

Introduction

Due to the current situation in which our world is faced with an epidemic called Covid-19, we are reminded of the epidemic that killed two-thirds of the population of each country in the past, The Black Death.

The story of the plague (The Black Death) has been spoken several times, following the three violent outbreaks of the past that took place, most of them in books or digital media like the internet refer to the black death disease from views of most Europeans are due to the pivotal point of the outbreak, or some of the media mention the origin of the disease, such as China, which is known for fearing the release of new pandemic diseases around the world. We have seen that in the media that people use to search for information, there is still a lack of content on the plague epidemic in Thailand.

Although the disease has now been seen in recent times, few people know that in the old days of the city called Bangkok, the Black Death had originated in Thailand. This makes us interested in studying and finding information on whether this disease has ever spread or actually occurred in Thailand or not and when it occurred. From which we have met, we can know that the disease of black death has occurred in Thailand 2 times in the past, the first time it was born during King U Thong, King Ramathibodi I was the first king of the kingdom Ayutthaya, which is an unstable promise. Of course, this happened or not, and it could also be linked to the transformation of the new city of King U-Thong (Ayutthaya). The second time happened in the Rattanakosin period, in the reign of King Rama V, Somdetch Phra Paramindr Maha Chulalongkorn, which was different from the first time in that it could prove to be true at that time.

For the reason why it is an important area to study, in addition to the first paragraph, nowadays, our world has the coronavirus pandemic, which is an infectious disease and can spread rapidly in many countries. Due to these situations, it reminds us of the severe disease that was the largest demographic disaster in European history and it kills a lot of Thais as well, which is the Black death. The aphorism that is “ History repeats itself ” seems to be true, as we can see that the Covid-19 and the Black death is a large pandemic that decreases a lot of population in many countries in the world. Many countries confront the Black death and the Black death caused numerous and broad effects in various ways, the Covid-19 as well. We can say that it is a catastrophe. Furthermore, the Black Death is the plague in the past that impacted every part in the world more or less, Thailand as well. It is an interesting pandemic for us to know and study more about it and it is curious how people deal with this dangerous pandemic.

For the background information that you should understand before enjoying this paper are the history of the black death and its impact on the people around the world especially in Europe which is the most infamous case. You can find all of this information in terms of a conclusion blog or even a video that clearly explains the identity of Plague, its effect, and timeline on YouTube and the internet. All of that source will make you understand our message that we try to explain to you clearer and faster.

History of the plague

The plague is a severe epidemic that is transmitted from animals to humans. It is caused by a bacterium called *Yersinia Pestis*. This bacterium usually lives in mice and fleas. The infected person has a high fever, chest pain, and black bruises caused by internal bleeding (hence the name "black death").

Signs and symptoms

The plague can be divided into 3 types according to the symptoms as follows.

1. **Bubonic plague:** Initial symptoms can cause sudden fever and chills. Including other symptoms, such as headache, fatigue and at least 1 swollen, painful or sensitive lymph nodes such as groin, armpit or neck, this plague is often caused by flea bites.
2. **Pneumonic plague:** Cause symptoms such as fever, weakness, headache, nausea, vomiting and rapid pneumonia. This can lead to coughing, shallow breathing, chest pain, or in some cases, a runny or bloody mucus, including respiratory failure or shock within 2 days of infection.
3. **Septicemic plague:** Symptoms include fever, chills, severe fatigue, shock, abdominal pain, diarrhea, vomiting, bleeding of the skin and other organs in the body, such as the mouth, nose or under the skin. Some body tissues may die and turn black, such as fingers, toes and nose (Gangrene). This type of plague is caused by a flea bitten or a patient comes into contact with an infected animal or it could be caused by Bubonic plague or Pneumonic plague that are not treated properly.

Previous plague pandemics

The plague has been said to have existed since ancient times, but the most talked about will be the 3 main cases where widespread pandemics have occurred.

1. Prehistoric plague pandemic

The Bible (I Samuel 5: 1-6) describes God's punishment against the Philistines in Ashdod after the Philistines seized the Ark of the Covenant of the Israelites about 3 thousand years ago. The punishment is that the Philistines suffered from the outbreak of a disease known in the Bible as "emerod". It was initially believed to refer to hemorrhoids, since emerod is an archaic term for hemorrhoids.

However, in The Bible of 1 Samuel, the Philistines also claimed that the Philistines had returned the ark that brought disaster back to the Israelites. Along with the tribute, five emerod-like sacrifices and five golden rats equal the number of the five Philistine governors, allegedly asking for forgiveness to God (I Samuel 6: 4). According to the golden rat, emerod

can be interpreted as saying that it might certainly mean the plague, since the rats are the carriers of the disease that caused the spread.

2. First plague pandemic

The first plague that has been recorded in the historical era is "the Plague of Justinian" which occurred during the 6th century (541–549 AD). It was estimated that the pandemic arose in China or India then made its way to Africa via land and sea trading. At that time the rat is everywhere in the city, gaining crates, military supply, and those rats contain the infected flea which is the carrier of the plague.

After a long journey, the diseases arrive in Egypt and spread to Constantinople by rats in an Agricultural plant. After the plague reaches its destination people start to fall down on the street. It has been recorded that at the peak time of the pandemic. Civilians of Constantinople died at least 10,000 people a day as the result of Constantinople loss around 40% of their residents and it was estimated that the Plague of Justinian killed over 100 million people around that world and wiped out 50% of European.

3. Second plague pandemic

The second plague pandemic or the Black Death or we can call the Great Pestilence is the most well-known in all of the three major outbreaks of plague. It occurred in Europe and China in 1346-1351. Arab historians Ibn Al-Wardni and AlMaqrizi believed the Black Death originated in Mongolia in China, and Chinese records show a huge outbreak in Mongolia in the early 1330s. It was most likely spread by the Silk Road or by ship.

Plague was reportedly first introduced to Europe via Genoese traders from their port city of Kaffa in the Crimea in 1347. During a protracted siege of the city, in 1345–1346 the Mongol Golden Horde army of Jani Beg, whose were suffering from the disease, catapulted infected corpses over the city walls to infect the inhabitants, though it is more likely that infected rats travelled across the siege lines to spread the epidemic to the inhabitants. It arrived at Genoa and Venice in January 1348, while simultaneously spreading through Asia Minor and into Egypt.

The bubonic plague, which is one of three types of plague caused by bacterium *Yersinia pestis*, was described graphically in Florence in *The Decameron* and Guy de Chauliac also described the pneumonic form, which is a severe lung infection caused by the bacterium *Yersinia pestis* as well, at Avignon. It rapidly spread to France and Spain, by 1349 was in England, in 1350 it was afflicting eastern Europe and it reached the centre of Russia by 1351.

The plague pandemic reached Europe in 1348 and killed up to a half of the population of Eurasia in the next four years. In detail, the severe pandemic in Europe causes death approximately to 25 million people which is one in four of the population and millions of people died in Asia. In this age, we have the Plague Doctor which plays an important role to

cure the patients. The 14th-century eruption of the Black Death had a drastic effect on Europe's population, especially in London, England that reduced the 70% of population and this called “ The Great Plague of London”, irrevocably changing the social structure in Europe. Thus, everyone called the second plague pandemic “ the Black Death”. This pandemic continued to spread many times in various countries until the 19th-century.

4. Third plague pandemic

The third wave of plague occurred during the 19-20 century. The pandemic arises in Yunnan, China(again) in 1855 AD the disease kills over 12 million people around the world (with about 10 million killed in India alone). At that time humans remain no clue about the cause of plague. Until 1894 Alexandre Emile Jean Yersin, the France doctor discovered the bacteria name *Bacillus pestis*. Which is the zoonosis that relate to Rodent and flea the patient will have 3 kind of symptom which are pneumonic(the plague that affect the Respiratory system) , bubonic (the plague that affect the Lymph nodes) , septicemic (the plague that affect the blood circulatory system) all of these type of plague will kill the patient with in 5-6 days after they got infected the plague can spread by 3 way 1. Was bitten by infected flea 2. Touch the infected tissue 3.Breath in the Secretion from the infected animal.

After the discovery the name bacteria was changed from *Bacillus pestis* to *Yersinia pestis* to honor Alexandre Emile Jean Yersin and this great discovery led to the first testing of vaccines in 1897.

5. Plague in present

In the present time the plague can be heal with Antibiotic, if it was founded in the primary state .It looks like the pandemic are already gone until around the august of 2009 there was the report about plague in Mongolia 3 people death in this incidence by pneumonic(the plague that affect the Respiratory system) and another 9 people was found infected. which most of them are the family of the first patient, but after this case there are no other reports about the plague anymore.

The plague in the era of King U-thong

King U-thong or King Ramathibodi I was the first king of the kingdom Ayutthaya reigning from 1350 to 1369. By the time that the reign was recorded in the chronicle or various historical evidence that it was the time of the outbreak of a pandemic that Thai people at that time called “โรคพลา”.

According to the evidence, it is impossible to determine exactly what disease this disease was, since at that time there was a misunderstanding in the name of the disease, with a deadly and fast pandemic in ancient Thai documents is largely recorded as this disease. (โรคพลา). The word “โรคพลา” might refer to cholera, since the disease was recorded from the pandemic back then, but if we look at it from that period and according to historical evidence, the term hash could refer to the plague or what at that time was known as the black death. The establishment of Ayutthaya was in 1350, coinciding with the second plague that spread across Europe and China in 1346-1351. Therefore, there is an assumption that the plague may be the cause of the immigration to establish a new city of King U-thong, which came from the pandemic through trade with China via the brig with rats carrying the disease.

All of the above is based on historical evidence recorded by Thailand, but if taking information or studies from other countries into consideration, it will raise doubts or debates to this hypothesis, which are:

First argument

For the first argument “black death” is the fast and deadly disease that has rats as the carrier which can survive in nature and prolong the disease's lifetime. This makes it easy for the pandemic to flare again. For example, the case of Europe in 1346-1351 BC, after the major spread there are many small blooms of plague occurring again in many countries during the 100 years period. And start to decline in 23 centuries. Which is opposite to the case of Thailand that happened in the same period. but the bloom happens only one time and never happens again. As the evidence shows after the establishment of Ayutthaya there is no trace of plague at all for 500 years until the age of King Rama 5.

Second argument

Second argument even “black death” spread all over Europe. But there are still some cities such as Milan, Italy and Poland. These 2 countries are not far away from the hotspot. However, the spread is not that serious. Next is the case of China which spread to every part of the country but there is no evidence that supports the spread to Japan, which is not that far away and these 2 countries always do the trading all along. Back to the case of Thailand, our country and China are trade partners that keep doing business all the time for the assumption: the trading with China is the root of plague in Thailand also causing us to change capital to Ayutthaya. It means that after we change capital the spread of plague should happen again but there is no evidence that mentions the spread in Ayutthaya at all.

And beside Ayutthaya the plague should also bloom in other pier cities such as Nakhon Ratchasima or Pattani but there is also no evidence about the plague at all.

Third argument

For the last argument, many Academic works ask questions about the black death in Europe India and China such as “the black death of a paradigm”- Samuel. K ,This article suggests the idea that “black death” may not be the plague as we always understand due to the symptom, spread, and effect on society of the pandemic that differ from what we learn in present Medical education. While another research “Was the black death in India and china?”-George D. Sussman questions about the spread in China and India that occur at the same time. The writer said that the pandemic that bloom in these 2 countries may not be the plague .Due to many reasons such as there are no evidence that explain the symptom of the pandemic that occur in that time even though the plague has a prominent symptom but text mentions the name of plague really unclear . It may conclude that this pandemic is not plague but some kind of disease such as smallpox.

Other possible pandemic hypotheses

From the analysis of historical evidence or various chronicles, we know that in addition to the plague, there are many diseases that have been mentioned and may be the cause of the migration to the new city of King U-thong because each of the evidence only names the disease as “โรคฬ้า”, at that time it was used to refer to diseases with a severe and rapid pandemic, making it difficult to determine it is the plague.

1. Cholera

It is an epidemic caused by bacteria transmitted through food and drink, causing severe diarrhea and rapid death. This disease was assumed to be the cause of King U-Thong to move the city from U Thong, name of the city, to Ayutthaya and it was said that after the town was established, there was another outbreak among the elite. At first hypothesis, it could be concluded that cholera really was the cause of migration.

However, from the criticism in the archival of King Chulalongkorn, King Rama V, King Chulalongkorn said, “U Thong that fled from cholera is not the U Thong that is the ruler of the old city (Ayutthaya), but is the other U Thong because there are many U Thong because U Thong is the name of the position.” There are also observations from studies that show that U Thong, name of the city, was abandoned long before the establishment of Ayutthaya, so cholera in U Thong was unlikely to be involved in the establishment of Ayutthaya.

2. Smallpox

Smallpox is a viral disease transmitted through contact and breathing, causing severe pus and abscess throughout the body and rapid death. The disease has been spread regularly in China and India, so when both countries come to trade or immigrate to the southeast, they will also bring the disease.

Smallpox has been recorded to occur many times in ancient times, such as King Naresuan had this disease. In addition, from the Archival that tells the history of Thailand in the past of Simon de la Loubère and François Henri Turpin, smallpox is said to be the most fatal disease and that Thai people in the past really meant that it was also known as “โรคพม่า”. According to the legend of Thao Saen Pom, which is the father of King U-thong, there is also a mention of the disease that Thao Saen Pom is a symptom that is similar to the smallpox that has pustular blisters on the body as well.

Nevertheless, this assumption is still not clear where the Royal Chronicle of Siam from the manuscript of the British Museum is the only chronicle stating that the disease that caused King U-Thong to migrate to Sorn Ayutthaya was smallpox, with no other chronicle listed.

3. Malaria

This pandemic is caused by parasites in protozoa and it has mosquito as carrier. These species of mosquito are intended in forests and reproduce by laying eggs in natural water sources. This is why malaria always spreads in tropical areas which have the Rainforest biome. The patient that was infected will have this kind of symptom: High fever, expanded liver and spleen, pneumonia, rabies, Seizures, and Finally death, For the one who survives the malaria will still remain in their body and become chronic malaria which is ready to be triggered anytime.

If we analyze the geography in the Ayutthaya era that is still abundant of forest and hill, this kind of biome is suitable for mosquitoes to reproduce, and at that time each village is Separate and medical treatments are not that advanced. For that reason, we can conclude that a lot of people die from malaria during that time.

From the myth of U-thong that was mentioned in Ayutthaya Chronicles its myth said about the dragon that spit out the toxin causing the people to die from disease. To help people King U-thong starts 3 rituals: first shoot an arrow back to the Archery barrel, second cover his body with rice, third fold betel to be eatable Piece after that fill up the pounds with soil to eliminate the disease and establish Ayutthaya at that place. People always make the assumption that the disease in this myth is the smallpox due to the word toxin. But “Anthony Reid” and “Jiang Na” argue that the disease in the myth may be malaria because it mentions filling the pounds and making the place suitable for growing rice. All of this move eliminates malaria as the consequence. Because it destroys the habitat of mosquitoes and retreats them

from the village. From this evidence we can conclude that malaria may be one of the pandemics that occur during that time.

To conclude even the establishment of Ayutthaya is the same time as black death but there is no evidence about the plague in south east Asia. And even though there are traces about pandemic in during the established timeline there still not enough evidence to conclude what is exactly the name of that pandemic.

The Ayutthaya Chronicle by Van Vliet (1640)

The hearsay of the people of Ayutthaya around 1633 to 1642 in the Kingdom of Phra Chao Prasat Thong said that “ Before King U-Thong established the city of Ayutthaya, there was a great epidemic, the people almost all died”. This hearsay was recorded in the Ayutthaya chronicle by Van Vliet (1640) ,but in the form of legends, fables, and hearsay which has the signs of that plague is the saliva of a dragon or a naga. Starting from King U-Thong has the original name “Jao U”. He is the son of Chinese emperor that was deported because of his bad habits and causing serious harm, so he shipped to Pattani and moved to the cities on the seashore then he came to defeat the epidemic and established the city of Ayutthaya.

According to The Ayutthaya Chronicles “the Epidemic Suppression”, At that time, King U-Thong heard news about the island that will be the location of Ayutthaya and he was doubted that a beautiful place was neither inhabited nor established by anyone. He met the hermit who had told him that in the past, there was a capital city named “Ayutthaya”, but the hermit cannot tell how the city had degraded, and no one else could build a city on that island. The reason is there was a place named “Whoo Talenkengh”, nowadays it is located in the centre of the city that has a pond that is the habitat of one ferocious dragon, which the siamese called “NackRhaji” whenever this dragon was disturbed, it will spew out its saliva and its saliva caused the people who lived around infect the disease and die because of the bad smell. King U-Thong asked the hermit whether he would kill the dragon and fill it up the pond. The hermit said there was no way to fix it, except to find the hermit that everything was similar to that hermit and throw him down to the dragon. Thus, King U-Thong has a royal command to investigate the hermit of such characteristics around the country. The hermit said that when he can kill the dragon and fill the pond and if King U-Thong wants to live in that place with perfect health, three things must be done which is 1. Firing arrows and then having to come back to the same bow 2. Daily anointed the body with cow dung and 3. blow the horns every day. As a result, King U-Thong agreed and went into a small boat and headed towards the middle of the river. He shoots arrows at the headwaters, and as the arrows flow with the water, he can trap arrows with bow, and instead of using the cow dung anointed his body, he uses rice mixed with a little wax oil and tell that rice cannot grow without cow manure in order that he means that cow dung is part of the rice. In case of blowing the horns, he ordered betel leaves rolls, which would look like blowing horns. In the meantime, the communicant who had sent out to search for the hermit came back and said

that he could not find such a hermit. King U-Thong kept this news a secret and went with the hermit out to the mouth of the pond where the dragon was, and without telling the hermit, he pushed the hermit down and filled up the pond. From that moment on, the dragon did not appear again, and the land was freed from the plague. Subsequently, King U-Thong began restoring the city and called the city “Ayutthaya”.

The plague in the era of Rama V

1. The plague was exactly confirmed in Thailand during the reign of King Rama V (Rattanakosin era), which was the same year as the 3rd time black death spread all over the world. The cause of the spread started in China, and was brutal in port cities such as Hong Kong during May 1894. This city became hotspots of spreading to other countries around the world.

2. In the same month, the Thai government was informed by the British consulate that there was a plague in Hong Kong. Thus, the diplomatic and consulates in many countries attended the meeting and proposed the government to use boat quarantine measures by inspecting all boats coming from the affected area, meaning that if there are no infected persons, that boat can enter the kingdom, but if they can detect an infected person or person who died because of the plague, that boat will need to be quarantined until the physician deems it is safe. Therefore, the Thai government began to set up a boat quarantine checkpoint at Phai Island in 1894 called “the danger prevention checkpoint in the care of the department of nursing and bill the quarantine law in order to prevent the plague from spreading to Thailand.

3. The quarantine law has been amended several times until it has evolved into a plague prevention announcement, which has more details on controls and is enacted every time the plague occurs in major port cities such as Shantou, Hong Kong, Taiwan, Manila, Singapore and other port cities. Additional modifications will be made from time to time to cover the cities with the plague epidemic. Once the outbreaks subside, the withdrawal will be announced from time to time by canceling the establishment of a boat quarantine station at Phai Island and changing the boat inspection at Pak Nam Subdistrict, Samut Prakan instead until the plague outbreaks abroad again, so they will move back to set up a boat quarantine checkpoint at Phai Island, later in 1904, the boat quarantine facility was changed from Phai Island to Phra Island.

4. During 1897-1905 BC there is an announcement, about countermeasures to the plague, and there are 3-4 improvements of measure each year. This shows that the Thai government became aware of the plague spreading situation in foreign countries, and tried their best to prevent it from spreading in Thailand by hiring the western doctor to check the boat quarantine at Phai Island.

5. In addition to the quarantine measures, there are also measures to maintain cleanliness by setting up a Bangkok sanitation in 1897 and setting up a sanitation doctor to manage cleanliness and disease prevention for the people of Bangkok, as well as to establish a boat quarantine station at Phai Island. The first sanitary doctor was Dr. P.A. Nightingale. Later, in 1901, Nightingale resigned, Dr. Hugh Camp Highest was appointed as a sanitary doctor instead, and became an important role in the prevention of the plague during the reign of King Rama V.

