague] was about to break out, a mouse would rush out its hole as if mad, and striking itself against the door and the walls of the house, would expire. If the occupants left the house immediately, their lives were saved’.⁴⁸ The English factors at Surat also inform us regarding

the plague at Agra of 1619: ‘the plague increased in Agra; the king at Fett pore (Fathpur Sikri) within twelve course [*kos*] thereof’.⁴⁹

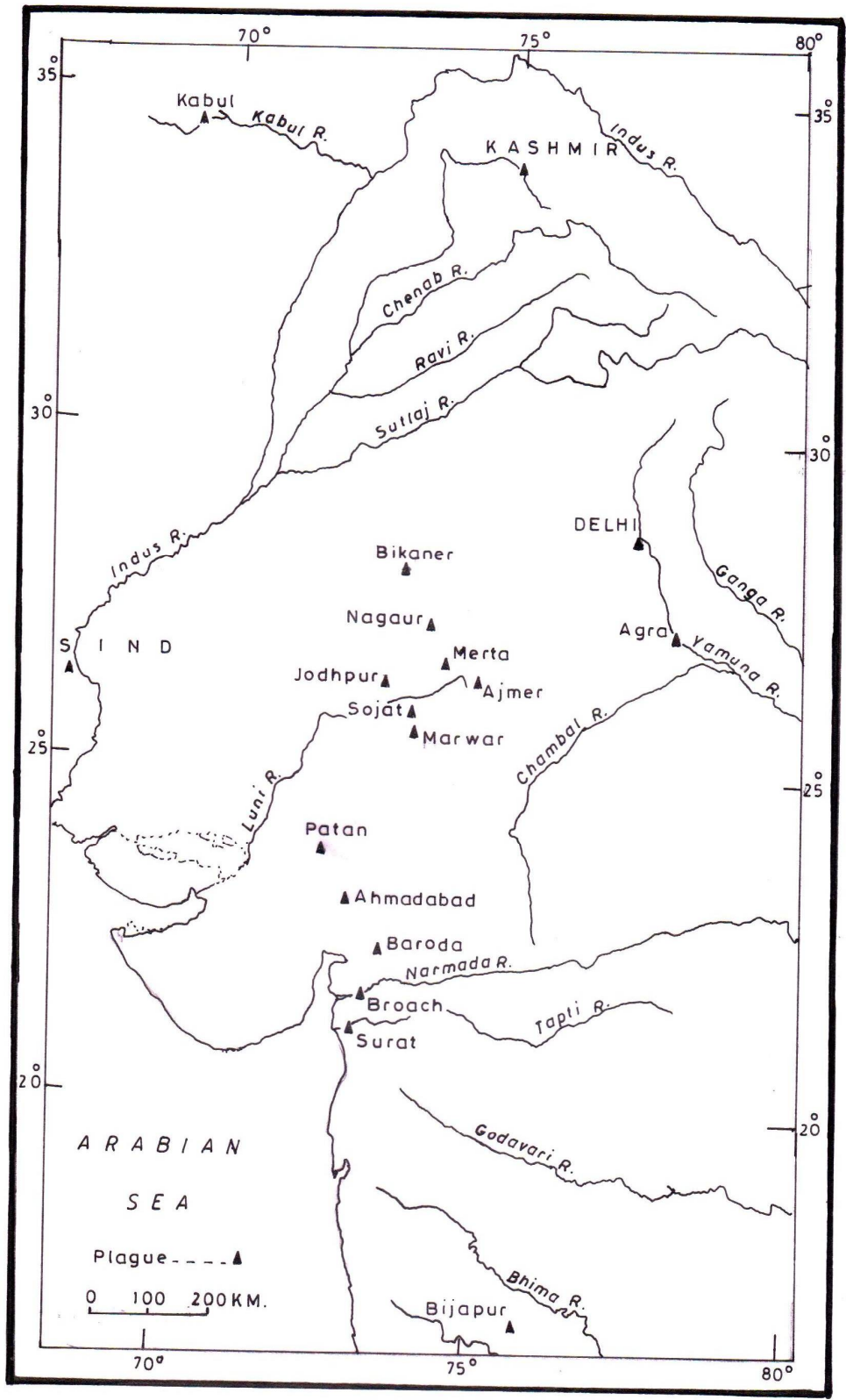
In 1632 plague broke out in Surat and adjacent areas following two years of famine. Signor Willibrand gives a very pitiful account of two years of famine and the great plague following, which swept away so many that at places there was none left to burn the dead. Many among the English too lost their lives, including President Rastell.⁵⁰

It seems that at the time of eruption of the disease, emperors generally moved out of the affected region, as Shahjahan proceeded for hunting to Gadh Muteshwar on the bank of Ganga during the epidemic of December 1656 in Delhi. There were large scale migrations to avoid regions affected by plague, as it happened in Surat and later in Marwar in 1656.⁵¹

In the first quarter of the 17th century, people were bewildered because to them that it had surpassed everything known in the past.⁵² Though they were able to establish the relationship of mice with plague, they could not fathom the cause of ferocity of the disease. Physicians too were not able to find any remedy, perhaps because the contagious nature of the disease prevented them from examining patients. The only serious and useful precaution which they could take, and indeed they did take it on a grand scale, was evacuation.

Modern medical science has widely accepted the reason for the spread of plague given in medieval chronicles or memoirs. Plague not only brought in its wake immense misery and suffering for people but also disrupted socio-economic life and put a great strain on the administrative machinery of the state.

Visitations of Plague in Mughal India



Smallpox

Smallpox⁵³ was another dreaded epidemic of India since long, coming mostly during the hot season. Like plague, it too was responsible for a high rate of mortality.⁵⁴ The earliest reference regarding smallpox is found in *Charakasamhita* and *Sushrutasamhita*.⁵⁵ In Sanskrit texts, smallpox as *masurika*,⁵⁶ is found dating back to over 2,000 years.⁵⁷ August Hirsch's view is that, although its origin remains an unsolved problem, the native foci of smallpox may be looked for in India and in central Africa.⁵⁸ The earliest reference to smallpox in medieval India is in Alberuni's *Kitab ul Hind* of the 11th century. He wrote: "The Hindus... believe that the smallpox is a wind blowing from the Island of Lanka towards the continent to carry off souls. According to one report, some people warn others beforehand of the wind beginning to blow, and can tell exactly when it would reach different parts of the country".⁵⁹ According to Irfan Habib, the disease (*masurika*) appears in medical literature probably as early as the 7th century, about the same time as it did in the west, and possibly a little after China.⁶⁰ His view, therefore, is that it is by origin practically a medieval disease.⁶¹

Bhavaprakasa, compiled in the early 16th century by Bhava Misra, has a full section on smallpox and information about the therapies for different types of pustules⁶². The smallpox goddess *Sitala* emerged in medical texts from about the beginning of the 16th century. Several Buddhist texts have images of *Parnasbari* (a Mahayana Buddhist goddess of the disease) unearthed from 10th to 12th century sites in eastern Bengal, who clearly resembles the *Sitala* goddess.⁶³ It may be inferred that by the 17th century smallpox was frequent, probably due to the deterioration of natural environment and changes in ecological balance.

In 1601-2, when Salim was leaving Agra, Khurram fell ill with smallpox. His condition became serious, and his grandfather grew nervous. He quickly summoned renowned physicians for his treatment and prayed frequently for early recovery. On the day the customary bath was given to Khurram after recovery, Akbar distributed alms and set many prisoners free.⁶⁴ In 1635, Prince Murad was afflicted by the disease while at Kashmir; he was treated by Wazir Khan.⁶⁵ Antonia van Diemen reported that out of the 600 male and female slaves who reached Batavia from Masulipatam in 1644, 135 died of smallpox during travel.⁶⁶ There are references to the disease in the Mathura region in the local Qazi's register: in the period 1653-1717, out of twenty five as many as ten

had smallpox marks on their faces (*dagh wa chehra*).⁶⁷ As this figure is only about those who survived, we may surmise that many more must have died of it. A Combay document, dated 29 November 1692, tells of a person named Paswir having marks of smallpox on his face.⁶⁸ In 1698-99, Ram Raja, a noble's eldest son, only five years of age, died of smallpox.⁶⁹ In a document of 1716, from the description of his face, one comes to know of a person having been afflicted of smallpox.⁷⁰ According to the records of Dutch factors, smallpox appeared at Cochin in 1718.⁷¹ On 21 October 1726, de Haan talked about the prevalence of smallpox at Malabar.⁷²

About the treatment of smallpox, Alberuni informs us that patients were given cloves to drink, together with gold dust,⁷³ he seems confident that if these were taken, 9 out of ten people had the chance to survive.⁷⁴ But we do not find about any proper remedy for smallpox until the first half of the 17th century. The physician Muhammad Akbar Arzani (*d.1722*) attempted relief by pricking patients with gold needles and draining them.⁷⁵ Both Alberuni and the physician Muhammad Akbar Arzani mention gold dust and clove as remedies of the disease. Thus it is clear that gold was an important component in the treatment

of smallpox. But neither Ayurveda nor the Yunani system had any effective remedy for it; the above method could only prevent its visitation.⁷⁶

Cholera

Cholera is called *hachaizia* in Arabic and *haija* in Hindi. In India its name varies from region to region, such as *morysey*, *mirtirissa*, *mordeyin* and *mordechien*.⁷⁷ The term *mordechien* is probably derived from the French ‘*mort de chein*’, literary meaning ‘a dog’s death’.⁷⁸ The climactic condition of the Gangetic plains is believed to be supportive of the occurrence of this disease; the intersection of the summer and the rainy seasons, when it is very humid and sultry, in some places drought and flood are the main reason of cholera.⁷⁹ Thus, as it frequents areas of heavy rainfall, it is believed that it has existed in India since the beginning of recorded history.⁸⁰ There is no evidence of the disease in Europe before it occurred at Nismes in 1564, and as far India is concerned, it was first observed by Europeans at Goa only in 1503.⁸¹ Thus, Jacques M. May’s view regarding the evidence of widespread cholera in India since earliest times may not be entirely correct. Although cholera has been known to exist here before the 1816 epidemic, occurrences in other parts of Asia had not been identified or traced, and there is no evidence that outbreaks had occurred in Europe or in the western hemisphere before the so-called “second pandemic” in

1832.⁸² As far as medieval India is concerned, there are no references to cholera in Babur's memoirs; probably it is recorded first by the emperor Jahangir in his own memoirs. In 1616, news came of the death of Saif Khan Barha⁸³ at Deccan due to this disease (*haiza*).⁸⁴

The European traveller Niccolao Mannucci noticed cholera at Goa. He informs us that the climate of the place was suited to older people but very unhealthy for the young; thus, he fell ill a few months after arrival and could never recover fully. He calls cholera (*mort-de-chien*) the common disease of Goa, colic of the bowels with vomiting and laxity being the cause of death of many. The best remedy, according to him, is to burn with a red-hot iron the middle of the heel until the heat is felt, which allays the pain, and discharge and vomiting stops. He records the spleen, the itch, and fevers as the other complaints of the place, the reason why residents of Goa had a bad complexion although there was an abundance of food, especially fruits.⁸⁵

Malaria and Fever

As a disease, malaria is characterised by periodic bouts of fever. The exact nature, severity, and periodicity of the symptoms and the kind and efficiency of the immune response vary from one parasite to another. *P falciparum* causes the most severe symptoms. If untreated, the condition of a patient can rapidly

decline to death.⁸⁶ As regards ancient India, there is no direct evidence of malaria; the incidence of malaria in the Harappan civilization has been inferred from the circumstantial evidence of unsanitary conditions in the outskirts of cities which arguably provided a breeding ground for mosquitoes and flies.⁸⁷ The problem may have been further aggravated by the disposal of animal-dung and night soil etc. outside city limits.

During Akabar's reign, Abul Fazl informs us, an epidemic in the form of malaria carried off innumerable people in 1575. It took the life of not only common people, because the author of *Ain* mentions also prominent nobles such as Munim Khan, Haider Khan, Mirza quli Khan, Ashraf Khan Abul Hasan, and Shah Quli dying of it.⁸⁸ In 1616, when Jahangir reached his fiftieth year, in consequence of excessive fever (*dud u bukhar*) his breadth was short and he was very unwell.⁸⁹ Again, malaria broke out at Ahmadabad in 1618 and took a heavy toll on lives, and Europeans too were affected.⁹⁰ A factor of Madras, in one of his letters to Masulipatam, informed about the death of one William after an illness of about three weeks.⁹¹ President Breton died on 21 July 1649 at Surat after 20 days of sickness, probably of malarial fever.⁹² In 1673, in Mughal north India, intense headache started due to malaria and numerous people lost life.

The factors' letters mentioned that Europeans too were suffering from this epidemic.⁹³

In 1618, in Mughal north India in consequence of great heat and the pollution of the air, inflammatory fever attacked most people, and within two or three days they became exceedingly ill. It was also noticed that even after recovery, they continued to feel weak. Jahangir informs us that he 'heard from old men that thirty years before the same kind of fever prevailed in the city of Gujarat'.⁹⁴

On 5 April 1636, Captain Christopher Brown died of a fever at Surat.⁹⁵ Lahori, in his account of 1646-47, informs us that due to discordance with the wind of the rainy season the emperor experienced fever and heaviness,⁹⁶ and a lot of charities and good work were carried out in his name.⁹⁷ On 15 February 1644, at *mauza* Sookar, Shahjahan suffered with illness of fever. Thus the emperor extended his hands towards Khairat and deputed physicians for treatment. After bloodletting and *Zehr-i Mohra* and other medicines he recovered after fourteen days.⁹⁸ In the month of August 1661, Aurangzeb fell ill with sudden fever which was so severe that it caused delirium,⁹⁹ and doctors

were unable to reduce his temperature.¹⁰⁰ As a last remedy they decided to bleed him; as it was being done, the bandage came undone, and blood began to flow. By the time the physician called Hakim ul Mulk¹⁰¹ arrived much blood had already been lost; the physician, though in great fright, tied the bandage anew. Aurangzeb, owing to the great heat he was in, wanted to eat water-melon, and Hakim ul Mulk incautiously gave him permission. Thus, while eating water-melons, as he had paralysis of the tongue, he very nearly lost his power of speech entirely and physicians were doubtful about his recovery.¹⁰² In the month of February, Aurangzeb was seized with severe fever and died.¹⁰³ In 1603, the Mughal Empire was again visited by an epidemic, probably *kala-azar*. Prominent nobles, such as Asaf Khan, Mirza Khan, Muinuddin Ahmad Khan, and Shaikh Tabir, lost their lives and panic spread in the empire.¹⁰⁴

Diarrhoea

In 1604, Akbar, much exhausted after watching a fight between the elephants of Khusrau and Salim, passed a restless night and the next morning had an attack of fever which was complicated by diarrhoea.¹⁰⁵ After a few months the

emperor again had diarrhoea accompanied by internal bleeding and finally died on 15 October 1605.¹⁰⁶

In March 1615, Khusrau Bi Uzbek, a distinguished soldier, died of dysentery.¹⁰⁷ In the same year, when the seat of government was at Agra, Mir Khalilullah¹⁰⁸ was attacked by bilious (*Ishal-i kabd*) diarrhoea for eating too many mangoes and passed away within ten or twelve days.¹⁰⁹

Jahangir informs us that in 1615, Muhammad Riza, ambassador of his brother Shah Abbas, died at Agra of diarrhoea (*ishal*).¹¹⁰ “On that day news arrived of the death of one of Jahangir’s intimate attendants, Inayat Khan. As he was addicted to opium and wine, he lost his mind by degrees. Weakly built, he took more than he could digest, and was attacked by diarrhoea, and he fainted twice or thrice. By the emperor’s order, Hakim Rukna tried remedies, but nothing worked.”¹¹¹ Lahori informs us that Shah Abbas¹¹² died in 1629 at the age of about 59 yrs, suffering from a number of diseases like Ague, diarrhoea, and *Su-al qinah*.¹¹³ Another noble, Haji Muhammad Jan Qudsi, died in 1646 at Lahore due to diarrhoea.¹¹⁴ It is said about Aurangzeb that he fell ill to

diarrhoea in 1694 and became so weak that he fainted several times, and the news spread that he had died.¹¹⁵

Strangury

Strangury is a disease in which urine is passed drop by drop owing to muscle spasms of the urethra or the urinary bladder. In 1654, when the court was at Delhi, Shajahan fell ill on retention of urine for three days, and he was almost at death's door.¹¹⁶ He again fell ill seriously to strangury, constipation, and other similar maladies in 1656-57. Physicians tried all remedies, but nothing worked.¹¹⁷ His condition worsened, with his lower limb swelling, his palate and tongue growing very dry, and with symptoms of fever appearing.¹¹⁸ No remedy could be finally found, and now being an old man and much enfeebled, he died.¹¹⁹ When Mir Jumla was at Dhaka, he fell ill with retention of urine.¹²⁰ In the eighth year of his reign, the emperor Aurangzeb was suddenly attacked with strangury, and suffered greatly for a few days before he recovered.¹²¹ Although our sources do not yield much information on this disease of urine, the little there is shows that it existed in the form of a slow-killing disease in Mughal India.

Asthma

Asthma is a disease that affects the lungs. It is the most common long-term disease among children, and it affects adults too. Asthma causes repeated episodes of wheezing, breathlessness, chest tightness, and night time or early morning cough. An asthma attack can occur when one is exposed to pollution in the environment such as dust mites and tobacco smoke.

According to the author of *Padshnama*, during Jahangir's last visit to Kashmir, his asthma got intensified and he became so weak that he became sure of his death. Thus, while marching towards Lahore, he is reported to have said, 'I don't know whether some more days of my life would stand up with me.' At Rajour, the attack intensified again and he passed away on Sunday, 29 October 1627.¹²² Nar Singh Dev, a noble, had an asthma attack in the reign of Jahangir.¹²³ Jahangir found the milk of antelopes, cows, and buffaloes of great use in asthma.¹²⁴

Other diseases

Abul Fazl informs us about a disease of swelling and says that affected people boiled the bark of the *siris* tree and drank the water to be cured of it.¹²⁵ In 1620, when Jahangir was at Kashmir, people of Rajaur were affected by a swelling

(*bughma*) under the throat.¹²⁶ Faizi suffered for a long time from difficulty in breathing, dropsy, swelling of hands, and blood-vomiting, and finally died on 15 October 1594.¹²⁷ In 1621, Khusrau died of colic pain (*qulaj*).¹²⁸ Francois Bernier observed, while commenting on the climate of Agra and Delhi, that gout, stone, kidney complaints, catarrhs, and quarter agues were nearly unknown there; and persons arriving afflicted with any of these, as was the case with him, soon experienced complete cure. According to him, even venereal diseases, common as they were in Hindustan, were not of so virulent a character, or attended with such injurious consequences, as in other parts of the world. But he also commented that although people enjoy great health here, they are less vigorous than people in the colder climates; the feebleness and languor both of body and mind, the result of excessive heat, he considered an unremitting malady which attacked all indiscriminately, and among east Europeans not yet inured to heat.¹²⁹

Manucci recalls a female servant called Dil-jo, a *valet-de-chamber* to Shah Alam, who was quite young but suffered from frightful things that so overwhelmed her that she took to even biting her own body. After some remedies had been administered which did her no good, Manucci advised the prince to marry her off. Two months later, people found that her colour had

returned and she had regained perfect health.¹³⁰ Thomas Coryat¹³¹ suffered from dysentery¹³² to which he rapidly succumbed at the age of forty in December 1617 at Surat.¹³³ Amir-ul Umra Ali Mardan Khan was ill with dysentery when he was at Kashmir due to bad air.¹³⁴ In 1659 Dara's wife, Nadra Begum, died of dysentery and vexation.¹³⁵ Prince Parwez was attacked by colic,¹³⁶ and the illness was attributed to heavy drinking.¹³⁷ Sadullah Khan (1655-56) suffered from a painful attack of colic, and the physician Takarrub Khan's medicine did not benefit him.¹³⁸ Sultan Shahariyar experienced the fox's disease or loss of hair (*dau-s salab*); his whiskers, eye brows, and eyelashes fell off and physicians were unable to contain the disease.¹³⁹ In 1683, at Ramghat pass, a pestilence of such virulence occurred that in a week one third of the population died, none escaping when attacked. Animals perished in larger numbers and their carcasses so poisoned the air that it affected the environment of the area too.¹⁴⁰ In 1718, the emperor Rafi ud Darajat suffered from consumption (*dikk*) and physicians' efforts to cure him did not succeed.¹⁴¹

Jahangir gives an interesting and a unique account of an elephant dying of hydrophobia in 1613. It is said that one night a mad dog bit Jahangir's private

elephant Gajpati and a cow elephant. The emperor mentions that ‘after a month and five days of that event, when one day the cow elephant heard the thunder as it was eating, it all of a sudden raised a cry and began trembling. For seven days water ran out of its mouth, and then suddenly it uttered a cry and showed signs of distress. The remedies that were tried had no effect and it died on the eighth day. A month after this incident, when the other elephant was taken to the edge of the river on a rainy day, all at once it began to tremble and sank to the ground. The driver of the elephant took it back to the stable with difficulty, but it died there.’¹⁴²

State Initiative

In medieval India, hospitals (*darush-shifa* or *shifa khanas*) were run by rulers who also employed physicians. It is mentioned in *Bahar-i Ajam* that both rulers and nobles constructed places for the treatment of the needy and poor people.¹⁴³ For instance, Sultan Mahmud Shah Khalji, in 1442-3, ordered for the construction of a *darush-shifa* and a *darukhana* (dispensary or pharmacy) at Mandu (Gujarat) and appointed physicians to look after visiting patients there.¹⁴⁴ According to Father Monserrate, the emperor established a ‘school of medicine’ at Sirhind, from where trained physicians were sent out to all over the empire. In the twelfth edict of Jahangir’s first regnal year, he ordered for the

establishment of hospitals with physicians in all the big cities of the empire.¹⁴⁵ Edict number 10 mentions that all expenditure would be borne by the *Khalisa sharifa*.¹⁴⁶ According to the author of *Padshahnama*, Shajahan too established a *shifa khana* at the northern corner of Jama Masjid of Delhi for the treatment of travellers and others suffering from diseases.¹⁴⁷ Medicines were distributed here free among all patients, without any religious or class distinction.¹⁴⁸ Shajahan appointed Hakim Mir Muhammad Hashim as the head of the Ahmadabad *darush-shifa*,¹⁴⁹ a hospital for the treatment of mainly the poor.¹⁵⁰ This hospital practised both Unani and Ayurvedic medicines. From the letters of Aurangzeb we come to know of two more hospitals, one at Aurangabad and the other at Surat.¹⁵¹ During his reign, *shifa khana* were established in small places within the *altamgha* assignments of the bigger *mansabdars*.¹⁵² Apart from the Mughal emperors' keen interest in *darush-shifa* to secure the health of subjects, nobles too established such institutions in their own areas. For instance, during Jahangir's reign, the nobleman Saif Khan had a hospital constructed for the poor at Jeetalpur that had a mosque and a *madrasa* too.¹⁵³ Another noble,

Hakim Alimuddin Wazir Khan, had a *darush-shifa* and a *madrassa* constructed at his native town of Chiniot (Punjab).¹⁵⁴

During Mughal times, it was also a tradition of the Hukkma to run *hawaij kadah* (clinic) for the treatment of the needy.¹⁵⁵ According to *Muruqqat-i Hasan*,¹⁵⁶ a large number of ailing people were successfully treated by Hakim Muhammad Rafi, as a result of which the two *parganas* in the *Sarkar* of Cuttack were given to him as *madad-i mash* (aid) for the running of *hawaij kadah* (clinic) for the poor.¹⁵⁷ *Madad-i mash* was not, however, confined to Muslim physicians, because there are references to this grant being bestowed upon also to Parsee physicians in the reigns of Akbar, Jahangir, Shah Jahan, and Aurangzeb.¹⁵⁸ We have seen that the *madad-i mash* was given to Hindu physicians as well.¹⁵⁹

Conclusion

The above discussion shows that both climatic and biotic factors were responsible for the spread of various types of disease in medieval India. The concomitant disappearance of populations from particular regions, large-scale migration, ecological imbalance, and heavy loss of human life affected both the society and economy of the times. In most of the cases we have discussed,

environment seems to have been a major determinant. Deficiency in rainfall during the monsoon led to famine that was inevitably accompanied by different kinds of diseases and epidemics. Such epidemics that coincided with other natural calamities like floods inevitably denied nutrition to the human body during periods of distress. Moreover, the urban growth of Mughal India calls for an understanding how issues of sanitation, disposal of waste etc may have had a bearing on the subject under discussion. It is obvious from our study that the medieval medicinal system could not find any remedy for such problems.

Endnotes:

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1. One suggested cause of disease evolution during late pre-historic and early historic times in the Middle East, India, and China links the process with the presence recently domesticated animals-cows, pigs, sheep, horses, dogs, cats and chickens in or near human habitation; cf. Sheldon Watts, *Disease and Medicine in World History*, Rutledge, New York and London, 2003, p.6.
 2. He was the author of at least twelve books. Two of his treatises related to symptomatology are preserved in Maulana Azad Libray, Aligarh Muslim University, Aligarh, See *Dalail ul Bul*, MS., Sir Sulaiman Collection, 616/22; *Dalail un Nabz*, MS., Sir Sulaiman Collection, 492/12, and Subhanullah Collection, 616/22.

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3. MS in Maulana Azad Library, Aligarh Muslim University, Aligarh, University Farsiya Funun, No, 56; Deepak Kumar (ed.), *Disease & Medicine in India A Historical Overview*, Tulika Books, New Delhi, 2001, p. 53.
 4. MS, Khuda Baksh Oriental Library, Patna, p. 11-40. Cf. Deepak Kumar, *Ibid*.
 5. MS., Central State Library, Hyderabad, Tibb, 254; Asiatic Society of Bengal, Persian MS, Catalogue, Soc. 722; cf. Deepak Kumar, *Ibid*.
 6. Badauni, *Muntakhab-ut Tawarikh*, (ed.), Molvi Ahmad Ali, vol., III, Calcutta, 1869, pp.164 & 230.
 7. MS., Salarjung Musuem, *Mashriqi Khitabkhana*, Hydrabad; cf. Syed Ali Nadeem Rezavi, 'Physician as Professionals in Medieval India', in Deepak Kumar, *Op. Cit.*, p. 54.
 8. Jahangir, Tuzuk-i Jahangiri, vol, I, (ed.), Syed Ahmad, Sir Syed Academy, Aligarh Muslim University, 2007, p. 347, vol. II, p. 344 & 364; Abdul Hamid Lahori, *Padshanama*, (ed.), Maulvi Kabiruddin Ahmad and Maulvi Abdur Rahim, vol., I, Part, II, Calcutta, 1867, p.350.
 9. Jahangir, *Ibid*.
 10. A. Rahman, et al., (eds.), *Science and Technology in Medieval India: A Biography of Source Materials in Sanskrit, Arabic, and Persian*, New Delhi, 1982, p. 21.

11. MS, Maulana Azad Library, Aligarh Muslim University, Aligarh, Subhanullah Collection, No. 615/4.

12. Maasir-i Alamgiri, p. 84. Deepak Kumar, *Op. Cit.*, p.55.

13. Bernier, *Travels in the Mogul Empire*, pp. 353-54.

14. A. Rahman, *Op. Cit.*, p.165.

15. Syed Ali Nadeem Rezavi, 'Physician as Professionals in Medieval India', in Deepak Kumar, *Op. Cit.*, p.53.

16. Niccolao Manucci, *Storio Do Mogor*, translated with introduction and notes by William Irvine, vol. II, p. 333.

17. *Ibid.*, vol. III, p.187.

18. Ole J. Bbenedictow, 'Yersina pestis, the Bacterium of Plague, Arose in East Asia. Did it Spread Westwards via Silk Roads, the Chinese Maritime Expeditions of Zheng He or over the Vast Eurasian Populations of Sylvatic (Wild) Rodents?', *Journal of Asian History*, ed., Claudius Muller and Roderich Ptak, Vol,1, No,47, 2013,Harrassowitz Verlag, Wiesbaden, Berlin, p.02; See Giovanna Morelli, Yajun Song, Camila J. Mazzoni et al., "Yersina pestis Genome Sequencing Identities Pattern of Global Phylogenetic Diversity", *Nature Genetics*, No.42, December 2010,p. 1140-43 (Published online, 31 October 2010)

19. Ibn Batuta, *The Rehla*, translated by Mahdi Husain, Oriental Institute, Baroda, 1976, p.101.

20. C. M. Agrawal, *Great Natural Calamities*, Indian Publishers Distributors, Delhi, 2000, p.14-15. There are ample references to pestilences or epidemics like cholera, malaria, plague, small-pox and *kalajar* etc in the *Vedas, Upanishads, Jatakas, Brahmanas* and other literary work of the ancient India.

21. Khwajah Nizamuddin Ahmad, *Tabaqat-i-Akbari*, vol, I, Nawal Kishor Press, Lucknow, 1875, p. 238.

22. *Ibid.*, p.300.

23. *Ibid.*, p.238.

24. C. M. Agarwal, *Op. Cit.*, p.42.

25. Mohd Arif Qandhari, *Tarikh-i-Akbari*, (ed.), Haji Syed Moinuddin Nadwi and Syed Azhar Ali Delhavi, Hindustan Printing Works, Rampur, 1962, p.1973; Abdul Qadir Badaoni, *Muntakhab ut Tawarikh*, vol, I, (ed.), Maulvi Ahmad Ali, Collage Press, Calcutta, 1868, p.428-29 ; See *The Cambridge History of India*, vol. IV, p.68, 112, & 142.

26. Sheikh Nur-ul-Haq, *Zubadat-ut-Tawarikh*, vol. VI, p.192; See Muhammad Akbar, *The Punjab Under the Mughals*, Idarah-i-Adabiyat-i-Delli, Delhi, reprint 1974, p.104.

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27. Abul Fazl, *Akbarnama*, vol III, Nawal Kishore Press, Lucknow, 1883, pp.713-14; Muhammad Akbar, *Ibid.*
28. Sheikh Nur-ul-Haq, *Op. Cit.*; See Muhammad Akbar, *Ibid.*; Beni Prasad, *History of Jahangir*, The Indian Press Publication, Allahabad, 1962, p.274n.
29. Abul Fazl, *Op. Cit.*; Muhammad Akbar, *Ibid.*
30. Jahangir, *Op. Cit.*, p.225, 226, & 259; Motamid Khan, *Iqbalnama-i-Jahangiri*, (ed.), Maulvi Abdul Hai and Maulvi Ahmad Ali, Asiatic Society of Bengal, Collage Press, 1865, Calcutta, pp.114-15; H. M. Elliot and John Dowson, *The History of India As Told By Its Own Historians*, vol. VI, Low Price Publication, New Delhi, 2001, p.405-6; See Beni Prasad, *Op. Cit.*, p.271.
31. Sir Thomas Roe, *The Embassy of Sir Thomas Roe to India 1615-19*, (ed.), Sir William Foster, Asian Publishers, Jalandhar, 1993, p. 268. Thomas Coryat, who arrived at the city of Agra in 1616, noticed that Agra was in the grip of plague.
32. *Ibid.*, pp. 336 & 337.
33. *Ibid.*; See Beni Prasad, *Op. Cit.*, pp.271-72.
34. Jahangir, *Op. Cit.*, p. 259; Beni Prasad, *Ibid.*, p.272.

35. Jahangir, *Ibid.*, p.161; Irfan Habib, *The Agrarian System of Mughal India 1556-1707*, 2nd edition, Oxford University Press, New Delhi, 2010, p.115; Irfan Habib, *Man and Environment The Ecological History of India*, Tulika Books, New Delhi, 2010, p. 87; See H. M. Elliot and John Dowson, *Op. Cit.*, p.406.

36. Jahangir, *Ibid.*, p.162.

37. *Ibid.*, p.219.

38. *Ibid.*, p.220.

39. *Ibid.*

40. Motamid Khan, *Iqbalnama-i-Jahangiri* (ed.), Maulvi Abdul Hai and Maulvi Ahmad Ali, Asiatic Society of Bengal, Collage Press, 1865, Calcutta, pp.114-15.

41. Banarsi Prasad Saksena, *History of Shahjahan of Delhi*, Forward by Sir Wolseley Haig, Central Book Deport, Allahabad, reprint 1968,p.24.

42. William Foster, *The English Factories in India 1618-21*, vol. I, Oxford University Press, London, p.47; see Beni Prasad, *Op. Cit.*, p.27.

43. Col. D. G. Greawford (*History of the Indian Medical Service*, vol. I, p.44) noted that it was evidently not cholera and that the symptoms described do not correspond with those of

plague in its modern form. But the symptoms mentioned by Terry have some similarity with those mentioned by the Emperor Jahangir, See *Tuzuk-i Jahangiri*, p. 66.

44. Sir Thomas Roe, *Op. Cit.*, p. 474.

45. Irfan Habib, *Man and Environment. Op. Cit.*, p. 87.

46. See Note. A Roger tr, *Tuzuk-i-Jahangiri*, p.66.

47. Jahangir, *Op. Cit.*, pp.259-60; See Motamid Khan, *Op. Cit.*, pp.114-15.

48. Motamid Khan, *Ibid.*

49. William Foster, *Op. Cit.*, p.82.

50. *Ibid.*, p. 224.

51. Om Prakash Prasad, *Aurangzeb ek Naya Jawiya-i Nazar*, Urdu transl., Faizan Rasheed, Khuda Baksh Oriental Public Library, Patna, 1990, p.23.

52. Motamid Khan, *Op. Cit.*, pp.114-15; H. M. Elliot and John Dowson, *Op. Cit.*, p.407.

53. S. P. James, *Smallpox and Vaccination in British India*, Spink and Co, Calcutta, 1909; Irfan Habib, 'Inside and Outside the Systems Change and Innovation in Medical and Surgical Practice in Mughal India', in Deepak Kumar (ed.), *Op. Cit.*, pp. 71-84; F. A. Marglin,

'Smallpox in Two Systems of Knowledge', in F. A. Marglin and S. A. Marglin (eds.), *Dominating Knowledge, Development, Culture, and Resistance*, Clarendon Press, Oxford, 1990, pp. 102-44; D. Arnold, 'Smallpox: The Body of the Goddess', in D. Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-century India*, Oxford University Press, New Delhi, 1993, pp. 116-58; J. Z. Holwell, 'An Account of the Manner of Inoculating for the Smallpox in the East Indies', in Dharampal, (ed.), *Indian Science and Technology in the Eighteenth Century*, 1967, pp. 195-218; Ralph W. Nicholas, 'The Goddess Sitala and the Epidemic Smallpox in Bengal', *Journal of Asian Studies*, No. 1, Vol.XLI, November 1981, pp. 21-44; Robert Jay Lifton, 'Popular Beliefs about Smallpox and Other Common Infectious Diseases in south India', *Tropical and Geographical Medicine*, No. 25, pp. 190-96; Ishrat Alam, 'Smallpox and its Treatment in Pre-Modern India', in Deepak Kumar (ed.), *Ibid.*, pp. 85-93; Harish Naraindas, 'Of Therapeutics and Prophylactics. The Exegesis of an Eighteenth- Century Tract on Smallpox', in Deepak Kumar (ed.), *Ibid.*, pp.94-119.

54. Ralph W. Nicholas, *Ibid.* Medical sciences opine that smallpox spread due to two viruses of the genus *Orthopoxvirus*. One is variola minor poxvirus and other, variola major poxvirus. Ralph. W Nicholas is of the view that the former was possibly rare in India and mortality low whereas in the latter virus high mortality was noticed.

55. Debiprasad Chattopadhyaya, *Science and Society in Ancient India*, Calcutta, 1977, pp. 24-32. There is some question regarding the actual date of the *Charakasamhita* and *Sushrutasamhita*. It is said that the present form of *Charakasamhita* belong to Gupta Period and a little later. Regarding *Sushrutasamhita*, it is said that it belongs to 2nd century AD to 7th century AD.

56. According to the description of *masurika* made by the physician Vagbhata in his *Astangabrdaya-samhita*, coral-like globules break out all over the body but swiftly vanish and the infected person dies quickly.

57. Ralph. W Nicholas, *Op. Cit.*

58. August Hirsch, *Handbook of Geographical and Historical Pathology*, transl., Charles Creighton, The New Sydenham Society, London, 1883. Cf. Ralph W. Nicholas, *Ibid.*, p. 26.

59. Alberuni, *Kitab-ul Hind*, transl., Edward C. Sachau, *Alberun's India*, vol. I, London, 1910, p. 309.

60. Irfan Habib, 'Inside and Outside the Systems. Change and Innovation in Medical and Surgical Practice in Mughal India', *Op. Cit.*, p.75.

61. Irfan Habib, *Man and Environment. Op. Cit.*, p. 86.

62. Ralph W. Nicholas, *Op. Cit.*, p. 27.

63. *Ibid.*, pp.20-30.

64. Banarsi Prasad Saksena, *History of Shajahan*, p. 5.(Mirza Aminai Qazvini, Padshanama, B.M. (Or. 173))

65. *Ibid.*, p. 314. (Qazvini, f. 337; Lahori, vol. I, part 2, p.70)

66. Dr. W. Ph. Coolhaas, *Generale Missiven Van Gouverneurs-General en Raden aan Heren XVII der Verenigde Oostindische Compagnie, Deel II: 1639-1655*, Martinus Nijhoff, Gravenhage, 1964, p. 223. Cf. Ishrat Alam, *Op. Cit.*, p.86.

67. Irfan Habib, *The Agrarian System of Mughal India, Op. Cit.*, p. 111; Irfan Habib, 'Inside and Outside the Systems. Change and Innovation in Medical and Surgical Practice in Mughal India', *Op. Cit.*, p.75; Ishrat Alam, *Ibid.*

68. National Archive of India, New Delhi, NIA, 2702/4.

69. Khafi Khan, *Muntakhab ul Lubab*, vol., II, p. 468(Elliot &Dowson, vol. 7, p. 366-67).

70. National Archive of India, New Delhi, NIA, 2695/16.

71. Dr. W. Ph. Coolhaas, *Generale Missiven Van Gouverneurs-General en Raden aan Heren XVII der Verenigde Oostindische Compagnie, Deel VII: 1713-1725*, Martinus Nijhoff, Gravenhage, 1964, p.374. Cf. Ishrat Alam, *Op. Cit.*, p.87.

72. Dr. W. Ph. Coolhaas, *Ibid.*, p.64. Cf. Ishrat Alam, *Ibid.*, p.87

73. Alberuni, *Op. Cit.*, p. 309; Ishrat Alam, *Ibid.*, p.86.

74. *Ibid.*

75. Irfan Habib, 'Inside and Outside the Systems. Change and Innovation in Medical and Surgical Practice in Mughal India', *Op. Cit.*, p.75.

76. *Ibid.*

77. John Macpherson, 'Annals of Cholera from the Earliest Period to the Year 1817', *The British Medical Journal*, Vol., 1, No, 1219, May 1884, p.908-909. See also Dhruv Kumar Singh, 'Clouds of Cholera and Clouds around Cholera, 1817-70', Deepak Kumar (ed.), *Op. Cit.*, p. 145.

78. P. Hehir, 'Historical Note on Cholera in India', *Indian Medical Gazette*, Vol., 46, No, 1, 1911, p. 8.

79. Jacques M. May, 'Map of the World Distribution of Cholera', *Geographical Review*, Vol., 41, No, 2, April 1951, p. 272.

80. *Ibid.*

81. John Macpherson, *Op. Cit.* The European traveller Niccolao Mannucci noticed cholera at Goa in the 17th century.

82. Jacques M. May, *Op. Cit.*, p. 273.

83. A brave and ambitious young man who exerted himself in an exemplary way in the battle with Khusrau.

84. Jahangir, *Op. Cit.*, p.159.

85. *Storia Do Mogor*, vol. II, p.157.

86. Philippe H. Martin and Myriam G Lefebvre, 'Malaria and Climate: Sensitivity of Malaria Potential Transmission to Climate', *Royal Swedish Academy of Science*, Vol., 24, No.4, June 1995, p. 200.

87. Suraj Bhan and K. S. Dahiya, 'Disease, Surgery and Health in the Harappan Civilization', in Deepak Kumar (ed.), *Op. Cit.*, p. 9.

88. Abul Fazl, *Ain-I Akbari*, tr, vol. I, pp. 334-6, 407.

89. Jahangir, *Op. Cit.*, p.243.

90. Edwards Garrett, *Mughal Rule in India*, pp. 191-93; Beni Prasad, *History of Jahangir*, p. 246-55.

91. William Foster, *The English Factories in India 1661-1664, A calendar of Documents in the India Office, Bombay Record Office, etc*, Clarendon Press, Oxford, 1910, p.37.

92. William Foster, *Factories Record in India*, vol, 8, p. 275.

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93. William Foster, *Op. Cit.*, p. 81.
94. Jahangir, *Op. Cit.*, 2007, pp.229-30.
95. William Foster, *Factories Record, 1634-36*, p. 93.
96. Abdul Hamid Lahori, *Padshanama*, (ed.), Maulvi Kabiruddin Ahmad and Maulvi Abdur Rahim, vol. II, part II, Calcutta, 1867, p. 536.
97. *Ibid.*
98. *Ibid*, p. 354.
99. A state of being unable to think or speak while suffering from fever.
100. The illness began about the commencement of the fifth year, 3rd Shawwal , 1072 (May 22, 1662). Aurangzeb was ill until the 10th Zil-Hijjah 1072 (July 27, 1662) (*Maasir-I Alamgiri*, p.41).
101. Mir Mohammad Mahdi Ardistani came with Aurangzeb from the Dekhin in 1068 AH (1658), was made a *hajari* , and soon obtained the title of Hakim ul Mulk (Masir ul Umra, vol. I, p.599).
102. *Storia Do Mogor*, vol. II, pp. 49-50.

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103. Jadu Nath Sarkar, *History of Aurangzeb*, vol. V, p. 256.
104. Abul Fazl, *Akbarnama*, tr, vol. II, p. 750.
105. *Ain*, vol. III, pp. 1258-62 (Banarsi Prasad Saksena, *History of Shajahan*, pp. 6-7).
106. Bamber Gascoigne, *The Great Moghuls*, Westerham Press Ltd, Tokyo, Japan, 1971, p. 126.
107. Jahangir, *Op. Cit.*, p.139.
108. He had come from Persia and belonged to a high saintly family; Jahangir gave him a *mansab* and *jagir*.
109. Jahangir, *Op. Cit.*, p.150.
110. *Ibid.*, p. 198.
111. Jahangir, *Ibid.*, pp.229-30.
112. Ruler of Khurasan.
113. Abdul Hamid Lahori, *Op. Cit.*, p.263.

114. *Ibid.*, p.504.

115. *Storia Do Mogor, Op. Cit.*, vol. II, p. 439.

116. *Ibid.*, vol. I, p. 231.

117. Mohammad Salih Kambu, *Amal-i Salih*, (Elliot & Dowson, vo., 7, p.128); Banarsi Prasad Saksena, *History of Shajahan*, p. 321, (Muhammad Waris, *Padshanama*, B.M. (Or. 175))

118. Jadu Nath Sarkar, *Op. Cit.*, vol.I, p. 172.

119. *Storia Do Mogor, Op. Cit.*, vol. II, pp.116-17. Shajahan died in the night between Sunday and Monday, 1 Feb, 1666.

120. *Ibid.*, p.94.

121. Mohammad Kazim, *Alamgirnama*, (ed.) Maulvi Khadim Husain Abdul Hai, College Press, Calcutta, 1868, as cited in Elliot & Dowson, *History of India As told by its own Historians*, vol. VII, p. 180.

122. Lahori, *Padshahnama*, vol. I, tr, p.69-70 (per 7)(See *Tuzuk*).

123. *Ibid.*, p.58. (per, 240)(See *Tuzuk*).

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124. Jahangir, *Op. Cit.*, pp.80-81.
125. Abul Fazl, *Akbarnama*, vol. III, p. 128.
126. Jahangir, *Op. Cit.*, vol. II, p. 181.
127. Muhammad Akbar, *Op. Cit.*, pp. 104-5.
128. Jahangir, *Op. Cit.*, vol. II, p. 228.
129. Francois Bernier, *Travels in Mughal Empire 1656-1668*, p. 254.
130. *Storia Do Mogor*, vol. II, p.372.
131. A European traveller who visited India in 1612-17.
132. It is caused by an infection which is spread by dirty water or food.
133. William Foster, ed., *Early Travels in India 1583-1619*, p. 239.
134. Mohammad Salih Kambu, *Amal-i Salil* (Elliot & Dowson, vo., 7, p. 124).
135. Khafi Khan, *Muntakhab ul Lubab*, vol. II, p. 80, (Elliot & Dowson, vol. 7, p. 244)
136. A severe though not continuous pain at the lower part of the stomach.

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137. Mutamid Khan, *Iqbalnama-i Jahangiri* (Elliot and Dowson, vol. VI, p. 429).
138. Inayat Khan, *Shahjahanama* (Elliot & Dowson, vol. VII, p. 118).
139. Mutamid Khan, *Iqbalnama-i Jahangiri*, as cited in Elliot & Dowson, vol. VI, p.435
140. Jadu Nath Sarkar, *Op. Cit.*, vol. IV, p. 294.
141. Elliot & Dowson, vol. VII, p. 482.
142. Jahangir, *Op. Cit.*, pp.118-19.
143. Munshi Tek Chand Bahar, *Bahar-i Ajam 1739-40*, vol., 2, litho. Nawal Kishore, Lucknow, 1916, p. 166; Deepak Kumar (ed.), *Op. Cit.*, p. 47.
144. Syed Ali Nadeem Rezavi, 'Physician as Professionals in Medieval India', in Deepak Kumar (ed.), *Ibid.*, p.47. (Masir-i Mahmud Shahi, p.64).
145. Jahangir, *Op. Cit.*, p.4.
146. *Ibid.*
147. Syed Ali Nadeem Rezavi, *Op. Cit.*, p.48.

148. Ashok K. Bagchi, *Medicine in Medieval India 11th to 18th Centuries*, Konark Publishers Pvt Ltd, Delhi, 1997, p. 97.

149. Abdul Hamid Lahori, *Padshanama*, (ed.), Maulvi Kabiruddin Ahmad and Maulvi Abdur Rahim, Vol., I, Part, II, Calcutta, 1867, p. 345.

150. *Mirat-i Ahmadi* (Supplement), p.186-187. (Syed Ali Nadeem Rezavi, *Op. Cit.*, p. 48.)

151. Aurangzeb, *Ruqqat-i Alamgiri*, Nizami Press, Kanpur, 1857, Letter No. 125.

152. Ali Muhammad Khan, *Mirat-i Ahmadi*, (ed.), Nawab Ali, Vol., I, Baroda, 1972-78, p. 376; Syed Ali Nadeem Rezavi, *Op. Cit.*, p.47.

153. Ali Muhammad Khan, *Mirat-i Ahmadi*, (ed.), Nawab Ali, Vol, I, Baroda, 1972-78, p.209.

154. Shah Nawaz Khan, *Maasir-ul Umara*, (ed.), Maulvi Abdur Rahim, Vol., III, Calcutta, 1888-90, p.936

155. Abul Hasan, *Muraqqat-i Hasan*, MS., Rampur Raza Library, Rampur; checked in microfilm in Centre of Advanced Study, Department of History, Aligarh Muslim University, Aligarh. Hakim Muhammad Rafi opened a clinic for the poor people at Orissa.

156. A compilation of letter written by Abul Hasan on behalf of Tarbiyat Khan, governor of Orissa.

157. Abul Hasan, *Op. Cit.*, pp. 330-31.

158. *Parwana*, dated 28th December 1704 (1, Ramzan 1116 A.H), 48th regnal year, preserved in National Archives of India, New Delhi, No. NAI, AD.2444.

159. K. K. Dutta (ed.), *Some Farmans, Sanads and Parwanas 1578- 1802 A.D*, Patna, 1962, pp. 30, 45, & 68.