10. Death and Disease in the Romney Marsh Area in the 17th to 19th Centuries

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Romney Marsh in the 17th and 18th centuries was known for its high prevalence of disease and death. This paper summarizes the findings of a large-scale demographic survey of mortality levels in Romney Marsh and other parishes of south-east England. The results show that mortality in the marshes was exceptionally high, with rates of infant mortality some two to three times higher than in neighbouring Downland parishes. The mortality figures derived from parish registers give no indication of cause of death for this period. A number of other sources do, however, allow us to draw some epidemiological explanations. The marshes, like many other parts of early modern England, were afflicted with a range of infectious and chronic diseases. Bubonic plague, smallpox and fevers all took their toll. The marshes, moreover, suffered from the additional problem of malaria. This paper suggests that the peculiar demographic and epidemiological characteristics of the marshes can be accounted for by endemic malaria. Malaria receded slowly from the marshes and by the mid-19th century Romney Marsh was one of the healthiest districts of Kent.

Introduction

Romney Marsh was once described as one of the most unhealthy and sickly places in the whole of Kent (Fig. 10.1). The Kentish topographer, William Lambarde, in his 1570 *Perambulation of Kent*, reminded readers that ‘the place hath in it sundry villages, although not thick set, nor much inhabited, because it is *Hyeme malus, Aestate molestus, Nunquam bonus*, Evil in Winter, grievous in Summer, and never good’. That evil reputation persisted for more than two centuries. R. Blome in 1673 reiterated the general view that Romney Marsh was ‘wealthy but not healthy, as lying low and moist in the marshes, and by consequence very aguish’, and Edward Hasted, at the close of the 18th century, agreed that the ‘airs and waters’ of Romney Marsh were both ‘foul and fatal’. Between the 16th and the early 19th century travellers, visitors and landholders feared the evil-smelling stagnant marshes which, they claimed, made dreadful havoc on the health of the inhabitants in ‘this sickly and contagious country’.

Lambarde, Hasted and others were, indeed, fully justified in making these assertions about the grievous situation of Romney Marsh. In a large-scale study of death and disease in south-east England using parish registers, letters, diaries, medical and topographical accounts, and a range of related archival and literary source materials available for the period, the Romney Marsh area emerges as one of the most deadly places in the country. Seventeenth- and 18th-century documents reverberate with the stark reality of disease and death in the marshes. Mortality rates were exceptionally high, infant mortality unusually severe, and the prospects of a long life remarkably poor. Why did Romney Marsh populations suffer in this way? What was the cause of its evil reputation and unusual demographic pattern? This chapter will document mortality patterns and levels in the Romney Marsh area in the 17th and 18th centuries, it will explore the epidemiological reasons for its high death rates, and suggest reasons why the marsh emerged from its bleak situation in the early modern period to become one of the healthiest areas of the country by the mid-19th century.

Mapping the Demographic Experience of Romney Marsh

Over the last few decades there has been a surge of interest in population history. New techniques and methods of demographic analysis for the early modern period (principally using Anglican parish registers) have enabled British
historians to transform the myriad and countless individual and familial events of baptism, marriage and burial into statistical data relating to national patterns and trends of population totals, fertility, illegitimacy, nuptiality and mortality. The subject of population history is now one of considerable technical complexity.

The foundations of this survey of Romney Marsh rest on a large computerized project. All manner of ecclesiastical, fiscal, medical, national, regional and parochial materials have been surveyed, counted and corrected, adjusted and entered into the computer in order to estimate and map the various dimensions of the population history of south-east England. The techniques of aggregative analysis and nominal linkage, familiar to students of population history, have been used to tease out the levels and trends of mortality. There are, however, many difficulties of transforming historical sources into population parameters. The mortality data, as presented here, are not precise figures but they do reflect the likely demographic situation of the marshes. They allow us to set Romney Marsh within a regional and even national framework, and to compare its experience with that of other localities and regions of early modern England.

Mapping the demographic indices tells us much about the contours of death but, all too often, the poignant experiences of individual family histories, the rich and diverse subtleties and nuances of local, regional, and county life, are lost behind the veil of statistical sophistication. In order to explore the causes and consequences of sickness and death in the marshes, the quantitative approach of this study has been blended with illustrative material from local and medical histories. Inevitably, it is the nearly illegible scribblings in Romney Marsh parish registers, the graphic descriptions of healthy and unhealthy parishes in Hasted’s History of Kent, the tragic accounts of sickness and death in faded letters and diaries which remind us of the infants, children, mothers and fathers who suffered and experienced the pain and torment of disease and death.

Mortality Levels in Romney Marsh in the 17th and 18th Centuries

Death rates in the Romney Marsh area were exceptionally high from the mid-16th century through to the mid-18th
Death and Disease in the Romney Marsh Area in the 17th to 19th Centuries

As many as one in three infants born to marsh mothers would die before reaching the age of one year and many died shortly after birth. Some 40% of all burials were of infants or children under the age of five years and, on average, a baby born in the marshes could only expect to live about 25 to 30 years, compared to over 75 years today.

Burials also exceeded baptisms in the marsh parishes during much of the 17th and 18th centuries. More people were carried to their graves than brought to the christening font. In Appledore there were nearly twice as many burials as baptisms in the late 17th century, and in a group of five Romney Marsh parishes (Appledore, Brenzett, Brookland, Snargate, and Stone) the excessive mortality persisted almost continuously from the late 16th century until the decade 1741-50 (Fig. 10.2).

The prolonged and high level of burial excesses was a striking characteristic of coastal and estuarine marshes and one without parallel in other rural communities of south-east England during the 17th and 18th centuries. This is illustrated in Figure 10.3 where growth levels, defined by \( \frac{(\text{baptisms} - \text{burials})}{\text{baptisms}} \times 100 \), reveal the

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**Fig. 10.2.** Burials per 100 baptisms in five parishes: Appledore, Brenzett, Brookland, Snargate and Stone, 1571–1800. Source: Parish registers CKS P7, P46, P49, P340, P353; SG Appledore.

**Fig. 10.3.** Growth levels in Kent, Sussex and Essex, c.1670. Source: Parish registers, see Dobson Contours of Death, 542–6.
unusually high levels of negative growth in the marshes—the dark tracts on the map clearly depicting the mortal landscapes of south-east England.

The area of high mortality appears to have extended some way beyond Romney Marsh (Fig. 10.4). Measures of mortality, as well as a number of other demographic indices, suggest that parishes such as Tenterden, Bonnington, Aldington and Rye, which lay just beyond the bounds of Romney Marsh, were also unhealthy in the period c. 1600–1760, though probably not quite so deadly as the marshland parishes below the 10-foot contour line (Fig. 10.1).⁸

The contrast between mortality levels in the Romney Marsh area and mortality levels in more elevated Wealden or Downland parishes was, however, exceptionally striking. A baby born perhaps ten or even five miles away, say in one of the little villages nestling on the North Downs or in one of the dispersed Wealden communities, could expect to live considerably longer, and possibly twice as long, as its marshland counterpart. Average crude death rates in late 17th-century Romney Marsh were over 50 per 1000 compared to a county average of approximately 37 per 1000 and levels of only 25 in the Downland communities of eastern Kent (Fig. 10.4).⁹

The contours of mortality appeared to parallel those of the landscape. Romney Marsh parishes shared their bleak demographic prospect with other marshland areas of Kent. Low-lying marshland and estuarine areas were unusually mortal, upland areas were refreshingly healthy. Low and lethal, high and healthy typified the mortality gradients of early modern Kent (Fig. 10.5).

The marsh parishes were outstanding—not only in terms of their high average number of burials—but also in the very erratic appearance of their burial curves. Deaths in these parishes peaked with unusual force and frequency. In some years the figures of recorded burials reached

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Fig. 10.4. Crude death rates in Kent, Sussex and Essex, c.1670. Source: Parish registers, Compton Census and Hearth Tax returns, see Dobson, Contours of Death, 540–6.
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Fig. 10.5. 'Worlds Apart': the demographic and topographic contours of 17th- and 18th-century Kent.

Note: CDR = Crude death rate; IMR = Infant mortality rate; $E_o$ = Life expectancy at birth.

Sources: see Dobson, Contours of Death, 287–92, 540–6.

alarming heights; sometimes levels remained high for several years in succession; at other times they rose and dipped with jagged relief, and from time to time there would be a run of good years when relatively few marsh folk were carried to their graves.

In the parish of Appledore, a community of perhaps 200 in the late 17th century, an impressive number of years witnessed the death of more than 20 or 30 people and, right through to the 1780s, a high proportion of communicants succumbed to the untimely onslaught of death. But this parish also enjoyed some favourable times, losing only three or four of its parishioners in one year. In Rye, a small market and fishing town to the south-west of Romney Marsh, annual burials exceeded 100 and even 150 on a number of occasions in the 17th and 18th centuries. Many other years saw the burial of more than 70 parishioners, and in over half of the years at least 50 people were buried (Fig. 10.6). These elevated peaks stood out against other relatively healthy years such as the cold, wet decade of the 1690s, when annual deaths dropped well below the average.

This high but fluctuating curve of mortality was one repeated in many marshy places – both large and small – during the early modern period and one which added to their unusual experience of mortality. Figure 10.7 illustrates the burial fluctuations in four Romney Marsh parishes (Appledore, Brenzett, Snargate and Wittersham) for the period 1601–1800. Using a demographic measure of deviations in annual burials around an eleven-year truncated moving average, the ten highest mortality peaks

Fig. 10.6. Annual burials in Rye, 1601–1800.
Source: Parish register: ESRO PAR 467.

Fig. 10.7. Annual burials in four parishes: Appledore, Brenzett, Snargate and Wittersham, 1601–1800.
Source: Parish registers CKS P7, P46, P340; SG Appledore; SG Wittersham.
in these parishes over the two centuries can be determined. These were 1611, 1638, 1647, 1649, 1665, 1667, 1679, 1720, 1780, and 1781.

The grim demographic picture of the Romney Marsh area was accentuated by its sparse population. Seventeenth-century Romney Marsh had the lowest population density of anywhere in south-east England. Parish densities were as low as 20 or 14 adults per square mile by the time of the Compton Census and the Hearth Tax Returns of the 1660s and 1670s. 10 The exact chronology of population change over the previous centuries is difficult to estimate from existing sources but it seems likely that the population had begun to fall between the 14th and late 15th centuries. The silting of the harbours of New Romney and Hythe, followed by that of Rye, furthered the decline and there were as many as seven abandoned churches by 1670. By then the population had probably fallen by about one-third since 1570, with only lookers, smugglers and ‘mean peasants’ left in parishes such as Brenzett or Appledore.11

The unhealthiness of the area appeared to have deterred the rich and educated from living on the marsh. Farmers, landholders, gentlemen and clergymen moved, for the sake of their health, to a safe distance beyond the marshes, away from the unwholesome air. Vicars complained to their bishop about the mortal consequences of living in their marsh parishes and requested permission to live outside the marsh. The vicar of Dymchurch wrote: ‘I have injured myself and family very much’, while the vicar of St Mary-in-the-Marsh moved away ‘by reason of health ... and several other inconveniences’. Vicars from parishes along the edge of the marsh also expressed their discontent. The vicar of Tenterden complained that ‘my health would permit me to stay no longer’, the vicar of Bonnington left because of the ‘disagreeable situation and to avoid the unhealthiness of the marsh air’, while the curate of Aldington summarized the general opinion: ‘so unhealthy a situation as to be absolutely unfit for any curate’.12

Much of the pasturage was owned by upland graziers. These absentee graziers ran huge sheep flocks on the marsh, enjoying their rich profits while minimizing dangers to their personal health. In the 18th century there were virtually no gentry resident anywhere in Romney Marsh – a consequence, as Lambard suspected earlier, of its grievous situation. The land, however, was rich and fertile and wages, for those prepared to work in these unhealthy tracts, were higher than in other parts of Kent (Table 10.1). Lookers were brought in to tend the ewes and lambs and the marsh parishes formed a unique economic complex whereby

‘the graziers, or occupiers of marshland ... live at a distance, while everywhere the management of the marshes and the stock they carry is committed in a great measure to the care of marshmen – principally lookers; whose cabins and pens are seen scattered over the area of the Marsh’.13

Lookers, smugglers, and sailors who were prepared to go to the marshes ‘for the advantage of good farms’ or ‘this prospect of gain, and high wages’ had to put up with its extreme unhealthiness.14 Smuggling was an especially lucrative occupation and, according to Arthur Young, while a task-worker could earn between 1s 6d and 2s a day, and a labourer from 16d to 18d, a smuggler could easily earn 10s 6d a night.15

The deserted, forlorn, and unhealthy appearance of much of the marshland was reflected in the mean and stark condition of its inhabitants. The smugglers and lookers of marshland communities were invariably described as mean, stupid, apathetic, caring little whether they lived or died. The parish of St Mary-in-the-Marsh was a typical example inhabited by ‘not above 50 persons, all of mean quality, marsh lookers’, and at Dymchurch the inhabitants ‘are of the lower sort, and, like others dwelling in the rest of the Marsh, are mostly such as are employed in the occupations and management of the level, or a kind of seafaring men, who follow an illicit trade, as well by land as water’.16 Late 18th-century Appledore comprised 48 houses ‘meanly built, and mostly inhabited by graziers, lookers and smugglers’.17 As Everitt has observed, ‘the inevitable consequence of absenteeism was an impoverished and alienated society’ where the marsh folk were regarded with suspicion and disdain.18

Table 10.1. Local variations in wages in Kent, c. 1794.

<table>
<thead>
<tr>
<th>District</th>
<th>Labourers’ wages per day</th>
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<tbody>
<tr>
<td></td>
<td>(10 hours)</td>
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<tr>
<td>Isle of Thanet</td>
<td>1s 6d to 1s 8d</td>
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<tr>
<td>Downlands, East Kent</td>
<td>1s 6d to 1s 8d</td>
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<tr>
<td>Hop grounds</td>
<td>1s 6d</td>
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<tr>
<td>Isle of Sheppey</td>
<td>2s Od</td>
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<tr>
<td>Downlands, West Kent</td>
<td>1s 6d to 1s 8d</td>
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<tr>
<td>Weald</td>
<td>1s 4d to 1s 6d</td>
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<td>Romney Marsh</td>
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Source: Boys, General View, 105.

The Causes of Sickness and Death

Contours of death – perceived by contemporary topographers and reflected in the outlines of excess mortality and crude death rates – can clearly be drawn around the area of Romney Marsh. Why were the Romney Marsh parishes, as well as many other marshland and fenland communities so very unhealthy in the early modern age? To move from the contours of death to the underlying epidemiological causes of death and disease is not an easy task. The parish registers – one of the most fruitful sources for the historical study of mortality – document the final stages in the lives of the villagers and townsfolk of the past. They recall the frequency of burial in Romney Marsh and the insecurity of former times. Ideally, they should also provide the main source from which to unravel
the epidemiological experiences of past populations. But behind the scribbled pages of those parish books lay many untold events. In particular, the cause of death, which contributed to the burial of young and old, was seldom revealed in the registers. We are told little of the sufferings of the decedent, the symptoms which preceded his or her death, or the nature of the disease or casualty which precipitated the burial. For the most part we are left only with a suggestive array of mortality statistics from which to infer the underlying patterns of causation and disease.

Other documents do, however, provide clues as to the nature of sickness and causes of death in the vicinity of the marsh. One remarkable Kentish document is the diary of Dr Jeremiah Cliff, which contains valuable evidence on the range of ailments and the fluctuations in mortality in the parish and market town of Tenterden. It is a physician’s careful record of deaths in his parish and is entitled ‘Memento Mori, Omnium Rerum Vicissitudo’ (Fig. 10.8). Dr Cliff’s aims were made clear at the outset:

‘Here is a true and perfect and exact list as I have been able to take in an alphabetical order of all those persons, men, women, and children, that have died in Tenterden, beginning March the 18th 1712/3 or thereabouts, with their names, their ages as near as could be guessed at, and what day of the month and year they died and also what distemper they died of and also who was their doctor that did them in the time of their sickness’.

The diary continues for a period of thirty years until Dr Cliff’s own death in 1742/3 and provides an account of the accidents and fatal ‘distempers’ that took the lives of 1,219 residents between 1712–13 and 1740. There were five main doctors practising in the town, including Dr Cliff, and another 30 or so other Kent and Sussex doctors.
Fig. 10.9. Annual burials in Tenterden, 1601–1800.

Note: This graph is plotted from the Anglican burial register which, like many parish registers, may have excluded burials of non-conformists and unbaptized infants. Dr Cliff’s diary records deaths rather than burials and provides a rare opportunity to examine fluctuations in total deaths (see Fig. 10.10 and Table 10.2). By comparing these two sources for the period 1712–42, it is estimated that 10% of all deaths may have been excluded from the Tenterden burial register. Source: These figures were kindly supplied by the Cambridge Group for the History of Population and Social Structure.

Table 10.2. Annual deaths in Tenterden, 1712–42.

<table>
<thead>
<tr>
<th>Year</th>
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<th>Fever deaths</th>
<th>Fever % of total deaths</th>
<th>Smallpox deaths</th>
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attended the parishioners of Tenterden and ‘did for them in the time of their sickness’. Clearly, the population of this community in the neighbourhood of Romney Marsh was in constant need of medical attention.

Fever was the leading cause of mortality, accounting for 259 of all deaths in Tenterden between 1712 and 1740 (Table 10.2 and Fig. 10.9). Consumption, or pulmonary tuberculosis, also ranked high with 130 deaths from this cause, and together fever and consumption claimed nearly one-third of the casualties recorded by Dr Cliff. Smallpox was another contributor to the toll of death. Forty-five died from smallpox and one from ‘bloody pox’. Although smallpox deaths were frequent in Tenterden, and in communities in the marsh, this highly infectious disease did not account for the same number of fatalities as fever and consumption, and even deaths from ‘lingering sickness’ outnumbered deaths from smallpox in Dr Cliff’s diary. There were several years when mortality from smallpox peaked sharply, but also occasions when the town appeared to have been spared from smallpox as a cause of death. The last decade of Dr Cliff’s diary was almost free from that scourge, apart from a flurry of deaths in 1740–1, three of which happened in one family.

Dr Cliff’s diary enumerated deaths from all sorts of other conditions – some familiar, some peculiar, some recognisable to us today, others bearing little resemblance to modern terminology. Tenterden parishioners died of ague, apoplexy, asthma, bloody flux with thirst, breast cancer, cancer of the navel, colds and coughs, colic, convulsions, drink, erysipelas, fits, French pox, gangrene, goot in the stomach, gravel, green sickness, harelip, *imposthumus*, internal bleeding, jaundice, measles, mortification, palsy, pleurisy, rheumatism, scabies, St Anthony’s Fire, tumour of the knees, ulcers in the side and bladder, vomiting, whooping cough and worm-fever. Six people committed suicide – Mrs Parton ‘hanged herself in her garters’ in 1722 and was inconsiderate enough to do so in Dr Cliff’s house! Twenty accidental deaths were recorded including Reynold’s child, aged two, who was drowned ‘in a little puddle of water’ and William Wood, the barber, who died in 1736 from a cudgel blow given to him by Richard Heath. Twenty-four Tenterden women died in childbirth, elderly folk died ‘bedridden’, of old age, decay or were simply ‘worn out’. Fifty-eight died of ‘lingering sickness’ while 33 died ‘suddenly’.

Seven parishioners died from ‘poverty’ but surprisingly few people in Tenterden as elsewhere in early modern England perished from outright starvation, hunger or famine. Food shortages may have been severe, grain prices fluctuated considerably from year to year, nutritional deficiencies were rife, contributing greatly to ill health and an individual’s inability to resist and cope with the many ailments and infectious diseases of the time, but by this period in its history, Kent had ceased to be struck by widespread harvest failure and famine. Indeed, folk living in the Romney Marsh region were more likely at this time to go mad, dying distracted, frenzied, insane, of
melancholy or in a state of lunacy. Some were more ready to recognize that they had neither the strength nor energy to face the hardships of life in 18th-century Tenterden. They gave up and died of ‘lethargy’.

Dr Jeremiah Cliff does not include plague in his list as this had, for reasons which are still far from clear, disappeared from England after the last great epidemic of 1665/6. It is hard to document the impact of plague on the villages of the Marsh though it was intermittently a major threat to the nearby Cinque Port of Rye. In the 16th and 17th centuries the authorities of Rye imposed many regulations to try to prevent its spread, including the shutting-up of plague houses, the marking of such houses with the sign of a cross, the closing of tippling houses, the appointment of women to search corpses, the killing of all dogs and hogs, and the preparation of medicines for the sick. In 1603 communication between Rye and Dieppe was restricted ‘by reason’ that ‘it is reported that the plague is in this town and near hereabouts’. However, on August 10th the Mayor and Jurat of Rye were relieved to announce:

‘that not only this town of Rye but also all the towns, villages and places near unto this town adjoining by the space of twenty miles and upwards, the Lord’s name be praised therefore, are clear from the said infection of the plague. And for our better security we will not permit any goods, wares or merchandise to be brought to our town from London or any other place suspected to be visited with the said sickness’. 23

Although the town was subsequently hit by plague in 1604, the scale of mortality was considerably less than some of the plague epidemics of the 16th century. 24

In 1624/5 another epidemic occurred. Rye again set up a set of strict precautions to prevent the plague entering the town but was nonetheless badly affected. A total of 198 burials were recorded – some two and a half times the annual average – and at least 56 citizens died of plague in that year. On this occasion as on others, the authorities felt that the reports of plague in Rye had been exaggerated and the restrictions of movement into and out of Rye were too harsh. In August 1625 the Mayor noted that the ferryman of Guldeford

‘hath denied some of our townsmen who were clear of the infection to carry them over the ferry in so much they have been constrained to wade over to the endangering of their health’. 25

On 22nd August 1634, the mayor of Rye, similarly, wrote with confidence:

‘Whereas it is reported abroad in the country that the infectious disease of the plague is in our town which false rumour causes the country to forbear to resort to other places to provide and furnish themselves with such necessaries as they want, wherefore we have thought good to signify to your Worship, that herein we are greatly wronged for, we thank God, our town is clear of that infectious disease, only (as it hath been in many other places) we have some few houses in our town visited with the smallpox of which sickness to our knowledge there have died about five or six persons’. 26

The authorities were clearly trying their best to stem the spread of the plague while firmly denying ‘false rumours’ in order to avoid the economic and social disruptions imposed by such restrictions.

The last major outbreak of plague in Britain occurred in 1665 and historians have written, at length, about its terrible toll of mortality on major cities, towns and some villages. In 1665 Rye imposed severe restrictions on movement into and out of the town, which was watched over by appointed warders. In Tenterden, two parishioners were issued with certificates to travel to the Isle of Wight because it was confirmed that ‘the parish of Tenterden aforesaid, and the places adjacent are free from the contagion and infection of the plague and so have been for the space of one year last past ... (dated) first day of August 1665’. 27 Although burials peaked in Rye and some of the marsh parishes during 1665/6 (Figs 10.6 and 10.7), Romney Marsh does not seem to have been devasted in the same way that some towns, cities and villages were during this final epidemic of bubonic plague. 28 Plague had a haphazard and random pattern – depending on the erratic movement of rats, fleas and humans – and, while the evidence suggests that it surfaced from time to time in the marsh vicinity, it is unlikely to have accounted for the extraordinarily high death rates that persisted throughout the 17th and 18th centuries.

Another fascinating medical document, which throws light on the causes of sickness and death in the region, is the astrological diary of Samuel Jeake, which he kept between 1652 and 1699. 29 It provides an account of the precise timing and periodicity of the many ague attacks which he encountered while living in Rye in close proximity to the Romney marshes. He suffered a particularly severe bout of attacks between 31 August 1670 and 2 May 1671, when he was 18 years old. During that time he experienced a total of 142 fits, each of which is recorded in his diary with symptoms and details of the precise time to the hour and minute. He calls this part of the diary ‘This Critical Register of the several paroxysms, I undertook the rather, to investigate the cause of their regular returns’. The attack started as a simple ague or ‘double quartan’, then degenerated into what he describes as a ‘triple quartan’ eventually becoming both ‘irregular’ and violent’. 30

During this spate of ague attacks and during the many other repetitive bouts that he suffered, the severity of each fit was described by Samuel Jeake: some were ‘mild’, ‘gentle and short’, ‘scarce sensible’, or ‘so little that it could hardly be perceived’; many were ‘violent’, ‘fierce and cruel’; others were ‘sharp’. The fits were accompanied by a range of symptoms and side-effects, depending on the intensity and timing of the fit. Some were followed by aches of his bones, pain in the head, giddiness of his head, oppression of his stomach, drowsiness or restlessness and...
inability to sleep, great shaking, violent shaking which made his teeth chatter in his head, or just a little shaking, severe vomiting or inclinations to vomit, palpitation of his heart, sweating excessively, coughing, extreme lassitude or lassitude in his limbs, feverish heat or extreme coldness. He was frequently troubled with the spleen, costiveness (constipation) or diarrhoea, a sore mouth and boils. At times he was 'very weak' with his ague 'so that my strength was not recovered in some time' and he was also occasionally 'indisposed' with his ague even on his 'well days'.

Jeake kept these minute details of the exact moment, periodicity and regularity of his fits alongside a series of symbols and references to astrological events. Thus, on 26th May 1689 he included a symbol for the sun and wrote:

'About 2h p.m. a very little fit of an ague. Venus then culminating on the radical place of Mars. The moon opposite to the cusp of medium coeli. Saturn opposite to the cusp of the 8th and Mars opposite to the cusp of the 12th'.

Jeake was curious to find some explanatory pattern for his fits, believing that the movements of the heavens may have accounted for their timing, intensity and side-effects. In spite of his intentions in keeping his Critical Register, he does not seem to have carried out a full analysis of the paroxysms and 'the cause of their regular returns' and we are left to speculate on the exact cause of his tantalising and tormenting attacks of fever.

One of the most striking epidemiological findings of the diaries of both Dr Cliff and Samuel Jeake, however, is the importance of fever and ague in these two communities. In Tenterden, fever accounted for 259 of all deaths plus a number of other cases in which fever was given as a secondary cause. Some 30% of identified deaths in Tenterden were attributed to fever at this time. Only in two years did the number of fever cases drop below five and in several years of high mortality fevers were responsible for over one third of all deaths (Table 10.2). Samuel Jeake, the vicars and their families also complained and suffered from frequent attacks of ague and fever. Other evidence suggests that the mortality peaks of Romney Marsh parishes may have been associated with fever epidemics. Out of ten of the years with the highest mortality in Romney Marsh parishes, one was a plague year, another was associated with an outbreak of smallpox, and the rest were years when fevers and agues were the probable leading cause of death. In 1780 – the year with the highest average annual mortality in Romney Marsh in the 17th and 18th century – there was an epidemic of fever which was:

'attended with peculiarities extraordinary and alarming. For the cold fit was accompanied by spasm and stiffness of the whole body, the jaws being fixed, the eyes staring and pulse very small and weak ... many country people whose illness had at its beginning put on the appearance of intermission, becoming delirious sank under it in four or five days'.

The exact cause of this fever, known locally as the 'plague ague', was not given.

Indeed, the term 'fever' is one of the hardest to diagnose retrospectively. In early modern times, fever epidemics were all-pervading, frequently filling 'many places with pale faces'. They 'crept from house to house, infected with the same evil most of the same family, and especially those ordinarily conversing with the sick, yea, old men, and men of ripe age, it ordinarily took away'. A particularly nasty fever spread in Rye in the late 16th century. The English soldiers returning home from France were 'sick and diseased ... full of infirmities in their bodies, wonderful sick and weak, some wounded, some their toes and feet rotting off ... all of them full of vermin'. They were cared for in Rye but sadly 'the persons in whose houses they were lodged and dieted and the women that did attend and watch them are for the most part fallen very sick and every day there die four or five of them with the infection that they had from the soldiers'. The infectious nature of many fever epidemics was recognised, but in the 17th and 18th centuries it was not clearly understood that these fevers were caused by a whole host of different organisms and covered a whole range of different diseases – typhoid, typhus, influenza, malaria, dysentery, enteric fever, viral meningitis, and scarlet fever were often simply subsumed under the label 'fever'. Differentiating one fever epidemic from another is very difficult, but the omnipresence of fever epidemics and their severe impact reinforces our image of a complex, mysterious and unpredictable spectrum of disease.

One fever does, however, warrant special attention in the context of Romney Marsh – marsh fever or malaria. This was one of the few fevers which contemporaries differentiated – not simply on the basis of its clinical symptoms and intermittent fever peaks – but on its clear association with a marshy environment.

The Role of Malaria in Romney Marsh

Marsh fever was given special prominence in many of the 17th- and 18th-century writings. It was a fever which was believed to be closely related, and, indeed, caused by the bad air or 'malaria' of the marsh. Residents and visitors frequently complained about the terrible smells and marsh fevers or agues they encountered in such airs. In Romney Marsh 'the large quantity of marshy water for the whole year ... engenders such noxious and pestilential vapours, as spread sickness and frequent death on the inhabitants ... the sickly countenances of them plainly discovering the unwholesome air they breathe in'. In Appledore 'the vast quantity of marshes which lie contiguous and come close up to it, make it very unhealthy, and this is rendered much more so, by a large tract of swamp, called the Dowles, lying about a mile south eastward from the village, within the marsh'. Snargate was described as 'a very forlorn unhealthy place, partaking of the same...
bad qualities of both air and water as the neighbouring parishes in the marsh and if possible to a greater degree, for the whole is an entire flat of marshes. And Burmarsh and Dymchurch, lying within the Level of the Romney Marsh 'throughout the whole of which both the air and water make dreadful havoc on the health of the inhabitants of this sickly and contagious country, a character sufficiently corroborated by their pallid countenances and short lives'.

We know now, from a range of circumstantial evidence, that the ague and marsh fever, which caused such 'dreadful havoc on the health of the inhabitants' in these 'sickly and contagious' parts was, in fact, malaria. Malaria is a parasitic disease transmitted by Anopheles mosquitoes. The Anopheles must bite a person with malaria gametocytes in the bloodstream in order to ingest the plasmodia. After an interval of about 16 days (depending on the ambient temperature), the mosquito becomes infective to humans and can transmit the disease to a susceptible individual at its next blood meal. Four malaria infections affect humans: Plasmodium falciparum, P. vivax, P. ovale and P. malariae. Although we have no records to determine which type of malaria was prevalent in England in the 17th and 18th centuries, there is good medical evidence from the early 20th century to show that Plasmodium vivax was endemic at that time in the marshes of England.

There are many different species of Anopheles mosquito, each of which has a very specialised ecological niche for breeding and feeding. Five species of Anopheles capable of carrying the malaria parasite are indigenous in Britain today. One species, Anopheles atroparvus, breeds in sufficient numbers to be an efficient vector of vivax malaria amongst human populations. Anopheles atroparvus breeds most readily in stagnant and brackish waters and is found along the coastal and estuarine marshes of England. The first map showing the geographical distribution of English Anopheles was produced by the British Museum in the early 20th century (following the elucidation of the mosquito cycle by Sir Ronald Ross in 1897). Romney Marsh and the area just beyond, including the parishes of Tenterden and Rye, were found to have high densities of Anopheles mosquitoes. The compiler of the map even noted that in Romney Marsh Anopheles existed 'in as great numbers as I have ever seen in tropical countries, and are more numerous than in any other locality I have examined in England'.

The chronology and geographical extent of malaria and the ways in which it led to high death rates cannot, however, easily be assessed from the historical evidence. The demographic indices imply that malaria made a great impact between the 16th and late 18th century when death rates were exceptionally high (Figs 10.2, 10.3, 10.4 and 10.5). Malaria was, however, only one of many diseases affecting the residents of Romney Marsh and it was generally recognized more as a major debilitator of health rather than an outright killer. Samuel Jeake and the vicars of Romney Marsh were almost undoubtedly describing malaria in their accounts of ague attacks but, in spite of their persistent and weakening effect, they managed to survive – especially if they removed to 'a purer air'. Samuel Jeake between 1667 and 1693 suffered a total of 330 ague fits. Indeed, notwithstanding the repetitive nature of his attacks and some of the alarming symptoms and sequelae, he did claim that 'when my ague was off' he could engage in reading, learning and geometry. He lived to the age of 47 years.

Observers did, however, notice that the marsh fever was likely to be fatal for infants and young children or for those who were entering the marshes for the first time. James Lind reported 'it is far from being mortal to the natives' but to strangers and to persons 'accustomed to a clear healthy air', or 'who have formerly lived on a drier soil, and a more elevated situation' it proves 'particularly severe, and sometimes fatal'. Thomas Short in 1750 warned that 'they run a great risk, who having been brought up, and accustomed to a clear healthy air, to remove to fenny, wet, sickly soil; for people born in, and inured to a bad air, hear it much better, and find less sensible inconvenience from it, than such as have been bred and familiar to a good one ... though burials in such places may exceed the births, yet the difference between weddings and burials, is far from being so wide as might be expected. Then it is evident, that great numbers dying in infancy, are supplied by fresh-incomers, who settle and marry there; and that the eminences of the place are more fatal to them than the natives'.

The non-immune population, which included infants and young children, and the relatively high number of immigrants seeking work in the marshes were most vulnerable. Mothers and pregnant women may also have suffered from the high levels of anaemia and associated side-effects of malaria and their weakened condition at the time of birth would have had serious consequences for their own survival as well as that of their offspring.

Death-rates of adults and children were particularly high in the spring and autumn season – and especially after hot summers. Dr Cliff's diary allows us to plot the monthly distribution of deaths from all causes and to compare this with the monthly pattern of fever deaths (Fig. 10.10). A pronounced maximum of both fever deaths and deaths from all causes took place during the early spring season and 38% of all fever deaths were registered in the three months of March, April and May. Deaths from fever were relatively few during the summer months but a second sharp peak followed this healthy season during the month of October. The spring, summer and winter pattern of fever deaths followed the path of mortality from all other causes in Tenterden. The rise in mid-autumn was, however, a striking aspect of fever deaths. This unusual double wave of seasonal mortality in the spring and autumn is consistent with the prevalence of malaria. The autumn rise, which followed the season of greatest mosquito activity, coincided with the period of new infections and primary attacks of malaria. The spring
rise included deaths from malaria relapses and latent primary infections, which often occur several months after the malaria parasite has been injected into the bloodstream.

Although at this time there was already a well-known treatment for malaria—the Peruvian bark or cinchona which contains the alkaloid quinine—this was in short supply and expensive. It was frequently adulterated and it is not certain how far the marsh population would have had access to this drug before the mid-19th century. It is more likely that the poor sick marsh folk tried to control their repetitive malaria fevers by dosing themselves and their infants with alcohol, opium and other narcotics. These may have helped them to cope with their terrible bouts of shaking but, sadly, over the long term the toxic effects of such agents only added to the toll of infant and adult death in Romney Marsh.

English vivax malaria, while not an outright killer, could have undermined the health of its victims and led to their early demise. The marsh folk were living with and suffering from frequent attacks of malaria, they experienced regular relapses, they had little access to appropriate treatments and on top of their unremitting and exhausting episodes of malaria came the whole host of other pre-industrial diseases. Plague, smallpox, typhoid, dysentery, scurvy, venereal disease, tuberculosis, brucellosis, typhus, influenza, pneumonia, bronchitis, scarlet fever and whooping cough as well as a range of diseases associated with inadequate diets, poor standards of domestic hygiene, the cold and dampness of marshland homes and the hazards of infancy, pregnancy and old age all took their toll.

The problems of obtaining adequate supplies of fresh water for drinking, cleaning clothes, bodies and homes may have been an additional and peculiarly critical problem in the marshes. The environmental conditions, the stagnant pools, and the insanitary state of the hovels would have been conducive to the incidence and spread of typhoid, dysentery and other water-borne infections. Consumption or pulmonary tuberculosis and respiratory conditions associated with poor housing and low-lying damp conditions may also have taken a heightened toll.

We cannot document the exact scenario, the precise interaction of one disease with another, but we can speculate that even if malaria was only the tip of the iceberg, or only one of many unrecorded causes of death, then its interaction with the rest of the disease spectrum could have had severe consequences for the Romney Marsh communities. It was one critical link in the chain of disease and death in the marsh and one which set their deadly demographic and epidemiological experiences apart from healthier upland parishes. The vicars who attempted to live in the marshes experienced some of its worst effects but, recognizing the danger, were able to move back to a ‘healthier air’. Landowners also resided above the ‘contours of death’. Some middling and prosperous individuals, like Samuel Jeake, lived within the bounds of malaria, and, although they were periodically incapacitated by the disease, they managed to endure the hazards of a nearby marshy environment. The ‘lookers’, smugglers and strangers seeking a living right on the marshes, their wives, ‘imported’ from the ‘fresh airs’ of inland areas, and above all their offspring, were on the other hand more likely to be without immunity and, perhaps, of an ‘ill-habit’, having neither the biological requirements nor the physical strength to combat malaria.

We have little evidence to determine when or how the malaria parasite was first introduced and transmitted by the local mosquitoes of Romney Marsh. We do know, however, that malaria was endemic in many parts of the world from ancient times and in the early modern period it was especially widespread throughout temperate and tropical regions of the world. The polders of northern Europe were highly malarious and it is possible that Dutch migrants suffering from malaria and carrying the parasite infected the local Romney Marsh mosquitoes. Further local research may add to the tantalising story of marshland malaria which, as yet, remains far from complete.
Fig. 10.11. Baptism: burial index by decade for four parishes: Appledore, Brenzett, Snargate and Wittersham, 1601–1800. 
Note: Baptism: burial index = baptisms/burials.
Source: Parish registers CKS P7, P46, P340; SG Appledore; SG Wittersham.

Fig. 10.12. Infant mortality rates in the registration districts of Kent, Sussex and Essex, 1861.
Source: Registrar General Returns, 1861.
Changing Patterns of Disease and Death since the late 18th Century

Although this survey reveals a very bleak picture of the lives and deaths of Romney Marsh inhabitants, the demographic material also shows that there was a dramatic improvement in the expectation of life in the late 18th and early 19th centuries. Indeed, by the time Victoria came to the throne, Romney Marsh was actually one of the healthiest places in Kent.

Baptisms in Romney Marsh increased rapidly in the second half of the 18th century and began, after decades and decades of natural deficit, to surpass burials. The contrast in the decadal totals of baptism and burials at the beginning and end of the study period was very noticeable. Baptisms in the decade 1601–10 totalled 295 in four Kent Romney Marsh parishes (Appleford, Brenzett, Snargate and Wittersham) while burials amounted to 411. In the final decade of the 18th century, the position was clearly reversed: baptisms stood at 452 and burials at 237 (Fig. 10.11). Indeed, baptisms in many marsh parishes had, by the end of the 18th century, overtaken burials. The burial: baptism ratio in Appleford, for instance, dropped from 202 in the years 1661–81 to 73 in the period 1753–73. Likewise, in Brenzett the ratio decreased from 146 to 76 and in Brookland from 190 to 89.

The decline in mortality rates was also particularly noticeable and in a little over a century these communities had experienced a reduction of over 50% in their mean death rate. Life expectancy at birth reached 46 years in the early 19th century – considerably longer than the 30 or so years estimated for a century earlier. By the middle of the 19th century, mortality levels were especially favourable in the marsh. Infant mortality for the Romney Marsh registration district was only 75 per 1000 live births in 1861 – the lowest recorded for any registration district in Kent (Fig. 10.12). A reduction in infant mortality from 250 to 300 per 1000 to under 100 per 1000 in just over a century and a half was a remarkable achievement. Romney Marsh, which had been one of the most mortal places of Tudor and Stuart England – notorious for its ‘bad airs and waters’ – had, by Victorian times, become the healthiest registration district in Kent.

The radical improvement in mortality levels in Romney Marsh suggests to us, as it did to contemporaries, that malaria with all its demographic and epidemiological consequences had receded from the marshes by this time. Malaria, however, did not completely disappear from Romney Marsh. In the hot summer of 1857 the disease recurred, an experience which debilitated and rendered people vulnerable to ‘diseases of a general character’. As late as 1860, when advertising for the post of schoolmaster for the parish of Appleford, the governors thought it best to warn potential applicants that ‘ague was prevalent in the parish’.

In the early 20th century, when the alkaloid quinine was isolated from the cinchona bark and proved a more effective therapy against the disease, the wider use of the anti-malarial drug – Peruvian bark and later quinine – may have also helped reduce the clinical symptoms of malaria. Peruvian or cinchona bark was used increasingly in the later 18th century as the basis for powders, infusions, tinctures and other ‘ague’ formulations. The major change came in the mid-19th century when the alkaloid quinine was isolated from the cinchona bark and proved a more effective therapy against the disease. Although quinine does not prevent the transmission of malaria in a population it can suppress the clinical symptoms and may have contributed to the milder nature of malaria. The price of quinine fell considerably in the late 19th century. Romney Marsh residents in the early 20th century, certainly, attributed the improvement in the malaria situation to the use of quinine.

Other factors seemed to have been working together, within and beyond the marsh, simultaneously and perhaps in a multiplicative way, to change the patterns of sickness and bring down the mortality levels of this unique type of environment. Changing demographic structures and decreasing rates of immigration may have had important consequences for the marshland communities, allowing the more stable populations of the 19th century to build up some immunity to malaria. The use of smallpox inoculation, changing infant feeding and welfare practices, a reduction in the use of harmful narcotics to combat malaria, and even small improvements in personal hygiene, water supply, diet, energy levels and nutritional status may have offered substantial returns to a previously unhealthy and lethargic population. As the marsh folk of
the 19th century became biologically stronger than their predecessors, so they were better able to combat the harmful and debilitating consequences of the malaria infection and the complicating effects of other diseases.

**Conclusion**

The prevalence of malaria in the marshes had a dramatic, if indirect, effect on the demographic variables. Malaria, acting either alone or in conjunction with other factors, was the one distinctive disease that differentiated the mortal marshland environments from other areas of south-east England. Malaria acted as a great debilitator. It was a disease which also appears to have set up a sequence of consequences and circumstances which fed deeper into the spiral of sickness and death. Malaria gave rise to a peculiar demographic and social structure in the marshlands. The low population densities, the non-residence of vicars and landowners, the unusual patterns of immigration by ‘lookers’ and smugglers and their short life-spans were all, in part, a response to the prevalence of malaria.

By the 19th century malaria no longer exerted a crippling influence on the mortality rates and demographic patterns of these localities. The lessening impact of malaria was one of the most outstanding epidemiological changes of this region. The forces behind such a spectacular change in the marshland environment deserve further attention. The exact contribution of many possible factors, their timing and their relationship to different environmental, climatic, behavioural and biological changes may eventually be elucidated by future research in the Romney Marsh area. We do know, however, that in Romney Marsh this once alarming disease eventually became ‘only the marsh fever’. The answers to questions surrounding the history, the decline and disappearance of malaria from places like Romney Marsh may still be pertinent in the world today when malaria presents a major global health problem for the 21st century.10

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**Notes**

Abbreviations used for unpublished references:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKS</td>
<td>Centre for Kentish Studies</td>
</tr>
<tr>
<td>ESRO</td>
<td>East Sussex Record Office</td>
</tr>
<tr>
<td>LPL</td>
<td>Lambeth Palace Library</td>
</tr>
<tr>
<td>PRO</td>
<td>Public Record Office</td>
</tr>
<tr>
<td>SG</td>
<td>Society of Genealogists</td>
</tr>
<tr>
<td>WSL</td>
<td>William Salt Library</td>
</tr>
</tbody>
</table>

2. Blome, *Britannia*, 122; Hasted, *History and Topographical Survey*, see, for example, 7, 253; 8, 258, 376.
4. Dobson, *Contours of Death*. The following Romney Marsh parish registers have been used in this survey: Aldington (CKS P4); Appledore (CKS P7 and SG Appledore); Bilsington (CKS P27); Bonnington (CKS P34); Brenzett (CKS P46); Brookland (CKS P49); Burmarsh (CKS P53); Dymchurch (CKS P125); Ebony (CKS P78); Fairfield (CKS P141); Hope (CKS P191); Ivychurch (CKS P203); Kenardington (CKS P206); Lydd (CKS P237); Newchurch (CKS P263); New Romney (CKS P309); Old Romney (CKS P310); Orlestone (CKS P276); Ruckinge (CKS P311); Sellindge (CKS P329); Smeech (CKS P4B); Snargate (CKS P340); Snave (CKS P341); Stone in Oxney (P353); Warehorne (CKS P384); West Hythe with Lympne (CKS P240); Wittersham (SG Wittersham).
7. Dobson, *Contours of Death*.
8. Preliminary research suggests that there were small, but significant, variations in mortality rates within the marshland area. These local variations warrant further investigation.
9. It is very difficult to give precise figures for crude death rates as their calculation depends on obtaining accurate population figures for each of the parishes. A more detailed discussion of the data is presented in Dobson, *Contours of Death*, 133–49.
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