

THE ELEVEN PLAGUES OF EDINBURGH

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INTRODUCTION

Much has been written about the attack of the Black Death on London in 1348 where, between 2 February and 2 April, there were 2,000 corpses thrown into a single mass grave, and over the whole course of the outbreak between a quarter and half of the population succumbed to it.¹ Every schoolchild knows about the Great Plague of London in 1665. Defoe painted a particularly vivid picture with all the streets of London deserted, and whole families of rotting corpses found unburied in their houses.² The fact that he was only eight years old during the plague, and did not write about it until 1722, was not allowed to stand in the way of a good story.

Much less is known about the plague in Edinburgh. The most recent account was given in Comrie's *History of Medicine in Scotland*.³ This uses as sources the *Scotichronicon* of Bower, a fifteenth century canon from the monastery at Inchcolm, and *Extracts from the Records of the Burgh of Edinburgh*.^{4,5}

SCOTICHRONICON

A recent English translation of Bower's work is concise, lucid and entertaining. It is likely that the account of more recent events is reasonably accurate, but information on the early plagues is brief and contains little clinical information. Any numerical data included are likely to be little more than guesswork. It should also be noted that some epidemics of plague ran concurrently with other conditions such as smallpox or typhus with an admixture of mortality figures.

The first epidemic mentioned by Bower did not involve humans, but was a severe outbreak of fowl pest which took place in 1336 and which resulted in the destruction of all poultry in Scotland. This was followed by an outbreak of the human plague in 1349, one year after it reached Mediterranean ports from a source in Central Asia. It caused a painful swelling of the body, and death within two days. Two-thirds of the population died, with the poor and middling classes faring much worse than the nobility. In St Andrews alone 24 canons died, probably because of their role in ministering Extreme Unction and the Viaticum to sufferers.

A further plague was recorded in 1361 when one-third of the population died. On this occasion it was the nobility who fared worst. Many fled to the Highlands to escape the contagion. Not much information is available on a further attack in 1379 other than that it was less severe than the previous one. The last mentioned in the *Scotichronicon* occurred in 1420. On this occasion also the nobility fared worse than commoners. Physicians linked the condition to a wet autumn, a dry winter and a wet spring. Their complex reasoning relevant to the time relating to an imbalance of the humours is obviously no longer relevant.

EXTRACTS OF THE RECORDS OF THE BURGH OF EDINBURGH

The great value of these is their sense of immediacy. They provide information on the thoughts and decisions taken before an event, and modification of these with further developments. These also include vignettes concerning the effects of the plague on individuals and their families. One limitation is that, unlike in some towns on mainland Europe, they contain little statistical input, and no record of clinical presentation or treatment. Some other important details may be missing because they did not constitute council business.

In 1498 the 'council' became worried about reports of plague in surrounding parishes, and prohibited visits from these on pain of death. Residents harbouring outsiders would be banished and have all their goods burnt.

Over the next six months the plague had established itself in Edinburgh. Measures proposed were as follows:

- Anyone wishing to take in a traveller should obtain a council licence.
- Residents were put on a rota to guard the town walls.
- Visitors should come through the town gates rather than over the walls or through the backs of houses. Miscreants would be branded, have their ears cut off and be banished.
- Any English cloth taken into town should be burnt.
- Children should stay indoors and should not attend church.
- There was a 10 p.m. curfew, and all taverns and schools should be closed.
- Anyone bringing in merchandise or food should have council permission, and a testimonial that it came from a non-infected area.

In 1499, problems were particularly prevalent in Haddington and Peebles, and travellers from there were banned from entry. Penalties for non-compliance ranged from banishment to death. Other regulations passed at this time were:

- Dogs and swine should be kept within a house or yard. Those running loose would be put down.
- Children wandering in the streets would be put in the stocks and scourged.
- Any teacher continuing to run a school would be banished.
- All trading booths should be closed on pain of all goods being confiscated.
- Since Leith was free of plague, food and grain could be brought in from there.

Wealthy burgesses were to give ten shillings and others

five shillings towards the cost of four cleaners paid 12 pence per day. They would wash and smoke infected houses. They were to carry a white wand with a hoop at its end, and lodge separately at the Hospital of St Mary Wynd, a convent east of the High Street. Despite the dangerous nature of their work, the council later reduced their remuneration to six pence per day.

Regulations passed in 1500 were:

- Servants should not take or buy clothing without their master's permission, on pain of branding and banishment.
- No one (suspected of harbouring the plague) should bring in merchandise.
- The Lawnmarket, the principal market below Castle Hill, was closed (Figure 1).
- Anyone bringing goods in without permission would have his hand cut off if a man, or her cheek branded if a woman.
- Goods from an infected house should be taken out and cleaned with water at the Water of Leith and by smoking. They should be left there for eight days until dry. Non-compliance would result in the goods being destroyed.
- Members of a household with a plague victim should avoid contact with others for 12 days.



FIGURE 1

The Lawnmarket. The site of Edinburgh's main medieval market.

Regulations recorded in 1505 were:

- Individuals sent out of town to cleanse themselves and their goods should not be re-admitted without the permission of the council.
- Each close should appoint two individuals with responsibility for identifying the sick and arranging for the cleansing of their houses and goods (Figure 2).
- The onset of illness should be reported within 12 hours.
- Sick or convalescent patients should not leave their house without a council licence.
- The rule about swine and dogs was reiterated.

The records are silent until 1509 when two men given a contract to clean the causeway agreed to provide their own horse and cart and other essential equipment for the fee of four pence for each apartment on the causeway. They also had the right to charge butchers, fishmongers and bird sellers one ha'penny per week for cleaning their stalls. Regulations similar to those passed in 1500 and 1505 were updated, and greater attention was given to

preventing the gates from being cluttered with rubbish. It was also decided that beggars should be driven out unless they were incapacitated, blind or elderly. The plague was finally controlled in 1514. Measures taken to prevent its recurrence included dividing the town into four sectors with a different magistrate responsible for each.

The next 15 years were uneventful, but in 1529 it was noted that there was a recurrence of the plague north of the Forth, and admission of travellers from there was prohibited. In anticipation of problems a cleaner, John Barbour, was appointed to provide support for patients and supervise contacts sent to wooden huts in the Burgh Muir, a large area of open ground to the south of the town. He was to store cleaned clothes in the Chapel of St Roche. Its site is close to a mansion of the same name in the grounds of Astley Ainslie Hospital (Figure 3).

By May of 1530 the plague had taken hold and regulations promulgated on previous occasions were reinforced. Particular concern was expressed about the filthy state of closes and the High Street, and householders were ordered to clean up the street in front of their doors or closes. There also was concern that some servants had been washing the clothes of others mixed up with those of their master and mistress. This was prohibited and it was stated that servants should only wash clothes under the supervision of a responsible individual.

Several sentences imposed around this time were recorded:

- Isobell Cattall – for failing to report that her daughter was sick – branding and banishment.
- Four adults – for failing to report that a sick child was in their house – all branded.
- Patrick Gowanlock – for failing to report that a woman in his house was sick, and admitting strangers – banished and half his goods confiscated.
- Janet Cowan, his servant – conniving in the crime – both cheeks branded and banished.
- A man – did not report that his wife was dying of the plague and attended church – hanged.
- A man – threw a woman with the plague out of his house without informing the council – branded and banished.
- Katryne Heriot – stole two rolls of buckram and had brought the plague into Edinburgh – drowned.



FIGURE 2

A small close on Edinburgh High Street.



FIGURE 3

St Roche's House, Astley Ainslie Hospital. Though the foundations of St Roche's Chapel are nearby their exact position has not been located.

The plague settled within the year. In 1574, after 24 years of respite, there was concern about reports of the plague in Kirkcaldy and Leith. Residents of Edinburgh were prohibited from having contact with people or goods from these towns. An order was promulgated that anyone falling ill should report this to the council, stay indoors and have no contact with neighbours. All gates apart from the Netherbow and West Bow would be closed (Figure 4). Beggars and vagabonds were to leave town on pain of scourging and branding.

John Forrest was appointed as master cleaner. He would have charge of patients transferred to the Burgh Muir, along with their contacts and goods. The pay for himself and his servant was £6 per month. Particular responsibilities would be to keep patients separate from contacts and to arrange cleansing of goods. If his measures failed to prevent the spread of infection, he was to be executed.

This episode was short-lived and in 1575 the last of the patients and contacts returned home.

There was a respite of about ten years. In a minor incident the crew of *William of Leith* came down with the plague, and was kept on board off Inchcolm. Cleaners supervised 'disinfection' of the ship, cargo and crew. Two episodes of plague occurred in south Fife and Perth. Visitors from there were denied access to Edinburgh. Concern was aroused again in 1585 when a woman died at home, as did another two in a house within the fish market. Three other people considered to be infected were moved out to the Burgh Muir near St Roche's chapel and their house thoroughly cleansed. At this point two cleaners were recruited, and arrangements made for a cleaner to help sick people and contacts move out to the moor. The doughty John Forrest was put in overall charge as a cleaner, and given a man and woman as helpers. Money was made available to compensate people whose clothes had to be burnt. Sections of the moor with patients and contacts were fenced off from each other so that the two groups did not come into contact with each other. Those who died were to be carried to their graves on a bier and not on a sledge or across someone's back. A gibbet was set up there, to emphasise the seriousness of breaking plague regulations.

Back in town all beggars and vagabonds were moved out, and it was decreed that if anyone was sick, the whole

household should stay indoors and contact the council through a neighbour or an official. A register was kept of the sick, indigent and poor shut in their homes, and food and drink made available to them along with those on the moor. Children sleeping in the streets would be taken to the chapel at St Mary's Wynd to the east of the High Street. Unattended cats, dogs and swine found loose in the town were destroyed.

All students at the College had already left town, and two masters were given permission to follow them. Servants were forbidden to go to Leith unless they were with their master or a reliable neighbour. The penalty for disobedience was 15 days in jail on bread and water.

For the duration of the plague it was ruled that groups should not crowd around the entrances to closes, and those returning from the moor should stay indoors for at least 15 days. Individuals were employed to remove the muck, filth and rags found in closes and vennels. At least two individuals were executed:

- A man and his daughter both suffering from the plague put members of the nobility at risk by walking amongst them. They were both condemned to death.
- A man was convicted of stealing infected goods on the moor and was sentenced to death by hanging.

Within four months the town was free of the plague and there was no recurrence for 18 years.

There were several scares in 1593, however, when the plague broke out in London. Passengers on a ship from there were confined to Newhaven. A bye-law stated that travellers from London should not be admitted without the knowledge of the council. Thereafter they should keep to their houses. Goods from London should be kept in buildings allocated by the magistrates.

The plague broke out again in an area of the town in 1597. Magistrates responsible for each town quarter appointed locals to check each close for sickness. Beggars and vagabonds were again expelled, and since there was plague in Leith, all herring, fruit, flour, clothes and wood from there were banned. Children and servants were to be kept off the streets, and 16 pence per day provided for poor people kept in isolation at home. So many people died on this occasion that there was insufficient room in



FIGURE 4

Netherbow. The gate at the north end of the High Street has been demolished, but this metal sculpture at its site shows that it was a very elaborate affair.

cemeteries and burial in a coffin was banned.

Several misdemeanours were noted, including:

- A man with plague had run off without being apprehended. His belongings were burnt at Greyfriar's Gate.
- A husband and wife who had kept a sick child at home without notifying the authorities were put in irons and then banished.

The plague resolved within four months but the populace got little respite; there was another outbreak in 1602. Wardlaw's Close, where this began, was fenced off and two cleaners recruited. Four watchmen also were sent out to an old convent on Burgh Muir at Sciennes to build wooden huts for plague victims. Cleaners were to be dressed in livery. Other regulations were that people should no longer give clothes to washers, or visit patients or contacts at Sciennes.

The only miscreant noted on this occasion was a merchant who got off lightly by being fined £20 for failing to report sickness in a child within his household. There seem to have been different standards of justice for the leaders of society and the less affluent. The plague eventually died out in 1607.

There was a long period of respite. One of the few incidents was in 1618 when three men were fined for sailing to and from Norway during an outbreak of the plague there. In 1636 another man, who had sailed to and from a place suspected of having the plague, was fined.

Trouble was once more on the way in 1644 when there were reports of the plague in Newcastle. Once the illness reached Edinburgh, the council closed the High School and the College. For the first time a physician, Dr Paulitius, was appointed to visit patients thought to be suffering from the disease. Cleaners were also appointed. Houses in the quarter affected by the plague were cleaned, and all loose thatch and straw burnt. As the plague advanced, debtors were discharged from the Tolbooth and the Clerk's Chamber was closed.

During 1645 the Civil War was raging. By August most people had taken to their houses and the town was undefended. One hundred men were levied as a watch, and others drafted to clean the houses and streets. The situation was worse by October when only 60 starving men were left to defend the town. Prisoners in the Tolbooth were also starving and threatening to kill their jailers. Around this time the Marquis of Montrose defeated the Covenanting Army at Kilsyth and could shortly have been at Edinburgh's gates. It was fortunate for the town that the plague settled, and the Royalists went elsewhere.

THE PLAGUE IN OTHER CENTRES

The experience in Edinburgh can be put in perspective by looking at the experience of people in other towns afflicted by the plague.

*London*²

The most dramatised visitation was in 1665. Though the plague had been almost endemic in the South of England for many centuries, the factor that exacerbated the 1665 outbreak was an expansion in the population of London from 90,000 to 460,000 over the previous century. There was gross overcrowding and appalling sanitary conditions.

The plague started in the poorest areas in the periphery and, by the time it reached the centre, most of the nobility, merchants and professionals had moved out. Preventative measures included confining patients and their contacts to their homes, closing schools, destroying stray cats and dogs and burning tar barrels to fumigate the streets. Hospitals were used but were soon overwhelmed. As cemeteries filled, bodies were thrown into large pits.

Since most of those in authority had left the city, the number of cases exploded and many of the housebound died of starvation. Since many of the clergy joined the exodus, their parishioners often died without spiritual solace. Deaths from plague calculated from bills of mortality were 68,586 (15%). The epidemic continued until November when a spell of frosty weather resulted in the epidemic disappearing.

*Vienna*⁶

The first attack was in 1349. It initially presented as a pyrexia and watery haemoptysis. Later, patients were said to develop swollen axillary, inguinal or cervical glands. Both were particularly common in poor people living in overcrowded conditions. Pregnant women were also at particular risk. Since the reported mortality exceeded the total population of Vienna, it obviously was exaggerated. The populace had support from 20 physicians and 12 surgeons. Preventative measures included clearing the streets of refuse, getting rid of goods stored in basements and prohibiting the use of old garments. Other sources of infection were public baths and brothels so these, also, were closed. Flagellants attempted to allay the wrath of God by flogging themselves. Jewish people were blamed for starting the plague and there were several massacres. Despite the high death rate and drama, the epidemic resolved itself within a few months.

Over the next three centuries a more effective policy for containing the plague was evolved. Important aspects of this were as follows:

- Appointing a *magister sanitas* to coordinate measures and report to a health council.
- Closing bathhouses, brothels, schools and the University.
- Using guards at the city gates to keep out carters, grape pickers and other potential carriers of infection.
- Beggars and vagabonds were to be sent out of the city.
- Infected clothes were to be burnt outside the city.
- Prohibiting the release of dogs and the disposal of rubbish within the city.
- Prohibiting the sale of fruit and vegetables at markets.
- Cleaning all streets twice a week.
- Pits, latrines and cesspools were to be filled in.
- Marking infected houses with a cross and prohibiting exit for 40 days.
- Burying all corpses outside the city.

There were several outbreaks of plague in the seventeenth century, with the last one occurring in 1713. Although records were kept of deaths during outbreaks, the numbers are so hopelessly confused that they are of little value.

DISCUSSION

The first outbreak of the plague in both Scotland and England undoubtedly had a devastating effect on their populations. With the records available at the time, however, it is difficult to see how Bower's estimate of a two-thirds

mortality could be accurate. In addition to the plagues a number of other factors acted in unison to produce a reduction in the population at this time.² A massive population increase occurred between the eleventh and fourteenth centuries and there had not been a proportionate increase in agricultural output; this led to recurrent famines and a reduction in female fertility.⁷ A concomitant deterioration in the climate led to a further decline in harvests.⁸ Reviews of deserted medieval villages reveals that a major decline in the population had occurred even before the influx of the plague.⁹ Analysis of all these data suggests that the plague mortality during the fourteenth century was around 20%.²

The variable duration of the plague in Edinburgh is of interest: it usually only lasted a few months. An exception is the outbreak of 1498 which seems to have lasted 14 years; there may have been a short break in the middle of the period but the records are unclear on this. There also was the outbreak in 1602 which lasted five years. It is unclear why those two outbreaks should have become endemic.

Controversy as to which socio-economic groups were most severely afflicted by the plague also exists. The nobility had the advantage that they could more easily move to other areas. A puzzling observation in many accounts is that there was a higher mortality amongst young men than in children, women and frail or elderly people.¹⁰ One hypothesis is that the plague bacterium grew better in the lymphoid tissues of young men.¹¹ The clergy and officials staying behind to help suffered an appalling mortality.¹²

If the decisions taken by Edinburgh council were translated into action, these should have tackled the plague with considerable efficiency. Measures included sealing off the town from the outside, clearing up the streets and closes and destroying sources of infection. This is in ironic contrast to the reputation of eighteenth century Edinburgh for being one of the filthiest towns in Europe. The value of fumigating houses remains unproven, but it continued as standard practice in cases of infection well into the twentieth century.

One of the major sources of contagion might have been contact with animals and other people. The approach of destroying all stray cats, dogs and swine was therefore eminently sensible. Unfortunately, beggars and vagabonds came into the same category as rubbish, as they were summarily ejected. Stray children fared little better in that they risked being put in the stocks and scourged, an example of a streak of cruelty that ran through medieval life. No provision was made for the elimination of rats, but Skeyne, a sixteenth century Edinburgh practitioner, suggested that there was a link between the plague and frogs and domestic vermin: 'precedis also, multitudo of Padokis & Domestical Vermis, callit in Latine Blartae'.¹³

It made sense to close the College, schools and markets. Church services continued but every effort was made to keep infected individuals away from these. The most important measure, of course, was to keep victims and their contacts confined within their own homes. Though the physical penalties of branding, amputating a hand, drowning and hanging seem draconian, they appeared to have some of the desired effect. The only punishment to be carried out with any frequency was branding. If the records are complete, few people were executed, and in these cases, there usually were aggravated circumstances.

It would be fascinating to know more about 'cleaners' and their activities. Their remuneration was good and it is likely that they were responsible for the administration of the emergencies rather than actually carrying out the work; menials probably did most of the physical work. It is of interest that another 'cleaner' was responsible for organising support for the occupants of the wooden sheds at the Burgh Muir; he was well remunerated, but had the death penalty hanging over him if his task failed. It may be that he held a post where there was a temptation for abuse of trust. Compared with the 'cleaner', little is said about the surgeon who was first appointed in the seventeenth century.

Associated with these necessary but unpleasant containment measures was an element of compassion. Food and drink were made available to residents on the Burgh Muir and the poor and frail incarcerated at home. Funds also were provided for individuals whose clothes had been destroyed. Frail and elderly beggars escaped the harsh treatment meted out to their fellows. Attention was even given to a dignified way of bringing the dead to their graves.

As time went on, the town developed an efficient system for identifying outbreaks of the plague in other towns, and of having appropriate arrangements for quarantining the crew, passengers and ships sailing from infected ports. These and all other measures were developed empirically over two centuries before the role and mode of transmission of *Yersinia pestis* were defined.

The plague did not occur in isolation. There were recurrent famines from the fourteenth century through to the end of the seventeenth century,^{14, 15} but it tended to afflict the young and healthy, rather than the frail and elderly. The plague might also have been associated with warfare, but most of the wars of Scotland in the late Middle Ages consisted of single battles that caused little social or economic dislocation. Two exceptions were Edward III's invasion of the Borders and Lothians in 1356 when there was extensive destruction of crops and buildings, and an invasion by Richard II in 1385 in which the Scots applied a 'scorched earth' policy. Later destructive periods were battles during the Reformation between 1545 and 1667, and war and invasion during the Civil War between 1638 and 1651.

During the latter, there was a prolonged period of plague that could have been linked to Royalist, Covenanting and Parliamentary armies marching all over Scotland and causing extensive damage in the process. The effect of continuous feuding in the Borders and Highlands is even more difficult to evaluate.

The converse question is whether outbreaks of the plague had a serious effect on central or local administration. Most were relatively brief, and had little impact other than on those who died and their relatives. During the long period of plague at the beginning of the sixteenth century, there was a flowering of the Renaissance in Scotland. Many new palaces were built, a major ship building industry prospered and many poets came to the fore. The defeat at Flodden in 1513 was due to the tactical incompetence of the king rather than a lack of military resources. During the Civil War the situation was different, and plague decimated the defences of Edinburgh.

In comparison with Edinburgh, there seems to have been a complete collapse in administration during the Great Plague of London. This was due, in part, to the large population, and the separation of the city centre from more

peripheral areas. An added accusation is that many leaders of society, medical practitioners and clergymen deserted their posts.

In Vienna during the plague of 1349 services were well organised. By way of contrast there was in this city the idiocy of the flagellants and the appalling persecution of the Jews. Over the next three centuries the system for managing the plague became even more effective.

One of the advantages of Edinburgh was its small scale. Most townspeople knew each other, and there was considerable interaction between different social classes. This made it easier to organise a response to the disease, to recruit effective officials and to keep an eye on individuals likely to disrupt things. This said, Edinburgh is still to be congratulated in the practical and effective manner in which it tackled one of the world's most devastating diseases.

REFERENCES

- ¹ Naphy W, Spicer A. *The Black Death*. Stroud: Tempus; 37.
- ² Roberts R.S. The place of plague in English history. *Proc Roy Soc Med* 1966; **59**:101-5.
- ³ Comrie JD. *History of Medicine in Scotland*. 2nd ed. London: Wellcome Historical Medical Museum; 1932; 202-21.
- ⁴ Bower W. *Scotichronicon*. Vols 7 and 8. Scott AB, Watt DE, editors. Aberdeen: Aberdeen University Press; 1996.
- ⁵ Edinburgh Council. *Extracts from the Records of the Burgh of Edinburgh*. 1403 to 1528, 1528 to 1557, 1557 to 1571, 1573 to 1589, 1589 to 1603, 1604 to 1626, 1626 to 1641 and 1642 to 1655. Edinburgh: Oliver and Boyd; 1935.
- ⁶ Velimirovic B, Velimirovic H. Plague in Vienna. *Rev Infect Dis* 1989; **5**:808-26.
- ⁷ Titow J. Some differences in Manors and their effects on the condition of the peasant in the thirteenth century. *Agric Hist Rev* 1962; **10**:1-13.
- ⁸ Titow J. Evidence of weather in the Account Rolls of the Bishopric of Winchester 1209-1350. *Econ Hist Rev*; **12**:360-407.
- ⁹ Allison KJ. The lost villages of Norfolk. *Norfolk Archaeol* 1957; **3**:116-62.
- ¹⁰ Hollingsworth MF, Hollingsworth TH. Plague mortality rates by age and sex in the Parish of St Botolph's without Bishopsgate, London, 1603. *Pop Studies*; **25**:131-64.
- ¹¹ Stephen RE. Immunity as a factor in the epidemiology of medieval plague. *Rev Infect Dis*; **6**:866-79.
- ¹² Bowsky WM. The impact of the Black Death upon Siennese government and society. *Speculum*; **39**:459-66.
- ¹³ Skeyne G. *Ane Breve Description of the Pest: Edinburgh 1568*. Amsterdam: Da Capo Press; 1971.
- ¹⁴ Nicholson R. *Scotland – the Later Middle Ages*. Edinburgh: Oliver and Boyd; 1978.
- ¹⁵ Smout A. *A History of the Scottish People, 1560–1830*. London: Fontana/Collins; 1981.