

## SOME FURTHER CONSIDERATION OF THE PLAGUE IN EYAM, 1665/6

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Of the many stories of plague epidemics striking England between the fourteenth and seventeenth centuries, that of the village of Eyam is perhaps the best-known, with much written of the unique events occurring in this small Derbyshire village. This essay aims to establish some of the facts behind the colourful story that has built up over the years, to consider the varying viewpoints that have emerged concerning the existing evidence, and hopefully to contribute to the debate.<sup>1</sup>

It may be of use to say something first of the story of the parish, situated in Derbyshire between Buxton and Sheffield, which at the time consisted of three townships; Foolow, Woodlands, and the larger village of Eyam. The most famous incident in their history was a severe outbreak of the plague in 1665/6, which in itself would not have been enough to ensure the remembrance of the case, but the action taken in response was. After seeing that the epidemic was limited to the parish, the rector Mompesson, a previous incumbent Stanley, and the villagers, made the unprecedented move of establishing an effective **cordon sanitaire** around themselves to prevent the catastrophic spread of the disease. In doing so they made the apparent sacrifice of resigning themselves to death to save others. While the actual motives and reasoning of the inhabitants remain unclear, it now seems, with the benefit of modern medical science, that their actions contributed to an epidemic of almost unrivalled severity for the village of Eyam.

Such a famous example of the plague has received a great amount of literary attention. However the problems of trying to study in detail the happenings in a small village over three centuries ago are soon apparent; the truth has 'inevitably become encrusted by a rare mixture of fact and fiction as the mass of secondary works of all kinds has steadily increased over the years'.<sup>2</sup> Much of this is due to the complete summarization of the known evidence by William Wood in 1842, whose work has been accepted by almost all since as the foundation for all further comment. Whilst greatly publicising the story, Wood did historians a disservice by discouraging all critical analysis until recently. Living in Eyam, he relied greatly on the oral tradition, and many of his stories may well be apocryphal; they certainly utilise a highly florid, romantic language intended to extol the virtues of the villagers and practically to canonize the rector Mompesson.<sup>3</sup> However, there have been developments since. G.R. Batho was one of the first to attempt what he called 'a scholarly reappraisal', although his main accomplishment was to raise questions and issues rather than to resolve them.<sup>4</sup> The most complete analytical study,

particularly of a parish register, was produced in 1977 by Leslie Bradley, offering a re-interpretation of many of the accepted stories of Eyam.<sup>5</sup>

This present paper attempts to progress from Bradley's work, utilising theoretical concepts that have emerged since 1977, and in particular using a copy of the original historical source, the parish register of the church of St Lawrence in Eyam, now made available for the first time. Almost complete from August 1630 onwards, it provides an excellent insight as it was fully maintained throughout the plague period. It also includes numbered indications of all the victims who died of the disease, marked by a later rector, Joseph Hunt, who copied the entire register towards the end of the seventeenth century.<sup>6</sup>

### **The origin of the Eyam plague**

As with much of the detail of the epidemic, the manner of arrival in the village is unproven. Wood's view is again the generally accepted one, with his account of a box containing cloth being sent from London to a tailor in Eyam. It may also have contained plague-carrying fleas which attacked George Vicars as he unpacked the cloth, apparently immediately striking him with sickness, growing steadily worse until death on the third day, 6 September 1665. But there are problems with this, discussed by both Batho and Bradley. The symptoms were clearly those of the bubonic form of the plague, but the first outbreak appears to have been unusually rapid for this type. An alternative put forward by Batho is that the disease was transported via rat fleas from Derby to Eyam during the Wakes on 20 August, in which case the time which elapsed would appear to fit more accurately. However, despite this plausible suggestion, Batho concludes that the traditional explanation is still more probable. Bradley finds it hard to understand why Batho dismisses his own theory, but himself decides that doubt must remain as there is no conclusive evidence of the plague in Derby in 1665. Paul Slack leans towards the original theory as it 'seems more persuasive than any alternative so far suggested'.<sup>7</sup> But there remain factors that we cannot be sure of; for example, the disease could surely have been carried to the Wakes not only from Derby, but elsewhere in the country. Equally, the theory indicating the box from London is still very possible. Batho, in claiming Wood's story of instant illness may have been 'perhaps somewhat over-dramaticised', makes a very simple but critical point that has been generally ignored.<sup>8</sup> It may well be the case that George Vicars did not actually show symptoms for some period after opening the box, and if we ignore Wood's tendency to melodrama then it is very possible that bubonic plague may have had time to act.<sup>9</sup> Furthermore, Wood seems likely to have based this story on an account by Richard Mead in 1744, from which it is not possible to state conclusively how long it took the sickness to strike.

### **Development of the epidemic**

Moving on from this, accepting that the plague did arrive in Eyam, then we can look at how long it stayed, how it developed, and what effect it had. In following the progress of the disease, the parish register is the source upon which we depend. All accounts agree that the first death was George Vicars,

**Table 1 Monthly plague deaths**

1665	September	6	May	2
	October	23	June	21
	November	5	July	56
	December	8	August	78
1666	January	4	September	24
	February	5	October	18
	March	2	November	1
	April	7		

**Source:** J.G. & F. Clifford, *Eyam parish register, 1630-1700*, (1993).

buried 7 September 1665. The last death is less clear though, with various suggestions between 11 October and 1 November 1666. The plague began in early September, hit a peak of burials in October, and receded during the winter. However with the arrival of warmer weather the village saw a reappearance, described in characteristic style by Wood: 'June awoke the deadly monster from his seeming slumber in the preceeding months, and with desolating steps he stalked forth from house to house breathing on the trembling inhabitants the vapour of death'.<sup>10</sup> Another peak occurred in July and August before the epidemic ran its course.

A debate has emerged about the endurance of bubonic plague through winter months, one view being that it cannot survive anything but the most mild of seasons.<sup>11</sup> Bradley argues cases both for and against the persistence of the plague in these months in Eyam. The argument in favour is based upon the abnormally high number of deaths during the winter, and the number that were described at the time as being due to the epidemic. The doubt thrown upon this by Bradley depends upon his analysis of the parish register. Counting forty-seven deaths between November and May, he argues that eighteen deaths in seventeen families show no sign of infection being passed on within the family, as would be expected with the plague. But this includes all deaths from all causes, and we can refine this by examining only the deaths marked as being due to the plague by Hunt. Of course we cannot know if those identified as victims of the disease are correct as such; I would argue that the symptoms are very distinctive, and an estimate taken at the time is likely to be more accurate than counting the total deaths. Hence the relevant deaths between November and May were thirty-three, fourteen less than Bradley observed. The notion of so many single deaths in families that were not passed on is also shown to be false. The plague burials in the period concerned are as follows (grouped in families):

Stubbs: 1 Nov, 15 Nov, 19 Nov  
Warrington: 29 Nov  
Rowland: 5 Nov, 1 Dec, 15 Jan, 14 Feb  
Rowe: 14 Dec, 15 Dec, 19 Dec  
Wilson: 22 Dec, 28 Jan, 15 Feb, 17 Feb, 18 Feb, 1 Mar  
Rowbotham: 9 Dec, 24 Dec, 1 Jan, 1 Jan  
Blackwall: 24 Dec, 21 Feb, 22 Mar, 6 Apr, 16 Apr  
Alleyn: 6 Apr, 28 Apr  
Thorpe: 15 Apr, 2 May, 2 May  
Hadfield: 18 Apr  
Syddall: 29 Apr

Bradley accepts that the deaths of Rowes, Rowlands and Thorpes look to be due to plague. As for the other families, the burial periods may be sometimes longer than the expected pattern of bubonic plague, but this surely does not rule it out. We do not know many simple factors such as living arrangements, and families may not have stayed permanently under the same roof. The plague would not necessarily wipe out families in one spell, as some members of families often escaped. Unfortunately for those attempting to study it, the plague does not always follow an entirely predictable path.

Returning to the number of single deaths in families identified as questioning the existence of plague, we can see very few appear as plague deaths as marked by Hunt. Of those burials that do not seem to constitute families, the two Alleyne deaths are those of a father and infant, and there is no record of any other direct member of family in the register. The Warrington burial is probably of a widow, but may have been her only daughter, also named Elizabeth; in any case there was no other close family at the time. The bulk of Emmott Syddall's family had died after the first outbreak the year before, leaving Emmott, her young brother, and her mother, but Emmott's death came at a time of upheaval and uncertain circumstance as her mother had remarried just days before.<sup>12</sup> Only Samuel Hadfield seems to have left a mother and three siblings unaffected.

All this cannot be taken to prove the plague persisted through the winter, but it does help discount much of the contrary evidence suggested by Bradley. Considering the case of Eyam, alongside examples from elsewhere, it does now seem sensible to conclude that bubonic plague can survive a winter, albeit in a more restrained manner than in the warmer months.<sup>13</sup>

## Severity

Measuring the severity of the Eyam epidemic is made difficult because of different estimates of population, using either the village of Eyam or the larger parish. Using a calculation of the parish population by Bradley, a mortality rate of anything up to 30 per cent is indicated.<sup>14</sup> The death rate of the actual village was far higher than the parish as a whole, placing it as one of the highest death tolls ever recorded in England.

The calculation of Crisis Mortality Ratios is one way in which the effect of mortality crises on parishes can be assessed and compared. By dividing the number of burials in the twelve highest epidemic months by the average annual number of burials in the parish over the previous decade, it provides a very crude measure of the increase in the crisis year. Although there are limitations to the method, it has the advantage of comparability between parishes.<sup>15</sup> Eyam in 1665/6 had a ratio of epidemic to average burials of 10.2, an extremely high figure when considered next to Slack's definition of 3.0 as an 'exceptional crisis'; by comparison, forty-seven parishes of London during the 'Great Plague' of the same year had a crisis ratio of 5.9.<sup>16</sup>

Figure 1 Baptisms, burials and marriages in the parish of Eyam 1631-1700

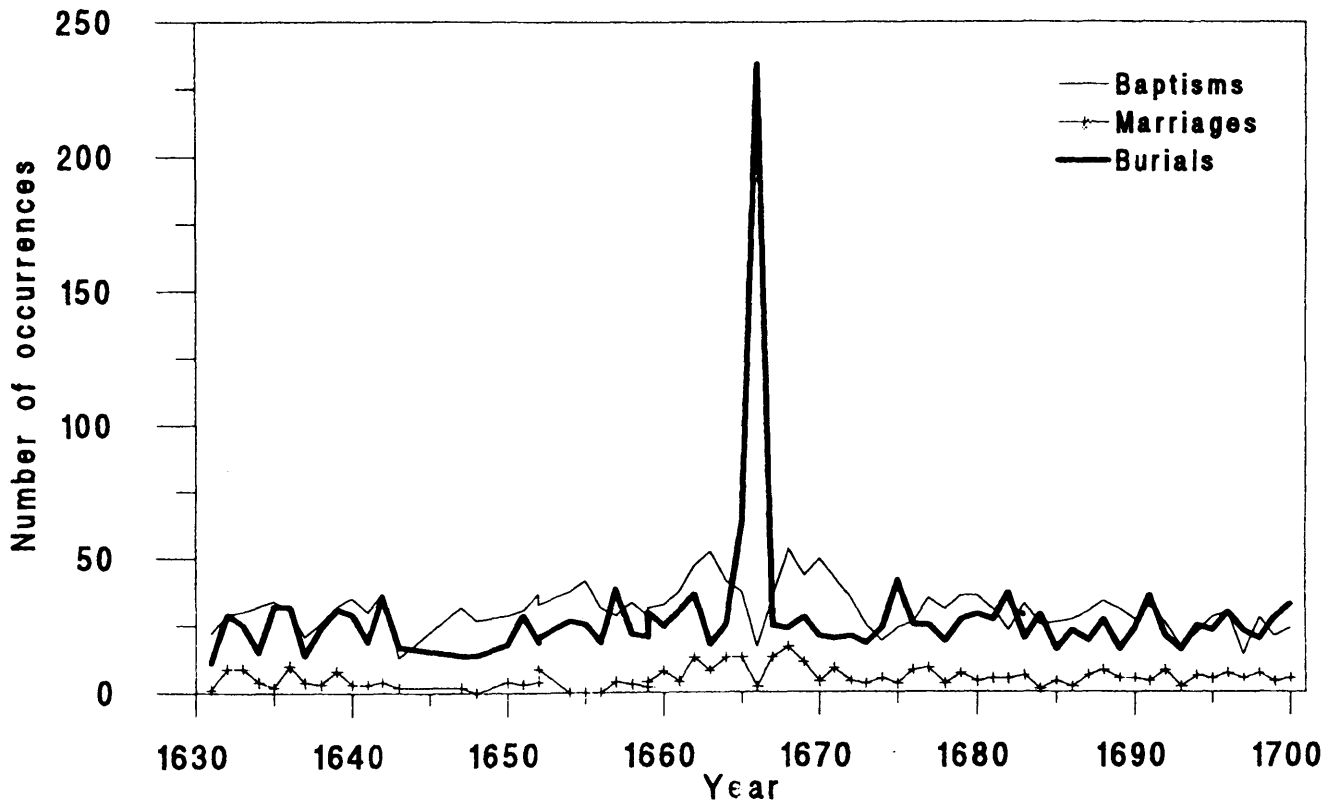
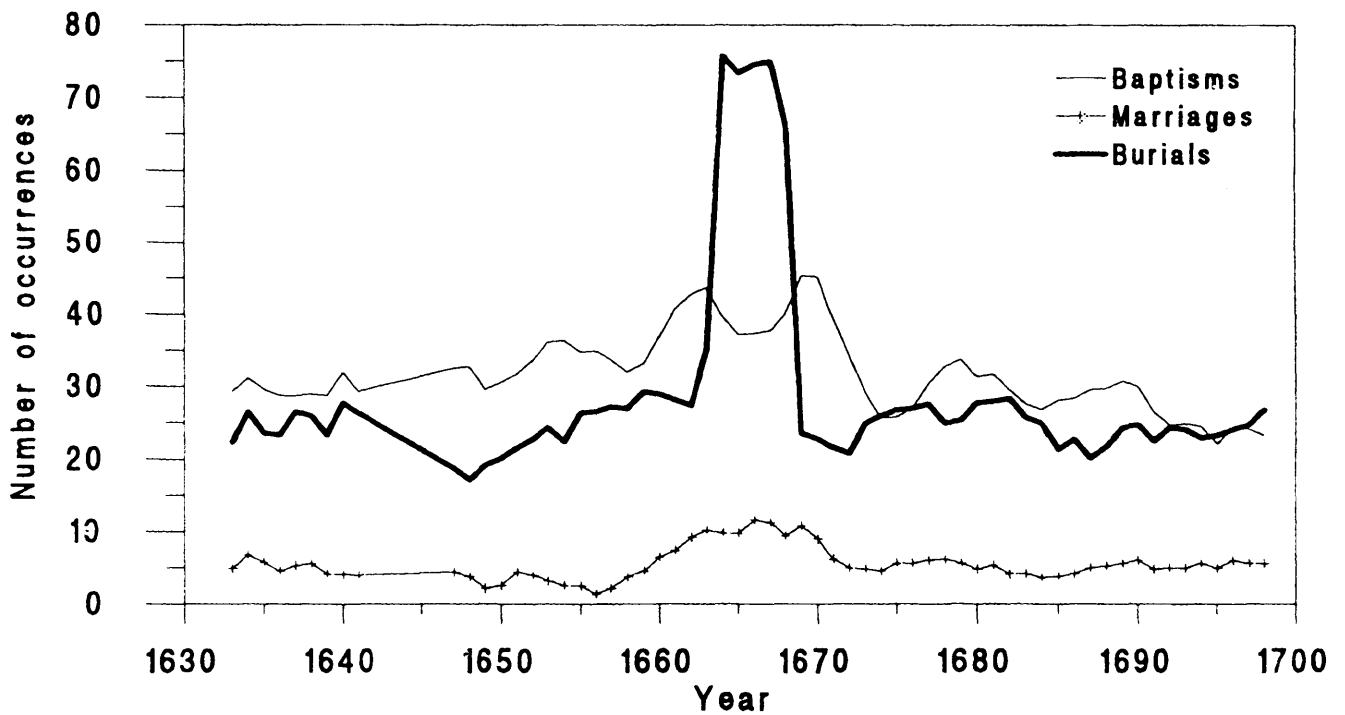


Figure 2 Baptisms, marriages and burials in the parish of Eyam 1631-1700. Five year moving averages



Source: J.G. & F. Clifford, *Eyam parish register, 1630-1700*, 1644-6 (Figure 1), 1642-6 (Figure 2) not included due to incomplete data.

**Table 2 Mean annual number of baptisms, burials and marriages**

	Baptisms	Burials	Marriages
1631-40	29.2	24.2	5.3
1641-50	30.2	20.4	3.9
1651-60	34.1	25.7	3.5
1661-70	42.0	50.8	9.8
1671-80	31.0	25.0	5.5
1681-90	28.7	23.8	4.7
1691-00	24.2	25.5	5.3

**Source:** J.G. & F. Clifford, **Eyam parish register, 1630-1700**, (1993).

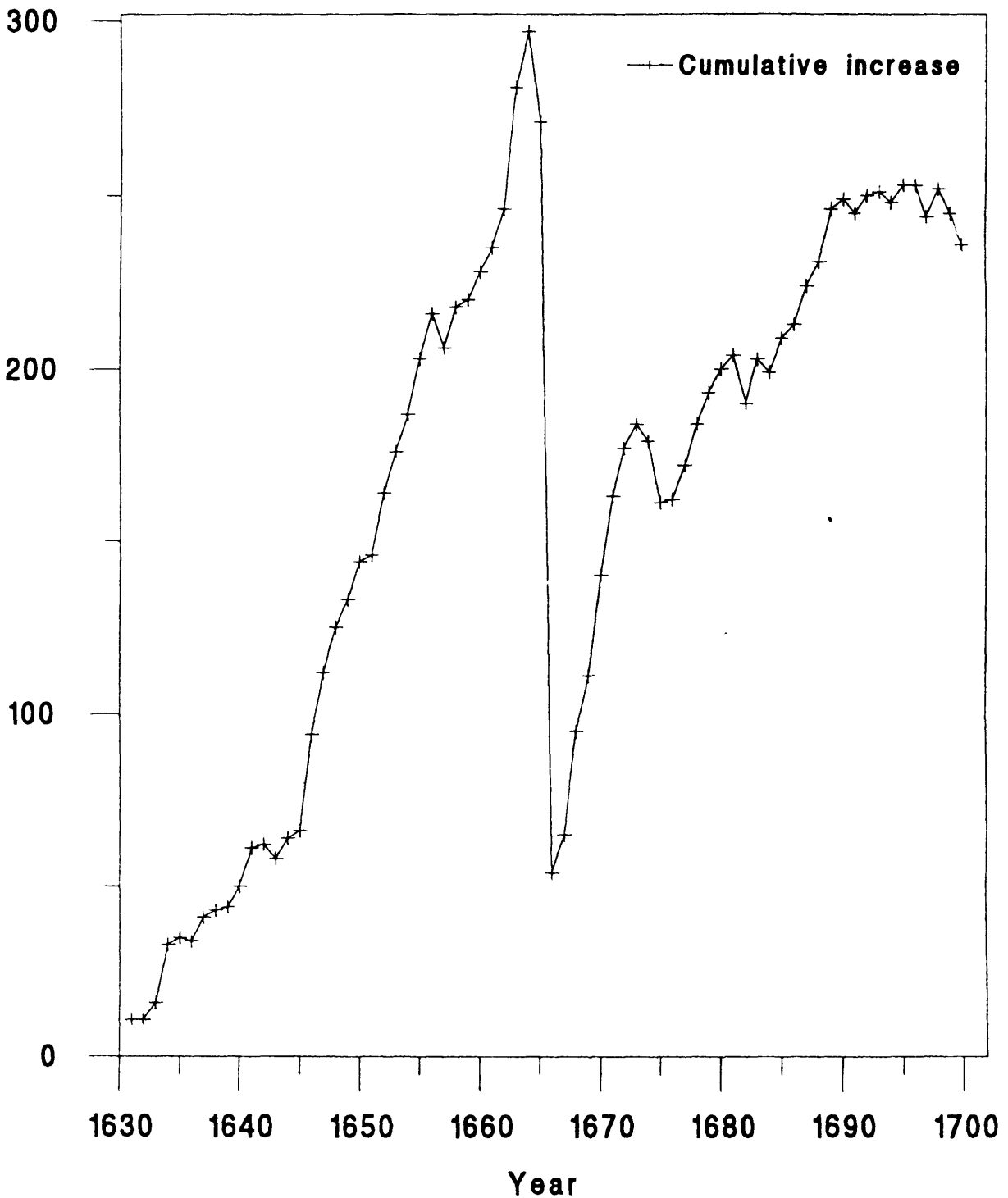
### Long-term demographic effect

Determining the long-term effect of a plague such as this is not easy. What we can do, using the parish register, is to examine the changes in the levels of baptisms, burials and marriages over the period before and after the epidemic and look for any evidence of a change (Figures 1 & 2; Table 2). The pattern of baptisms is perhaps the closest to what we would expect to see. There was a steady increase up to, and including, the 1660s with a temporary fall during the actual plague period. However, the demographic effect appears to become increasingly clear after the early 1670s, as the number of baptisms shows a constant decline, due presumably to the lower quantity of adults of child-bearing age. By the end of the period the level was at the lowest since the register began, as the effect of the decimation of the children of the parish thirty years earlier, who would now have been producing offspring, became apparent.

The evidence of burials shows no disturbance of the general pattern with the obvious exception of the two plague years. The decades before and after show the number of burials fluctuating within a similar range. Marriages also follow this course, with a clear peak during the plague decade, although in this case the epidemic was not the main cause, and indeed served to suppress unions in 1666. Marriages were higher in the decades following the disease than before, and show little conclusive evidence of being affected by the outbreak.

Bradley calculated the cumulative natural increase in the population of Eyam between 1630 and 1690.<sup>17</sup> Figure 3 here repeats the analysis, extending the data a further ten years to 1700, and using a recent copy of the register, gaining results showing increases rather higher than Bradley. The population had been growing at an increasing rate until the plague epidemic. The deaths in these two years removed much of the increase since 1630, but after the epidemic the population initially recovered very quickly. The trend continued upwards, despite a few small exceptions, although never quite recovering to pre-plague levels. After 1690, when Bradley's analysis finished, the effect of the falling level of baptisms became apparent, and there was an actual net decline in the population change. It would be of interest to see the data after 1700.

Figure 3 Cumulative net population increase



Source: J.G. & F. Clifford, *Eyam parish register, 1630-1700* and L. Bradley, 'The most famous of all English plagues'.

The outcome of all this evidence on the demographic effect is that there was no collapse, despite the extreme mortality of 1665 and 1666. The parish appeared to recover quite quickly in the immediate post-plague years but, over a longer time-span, a very large amount of the natural increase was removed, the levels of baptisms fell, and the parish lost a large proportion of its potential population.

## Sex and age incidence

As well as absolute mortality, the demographic effect may vary according to the incidence of deaths on various groups in society. One possibility is a difference between sexes, which could lead to an imbalance and therefore depress population growth. In theory there seems to be no biological reason why one sex should be more susceptible than the other, but differences did occur from parish to parish.<sup>18</sup> However this is not due to any inherent level of susceptibility; a large proportion of deaths of one sex may be influenced by more or less exposure to risk, but usually is due to the simple factor of a greater number of the population being of that sex. Despite this, English plagues were always thought to afflict men more seriously, and indeed work on the evidence of St Botolph's in London in 1603 seems to indicate this.<sup>19</sup>

The plague at Eyam showed a surplus of male deaths, with 104 male deaths per 100 female. Too small a difference to be significant, it also needs to be compared to the average level of mortality in a non-plague period; in the previous ten years the ratio was 106 males to 100 females. Colyton in Devon differed in showing a surplus of female deaths (93 male: 100 female) but again this is shown to be irrelevant when compared to the pre-plague levels (93 male: 100 female).

The evidence of the incidence of mortality on different age-groups is more substantial. Bradley's study of Eyam revealed that the proportion of total mortality falling on the 5-19 age group during the plague period was three times that of previous years. Compensating for this, the proportion of dead was lower for those under five years, and much lower for those in their first year. The share of mortality taken up by adults was similar to pre-plague times.<sup>20</sup>

The pattern found in Eyam was expected, and agreed with other studies. However Roger Schofield uses another method of calculation, measuring the level of mortality for specific age-groups before and during the epidemic, instead of comparing the proportions of mortality taken up by each group; in effect looking at rates rather than numbers. Examining Colyton, Eyam and St Botolph's he found a different pattern, suggesting that epidemic mortality was less serious amongst older children than amongst those younger, and that infants suffered very much more than other age-groups.<sup>21</sup> Slack also endorsed this reversal, and argued that the death rate was highest for the infant group, with the lower proportional numbers of infant deaths in plague periods being due to the lower overall numbers of infants in the population.<sup>22</sup>

Studies of the relationship between age and plague mortality tend to look at deaths and age at burial. But with infant mortality it is also possible to examine births, and the annual number of deaths per 1,000 baptisms, and in this way gain a rough estimate of the effect of plague on the rate of mortality for the most susceptible group. Admittedly the results from this will be liable to error. Relying on the parish register, the number of baptisms is only an indicator of the number of actual births, and infant deaths may have occurred before baptism took place.



**Table 3 Infant mortality rates (per 1,000 baptisms)**

1655-64	147		
1665	211	Jan-Jun	150
		Jul-Dec	278
1666	421	Jan-Jun	455
		Jul-Dec	375
1667	194	Jan-Jun	300
		Jul-Dec	63
1668-77	100		
Sep'65-Aug'66	500		

**Source:** J.G. & F. Clifford, **Eyam parish register, 1630-1700**, (1993).

From Table 3, the infant mortality rate in Eyam during the peak year of the epidemic was nearly three times the average for the previous decade. The rate in this year stands out; 278 out of 1,000 died in 1660, possibly due to a mild epidemic of some sort, or maybe just demonstrating the unreliability of figures over small samples and using imperfect registers; but the infant mortality during the plague period reached an unprecedented high. During the peak twelve months, 50 per cent of all children baptised died within a year, an extremely high proportion. The six-monthly periods show the relationship between the rates and the plague more clearly, although as results are looked at in more depth, the more likely are distortions due to inconsistencies. Given this, the rates show the likelihood of death increased in the months prior to the outbreak in September 1665, and then peaked for the central six months. Also clear is a lag after the epidemic had disappeared in October 1666; the effect on the condition of the inhabitants and the village must have been severe as all six of those who died as infants after baptism in the first half of 1667 did so within the first month.

## Conclusion

The evidence presented and discussed in this essay shows the difficulties that emerge when trying to resolve issues concerning occurrences in past centuries. However, despite severe limitations, we can obtain some picture of the effect of such an epidemic. We continue to accumulate evidence concerning such aspects as the winter survival of the disease, and the varying incidence on groups in society. Looking specifically at Eyam, estimates show overall mortality was very high, and Bradley is correct in comparing the rate with that of severe urban epidemics.<sup>23</sup> Despite this, there was no serious demographic collapse, although the consequences of such severe mortality were significant in the following decades. The lasting impression left by the reconstruction of the experience of Eyam, added to the tragic human stories passed down the years, remains that of the supreme devastation an epidemic such as this could cause.

## NOTES

1. The author thanks Chris Galley, Department of Geography, University of Liverpool, for guidance and assistance.
2. G.R. Batho, 'The plague of Eyam: a tercentenary re-evaluation', **Derbyshire Archaeological Journal** 84, (1964), 81-91 (quotation, 83).
3. W. Wood, **The history and antiquities of Eyam**, (London, 1865). For example: 'The immortal victors of Thermopylae and Marathon, who fought so bravely in liberty's holy cause, have no greater, no stronger, claim to the admiration of succeeding generations, than the humble villagers of Eyam in the year 1666. Their magnanimous self-sacrifice...is unrivalled in the annals of the world', 56-7.
4. Batho, 'The plague at Eyam', 81-91.
5. L. Bradley, 'The most famous of all English plagues: a detailed analysis of the plague at Eyam 1665-6', Local Population Studies Supplement, **The plague reconsidered**, (Matlock, 1977).
6. J.G. & F. Clifford, **Eyam parish register, 1630-1700**, (Chesterfield, 1993).
7. P. Slack, **The impact of plague in Tudor and Stuart England**, (London, 1985), 346, note 25.
8. Batho, 'The plague at Eyam', 87.
9. Bradley, 'The most famous of all English plagues', 64, describes how Wood, in later editions of his book, became much less specific about many details of the affliction of Vicars; from describing the story as 'fact' in 1842 to 'according to traditional accounts' in 1903. In addition, it has been suggested that the box of clothes arrived earlier, towards the end of August, in J.G. Clifford, **Eyam plague 1665-1666**, (Eyam, 1993), 5.
10. Wood, **The history and antiquities of Eyam**, 78.
11. J.F.D. Shrewsbury, **A history of bubonic plague in the British Isles**, (Cambridge, 1970).
12. Clifford, **Eyam plague**, 37-8.
13. Also for Colyton, London, Sweden, in R.S. Schofield, 'An anatomy of an epidemic: Colyton, November 1645 to November 1646', **The plague reconsidered**.
14. Bradley, 'The most famous of all English plagues', 67.
15. Slack, **The impact of plague**, 179-81.
16. Eyam: average annual burials 24.5, burials in plague twelve months 251; London 47 parishes in Slack, **The impact of plague**, 158.
17. Bradley, 'The most famous of all English plagues'. This refers to the cumulative total of the annual difference between baptisms and burials, offering an indication of population change, although not accounting for change through migration.
18. Slack, **The impact of plague**, 179-81.
19. M.F. & T.H. Hollingsworth, 'Plague mortality rates by age and sex in the parish of St Botolph's without Bishopgate, London, 1603', **Population Studies**, 25 (1971).
20. Bradley, 'The most famous of all English plagues', 73.
21. Schofield, 'An anatomy of an epidemic', 115.
22. Slack, **The impact of plague**, 182.
23. Bradley, 'The most famous of all English plagues', 79.