PLAGUE, POVERTY AND POPULATION
IN PARTS OF NORTH-WEST ENGLAND,
1580-1720

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THIS survey of certain aspects of social history is derived
mainly from a study of the published parish registers of
the area. The registers that only exist in manuscript form have
not been considered. For a purpose such as this a register does
not become digestible material until it has been transcribed,
indexed, published and deposited at some accessible place of
reference.

The nature of the material to a large extent dictates the
limiting dates of the period covered. The period preceding 1580
is not well represented by the surviving registers and the early
recording is rather ragged. Parish register societies have
naturally concentrated on the earlier records and this fact is
partly the reason for the second limiting date of 1720. More­
over, 1720 is a convenient round figure and it may be per­
missible to use it as a dividing line between two phases of social
and economic history. While realising that the division should
be marked by a broad band rather than a line, I have been
obliged to choose a line and have drawn it at the year 1720.

The keeping of parish registers, from their first institution
in 1538, was regarded with various degrees of resentment or
indifference, and one does not find any general striving after
accuracy until late in the seventeenth century. Parish clerks
were literate—in various degrees, but were not educated to the
point of understanding the importance of their task. As they
saw it they were employed to keep a record, not to make that
record useful or even intelligible. One finds a number of
trivial excuses for unrecorded periods, and it was almost a
matter of course to leave a permanent gap in the register to
mark the interval between the death or retirement of one
recorder and the appointment of a successor.

There are other gaps or periods of incomplete registration
that were probably unavoidable, due to widespread epidemics
that carried off the recorder, clerk or parson, or both, and dis-
organised the life of a parish for a long period. Perhaps the most widespread of seventeenth-century plagues was that of 1622-23, and the number of registers in which these years are defective tells its own tale.

But with all these defects the registers have their value as material for rough statistics. A minority of parish clerks were good and honest recorders, and even the negligent ones had their fleeting seasons of virtue. The weakness of individual registers can be ironed out by collecting figures from a number of registers, by sampling of one sort or another. Naturally the resulting estimates can only be a series of approximations and their value is a matter of opinion. My own conclusion is that they are near enough to the truth to be presentable. The presentation of figures has involved such frequent arbitrary decisions as the acceptance or rejection of part of a register as accurate or otherwise. In a work of this kind certain patterns or trends appear from time to time and there may be a temptation to choose the figures that fit the apparent pattern. The only defence against this danger is to be aware of it and I have kept it in mind.

I. EVIDENCE FROM PARISH REGISTERS

A rapid examination of a few parish registers will reveal the following facts. The population between 1580 and 1720 was static by modern standards. There were periods when births were very numerous and periods when the burial entries of a single year occupied several pages of the register. But on the whole there was not a great difference between the number of entries in the late sixteenth century and the corresponding number in the early eighteenth century. The growth of urban populations is a subject in itself and no attempt is made here to deal with it in detail. Such towns as existed in the north-west were tending to increase in size in the latter part of the period, though Liverpool was the only one that showed any sensational growth. However, up to 1720 the population of the north-west was still predominantly rural, living by husbandry, and movement from the country to the town was only a minor factor in the changes here described.

The progress of the population is best demonstrated by graphs or diagrams of various sorts. One may draw graphs to show the variation in the annual death-rate of a parish, in particular to show the effects of epidemics of plague whose dates are known. One may construct a double graph to show the relation between the marriage-rate and the birth-rate. The
relation of these two rates is obvious so such graphs are hardly worth drawing. What is less obvious is the relation between the death-rate and the marriage-rate and this relationship is demonstrated in the graphs of Fig. 8, which also show the mortality from certain well-known plague epidemics.

The upper pair of graphs show, superimposed, the annual death- and marriage-rates in Kirkham parish for the period 1555-90. It will be seen that the death-rate was very high in the years 1578 and 1587. These were well-known plague years though the earlier one was not universal. It will also be seen that each epidemic was in progress for three or four years with one conspicuous peak year, and that in each case the rising death-rate was followed by a rising marriage-rate.

The second pair of graphs is taken from the Penrith parish register and covers the years 1575-1610. Again we notice the effect of that plague that reached its peak in 1587, and the corresponding rise in the marriage-rate that closely followed it. But the most remarkable feature of the graph is furnished by the great and almost universal plague of 1596-98. This struck Penrith, then mainly a rural parish, with particular severity. It is fairly certain that the register does not give the full list of burials as it is clear that numerous irregular interments took place. The full number may have amounted to one-third of the parish population. The rise in the marriages is almost as striking. Even in the peak year of the epidemic the marriage-rate was more than double the previous average. This relation between death-rate and marriage-rate is found in so many registers that one comes to expect it, though actually it is not invariable. For instance, the Penrith register shows no significant increase of marriages after the plague year of 1623.

This leads to one more noteworthy feature of the Kirkham graphs. A large number of marriages occurred in the years 1559 and 1561, with a higher than average number in 1560. One cannot correlate this with a high death-rate in preceding years because the record of burials for the years preceding 1560 is missing. Actually there was a severe and widespread plague in the years 1558-60. It is not known definitely that Kirkham was involved but the high marriage-rate of 1559-61 strongly suggests a heavy mortality in preceding years. The gap in the register is significant in itself. There are several Lancashire registers that cover this early period. Some are too defective in general to allow any opinion to be formed. Of the rest two show no evidence of an epidemic, six a high death-rate in the plague years, and three a conspicuous gap in the plague years.
Figure 8. **DEATH AND MARRIAGE RATES IN PARISHES OF KIRKHAM AND PENRITH**

In each pair of graphs the upper one shows the number of deaths and the lower one the number of marriages.
It will be recognised that all routine procedures would be upset by a serious outbreak of plague and if the person responsible for the registers were a victim there might be a long interval before a successor were appointed. The number of literate persons available for the post was limited and the vacancies were probably many.

So far as we know plague was the only epidemic disease of great significance until the mid-seventeenth century, about which time smallpox was becoming a serious competitor. It is therefore desirable to date and evaluate the main epidemics of plague so far as the registers of north-west England reveal their effects.

1557-59. The mortality is impressive in the few lists that can be found. Various scraps of evidence suggest that it was as widespread and lethal as any subsequent outbreak. In view of what will be said later about the famine-pestilence sequence, it should be noted that the country experienced three bad harvests in the years 1556-58. For general information about pestilence in Britain, the reader is referred to C. Creighton, *A History of Epidemics in Britain* (1891).

1586-88. A widespread epidemic with a high mortality in some districts but in the affected areas a number of individual parishes seem to have escaped. It reached its peak in 1587 and was associated with a period of scarcity and high prices. So many registers are interrupted in these plague years that one is likely to underestimate its importance.

1596-98. This was one of the greatest epidemics and affected nearly all the north of England. The mortality generally was high and probably very much higher than many of the registers indicate. One gets the impression that in some parishes the task of recording was too much for the recorders. Certainly in some large and scattered parishes many corpses never reached the churchyard. Contemporary estimates of numbers are fantastic and impossible but nevertheless reveal the sense of catastrophe that this visitation inspired. There are many gaps in the registers during these years. Some of them are continuations of gaps that began in the period of an earlier epidemic, that of 1586-88. There were famine conditions in the northern counties during and preceding the year 1597.

1622-23. This was another major disaster. I have no doubt that this was in the main an epidemic of plague on a national scale. Creighton described it as a complex of typhus, dysentery and smallpox with typhus predominating. With all respect to Creighton and others, I cannot agree. Typhus has a typical age mortality in that it takes its victims from the adult population. As very few children die of typhus, it should be possible to recognise the disease from an inspection of a list of burials and I have not yet been able to recognise it. Moreover, though typhus spreads very quickly in any closely packed group as in a gaol, a ship or a slum, it does not spread quickly from one group to another. The great epidemic year was 1623 all over the north. I cannot believe that typhus could have spread from two or three focal points with such speed as to produce its maximum mortality everywhere within a single year when one considers the self-contained character of parishes or groups of parishes at this time. In short, all its features are characteristic of plague though it is quite likely that in some congested areas, particularly the towns, typhus was prevalent at the same time. Overcrowding, squalor and hunger favour the spread of many diseases.

I would presume that apart from plague one of the common causes of death in this period was starvation, and one parish register of Cumberland provides evidence of this. Like the other great plagues it was preceded and accompanied by great scarcity and distress.
About a quarter of the registers examined are interrupted during the years of this plague, a strong suggestion of the death or prolonged incapacity of the clerk or parson responsible for the register.

**1635-38.** There was a widespread epidemic or series of epidemics in this period centring on the year 1637. It was not universal. Many parishes were but slightly affected, others had heavy losses. It cannot compare in severity with the plague that preceded it, but it seems to have taken a heavy toll of the poorest class of the people, those described as *peregrinus, traveller,* or merely as *stranger.*

There were other outbreaks of plague in the north but of a more localised character. One particularly virulent outbreak in 1630-31 was almost confined to certain areas in the lower valley of the Ribble. It has been estimated that about one-third of the people of Preston died in those years, and the plague was also severe in Kirkham parish and produced a local outbreak in Dalton-in-Furness. (See **TRANSACTIONS, Vol. 90, pp. 60-71.**) There were other sporadic outbreaks between 1640 and 1660, but the registers are so ragged in this period that it is hard to get a clear picture of their distribution or timing.

## II THE CAUSE AND EFFECTS OF PLAGUE

Men became especially vulnerable to the attacks of parasites and micro-organisms when they emerged from the nomadic stage and began to live in permanent settlements. No doubt they were subject to many varieties of infection, but of all these the most devastating and dramatic that we know was the disease caused by *bacillus pestis,* the specific microbe of plague. This disease had been well known in Europe since before the Norman Conquest. As the Black Death it acquired its most disastrous force in the middle of the fourteenth century, and it suddenly disappeared from Britain as an epidemic disease three hundred years later after the final explosion in 1665 known as The Great Plague of London.

Plague is primarily a disease of small rodents, particularly of the black rat, which was the only species of rat known in this country until the eighteenth century. The brown rat reached this country about 1730. In subsequent years it supplanted the black rat almost completely, but there is no obvious connection between this fact and the disappearance of plague seventy years earlier. The black rat was rather less adaptable and enterprising than the brown rat that supplanted it. It was rarely found except in association with man. It haunted the wattle and daub walls of houses and barns and did not usually range far and wide over the countryside like its cousin and successor. Being a parasite upon the food supplies of man its well-being depended on the well-being of its human hosts. When granaries were full men and rats were well fed. In times of famine both went hungry.

The plague was carried from rat to rat by the fleas that infested them and in normal circumstances the disease was
PLAGUE, POVERTY AND POPULATION

confined to rats. Fleas are of many species each with its specific host or group of hosts among a few closely related birds or mammals. In simple words, rat fleas are only interested in rats. A few rats might die of plague or other causes, but their parasites would soon find fresh hosts among the living rodents.

But there were times of famine or near-famine when stores of grain were carefully guarded, when there were no disregarded scraps lying in shippon or sty, times also when the rats were worse afflicted with plague than usual. Soon rats were dying in large numbers from hunger or disease or a combination of the two. The dead rats would be observed with foreboding. No one understood that rats brought the plague. The dead rats were simply a sign of the wrath to come.

For though the rats died almost to the point of extinction their parasites did not die and soon in default of their natural hosts they began to infest their human neighbours. Thus began an epidemic of plague, which continued until all infected fleas had died out or until there were no more susceptible human beings within their reach. This famine-pestilence sequence is common to all widespread outbreaks of plague. The localised outbreaks are harder to explain. They may have followed a localised scarcity or perhaps rats by their natural increase furnished their own famine conditions over a limited area.

Mortality from plague probably did not fall much below 50% of those attacked. In the pneumonic type of plague which gave the Black Death its deadly character, a 100% mortality would be the rule, but it does not appear that this type was prevalent in any of the sixteenth and seventeenth century outbreaks. The normal channel of infection was by rat flea to human host, though it seems likely that once an epidemic was established infection would travel from person to person through the medium of the parasites that normally infest mankind. In the pneumonic type infection was carried by inhalation of the fine droplets coughed up by an infected person and spread rapidly in this way.

Man could not harbour this disease indefinitely. The permanent reservoir of bacillus pestis was always in the rat population.

III THE RIGID ECONOMY OF THE PERIOD 1580-1720

Lancashire, like the rest of England, was an aggregate of rural parishes. In every parish there was a fixed number of tenements each the home of a single family. The people of the parish had to produce their food from the cultivable land
within their boundaries, and as the area of cultivable land was limited, the population could not expand beyond a certain point without creating hardship. Any marked increase beyond this point was checked by poverty, famine and eventually by disease. In every parish were a number of craftsmen. Some were full-time; others husbandmen practising subsistence agriculture and plying their craft in their spare time, for most parishes found it difficult to feed families which did not grow their own food.

There would be a market town that acted as a centre for a number of parishes and provided such goods and services as were beyond the scope of the rural craftsman. There would be saddlers, ironmongers, professional men. Here again the number of such specialists was limited for the same reason that the number of humbler craftsmen was limited.

In fact, the size of population and the whole economy was geared to a fundamental factor of food production which did not change, or at the best changed very slowly in a piecemeal and niggling fashion. Long before this period the population of England had come to rest against the inertia of ancient law, manorial custom and a primitive agricultural tradition. If any small permanent increase were achieved it was because from time to time and here and there this immemorial inertia yielded slightly to the pressure of unusual circumstances.

From all this it may be seen how circumscribed was the future of a young unmarried man living with his parents. He would work for his father; in addition he might earn a wage for some seasonal employment. There was no expanding industry calling for his labour. If he left the parish to seek an opening elsewhere he exposed himself to the brutality of the vagrancy laws. In short, his prospects of marrying and living in a home of his own were a matter of waiting for a death vacancy. In due course his own father would die or some neighbouring tenement might become vacant. In either case it was a matter of waiting, sometimes for many years. So one sometimes finds that marriage was delayed to a time of life when both parties were past their first youth and in this way a certain equilibrium might be achieved. Late marriages meant smaller families and a smaller number of young men and women waiting for the opportunity to marry in the next generation.

But such a sequence would be violently upset in the event of a deadly epidemic that carried off a number of householders and provided homes for several newly-married couples within a few months. And that is why a heavy mortality was often followed almost immediately by a large number of marriages and later
on by a leap in the birth-rate. If the newly-married included a large number of young women in their early twenties the birth-rate would remain high for many years.

It might even happen that the birth rate was so sustained as to produce a serious state of over-population within a generation. We shall see that the plague of 1596-98 was followed by a great increase of population in the early years of the seventeenth century. As those born in these years were reaching maturity we shall see the development of poverty and vagrancy on a large scale with the lean years becoming leaner until the culminating disaster of 1622-23.

Nearly all that has been said so far arises from one set of graphs showing the death-rate and marriage-rate in two parishes in the years 1555-1610, and can be summarised as follows:

1. North-west England in the sixteenth century and the first half of the seventeenth century was subject to periodic outbreaks of plague of which two were particularly destructive and universal, those of 1596-98 and 1622-23.

2. The following chain of cause and effect has been postulated:
   a. Famine or near famine affecting both men and rats.
   b. Heavy mortality among rats from plague and starvation.
   c. Infected rat fleas acquiring human hosts.
   d. Epidemic of plague.

3. The association between famine and plague can be seen in all the major epidemics.

4. The country's capacity for food production was almost stationary and governed the size of the population.

5. There was a tendency towards a state of equilibrium characterised by late marriages, small families and a stationary population.

6. Such an equilibrium would be upset by a famine-plague sequence with heavy mortality, a large number of "death vacancies", and a consequent rise in the marriage-rate extending to the younger age groups.

7. If a large number of couples were enabled to marry early, there ensued a sustained rise in the birth-rate. One may therefore find the paradoxical sequence of a deadly epidemic resulting in a disastrous over-population a generation later.

Some of these points are better illustrated by another type of graph, a type easily prepared from any well-kept register and which is exemplified in Fig. 9. To explain—each vertical column above the base line represents the average annual birth-rate over a period of ten years. A surplus of births over deaths is represented by a shaded area at the top of the column. A surplus of deaths over births is represented by a shaded area below the base line.

The graphs are drawn from the registers of parishes in the hundreds of Lonsdale, Amounderness, West Derby and Salford, but they all show certain common features. There is a period of heavy mortality between 1580 and 1600. There is a period of high birth-rate and rapid increase during the first thirty years or more of the following century. There is a period
Figure 9. AVERAGE BIRTH/DEATH RATES OF FOUR PARISHES
Each column represents a decade. The shaded area at the top shows excess of births over deaths: the shaded area below the base line the excess of deaths over births.
of decline after 1660 extending nearly to the turn of the century, a period when in some decades deaths outnumber births and the reduction in the total volume of all register entries points to a falling population. Finally, from about 1690 onwards there is recovery; the birth-rate exceeds the death-rate and the population is increasing again.

On the other hand there are important differences between the four graphs, which have in fact been selected because they are fairly typical of the regions in which the various parishes are situated. The graph of Cartmel shows an excess of deaths in the period 1590-1600 due to the plague of 1596-98 which was particularly severe in the more northerly parishes. There are only two other decades when the deaths outnumber births and the period of decline in the late seventeenth century is not very marked. The parishes of Westmorland and Cumberland on the average show even less decline in the period 1660-1700, and a number of these show a consistent excess of births over deaths during all this period.

Stalmine shows a more marked decline in the late seventeenth century and a long period with excess of deaths. Both of these features are carried further in the graph of Upholland, but the Upholland register is too defective to permit of a graph construction for earlier periods. In Stalmine the graph is apparently unaffected by the plague of 1596-98, but shows a fairly high death-rate in the previous decade. In this latter respect it resembles Middleton. At Middleton, as at Cartmel, there is no sustained period of excess deaths. On the other hand there is quite a marked decline in the late seventeenth century, in which Middleton is not really typical of south-east Lancashire as a whole.

The great plague of 1622-23 does not leave a very obvious mark on these graphs largely because it occurred at a time when the birth-rate was still high enough to mask it. Also, this epidemic in its turn stimulated the marriage-rate in many parts, with a consequent stimulus to the birth-rate. Some conspicuous gaps in these graphs are due to the patchy nature of registration during the years of the Civil War and the Commonwealth. It is difficult to get a satisfactory picture of the state of the populations in the mid-seventeenth century. In some registers there are signs of heavy mortality in the years from 1647 onwards, and from other sources it is known that there were a number of severe but localised outbreaks of plague in Lancashire in the period 1645-58.

The series of graphs in Fig. 9 does not include a specimen from Westmorland or Cumberland. As stated above they have a
certain kinship with that of Cartmel. But before leaving these northern counties it is opportune to refer to a unique group of entries in the register of Greystoke for 1623, as they indicate that plague was not the only lethal agent in the death roll. I quote these typical items from the register of burials:

- **March 27th.** A poor hunger starved beggar child.
- **May 21st.** John Clementson of Johnby a poor man destitute of means to live.
- **September 11th.** Leonard son of Anthony Cowlman of Johnby late deceased, which child died for want of food.
- **October 27th.** William son of Lancelot Browne which Lancelot went forth of the country for want of means.

And so the sad recital continues. Over a period of less than two years nearly twenty deaths from starvation are recorded and in many more cases starvation is implied by the nature of the entry. It will be seen later that desperate poverty existed in other parts of the north, but no testimony is so direct as this at Greystoke.

About the year 1660 we cross a great divide in the history of disease in England. There had of course been other diseases besides plague. There was typhus. There was the curious and interesting fever known as “the sweating sickness”. No doubt bacteria of the typhoid group took their toll. But none of these made a visible impact on national life and history. For a thousand years plague had been “captain of the men of death” with no serious rivals. But plague made its final appearances in the north-west in the years 1650-1660 and never returned.

But the devil that had been cast out was replaced in some measure by smallpox. I cannot say when this disease first appeared in England, but in parts of Lancashire it was becoming well established as a recurrent epidemic in the Commonwealth period and ten years later it was affecting the whole of the north-west. It differed from the plague in its mode of transmission and other ways. Smallpox, though a dangerous disease, only has about half the mortality rate of plague. On the other hand it is a highly contagious disease and is specially dangerous to children. It takes about three-quarters of its victims from the very young and a rather bigger proportion of boys than girls. It thus tended to increase that disproportion in the numbers of the sexes that has been regarded as normal up to very recent years. As the proportion of adult deaths was relatively small it had little stimulating effect on the birth- and marriage-rates to compensate for the losses it caused.

This destruction of young life would perhaps not have prevented a steady natural increase if the birth-rate of the early
part of the century had been emulated. But smallpox became severe at a time when families were relatively small, so from 1670 onwards there are periods of many years when deaths exceed births and by the end of the century the reduction in the volume of all entries in the registers denotes a declining population. In Cumberland and Westmorland the decline was not so serious as in many parts of Lancashire. On the other hand recovery was more delayed. In Lancashire on the whole the birth-rate was rising again after the turn of the century. In the former recovery was not very evident until after 1720.

One may continue to draw graphs of this sort so long as a suitable supply of material lasts. As it happens such material is limited. The registers of many large parishes, each with a number of chapelries, show a quite incredible excess of deaths over births extending over half a century or more and it becomes clear that a large number of baptisms carried out in the outlying chapelries were not recorded in the register of the mother church. For various reasons burials were more fully recorded. Moreover a high proportion of registers cover only a limited period and others are fragmentary from loss, damage or lax registration. But if we consider only the shaded portions of the columns in Fig. 9, that is to say the surpluses, whether of births or deaths, and if we express these surpluses as a percentage, it becomes possible to use the better portions of defective registers and to build up contrasting regional pictures of moderate reliability.

For the construction of the regional graphs of Fig. 10 it was necessary to build up figures for each decade separately, using sequences of figures from any parish that showed a run of apparently accurate entries for both baptisms and burials. Then totals of baptisms and burials were made for each decade and the surplus of either baptisms or burials was expressed as a percentage of the total baptisms for the decade. A surplus of births is shown above the base line, a surplus of deaths, shaded for contrast, is shown below the base line. There is no question of showing the volume of births or deaths in these graphs. Their function is merely to show the relative tendencies in each region.

Also, having already observed certain common tendencies between Leyland and West Derby on the one hand and Blackburn and Salford on the other hand, these four hundreds have been divided into two regions only, south-west Lancashire and south-east Lancashire. This lumping together was partly dictated by the necessity of gathering enough figures to draw the graphs. The graphs for Amounderness and Lonsdale have
Figure 10. REGIONAL VARIATIONS IN BIRTH/DEATH SURPLUSES

Death surpluses, shown below base line, are shaded for contrast.
been built up in the same way. That for Cumberland and Westmorland has been drawn from the registers of a number of representative parishes, not from all the registers available.

The regional differences shown can be described thus. In the extreme north the continued excess of births and the extent of it are remarkable if not somewhat incredible. The signs of steady increase are to be seen in every decade from 1600 onwards. These parts endured the full impact of the terrible plague years 1596-98, and therefore show the heaviest losses in the last decade of the sixteenth century. They also show the most dramatic reaction to those losses in the great increase of the following twenty years. This paradoxical sequence is well illustrated. The heavy mortality of the 1590s brought about a phase of early marriage and vastly increased the reproductive capacity of the people. On the whole the greater the losses from plague in 1596-98 the more striking was the subsequent increase.

Coming south into Lancashire direct signs of the 1596-98 are less conspicuous. But there is still the great rise in the birthrate over the first ten to twenty years of the seventeenth century. In these southern regions though losses were smaller during the great plague years there were several other years of high death-rate from 1592 to 1605, whereas in Cumberland and Westmorland the mortality was concentrated in the plague years of 1596-98. But the result was the same. Throughout Lancashire there was a general tendency to decline from 1660 onwards. This decline is not severe in the hundreds of Blackburn and Salford. But it is well marked in West Derby and the areas north and south of the Ribble. In Leyland and Amounderness it appears quite disastrous.

One naturally asks what the more prolific areas did with their surplus, as a picture has already been drawn of a rigid economy that permitted only a limited, almost stationary number of households in each parish.

In Cumberland and Westmorland there were great areas of fell that were rough pasturage for sheep and could be little else. Nevertheless, it was a country where some agricultural nibbling was possible. When the great estates of Furness Abbey came on to the market a phase of development and expansion took place that had probably not ceased by the early seventeenth century. Much of the population was distributed along the valleys of small rivers where the land became worse and the population sparser as one ascended towards the fells. At the top of the dale there was often some hitherto uncoveted land that could be cleared and coaxed into growing enough oats to support another family provided that local custom and manorial law
were not too resistant. Cumberland had a few small ports on its own coast and the small ports of Furness were easily accessible. Men who were desperate to make a living sometimes took to a seafaring life, a hazardous occupation that required constant recruitment to replace its losses. Industrial openings were scanty but they existed. There was the iron industry of Furness, expanding very slowly and not as yet restricted by any dearth of wood for charcoal burning. And in the centre of Cumberland, with Keswick as its main focus, was that remarkable mining and smelting industry originally financed from Augsburg and manned by Tyrolese miners, which W. G. Collingwood described in the 1912 volume of the Transactions of the Cumberland and Westmorland Antiquarian Society. One must not assume too much importance for any of these as openings for men who must work or starve. Indeed, there were plenty left to starve.

There were others like Lancelot Browne of Greystoke parish who "went forth of the country for want of means". Lonsdale, in particular the portion south of the Sands, achieved a sort of equilibrium by a long period of late marriages and low birth-rate. There was here no industrial outlet until the development of Lancaster's West Indian trade at the end of the century. The same can be said of Amounderness.

In the hundreds of Blackburn and Salford were ancient royal forests alienated by the Crown early in the sixteenth century and undergoing a process of development and settlement that was probably not complete until the mid-seventeenth century. In both these hundreds industry was developing in certain valleys, a slow growth but nevertheless a growth. Here and there superficial deposits of coal were being exploited and as the woodlands dwindled the demand for coal rose. It would seem that in south-east Lancashire there was a little more flexibility than elsewhere in the north-west, a little more room for the population to expand.

In Leyland and West Derby, the great low-lying plain of West Lancashire, nearly all cultivable areas had for centuries been fully occupied. The great stretches of moss-land which could be utilised only after large scale draining operations, limited any further expansion. Coal, metal and textile industries and in particular the rise of the port of Liverpool, were all significant developments. In themselves they may have been as important as the industries of the Pennine valleys. But in the south-west the size of the purely rural and agricultural population was relatively much greater and overshadowed the industrial element. On the whole the state of the people was similar to that of Amounderness and very different from that of south-east
Lancashire. The great sustained surplus of deaths in Amounderness and south-west Lancashire is, perhaps, the most striking feature of Fig. 10. The extent of it has the same rather incredible quality as the excess of births in Cumberland and Westmorland. The picture suggests a high rate of child mortality though direct evidence of this is lacking.

IV AGE OF MARRIAGE AND POPULATION FIGURES

It has been shown already that a single terrible epidemic might cause a whole decade to show a great excess of deaths over births. But the tendency to a surplus of deaths in certain decades from 1660 onwards depends mainly on a fall in the birth-rate. In the graphs of Fig. 9 a marked fall in the total volume of recorded baptisms can be observed in all parts of Lancashire in the last thirty years of the seventeenth century, a feature common to all parts of the north-west. It is true that in this period there were on the whole fewer marriages, but much more important was the fact that families were smaller. This statement has hitherto been unsupported.

There is no magic about the reproductive rate of mankind. If women marry at twenty (in an unsophisticated society) they generally have many children. If they marry at thirty they have much fewer, and the decrease is not merely pro rata for the years spent in spinsterhood. There is the fact that readiness of conception gradually diminishes with age, and also the fact that the hazards of a first pregnancy and confinement steadily increase with the age of the mother—under seventeenth-century conditions at any rate. These things do not generally become obvious until they are perceived. Creighton, in his great survey of epidemic disease, quotes a fourteenth-century observation on the remarkable fertility of women in the years following the Black Death as though such fertility were a provision of Nature or of Providence to repair the losses from disease.

In considering the size of families it would seem to be a simple matter to find the ratio between recorded marriages and recorded baptisms in successive periods and to plot this on a graph. It is simple and it has been done but the resulting graphs suggest so much inaccuracy in the material that it does not seem worth while to reproduce them, for it is much harder to detect an imperfect list of marriages than an imperfect list of baptisms. A few omissions in the count of marriages can make a much bigger difference to the ratio than the omission of the same number of baptisms. But however untrustworthy these graphs may be in detail, there are certain general features that are
acceptable as they appear consistently in most of the regions examined from Cumberland to South Lancashire. The ratio for the period 1580-1600 is nowhere high and often conspicuously low. There is a marked rise everywhere after 1600, a marked fall in most cases after 1660, and a tendency for the ratio to rise again after 1700. To summarise roughly:

- 1580-1600 Small families
- 1600-1640 Large families
- 1660-1700 Small families
- 1700-1720 Medium-sized families.

The regional variations shown are more doubtful. They suggest that the areas with the smallest families were Lonsdale and Amounderness but beyond that no deductions are justified.

An attempt has been made to estimate the birth-marriage ratio by compiling lists of individual families. It is an unsatisfactory procedure because of the difficulty of sorting out one family from another and of securing enough figures to strike a reliable average. From various series of families in the Lunesdale parishes it would appear that the average number of children per marriage was slightly over four in the first half of the seventeenth century, and slightly over three in the second half of the century. It may be added that in both periods the mortality in childhood and adolescence was about 30%. The mortality was on the average less in the sparsely populated upland townships than in the villages, a fact that requires no explanation.

There is evidence that a certain rudimentary form of family planning was understood in those times. The type of family in which there is a rapid succession of births at intervals of eighteen months or less, is quite uncommon. A spacing of two years or more between births is typical. It is well known that a mother who is feeding her baby is on the whole unlikely to conceive. It is not now considered a reliable preventive of too frequent pregnancies. Nevertheless, when one considers the spacing of births that was typical, it seems highly probable that prolonged lactation was deliberately practised and was more successful than modern medical opinion would expect it to be. There is another piece of evidence which will be familiar to anyone who has drawn a good number of pedigrees of this period. When a child dies soon after birth there is often another child born within the twelve months following. Lactation having ceased on the death of the first child the mother is fully exposed to another conception. Also the infrequent examples of a rapid succession of births appear to be more typical of families in a
superior social station, who would be in a position to employ a wet nurse or foster mother.

There is another method of detecting fluctuations in the size of families, an indirect approach dependent on the average age of women on marriage. It is probably at least as revealing as the birth-marriage ratio and is much simpler. Actually my attention was first drawn to periodic variation in the average age of marriage by the fact that the recorded baptisms of twin children were in certain periods rather frequent relative to the total number of baptisms.

It must be explained that the liability of a twin pregnancy varies with the age of the mother. Though women of all ages produce twins the chance of such an event increases steadily as the years pass. The "risk" of a twin pregnancy in a woman of forty is more than three times as great as in a woman of twenty. It follows, therefore, that when the average age of childbearing extends from twenty to forty the percentage of twin births will be relatively low; when childbearing starts at thirty it will be much higher.

It would be more direct and obvious to calculate the average age of marriage by looking up in the registers the baptismal dates of the women whose marriages are recorded. The time-consuming nature of such a task cannot be realised until it is attempted. Owing to the paucity of Christian names and the lack of details for distinguishing one family from another, most of the time is spent on fruitless quests. All the same this method has been employed in a group of Lunesdale parishes for the period 1650-1720. From a list of several hundred brides, the following facts were revealed. The periods when the age of marriage was lowest were 1650 to 1660 and 1670 to 1680, each with an average of about 25 years. From 1680 to 1720 the average age of marriage was constantly above 26 with a peak period in 1680-90 when it reached the figure of 27.1. When these figures are expressed in a graph and compared with a graph showing the twin birth-rate for the same district there is a remarkable degree of correspondence, and in this particular region the twin birth-rate probably reflects fairly accurately the variation in the average age of marriage. If it were possible to have a uniformly accurate record of twin births over the whole of the north-west it should be possible to make a fairly near estimate of the average age of marriage at different periods in different regions. Unfortunately neither accuracy nor uniformity is obtainable. The number of cases where the baptism of twins is indicated can bear no fixed relation to the number of twin births actually occurring. However, even if the relation
Figure 11. COMPARATIVE TWIN BIRTH RATES
Shading Denotes rates of over 1.5%.
between the two sets of figures is not fixed there is still a relation of sorts.

So far as the registers permit twin birth-rates have been calculated for the various hundreds of Lancashire and are embodied in the graphs shown in Fig. 11. The twin birth-rate is expressed as a percentage of the total births in a decade. The high figures being the most significant and reliable, the portions of the graphs showing a rate of more than 1.5% are shaded.

It will be seen that there is a general tendency for the rate to fall following the dates of the major epidemics, 1586-88, 1596-98 and 1622-32. Secondly there is a general tendency for the rate to rise in the period following 1660, particularly between 1670 and 1690. Perhaps the most important feature is the contrast between Blackburn and Salford hundreds and the rest of Lancashire. Salford has a steady low twin birth-rate for the whole hundred and forty years. Blackburn has a low rate for most of the period but it is less uniform. This contrast between east and west is even more noticeable in individual registers.

In the parishes of the western hundreds rates of 3% are not uncommon. In the parishes of the eastern hundreds a rate of 2% is a rarity. There can be little doubt that in these latter areas a reasonably low age of marriage prevailed for almost all the time up to 1720, and that this resulted in a steady excess of births over deaths throughout most of the period.

It would be natural to suppose that under conditions that checked or delayed marriage the number of illegitimate births would increase, and that the rate of illegitimacy in itself would be some index of the average age of marriage. No such conclusion has been reached though figures of illegitimate births have been collected from all parts of the north-west. Generally speaking the highest rates occur in the period 1590-1640 and beyond that little can be said. The figures vary greatly from parish to parish. It would appear that the rate was more affected by purely local factors such as local tradition or the influence of persons of prestige in the neighbourhood. Some parish clerks did not make any distinction between the lawful father and the reputed father when recording a baptism. It is interesting to notice that the subsequent marriage of parents was not a common occurrence.

V THE WANDERERS

Possibilities have been suggested as employments for some of the superabundant population of the early seventeenth century. I have no information about the use made of such
possibilities, nor even of their extent and importance. In con­
sidering those who failed, or apparently failed to find any regular
means of subsistence, one may have a little more confidence.
In certain instances it is permissible to say that a certain
sequence of events took place simply because the events were
inevitable. I cannot quote chapter and verse for all the develop­
ments next described. I say they happened because I conceive
they must have happened, and that no other course of events
was possible.

As the children born in the early years of the seventeenth
century developed into adolescence and then into youthful
maturity their need for food increased at a rate that put a great
strain on all available sources of food. The great host of moder­
ate or small yeomen or husbandmen who made up the bulk
of the people were not primarily engaged in producing food for
sale. Their preoccupation was to produce enough food for
their own families. This might not be difficult for a couple with
a small family of small children. But the time would come
when the family consisted of five or six adolescents or adults
most of them at the hungriest stage of life. For the prosperous
yeoman with a large tenement the difficult could be met. The
size of his holding allowed some flexibility in the use of his land.
He could plough up some old pasture. He could pay labour
for the task of clearing and draining some hitherto unproductive
corner of his estate. But the small man with a small tenement
must have tried to meet the difficulty by some departure from
the recognised rule of fallowing, in other words by overcropping,
a device that might have sufficed to tide over one or two difficult
years but which was disastrous for a longer period. As time
went on the harvest yields would decrease and there would be
increasing hunger and the inclination towards desperate
remedies that hunger brings.

In those days the decision to leave home and seek a livelihood
in some distant parish was a momentous one. Whoever did
this would be a hungry stranger in places where hungry strangers
ran great risks. At the worst they experienced the full rigours
of the vagrancy laws. They were fortunate if they met nothing
worse than a callous indifference. Yet as the century advanced
there were men (and some women) who were desperate enough
to make this venture into the unknown. Their movements have
left abundant traces in the parish registers. They appear mainly
in the registers of burials as vagrants, wanderers, travellers,
strangers or even simply as poor and unknown. So many of
them died. At times a whole family might be travelling. There
are records of the baptism of children born during their
wanderings, and occasionally of the marriage of two of these homeless people.

All such entries have been extracted from the printed parish registers of Lancashire and a series of graphs have been drawn showing the frequency of such entries at different periods and in different parts of the county. The frequency of the entries is expressed as per thousand entries, that is as a proportion of the total entries in the registers. There are six graphs showing the situation in the six hundreds of Lancashire. There are clearly certain features common to all as well as some well-marked regional variations.

In the years 1580-1600 the incidence of wanderers is moderate or low, though Amounderness shows a sharp rise in 1590-1600, and most of the graphs show a slight fall at the turn of the century indicating that there was some relaxation of pressure in the years following the plague of 1596-98. There is a general tendency for the figure to rise after 1615 and to reach a peak during the years 1620-25. Lonsdale is an exception in that the peak is not reached until 1630-35. In Amounderness, Leyland and West Derby there are two peaks which roughly synchronise in all three regions. In the period 1640-60 a low figure is general. Then from about 1670 onwards the incidence rises again, sometimes resulting in a steady, fairly-high level, sometimes producing a high figure for one or two decades only.

The height of the peak that appears in 1620-25 is due to the great plague of 1623 which took a heavy toll of the ill-fed homeless wanderers, though some of these deaths must have been due to sheer starvation such as occurred in Greystoke parish. It must not be thought that the peaks of 1620-40 are just the expression of a high selective mortality. Graphs have been drawn from records of baptisms alone and these show the same peaks, though their height is much reduced. The fall in the records of wanderers in 1640-60 is hard to discuss in clear terms of cause and effect. There is no harm in a few speculations provided they are clearly labelled as speculations. Though the registers for these twenty years are ill kept it is clear that there were in places years of high mortality in both decades. If this were a general occurrence everywhere there would be some reduction of population pressure. Also, during the war years there would be a few thousand men serving in the rival armies, not a large number relative to the total population, but nevertheless a number large enough to leave a few gaps in the general economy that would have to be filled by hired labour. There would be some additional labour absorbed in ancillary services and in providing the variety of supplies that armies
Figure 12. COMPARATIVE FREQUENCY OF PARISH REGISTER ENTRIES OF WANDERERS EXPRESSED AS PER THOUSAND OF TOTAL ENTRIES
require. And against all this is the fact that the source of all hardship was food scarcity and there was no new factor in the affairs of men that increased the productivity of land.

The settlement of Ireland during the Commonwealth caused the greatest single emigration movement of the century. To what extent it relieved Lancashire of superfluous population I cannot say. And there all speculations must stop for lack of known facts.

From 1660 onwards the quality of the parish registers improves and one can speak more confidently to explain the renewed appearance of wanderers on the roads. The population is once more pressing on its accommodation, more on its accommodation than on its means of subsistence probably. The marriage-rate is relatively low and couples are marrying later and producing smaller families from 1670 onwards. There is poverty but we hear nothing of anything approaching famine. It is certain that a large number of men are leaving their homes in search of a living, but the frequency of such movements may reflect a relaxation in the enforcement of the vagrancy laws. And the prospect for these wanderers of finding some remunerative niche in society has improved. Yeomen of substance with plenty of wool to sell are now making money over and above their current needs. They are beginning to build stone houses to replace their old wattle and daub dwellings. And if they prefer to expend their money on the drainage and improving of poor land they can do that. They can afford to pay for labour and the labour is there for hire.

And slowly, quite slowly for the most part, the towns are growing. Apart from Liverpool there is no sensational growth, but smaller towns like Lancaster are becoming busier and more populous by 1690. There is more building of ships and more seamen are required to man them. All these activities provide an expanding market for food products. And the immediate prospect of ready sales for corn and meat is a sharper stimulant to vigorous and enlightened husbandry than the more distant threat of famine. Again, there was in Lancashire quite a revolutionary addition to the traditional crops of corn and legumes. Between 1670 and 1680 a few people here and there were growing potatoes, not on any great scale and not using it as a staple food, just as a pleasant change from a rather monotonous diet. We have it on the authority of William Stout that by 1725 in the Lancaster district potatoes were "plentiful and cheap". We may therefore presume that from 1680 onwards potatoes were adding a new and increasing element to our food resources, another defence against famine.
For perhaps the first time in our history there is a break in the familiar cycle of over-population, poverty, famine and plague. There is a certain surplus of young adults who leave home to seek a living elsewhere and they may now seek more hopefully. There is poverty but it does not amount to famine. There is enough congestion to check the growth of population, but it does not culminate in plague, for plague is no longer with us. After a thousand years of recurrent visitations it has gone, for reasons that we do not understand.

It will be seen from the graphs that the regional variations are in the main differences between east and west. The elevated hundreds of Blackburn and Salford harboured or attracted the minimum number of wanderers. The greatest numbers are found in the parishes of the western plain from the Mersey to Morecambe Bay, and they attain their biggest concentration in Amounderness.

Again one must speculate. It may be suggested that wanderers would be found most numerous in the vicinity of the main roads from north to south. This explanation does not prove satisfactory. Wanderers are well distributed in Amounderness and are not particularly a feature of the parishes crossed by the main road. In West Derby they are numerous in the western parishes remote from any main road. Moreover the important road from Yorkshire down the Ribble valley does not produce a large number of wanderers in the hundred of Blackburn.

It may be suggested that the vagrancy laws were strictly enforced in some parts and not in others. Here we may be getting near the truth because it promotes the question “Why should they be more tolerated in some areas than others?” This suggests the answer, “Because they were more tolerable in some areas than others.” In other words—in some areas the vagrants were a nuisance, in some they fulfilled a useful purpose.

Reference should now be made to Fig. 10. It will be seen that in south-east Lancashire in the areas where wanderers were few, there was the most sustained excess of births over deaths. This region has its setbacks in that respect, but they are of short duration. The reverse is true of south-west Lancashire, and it is suggested that the mortality in this region was high enough to produce a frequent shortage of manpower to the extent that it was possible for a homeless labourer to keep alive by wandering from one job to another, and that these unfortunates naturally gravitated to these areas where there was the greatest toleration and the best opportunity of keeping alive.

It is natural to enquire into the place of origin of the wandering class and here there is some factual information.
Often it is the only information conveyed in a burial entry e.g. "a northern woman” or “a poor man born in Cumberland”. In other cases the stranger may have a distinctive surname which reveals his probable place of origin. On the other hand there are many surnames that are too widely distributed to be helpful, and there is another group of which nothing much can be made and which may be surnames from more distant parts rendered obscure by the clerk’s efforts to spell an unfamiliar sound.

With so many exclusions a classification of wanderers in respect of place of origin can only be made in very general terms as follows:—

1. In Lancashire north of the Ribble the largest contingent of wanderers came from Cumberland and Westmorland. In Amounderness they probably amounted to at least one-third of the whole. About half this number appear to hail from the West Riding of Yorkshire and about the same from the hundreds of Blackburn and Salford respectively with small contingents from Leyland and West Derby. Wanderers from the southern hundreds do not range further north than Amounderness or do so but rarely. Wanderers from Cumberland and Westmorland are fewer in the extreme south of the county, but probably never fall below 10% of the whole.

2. Wanderers from the West Riding are fairly numerous especially in South Lonsdale, Blackburn and Salford hundreds.

3. A small number of wanderers from Durham and the North Riding are to be found in most parts of Lancashire. Their place of origin is generally named.

4. In south Lancashire there appears a more general diffusion. There are a number from the Midlands or east Midlands, rarely from southern or western England.

5. It seems that a certain proportion of wanderers became professional vagrants as their movements can be traced over a number of years. In at least one case vagrancy as a way of life was adopted by two generations in succession.

The account that is now concluded can be resolved into two main themes. The first deals with a sequence of population growth, famine, disease and recovery. It provokes an obvious question. Is this sequence an isolated complex of events peculiar to the period surveyed, or is it the final revelation of a recurrent cycle terminated by a change in the character of Bacillus Pestis? To this question no certain answer can be given. But there is a pointer to an answer. It has been said by M. W. Beresford and others that in the century preceding the Black Death, cultivation was extended to land that has never felt a plough since. Surely nothing but over-population could produce such desperate husbandry, the sort of husbandry that accompanies famine and precedes pestilence.

The second theme concerns the regional peculiarities of parts of north-west England, and this suggests two questions. Why should such differences exist? What effects, if any, did they have on the distribution and movement of population? To these questions at least a partial answer is possible.