2 The Black Death in Norway, 1348-1349[276]

2.1 Fundamentals of Plague Epidemiology

Plague is transmitted by rodent fleas. Almost all cases of plague which occur today are episodic individual cases, reflecting that human beings more or less fortuitously have come in contact with diseased wild rodents and been bitten by their fleas. Generally speaking, hunters, herdsmen, tourists, or children are most exposed to contract it. Epidemics occur in quite rare, usually small outbreaks such as in India in 1994.

Plague epidemics arise when the contagion is transferred to human settlements, which can occur when black rats live there, and is predominantly transmitted to human beings by their fleas, *X. cheopis*. Black rats are not the species of rats which live in Norway today, i.e. the brown (or gray) rat. The brown rat did not arrive in Europe before the eighteenth century. Another important point is that the brown rat likes to keep a distance to human beings, and in modern society prefers to stay in sewers or cellars. For this reason, brown rats do not play an important role in the spread of plague to human beings.

The species of rats which has constituted the rodent basis for plague epidemics among human beings everywhere in the world is the black rat. It is also called house rat and ship rat because it thrives also as a peridomestic rat, near or in human habitats. One important reason is that grain is its favourite food. Black rats are burrowing in woods, fields and in housing (see Chapter 8). They are also good climbers and quite often locate their nests in roofs or ceilings where they are not so vulnerable to cats and other predators, which consider them good food. It can be difficult for modern inhabitants of the West to understand that people of the past or in developing countries today often are so lenient towards the presence of rats in their houses. In the Nordic countries, skeletal remains of the black rat from the Viking Period and Middle Ages have been found at quite a number of locations in Sweden and also within the medieval territory of Denmark. [Since this monograph was published in 2002, several finds of black rats have also been made in Norway, and not only in towns, but twice also in the countryside: in Bygdøy, that in the Middle Ages and most of the early Modern Period was uninhabited, and in Hof parish in Vestfold County, important facts that so far have been ignored. The long presence of the black

276 English translation by the author from his monograph, *Svartedauen og senere pestepidemier i Norge. Pestepidemienes historie i Norge 1348-1654* [The Black Death and Later Plague Epidemics in Norway: The History of Plague Epidemics in Norway, 1348-1654], 2002: 27-105, with Table 2A, here Table 2.1. The first part contains a somewhat shortened version of the chapter on the clinical and epidemiological manifestations of bubonic plague, which, in its turn, is predominantly based on the broad in-depth study of the primary research literature and standard works on bubonic plague given in my 1992 doctoral thesis (See also Preface). This version is to some extent updated, but in the perspective provided by the discussions in the following Chapters 3-11.

rat in Europe is extensively presented and discussed in Chapter 8, in a broad Nordic context[277] The black rat was the only rat in Sweden and Finland up to about 1800. Rats also are mentioned in sagas and other documentary sources of the Middle Ages.[278] It is important to note that the word mouse in languages belonging to the Indo-European language family, like Norwegian ["mus"], is used about both mouse and rat. When one wished to be more accurate and specific in Old Norse the term "vǫlsk mus" was used, which can be translated as "Frankish mouse". This indicates that the black rat was introduced to the Nordic countries from France via the Vikings in the ninth century, when they sailed up the big French rivers and, among other things, besieged Paris. This is confirmed by numerous finds of skeletal remains of the black rat from the Viking Period, especially in Sweden.

This raises another problem that took the Indian Plague Research Commission (IPRC) many years to resolve, namely how fleas transmit plague bacteria from rats to human beings (See also Chapter 10). It was soon clear that this did not occur by the bite itself, because the remains of blood on the mouth parts did often not contain any bacteria. If present, they could usually be counted on the fingers of one hand and would easily be defeated by the human body's quite good immune system. One important reason is that plague bacteria are much larger than virus. Research also has shown that the remains of blood on the mouth parts that could contain plague bacteria mostly vanished in about an hour, at the most three hours, while the next feeding would normally not occur until one or two days later, that is under favourable circumstances.[279] Eventually, IPRC succeeded in demonstrating that when a flea ingested highly bacteraemic blood, the plague bacteria in the stomach system multiplied faster than had they were passed on into the lower alimentary canal by the normal digestive processes. This caused the formation of a plug consisting of a hemobacillary mass consisting of bacteria, fibrinoid-like material, and haemin. When a blocked flea, as it is called, attempted to ingest blood, the fresh blood would run into the blockage and stream back into the bite wound taking with it small bits. It has been shown that often around 24,000 bacteria will be transferred in this way.[280] A blocked flea is desperately hungry and bites repeatedly. The contagion dose is therefore typically very high, which is an important part of the explanation of why so few survive plague disease. Scholars who advocate that plague is transmitted without

277 See also above, Chapter 1.2.

278 A concise presentation of the paleoosteological research literature on rats in Europe in Antiquity and the Middle Ages is given in Benedictow 2004: 22-24. See now Benedictow 2010: 73-150, which provides by far the most comprehensive and adequate general presentation of the research on the presence of the black rats in Roman Europe, the Viking Period (in the Nordic countries), and the Middle Ages, and with respect to the Nordic countries until the mid-1900s. This is important because a brief, misleading account recently appeared (see Chapter 8, below).

279 Benedictow 1992a/1993/1996a: 238–40.

280 Burroughs 1947: 383.

blockage, do not attempt to explain how or why plague bacteria are moved from the stomach against the stream of blood imbibed by a flea and into the bite wound. This topic opens a much wider array of problems and data that will be discussed quite thoroughly in Chapters 7, 8, 10 and 11. Here it will only be given a brief orientation.

IPRC also examined blood of human beings and rats with plague disease in order to ascertain the proportion which developed bacteraemia, and the levels of bacteraemia. In a small selected group of patients at a plague hospital in Mumbai, they found that about half of all cases died without having plague bacteria in the blood stream, i.e., without bacteraemia. The other patients in whom plague bacteria entered the blood stream, died with generally quite a weak bacteraemia through the whole course of illness. These findings were later largely corroborated by American research on plague patients in the United States as well as by research on far more numerous cases conducted by U.S. military physicians during the Vietnam War, when large plague epidemics broke out there (but showed on the average lower prevalence of bacteraemia, more in the range of 30%[281]). The cause of death is heart failure due to the strong poison (toxin) that plague bacteria produce.

IPRC also found that for all practical purposes all plague infected rats became bacteraemic and often developed immense numbers of bacteria in the blood stream. These studies demonstrated that one-third of the rats had > 10^6 plague bacteria/mL (millilitre) of blood early in the course of the disease and rats with >10^9 (over 1 billion) bacteria/mL of blood during the course of illness were not unusual. It was thus evident that plague-diseased rats were exceptionally efficient sources for infection of fleas which ingest(ed) their blood. Rats had, on average, nearly 1000 times more plague bacteria/mL than human beings, that is as a comparison between the rats and human beings that developed bacteraemia, when the high proportion of human beings which remained nonbacteraemic is taken into account, the difference becomes much greater.

The crucial point proved to that the degrees of bacteraemia that had occurred in human beings were too small to infect a great majority of fleas, or in a way that would lead to blockage of the stomach system. This is the reason human fleas play no role, at least not a significant role, in plague epidemics.[282] These findings were later decisively corroborated by Soviet researchers. They showed that the density of bacteria in the blood required to cause the development of blockage in fleas and, thus, the capacity to transmit contagion, has never been observed in human beings.[283] This is the reason that plague epidemics are closely associated with the presence of house rats in human

281 As will be seen below in Chapter 12, Appendix (and, for instance, in Chapters 7, 10, 11), this estimate should be reduced to about 30-45%.

282 All this research is succinctly synthesized and discussed in Benedictow 1992a/1993/1996a: 242–64. This has been performed again in relation to various works and assertions below in Chapters 7-12.

283 Bibikova and Klassovskiy 1974: 45–47.

habitats, and that rat fleas are the vectors transmitting the disease to human beings. From this perspective, we can say that in a plague epidemic human beings become involved in an epizootic among rats.

Lice play no part in the transmission of plague, because such a high proportion of human plague patients do not develop bacteraemia and the great majority of the remaining patients develop so low levels that they will not infect feeding ectoparasites, or only slightly. An additional reason is that plague bacteria are not evolutionarily adapted to passing through their alimentary system, because they have developed another predominant mode of transmission, by blockage. Plague bacteria excreted alive in the faeces of lice are so weakened that they usually do not cause disease, also if they become scratched into bite wounds by unsuspecting human beings. This is also the case if they are spread by faeces reduced to powdery dust (see Chapter 9).
Because plague contagion is a bacterium, several types of antibiotics like streptomycin and tetracycline are efficient medication, on the condition that they are administered in time. In pre-modern times, there was no useful medication against plague.

2.2 Bubonic Plague and Pneumonic Plague

> [...] When a blocked flea bites a person and transmits contagion, the contagion [is deposited at an intradermal level from which it] will be drained along the lymphatic tracts to a lymph node. The lymphatic system serves as the human body's first line of defence against invasion. The infection makes the lymph nodes swell strongly into the infamous buboes that can grow large as eggs. Buboes are exquisitely tender and produce an intense piercing pain by touch or movement [of associated limbs].[284] Lymph nodes are located in large clusters in the femoral-inguinal region [upper thighs-groin]: the arm pits, neck, and more dispersedly elsewhere. Buboes are therefore predominantly concentrated in the three mentioned areas, but may occur with great dispersion over the body. Because the legs are the largest surface area of human beings and because legs can attract fleas both when people are asleep and standing up or walking about, most bites occur there. The contagion will then be drained to the groin or quite often to nearby femoral lymph nodes. Human beings who are asleep will often be bitten on the upper parts of the body and quite often will develop buboes in the arm pits (axillas) or quite frequently on the neck or shoulder. [...][285]

In around half of the patients,[286] the toxins of plague bacteria eventually wear down the tissues of the lymph node, making their way into the blood stream. Occurrence of bacteria in the blood stream is, as previously mentioned, designated bacteraemia, while this variant of plague is called *secondary bacteraemic plague*, because it is a

284 Reed, Palmer, Williams et al. 1970: 479; Welty, Grabman, Kompare et al. 1985: 641–643; Butler 1983: 73–74. Cf. Simpson 1905: 263, 274; and Owens 1990: 155.
285 Pollitzer 1954: 419-23.
286 As will be seen below in the Chapter 12, this estimate should be reduced to about 30-45%.

secondary development, a consequence of the first or original infection of the lymphatic system. In the blood stream, plague bacteria will proliferate and be carried around in the body (if not immediately cleared away by the immune apparatus, a transient slight bacteraemia is sometimes observed; see Chapter 10, below). A characteristic feature of patients with bacteraemia is that plague spots quite frequently develop in the skin. The reason is that plague bacteria also are transported to the capillaries, the small blood vessels in the skin, where their toxins break down the walls or they cluster to form small blood clots that make the (weakened) blood vessels burst so that blood seeps out. In the skin, this looks like blue or purple spots. [...] Because plague spots are caused by bacteria in the blood stream, they also exhibit symptoms heralding the imminent demise of the patients, almost without exception.

This was understood in the plague period. In England, the spots were called "God's token", or, as a reflection of familiarity, only "token", because those who developed plague spots were seen as being called home by God. Shakespeare used the expression in its dramatic meaning: "The tokened pestilence where death is sure."[287] In Norway, the expression "the spots are counted" meant that a person was dying, and it was used long after the plague period. Plague spots are mentioned in Norwegian sources twice in relation to the plague epidemics of the early 1600s.[288]

Most patients with bacteraemia will die quite fast. Some of them manage to hang on to life for some time, in these cases it will quite often occur that plague bacteria which are moved with the blood stream to the lungs attach themselves to lung tissue and start to proliferate and consolidate in a manner that produces an ulcer. Accumulation of blood, pus, and suppuration means that patients will tend to produce a cough with bloody expectoration. A secondary condition has arisen from the original bubonic plague infection, which is called *secondary pneumonic plague*, because it is a secondary development, occurring in 10–25% of all bubonic plague patients.[289]

This coughing can expel plague bacteria out of the lungs in droplets that can be inhaled by another person in the immediate vicinity. A person infected by droplets inhaled into the lungs contracts the disease in this original form, which is called *primary pneumonic plague*. Primary pneumonic plague is an extremely lethal disease, survivors are exceptional cases indeed. However, it is misunderstanding that it is highly contagious disease, and for several reasons. Plague bacteria are much larger than virus. This means that they need much larger droplets in order to be transferred. Big droplets are moved over much shorter distances by air currents in the rooms of human housing than small ones. Scientists emphasize that to be infected in this way normally requires that one is almost in the direct spray from the cough of a person

287 McArthur 1925-1926: 358; and Wilson 1963: 102.
288 Hertzberg, Oldtids Minder, Gamle Sagne i Kinservigs Pr. Gj. , Manuscript, 1824: 21.
289 Hirst 1953: 22; Leads 1984: 1400; and Welty, Grabman, Kompare et al. 1985: 646.

with primary pneumonic plague. Mostly persons engaged in nursing care contract this disease, quite often women and medical personnel in modern times. Our knowledge of the basic epidemiological pattern of pneumonic plague is precisely summarized by J.D. Poland, the prominent American plague researcher:

> Primary plague pneumonia occurs primarily in persons in close and prolonged contact with another person with pneumonic plague. Hence, respiratory transmission occurs most frequently to medical personnel or household contacts who are directly involved with the care of the patient.[290]

Droplets that can carry plague bacteria are relatively large and, upon being inhaled, they tend to impinge on the upper parts of the respiratory tract where they infect the tonsillar region, thus causing pharyngeal and primary bacteraemic plague with extremely rapid death for the patients (see Glossary). Wu Lien Teh, the leading authority on primary pneumonic plague, stresses the importance of a third type of fulminant cases called *pulmonary* plague. Dissection of the lungs of such cases did not show the usual pneumonic foci that produce the cough with bloody sputum. These types of cases which do not develop a bloody contagious cough are quite numerous, and undermine the ability to spread pneumonic plague.

Outbreaks of primary pneumonic plague are almost always limited to family members and close relatives, neighbours, and friends visiting the diseased. Usually, they comprise not more than around 10–20 persons, only rarely more than 100 cases. On the other hand, new, tiny or small outbreaks arise from patients with secondary pneumonic plague, so that cases of primary pneumonic plague constitute a normal small percentage of those infected by bubonic plague epidemics, around 2.5%.[291] In some areas of the world where the local culture demands close contact between diseased and healthy persons for comfort and consolation, pneumonic plague can be somewhat more usual.[292] This has especially been the case in Madagascar, Upper Egypt and Java.[293]

2.3 Long Distance and Short Distance Spread of Plague

Because black rats have grain as their favourite food and like to stay in human habitats, their fleas often fall off or are scratched off in places with grain, flour, or grain debris.

290 Poland 1983: 1230.

291 Choksy 1903: 30, 58; Lamb 1908: 1.

292 See the presentation of the medical scholarly literature on primary pneumonic plague in Benedictow 1992a/1993/1996a: 25–32, 221–22. Also see Benedictow 2010: 493-552.

293 Brygoo 1966: 47, 50–51: Petrie and Todd 1924: 143-48, Wu Lien Teh 1926: 23, 32; Wu Lien Teh 1936b: 413, 416; Benedictow 1992/1993/1996: 222–23, 260–62.

IPRC discovered early that rat flea, by evolutionary adaptation through thousands of years, had developed the ability to live off debris of grain or farinaceous dust and were dependent on blood only for egg-laying. It also became clear that rats' role in the spread of plague was quite limited, and that infected fleas were the predominant vehicles of spread of plague infection. Much subsequent research has corroborated this observation, including research conducted in connection with the big plague epidemics during the Vietnam War, when it was observed that plague arrived to a town or area with shipments of rice.[294]

Rats are strongly attached to locality, for they live in colonies and defend their territories and the food resources there. They like to settle in or around places that store grains and, therefore, will travel with food transports (or, likewise, they can be ship rats.) With long-distance transportation, the great majority of plague infected rats will die, but their plague infected fleas can survive for weeks if temperatures are not too high and humidity is good, which tends to be the norm at sea. Desiccation is the greatest danger to the survival of fleas. At arrival infected rat fleas preferably seek out new rat hosts and unleash plague in the locality. This is the usual form of spread of plague over modest-to-long distances.

Short-distance spread in local societies (and between neighbouring localities) is mostly associated with other types of spread. First, in towns and villages, the contagion could be spread slowly by contact between rat colonies. When a rat colony was reduced by plague mortality and no longer able to defend its territory, it would be invaded by rats from adjacent rat colonies, which, in this contaminated territory, would be attacked by infective rat fleas and then transfer the contagion to their colonies. In the countryside, this form of transfer of contagion also occurred among the houses of the farmsteads, as well as between rat colonies in the farmhouse, stable, or store house [on plinths]. In this way, adjacent families in the towns or farm workers who slept in barns, cow houses, or stables would be exposed to plague.

There are more important forms of short-distance spread, however, and it is important to know something about the life and predilections of fleas in order to unveil the mechanisms of spread. Fleas can be divided into two main categories: *nest fleas* and *fur fleas*. Most species are nest fleas, because they like to stay in the nests of their hosts, while in the case of the so-called human flea [*Pulex irritans*], they prefer the vicinity of beds. In fact, beds in Norway are still humorously called "the flea box". This idiom reflects a cultural heritage fashioned by people of the past which had good knowledge of fleas and their habits. Human fleas will come out from their hiding places at night when people are sleeping, take their feed of blood, and then disappear into a suitable hiding place in order to enjoy the meal and lay eggs. This means that human fleas are [evolutionarily] adapted to darkness and avoid light. In the past, people knew that the best means against flea nuisance was to light a candle.

294 Marshall, Joy, Ai et al. 1967: 604-05, 610.

Human fleas are, therefore, only quite incidentally found in clothing when used by people. They dislike riding with their hosts, because they will be carried away from the safe areas of the nests, i.e., beds and other sleeping arrangements that present good opportunities for feeding, and will almost unavoidably be exposed to (day)light. If they should fall off or be brushed off, they are in danger of dying. Moreover, the human flea is in these important respects poorly adapted to function as a vector of contagion. The combined facts that 70-55% plague patients die without developing bacteraemia (plague bacteria in the blood stream), coupled with the fact that levels of human bacteraemia in patients with bacteraemia that are quite generally are low, mean that human fleas do not play a significant part in plague epidemics (see above).

The ordinary fleas on black rats, *X. cheopis*, are typical fur fleas which normally ride with their hosts. Spending much of their adult lives in the fur of their hosts, they enjoy there a relatively warm microclimate even in chilly or cold weather and ample feeding opportunities. This explains that plague epidemics can produce cases in chilly or cold autumnal weather, although at a rapidly diminishing rate caused by the depletion of the number of rat fleas and the reduction of bacteraemia in plague-infected rats, until cold weather stops the epidemics. However, also in cold weather the presence of smouldering enzootics can be disclosed by occasional cases. Plague epidemics do not, therefore, stop abruptly with the advent of chilly or cold weather. This will to some extent also depend on the temperatures in the houses where rats stay and the effects of heating or the warmth from big animals in stables or byres where live-in farmhands often slept in olden days.[295]

These rat fleas are used to leap onto hosts and ride with them. They tolerate, therefore, light quite well and readily leap onto the clothing of human beings and ride with them. The main features of plague's powers of spread over short(er) distances are clear: when infected rat fleas have been transported to a new environment, they will first seek rats. If introduced into human housing, plague will usually first break out in the colony or colonies of black rats. As the rats die off, their fleas will gather on the remaining rats that will soon carry far more fleas than normal, an increase from 7 to 50-100 fleas is usual. This means that they rapidly become infected and die. After about 10-14 days, the rat colony is so strongly reduced that the rat fleas often do not find new hosts. Hundreds of fleas will be released from dying rats[296] and swarm into the immediate proximity of human beings. Rat fleas are adapted to their normal hosts and prefer to ingest their blood, but after about three days they will be so hungry that they leap onto human beings in order to feed (see also below).[297]

295 IPRC, XXIX, 1908: 245–46, 258; Liston 1924: 997; Pollitzer 1953: 321; Pollitzer and Meyer 1961: 461; Busvine 1976: 37.

296 Brown 1995: 931; Thomas, Karstens, and Schwann 1993: 209-13.

297 Pollitzer 1954: 485; IPRC, XXII, 1907: 765. On the average, 3.66 days elapse from a black rat is infected by plague until it dies. IPRC, VIII, 1906: 519-23.

In the past, two ethical obligations were especially highly valued in the relationship between people. The standard phrase is found in the Irish monk John Clyn's account of the Black Death, which has been rendered above [not rendered here*1], namely to visit the sick and bury the dead. When people became ill, neighbours and relatives came to pay their respects and show their sympathy, take care of the children, and carry out necessary work on the holding[*2]. In the case of plague, dangerous rat fleas would leap onto the clothing of these persons and be carried to their homes on neighbouring holdings or in neighbouring localities. The same would be the case in connection with wakes, funeral feasts, and burials. Relatives would attend not only as mourners but also as inheritors. In fact, the Old Norse word for funeral feasts was inheritance feast ("arfǫl"). Also on these occasions, they would be strongly exposed to infected rat fleas and carry them to their farmsteads or cottages. They could also inadvertently take with them rat fleas in bedding and clothing that they inherited: in the poor society of the past, second-hand clothing and used bedding were attractive objects of inheritance. Rat fleas may bite the person they have jumped onto, but most importantly they will be transferred to another settlement or farmstead, where they will first seek out a rat colony and unleash plague, and then the process of infection and disease will be repeated.

This pattern explains why plague could linger for so long in the same locality, as will be seen, and why a plague epidemic can spread with tremendous efficiency in the quite sparsely settled peasant localities in Norway.

2.4 Plague Epidemics' Pace of Development and Spread Rates

Bubonic plague begins in a concealed way as an epizootic among rats and develops into an epidemic according to quite a regular pattern. Knowledge of the time frame of the pattern of development is an important tool for the dating of when an infection was introduced into a town or rural society, and is a useful tool for drawing maps that show the spread of plague epidemics in time and space.

It takes, as mentioned, 10-14 days from a colony of black rats has been infected until it is so severely reduced that fleas leaving dying rats have difficulties in finding new rat hosts. After about three days of fasting, rat fleas which have not found new rat hosts will be so starved that they leap onto human beings in their proximity. The inherent danger increases rapidly as more of the few remaining rats die and release hundreds of infected rat fleas with poor prospects of finding a new rat host. When plague contagion has been transmitted to a human being follows an incubation period

*1 See Horrox 1994: 82-83; Gasquet 1908: 138-39.

*2 On the term holding in the meaning peasant holding, tenancy or freehold, see Benedictow 2002: 87, 93, 95, in English translation with explanatory passages, see: Appendix 2 to Chapter 2, below; Benedictow 2006: 83-163, in English translation in Chapter 3.

of normally 3-5 days before the disease breaks out, followed by a period of illness of 3-5 days when the great majority of cases dies, on the average 8 days. The period from a rat colony in human housing becomes infected until the first death among human beings lasts on the average 19-27 days, usually between 23-24 days.[298]

In the meantime, contagion is transferred to healthy rat colonies as they invade colonies strongly weakened by disease. This is a slow process of spread. Far more important is the spread of contagion by persons who visit plague infected houses and take with them rat fleas to their own houses which infect rat colonies there. This means that the process of spread begins to be efficient only from the time a person falls seriously ill in a plague-infected house and neighbours, friends, and relatives begin to visit the diseased, and, according to the customs of the time are present at the deathbed. Next, follow gatherings of people associated with the wake, funeral feast, and division of the deceased's estate. This pattern of development is repeated in each house where plague-infected rat fleas arrive. However, the contagion is spread by increasing dynamics, because a rapidly increasing number of people (unwittingly) become involved in the transportation of infective rat fleas to other houses or localities.

In the first week(s), the development is characterized by sporadic cases of illness called the *endemic* phase, the transition to a genuine epidemic phase with rapidly increasing numbers of plague cases will normally begin in a locality 4-5 five weeks after the contagion arrived. However, also the time of incubation, the course of illness and death by an increasing number of persons infected at the end of the endemic phase must be taken into account. These epidemic elements constitute a part of the epidemic process which also must elapse before a sudden upsurge in the number of plague cases heralds the beginning of the epidemic phase. The entire process from contagion is transferred to rats in a local society until a clear epidemic outbreak tends to take about 39–40 days or slightly over 5.5 weeks.

At a time when the microbiological causation of epidemic disease was not known, also, therefore, not how to protect oneself, epidemic diseases flourished. People were used to outbreaks of epidemic diseases. The lower classes and poor people were especially exposed, almost all outbreaks started among them.

Upper classes in towns and cities were so used to outbreaks of contagious diseases that a week or two elapsed before they reacted to the presence of the Black Death among poor people in the vicinity and they suddenly felt menaced by the epidemic drama which unfolded. Chroniclers are persons from the well-off classes, also this time lag must be taken into account when dating of outbreaks of plague mentioned in chronicles shall be used for the precise dating of the time contagion was introduced and the epidemic outbreak in a locality.

298 Pollitzer 1954: 409–11, 418; Chun 1936: 313; IPRC, XXII, 1907: 765.

Another important tool of analysis is the normal average spread rates of plague over distances and areas. My registration of the Black Death's spread rates over land in Europe based on all available studies shows that the highest spread rate was about 2 km a day. This was, for instance, the spread rate from Pisa to Pistoia in Tuscany, from Marseille to Avignon in southern France up the Rhône valley to Lyon. This spread rate is found in areas with high population density and along main roads with much movement of goods and people. Northwards from Lyon the spread rate declined to around 1 km a day also along important communication lines. When the Black Death branched off from the European main roads and turned, for instance, eastwards from Lyon into Switzerland, the spread rate declined to about 0.7 km per day. The same was apparently the case in Germany, while the Black Death spread at a somewhat higher rate across England, on the average about 1 km a day (because the milder climate in the British Isles meant that spread was often not halted by winter weather, only slowed down). The gauge here is the spread rate as the crow flies, as measured on maps, however, on the ground along bendy hillocky roads or tracks the average spread rate was significantly higher (because the distance would be longer). These spread rates have been shown to apply to much later plague epidemics and acquire therefore a general character relevant for European pre-industrial societies.[299]

Plague has also a distinct way of spreading by long leaps. This occurs especially when transportation is by ship, which can convey plague contagion over long distances between countries or regions. Because plague-infected rats die, contagion is mainly transported over long distances in the stomach system of fleas. Under such circumstances rat fleas can survive long, partly because they find nourishment in grain dust, partly because humidity is high at sea so they avoid desiccation.[300] The Black Death was, for instance, transferred directly from Kaffa on the Crimea to the Black Sea to Constantinople, from Constantinople to Alexandria in Egypt and to Messina on Sicily, Venice and Genoa. From Bordeaux it was transported to north-western Spain, to Rouen in north-western France and to Weymouth (Malcombe Regis) in England. Such long-distance leaps also occurred also along the busy, big rivers that had much transportation traffic, such Rhine River.[301] All through the plague period 1348-1654, plague was spread from other countries to Norway by ship transport. The Black Death

299 The complete material on the Black Death's spread rates across Europe is presented in Benedictow 2004: 227-33. The present 2002 monograph [i.e., the plague history of Norway] and the monograph on the Black Death were finished at about the same time, but the greater size and more complicated account of the Black Death took longer time to prepare for publication, so while the present monograph was published in December 2002, the monograph on the Black Death was published in June 2004. For Switzerland, See also Andenmatten and Morerod 1987: 21. Information of this type is also given in Biraben 1975–1: 90-91, but some of the data could be misleading, because they refer to river transport.

300 See, for instance, Lamb 1908: 63-64, 81-83, 93; Estrade 1935: 293-98; C.Y. Wu 1936: 260–261, 287; Hirst 1953: 275-76, 322–23.

301 Benedictow 2004.

* The letter Å, å is pronounced as English Aw, aw.

spread at least twice by long leaps with ship transports along the coasts of Norway (see below).

Infrequently and over much smaller distances than by ship transportation, plague can be spread by leaps also over land, primarily in moderately chilly and humid climate which prevents desiccation of plague fleas. In southern France the Black Death leapt westwards and south-westwards by land from Arles to Montpellier further to Bézier and Narbonne, and from there inland to Carcassone and further by land to Bordeaux on the Atlantic coast. A couple of such cases are known also from Tuscany in northern Italy. The quite few instances of such leaps in such a tremendous wave of plague as the Black Death and the fact that they are predominantly associated with Southern Europe indicate that no concrete instance of this type of spread by land between localities in Norway would be found. This is also the case with the Black Death, which does not exclude such events. In 1525, one instance occurred of a relatively short leap of around 40 km by land from Hamar to Åmot (where the River Rena empties into the River Glomma).

With a term taken from cancer research spread by leaps is often designated *metastatic spread*. Cancer spreads in the body when the original tumour releases cancerous cells which are transported by the blood stream and attach to a suitable place which may be at quite distant locations in the body. There they grow into new cancer tumours that are called metastases.

Bubonic plague epidemics usually grind to a halt in cold weather for two main reasons: (1) Rats rarely develop high degrees of bacteraemia when environmental temperatures falls below 10° C.[302] This means that rat fleas do not become infected or usually become only slightly infected by plague bacteria when they ingest blood from their rat hosts and therefore develop blockage of the stomach system quite infrequently. (2) Because plague is transmitted by rat fleas, the development and dynamics of the spread of plague epidemics are dependent on temperatures that do not strongly impede or stop the procreation of fleas. When environmental temperatures fall below 10° C reproduction becomes markedly and even sharply reduced, and when the temperature approaches 5° C reproduction stops.

The natural mortality rate of fleas is high, for instance, a fully developed flea [imago] lives usually about 5–6 weeks. In cold weather, the number of fleas falls strongly.[303] Medieval building traditions and types of housing meant that temperatures approached or reached such levels also indoors in the winters all over Northern Europe and in the central European mountain areas. Under such circumstances epidemic plague will normally disappear, but an endemic sprinkling of cases may occur and betray its presence, because it will often smoulder, so to speak, in the rat colonies, until the advent of spring with warmer weather. Then the number of fleas

302 Lamb 1908: 88; Seal 1960: 289.

303 With respect to these basic facts, see Benedictow 1992a/1993/1996a: 160–70.

would recover, plague infected rats develop high levels of sepsis and the epidemic recrudesce, which occurred quite frequently.[304]

This seasonal pattern was clear from the beginning with the Black Death. In the winter, the spread rates declined strongly in France and the epidemic was to some extent halted.[305] Its spread stopped completely in the Tyrolese Alps, in the northern parts of Germany and in the Nordic countries.[306] This also means that contagion often was introduced in localities too late in the autumn to develop into a fully-fledged outbreak and would often be overlooked until the arrival of spring when warmer temperatures allowed plague to regain full epidemic powers.

An interesting instance in the Nordic countries appears to be the outbreak of the Black Death in the town of Visby in Gotland Island [on Sweden's Baltic coastline]. A chronicler dated it to Easter week 1350,[307] which began on 28 March. The development of plague from contagion is introduced into a rat colony until its presence becomes apparent for a local population in such a menacing manner that chroniclers took notice, requires around six weeks (see above). This indicates that plague contagion arrived in Visby around 7 February. However, at this time there was not any shipping for three important reasons: (1) the danger of winter storms (2) the Baltic Sea has so low salinity that thick winter ice is often formed; (3) and most importantly: the Hanseatic cities prohibited merchant ships from putting to sea in the months November-February.[308] Instead, it must be assumed that plague contagion was introduced in Visby in the late autumn of 1349.

Sometimes plague had time to demonstrate its mighty presence before it vanished and people heaved a sigh of relief. A study of wills in Lübeck provides an interesting glimpse of this process: in the years before the Black Death there were, on average, preserved six wills yearly. In 1349, there was a conspicuous sudden increase to 25

304 [The registration of transseasonal plague epidemics in Norway begins with better source-material in the sixteenth century. The cases presented here are, therefore, gathered together from later parts of the monograph, which is not in English translation here (and because the Black Death did not recrudesce in the spring of 1350, as repeatedly demonstrated below and in subsequent articles): Benedictow 2002:163-66 (the plague epidemic in Oslo 1547-48), 187-202 (the plague epidemic in Bergen 1565-66), 211-12 (the plague epidemic in Trondheim 1565), 221-26 (the plague epidemic in Østlandet, "the East Country", 1583-84), 234-35 (the plague epidemic in Bergen 1599-1600), 238 (the plague epidemic in Strandebarm 1600), 240 (the plague epidemic in Trondheim 1599-1600), 243-44 (the plague epidemic in Sørlandet "the South Country", 1602-03), 270-75 and 279-80, (the plague epidemic in the county of Telemark 1625-26), 285 (the plague epidemic in Bergen 1629), 287-88 (the plague epidemic in Trondheim 1629-30), 306-07 and 313 (the plague epidemic in Oslo 1654), 315 (the plague epidemic in Trøgstad Hundred, Østfold County, 1654, 318 (the plague epidemic in Drammen 1654), 320 (summary on seasonality). See also Benedictow 2004/2006: 233-35; Benedictow 2010: 398-419.

305 See also Dubois 1988b: 316.

306 Benedictow 2004.

307 Peters 1940: 34. This event will be much more developed in the forthcoming second edn. of my 2004 monograph on the Black Death.

308 Hansen 1912: 127.

wills, the great majority from the end of the year. Then the rush of wills stopped and did not resume until May 1350, when a chronicler informs that the Black Death broke out at the middle of the month.[309] In Norwegian plague history, there is quite a number of examples of plague epidemics that broke out in the autumn, suddenly declined rapidly in the second half of October and vanished around the turn of the year, next, to reappear with full mortal powers in the spring (see below)[not rendered here, see n.307].

This was a feature of plague epidemics which people in the Nordic countries noticed. In November 1545, Joakim Beck, the (Danish) Chancellor of the Exchequer, wrote a letter from Roskilde [northern Zealand] to the former castellan of Bergenhus castle Eske Bille: "I will advise You not to journey to Copenhagen before the start of freezing temperatures and the plague stops reigning in that city. I intend to pass the waiting time here in Roskilde."[310] As will be seen below, there is not a single instance of a winter epidemic of plague in Norway.

2.5 The Territorial Origin of the Black Death and Its Route to Norway[311]

Also the large southern French port city of Marseilles was infected early on, among the rats probably already in the second week of September, because a chronicler noted an outbreak among the inhabitants there 1 November.[312] From Marseille the Black Death was spread in several directions along the main roads of trade and travel. Most importantly in the present context, it spread westwards and south-westwards along the Mediterranean coasts to Montpellier and Narbonne, whence it spread along the communication lines north-westwards via Carcassone and Toulouse to the big port city of Bordeaux on the coast of the Atlantic Ocean. From Bordeaux the Black Death was transported by ship in several directions, to north-western Spain, probably with pilgrims on the way to Santiago de Compostela and therefore via the port town of La Coruña, to Rouen in north-western France and, especially important in the present context, to Melcombe Regis, today (part of) Weymouth, on the southern coast of England.

Melcombe Regis's rat colonies must have been infected as early as May 1348, because chroniclers dated the outbreak to shortly before the Feast of St. John the Baptist (or on that day).[313] From Weymouth the Black Death was rapidly spread by ship towards the western coast and to the south-eastern coast of England. The first

309 Ibs 1994: 87-88.

310 DN XXIII, No. 518, 11.11(?) 1545.

311 Only the last part of the chapter is discussed here, Benedictow 2002: 44-47; see instead Benedictow 2004: 44-156.

312 Biraben 1975-1: 91.

313 Grandsen 1957: 274; Higden 1865: 355.

outbreaks on the south-eastern coast were mentioned in September and reflect the fact that rat colonies must have been infected in the smaller (unidentified) port towns about six weeks earlier. A contemporary chronicler dates the outbreak in London to 29 September. The quite lively trade connections between Norway and port towns in south-eastern England at the time explain that the Black Death apparently transported to Norway the same autumn.[314]

The Black Death arrived in northern Germany a year later than in Norway, Hanseatic ships could not have transported contagion from their home cities to their trading stations in Norway. The earliest reference to the Black Death in the southern region of the Baltic Sea relates to the town Elbing [today Elblag] in East Prussia where it broke out on 24 August 1349, soon also other towns in this region were ravaged.[315] The outbreaks of the Black Death in the big Hanseatic cities like Bremen, Hamburg and Lübeck are dated by chroniclers to May 1350. In the case of Lübeck, there was, as mentioned, a sudden strong upsurge in the number of wills at the end of 1349 when the shipping season was over.[316] This heralded the beginning of an epidemic outbreak which was suppressed by cold wintry weather and did not emerge in its full murderous epidemic might until the spring.[317] About the same pattern is indicated for Stralsund.[318] Also the Low Countries, roughly the present-day Belgium and the Netherlands, were invaded later than Norway.[319]

2.6 The Arrival of the Black Death in Oslo

In 1348, the merchant ships that had sailed from Oslo to port towns in south-eastern England with timber, wood products, butter, wax, bake stones, millstones, whetstones, hides and furs, would return as usual in September or perhaps October loaded with wheat, strong beers, wine, glassware, pewter ware, and many other things. However, this time the arrival was different.

The accounts must have been more ghastly for every new ship that returned, as terror-stricken as the letter the prior of Christ Church in Canterbury wrote the bishop of London at the end of September where he related about the quite numerous outbreaks

314 [With respect to this spread, see Benedictow 2004: Map of spread, xviii-xix, 101-04, 108, 126-31, 134-37, 149-51 [or forthcoming 2nd. edn.].

315 Hoeniger 1881: 24.

316 Brandt 1964: 5-6; Brandt 1973: 127. A closer look at the sources seems to show that this pattern was more widespread among the Hanseatic cities, also on the coast of the North Sea. [Benedictow forthcoming 2nd edn.].

317 See also Ibs 1994: 87–88, 91.

318 Lalla 99: 34, who refers to Techen 1926.

319 For "Belgium", see Dubois 1988b: 316; Blockmans 1980: 836; Biraben 1975: 76-77. For the Netherlands, see Meinsma 1924: 401, 404-09, 433-35, Blockmans 1980: 843-44; for Friesland, See also Biraben 1975: 84, Hoeniger 1881: 23–24.

of the Black Death in the diocese. The diocese comprised Kent and London and also Essex with busy port tows such as Colchester and Harwich which were also frequent destinations for ships from Oslo. The rapid spread of the Black Death from Weymouth to south-eastern England must have occurred by ship.[320] Taking into account the normal time lag between transfer of contagion and outbreak, a number of outbreaks in this area at the time indicate that the Black Death had been introduced in several localities in the first half of August. A contemporary chronicler relates, as mentioned, that the Black Death broke out in London on 29 September and this agrees well with other pieces of information.[321] In this huge city it would quite likely take up to eight weeks before the spread of plague around the harbour and the mortality among poor people took such a dramatic turn that it attracted the attention of the chronicle-writing upper classes. The contagion had quite likely arrived at some time in the period 4–11 August.

It is, in fact, not necessary to suppose an outbreak in the rat colonies along the harbour for contamination of ships to have occurred. Transfer of contagion directly between ships in port towns was recorded by several of the chroniclers who commented on the Black Death. This was the case with the ship that transported the Black Death to England in Weymouth (Melcombe Regis). This infamous event is described in the *Grey Friars' Chronicle*:

> In this year, in Melcombe in the county of Dorset, a little before the Feast of St. John the Baptist, two ships, one of them from Bristol, came alongside. One of the sailors had brought with him from Gascony the seeds of the terrible pestilence and through him the men of the town of Melcombe were the first in England to be infected.[322]

Quite likely, the ship from Bristol is reflected in the fact that a contemporary chronicler dated the outbreak of the Black Death in Bristol on the south-western coast of England as early as 15 August. Taking into account the size of the town, the introduction of the plague contagion must have occurred about seven weeks earlier, that is at the end of June. This indicates that the ship from Bristol put to sea homebound shortly after the episode in Weymouth harbour. The transfer of contagion between ships which were densely moored was quite likely usual both by personal contact among sailors and merchants, exchange of goods and contact between rats or rats and infected fleas.

320 Ziegler 1970: 161; Gasquet 1908: 123.

321 Benedictow 2004/2006: 134-38.

322 Grandsen 1957: 274. Melcombe was situated within the area covered by Weymouth today. It is therefore usual to refer to Weymouth as the name of the seaport where the Black Death entered England.

Outbreaks in rat colonies in port towns along the south-eastern coast, especially Harwich and Colchester,[323] or exchange of goods between ships in these harbours could have contaminated ships there, also Norwegian ships, by infected rats or rat fleas 6–7 weeks before a growing outbreak among human beings made its presence evident, in London, probably (nearly) eight weeks earlier. This indicates that the contagion was introduced in the port towns of south-eastern England in the first half of August. The powers of epidemic spread increased strongly with the increasing number of contaminated localities that could function as epicentres for new spread. At the time when commercial ships from Oslo began to sail homewards, they could have been contaminated in several of the port towns of south-eastern England from where they put out to sea. The later they headed homewards, the more people on board had occasion to notice that the plague broke out in a rapidly increasing number of localities with enormous murderous powers creating an atmosphere of terror and panic.

The ships which arrived in Oslo from England were not necessarily Norwegian. The German merchants we call Hansards, from German commercial hubs on the North Sea or Baltic Sea, did not only sail on Bergen, they had also small trading stations in Tønsberg and Oslo. They could profit from sailing there in the spring with easily marketable German goods, sell them profitably, buy Norwegian commercial goods, sail to England and sell them profitably there. Next, they would buy English goods which were in demand in the Oslofjord area, return there, sell these goods profitably and lay the ships up for the winter in Tønsberg or Oslo. During the winter, they purchased goods for sale in their northern German home towns, Stralsund, Rostock, Lübeck, Wismar or Hamburg or Bremen, and would head homewards in the spring.

Bergen was not contaminated before the following summer, because ships from Bergen bound for England sailed via Shetland, or alternatively, first southwards to the coast of Jæren and set out across the North Sea from there. Next they followed the Scottish and English eastern coasts until they reached the port towns they headed for. These destinations had in common that they were situated north of the ports visited by ships from south-eastern Norway. They were situated around the big bay the Wash on the coast of Norfolk or Northern Suffolk,[324] while the Black Death did not spread further than the border area of Essex and Suffolk in the autumn of 1348.

The ships from Oslo or Tønsberg were exposed to the Black Death, because they followed a different sea lane and visited more southerly port towns on the east coast than the commercial ships from Vestlandet. In those days, ships were still so little developed and susceptible to shipwreck that it was usual to sail coastwise. They could then quickly slip into a cove or bay for anchorage if inclement weather broke out (there

323 Shrewsbury 1971: 85.
324 Rafto 1958: 660-62.

were no weather forecasts). The voyages of Norwegians to Iceland and Greenland were impressive and courageous undertakings at the time, and wrecks were not unusual. Ships sailing to England from towns in south-eastern Norway would normally sail along the coast southwards to a favourable point for crossing over to the northern tip of Jutland and then follow the coast southwards to a good point for crossing over to England.

Coastwise sailing meant that it was necessary to cast anchor near land and settle in for the night, because there were neither firehouses nor other means for nightly navigation in coastal waters. This type of sailing in olden times is manifested in place names along the sea lanes like Eldøy [= Fire Island] by Stord, an island where people sailing along the coast anchored for the night and lit bonfires to cook their meals. More usual is Brønnøy [= Well Island] (a place name found in Asker, Skåtøy, Vikna, Helligvær, and elsewhere) which focuses on the opportunity of taking aboard fresh drinking water. It also shows up in the gauge used for indicating the time needed to cover given distances at sea. Distances were given in "dœgr" of sailing, and one "dœgr" was 12 hours [by implication it is also the distance sailed in 24 hours, the reason the word "døgn" in modern Norwegian means 24 hours].[325]

Ships still carried only one big square sail that already the Viking ships used; also the big commercial types of ships called "knǫrrr", "buza" or "cog" carried only this type of sail.[326] Ships were not good at sailing up against the wind and had frequently to stay put waiting for the right wind for sailing, preferably downwind. It was not unusual that ships had to wait for suitable wind for weeks, before it was possible to set sail and heave up the anchor, especially if they were headed eastwards, because westerly winds dominate strongly in this part of Europe. Although transportation by ship was by far the fastest and most efficient way of moving goods, it was slow by the gauge of later times. In the late Middle Ages, the usual average distance sailed per day appears to have been around 40 km,[327] which implies that Norwegian ships

325 Steen 1934a: 227.

326 See, for instance, Christensen 1969: 191-96; Steen 1934b: 282-300.

327 Almost no research has been performed on the usual pace of sailing or the average distance covered per day (including night) by commercial ships in the Middle Ages. A couple of scholars have given a few data which relates to Norway and to Hanseatic shipping on Norway. I can add a few data from the end of the Middle Ages.

In the century preceding the Black Death, the usual duration of a voyage along the lane of roughly 550 km from Bergen northwards to Nidaros (Trondheim) was two weeks, which corresponds to an average sailed distance per day (and night) of about 40 km. In the early 1300s the normal duration of a voyage from Nidaros to Tønsberg, a distance of roughly 1100 km, was conceptually rounded off to a month corresponding to an average pace of sailing of 37 km per day. Presumably, this small variation is not real. Steen 1934a: 227. In 1309, King Håkon V estimates in general terms the duration of a voyage from Nidaros to Tønsberg to "one month" RN, III, Nos. 560-562 .

In 1485, the eastern Hanseatic (Wendish) cities proposed to the merchants of Lübeck who traded on Bergen that their ships should gather outside Lübeck on 24 June in order to arrive in Bergen a month

returning from ports in south-eastern England would take just over a month on the return voyage to Oslo. However, reality was not that simple. Because the prevailing winds in the North Sea region are strongly south-westerly or westerly, it will normally take considerably longer to sail such ships from the east towards the west, from Oslo or Bergen to England, than back home again.

Because ships were poorly suited for sailing in inclement weather, the shipping season was quite short in order to avoid the storms of the late autumn or winter. Contemporaries used to say that the shipping season ran from the Feast of the Cross in the spring [the Invention of the Cross] to the Feast of the Cross in the autumn [the Exaltation of the Cross], i.e. from 3 May to 14 September. The play on words that people in the past were so fond of shaped the formulation of the phrase, because we can observe that the shipping season started, in fact, in April and continued well into October. However, it also means that the period between the two feasts of the cross was the best for voyages and that shipping on both sides of this period was associated with increasing risk.[328] The last ships that returned from England could have left for Oslo as late as the end of September when there had been a series of outbreaks of the Black Death in south-eastern England, also in London and the port towns they had departed. Clearly, conditions were well suited for the occurrence that ships that headed for Oslo in September could have the Black Death aboard.

later. Consequently, they assumed that the average distance covered per day for these ships over the distance of roughly 1100 km from Lübeck to Bergen would be 37 km. The use of the term month and the knowledge that varying winds and weather could affect the voyage make it reasonable to consider the statement as rather approximate and round it off to around 40 km. This statement is important because the assumption on the duration of the voyage apparently reflects a common notion about it, and, indirectly, also on the average distance covered per day by Hanseatic merchant ships over this long route taking, into account varying directions of the wind as a normal condition.

All three individually known durations of voyages by ships that sailed this route in the second half of the fifteenth century, one case in 1455 and two cases in 1483, lasted much longer, namely 8 weeks. However, the information on duration in these cases was presumably given exactly because they were unusual. Still. in the first half of the 1500s, the average distance normally covered per day by Hanseatic ships sailing from Lübeck to Bergen was apparently 40 km or slightly lower, the 1100 km were usually covered in 3-4 weeks. Bruns 1900: C (= p.100). This might seem a little surprising, because it is usually assumed that merchant ships at the time were better developed than those sailing two centuries earlier, especially with respect to rigging and the sails they carried.

In 1529, Crown Prince Christian (III) sailed with a small fleet the roughly 540 km long sea lane from Copenhagen to Oslo with a following of Danish councillors of the Realm and considerable military forces. After having waited for suitable wind and weather for some time, the fleet put out of the harbour of Copenhagen on 30 June and put into the harbour of Oslo on 13 July. The distance covered per day was thus, on average, just below 40 km. DN XI, No. 530; DN X, No. 580; *Norske Regnskaber og Jordebøger*, Vol. 4, 1906: 351. The ships put out of the harbour of Oslo on 8 September and into the harbour of Varberg in Halland [on the Kattegat] on 16 September after having sailed a distance of around 360 km. They had, consequently, returned with the same average pace and distance covered per day/24 hours, namely 40 km. DN VIII, No. 607; DN IX, No. 644.

328 Steen 1934a: 226–27.

Hanseatic ships' busy rounds of sailing meant that they would often have narrow temporal margins for their autumnal voyages to Oslo or Tønsberg. However, as will be seen, Tønsberg was apparently visited quite late by the Black Death.

Even though the source material to the Black Death's history in Norway is much better than for any subsequent plague epidemic before the second half of the 1500s, it is, nonetheless, quite small and must be carefully analyzed with thorough source criticism in order to wrench from it the main outline of localities of arrival, times of arrival, and spread across the country.

Clearly, something highly unusual with great importance for the Black Death's history in Norway must have occurred in Oslo in the late autumn of 1348. The basis for our knowledge of the event is a property transaction that took place a little later. On 20 February 1349, a sale of landed property was executed in the Canons House[329] in Oslo: Olav Petersson sold 12 øresbol[330] in the peasant holding of Folvell in Nes parish in [the area of] Romerike to the recently established alter for St. Sebastian in St. Hallvard's Church, the cathedral of Oslo, for 54 marks in current coins. The Canon Gyrd Aslesson and Trond Krakesson, lawman ("*lǫgmaðr*"[331]), of the royal mansion, acted as purchasers on behalf of the St. Sebastian altar.[332] A document issued about this property transaction later informed that the townsmen of Oslo had granted the money.[333] It is the only instance among hundreds of letters and abstracts of letters on

329 Canons were members of the cathedral's Chapter of Canons who constituted the highest body of the diocese.

330 At the time, sales values of landed properties were assessed according to the value of the rental income, the rents and fines payable by a tenant. The basic gauge was the value of the rent expressed in silver according to a money of account, mark silver old-time value [mark forngild]. 1 mark silver old-time value weighed 71.44 g of silver which was divided into 8 ører and 24 ertoger. Because inflation had reduced the original silver content of the coins, the money of account mark of old-time value was established around 1300 with a supposed silver content of one-third of one mark fine silver (according to the notions of fineness of the time). In connection with property transactions the word "bol" was used to designate agricultural land. 12 øresbol was the landed property which yielded a yearly rent with the value of 12 øre or 1.5 old-time mark of silver. In reality, the rent was usually paid in kind, 1 old-time mark of silver corresponded at the time, for instance, to a rent of 3 laups of butter, 1 laup a wooden box with a volume containing 15.5 kg of butter. The tenant on Folvell was, therefore, obliged to pay 70 kg of butter each year to those in charge of the operation of the alter or, if not possible, corresponding value in grain or malt or cattle hides, etc.

331 Iceland was part a of the state of Norway (and also the Norwegian Church Province) and was, like Norway, divided into judicial districts or regions, each containing a *lǫgþing*, 'moot court'. Each *lǫgþing* was led by a *lǫgmaðr*, 'lawman', appointed by the king. His primary function was to inform the "lagrettemenn", judicial assessors, respected men who had sworn a specific oath and gained the right to serve on a lǫgretta (*dómr*), a jury of the *lǫgþing*, about the parts of the law relating to the specific juridical matters and cases put before them.

332 DN II, No. 298.

333 DN IV, No. 348, 03.10.1349. Brief note on the document's reverse side: "Bref firir jærdum Sebastianis altaris." [Document on the land of St. Sebastian's altar.] The sources show that the peasant holding of Sinsen later was owned by the St. Sebastian Altar. See *Biskop Eysteins Jordebog* [*Bishop Eystein's Cadaster*] 1879: 281. Cf. Bull 1922: 270.

gifts or endowments to Oslo's churches in the Middle Ages in which the townsmen of Oslo acting as a community, established an altar in a church. It is also the only time the townsmen of Oslo donated land or money for the purchase of land to be donated a church or an altar in a church.[334] In other words, it is a very strong piece of evidence of very special circumstances which were perceived as so menacing or overwhelming, or both, that the townsmen for the first and only time had acquired the common clear view that they had to make a substantial collective effort to gain God's compassion.

It takes time to establish an altar: money should be collected, a suitable place in the cathedral should be identified and suitably equipped, a statue or image of the saint, altar cloth, candlesticks, and other paraphernalia had to be acquired. The operation of the altar should be durably financed by purchase of peasant holdings or portions of peasant land from which the rents were payable to the prominent men in charge of the altar. A considerable amount of money to buy peasant land was in hand at the latest by 20 February 1349. Quite likely, much was ready by the time of the saint's feast day, 20 January. All these facts indicate the autumn or perhaps rather the late autumn 1348 as the time decisions to this effect were made.

St. Sebastian was not a random choice of patron saint. According to the legend, he suffered martyrdom under Emperor Diocletianus's persecution of Christians in the years 303–311 CE. He was bound naked to a tree and used as a target by archers who miraculously did not succeed in killing him in this way, so they had to whip him to death instead. In the *Old Testament*, Jehova punishes human beings with plague or terrible epidemics. In the typical language of the OT, Jehova's punishment of human beings in the form of a terrible epidemic is expressed as if they were being hit by arrows from above. Correspondingly, the arrows shot at St. Sebastian were perceived as plague arrows against which he had demonstrated his saintly powers of resistance and, consequently, his gift as a protector saint against plague. St. Sebastian was therefore early called upon for protection against epidemic disease. Under the Justinianic waves of plague (540–767 CE), he was established as the most important patron saint against plague.[335]

At the basis of all this lies the medieval notion that one could achieve God's help by praying to holy men and women or Virgin Mary to intercede on their behalf. A heavenly host of saints came into being which were specialists on performing the wishes expressed in intercessory prayers in relation to special problems of life. They covered the whole range of earthly problems from obstetric difficulties to (specific) contagious diseases or chronic diseases; they were patron saints of members of dangerous occupations such as sailors or soldiers, against sudden death so that one would not die without the last rites and suffered perdition for this reason. There were local saints and saints who enjoyed international veneration. Saints who provided

334 Nedkvitne 1991: 336.

335 Lavold 1997: Chapter 3.

protection against disease or specific diseases played an important part, because contagious diseases and chronic diseases flourished and the prevailing causal explanation of disease was that it was God's punishment for sin. Such punishment could be meted out both to individuals, towns, local societies or entire countries. According to this view, the only efficient countermeasure was to address with a contrite heart and heartfelt penitence a strong saint with good connections to God and ask him to intercede on your behalf.

In the autumn of 1351, many people knew that the board of St. Sebastian's alter in Oslo's cathedral had great means at their disposal. When Nonneseter convent in Oslo was in dire straits at the time, the abbess addressed them. With pre-emption right for the mortgagees,[336] she mortgaged a big expensive holding, namely Sinsen, which at the time was situated in Aker hundred just outside the town, for the very considerable amount of 94 marks and 3 øre.[337] It seems quite likely that the altar under the ravages of the Black Death in Oslo had been showered with testamentary gifts from persons who panicked at the mass mortality raging around them. They pinned their only hope on St. Sebastian's intercession, if they showed him sincere heartfelt confidence with both prayer and money for his altar. The Reverend Canon Arne Ketilsson, who is mentioned in the sources in the years 1349–1353, donated a hostel to St. Sebastian's altar. *Bishop Eystein's Cadaster,* which was written around 1390 to register the ecclesiastical properties in the diocese of Oslo, shows that properties were donated to St. Sebastian's alter in the cathedral also when subsequent plague epidemics ravaged the city.[338]

At the time, Europe had not been visited by plague for 600 years, altars for St. Sebastian were unusual in Europe's churches. However, when the plague raged in the southern Netherlands ("Belgium") from the summer of 1349, great crowds of people of all social classes streamed to St. Peter's monastery in the province of Hainault, because it had become known that relics of St. Sebastian were kept there. Relics were usually skeletal remains, but could also be clothing or other objects that purportedly had belonged to the saint and therefore, according to the notions of the time, should have miraculous power. Abbot Gilles di Muisis of the monastery St. Martin in Tournai in south-western Hainault wrote a chronicle in which he wrote a prayer to St. Sebastian in August 1349. This prayer was used against the high plague mortality there (the Black Death broke out at the beginning of July). This year, people streamed also to the Abbey of St. Medard in the city of Soisson in north-western France that also contained relics of St. Sebastian. In the summer of 1350, an altar for St. Sebastian is mentioned in Deventer (situated on the border between the provinces of Overijssel and Geldern) in the northern Netherlands.[339] This reference should be seen in the light that the

336 I.e., the right to purchase before other customers.
337 DN IV, No. 354, 11.18.1351.
338 Bishop Eysteins Jordebog 1879: 281.
339 Lavold 1997: 74-75.

Black Death broke out in the city early in the spring of 1350 and continued into 1351.[340] It can so far not be determined whether the altar was old or had been established on the eve of the plague or under it. A Scottish chronicler wrote immediately after the Black Death that masses to St. Sebastian were the best countermeasures against the plague.[341]

The decision to establish an altar for St. Sebastian in Oslo in the late autumn of 1348 is thus a surprisingly early example of this specific countermeasure against the Black Death. Actually, it cannot so far be excluded that it was the first measure against the Black Death based on the knowledge and belief that St. Sebastian was the right patron saint to prevent God's punishment in the form of plague. The townsmen of Oslo must have become absolutely certain that they now lived in extreme danger of plague. Because the altar was established in the cathedral and a canon plays a prominent part in the document on the property transaction, it may appear that they have asked the leading ecclesiastics at the cathedral for advice. After the bishop, the canons were the most prominent ecclesiastics in the diocese and had often studied theology at universities abroad. They constituted the cathedral's Chapter of canons which functioned as the bishop's council and the highest administrative body of the diocese. Each of them had at their disposal a substantial portion of the landed property owned by the diocese, they were notabilities.

Several sources show that the canons invested some of their wealth in books: in the autumn of 1349, the Reverend Canon Arnulv Steinarsson endowed, for instance, by testament a number of books to the monastery of Hovedøya Island (in Oslo's harbour).[342] Small libraries are mentioned at the most important ecclesiastical institutions in Oslo, St. Mary's (royal collegiate church), St. Hallvard's cathedral, the monastery of Hovedøya Island, Nonneseter convent. Also St. Olav's monastery situated immediately north of the cathedral with direct connection with the bishop's mansion and the Canon House, had a substantial collection of books.[343] Presumably, on the urgent request of the townsmen the canons and other highly educated and book-owning ecclesiastics consulted their books, held a meeting and responded that the best countermeasure the townsmen could implement against plague was to establish an altar for St. Sebastian in the cathedral.

What could have been the basis of the learned ecclesiastics' response? In a postgraduate thesis by Bente Lavold maintains that they most likely knew the very popular and widely distributed collection of legends *Legenda Aurea*, which was written

340 With respect to information on the spread of the Black Death in Europe, see my monograph Benedictow 2004/2006, which provides a complete gathering and synthesis of all information on the Black Death's movement in time and space and, contains, thus also important clues to plague's epidemiology.

341 Ziegler 1970: 206-07.

342 DN IV, No. 350, 09.10 1349.

343 Nedkvitne 1991: 303, 293-94.

between 1250 and1280 by the Dominican Friar Jacobus de Voragine. It contains an account of St. Sebastian's miraculous power as protector against plague. At the end, he related a specific miracle against plague: a reliquary with the relics of St. Sebastian was carried in a procession in order to halt a big plague epidemic which ravaged all Italy and especially Pavia and Rome. God should have given a specific notice to "some good persons" that the plague in Pavia would not end until they had concentrated an altar to St. Sebastian. When the altar was established in the cathedral the miracle occurred, the plague stopped at once.[344] In Oslo, they did the same as in Pavia, they established an altar for St. Sebastian in the cathedral.

It was then urgently important to raise the means for a beautiful and fully equipped altar and a salary for a priest who knew how to venerate the powerful saint in a manner which could secure a highly favourable response. However, also ordinary townsmen could make their sincerely heartfelt appeal to the saint for intercessory prayer with the good Lord and ask Him to spare them, their wives and children from this gruesome killer disease. The Canon Gyrd Aslesson is mentioned in several documents relating to the economic running of the altar.[345] He was evidently a very prominent man at the diocese of Oslo. Documents show that he combined the position of canon with the position as the diocese's *officialis* or official principal in November 1351.[346] He functioned thus as the diocese's "lawman" in the court of ecclesiastical matters (*forum internum*). Shortly, later, after Bishop Salomon's death at some time in the autumn of 1351,[347], the Chapter of Canons elected him to succeed Salomon as bishop of Oslo.[348] Also the king's lawman in the royal mansion in Oslo is mentioned as representing the St. Sebastian altar, [evidently as member of the board].[349] This indicates that not only the townsmen of Oslo but also the highest representatives of the king and the Church had engaged strongly in the undertaking to establish an altar for St. Sebastian in the cathedral. This reveals much about the extraordinary importance attributed to this measure.

Another urgent question arises: is it really possible that these people would organize such a huge effort only on the background of what they knew about the events in England, if they had not found themselves directly confronted with a concrete gruesome menace? Taken together, do not these (re)actions imply that terrible news had spread as fire in dry grass? The Black Death was among them! Some people had suddenly been gripped by fulminating fever, shortly later, painful buboes had grown

344 Lavold 1997: 75.

345 DN II, No. 298; DN IV, 354.

346 DN No. I, 329 (with corrections in DN VIII, p. 180), 11.05 1351; DN IV, No. 354, 11.18 1351. The official principal exercised the Church's legal right to settle lawfully juridical disputes between clerics and between the bishop and his subordinate ecclesiastics in its internal court of law (*forum internum*).

347 Bishop Salomon is last mentioned alive in August 1351. DN IX, No. 150, 08.23 1351.

348 DN II ,No. 313, 09.21 1352.

349 DN II, No. 298.

in the groin or on the thigh near the groin or in the arm pits or on the neck. They died in a few days; some had begun to cough up blood and had died briefly afterwards. The most likely comprehension or interpretation clearly seems to be that the Black Death had arrived with a ship quite late in the autumn. After having raged among rat colonies, the disease had emerged dramatically among the population, persuading the townspeople that hasty and determined action was absolutely necessary. As often occurred, especially in the mountain areas of Central Europe and in the northerly parts of Europe, winter arrived and suppressed the incipient epidemic. The disease retreated into the rat colonies and smouldered there until the advent of spring with warmer weather reinvigorated it.[350]

The subsequent epidemic events in Norway will now be presented. It will then be important to examine the pattern of spread of the Black Death in Norway the following year. Within this pattern of events, possible evidence which may corroborate or support that the Black Death arrived in Oslo quite late in the autumn of 1348 will be in the focus.

2.7 The Black Death Conquers Østlandet [the "East Country"] in 1349

There are quite few sources to the outbreak and spread of the Black Death in Østlandet in 1349. Some are unclear or extant as the products of serial transcripts and with numerous scribe's errors that have accumulated over long time. It is like solving a puzzle where only a few bits are known that can be put together but, nonetheless, in a way that gives some main features of the larger puzzle. And it must not be possible to put them together in an alternative way which gives the outline of a different picture that is also compatible with what we know about the plague's epidemiology and the society in which the Black Death spread.

One type of bits of sources is found in documents from the years after the Black Death. Much in the same way as the older generation which lived through the Second World War dated events roughly by stating that they should have occurred before or after the "War", contemporaries referred to the Black Death as the great epochal divide and turning point of their lifetime. A few years after the plague ravaged the region, for instance, a document issued by seven men on the farmstead Berg in the Øvre Eiker hundred, around 70 km south-west of Oslo, contains, among other things, the following information: three witnesses stated under oath that the late Thorstein, the peasant who had held Lunde in Eiker, owned three-quarters of a mill and a mill waterfall and that Arngjerd, his wife, owned this after him until she died in the "summer

350 See above: Chapter 1, 3.2, point (4); Chapter 2.1.

of the Great Mortality".[351] This must mean that the outbreak of the Black Death in the inner Oslofjord area started in May or around 1 June at the very latest, in order to have sufficient time to spread so far and in such a manner that this form of dating would be readily understood by the three witnesses and the seven issuers, and presumably all who read the document. The time frame for the plague's process of development of an epidemic of bubonic plague from contagion is introduced into a local rat colony and it assumes an early clear epidemic form is, as mentioned, 39-40 days or nearly 6 weeks. This indicates that the contagion must have been in the country in mid-April at the latest. Because transportation by ship from England must have taken about a month,[352] this implies an unrealistically early time of departure of the ship in relation to the shipping season. Thus, the source can be taken to strengthen the assumption that the Black Death had come ashore in Oslo in the late autumn of 1348. However, because this piece of evidence is not specifically dated, this interpretation depends on that it is not at variance with other sources.

Also in the case of the small cathedral city of Hamar, located around 130 km north of Oslo, a source provides a clear indication that the Black Death must have spread in the inland of Østlandet [inland south-eastern Norway] during roughly the same period. The source is the history of the episcopal city of Hamar which historians usually call *The Chronicle of Hamar* [*Hamarkrøniken*], but the original title is *Om Hammer = On Hamar*. It is written in the 1540s [now redated to after 1553] by an unidentified man who had free access to the diocesan archives,[353] which were destroyed in 1567 under a war between Sweden and Denmark-Norway. The fact that it has a broad documentary basis makes it an important and interesting source. Problems arise, however, from the fact that the original was lost so early. *The Chronicle of Hamar* is known only in the form of transcripts from the 1600s and 1700s, they are transcripts' of numerous transcripts over long time and is, as other sources with this background, unavoidably affected by scribe's errors which were passed on and accumulated by successive scribes. Fortunately, the Chronicle is available in an edition with erudite and detailed comments by Professor Gustav Storm. He has also written a long paper on it in *Historisk tidsskrift* (*HT*).[354] In the present context, this is important precisely because the information on the Black Death has been affected by a scribe's error. It must also be understood against the backcloth of the author's manner of working. In the text that relates about the Black Death, the following account is given (in cautiously modernized Norwegian [and, in this version, translated into English]):

> In King Håkon's [V's] time [1299–1319 CE], then were almost all new cleared crofts both in Nes [hundred] and in other localities given under Hamar's [cathedral] Chapter, the See [of Hamar]

351 DN III, No. 298, 01.22.1359.
352 Steen 1934a: 227.
353 Storm 1895: 36-39; Pettersen 1986: 16.
354 Storm 1890: 113-140; Storm 1895: 24–41.

> and the community of canons, and at that time they were at the top of their vitality. However, in the Great Mortality they were deserted for the reason that there was none who could settle on them, so severely were the people killed off, which occurred Anno Domini MCCL, and started here in Norway Nativitatis Mariae and continued to All Saints' time.[355]

Here the Black Death is dated to the year 1350 and temporally determined more accurately by references to feast days of saints, it began on 8 September an ended on 1 November. It is, of course, impossible that the Black Death in Norway should have lasted only for two autumn months. Presumably, with the expression "here in Norway" the author had Hamar and the surrounding areas in mind or perhaps the area of Hedmarken more generally (comprising also the hundreds of Ringsaker, Løten, and Stange), and that it was in this area he meant that it lasted from 8 September to 1 November.

It is evidently impossible that the Black Death should have started deeply in the interior of the south-eastern Norwegian inland, in Hamar or thereabouts. It must have come from a port of importation on the Oslofjord. Oslo comes in the focus as the nearest port and linked with Hamar by one of the main communication lines of the time, the track from Oslo to Nidaros. Several basic problems must be clarified in order to gain a more accurate understanding of the Black Death's outbreak and spread in time and space in Østlandet.

Also the year 1350 is not credible. Storm, the editor of *The Chronicle of Hamar*, and other historians point out that it must be erroneous.[356] Errors of years of dating and other numbers occur often in medieval documents, because they are easily miswritten with Roman numerals. There are several other instances also in *The Chronicle of Hamar*, also with the dating of the Black Death. In the oldest transcript (available to Storm), which served as the basis for the edition, namely the A-manuscript of 1633, the Black Death is dated to "MCCL", i.e. 1250.[357] Here the scribe has lost a C, a frequent type of error with numbers in Roman numerals which often comprise series of the same letter(s). Letter numerals are also easily fused under the process of writing. For instance, the crucial figure here, 49, is usually written in Roman numerals as IL: the scribe starts to write an I, but only a moment of inattentiveness is enough for the hand to glide into the foot of the L and the error has been made.

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355 *Om Hammer* 1895: 136. My translation from (late) Middle Norwegian.

356 Storm's edition of *On Hammer* has a double set of footnote apparatuses. One set follows the ordinary usage where the footnote is indicated by a superscript the running text and refers to variants of the texts and commentary. Another footnote apparatus is placed above the textual footnotes. It contains other types of comments and refers to the numbering of the lines of the running text on the page. In relation to the textual passage on the Black Death, Storm makes the following comment to line 20: "[1350] more correctly 1349". See also Storm 1890: 136, and Storm's editorial comments on the dating of Bishop Guttorm of Stavanger's death in *Obituaria*, in: *Monumenta historica Norvegiæ* 1880: 197, n. 5. See also Kolsrud 1913: 235; Taranger 1915: 91, Benedictow 1992a/1993/1996a: 83-84.

357 *Om Hammer* 1895: 136, n. 16.

In olden times, the importance of meticulous accuracy was also not so strongly emphasized as in modern society. In classical humanist education, grand rhetorical style and moralizing content was more in the focus. The problem of inaccuracy is found in the writings of chroniclers all over Europe. Many chronicles that provide information on the Black Death's beginning in southern Germany must, for instance, be re-dated by a year. The Russian chronicle(r)s disagree so strongly whether or not the Black Death raged in Pskov and Novgorod in 1351 or 1352 that the question must be resolved on different premises.[358] The primary Danish source to the Black Death the *Chronicle of Zealand* [*Sjællandske Krønike*], misdates the year of the Black Death in Denmark. "Strange it is", Professor Erik Ulsig writes in a long article on the Black Death in *Historisk tidsskrift* [Denmark] in 1991, "that the Chronicle of Zealand which was written at the end of the 1350s misdates the plague".

King Magnus (Eriksson) of Norway and Sweden relates in a circular letter written in western Sweden in late September 1349 that plague rages "all over Norway".[359] Obviously, the Black Death was not present in Norway in the late spring and summer of 1350, when the king stayed comfortably in this country,[360] while the Black Death raged in Sweden.[361] The year 1350 will be discussed in more detail below, when society starts to recuperate after the disaster of the preceding year.[362] [See also below Chapter 3, and especially Chapter 4 and Chapter 5, where Kåre Lunden's peculiar objections, to say the least, are commented on.].

With respect to the dating of the Black Death to the months September-November the author's technique of dating must be taken into account. The author provides, for instance, a list of bishops of Hamar and the time they had ruled. Storm points out that the dates do not relate specifically to the bishops' year of death or period in the cathedra.[363] They are taken from dating formulae in letters in the diocesan archives where bishops are mentioned.[364] The author can be seen to have used also dating formulae in account rolls and rent rolls and perhaps also copy-books of letters which

358 See Benedictow 2004/2006, or forthcoming 2nd edn.

359 With respect to the dating see *Diplomatarium Suecanum* VI 1, No. 4515, n. 1; Grandison 1885: 99. Benedictow 2002: 96-97 and n. 187 on pp. 353-54, English translation in ns. 471-472; Benedictow 2006a: 94-95 and ns. 28-30, and especially 128, n. 113, English translation in Chapters 3.2, point (3), and especially 3.3, n. 607.

360 Grandison 1885: 99–100. King Magnus intended to go to Jemtland in the Easter week on his way to St. Olav, i.e. to Nidaros. DN III, No. 271, c. 02.07 1350 (dated to 02.10 in DN, see RN V, No. 1222). If the journey was performed according to plan, he would have travelled by ship from Nidaros to Bergen where he stayed in the first half of June.

361 Diplomatarium Suecanum VI 1, No. 4515.

362 Benedictow 2002: 89-96, English translation in Chapters 3.2, point (3), and especially 3.3, n. 607.

363 The cathedra is the throne or chair of the bishop of the diocese, the church which contains it, is the cathedral (church).

364 Storm 1895: 40.

he had found in the diocesan archives.[365] This is evidently also the case with respect to the dating of the start and end of the Black Death. The earliest mention he has found was dated 8 September and the last 1 November. This must be understood to imply that the Black Death's epidemic started earlier and ended later. The epidemic process had been going on for some time before it reached a level of presence which would make it likely that the mortality would be reflected in documentary sources.

Two central Icelandic annals inform under the year 1349 that Bishop Hallvard of Hamar died in the Black Death.[366] The bishop's death provides the opportunity to identify the time of the Black Death more closely. The point of departure is the time-consuming ecclesiastical process that the bishop's death would set in motion. Firstly, a meeting of the cathedral's Chapter of Canons had to be summoned in order to elect a new bishop. Next, one had to prepare for the journey of 415 km to Nidaros for the bishop-elect with an entourage of elderly dignitaries who should travel in style and with comfort according to the notions of the time. They reached Nidaros in time to perform the solemn ceremony of consecration of the new bishop of Hamar before Archbishop Arne himself died from plague on 17 October,[367] or more accurately, before he fell ill in plague 3–5 days earlier. This gives a point in time that permits further analysis of the time the Black Death broke out in Hamar.

The journey must be assumed to have lasted at least a fortnight. On the extreme premise that the ceremony of consecration occurred on the last day before Archbishop Arne fell ill, the epidemic must have broken out in Hamar in the dying days of September at the very latest. More moderate premises indicate that the bishop of Hamar died at some time in the first half of September, that is approximately at the same time *The Chronicle of Hamar* states that the Black Death began. By including the time of incubation and the course of illness, about 6-10 days, the turn of August and September is indicated at the time Bishop Hallvard was infected. Apparently, the bishops tended to become infected quite early in the epidemic process, which indicates that it started around mid-August, and hardly later than the third week of August. Because it would elapse nearly 6 weeks from plague contagion was introduced into Hamar's rat colonies, before the outbreak entered a marked epidemic phase, knowledge of plague epidemiology and the few pieces of sources taken together indicate that the Black Death reached Hamar rather early in this period, in the first half of July. [The time of the Black Death in Hamar and problems of spread are further discussed at length in Chapter 4, in order to clarify unfortunate comments by Kåre Lunden.

Clearly, the Black Death cannot have started in Hamar but must have spread there from a port town in the inner Oslofjord area. The spread rates of plague over land in

365 Pettersen 1986: 15.

366 *Islandske Annaler* 1888: 276, 404.

367 *Monumenta historica Norvegiæ* 1880: 190, and Storm's editorial comments there. See also Chapter 2.8. Cf. Kolsrud 1913: 207.

Western and Northern Europe were, as mentioned, c. 0.66–1.5 km/day. In a sparsely settled country as Norway one would expect a spread rate in the lower reaches of this range, much like in Switzerland. However, this does not agree with the facts on the ground. The distance from Oslo, the nearest realistic port of importation, is 130 km ,and the sensitivity of plague with respect to temperature makes it difficult to suppose that the spread can have started before the first half of April. This shows that the spread rate must have reached the higher reaches of the range in order to cover the distance in 90 days.

An early outbreak would be readily possible if the contagion had been spreading slowly in the rat colonies in Oslo during the winter and the spring weather was normal. As will be seen below, according to a letter of 24 April 1548, a plague epidemic was in full outbreak in Oslo at the time [not included here]. The plague epidemic had broken out late in the previous summer and been suppressed by cold winter weather. This pattern can explain that the Black Death apparently reached Hamar in early July. An early outbreak of the Black Death in Oslo would have terrified people. Some of them would, presumably, be persuaded to go on a pilgrimage to Nidaros and St. Olav in order to pray to Norway's own patron saint to save their loved ones and all people in the country from the plague. The main track from Oslo to Nidaros went through Hamar, much traffic by pilgrims would have increased the risk of contamination.

The use of the dating formula "the summer of great mortality" in the document of Øvre Eiker hundred, and the information on the time of the Black Death in Hamar, fit nicely together. It strengthens the notion that the Black Death began to spread along the main tracks out of Oslo both southwards and northwards quite early in the spring, so early that it unequivocally indicates that the importation of contagion must have occurred at the end of the shipping season the preceding year.

Summing up the various sources and arguments so far, they underpin the argument that the Black Death was introduced in Oslo in the late autumn of 1348: only if this was the case, could the spread out of Oslo have started in April 1349. A contaminated ship from England that put to sea at the beginning of the new sailing season could not have arrived in Oslo before early May, and then a lengthy process would have followed, before epidemic spread out of Oslo could have started.

Fortunately, there are two more sources which fit in and underpin the viability of this pattern. In a document on the division of an inheritance issued some years later on a farmstead in Idd parish in Østfold [south-easternmost county in present-day Norway], two witnesses stated that they had been present on the farmstead Klepper on 25 August in the "year of mortality". Being "sound and undiseased", Thorbjørg had then given her sister Sigrid a little part of the peasant holding Søndre Remmen and a posh drinking horn.[368] The text is interesting for several reasons. It refers to the

368 DN III, No. 311.

year of the mortality, and there was a need to emphasize strongly that the testator was healthy at the end of August of this year. The distance from Oslo fits conspicuously well into the pattern outlined above. While Øvre Eiker hundred is situated on the western side of the Oslofjord about 70 km from Oslo, this locality is situated on the eastern side; the event occurred in Idd somewhat later, corresponding quite well to the longer distance from Oslo, about 100 km. Time and distance likewise fits quite well with the outbreak of plague in Hamar, especially if it is taken into account that trade and traffic were busier along the main track northwards via Hamar to Nidaros than it was southwards along the Oslofjord; and now many pilgrims were on the way to Nidaros.

There is also an interesting but problematic source relating to Toten, a district on the other side of Lake Mjøsa of Hamar. A book published in Copenhagen in the mid-1700s, renders a short notice in Latin purportedly found in a catholic missal[369] extant in the parish church of Toten on the Black Death thereabouts. In translation, it runs like this: "The plague began in the last days of September, anno MCCCL, lasted for six weeks, while it all the time had been raining."[370] The missal has since been lost, the text cannot be checked or tested, we do not know when it was written and on what it is based. We also cannot know whether or not the (mis)dating was in the original notice of the missal or was made by the author who copied it or by the publisher or printers. The problems associated with the writing of numbers with Roman lettered numerals presented above also apply in this case. At this time, texts were put together by hand letter by letter using moveable types letter by letter; in a sequence of similar letters, one letter might easily slip away. The sense of accuracy was considerably smaller than today, proofs were read quite superficially, if at all. Much can be said that to undermine the credibility of the source. However, it is not implausible that the Black Death should have lasted only six weeks in this quite large district at the time: cold inland winter weather could have started at the turn of October or early November and have forced the epidemic into retreat so that it had lost most of its powers by mid-November. This fits well with the dating given by the author of *The Chronicle of Hamar* according to his sources, that the plague thereabouts lasted until 1 November.

The information on the time of the Black Death fits remarkably well into this pattern, if we assume that the dating of the year is misdated by a year. In this case, the Black Death had spread out of Oslo along the main track which via Hadeland and Valdres, crossed over Filefjell to Lærdal in Sogn from where people could continue to Bergen by land or by boat, see Fig. 2.1. This main track had much less traffic than the main track to Nidaros via Hamar; the spread rate must be assumed, therefore, to

369 A book containing the texts used in the Catholic Mass throughout the year

370 Schøning 1754: 38. "Pestis ultimis diebus septembris hic incipiens sc. An MCCCL. sex duravit hebdomadas, qvo toto [sic] tempore perpetuo pluebat." Cf. Mansa 1873: 75. Translation below in Chapters 2.12-2.13.

have been lower along this route. In Hadeland and Land, the main track followed L. Randsfjord and there an offshoot of the Black Death was moved from the main track along small tracks and bridle paths also to Toten at a much slower spread rate. Accordingly, an outbreak in Toten at the end of September 1349 fits well into the broader context that has been uncovered.

After a proper source-critical examination, the usefulness of the information on the seasonal time of the Black Death in Toten is supported by another source. In a later document, Thorkjell Aslaksson testified that *in the autumn of great mortality* he heard Thorbjørn Thorgilsson declare that he had rented from Sigrid Thorgeirsdatter 11 laupsland land in [the peasant holding] Nedste Graneim in Ulnes parish in Nord-Aurdal (hundred) in Valdres.[371] This fits well with the Black Death's further spread along this main track after it had passed the side track used to reach Toten.

The term in the "autumn of the great mortality" is used also in another document that evidently concerns the right of inheritance of the [peasant holding] Hammar in Vågå, not far from present-day Otta and the main track to Nidaros. In the focus, was the question of when Magnhild Åsmundsdatter on Hammer died in the "autumn of the great mortality". Two sworn testimonies were given to the effect that she died on the eve of All Saints, that is on 31 October.[372] This gives a glimpse of the spread northwards from Hamar along the main track Oslo-Hamar-Nidaros in a time perspective which fits well with the general pattern of the plague's spread. The variation of spread rates along the two main tracks reflects presumably the difference in the intensity of traffic. Vågå is situated roughly 300 km from Oslo and 170 km from Hamar. This shows again that the Black Death moved along this main route with a high average spread rate of 1.5 km a day from its departure in Oslo in mid-April and passage through Hamar in the early days of July. It also shows that the average spread rate was about the same on the stretch from Oslo to Hamar and the subsequent stretch from Hamar to Otta.

The various sources that provide information on the Black Death's spread in Østlandet fit well together in a characteristic epidemiological pattern of plague. The Black Death must first have come ashore in Oslo in the autumn of 1348. It probably manifested its presence in a brief outbreak which was suppressed by cold winter weather. After having been smouldering in the rat colonies through the winter, the Black Death reappeared in epidemic form in the spring, apparently in April and hardly later than the middle of the month. This time the Black Death demonstrated a rapidly increasing intensity based on the combination of warmer weather and the preceding imperceptible spread of contagion among the rats in the town. The Black Death spread out of Oslo along the main tracks, northwards to Nidaros via Hamar, north-

371 DN V, No. 269.11 laupsland is agricultural land that yields a rent of 11 laups of butter if rented by a tenant, see above: Chapter 2.6, My italics.

372 DN III, No. 425.

westwards to Vestlandet and Bergen via Hadeland at least to Valdres, and southwards along both sides of the Oslofjord. In a document issued in Eiker, it is referred to the "summer of the mortality; in Idd, plague was apparently present or menacingly close at the end of August. Late in 1349, the Black Death had apparently spread all over Østlandet.

An Icelandic annals gives information also on the Black Death in Agder [the southernmost coastal region of Norway] which, when seen in a broader perspective seems to indicate that it had arrived with a ship from the Oslofjord area in an early metastatic leap.

It is useful first to round off the Black Death's history in south-eastern Norway. Somewhat surprisingly, it appears that the Black Death arrived in Tønsberg quite late, but it could be related to the town's strong Hanseatic connections. Suddenly, two wills are extant, from 2 and 14 November.[373] This should be seen against the backcloth that only 16 wills are extant for all Norway from the preceding decade (1339-1348), while 13 are known from the year 1349 alone. However, the distribution of the wills between the first and second half-years of the decade 1339-1348 is highly skewed, so that 10-14 of the wills were made in the first half-year, while only 1-5 wills were made in the second half-year; the margins of uncertainty are due to problems with dating. Accordingly, the average number of wills made in the first half-year in the decade 1339-1348 is 1-1.4, the average made in the second half is only 0.1-0.5. This means that the two wills issued in Tønsberg in November 1349 exceed formally statistically the average for the second half-year of the previous decade by 4-20 times

Wills are couched in a highly formal language and form, there is no specific mention of the Black Death, only statistics unveil the context. For this reason, it is not possible to make specific claims about the context of the individual will, it is all a question of statistics. When two extant wills are issued in this small town in the course of the first half of November, it seems quite improbable that it was a coincidence. This permits the inference that the Black Death now raged in the town, and that people of fortune hurried to make arrangements for the inheritance and heir(s) before it was too late.[374] According to the pace of development of plague epidemics, the Black Death would need about six weeks from arrival to reach an early epidemic form. Plague epidemics often broke out among poor people in harbour areas, while the well-off classes reacted by making their wills when the spread was perceived as menacing. Plague contagion seems to have arrived in Tønsberg at the turn of the months August and September.

In two sources, the term "the winter of great mortality" are used. They have in common that they indicate also more accurately the time and in both cases that was at the end of December. Some years after the Black Death, Jon, rector in Rollag parish

373 DN XI, Nos. 39-40.

374 With respect to discussion of the wills, see Benedictow 1992a/1993/1996a: 49-50.

(and hundred) [present-day county of Buskerud], issued a testimony on a death in the Black Death: he had been present when Ånund Helgesson died before the octave of Christmas in "the winter of the great mortality". Also Ragndid Simonsdatter, Alvald Sveinkesson, and many other good persons were present. Ånund was interred at Mæl parish church in Tinn hundred [present-day county of Telemark].[375] This shows that the Black Death, as should be expected, reached the mountain settlements last, and that people died there as late as in the last week of the year. The priest did not any longer recall accurately the day Ånund died. Rollag is, by the way, conterminous with Tinn, so that this parish priest had moved only a short distance away and undoubtedly still had good contacts with the inhabitants there.

The other source contains a statement by the juror ["lagrettemann"[376]] Audun Thorstensson: when he went to Oslo in "the winter of the great mortality", Kolbein, the peasant on Darbu (Øvre Eiker) had given him 2 øre in current money which was rent payable to a canon in Oslo. He had performed this task on the day before Christmas Eve the same year.[377] The Black Death was evidently over before Christmas in Oslo where it had started, and in the intervening areas, otherwise it is difficult to believe that anyone would have travelled voluntarily to the town.

Also a third extant source contains similar information on the Black Death's final phase in southern Norway. It relates to inheritance litigation and reflects the conditions formed by the fact that so many persons of the same family and kin group had died in a short period of time. It was often important to establish the succession or sequence of deaths, as was the case with the holding Hammar in Vågå (above). Some years later, a sworn testimony was taken to the effect that Margreta Hæth, the daughter of Jon and Disa on (the farmstead of) Nedre Kjørstad in Sandsvær hundred [presentday county of Buskerud], was alive in the Ember Days before Christmas, i.e. 16, 18, 19 December 1349, " in the year of the great mortality". She was the last surviving heir(ess) on Nedre Kjørstad. Thorunn Hallkjellsdatter stated under oath that she had stayed on Nedre Kjørstad this week before Christmas,[378] which must reflect that the Black Death then had ended, as it seems, quite recently.

This evidence shows that the expression "the winter of the great mortality" related to the "forewinter" of 1349, in these cases to the last half of December. No

375 DN I, No. 355, 07.13 1358.

376 In Norway, there were not feudal manorial courts. Courts were organized as local moots of a district or a region. The local moots could only deal with civil cases, only the regional moots could pass sentences in criminal cases. Cases could be submitted directly to the regional moot, but it functioned also as a court of appeal from the local moots in the region. A juror, a "lagrettemann", had visited the lawman and made a special oath which qualified him to serve on the jury of the regional moot of law. This was usually performed by prominent men in local societies who were also much used as witnesses and arbitrators in local civil disputes.

377 DN II, No. 478, 0.2.03 1383.

378 DN III, No. 420, 12.20 1378. The Ember Days are the three days Wednesday, Friday and Saturday following St. Lucy's day 13 December. In 1349, St. Lucy's day was on Sunday.

source indicates that anyone should have died from plague in this part of the country after New Year's Eve.

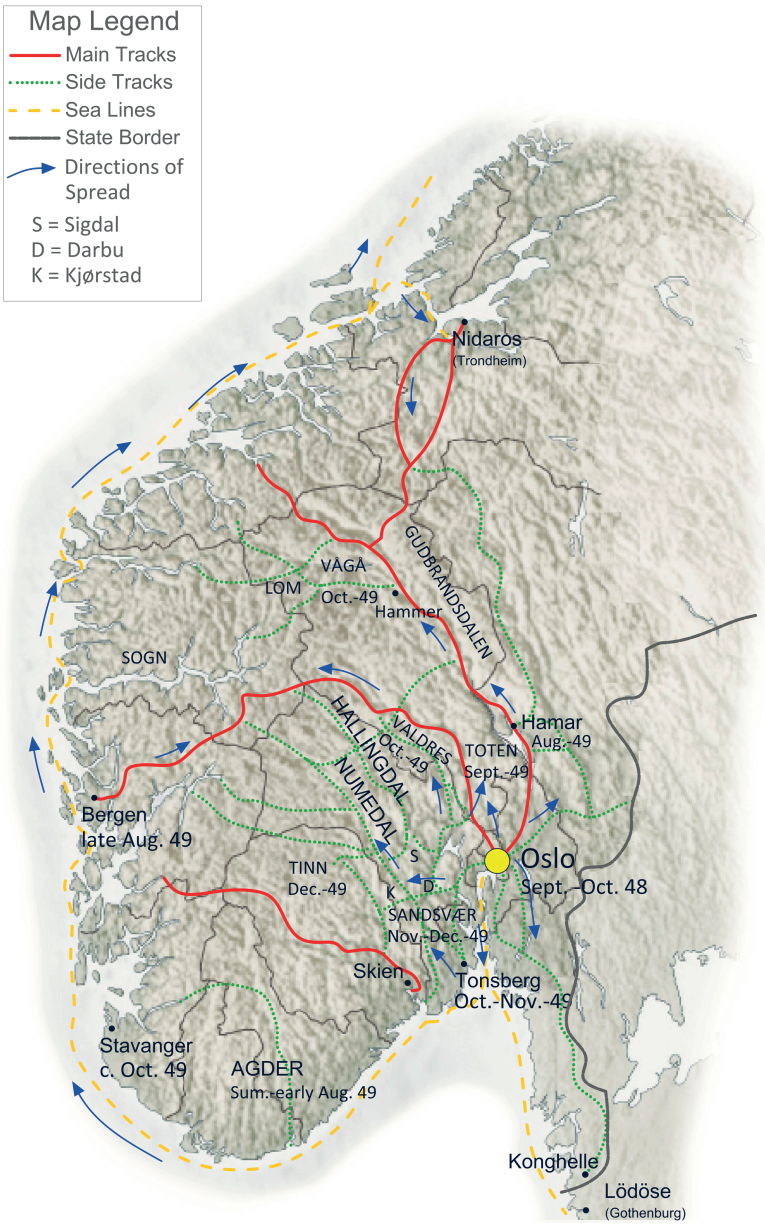

Figure 2.1: The arrival and spread of the Black Death in Norway.

This is confirmed by other sources which show that normal social and political functions had begun to recover. Among the property-owning social classes, arrangements of orderly transfers of property had top priority in the wake of the great mortality: on 20 November 1349, in the Thoragård [Thora House] in Oslo, Sigrid Eilivsdatter gave up to Kjetil Kolbjørnsson (on various conditions) all land, goods and chattels that Åsa had inherited from her brothers, the Reverend Gudmund Berdorsson, Thorstein Berdorsson, and Eirik Berdorsson.[379] In the 1600s, when Oslo had roughly recovered its pre-plague population size, plague epidemics which broke out in the summer, spread across the town before the end of the autumn (see below) [not included]. Cold wintry weather rapidly slowed down and halted the Black Death. Also this development is a certain indication that in Østlandet, as elsewhere, it was an epidemic of bubonic plague spread by rat fleas. It was not primary pneumonic plague spread by cross-infection with droplets, because, in that case, its powers of spread would not have been weakened by cold weather but, on the contrary, strongly increased.

2.8 The Black Death Arrives in Bergen

We must imagine that a sinister and frightened mood spread among people in Iceland during the autumn of 1349. The ships that had sailed to Bergen with homespun coarse woollens, dried cod, fish-liver oil, and whale blubber did not return with the vitally important cargoes of grain. And where were their bishops? Bishop Orm of Hólar who had sailed to Bergen on official business and Gyrd Ivarsson, the new bishop of Skálholt, who until then had been prior of St. John's Priory in Bergen? Why did not Abbot Thorkell of the monastery at Helgafell return from Norway? And what of the monks, Brother Hámund and Brother Thorvald, who should have returned with Thorlak's ship? Why did not any Norwegian ships arrive? Had all ships and crews, tradesmen and pilgrims, monks and bishops perished in the frothing green-blue sea?

The next summer, bishop Orm of Hólar returned to Iceland, perhaps on Torlak's ship, while Bishop Gyrd of Skálholt returned in 1351. They could tell about such a ghastly "killer disease" which had ravaged Norway that the listeners were certainly deeply shattered. This must be the reason that several Icelandic annals (≈ chronicles) provide interesting accounts on the Black Death instead of the usual brief statements that a serious epidemic had occurred in some part of Iceland or Norway. Two of the chronicles provided such detailed ecclesiastical information that the two bishops presumably are the main informants. One of the annals is called the *Lawman's Annal*,

379 DN V, No. 213.

probably because it was owned by a "*lǫgmaðr*", directly translated "lawman",[380] in the seventeenth century. It was written by Einar Hafliðason, a prominent Icelandic priest (1307–1393) who was active in his ministry and otherwise at the time of the Black Death.[381] By virtue of his clerical position, he must be assumed to have met the bishops in person and listened attentively to their accounts. In this annal, he gives the following account translated into modern English from Icelandic Norse:

> At the time [1349], such a big killer disease ("drep sott so mickil") spread all over the northern half of the world that never before had something like this occurred, since the countries were settled. The disease started in Babylon in "Serkland" [382] in Africa. Thence, it went to the "Land of Jerusalem" and Jerusalemburg [= the fortified city of Jerusalem] and desolated gruesomely the burgs [the fortified towns and cities]. Next, it went northwards across the Jerusalem Sea [the Mediterranean] and across all "Romania" [= (Eastern) Roman Empire/Byzantium] and then further northwards across the countries and to the papal city [= Avignon] [383] and the surrounding area and desolated everywhere gruesomely. The pope consecrated the R. Rhône [which runs through Avignon] and dead people were thrown into it [...] Then, the disease went across all of France and Saxony[384] and then to England. Almost all of England was depopulated, as a proof of that not more than 14 people survived in the city of London.
>
> At that time, a cog sailed from England with many people on board and it put into the bay [of the harbour] of Bergen, and a little was unloaded. Then, all the people on the ship died. As soon as the goods from this ship were brought into the town the townsmen began to die. Thereafter, the disease swept all over Norway and wrought such havoc that not one-third of the people survived. The English cog sank with its cargo and the dead men, and was not unloaded. More ships, cargo vessels and many other ships, sank or drifted widely around. And the same disease spread across the Shetland Ilands, the Hebrides Is., the Orkney Ilands, and the Faroe Ilands.
>
> That was the sort of the disease that people did not live more than a day or two with *sharp pangs of pain*. After that they began to vomit blood, and then the spirit lef them. From this disease expired Archbishop Arne and all canons of Nidaros [cathedral], with the exception one who survived, named Lodin. He arranged an election, appointed Abbot Olav of [Nidar]Holm monastery archbishop. Likewise died Bishop Thorstein of Bergen. Likewise died Bishop Guttorm of Stavanger. Bishop Hallvard of Hamar also expired at the time. This disease did not come to Iceland.[385]

Historians must relate to chronicles with great scepticism and armed to their teeth with source criticism and knowledge of contemporary people, culture, and societies.

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380 For the meaning of the term "*lǫgmaðr*", in direct English translation "lawman", see above: Chapter 2.6, n. 331, Chapter 2.7, n. 376.

381 Larússon 1958: 529-30; Larússon 1966: 135-36.

382 "The country of the Saracens" = the land of the Arabs.

383 "Pavegard" could either mean the Papal city (cf. the Norse place name Miklagard for Constantinople) or the Papal Court, i.e. the Papal Curia. Both expressions refer here to Agivnon where the popes now had been residing for several decades, including the ruling Pope Clemens VI.

384 "Saksland", the land of the Saxons = Germany.

385 *Islandske annaler* 1888: 275–276.

Chronicles contain often substantial and useful information, but often mixed up with erroneous assertions, high-pitched rhetoric and partial views. The sense of accuracy and realistic numerical estimation are quite generally small. Even a cursory reading uncovers that the main part of the Icelandic annals' account of the Black Death's origin and spread is wrong. The author's knowledge of geography, living in a small island far up in the high North of the Atlantic Ocean, was very deficient. Babylon was situated in Mesopotamia, which today is a part of Iraq and not in Northern Africa. It is far less erroneous to maintain that the Black Death ended in Mesopotamia than that it started there.[386] The point of departure of the Black Death in Northern Africa and the Middle East was Alexandria, which had been infected in the autumn of 1347 by a ship from Constantinople that had been contaminated in the spring of 1347 by Italian ships that had fled from Kaffa.[387] The Black Death did not come to England via Germany where the southernmost parts were invaded in the spring of 1349.[388] Instead, it arrived in England about a year earlier from Bordeaux in Gascony in south-western France and not via Rome, but via Marseilles, the original port of importation of plague in this region (see above).[389] It is obviously a tall story that only fourteen people survived in London. Around 20% of all people diseased by plague survive; even if every inhabitant of London was infected, 12,000-16,000 inhabitants would have survived.[390]

However, at the point where Einar Hafliðason's account shifts to events in Bergen and Norway it acquires a far more trustworthy character, albeit with a couple of reservations. Modern knowledge of plague's epidemiology and process of development in local societies means that people in Bergen cannot have begun to die as soon as some of the cargo aboard the cog from England was moved up into the town. This

386 [Recently, I discovered that I may not have been entirely fair with to Einar Hafliðason. Gabriele de Mussis did certainly not relate in his chronicle that the Black Death originated in Babylon. However, in his wide-ranging account of the Black Death's spread from Kaffa, he also gives a graphic description, purportedly based on "Saracen" accounts, that, in the "city of Babylon (alone) the heart of the Sultan's power, 480,000 of his subjects" died from the disease in less than three months. "This is known from the Sultan's register, which records the names of the dead, because he received a gold bezant for each person buried." Horrox 1994 20-21. Also in this case, many parts of de Mussis' account are obviously gross exaggerations typical of the classical rhetoric style, the imaginings and hopelessly inaccurate quantifications of medieval chroniclers. His reference to Babylon, could, however, be to the medieval town of Bābalyūn outside Cairo, now part of south-eastern Cairo called the Old City. The purported population loss and the reference to the Sultan make it clear that the city in question was Cairo, where the Black Death certainly did not originally break out, but entered it at a time in the summer or early autumn of 1348 which produced the height of intensity at the end of the year. Benedictow 2004: 66. However, However, Cairo is much closer to Alexandria where the outbreak in North Africa started than Babylon in Mesopotamia, and, is, in this limited respect, less erroneous.]

387 See Dols 1977, and Benedictow 2004: 60-65.

388 My recent research shows that southern Germany, especially Bavaria, was invaded in the summer and autumn of 1348. See forthcoming 2nd edn. of Benedictow 2004.

389 Benedictow 2004/2006: 96-131.

390 Smith 1991: 50-51.

assertion must be rejected: it does not take into account the epizootic process in the rat colonies, period of incubation or duration of illness, and the slow development of the incipient endemic and epidemic process. It must be correct, however, that the Black Death in Vestlandet first arrived in Bergen. New information on the Black Death's spread in Europe in 1349[391] makes it highly probable that it came to Bergen from England and with an English merchant ship, as the reference to the cog from England implies. The information on the fates of the Norwegian bishops is entirely correct, they had all died with one exception, namely Bishop Salomon of Oslo, who is the only one not mentioned. The sources relevant for discussing the information about Canon Lodin will be presented and examined on in the following chapter.

The clinical description of the disease is quite good for its time. For two reasons, buboes are quite often not mentioned or explicitly referred to in medieval sources: (1) contemporary clinical descriptions are not based on modern physical examination of patients, buboes develop often in the sexually and morally sensitive area of the groin. Instead, (2) buboes are referred to with quite a shy indirect and suggestive choice of words, particularly by ecclesiastics, as in this case. It is common to mention terrible piercing pain corresponding to modern medical descriptions of plague buboes as exquisitely tender or causing intense piercing pain by touch or movement of associated limbs. When M.G. Block, the Swedish physician, in 1711 published a booklet on his observations and experience of the plague epidemic in Norrköping in the years 1710-1711, he provides also interesting proto-scientific clinical descriptions which should serve as a base for certain identification of the disease. The two first points are: "(1) a sharp piercing pain everywhere in the (lymph) nodes, especially in the arm pits and the groin; (2) buboes in the same locations".[392] Michael Platiensis (Michaele da Piazza) gathered information on persons infected by the Black Death in Sicily in the autumn of 1347. He relates that the characteristic features of plague were growth of buboes and swollen (lymph) nodes concomitantly with profuse coughing up of phlegm (mucus) followed by death followed three days later. The next year, the Black Death raged in Piacenza in northern Italy. Gabriele de Mussis noted that plague patients first displayed freezing fever and shivers and felt a piercing pain as if they were hit by arrows. After some time the diseased began to "spit blood", i.e. cough up bloody phlegm from the lungs.[393] In the parish of Ullensvang [in Hardanger, Vestlandet] a history was told much later about a maid on the peasant holding of Åkre who under the plague epidemic in 1600 returned from the shieling[394] one night, put down the milk bucket and said: "Now the plague stung me!" The next day she was

391 Benedictow 2004/2006: 68-208, and Map 1: xviii-xix. See also Fig. 1.

392 M.G. Block 1711: 21. My translation from Swedish.

393 Benedictow 1992a/1993/1996a: 71-72.

394 Habitation and shelter for domestic animals associated with the use of mountain pastures in the summer and early autumn.

dead.[395] Also here it is referred to the intense initial piercing pain caused by plague infection of a lymph node.

Einar Hafliðason's description of the course of disease is more inaccurate, but indicates quite clearly that the disease's first phase with infection of lymph nodes and the growth of bubo(es) lasted a day or two. Then, followed a short, dramatic final phase with bloody expectoration, which ended by death. As in the case of Michael Platiensis's account, a normal duration of the course of illness of three days is indicated, which is quite usual for bubonic plague (but not for primary pneumonic plague). This is corroborated in a relatively independent and good Icelandic annal which is called *Annal fragment of* [the Sea of] *Skálholt*, because it was kept there in the seventeenth century, but was written somewhere in northern Iceland. This annal informs that the bloody expectoration developed after three days of illness, then, death followed quickly.[396] As usual, the significant incidence of secondary pneumonic plague with dramatic bloody cough caught the attention of observers at the cost of other more usual aspects of the course of illness, but it is correct that such patients almost invariably die. However, this is not correct for cases of bubonic plague more generally, because a significant proportion of around 20% recovers. Taken together, Einar Hafliðason provides useful and interesting information, but we would like to have got much more knowledge, even the time of the outbreak in Bergen is not mentioned.

The other Icelandic annal which relates quite informatively about the Black Death in Norway is *Gottskálk's Annal*, written by Gottskálk Jónsson, a cleric living from 1524 to1590. Also this annal is preserved in original, but is not contemporary with the Black Death, as is the case with the *Lawman's Annal*. This does not, however, affect its usefulness as seriously as it might seem at first glance. Including the year 1394, *Gottskalk's Annal* is a transcript of a lost annal from the end of the 1300s. For its account of events up to the middle of the fourteenth century, the lost annal built in its turn on older annals and sources, and this is fortunately the case with the account on the Black Death in Norway:[397]

> A large killer pestilence came to Norway and Shetland. Then died Dominus Archbishop Arne and Abbot Thorkell [Einarsson] of Helgafell [a monestary in Iceland]. Seven parishes in Agder [coastal region in southern Norway] were desolated in a short time. The bishop of Stavanger sent there many priests and deacons and retainers, and they all died hastily. The loss of life in Bergen was so great that eighty corpses came to one church on one day, and among them were thirteen priests and six deacons. Died [the priests] Dominus Bjarne and Dominus Peter and Dominus Olaf. Died Bishop Thorstein of Bergen, Bishop Guttorm of Stavanger, Brother Hámund, Brother Thorvald, Runolf '*anima*' and many other men on Thorlak's ship so that she could not go to Iceland.[398]

395 Hertzberg, *Oldtidsminder*, Manuscript, p. 22.This episode is related also in Kolltveit 1963: 330.
396 *Islandske Annaler* 1888: 224; Storm, Forord 1888: xvii–xx.
397 Benediktsson 1960: 405–406; Storm, Forord 1888: xxv–xxxii.
398 Islandske Annaler 1888: 354.

Gottskalk's Annal contains detailed ecclesiastical information, especially in view of the relative paucity of sources to the Black Death's history in Norway. The information on the events in Agder and the Diocese of Stavanger will be discussed in Chapter 2.10 below.

The three named ecclesiastics could be from the Bergen area, two parish priests by name Bjarne and Peter, and the Canon Olav are mentioned in earlier documents,[399] but no clue is given as to why just they should be mentioned. Also Icelandic clerics are mentioned who were aboard the Icelandic ship which did not manage to cast off from the quay before the Black Death broke out on board: two Icelandic monks are mentioned, also Runolv, a parish priest in Skálholt diocese with the Latin word for soul, *anima*, as a flattering epithet.

The account gives a strong impression of the havoc wrought by the Black Death in Bergen. Catastrophic mortality among the parish priests and their auxiliary priests everywhere in the Diocese of Bergen is corroborated by the fact that the new bishop of Bergen wrote a letter to the pope in 1351 where he stated, among other things, that the plague had voided the diocese of "priests and clerics". In order to remedy this untenable condition, which made it impossible to administer to the inhabitants the absolutely necessary priestly services for their salvation the pope granted the bishop of Bergen permission to exempt from the provisions of canon law the requirements of regularity of birth [i.e. born within marriage] and age, 10 men who had been bred either by two unmarried parents or by a priest and an unmarried woman, and 10 men who were 20-25 years old. These young men could be ordained to all orders or ecclesiastical offices, also with cure and spiritual guidance.[400]

The number of corpses purportedly brought to the same church on the same day refers presumably to the Cathedral's parish, because the Cathedral's parish was by far the most populous Norwegian parish in the city (there were also two German congregations), and can explain the high number of clerics among the dead. On a more general basis, there is reason to doubt that so many priests and deacons died on the same day, they were not so many of them. Although a certain accumulation of unburied corpses of clerical personnel may have occurred due to the special rituals and ceremonies which were required for the burial of ecclesiastics, the general rules about rapid interment of the dead applied. This does not mean that the carnage among ecclesiastics was not disastrous.

Scepticism is called for also with respect to the number of deaths more generally. Bergen is assumed to have had about 7000 inhabitants at the time. On the same day, 80 corpses or slightly above 1% of the inhabitants should, according to this annals, have been brought to one of Bergen's parish churches for interment, presumably, as mentioned, the Cathedral's parish. The number seems unrealistically high also if a

399 See Index of Names in RN V, 452, 488, 486.
400 DN VII, No. 230a, 07.18 1351.

substantial proportion of the clerics are subtracted as having died elsewhere in the city. The number of deaths in the Cathedral's parish during the plague epidemic in Bergen 1565-1566 is known by day. At the time, Bergen had probably around 5500 inhabitants. About 40% of the population died (see below) [not rendered here]. However, at the peak of the epidemic not more than 15 corpses were brought to the cathedral for interment, only a small fraction of the 80 corpses which purportedly arrived at the cathedral on one day in 1349. When the plague was at its peak, the highest number of corpses brought to all parish churches in Bergen, Norwegian and German, on the same day was 26. Even if the high proportion of clerics is discounted, it does not significantly affect the reason for scepticism.

The account of the Icelandic ship that was moored along the quay in Bergen ready for return voyage whose crew was so severely hit by the Black Death that the voyage had to be cancelled, can explain why the Black Death did not reach Iceland. However, it does not give the whole or explanation. Iceland should purportedly have been ravaged by plague twice, at the beginning and end of the fifteenth century. Because it has been shown that these epidemics cannot have been plague,[401] plague never reached the island. This means that crews and passengers on a ship which set sail for Iceland with plague on board, would be so severely ravaged that the voyage ended in a ship wreck.[402] This is in general terms also mentioned by Einar Hafliðason in the *Lawman's Annal*, that many ships "sank or drifted widely around". Long voyages with plague aboard were impossible at the time. From Columbus found the sea route to America in 1492 until the plague disappeared from Europe, that is, in the course of 200 years, no ship plague on board reached America. For the first time, this occurred with a steamer arriving in San Francisco in 1900.

Both annals are silent with respect to events in eastern and northern Norway, they relate mainly to Bergen. This is characteristic for Icelandic annals and reflects that the Icelanders had their commercial, ecclesiastical and social contacts with Bergen and, to some extent, with ecclesiastics in Nidaros and Stavanger. Generally, they knew little about events in eastern Norway. The next wave of plague in 1360, which was limited to south-eastern or more generally southern Norway is not mentioned in any Icelandic annal. This aspect of the Icelandic annals is the reason that the Black Death's arrival and spread in this part of Norway must be explored on an independent basis.

The two annals have nothing to say about the time of the outbreak and spread of the Black Death in Bergen, except, indirectly, that it arrived in the shipping season. Unfortunately, there are few sources which permit encircling the time of the Black Death's outbreak in Bergen. Kolsrud's statement that Bishop Thorstein of Bergen is not mentioned after 8 September, which should indicate that he died shortly afterwards, is, unfortunately,

401 New thorough research on these Icelandic epidemics has shown beyond reasonable doubt that that they cannot have been plague. See Benedictow 2010: (493-)502-514(-553), and Chapter 10 below.

402 See Chapter 10 below.

not correct.[403] He is not mentioned in any source on 8 September, the last time was on 13 March.[404] The Icelandic annals provide the crucial evidence, that he died in the Black Death and that his successor had been confirmed. This information shows that Bishop Thorstein died in the Black Death at a time which permitted the cathedral's Chapter of Canons to convene, elect his successor (Gisbrikt Erlandsson), send representatives by ship to Nidaros and obtained his confirmation from Archbishop Arne before he fell ill by plague c. 13 October (died on 17. October). This suggests that Kolsrud's indication of the time Bishop Thorstein's died was not far off the mark, albeit fortuitously.

The notion that the Black Death was in full outbreak in Bergen in the first half of September is also supported by three last wills issued by diseased persons, two on 19 September and one on 26 September.[405] As shown above in connection with the Black Death in Tønsberg, this is statistically highly significant: from the preceding decade (1339-1348), 16 wills are preserved from all Norway, i.e. on the average 1.6 per year, now 3 extant wills were issued in a few days. However, the distribution of the wills between the first and second half-years of the preceding decade, 1339-1348, is highly skewed: 10-14 of the wills are made in the first half-year, while only 1-5 of are made in the second half-year; the margins of uncertainty are due to problems with dating.[406] Accordingly, the average number of wills made in the first half-year in the decade 1339-1348 is 1-1.4, the average made in the second half is only 0.1-0.5 This means that the two wills issued in Bergen in September 1349 formally exceed the statistical the average for the second half-year of the previous decade by 6-30 times.

Huge upsurges in the number of wills are known also in England and on the Continent where probated wills were recorded quite systematically by notaries at the time.[407] [Wills and donations to religious institutions were thoroughly studied with respect to Denmark and Sweden in much the same time perspective and presented in my monograph on the Black Death. They showed the same great upsurge during the Black Death according to a clear territorial pattern of spread. In the case of Norway, similar evidence was produced on the basis of Norwegian sources in my doctoral thesis. All Norwegian sources to this topic are (presumably) presented and discussed in great detail in Chapter 4.[408]] The estimated increases based on small local evidence, are therefore credible and useful evidence of outbreaks of the Black Death in these localities at the time. Because the upsurges are so strong and consistent, they are not strongly dependent on the assumption that the loss rate of wills made at the time of the Black Death was about the same as for wills made during the preceding decade.

403 Kolsrud 1913: 224.
404 DN XVI, No. 9.
405 DN XII, Nos. 99-100; DN V, No. 212.
406 Chapter 2.7 [See also Table 4.2 and Table 4.4.]
407 See, for instance, Benedictow 2004/2006: 106, 135-37, 197-98,
408 Benedictow 1992a/1993/1996a: 48-52; Benedictow, 2004/2006: 165-68, 172-77, 158. See above: Chapter 2.7.

Obviously, only a few of the wills made in the sinister shadows of the Black Death are extant today. For this reason, it is unlikely that the wills of 19 September were among the earliest in Bergen. The two persons who made their last wills on this day informed that they were diseased; they were, accordingly, probably infected 14-16 September, which indicates that the Black Death had entered the area and habitations of the upper classes at the time. However, it is unlikely that this was the first social class to be hit. Upper-class people started to make their wills when they began to be perceive that their lives were in danger and that must be assumed to be noticeably later than the start of the outbreak.

This uncertain basis permits to draw cautiously an epidemiological outline. Modern knowledge of bubonic plague's process of development shows that it takes 39-40 days or almost 6 weeks from contagion is introduced into a rat colony until the presence of plague in local society begins to assume an epidemic form. This takes the epidemiological developments back to around 1 August.

General sociological and epidemiological arguments make it unlikely that the bishop of Bergen should have been among the first victims. However, the parish priests were exposed to infection, because they were obliged to administer the last rites that, according to Catholic doctrine, were a necessary condition for salvation (and avoiding perdition). Parish priests and their auxiliary priests, often deacons and subdeacons, entered houses with parishioners dying from plague and would then be (as we know) exposed to mortally dangerous rat fleas. Although the mortality among the parish clergy of Bergen claimed by *Gottskalk's Annal* cannot be accepted, they show that parish priests and their auxiliary priests suffered enormous mortality. This meant that many parish priests were soon dying. The last rites would be administered to them by canons or other prominent ecclesiastics who, in turn, would then bring back to their own residences infective rat fleas in their clothing. The prelates would be early in the centre of the epidemic storm, because the parish clergy, as first line soldiers of salvation, courageously faced imminent death in order to save the souls of their parishioners by administering the last rites to them, and died heroically on duty. This explains that the bishops of Hamar and Bergen and the archbishop of Nidaros apparently died quite early in the epidemic process in their respective sees, their cathedral cities of residence. It appears also reasonable to assume, therefore, that the bishop of Bergen could have been infected only a couple of weeks after the Black Death assumed a more pronounced epidemic form. According to this line of reasoning, the cog from England transporting the Black Death to Bergen arrived a couple of weeks before 1 August, probably around mid-July or possibly somewhat earlier, and as will be seen below, there are indications to this effect.

Presumably, the Black Death broke first out among people living and working in the combined dwelling houses and warehouses on both sides of the Bay of the harbour which contained great amounts of food stuffs. The stores of these houses would especially contain grain and dried cod, the favourite food of black rats, which certainly teemed in the area. An English ship would have moored alongside the quays

on the western side of the Bay, on the Strand Side [Strandsiden] directly opposite the Hanseatic Wharf in Bergen. The cargo was quite certainly predominantly corn and farina, the typical export products from England to Norway. They were mainly bartered for dried cod with fishermen from northern and north-western Norway. The exportation of grain products to Norway shows, among other things, in instructions from King Edward III to the municipal authorities in King's Lynn. They confirmed that the burghers of Lynn had permission to export grain to Norway on the conditions that they guaranteed that it would not be sold to the king's enemies and that they received a letter of confirmation from the municipal authorities of the town where the grain had been unloaded.[409] The fact that merchants of Lynn traded actively on Bergen can also be seen from a letter the mayor and burghers sent to the royal treasurer, lawman, and councillors of Bergen a few years earlier. In this letter, they complained that people of Bergen had impounded cargo and goods that belonged to merchants of Lynn and asked them to obtain permission from the king of Norway that trade could go on as before.[410]

These economic connections and the pivotal plague epidemic perspectives associated with them can be made more concrete. One of King Edward III's fine rolls recorded on 8 May 1349 that permission was granted to the merchants Thomas de Melchebourn and William de Melchebourn of Lynn to export 1000 quarters of grain (12,700 kg) for trade in Norway.[411] It is well known today that nothing could be more risky than a cargo of grain from England in those days of plague, but at the time people did not have an inkling.[412] In the spring and the summer of 1349, the Black Death raged in Norfolk and Lincolnshire, exactly the areas around the huge bay of the Wash where Lynn is situated.[413] A new study shows that it broke out on manors in the rural districts around and south of Lynn at the end of March or in early April, peaked in May and June, and subsided over the next two months.[414] Quite likely the two merchants wished to export grain purchased the previous autumn and stored for sale at a profit the following spring or summer. Nonetheless, it must have taken some time from the export license was given to a suitable ship in Lynn had been contracted, the grain had been carted to the ship and loaded, and the ship was ready to set sail. Few English ships carrying grain sailed to Norway in the first half of 1300s. Quite likely, the Black Death was transported to Bergen in this grain cargo.

409 DN XIX, No. 566; RN V, No. 682.

410 DN VI, No. 160; DN XIX, No. 557; V, 308. Nedkvitne 1983: 34-49.

411 RN V, No. 1158a.

412 [They knew nothing about microbiological pathogens, nothing about the vector role of insects in general, and more specifically in this case, the role of rat fleas in the dissemination and transmission of plague contagion, and nothing about the suitability of grain for transportation of infected rat fleas also over long distances, particularly by ship in the humid and mild environments of the oceans.]

413 Ziegler 1970: 173-77, 184-85; Shrewsbury 1971: 99-105.

414 Stone 2012: 218-30.

The upper classes in Bergen must have been accustomed to ships bringing infectious diseases to Bergen, and that sailors, working poor in the areas around the quays were struck by diseases. In 1529, the Danish noblewoman Anne Rud warned her daughter Sofie Krummedike who should go to Bergen where her husband had been appointed castellan of the castle of Bergenhus: "I have heard that Bergen is greatly afflicted by pestilence [= epidemics]."[415] Plague's quite slow early phase of development and spread indicate that at least eight weeks would elapse from the contagion was introduced in the landing areas on the Beach side of the Bay and, subsequently, was transferred across the Bay to the Hanseatic Wharf, before the Norwegian upper classes began to feel menaced and make their wills.

General epidemiological and sociological arguments make it, therefore, likely that the Black Death arrived in the Bay area in the first half of July and quite likely early in that period. This supports the assumption that it was the grain cargo that the brothers Melchebourn Thomas and William de Melchebourn received permission to export to Norway which contained the contagion. This line of reasoning indicates also that the Icelandic ship which was made ready for return voyage to Iceland was struck by the plague in mid-August or shortly later. This would be a suitable time of return for a ship that should sail the daring voyage on the open sea all the way to Iceland. The Black Death succeeded in spreading through the entire town in the remaining half of the year, which also indicates that it did not arrive later than early July. The temporal rhythm of the series of plague epidemics in Bergen in the period 1565–1637 shows that plague epidemics that broke out at the end of August or later did not have time to spread all throughout the town, was suppressed by cold weather, and recrudesced the following spring or summer. Epidemics which broke out in the summer completed the epidemic course of developments and did not recrudesce in the spring (see below) [not included]. The plague did not break out again in Bergen in 1350.

The Black Death occurred in Bergen and Hamar with surrounding areas around the same time; the bishops also died at about the same time. This shows that the Black Death was introduced into Norway by two independent transfers, and that it first must have occurred in south-eastern Norway, because the epidemic needed several months to spread form the port of importation to an inland town on Lake Mjøsa, while it was introduced directly into the harbour of Bergen.

As a notional point of departure, or a working hypothesis, it would be likely that the Black Death was imported into Norway's two largest towns which also were the towns with the most trade with England, namely Oslo and Bergen. This agrees nicely with the facts on the ground according to the sources. These were the two largest towns in Norway, because they covered the needs for trade of their regions, Østlandet and Vestlandet, Bergen also of the population in northern Norway. Because these towns had the highest intensity of trade and the most comprehensive and busiest networks

415 DN XXIII, No. 228, 05.09 1529.

of contacts and exchange of goods over entire regions, they would also provide the Black Death with maximum powers of spread in Norway. The establishment of two independent epicentres of spread of plague contagion in separate parts of the country was crucial for the fact that the Black Death succeeded in covering all Norway in 1349.

2.9 The Black Death Comes to Nidaros (Trondheim)

In military parlance one would say that the Black Death made landings in Bergen and Oslo. There it established two beachheads for the conquest not only of Østlandet and Vestlandet, but of all Norway. In the case of Norway, it should be expected that transportation by ship along the coast would be important for spread over long distances.

A rough temporal outline can be produced regarding the Black Death's arrival, outbreak, and spread in Nidaros. The basis is temporal aspects of the information on the archbishop's actions and use of modern knowledge on the epidemiological process, which permit successive regression in time. Archbishop Arne died from the Black Death in Nidaros on 17 October.[416] The archbishop's death from the plague reflected a composite epidemiological process of development with a well known temporal perspective: about 39-40 days, nearly 6 weeks, would elapse from the time the first rat was infected in Nidaros harbour area until the incipient epidemic outbreak; a full outbreak would begin to unfold around 7 weeks later. From this time forward, the archbishop, like everybody else, would be in grave danger. One must take into account, as mentioned, that prelates early had a high level of exposure to infection, because they were obliged to administer the last rites to dying parishioners. The usual period of incubation and course of illness was usually 6-10 days, 8 days on the average, which would presumably be the case also for the archbishop. The archbishop was consequently infected around 9 October. According to this analysis, plague contagion must have arrived in Nidaros 20 August at the latest, more likely by mid-August, and rather a couple of days earlier. The transition to a more pronounced epidemic phase would then have occurred about 21-24 September.

416 According to *Series Archiepiscoporum*, Archbishop Arne's period of rule lasted "annis tribus mense uno die uno", that is three years, one month, one day. *Monumenta historica Norvegiæ* 1880: 190. He was consecrated archbishop by Pope Clemens VI on 16 September 1346. DN VI, No. 180. Storm states in his editorial commentary to *Series Archiepiscoporum* that "his period of rule must have been reckoned from his consecration on 16 September to Arne's death on 17 October 1349," a period lasting exactly three years, one month, and one day. Storm, in: *Monumenta historica Norvegiæ* 1880: 190-91. Storm argues that *Series Archiepiscoporum* was produced by a member of the Chapter of Canons in Nidaros, because "he in the process of compilation had access to the letters and notices about and by the archbishops". Storm 1880: LVIII. My translation from Norwegian. Later, most of these sources have been lost. See also Kolsrud 1913: 207.

This shows that the Black Death must have come to Nidaros by ship from Bergen. It also shows that plague contagion must have been transported to Nidaros much at the same time as the Black Death's outbreak in Hamar. This makes it unlikely that the Black Death could have spread by land via Hamar to Nidaros. Presumably, the plague contagion was transported to Nidaros by a ship that left the Bay in Bergen about two weeks earlier, about 1 August, or the dying days of July.

Archbishop Arne made his last will on 23 September,[417] about 16 days before he was infected (as it seems). It seems quite likely that the will was made hastily in a situation when the Black Death was in full epidemic outbreak in Nidaros, with a sharply rising number of deaths. This agrees with the temporal analysis of the epidemiological developments based on the time of the archbishop's death. The hasty issue of the archbishop's will could also be a reaction to the terribly frightening accounts by pilgrims and refugees who by now over several weeks would have arrived by ship from Bergen or by land from south-eastern Norway and, perhaps especially, the terrible news of that the bishops of Bergen and Hamar (see below) were dead. There were overwhelming reasons to expect the worst. About two weeks had elapsed from the archbishop drafted his will until he was infected by plague.

Einar Hafliðason's assertions in the *Lawman's Annal* that of all the canons in Nidaros only one by name Lodin survived and that he on his own selected and elected a new archbishop, may instantly appear untrustworthy. They have also been strongly doubted by the historians. However, when I gathered and collated all relevant sources, they supported, much to my surprise, the annalist and not the historians. Twelve canons of the archcathedral of Nidaros are mentioned in the sources in the five years before the Black Death developed a clear epidemic form there at the end of September 1349, a credible number. At least the great majority was presumably alive when the epidemic storm broke out in the cathedral city. It is a dramatic fact that it has not been possible to find a single one of them alive after the disaster.[418] In the five years following the Black Death, five new canons of Nidaros cathedral are mentioned, that is under half of the number before the Black Death. This is a trustworthy expression of the deficit of qualified candidates for the position of canon and also of the strongly reduced incomes from the canons' benefices (because so many of the tenancies that

417 DN V, No. 212.

418 Håkon Øysteinsson: DN V, No. 182, 08.12 1345; DN V, No. 186, 02.22 1346; DN XVII, No. 71, (misdated, see RN V, No. 888). Aslak: DN IV, No. 293, 09.15 1345. Arnfinn Petersson: DN IV, No. 293, 09.15 1345; DN V, No. 212, (before) 09.23 1349, RN V, No. 1199; DN II, No. 305, 10.17 1349 (dying from plague). Klemet: DN IV, No. 293, 09.15 1345; DN V, No. 186, 02.22 1346. Bård Einarsson: DN V, No. 186, 02.22 1346; DN XVII, No. 72, 10.18 1346 (misdated, see RN V, No. 889); DN II, No. 293, 04.04.1348; DN No. V, 212, (before) 09.23 1349, RN V, No. 1199. Balte Klemetsson: DN V, No. 186, 02.22 1346; DN II, No. 276, 08.11 1346; DN XVII, No. 67, 10.18 1346. Svein: DN V, No. 186, 02.22 1346. Jon Eiriksson: DN II, No. 276, 08.11 1346; Kåre Torleivsson: 08.11 1346. Arne Eindridesson: DN XVII, No. 70, 10.18 1346 (misdated, see RN V, 887). Jon Arnesson: DN XVII, No. 68b, 04.02 1347. Tore Gunnarsson: DN VI, No. 193d, 09.03 1349.

financed them with their rents were deserted). The first of these new canons appears in the sources in the summer of 1351, his name is Lodin Toresson.[419]

Probably, the carnage among the canons came so abruptly and disastrously that the canons who were alive and healthy at any time with all haste consecutively appointed new canons as their colleagues died in the raging plague. Eventually, they also died themselves, certainly also some of the newly appointed: a canon by name Eindride appears in the sources on 17 October while the Black Death was raging in Nidaros; however, he is otherwise not mentioned at any time before, under or after the plague.[420] With this desperate measure, they succeeded in securing the continuity of the diocesan leadership.

This does not definitely prove that Lodin Toresson was the sole surviving canon who, after Arne Einarsson's death 17 October, on his own selected and elected Abbot Olav of (St. Mary's) monastery on Nidarholm (Holm) the new archbishop, or, more accurately as archbishop-elect. According to the *Annals of the Flatey Book (Flatøbogens Annaler)*, Bishop Olav's election occurred in the autumn of 1349.[421] He could possibly have had newly appointed canons with him, perhaps also some of the canons appointed before the plague were still alive and could have participated. It is not possible, however, to show that Einar Hafliðason's information is wrong. On the contrary, according to the sources, as far as they go, the information could quite likely be correct! This view is strengthened by the numerous documents and announcements Pope Clemens VI issued on the day he consecrated Bishop-elect Olav archbishop in order to bolster the legitimacy of his new office, which imply serious deficiencies: a papal letter of provision to Bishop-elect Olav to the effect that in his capacity as pope, (1) he had used his right of provision to ordain a new archbishop in Nidaros and had appointed Bishop-elect Olav; (2) a letter to the Chapter of Canons in Nidaros where he announced his consecration of Olav to the office of archbishop; he also enclosed letters to the same effect (3) to the people of the city of Nidaros and (4) to the population of the archdiocese, (5) to all suffragan bishops in the archdiocese of Nidaros, and (6) to King Magnus.[422]

The tremendous mortality among the clergy in the archdiocese more generally can also be seen from a letter the new archbishop sent the pope shortly after he returned from Rome. He related that almost all priests and clerics in the archdiocese had died in the plague and asked for permission to ordain persons to priestly office who, according to canon law, did not qualify due to personal reasons, candidates under age 25 or whose parents were not married. The new bishop of Bergen also wrote the pope

419 DN VII, No. 229f, 07.14 1351. Bård Eindridsson and Torfinn Eiriksson: DN IX, No. 150, 08.23 1351. Arne Kjetilsson: DN VI, No. 219c, 01.23 1354. Bård Bjørnarsson: DN V, No. 219, 09.07 1353–1354; DN I, No. 342, 11.23 1354.

420 DN II, No. 305.

421 *Annals of the Flatey Book* 1888/1977: 404; *Series Archiepiscoporum* 1880: 191.

422 DN I, Nos. 322-324.

for the same reason, and the pope granted them both the same extraordinary authority in such matters on the same day.[423] Dispensations for candidates for priestly office due to "irregularities" of birth had been usual also before the Black Death, because canon law prohibited priests from marrying and obliged them to live in celibacy (not having sexual relations). While the newly consecrated Archbishop Arne Einarsson still stayed in Avignon in 1346, for instance, he petitioned the pope for permission to ordain for the office of priest up to 30 sons of priests and 40 born out of wedlock.[424] The main reason was that so many of those who studied for the priesthood were sons of priests who lived in unlawful cohabitation with concubines. Irregularity of age is not mentioned, because before the Black Death, there were enough candidates to observe canon law's provision of a minimum age for persons who could be ordained to priestly positions with cure (of souls), in this context primarily parish priests.

By implication, many of the new, young candidates for priestly service who were now ordained in order to compensate for the immense mortality among the secular clergy in the Black Death, did not have adequate training and education. At a general council of the Norwegian church province, which Archbishop Olav convened in Nidaros in August 1351 in order to improve conditions after the Black Death, the following motion was carried:

> Because the deficit of clerics in these times unfortunately entails that simple and ignorant persons frequently are ordained in benefices with cure [i.e. as beneficed parish clergy, with pastoral spiritual charge of a parish], their superiors are instructed to train the younger in the duties of their service and especially on the order of the mass, about baptism, about the last rites with the extreme unction and interment, and so on, and diligently to examine them in these matters.[425]

The extant sources do not contain information on the Black Death in northern Norway. When there are no sources, historians have lost. This important question is apparently doomed to remain in darkness forever. True, later sources of northern Norway show a strong decline in settlement and agricultural rents which must reflect a strong fall in population. However, it is fallacious to infer that the Black Death was the cause.[426] Dramatic regression of settlement and decline in rents can be explained independently both as mortality effects of subsequent plague epidemics and of mass migration out of the region: after the Black Death had exterminated large parts of the population in other regions, there were good vacant tenancies to be rented everywhere. However, it must also be underlined that serious plague epidemics raged in northern Norway later (see below) [not included here], which shows that there were not any particular climatic or social conditions preventing the Black Death from

423 DN VII, No. 230b, 18.07.1351.
424 DN XVII, No. 66, 18.10.1346.
425 DN IX, No. 150, 23.08.1351.
426 Nielsen 1984: 504-14.

spreading through much of this region with the same devastating effects as elsewhere in the country.

2.10 The Black Death Arrives in Agder and Stavanger

Sørlandet is a modern geographical term [.] the old place name was "Agdesiden", that is the coastal stretch of the present two counties of Agder [.]. In this monograph, Sørlandet is used in the meaning that later has become usual, as identical with Agdesiden.

Gottskalk's Annal that is cited in the chapter on the Black Death in Bergen, gives some dramatic information on the Black Death's terrible ravages in seven parishes in Agder. They were desolated, it is said. The annal also relates that the bishop of Stavanger did his very best to provide the inhabitants with spiritual services in those gruesome times of death. Some of the information gives indirect indications on the Black Death's spread. It is a conspicuous fact that that the bishop of Stavanger had ample qualified personnel who could be sent with all haste to these parishes in Agder: priests, deacons and retainers. This indicates that the Black Death arrived in Agder before it came to Stavanger. It is almost inconceivable that the bishop should have extra qualified personnel at his disposal if the Black Death had raged in the cathedral city. The annal's description of the stream of dead priests and deacons who were taken to the cemetery of the Cathedral's parish in Bergen for interment speaks volumes (also when it must be exaggerated).

Usually, a voyage from Bergen to Stavanger took only 4-5 days. However, few had any reason to sail between these two towns. Stavanger was at the time a small town, mainly a cathedral city such as Hamar, i.e. an ecclesiastical administrative centre in the diocese with a small presence of craftsmen and merchants who predominantly met the ecclesiastics' demand for goods and services, and the ecclesiastics' servants. Stavanger and the surrounding area was self-sufficient with grain from the fertile [area of] Jæren. For these reasons, one might expect that Stavanger was contaminated quite late. There is, in fact, a source that can support this analysis: the very last person who we know died in the Black Death is namely the bishop of Stavanger who died on 7 January 1350.[427] It appears quite likely, therefore, that Stavanger was contaminated when the survivors of the bishop's personnel returned from Agder and not with a ship (returning) from Bergen.

This suggests two possible origins of the Black Death in Agder. Foreign ships fleeing from Bergen and heading homewards were one source of infection. Some of them, especially ships from the western cities of the Hanseatic League, from Hamburg and Bremen, and ships from the Netherlands would have sailed down to Agder before

427 *Obituaria*, in: *Monumenta historica Norvegiæ* 1880: 197. Cf. *Islandske annaler* 1888: 226.

they crossed the Skagerrak and began to sail down the western coast of Jutland. Because ships sailing coastwise in those days had, as mentioned, to cast anchor near land and settle in for the night, contacts between sailors or passengers and local populations were usual, especially for purchase or barter of fresh food and supplies of fresh water, and perhaps some local sale or barter of merchandise.

Clearly, the Black Death could also have been transported to Agder aboard a ship from the epidemic epicentre in Oslo, or from other subsequently contaminated localities on the Oslofjord. Transportation by ship played an important part in the Black Death's conquest of Norway, not only by metastatic leaps from England to Oslo and Bergen, but also by secondary metastatic spread along the coast to Nidaros and Agder, i.e. to Trøndelag [Central Norway] and Sørlandet.

The bishop of Stavanger was, as mentioned, the last and only person who is known to have died from the Black Death in Norway, namely on January 1350. No source suggests that any unnamed person(s) died in the Black Death in 1350. There is no basis for maintaining that the Black Death continued in epidemic form through the winter months of 1350, as has been maintained.[428] A few cases may, nonetheless, have occurred in the early weeks of this year.

2.11 The Triumph of Death: How Many People Died in the Black Death in Norway?

2.11.1 Introduction

Contemporary chroniclers in Europe often made implausible assertions on the mortality wrought by the Black Death in their towns or localities. The asserted number of deaths can in several cases be shown to be far higher than the number of inhabitants. They do not, however, make any assertion on the mortality in an entire country. The exception is Einar Hafliðason in the *Lawman's Annal*, he maintains that over two-thirds of Norway's population died in the Black Death. It has been usual to consider this assertion in the light of other evidently untenable assertions he also made, that, for instance, only 14 persons survived the Black Death in London. The author of this book and other Norwegian historians have for this reason claimed that this assertion should not be taken seriously. The general opinion has been that no epidemic of any infectious disease could have swept away such a high proportion of a population. The only exception might, perhaps, be outbreaks of dangerous infectious diseases among besieged populations which could not flee and would be seriously physiologically weakened by long undernourishment or starvation. However, in the last four decades of the twentieth century an increasing number of demographic

428 Holmsen 1984: 7–8; Holmsen 1986: 431; Helle 1982: 674. See especially Chapter 4.

studies of population losses during the Black Death in various localities and regions have approximated this mortality rate. This has especially been the case in Navarre in north-eastern Spain, in Catalonia in south-eastern Spain, in Tuscany and the Piedmont in Italy, in Provence and the Savoy in France, and for numerous manorial populations in England. All these local studies have recently been gathered and discussed by the present author.[429] To his surprise and consternation, he had to conclude that Einar Hafliðasson's assertion on the mortality rate must be taken seriously.

The results of these European studies are presented in Table 2.1. The table needs some explanation. The sources consist mainly of tax lists, or in the case of England primarily of manorial registers (rolls) of various types. Most of these records register only heads of families, i.e. the householder in each family, predominantly adult men. The numbers of householders are entered in the table's second column. Also the households in which the householders survived suffered losses which can be cautiously but realistically estimated. Taking this into account produces the difference between the second column and the third column that include also the members of the households, mainly wives and children. In many cases, the tax lists record only taxable households (which were not too poor to bear any tax assessment). Manorial rolls record only the customary tenants who paid rents and fines to the lords of the manors, while the poor, the landless or all-but-landless social classes of day labourers, cottagers, sub-tenants, and so on, remained unrecorded. Studies of sources which register also or only these poor and destitute social classes indicate that they constituted around 50% of the populations. This is of substantial interest, because the poor, as usual, suffered supermortality, higher mortality rates than the better-off classes, and for two main reasons: (1) they were more susceptible to so-called secondary catastrophe effects, when parents fell ill, they could not take nursing care of their children or each other; (2) the poor tended to be more susceptible to infectious diseases due to undernourishment and malnourishment. In relation to the Black Death, a cautious estimate indicates supermortality in the order of 5-6%. This modest difference must be seen in the light of the tremendous mortality rates generally caused by the Black Death. The tax records of Navarre and Provence intend to register all households, also the non-taxable poor, and in Tuscany even regular population censuses were occasionally produced. This is the reason for the variation of the progression of numbers in the columns of Table 2.1.[430]

Table 2.1 shows that over half the population died in the Black Death in all the regions and countries for which there is data of good or usable quality. The average appears to be around 60%. This is by far the largest population catastrophe in history. It is usually assumed that Europe's population was around 80 million at the beginning of the late Middle Ages.[431] This suggests that nearly 50 million of them perished in the

429 Benedictow 2004/2006: 245-384.
430 Benedictow 2004.
431 Livi-Bacci 2001: 27; Benedictow 2004/2006: 382-83.

Black Death. The great majority of these people died of plague contagion, a significant proportion died from the secondary catastrophe effects.

2.11.2 The Question of Average Household Size and the Denial of Elementary Facts: Some Consequential Analyses

How many of the victims could have been Norwegian? Because the overwhelming majority of Norway's population, probably about 90%, lived and worked in rural areas, this question can only be answered on the basis of the number of peasant holdings [freehold or tenancies in all possible proportions] in operation and the average number of persons living on them. The first question can be answered today with a high degree of tenability: inside Norway's present borders slightly, above 64,000 peasant holdings were in operation in the first half of the fourteenth century.[432] The number of peasant holdings in the areas that were ceded to Sweden in the mid-1600s, predominantly Båhuslen, Jemtland, and Herjedalen, contained about one-eight or 12.5% of Norway's population.[433] The area of the medieval Norwegian state contained, consequently, about 73,150 peasant holdings of all kinds and sizes.

Table 2.1 : Mortality in the Black Death according to region and country.

Region and Country	Tax- and Rent-paying Householders	Tax- and Rent-paying Population	General Population
Kingdom of Navarre	55–60	60–65	60–65
Catalonia	(71)	(74)	(60–70)
"Spain"	55–60	60–65	60–65
Florence			60
Tuscany			50–60
Piedmont	42	50	52.5
"Italy"			50–60
Provence	54.5	60	60
South-central France	50–55	55–60	60
County of Savoy	50–55	55–60	60
"France"	50–55	55–60	60
England	55	60	62.5
Average	50–55	55–60	60

432 Marthinsen 1996: 157.
433 Lindstøl 1887: 21.

The question of the average size of the population living on the peasant holdings is more difficult and has been the object of much superficial and anachronistic handling, i.e. the use of much later data, which relates to or reflects highly different social and economic structures on Norwegian farmsteads. In the light of consequential analyses, This data displays completely untenable, even absurd, demographic consequences. Despite the fact that thorough demographic and economic analyses have reached clear and reasonable results, which have been available since 1996,[434] and subsequently have been enlarged on and deepened,[435] such untenable and arbitrary assumptions still occur. Recently, Knut Helle asserted without arguments or evidence that average household size on peasant holdings was 6 persons around 1300.[436]. All these works on the topic have, then, been long known and could be exposed to fair scholarly criticism, but in the 20 years after the first thorough analysis of this problem, this has not occurred. No discussion of population size in Norway in the decades before the Black Death, and the population loss it caused, can be performed without clarification of this basic factor, the household multiplier. This problem is, therefore, addressed again here in Chapters 2.11.2 and 2.11.3, and most comprehensively in Chapter 3.4 which contains a translation of most of my 2006 presentation and discussion of these demographic issues.

It has been usual to make inferences about the household multiplier from much later sources, from the male censuses that were produced in the 1660s and even from information on family conditions in the general censuses recorded in 1800s.[437] It must be anachronistic and fallacious simply to assume that basic demographic structures or elements such as the form, size or composition of family, household or farm population are unaffected by profound societal changes over hundreds of years.[438]

Some basic demographic conditions or facts must be kept in mind in relation to this subject: (1) it is generally agreed that, in the decades before the Black Death, Norway's total population had reached (or overreached) its maximum size with the prevailing agricultural technology; it was, therefore, quite stable, technically called stationary, or it could have begun to decline slightly. (2) Families in a stationary population have as the net reproductive outcome of their fertility and parental efforts, on average 2.1 children who survive to adult age and marry. (3) if a census had been taken at the time of stationary population, for instance, on 1 January 1330, families would, on average, have completed two-thirds of their child breeding and rearing, which means that they would, on average, have 1.4 living children. This puts in perspective Helle's

434 Benedictow 996b: 129-76.

435 Benedictow 1996c: 174-77. Benedictow 2006: 131-57, English translation of pp. 131-47 in Chapter 3.4.

436 Helle 2013: 63.

437 See, for instance, Sandvik 1999: 169; Benedictow 2006: 149, or below in Chapter 3.4.

438 Benedictow 2006: 134, below Chapter 3.4; Benedictow 2012: 3-28.

assumption that each Norwegian peasant holding was on the average inhabited by 6 persons. He also asserts that Norway's population within the present borders was about 400,000 inhabitants and within the medieval borders was slightly above 500,000 inhabitants. These seeming population estimates are not based on known data with respect to their crucial basis in number of peasant holdings/households, but imply higher household size than 6 persons. However, this point can here be put aside and his explicit household multiplier can be addressed at face value as the basis of the discussion. Because he, despite strong general exhortations,[439] does not provide any specific information on the composition of this average household size, one can assume that he envisages, as all other historians who have made similar (or higher) assumptions,[440] that this household consisted of two parents and four children. This is the case for the generally accepted reason in Norwegian historiography on medieval society that, in the period 1200-1600, peasant households consisted mainly of what demographers call the solitary household (nuclear family): there simply are not other social elements to include which can raise the size of the peasant household from the basis of 3.4 persons to 6 persons, only to about 4.5 persons, a difference which has substantial effects on population estimates.[441] The tenability or validity of the assertion that the normal household around 1300, and in the high Middle Ages more generally, consisted of two parents and 4 children must, therefore, be tested. This can again be performed by reiterating previously presented consequential analyses which Helle passes in silence by, because they reveal his assertions on these points are completely unrealistic and grossly erroneous.[442] Hopefully, consequential analyses will eventually make impression on some scholars who are in denial of (some central elements of) demographic methodology, elementary facts and the effects of basic math.

439 Benedictow 2002: 84-89, in English translation in Chapter 2.12, below, and Benedictow 2002: 177. Benedictow 2006: 137-38, 142-45, 155-56, in English translation in Chapter 3.4 below. See also Benedictow 1996b: 149-72.

440 See, for instance, Holmsen 1984: 8, and 1986: 431; Sandvik 1999: 149-151. Cf. Ersland 1999, 46, who (also) implies an average household size of 6.8 persons, that is on the condition that one implies on his behalf that he has used the modern figures for number of peasant household , namely 64,000, within Norway's present borders and 73,150 within Norway's medieval borders. If he has used the same obsolete figures as Sandvik in the same volume, namely 60,000 and 68,575, the (implied) average household size increases to 7.3 persons. [Lindanger claims that mean household size quite likely was higher, also substantially higher than 6 persons. For the discussion of his arguments, see Benedictow 2006: 131-47, in English translation in Chapter 3.4, below.

441 Benedictow 1996b: 149-76; Benedictow 1996c: 174-77, 179-78, Benedictow 2002: 175-79. [Benedictow 2006: 137-41, 152-53, for English translation of pp. 137-41, see Chapter 3.4.2, pp. 240-44.

442 Benedictow 1996b: 151-53. [Benedictow 2006: 137-41; 149-53, see English translation of pp. 137-41, in Chapter 3, below.

The point of departure is that at a given point in time, families can be assumed, on average, to be roughly only two-thirds through the process of raising a family.[443] This means that, according to Helle's assertion, around 1300, Norwegian families raised on the average six surviving children, before they ended their reproductive career. The population of Norway must have grown at much the same rate, trebling in each generation, i.e. in roughly thirty years (about 27 years rather, the mean age of men at the birth of their sons). This implies a yearly population growth of 3.75%, which doubles a population in 18.8 years and about 40 times in 100 years. As pointed out, it is usually assumed that the size of Norway's population (with some regional variation) doubled in the course of the 300 years constituting the High Middle Ages (c. 1000-1300), corresponding to an average annual growth rate of 0.2% and that the population was quite stationary around 1300, which has so far, after 20 years not been explicitly challenged, for reasons that will become clear below.

If we, for the sake of exemplification, assume that the first holding in a local society, for instance, Sigdal (Buskerud County) was colonized by a newly married couple about 900, that families living there had, on average, the same reproductive success, namely six surviving children, and that Sigdal was a closed demographic system, i.e. that there was no emigration or immigration, we may estimate the number of persons who, according to Helle's premises, would have lived at the 135 holdings in this local society[444] on the eve of the Black Death. In the course of 15 generations, the population would have increased from 2 persons to around 9 million people (descendants), and the average size of population on each farmstead would be 66,667 persons. This is simple math that one could legitimately assume would make a strong impression. Expanded to cover all Norway, which, within Norway's present borders, had about 64,000 peasant holdings of all sizes, and within Norway's medieval borders 73,250, Helle's assertion on household size implies that, around 1300, or in pre-plague society, Norway's population within the present borders was 4,266,688,000 persons or within the medieval borders was 4,876,691,050 inhabitants, i.e. 4.3–4.9 billion inhabitants. Ordinary additions of population categories living outside rural society, urban populations, inhabitants of fishing villages and the Saami people of hunter-gatherers, are, relatively speaking, too small to affect this figures significantly. (However, one may in Helle's figures for household size and population size discern very much larger additions than suggested by any other medievalist.[445] This may

443 Hollingsworth 1969: 115.

444 Sandnes 1968: 284.

445 According to Helle's data, there were 72,000 peasant households in Norway around 1300, which multiplied by a household multiplier of 6 persons produces a population of 432,000 inhabitants. Because he asserts that population size was slightly over 500,000, he implies additions of 80,000-90,000 persons who lived and earned their livelihood outside peasant society, implying an addition of 18–20%.

contribute to explain why he does not specify the social elements constituting the demographic and social composition of the peasant population at the time).

However, surprisingly, Helle assumes that, around 1300, Norway's population was 400,000 within the present borders or slightly above 500,000 inhabitants within the medieval borders. He assumes that the number of peasant holdings was respectively 60,000 and 72,000 (the basis for this estimate is unknown). He does apparently not know Martinsen's persuasive 1994 recalculation of the number of peasant holdings within Norway's present-day borders to 64,000,[446] which has been status of this research for 20 years. On Helles premises about number of peasant holdings, the corresponding estimates of population size would be respectively 4,000,020,000 and 4,800,024,000 inhabitants, or roughly 4–4.8 billion.

This provides the occasion for making another consequential analysis in the form of reverse calculations downwards in time based on Helle's implied assumption of an annual population growth of 3.75% which, as mentioned, doubles a population in 19 years. The converse of doubling time is half-life (period), used to refer to any period of time in which a quantity falls by half, in this case 19 years. If we take the point of departure in his assertion that the population within Norway's medieval borders was 500,000 inhabitants in 1300, it can be reduced by the same exponential factor, which can be shown to have mathematically the following demographic consequences: in 1200, Norway would have contained 10,464 inhabitants, in 1100 367 inhabitants, and, in 1000, 9 (8.57) persons would have lived within the territory of medieval Norway at the time. Within Norway's modern borders, there would, according to Helle's premises, have lived 7 persons in year 1000. Because there were 25,000-30,0000 or 28,000–34,000 peasant holdings in Norway within respectively the modern or medieval territory around year 1000,[447] they would then be inhabitated by on the average 0.00030–0.00035 persons distributed on the two genders and all ages. This shows that consequential analyses of Helle's assumptions and assertions produce not grossly erroneous, but plainly absurd consequences. Unusually, Helle's arbitrary assumption that average peasant household size in medieval Norway was 6 persons can reasonably be characterized as completely erroneous. This is an unsurprising conclusion for two reasons: (1) Helle does not present or discuss any evidence in support of this view; he has chosen to ignore relevant research, without providing any reason, which can be taken as evidence that it stands up to scrutiny and testing. This also explains why his view can be characterized as arbitrary. Likewise, none of the historians who makes similar assumptions of a medieval average household size of 6 or more persons around 1300 argue why this should be a valid and tenable estimate or indeed that it satisfies the condition of testability. They all have in common that

446 Marthinsen 1996: 156-57; Benedictow 2006: 139, Chapter 3.4, below.
447 Sandnes 1976: 31. Cf. Benedictow 2006: 152; Benedictow 1996c: 180.

they do not test the demographic consequences of this (unwarranted) assumption in a long-time perspective. Clearly, a long-time increase of about 0.25% is compatible with the high medieval increase in the number of peasant holdings in the period 1000-1300 CE, according to Liv Marthinsen's reestimate with respect to status around 1300. One may, of course, freely disagree with this conclusion, as with all historical conclusions, but this requires normal explicit methodological analysis or empirical evidence and lines of arguments. It is incompatible with the standards of scholarly work just to pass them in silence by and maintain alternative assertions unmediated by evidence or analysis.

2.11.3 Average Household Size, Numbers of Households in the Middle Ages, and Population Size and Decline

These consequential analyses clear away all the demographically untenable assertions and allow a normal scholarly presentation and discussion of population size and structure in Norway on the eve of the Black Death and, thus, to approach the question of how many died in the epidemic. The main reason for this seemingly low number of living children was the mortality of infants and young children, which, when seen with modern eyes, was tremendous or disastrous. It is important to keep in mind that infant mortality, i.e. the mortality in the first year of life, still around 1750 was 250/1000. At the time, many important conditions had improved, for instance, housing, how society was organized, and, more specifically, the organization of efficient quarantines that prevented importation of plague and restricted strongly and increasingly the importation of other serious contagious diseases. This had improved social conditions and life expectancy since the Middle Ages, when infant mortality appears to have been significantly higher, slightly over 300 per thousand and life expectancy at birth appears to have been 20-25 years, and rather in the lower reaches of that range.[448] Women who survived their fertile period up to about age 40 would frequently give birth to many children, but did not normally have many children, and many women died from various causes before they had completed their fertile years. Many spouses did not have surviving children or were pleased it they had one offspring alive. Mortality was higher also in all other ages in the Middle Ages than in the highly developed early Modern Period around 1750. It is also important to keep in mind that, because mortality was so high, and because people moved more often than frequently assumed, it was not usual that grandparents lived to see their grand children or lived under the same roof as their children and grandchildren.

448 Benedictow 1996b: 233-37, cf. chapter 3, ibid: 77-88. Benedictow 2004/2006: 245-56; Benedictow 2012.

It is also obviously anachronistic and fallacious to introduce the family structure of the1800s when a demographic revolution was in full swing with dramatic fall in mortality and greatly increasing life expectancy, which made grandparents a more usual presence, doe the first time in history. This was, then, great demographic news reflecting the societal transition from early modern society to modern society, and a number such historical transitions of periods followed after the Middle Ages and changed radically social formations, social conditions and demographic structures.

Consequently, in a stationary population the nucleus of families consist(ed), on average, of 3.4 persons. All higher averages for the size of families or households must be argued explicitly. It is a scholarly obligation to specify the individual social elements which increase family or household size above this basic level. The scholarly requirement to make explicit the empirical basis of any argument increasing family of household size above the basic size is almost generally neglected, as was again the case with Helle's recent arbitrary assertion in this respect that the average household size in Norway at the time was 6 persons (see below).[449] Clearly, no assertions of significantly larger average sizes of families or households are valid which do not specify the social elements which produce the increase(s). Agrarian historians have clarified that Norwegian peasant holdings, after slavery had disappeared around 1200, were operated predominantly by nuclear families.[450] Joint families are a much fancied ideological concept from the infancy of socialist theory-building. It is, therefore, important to emphasize that no extant sources support any significant incidence of joint families (but joint families exist as a historical phenomenon, and may have been usual in earlier historical periods). Agricultural historians can be clear on this point also because large-scale division of peasant holdings and mass clearance of small holdings and cottages on the outskirts of local societies in the high Middle Ages meant that only a small proportion of the holdings were large enough to provide a reliable livelihood for more than one household with the prevailing agricultural technology of the time.[451]

Three independent estimates of the size of peasant households can be performed on the basis of contemporary medieval sources or by use of the retrogressive (retrospective) method on later sources:

1. In my monograph on medieval demography in the Nordic countries, I estimated household size based on studies of skeletal populations excavated in medieval cemeteries in Norway and other Nordic countries. Analysis of these skeletal populations according to age and gender with demographic techniques

449 Helle 2013: 63. See also Benedictow 2006: 131-57, English translation of pp. 131-47 in Chapters 3.4-3.4.3.

450 See Benedictow 1996b: 150-51.

451 Benedictow 1996b: 163-72.

produced an average estimate of 4.25 persons. This estimate was affected by the extraordinary high level of mortality caused by plague in the late medieval period, suggesting a slightly higher average in the period before the Black Death.[452]

2. In the same monograph, Andreas Holmsen's pioneering local history of the medieval settlement and production in the Eidsvoll hundred [south-eastern Norway] was analyzed with this question in mind. The outcome confirmed the agricultural historian's general opinion, that the peasant holdings were predominantly inhabited and operated by nuclear families, or, in accurate demographic parlance, were operated by simple family households, and that the average size was slightly above 4.5 persons. Significantly, this area had better agricultural resources than many other localities in Norway.[453]
3. The male censuses recorded in the 1660s can be used as the basis of so-called retrogressive methodology for the purpose of estimating the average number of persons living on the peasant holdings in the Middle Ages, which would then correspond to the average household size. These male censuses indicated that on the average about 6 persons lived on the peasant holdings at the time, which reflects great economic, social and demographic change caused by the societal transformation from medieval society to fully-fledged early modern society. According to retrogressive methodology, this estimate will be the point of departure for consequential analysis of this transformation with respect to the structure of the farm population: one moves downwards in time from this point and adds or subtracts historical population elements which arose or disappeared on the holdings. In this case, there is only basis in the sources for subtraction, albeit a substantial one. From the early 1600s a rapidly growing class of households settled on subtenancies. This new proletarian rural class lived on undersettles, i.e. subtenancies, inside the territories of the ordinary peasant holdings [recorded in official cadastres as taxable, in Norwegian technical parlance called "matriculated holdings"]. They produced a substantial increase in the average size of the holdings' populations. According to the censuses of the 1660s, there were 17,000 subtenant households which were distributed on 57,000 peasant households.[454]

The social underclass of undersettlers/subtenants in Norway arose primarily from the growth of new export industries, especially forestry, sawmilling and timber production. They increased the production within the holdings and created the basis of huge importation of grain and farina into the country which made it possible to feed the new large proletarian social class. Around 1650, the importation of corn and

452 Benedictow 1996b: 155-62.
453 Benedictow 1996b: 163-72.
454 Dyrvik 1979: 33.

farina covered around one-third of the consumption of such food in the country.[455] This meant that many did not any longer contain only one household and were not run by a single peasant household, typically a nuclear family, but included one or more households settled on subtenancies which together formed farmstead populations. In order to identify the average medieval household size in the period 1200-1600 by the retrogressive method, the new social class living on the undersettles must accordingly be subtracted. It has not been possible to identify in the sources any other social class or other social elements in the social groups living on the peasant holdings before 1600, which could numerically substitute for the new social class of subtenants, and had disappeared in the meantime. In the quite many years which has elapsed since I first made this analysis, no historian has pointed at evidence of other social elements which formerly, before 1600, contributed to increase the average size of farm populations above the size of the simple family household, also not Helle who recently asserted that the average size of the farm population in the 1660s were 6 persons, he just passes the this crucial issue by in silence. It is clearly simply an anachronistic and, therefore, fallacious projection of the status in the 1660s, according to the censuses, into the medieval past without addressing the problems that have been indicated and without support from new data.

However, a small reduction must also be made from the figure, because Norway's population increased quite briskly in the 1600s, while it was stationary or rather declined slightly in the decades preceding the Black Death. Population growth implies larger households, because it reflects more surviving children and that their parents lived on the average somewhat longer. This method of estimation produces much the same outcome as the previous estimations, about 4.5 persons lived, on average, on the peasant holdings in Norway in the decades preceding the Black Death when population size was roughly stationary. This agrees well with the results of demographic research on household size elsewhere in contemporary Europe.

In a good master's thesis [formerly "hovedoppgave"] from 1999, Truls Bøhm examined thoroughly all Norwegian series of sources of the 1500s and the early 1600s that conceivably might contain information on household size. This work confirmed unequivocally that there was no trace of any significant incidence of other types of households on the peasant holdings than the simple nuclear family household, and that the social class of undersettlers/subtenants had its breakthrough around 1620. In in-depth studies of selected localities in Østandet, Bøhm found the same normal size of households and corroborated the pivotal significance of the rise of the class of su00btenant households for the increase in the average size of populations on the holdings, estimated on the basis of the male censuses of the 1660s. His study of these male censuses also shows that average life expectancy at birth for males had

455 Fossen 1979: 68-69.

increased and was about 25 years at the time. I would, however, say it was about 27 years, a higher increase since the medieval period (see above).

All assertions of averages of 6–9 persons on Norwegian in the period 1200-1600 are arbitrary in the fundamental sense that they are without basis in the sources and demographically unexplained in the form of identification of the various social elements which purportedly should have increased the average from the basic level of 3.4 persons. According to my research, a few additions can, in fact, be made to the basic family of 3.4 persons. The largest addition is due to the great normal level of mortality which (according to life tables) meant that around 45% of all persons who reached age 20 died before reaching age 50. Many adults were thus swept away by death before they completed their production of children. Families were broken by the death of a spouse, while remarriages by surviving spouses redistributed their children into new households. Around 10% of all children would experience the death of both parents. Rapid remarriage was common, also because a (married) couple was a necessary condition for the operation of a holding.

Also in the past, it was usual that spouses could talk about my children, your children and our children, but it was death and not divorce that was the cause. For this reason, households did not contain 1.4 children, but around 2.3 children if we include all offspring, also youth above age 15. However, the crucial condition remains: in the pre-plague period, the final outcome of all sexual activity among married couples, whether or not they survived their reproductive period, meant that they had, on average, 1.4 children living at any one time. Marginal additions include that perhaps up to 5% of all households contained a grandparent, and that there also was a marginal incidence of two cohabitating families, normally families of siblings, and that the households contained also a small incidence of live-in farm-hands, maids and lodgers.[456]

This demographic data produces a peasant population of around 330,000 persons within the territory of medieval Norway. A total urban population of probably around 15,000 people must be added. Some people lived outside both these social contexts, hunter-gathers, populations in fishing villages along the coasts of north-western and northern Norway, vagabonds and mendicants. None of these social categories were numerous at the time. There was also a Saami population of perhaps around 3000 persons, who lived as hunter-gatherers at the time. Accordingly, in the first half of the 1300s the Norwegian population can be e estimated at around 350,000 persons, and was quite stationary or slightly declining in size.

This implies that 210,000 persons died in Norway, if the Black Death caused roughly the same level of mortality as in the regions of Europe with reasonably good demographic data, i.e. about 60%. In England, the mortality rate may seem to have

456 Benedictow 1996b: 155-62; Bøhm 1999.

been slightly higher. These estimates can be compared with the fact that around 20,000 Norwegians died in the Second World War of a population that was almost 10 times larger.

2.12 Life After the Black Death

20 July 1350, a public hearing of witnesses was conducted on the farmstead Vad in Sigdal hundred [Buskerud County). The purpose was to establish in legally valid form "who had died last of the people on [the neighbouring holding of] Hoffar".[457] The need for this clarification is clear: after the mind-stretching plague tragedy there was an avalanche of inheritance cases, thousands of judicial hearings were conducted to find out who had the legal rights of inheritance.[458] In an Icelandic annal's account of the great epidemic there in 1494-1495 it is stated, among other things: "Much property came then in the hands of many. Almost everybody got inheritance from [dead] relatives, third cousins or closer."[459] The situation in Norway in 1350, in the wake of the Black Death, was much the same. The witnesses on Vad stated under oath that "Thorgeir survived both his father and mother and all his siblings". However, Groa Bjarnesdatter, presumably a more distant relative, "died later in this exceptional mortality". This legal evidence or deposition was taken by a representative, the ombudsman, of the royal castellan of Tønsberg castle and constituted the content of a type of document known as "proof letter". It shows that the plague was over for so long that ordinary official functions had begun to recover. To obtain the presence of a representative of local official authorities took its time, then, as now. The castellan's ombudsman could have taken care of many transactions before he came to Vad.

A fortnight after the deposing of witnesses on Vad, Regent Orm Øysteinsson, who led the government and was presiding member of the Council of the Realm in the minority of the young Crown Prince Håkon Magnusson, issued a circular letter to the peasant population in the Diocese of Oslo. He acted on behalf of Bishop Salomon of Oslo, the only Norwegian bishop who survived the Black Death. The declaration shows that the conditions were very unusual. The bishop had told him that people

457 DN VIII, No. 156. In the document, the official calls himself ombudsman of Torgaut Jonsson [Smør], fehirde on Tønsberg castle. Fehirde means strictly treasurer, i.e. one of the three regional royal treasurers with the main responsibility of exacting and gathering together royal incomes from a wider region. Because this is a legal matter, and incomes from ordinary legal matters were the castellan's income, the castellan and the treasurer were probably the same person at the time.

458 Holmsen 1984: 7, 17.

459 *Annales islandici posteriorum sæcolorum*, 1, 1927–1932: 27-28; Benedictow 1996b: 212. My translation from Icelandic Old Norse.

had not paid their tithes (which, in Norway, were predominantly payable on the grain harvest) to the Holy Church and

> say for their excuse that they could not find thrashers to thrash the tithes. It is, nonetheless, clear that people are thrashing daily for their own consumption and are transporting grain to the market towns for sale. Furthermore, they are drinking far more than people ever did before [ale brewed on thrashed grain]. They forget, therefore, God's rights and the payments of tithes to the Holy Church. For this reason, the land lays desolated, uncultivated and unsown.[460]

The circular letter shows that the Church still, quite shortly before the new harvest, had not received much of the tithes of the preceding year's grain harvest. The reason, the peasants maintained, was that they could not find labourers to thrash the grain: by implication, a large part of the population had been swept away by the Black Death.

In the letter's wording, we can discern a peasant society in sudden disruption, disintegration and restructuring. A large proportion of the Church's tenants were dead, the same was the case with the tenants of the king, noblemen, and gentry and with the free peasants. This unleashed a tremendous process of resettlement. Survivors moved onto the best deserted peasant holdings by inheritance or as new tenants, and none of them felt responsibility for their predecessors' obligations with respect to tithes, rents or taxes. Rents were not paid and some people took up vacant land without legal rights, permission or compunction, because the well-functioning pre-plague social order had been disrupted. A characteristic instance shows in the sale of a in Enebakk situated only around 25 km south of the royal administrative centre of Østlandet in Oslo: in 1358, Reidulv Sigurdsson declared in a sales document he had sold [a part of] 5 øresbol in [the of] Sunnby to Amund Torgardsson, and that he had received full payment. However, he had to promise Amund that he would receive the rents that should have been paid since the "year of the great mortality".[461] In [the area of] Bærum, conterminous today with Oslo on the western side of the Oslofjord, official authorities were quite weak also much later in the fourteenth century. In a court decision of 1391, it was stated that Asgaut Jokjellsson, peasant on [the holding of] Avløs, had unlawfully cultivated 5 øresbol in the deserted western of Dæli for 21 years![462]

The new tenants were to a great extent recruited from survivors among poor or destitute people who in recent times had settled on the multitudes of cottages and crofts cleared on the outskirts of local societies. Some might have been live-in families of farmhands and servants in the households of well-off peasants. Or, more commonly, they could have been single farm hands who, under the very difficult times at the

460 DN VI, No. 196, 08.03 1350.

461 DN IV, No. 388, 01.28 1358. The meaning of the term øresbol is explained above in Chapter 2.6, n. 330.

462 Marthinsen 1983: 146.

end of the high Middle Ages had not managed to find vacant peasant holdings or clearances where they could settle with families of their own. Instead, they had to accept employment by substantial peasants for board and lodging and paltry wages. Now, under the new circumstances, they moved triumphantly onto their own good holdings.

Many of the new peasant families were undoubtedly new households composed of what remained of two families broken by the plague, people who had lost spouse, children or parents. Sorrow and need they had united them in this time of troubles. A new world of opportunities opened up to poor people. Smiling in their sorrows they gathered their few chattels and settled as peasant families where, only a few months earlier, they had gone cap in hand to ask for work. Unlike the upper classes in peasant society, the proletarian classes, agricultural labourers, farmhands, cottagers and all-but-landless people, were reduced for two reasons: either they died like other people from the plague or they became substantial tenants who could use all their strength to work on their own tenancies. Suddenly, there were no longer any labourers or farmhands who would thrash the grain or other tasks of agricultural husbandry. However, there were numerous weddings.

The profound societal transformation and changes of social class relations that followed in the wake of the Black Death resonated in legal documents much later: disputes over inheritance, social disintegration, the mass movement of poor people from small holdings, crofts and cottages cleared on the outskirts of local societies, and the movement of live-in farmhands from the farmsteads of substantial householders into vacant good tenancies in the central parts of local societies. It was also associated with a rush to the alter and celebration of weddings, because young adults who had wished to marry but could not find a vacant holding or the economic basis for marriage before the plague, now had golden times. [.] Here follows a longish example with this background of a legal dispute about a peasant holding].

The tremendous population losses caused by the Black Death unleashed great changes in agricultural husbandry and deep transformations of the social class system of peasant society. On the anciently settled substantial farmsteads, proud well-off peasants now had to rely on the labour capacity of their families. They could not produce more than the former threadbare poor people on the relatively recently cleared small holdings, cottages and crofts on the outskirts of local society or the humble families of agricultural labourers who a just had settled on the neighbouring holdings. When the Black Death swept away a large proportion of the population, it also paved the ground for great social equality among the survivors. In the late Middle Ages, social and economic equality in Norway was greater than before (as far as we can see into the past) or later. Previously poor people had become tenants on good peasant holdings and produced as much as peasants on substantial holdings who could also not produce more than the family's capacity for work permitted.

[In Norway, there was generally allodial title to land, i.e. private ownership, land was not held in feudal tenure as possession, which in principle was in the King's gift. This was also the case with noble families (in the Norwegian meaning which did not presuppose baronial status) and gentry. Only ecclesiastics held land in tenurial possession, prelates as well as parish priests, because the land belonged to the Church. Ownership or possession of large(ish) numbers of tenancies did not form manorial structures as known from, for instance, medieval England, but a peculiar sort of estates consisting usually of widely scattered properties.] In post-Black-Death society, prelates and also noblemen or gentlemen who owned numerous tenancies or ran royal properties had to compete sharply for tenants, so the tenancies could be kept in operation and maintained, and at least some rent and fines would be paid from them. Rents and fines declined steeply, after some time down to around 20-25% of the pre-plague level.[463] This meant that it became quite unimportant whether or not peasants were freeholders or tenants, except when the big landowner's bailiff could be called upon to defend the peasant (or someone in his household) in some legal dispute and represent him in the local moot or the court. The social class system of peasant society underwent a sudden transformation in the wake of the Black Death. Before the Black Death conditions were highly different: high population in relation to the resources that could be exploited with the prevailing agricultural technology engendered sharp competition for work and tenancies putting strong upwards pressure on rents and downwards pressure on wages.

Before the Black Death, peasants endeavoured to produce as much grain as possible on all lands suitable for arable cultivation. No other form of agricultural husbandry produces more calories per unit of area under cultivation, and that is the crucial point for keeping body and soul together in times of high population pressure. However, arable husbandry demanded a particularly high input of work in old-time peasant society. Much of this intensive cultivation of grain had to be relinquished after the Black Death. The deficit of labour meant that the peasant households shifted their production to more emphasis on animal husbandry, which required less input of work and cultivated only the grain they then needed for food and ale. Grain production was reduced, because there were fewer mouths to feed, and because the deficit of labour compelled a reorganization of the operation of holdings towards more animal husbandry.[464] These were the fundamental grounds that agricultural land was deserted, uncultivated and unsown, not because people were lazy and given to drink.

An very different matter was that an almost inconceivable proportion of the survivors were not only happy to be alive, but also felt the deepest abyss of sorrow from the personal losses of children, spouses, friends, neighbours, and others who

463 Salvesen 1978: 109-41.

464 Sandnes 1971: 195-98; Sandnes 1987: 160-68.

had been dear to them and given life meaning. A drink too much felt surely good for many more people than before.

2.13 The Powers of Spread of the Black Death

The fact that only around 20 per cent of those who contracted plague survived or, put another way, that the *case mortality* (or *lethality*) rate was 80% is a necessary condition for the causation of enormous mortality, but it is not a sufficient condition. In order to cause enormous mortality a disease must both be hugely mortal and have tremendous *powers of spread*. Such an incomprehensible epidemic disaster as the Black Death raises consequently two central questions: how can it be that plague disease can combine huge rates of case mortality with tremendous powers of spread? How could such a disease spread so efficiently from urban centres on the coast across the sparsely settled countryside all the way up to the mountain settlements and also to the remote settlements along the coasts? The latter question raises two new main questions or problems: (1) how were old-time medieval Norwegian peasant societies interconnected by movement and traffic so that contagion could be introduced into the homes as a mass phenomenon? (2) Why were people evidently not able to do anything of significance to prevent the spread of contagion across the country, a question that primarily relates to the understanding of epidemic disease?

It is exceedingly rare or unique rather for a disease to combine huge mortality and great powers of spread. The reason is that the faster and more frequently diseased persons die, the more the functions of the diseased as sources of infection of others will be reduced. This means that epidemic diseases with such properties will have weak powers of spread and will tend to disappear quite rapidly. The reason that bubonic plague combines these two properties is precisely because it is not transmitted directly between human beings, but by infected rat fleas to human beings. In medieval society, it was, as mentioned, a strong obligation to visit diseased neighbours, relatives and friends, to be present at their deathbed, and when they died, to participate in wakes and funeral feasts and be present at interments. If not earlier, the heirs would meet at the funeral feast in order to share the goods and chattels. Also bedding and used clothing were popular items of inheritance in old-time society characterized by widespread poverty and destitution. Such items could also be sold and provide income. All these events brought many people together in houses swarming with infective rat fleas which would leap onto the visitors, bite them or be carried in their clothing to their own farmsteads and local societies where they unleashed a plague epizootic in the rat colonies that next would release swarms of infective rat fleas and translate into epidemic form at the level of farmsteads, thus starting the process all over again. The settlements of inheritance after people died from plague spread dangerous rat fleas also by redistribution of bedding and worn clothing. When so many people died, the process of redistribution of goods and

chattels by inheritance assumed huge dimensions and contributed greatly to plague's powers of spread. These special conditions of the epidemiology of plague are the reason that, in contrast to other contagious diseases, the powers of spread of plague increase by the rapid death of people diseased by plague infection. This is crucial to the understanding of the fact that plague can combine very high case mortality rates with high powers of spread.

A sharp glimpse of the social process that induced people to gather in the houses of persons dying from plague and therefore were swarming with dangerous rat fleas is given in a later document (See also above). Jon, rector off Rollag parish, issued a testimony on a person who died from the Black Death: He had been present when Ånund Helgesson died before the octave[465] of Christmas [had ended: my insertion] in the "winter of great mortality" and that Ånund died in the presence of these persons: Ragndid Simonsdatter and Alvald Sveinkesson and *many other good persons* [.][466]

In pre-plague Norway, there was much more movement, trade and travel along tracks and paths than often assumed. The population had been growing over many hundreds of years. Gradually, the central areas of the anciently settled local societies were completely cleared, and eventually a large number of small holdings, crofts or cottages on tiny clearances had developed on the outskirts. There lived a new agricultural class of proletarians or cottagers who were dependent on seasonal work on the anciently settled, large holdings for the main part of their incomes. As also the peripheral or marginal resources in the anciently settled central localities were exhausted and young people struggled with increasing difficulties in scraping together the means for marriage and family life, they gradually were pressured to move to mountainous areas or coastal areas, where there still were unused natural resources for clearance of viable marginal small holdings. The mountain settlements and the external coastal settlements were established.

The old type of agricultural husbandry was based on subsistence economy and self-sufficiency, i.e. the peasant households endeavoured to produce all they needed to survive. Usually, self-sufficiency was not possible to achieve for two indispensable products, namely iron for tools and salt for the preservation of food for later consumption, especially meat, butter, and fish. Since olden times, a fine-meshed network of trade had, therefore, been in operation in Norway where iron and salt were bartered for agricultural produce or self-moving domestic animals. This network of trade was greatly developed with the growth of settlements in peripheral areas. Climate and land in the mountain settlements and external coastal settlements did often not allow sufficient production of grain for food and ale. However, conditions were good for animal husbandry, because there were enormous areas suitable for

465 The seventh day after a Church festival, in this case the week from Christmas Day to New Year's Eve.

466 DN I, No. 355, 07. 14 1358 (misdated in DN to.0.3.31). My italics.

grazing. The opportunities for hunting were plentiful and also many other natural resources were available ranging from bog iron to quarrying of steatite. The rise of the settled outskirts of Norway depended to a considerable extent on the exchange or barter of the products of animal husbandry and local natural resources with vitally important supplies of grain and salt, and commonly also iron.[467] A decisive factor was the establishment of a well-functioning Norwegian government and administration of the realm which made it possible for merchants and tradesmen to travel safely with their goods all the way from the port towns on the coast to the mountain settlements or to the peripheral coastal settlements. Often surplus production of corn and farina was acquired by purchase or barter in the fertile inland lowland districts for sale in the peripheral settlements and localities.[468] In the high Middle Ages, a vital commercial network had come into being that linked the country together by brisk trade and traffic.[469] Along the same network, contagion was efficiently conveyed with people and goods, with respect to plague especially by commercial transports of corn and farina. These products were also shipped from England and the Hanseatic cities to Norway. When such goods in ware houses in Bergen or Oslo were contaminated with plague infected rat fleas, they contributed to the spread of plague across the surrounding regions.

Another dynamic factor of spread must be mentioned: pilgrimages. They were linked to the rapidly growing cult of saints and the concomitantly growing universe of notions of the purgatory. The purgatory was an institution of torture of all good Christians who had to be cleansed for the punishment associated with their sins before they could be let into paradise. The time in the purgatory could be shortened by the acquiring of indulgences for good deeds or pious acts of various kinds, among them pilgrimages, not only to St. Olav's in Nidaros, but also to many other ecclesiastical institutions and sacred sites.[470] This caused a considerable increase of movement of people along the communications lines of the country. At the time of the Black Death, pilgrims have certainly streamed to Nidaros; in Østlandet the new alter for St. Sebastian in Oslo's cathedral must have been an attractive goal.

2.14 Contemporary Understanding of the Causation of Epidemic Disease

The account in the preceding chapter of the powers of spread of the Black Death raises the question of why people were unable to do anything to prevent the spread of infection across the country. The answer to that question relates primarily to

467 Martens 1989: 73-91; Martens 1986–1988: 73-80; Martens 1990: 70-81.
468 See, for instance, Sandnes 1971: 69–70; Martens 1990: 78–81; Martens 1986–1988: 78–79.
469 Martens 1989: 79-83; Martens 1990: 79.
470 Kolsrud 1958: 352–356, 341-48.

contemporary understandings of the causation of disease. The understanding of disease among the social elites of ecclesiastics, nobility and gentry, and the king is quite well known. Predominantly, it was based on the medieval Christian view of disease as the Lord's punishment for sins. There was also some knowledge of classical Greek medicine, but there is not any indication in the sources that it was activated for the purpose of combating the Black Death or subsequent plague epidemics as occurred in other countries in Europe, also in England, with which contemporary Norwegian ecclesiastics and merchants had good connections.

According to the religious understanding of the causation of disease in the Middle Ages, measures aimed at tempering God's wrath was the most important means to halt the spread of epidemic diseases and cure the infected. Such religious measures were described in a circular letter from King Magnus of Norway and Sweden to all inhabitants of Sweden's dioceses[471] from late September 1349[472].

471 The circular letter is addressed to the inhabitants of the Diocese of Linköping, however, the wording makes it clear that similar circulars were (supposed to be) sent to all Swedish dioceses.

472 Grandison 1885: 99; *Diplomatarium Suecanum* VI, No. 4515, see especially n. 1. In RN VI, No. 1, n. 1, the circular letter is dated to "at least some weeks before 30 November, but hardly many months earlier". I cannot agree with the approach taken to address the question of dating leading to this conclusion. In RN the point of departure of the analysis of dating is taken in the royal order in the circular letter that all inhabitants should have paid to their parish priest 1 Swedish penny by the 30th of November, at the latest. The king and the bishops should then deliberate together on how this money could best be used in order to reduce God's wrath. The date of 30 November represents a certain but highly unrealistic *terminus ante quem*, while the time needed for collecting a general head tax under contemporary conditions is so poorly known and difficult to assess that any attempt to indicate a *terminus post quem* becomes very uncertain, but hardly less than a number of months. "At least some weeks" must be a strong underestimation of the minimum time required to collect the tax, while I do not understand why at least a couple of months would not be a realistic assessment.

Instead, I must agree with the approach to the problem of dating taken by Grandison and the editors of *Diplomatarium Suecanum* VI. Their point of departure is the fact that the king had summoned a meeting of the Council of the Realm in Lödöse, the precursor of Gothenburg, and that those bishops who were unable to attend on so short notice should be represented by canons. This writ of summons has been lost, it is mentioned in some detail in the circular letter. The meeting took place as planned and the participants had time to work out and pass the measures which are stated in the letter. Clearly, the king stayed in Lödöse at the time it was written. The best way of dating the circular is to link the knowledge of the time the king stayed in Lödöse with information on the time he stayed in Lödöse. Other documents show that he stayed there in the period 25-29 September.

Another document shows that the king stayed in [the town of] Jönköping on 11 September. Grandison 1885: 99. The distance to Lödöse was about 150 km, which could be covered in four quite usual days of travel on horseback at the time. Steen 1934a: 228. Without any extra effort, King Magnus would then have arrived in Lödöse by mid-September. A longer view of King Magnus's itinerary shows that, on 10 August, he stayed in the town of Nyköping on the Baltic coast about 80 km slightly southwest of Stockholm. From there, he began heading for Jönköping where he, as mentioned, stayed on 11 September. His itinerary after the meeting in Lödöse shows a consistent route of travel away from south-western Sweden towards central Sweden and, then, further to Stockholm via Jönköping, Arboga, Västerås and Strängnäs. Grandison 1885: 99-100. This means that the king probably issued

The circular letter starts with a motivational clause: he had been informed about the Black Death's terrible ravages in the countries west of Sweden, and that it had spread over "all Norway" and also Halland [longish region on the Kattegat] and that this big "plaga" was now coming close to Sweden. People died suddenly without preceding illness (so to their great terror, they had died without having received the sacrament of the last rites and faced perdition), and the survivors were too few to inter the death [so were not interred in consecrated cemeteries and faced perdition also for this reason]. The king feared that "all our misdeeds should lead the same 'plaga' and mortality to our subjects". He had, therefore, taken responsibility for the well-being of the people. He had summoned their bishops, a number of councillors of the realm and canons of the cathedrals whose bishops could not, at so short notice, attend the meeting where measures should be discussed that "could please God and induce Him by his grace to bestow his mercy on us". They had agreed on the following measures:

> all people throughout all the Realm of Sweden, rich, ecclesiastics, laymen, old and young, females and males, should come barefooted to their parish churches on Friday in every week and confess their belief in God, His righteousness and power, with appropriate humility. They should walk (in procession) around the church with their sacred treasures [relics, images of saints, and so on], attend mass with invocation of God on that day, make their offerings on the altar of the pennies that they could afford, so that others could receive alms. The church wardens should distribute this offer among poor people and it should under no circumstances come in the hands of the priests. We order and advise you that on each Friday every Christian shall fast on water and bread: those who do not want to do that shall at least abstain from all fish and fast on ale and bread.
>
> Mass shall be said in honour of Our Lady [the Virgin Mary] that She would deign to ask her blessed son on her behalf to turn His wrath away from these countries for the sake of our humility. Every bishop has granted xl [= 40]days of indulgence to all those in his diocese who have prepared themselves [for their deaths] and made proper confessions, which all human beings are advised to do these days [...] For this reason, We convey to all human beings the curative advice [for their souls] that every human being, while God still has given him some time, to cleanse his conscience, make his confession and with full contrition do penance for his sins, so that when God will visit him, He will find him so ready that his soul would be taken in God's hand. [...][473]

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the writ of summons to the meeting shortly before, or just possibly around 1 September, while he was on his way to Jönköping. This indicates a realistic time frame that would give the summoners time to reach the summoned, and the summoned time to prepare for the travel and ride to Lödöse, and arrive in a number forming a meeting of the Council of the Realm with a presence satisfying the need for a quorum. See also Benedictow 2006: 95 with n. 29, and p. 128 with n. 113, in English translation in Chapter 3.2.1, p. 196 n. 515, and Chapter 3.3.4, pp. 230-31, n. 613, and Chapters 4.5.4-4.5.5 below.

473 *Diplomatarium Suecanum* VI, No. 4515. My translation from the middle Swedish text of the transcript of the lost original circular letter.

A declaration with related content is known from Norwegian sources but is preserved only in an undated transcript. The issuers are the bishop of Bergen and his Chapter of canons but the issuers are not identified by name. In Volume XXI of the great series where almost all Norwegian medieval sources now are published, *Diplomatarium Norvegicum*, the editors have dated the declaration to "1445 at the latest?"[474] The reference to the cult of St. Anne, the mother of Mary, is considered important for the late dating, because such veneration is characteristic of the fifteenth century in the Nordic countries. It is particularly associated with the (monastic order of the) Bridgettines after the founder, the Swedish saint Bridget (or St. Brigit). Recently, Bodil Lavold in a postgraduate thesis (supervised by the author) on protector saints against plague in the late Middle Ages made interesting observations which indicate that the declaration was issued in relation to a plague epidemic in Bergen 1438–1439.[475] Table 2.2 below shows that this was a year when a big wave of plague spread over Northern and Western Europe. In the declaration, which is written in Latin, it was stated:

> It is hereby declared that to combat the plague, We and our Chapter have decided that five masses should be solemnly celebrated on five days which should include offers in blessed commemoration [of the dead] and that those attending should hold burning candles and offer a penny that shall be distributed among the poor for this purpose by particularly selected men. All those present at the aforementioned masses and processions should walk barefoot and fast in the four following days, and, when they are truly contrite and have made their confessions [of their sins], they shall receive the Holy Communion on the following Sunday. The order of processions is, *inter alia*: today, the procession occurs at the Dominicans' [Holmen Priory] the fifth day of the week at the Franciscans' [Friary] , on the sixth day of the week at the [Cistercian convent] of the sisters of Nonneseter [Convent], on the Sabbath at Munkeliv [Benedictine Abbey], and on Sunday at the cathedral. One must take care to be alert and that all shall pray individually to Our Lord and God with heartfelt piety and to St. Anne, mother of the God-bearer, and the other saints that God by their mediation and intercessory prayer and merits will have mercy on us and decide to halt this recrudescent plague that we fear is punishment for our sins, and that He will grant us time to do helpful penance.[476]

The measures are similar to those found in King Magnus Eriksson's circular letter 90 years earlier. However, in his royal letter King Erik Magnusson ordered that masses said for Virgin Mary should be celebrated on Fridays so that she would make intercessory prayer for them with God, while the bishop of Bergen's declaration refers instead to a mass that Pope Clement VI had composed in order to counteract the Black Death in Avignon called "Recordare Domine" ["Remember the Lord"] after its first words. In the late Middle Ages, the mass became a very popular countermeasure against plague. Also in this mass, people were required to hold burning candles in

474 DN XXI, No. 431.
475 Lavold 1997: 57-65.
476 My translation from Latin.

their hands, walk barefoot, and so on.[477] Pope Clement VI's mass is mentioned in a couple of Icelandic annals in association with the Black Death. The accounts confirm that the participants in the celebration should "be on their knees with candles" and should be granted sizeable reductions in the punishment for their sins when they made their confessions. It also relates that Pope Clement VI on the same occasion had authored a special prayer against the plague called "Benedictio Dei Patris" ["The blessing of God our Father"], which granted reductions both of the punishments for sins and the requirements of fasting.[478] Because the annals in question are transcripts of older annals with later additions, they cannot unreservedly be taken as proof that this particular mass was celebrated in Norway at the time of the Black Death. Icelandic annals contain also information showing that, when the island was ravaged by severe epidemic disease(s) in 1402-1404, these religious countermeasures were immediately implemented.[479] Because people at the time, and for a long time afterwards) did not recognize that various epidemic diseases had specific pathogens, these countermeasures were activated against all severe epidemics. Iceland with its two dioceses was suffragan to the Norwegian Church province; the use of Pope Clement VI's mass and prayer against the plague reflects presumably a common usage in an integrated church province in times of severe epidemic diseases. This also suggests that these religious countermeasures had long been used in Norway against recurrent plague epidemics in the second half of the 1300s. The annalists/chroniclers, who usually were ecclesiastics, were able to present such specific details of religious practices, would presumably have knowledge of the countermeasures implemented in Norway against plague and other severe epidemics.

In her postgraduate thesis Lavold also shows that several altars were established in Norwegian churches for St. Sebastian, St. Roch, and other protector saints against plague, which became popular in the late Middle Ages. Expensive triptychs and other pictorial decorations of churches were purchased which show these protector saints against plague. Such purchases were acts of piety that were made under the assumption that they could counteract plague, because they provided people with better opportunities to venerate these protector saints and implore them to make intercessory prayer with God in order to reduce or stop plague epidemics.[480]

This religious understanding of disease lasted through the late Middle Ages without significant change, seen with modern eyes. In the light of modern medical knowledge and our knowledge of the tremendous mortality plague epidemics caused,

477 Rendered in English translation in Horrox 1994: 122-24.

478 *Islandske annaler* 1888: 213, 224.

479 *Islandske annaler* 1888: 286; *Annales islandici posteriorum sæcolorum*, 1, 1922–1927: 9-11. New thorough studies have shown that this purported plague epidemic and the next purported plague epidemic cannot have been primary pneumonic or bubonic plague but must have been another severe disease or other diseases. Benedictow 2010: 493-535.

480 Lavold 1997, Chapters 5–8.

these countermeasures did not work. In fact, they could have contributed to the spread of plague by inducing people to assemble in great numbers.

Lack of real medical knowledge of the nature of infectious diseases and the specific nature of plague meant that governments and other authorities could not implement efficient countermeasures against the spread of plague. They could not prohibit trade and movement of people, gathering of relatives and neighbours in the houses of diseased, or pilgrimages. Because medieval people considered plague as punishment for sin, all efforts to flee from epidemics would be seen as attempts to avoid God's will, yet another sin.

Appendix 1: Plague Epidemics in Norway 1348-1500 and Their Provenience

Table 2.2: Certain or presumed plague epidemics in Norway mentioned in Norwegian or Icelandic sources 1348–1500 correlated with large(ish) plague epidemics in England, northern Germany and the Netherlands. Probable areas of origin for plague imported to Norway are indicated by bold type. [481]

Norway	England	Northern Germany	Netherlands
1348-49	**1348–49**	(1349-)1350	1349–52
1360	1360–1361/62	1358	1359–60
1370–71	1368–69	1367	**1368–70**
	1374/75	1375–76	1374
1379	**1379–83**		1382–84
		1387–88	
1391–92	**1389–93**		1390
		1396	
(?)	1400		1400–01
(?)	1405–07	1405–06	1409
	1413		1412
(?)	1420-21	1420–21	1420–21
	1427		
(?)	1433–34	1433	1433
1438–39?	1438–39	(1438)	1438–39
1452	1448–1450	1451	**1450–54**
1459	1457–58		1456–59
1465-72?	1463–67	1463-65	1466–72
	1470-71		
1479–80?	**1479–80**		1478
(?)	1485–87	1483–85	1481–85
			1487–90
1500	**1499–1501**		

481 The sources to the post-Black-Death plague epidemics in Norway are presented below [not included here]. Shrewsbury 1971: 54-156, and Hatcher 1977: 17, 57, have been used to identify English plague epidemics. See also Dodgshon and Butler 1978: 125; Nigthingale 2005: 45-48. Plague in the Hanseatic cities of northern Germany in this period are registered by use of Ibs 1994: 86-124, 206-07; Goertchen 1971: 7577; Bruns 1900: 353; Koppmann 1878: 127-30; Keyser 1954: 207-09; the Netherlandish plague epidemics by use of Blockmans 1980: 836-45, 850-54; Noordegraaf and Valk 1996: 225-32. The international overviews of plague epidemics in this period given by Sticker 1908: 42-88, and by Biraben 1975 1: 400-02, 407-10, 415-17, have been used with caution.

Appendix 2: Some Basic Elements of the Medieval Norwegian Agricultural System which Affect Analysis of Plague Epidemics

Servitude had disappeared in Norway by the early 1200s. Land was not held in feudal types of possession, i.e. manorial domains cultivated by hired labour or tenants were miniscule phenomena. The term peasant holding is a translation of the Norwegian term "gårdsbruk", i.e. autonomous agricultural unit in operation by a peasant household (≈ farmstead). All peasant holdings were liable to pay taxes to the king (via his representative) whether they were run by (customary) tenants or freeholders (yeomen/franklins). They were registered in official registers as taxable by a generalized fraction of value of the normal agricultural production; in the early Modern Period, the technical term for taxable holdings was "matriculated" holdings, i.e. recorded in official registers. In medieval Norway, ownership of land was not associated directly with specific fields and forests but rather with the so-called "rent-owner system".

In most parts of Norway, it was not ownership of physical land but rights to rents and fines from land that constituted the essence of ownership. Partible inheritance was generally practiced and rights to rents could also be sold in parts. It was quite common for peasant holdings to be more or less partly owned by the peasant household and partly owned by another owner or other owners who would then have rights to collect rents and fines according to the relative value of their portions. Because peasant landholdings were partible and subject to sale, privately owned (parts of) land could become tenant land, but (parts) of tenant land could also be purchased and become owned by peasant families, whose obligation to pay rents and fines would be reduced accordingly. These families in turn either could increase the proportion of ownership in the holdings under their control or purchase rights to rent in other holdings, and therefore, also receive rental income.

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