

CRAMOND: BIRTH, LIFE AND DEATH IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES

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INTRODUCTION

It is clear that in Scotland, as in the rest of Europe, during seventeenth and eighteenth centuries there was a high infant mortality and short life-expectancy.¹ Less attention has been paid to the lifestyle of individuals in a particular parish and how this influenced changing demographic patterns over this period.

CRAMOND

Cramond is an exception in that a historian at the end of the eighteenth century, in addition to providing a brief history of the parish, described local estates, the work of the church and kirk session, the provision of childhood education, agricultural productivity, the lifestyles of farmers and their workers, the development of iron foundries, the decline in the shellfish industry, and details of baptisms, marriages and burials.² He completed his account with genealogies and histories on some of the local prominent families.

PREHISTORY AND HISTORY

The village lies on the south bank of the Forth, east of the River Almond. Excavation over a raised beach uncovered chert microliths from a Mesolithic settlement. Bronze Age cists and pottery have also been found. Much later, during the Antonine period in the second century AD, the Romans built a fort which was reoccupied during a punitive campaign by Septimus Severus in the early third century. The first church may have been built over the headquarters of this in the sixth century.

The first mention of Cramond was in a twelfth century charter which donated the land to the bishops of Dunkeld. Their residence from the fifteenth century until 1574 was Cramond Tower, after which it was given to the Earls of Angus (Figure 1). It was subsequently sold to a merchant who, in turn, sold it to the Inglis family. Several generations lived there before moving to Cramond House, a large new building. The family remained there until 1959 when it was purchased by Edinburgh City Council. Cramond church was built in 1659 around a fifteenth century tower (Figure 2).

Little is known about the village before the eighteenth century when it was recorded as being overcrowded and unhygienic. Oyster collection was a major enterprise, which later declined from over-fishing. There was a major expansion in shipping with the advent of ironworks. This was started by the Smith and Wright Company and then sold to Dr John Roebuck of the Carron Iron Works. He used the mills to cut and roll iron. When Thomas Eddington and Cadell took over in 1770, they manufactured rod iron, bar iron and nails. Though there was financial stringency and increased competition during and after the Napoleonic Wars, the business continued until 1860.

Like many coastal villages during the nineteenth century,



Figure 1

Cramond Tower. Built in the fifteenth century, this originally was the residence of the Bishops of Dunkeld. The single story building to the right is of recent origin but there are marks on the sides of the tower to indicate that there were low buildings built against it in the later Middle Ages.

Cramond became increasingly reliant on the leisure and holiday trade, while much of the farmland was sold to builders. Rural activity and industrial enterprise soon became a distant memory.

LIFESTYLE

Diet

In many parts of Lothian, to the middle of the eighteenth century, farmers shared their meals with hinds and their families at a common table.¹ These were plain but nutritious consisting of porridge for breakfast and supper, and barley broth with green vegetables and bannocks for dinner. As a supplement they received meat about twice a week and, since Cramond was on the coast, fish and shellfish were supplements.

The families of workmen living in the village of Nether Cramond fared less well, subsisting on a diet of oatmeal and milk in the summer and autumn, and of potatoes over the winter and spring. This was supplemented by considerable quantities of shellfish, though these became increasingly scarce during the later part of the eighteenth century. The aged, disabled and unemployed received financial support from parish funds, and it is encouraging to note that this was not a fixed amount, but was varied to meet the particular needs of individuals.

Most of the time, then, the population was well fed, but the balance was disturbed between 1695 and 1699 when

Date	Age in Years				
	<10 years	10-19 years	20-49 years	50-69 years	>70 years
1755	298 (24%)	238 (19%)	532 (42%)	161 (13%)	33 (3%)
1792	359 (24%)	298 (20%)	598 (40%)	191 (13%)	39 (3%)

a series of disastrous harvests and national insolvency created a severe famine. In some parishes, up to a third of the population died from infection and starvation.³ There are anecdotes of people eating nettles, nursing mothers found dead on the road with infants still suckling their breasts, and the dying dragging themselves to a churchyard to ensure a Christian burial. Cramond escaped the worst of this, but there were a few unfortunates who came from outside to seek food. Another failure of crops occurred in 1744, but, on this occasion, landowners were better organised and provided financial and practical support to parishes in particular difficulty.

Housing

The traditional pattern of rural housing was that a tenant farmer lived in a long house containing a large kitchen, a bed room and accommodation for horses and cattle at one end.¹ The 'gudeman' and his wife slept in the bedroom, while his sons and landless labourers slept in the loft, and his daughters and maids occupied the kitchen. Married labourers lived in less luxurious apartments consisting of stone-walled huts about 3.5 m square by 1.5 m high. Although they had a hearth, they rarely had a chimney. Such an ill-ventilated environment sheltering two adults and several children was a breeding ground for respiratory diseases.

During the course of the eighteenth century, enclosures and merging of tenancies produced a vast improvement in the quality of life of the remaining farmers, but were of little benefit to the farm workers. If anything, they were worse off in that many were driven from the land.

The accommodation for artisans, iron workers and labourers in Nether Cramond was as bad as that encountered in the slums of Glasgow or Edinburgh. Artisans in the village were a brewer, baker, and butcher, and 13 smiths, 30 coopers, wrights and turners, 11 masons, 11 weavers, 10 tailors, and 9 shoemakers. With the exception of the manse and the house for the dominie (school master), most families in the village lived in flats of one or two rooms with one-third of them having six or more adults and children.⁴ Proximity to the River Almond made houses extremely damp. This combined with small windows and cramped conditions exacerbated chronic ill-health and a high mortality. A further hazard was that water was drawn from wells close to cesspits.

Industry

Although the bulk of people in the parish worked on farms, around 80 men and boys were employed in the local iron works. This was founded by a consortium of local merchants and ship-owners in 1752, but sold out to Messers Cadell and Edington in 1771. There was also a small fleet of sloops which imported iron and coal and exported tools produced by the iron works. Some were employed in collecting shellfish, but, due to overworking of the mussel beds, their number diminished towards the end of the eighteenth century.

DEMOGRAPHY

The population of the parish was estimated with varying degrees of accuracy between 1715 and 1792. As a response to the first Jacobite rebellion a review established that there



Figure 2
Cramond church. This has a fifteenth century tower and a seventeenth century transept and nave.

were 325 'fencible' (capable of fighting) men. Since this was about one-fifth of the population of most parishes, the total in Cramond can be estimated as 1,600. Further information came to hand in 1755 when all parish ministers participated in a national census. This gave a population of 1458.⁵ The iron company later estimated the population at 1306. A final census in the eighteenth century was organised in 1792 by Mr Wood but conducted by Mr Spotswood, the parish doctor and session clerk.² On the basis of these data, it would appear that, between 1715 and 1792, the population fell by 7%. The slight reduction may have been related to enclosures and farms merging, but might equally be due to the inaccurate method used for estimating the population in 1715.

The age distributions of the population in 1755 and 1792 were almost identical (Table 1). The fact that 24% of individuals were under the age of ten years, and only 16% over the age of 50 years indicates that, as in the rest of the

From 1659 to 1698, an average of 16 people were buried each year (Table 3, Figure 4). Thereafter there was a sudden rise in the number of burials with twenty-year averages of between 30 and 35 per year over the next 60 years. Between 1739 and 1788, the average buried per year were 25 for 1739-1758, 24 for 1759-1778, and 22 for 1779-1788. During this period there were wild fluctuations from year to year, the highest number of deaths in a year being 79 in 1681, and the lowest 10 in 1709.

The consistent deficit between births and deaths could have been due to the confounding factors involved in numerating deaths already mentioned. Consistent migration from the parish is another possibility.

THE GENTRY

Wood provided genealogies for particularly prominent families. Some of these contain ages of death, but these were more likely to be available for a head of the family

TABLE 2						
Mean changes in number of baptisms per year (standard error) from 1659-78 (mean 48.7) to 1779-92						
Dates	1679-98	1699-1718	1719-38	1739-58	1759-78	1779-92
Change from 1659-78	7.90 (281)	6.10 (2.81)	4.98 (2.85)	4.15 (2.81)	-7.15 (2.81)	-6.93 (3.17)

TABLE 3						
Mean changes in burials per year (standard error) from 1669-78 (mean 16.4) to 1779-92						
Dates	1679-98	1699-1718	1719-38	1739-58	1759-78	1779-92
Change from 1659-78	19.70 (2.91) p<0.001	13.75 (2.91) p<0.001	16.75 (2.91) p<0.001	8.60 (2.91) p<0.003	7.35 (2.91) p<0.013	5.11 (3.28) NS

country, there was a high childhood mortality and low adult life expectancy.

BIRTHS

Information on the number of births was taken from the church's register of baptisms. Since the population of the parish was recorded on only four occasions, births per year are recorded as numbers rather than rates. Despite the fact that the number of births varied from year to year from a minimum of 21 to a maximum of 71, the mean number of births per year over a 20 year period was remarkably constant, varying from a minimum of 39 to a maximum of 56 (Table 2; Figure 3).

During the 1792 census there were 330 married couples and 50 baptisms. At a rough estimate, 70% of wives would have been of childbearing age indicating an annual birth rate of 30 per 100 married women. It can be interpolated from this that, over 20 years, each wife, if she lived that long, would have borne around six children.

BURIALS

The number of burials was calculated from a parish account book used to identify families hiring a mortcloth for a coffin. This provides an underestimate since the gentry and major farmers who had donated mortcloths did not pay for their use when members of their own family were buried.

and infants and children.² The date of death for brothers and sisters is less usual in that they often left the parish, while the date of birth for wives may not have been recorded because they lived outside the parish before marriage.

With these limitations in mind it would appear that around half of the gentry died in infancy or childhood (Table 4). Having survived into adulthood, however, 31% lived beyond 50 years and 13% beyond 70 years. Five heads of families, indeed, died in their eighties. The high infant and childhood mortality is similar to that calculated from the remains of a well-to-do congregation buried in the crypt of Christ Church, Spitalfields, London during the eighteenth and early nineteenth century.⁶ Reasons for the high mortality included a wide-range of infections and inappropriate feeding with a staple diet of breadcrumbs and water. Death and malnutrition were no respecters of wealth amongst young children.

FAMINE

A variety of factors might have been responsible for the increased mortality in Cramond between 1679 and 1738. One of these could have been famine but this is unlikely in that the increased mortality appeared 16 years before the great famine of 1696-1700. The next crop failure of 1744

Age ranges in years	<10	10-19	20-49	50-69	70
Number	57	1	23	21	19
Percent	49%	1%	20%	18%	13%

had little impact on mortality rates in Scotland in general, or Cramond in particular.

INFECTION

Poor nutrition, overcrowded accommodation, unsanitary conditions and living next to domestic animals all increased the risk of infections. The diagnosis of these was problematic because clinical features were often non-specific, and their pathogenesis little understood.

Plague

Archaeological evidence of plague in Cramond was the identification of 12 skeletons in the Roman bath-house latrine. Associated artefacts, indicated that these represented victims of the plague from the Middle Ages.⁴ They were buried outside the churchyard to avoid infection of others. There was also a memorial in the churchyard to four individuals who died of the plague between 1646 and 1647.²

Malaria

A large proportion of farm labourers in the parish suffered from the 'ague', a condition characterised by intermittent episodes of fever, sweating and extreme lethargy.⁷ Its incidence reached a peak in the spring, and was sufficiently widespread to prevent farmers from running their farms during an outbreak. In Cramond, the condition had become rare by 1775. This was attributed to improved drainage of the land over recent decades.¹

There is debate as to whether the symptoms of ague were due to malaria, or to a variety of other infections inducing intermittent fever. An important observation is that the ague produced illness and debility in the spring. This would fit with the spring intermittent fever, often found in malaria, where an infection contracted in the autumn first manifests itself in the following spring. A major reservation about the hypothesis is doubt as to whether temperatures in Scotland were high enough to allow the

incubation and spread of malaria.

One argument is that the mosquito requires a temperature of 23 °C to ovulate within 48 hours, and one of 20 °C if the eggs are to reach maturity within 20 days.⁸ The minimum temperature for the development of the *Plasmodium* is 15 °C. A less relevant requirement in Scotland is that the development of a parasite requires a humidity in excess of 60%.

Retrospective estimation of the weather in Scotland, indicates that, during the cool period between 1550 and 1700, the temperature was high enough to allow the mosquito to ovulate on 81 days each year. There were also sufficient wet summers to accelerate development of the parasite. With an increase in temperatures after 1720, the spread of malaria would have become even more of a risk. Another argument is that a temperature of 20 °C for at least 30 days would be necessary for the maturation of *Plasmodium* within a mosquito, and that, subsequent to this, it could only survive the winter inside an animal or human host.⁹ There were also years in which the temperature in May was too low for mosquito eggs to hatch.

These deliberations apart, the intermittent nature of the fever, its presentation in the spring, and its disappearance with field drainage, provide cogent arguments for the ague being due to malaria. Nonetheless, several other infections deserve consideration as possible causes for the illness.

Smallpox

Records for England during the seventeenth and eighteenth centuries indicate that this was a major cause of morbidity and mortality.¹⁰ It produced a characteristic rash, however, and was not endemic in small towns or large villages, tending to cause epidemics around once every five years. These features are incompatible with the pattern recorded in Cramond.

Influenza

From the sixteenth century at least, outbreaks of influenza were common in England and were associated with peaks of mortality.¹¹ These would not, however, have caused a consistent increase in mortality.

Brucellosis

This is still common in farm workers.¹² The risk of infection would have been enhanced, if, as in many parts of Scotland

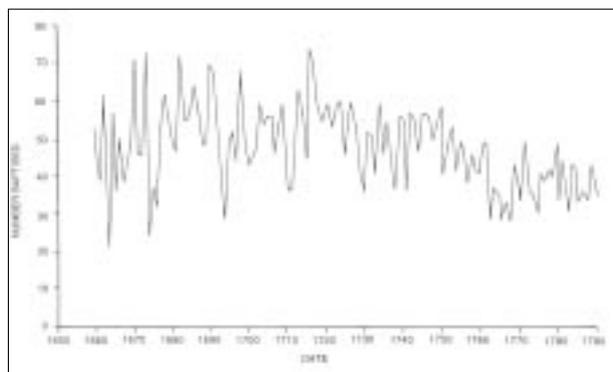


Figure 3
Number of baptisms per year from 1659 to 1792

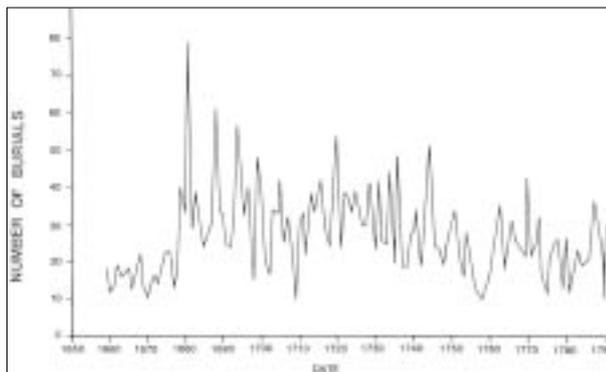


Figure 4
Number of burials per year from 1659 to 1792

in the seventeenth and eighteenth centuries, families slept close to horses and cattle. The symptoms of fever, chills, sweating and muscle pain are similar to those attributed to the ague, but the less common ones of headache, and respiratory symptoms are less likely.¹³ The symptoms of brucellosis also have no seasonal pattern.

Q Fever

The condition is common amongst farmers, abattoir workers and butchers.¹⁴ There is fever, weight loss and headache, but a proportion of sufferers develop respiratory symptoms such as breathlessness, cough and chest pain. It differs from malaria in not having a seasonal pattern, and producing a particularly long period of debility.

Tularaemia

Ticks transmit the organism to humans from mammals or birds.¹⁵ Individuals at particular risk include those processing dead rabbits. It causes a pyrexia with or without tachycardia, with ulceration and swelling of local lymph glands at the site of the tick bite. Even in parts of North America, where several series of cases have been reported, the infection is uncommon.

Relapsing Fever

A variety of lice and ticks carrying a range of organisms produce an ague-like picture. One tick borne infection transmitted from animals produces recurrent bouts of fever, chills, headache, arthralgia and myalgia.¹⁶ Another louse borne one produces a similar pattern.¹⁷ These are usually associated with overcrowding and unsanitary conditions, such as those found in the houses of Nether Cramond. The lack of seasonality make them unlikely candidates, however.

CONCLUSION

A review of the health of a community two to three centuries ago is bound to contain serious omissions, selection biases and inaccuracies. The anecdotal evidence is that the rural population ate a sustaining if rather dull diet. This differed from the village where poor nutrition mirrored a similar situation in industrial towns and cities. The devastating famine from 1695 to 1700 had little effect on Cramond, emphasising that the severity of the famine varied, and that wealthy agricultural areas often escaped its worst effects. Even allowing for the inaccuracy of the data, it is surprising that, despite an excess of baptisms over burials, the population changed little between 1715 and the end of the century. It may be that there was increasing migration to developing industrial towns during this period.

Data from the 1755 and 1792 censuses reveal a population distribution characteristic of underdeveloped societies in which there are large numbers of children and few adults over the age of 70 years. This is usually due to a high infant and child mortality combined with a steady attrition through adulthood. The parish register indicates that married women were under particular stress in that, over a period of 20 years, most bore around six children.

Patchy information on the gentry revealed that many reached a ripe old age, but that their infants and children fared no better than those from the lower orders, a pattern due to ignorance about the appropriate nutrition and care of youngsters.⁶

The unanswered question is why there should have

been an increased mortality between 1679 and 1739. It started too early for the 1695 famine to be a factor, and had settled before poorly housed and undernourished industrial workers moved to Nether Cramond. Infection is possible, though plague can be discounted since it disappeared from Britain by the mid-seventeenth century.

A strong candidate is the ague, a condition characteristically associated with malaria. Circumstantial evidence is that it produced spring symptoms, and that it disappeared after drainage of the local fields. Debate continues as to whether the seasonal temperatures in Scotland were sufficient to allow *Plasmodium* to mature. Further studies are required to provide a definitive answer.

The purpose of the review was to establish whether analysis of a particular area could provide more accurate historical information on health and mortality than statistics for the whole of Scotland. It seems likely that, in Cramond, during the seventeenth and eighteenth centuries, an increase in mortality was due to malaria carried by mosquitoes from poorly drained land. For this analysis we are indebted to Messrs Wood and Spottswood, two men who were well ahead of their time in their development of demography and social science.

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