

CHAPTER 5
THE LANDOWNERSHIP AND OCCUPATION IN
THE ST. AUGUSTINE EAST DIVISION

This chapter deals with patterns of landownership and occupation that can be derived from the land tax assessments for the St. Augustine East division of Kent. The analysis deals mainly with the period 1780 to 1831, but for a sample of parishes and the degree of owner occupation, the trends have been traced back to 1691. The chapter begins by outlining the main trends in the statistics. The relationship between the variables selected have been derived by a series of regression analyses in which almost all the variables have been correlated against each other. The chapter then goes on to consider some of the influences on the trends. The influence of agricultural production on the statistics, though, is treated in chapter 6 but three main influences are examined here. The extent to which the pattern of landownership and occupation reflect the influence of demographic factors is examined by comparing some of the features of the agricultural structure in 1801 and 1831 with data derived from the censuses of those years. The main trends in economic conditions in agriculture are considered as an influence on the agricultural structure with the aid of various rentals, the trends in sales from John Bridges' farm accounts, and by considering the changes in an important outgoing, the land tax itself. Finally, the changes in agricultural productivity are examined in order to see if there were significant economies of scale that may have influenced the agricultural structure.

The statistics on which this chapter is based can be found in appendix A. These represent the bare minimum needed to convey a reasonable representation of the

agricultural structure. Even so the appendix contains over 13,000 figures and is itself a summary of over half a million separate items of data. The figures are presented on a parish basis as most of the statistics with which they can be compared are also on a parish basis. These include the figures from the censuses and returns such as the 1801 crop returns and the 1795 harvest returns. Ideally, it would be desirable to make the necessary comparisons on a farm by farm basis, but the data necessary for such an analysis is largely lacking. The parish unit represents a compromise. For most of the analyses, the division represents much too large a unit to reveal anything useful.

The statistics computed are designed to provide information on all aspects of the agricultural structure. The number of proprietors and occupiers have been derived from the land tax assessments and they have been divided into three tenurial groups following the modern practice of the Ministry of Agriculture, Fisheries and Food. The groups are proprietors who let all their estate, proprietors who occupied all their estate, and proprietors who possessed a mixed tenure estate that was partly tenanted and partly under owner occupation; and occupiers who rented all their holding, occupiers who own all their holding, and occupiers with mixed tenure farms who were partly owner occupiers and partly tenants. It was rare for the proprietor of a mixed tenure estate to rent land from another landlord, unless the tenanted part of his estate was comparatively small, and in the form of cottages and smallholdings let to his agricultural

workers. This means that the occupiers who owned all their holdings include almost all the proprietors of mixed tenure estates. It was rare for the occupiers of a mixed tenure farm to let land to any other tenant, except for those few farmers who let cottages and smallholdings to their workers. The proprietors who occupied all their estate include almost all the occupiers of mixed tenure farms. The modern threefold tenurial division has not generally been used in studies of this sort, which means that the figures derived from this approach are not comparable with them. Its use here is in order to be able to differentiate those owner occupiers who might be regarded as independent peasant cultivators from those for whom owner occupation was of secondary importance. It would be desirable to be able to distinguish those proprietors who occupied all their estate from those who occupied only a part of their estate, and to examine the importance of the tenanted part to the latter group. It would also be desirable to examine how many of the owner occupiers cultivated just their own land compared with those for whom the owner occupied part was only a proportion of a larger holding. It is important to know the relative proportions of the two parts in such a holding. It is quite possible that the two groups of proprietors and occupiers were subject to different influences and their relationships with other parts of the agricultural structure may be different.

In appendix A the land in each parish is apportioned into the different tenurial groups. The land in owner occupation is expressed as a proportion of the total area.

The estates are classified according to the threefold tenurial division as are the farms, with the percentage of land in each category being computed. The mean estate and the mean farm in each tenurial group have been derived so that comparisons can be made between those under owner occupation and those that were tenanted or under mixed tenure. Three measures of dispersion of farm and estate sizes in each parish have been computed. The ones selected are the logarithmic mean and standard deviation and the entropy. The choice represents the best that can be made amongst the various indices available. Single indicators of this nature have many disadvantages, but, equally, it is often useful to be able to summarise a distribution in a single statistic. They have been preferred to the better known Lorenz curve and its accompanying Gini coefficient in that these do not give a unique ranking of the distribution, as it is possible for Lorenz curves to intersect.(1) No computation has been undertaken of the median farm and estate in any tenure group as this measure is of limited validity. Although it has been widely used in agrarian history, it has very little to commend it. As it is not a mathematical concept, it cannot be manipulated algebraically and, consequently, nothing can be derived from it. Nor can it be used in regression analysis.

The logarithmic mean and standard deviation have been selected due to the properties of the log-normal distribution curve. It has been found that many distributions, whose values are skewed towards a few high values but with the majority of values being low ones, approximate to a normal

1. A.B. Atkinson, 'On the Measurement of Inequality', Journal of Economic Theory, II (1970).

distribution curve if the logarithms of the values are taken. Once the logarithmic mean and standard deviation are known, then the area lying under the distribution curve can be computed, so that the measures represent an efficient way of storing the information usually found in a frequency distribution. There is an important relationship between the original log-normal distribution and the first moment distribution. The former is the distribution of numbers in each size category and the latter, in this case, is of the amount of land held by farms and estates in each size category. The mean of the first moment distribution exceeds the mean of the original distribution by an amount equal to the variance and will have the same variance as the original distribution. It will be obvious that comparisons between logarithmic means and variances is easier than comparisons between different frequency distributions.(1)

The entropy measure has been used in a number of studies of concentration amongst firms in an industry and of the degree to which an industry is concentrated in a particular locality.(2) It produces results akin to the

1. The properties of the log-normal distribution curve can be found in J.Aitchinson & J.A.C.Brown, The Log-Normal Distribution.(1957)

2. For example see H.Theil, Economics and Information Theory, Amsterdam (1967); I.Horowitz, 'Employment Concentration in the Common Market: An Entropy Approach', Journal of the Royal Statistical Society, 133(1970); R.K.Semple, 'Recent Trends in the Spatial Concentration of Corporate Headquarters', Economic Geography, 49(1973)

Tress statistic. (1) Entropy is computed using the formula:

$$E = \sum (P_i \times \log 1/P_i) / \log n$$

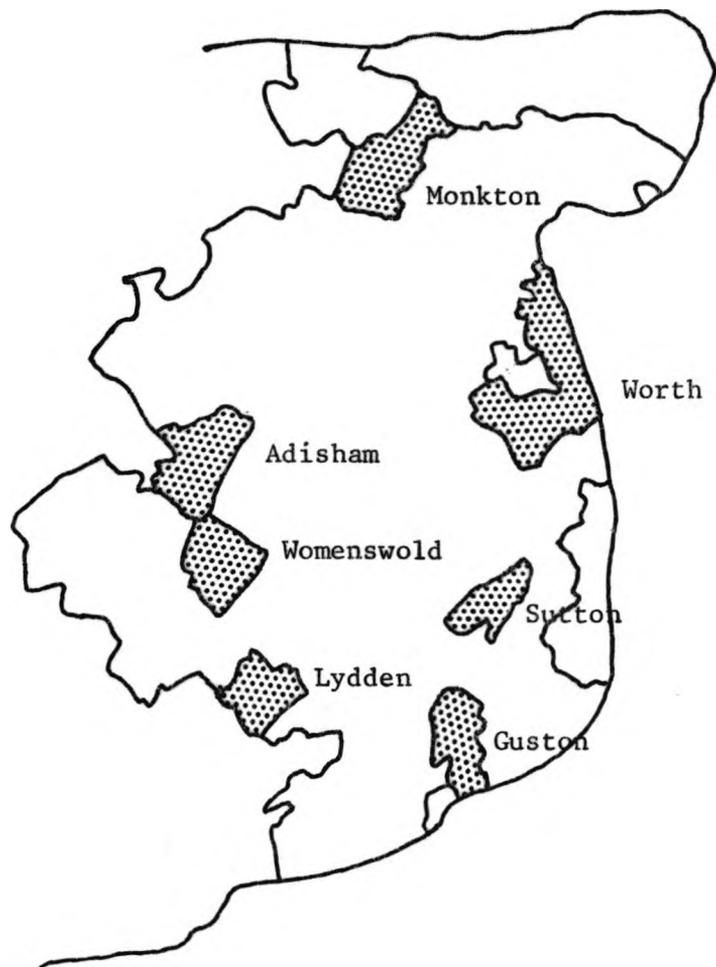
where P_i is the share of the i th item and n is the number of items. Each item in the series is weighted by the logarithm of its reciprocal in order to compute the index. The concept is similar to computing the Lorenz curve and Gini coefficient but using logarithms. When the index is divided by the logarithm of the number of items in the series it taken on a value between 1 and 0. A value close to zero means that the total is accounted for by a few items, and a value nearer to one indicates that there is an even distribution between the elements in the series. Its use is not wholly without problems. It is believed to be sensitive to the influence by high values. (2)

Each of these measures have been computed for each parish for the years 1780, 1790, 1801, 1814, 1822, and 1831. Not all the land tax assessments for each of these years have survived and, in a few instances, the closest year to the sample one has been selected. The main year affected by this is 1831. In most cases the assessment for the next year has been available. For two parishes, Stonar and St. Margaret at Cliffe & Oxney, assessments are not available for all sample years. For seven parishes, a series has been compiled at roughly ten yearly intervals back to 1698. The e are the parishes of Adisham, Guston, Lydden, Monkton,

1. R.C.Tress, 'Unemployment and the Diversification of Industry', Manchester School, IX(1938); M.Chisholm & J.Oeppen, The Changing Pattern of Employment: Regional Specialisation and Industrial Location in Britain (1973), pp30-41

2. D.G.Champenowne, 'A Comparison of Measures of Inequality of Income Distribution', Economic Journal, LXXXIV(1974)

MAP 5.1: The Location of the Selected Parishes in the
St Augustine East Division.



Sutton, Womenswold, and Worth. They were selected as they were thought to be reasonably representative of the different areas within the division, and because their assessments were generally free from problems. The militia tax assessment for Monkton made in 1691 has survived, and this has added to the series. The location of these parishes are shown in map 5.1.

I

In 1780 owner occupiers were present in almost every parish in the division. The exceptions were Tickness Borough and Westcliffe where the parishes were dominated by a few non-resident proprietors. In one case, Stonar, in which the entire parish formed part of one estate, the whole parish was under owner occupation. In most parishes the majority of proprietors were non-occupiers. Amongst those who occupied all or part of their estate, the majority had wholly owner occupied estates rather than estates under mixed tenure. The mixed tenure proprietors tended to be strongest on the upper dipslope, and in parishes such as Denton and Wotton outnumbered the proprietors of wholly owner occupied estates. The number of owner occupiers tended to be least in the parishes of the Stour Valley and Thanet, in parishes such as Ash, Wickhambreux, Wingham, and Goodnestone. They tended to be more numerous in the downland parishes. Over the period 1780 to 1831 there was an overall decline in the number of proprietors but the scale of the change was relatively small. Some areas show signs of growth, against the trend. These are mainly the more populous parishes, such as Ash,

St. Lawrence, and some of the parishes around Dover such as Buckland and Charlton. Some of the parishes on the lower dipslope show increases, such as Tilmanstone, Eythorne, and Eastry. It is not easy to discern a clear geographical pattern. In the parishes at the mouth of the Stour, Shoulden and Worth show substantial increases in numbers while Woodnesborough experienced a decline. There are declines in some of the parishes in the western Stour Valley and the western part of the dipslope, such as Adisham, Nonington, and Barfreston. The most spectacular decline in numbers was at Goodnestone. The number of proprietors declined from 34 in 1780, to 27 in 1790, 18 in 1822, and 10 in 1831. This came about as a result of the growth of Sir Brooke Bridges' Goodnestone Park Estate. This increased from 43 per cent of the parish in 1780 to 72 per cent in 1831. There was an overall decline in the number of non-occupying proprietors between 1780 and 1831, particularly between 1780 and 1801. There was a corresponding increase in the number of owner occupiers over the same period.

There was comparatively little change between 1780 and 1790. Some parishes experienced growth in the number of proprietors, while in others the trend was the reverse. Some parishes show a decline in the number of non-occupying proprietors. The parishes experiencing the greatest increases in the numbers of owner occupiers tended to be those in which the number of mixed tenure proprietors increased most, indicating that the increase was associated with mixed tenure rather than wholly owner occupied estates. Between 1801 and 1790 some areas of growth in the number of proprietors can be discerned but these tend to be

fairly concentrated. Some parishes, though, experienced declines, particularly in some of the Stour Valley parishes such as Staple and Littlebourne. There was an increase in the number of proprietors of wholly owner occupied estates and a fall in the number of the proprietors of mixed tenure estates. Between 1801 and 1814, the areas of growth in the number of proprietors were still concentrated, with other parishes experiencing declines. The period saw further falls in the number of non-occupying proprietors and the growth in the number of proprietors of wholly owner occupied estates. Between 1814 and 1822, the growth in the number of proprietors seems to have been stemmed. Some of the previous areas of growth such as Ash and Buckland and Charlton see a reversal. No clear trend emerges with respect to owner occupation. In some parishes the previous trend continues, while in others it ceases. Between 1822 and 1831 rapid growth was resumed in the parishes in which there had been growth previously, such as Ash, Worth, and Shoulden. Elsewhere, the number of proprietors declined. There was a decline in the number of proprietors of wholly owner occupied estates but an increase in the number of mixed tenure estates. The trend between 1780 and 1831 seems to be one of comparatively little change in the number of proprietors. Certain parishes experienced comparatively rapid growth in their numbers, while others saw a decline. This meant that the geographical dispersion of proprietors in the area changed with a concentration in the parishes with the more rapidly growing populations such as Buckland and Charlton, Ash, and St. Lawrence. This suggest that the areas of

growth were likely to have been areas in which the estates became subdivided and, but for this trend, there would have been a more discernable decline in numbers.

The seven sample parishes show little sign of any discernable trend in the number of proprietors during the eighteenth century. Half the parishes saw a decline in the number of owner occupiers between 1720 and 1730 and the rest between 1730 and 1740. There was an increase in the mixed tenure proprietors between 1699 and 1710, a decline between 1710 and 1720, and further growth between 1750 and 1760. Adisham and Sutton saw some growth in the number of proprietors during the first half of the eighteenth century. The numbers declined after 1760 at Sutton and after 1770 at Adisham. The main period of decline at Adisham was between 1801 and 1814. The number of proprietors at Guston, Lydden, and Monkton remained similar throughout the period. At Worth there was a gradual increase in numbers until 1814, then rapid growth, and at Womenswold an increase until 1822, and then decline. The number of non-occupying proprietors declined after 1790 at Lydden, Monkton, and Worth. Only Sutton shows any earlier decline, after 1760. The increase in the number of owner occupiers took place at different times. For Womenswold, Worth, Adisham, and Lydden this was between 1790 and 1801, and for Monkton between 1801 and 1814. All, with the exception of Worth, saw a decline in the number after 1822, especially at Monkton. Overall, few general trends emerge other than the relative stability in numbers of proprietors during the course of the eighteenth century.

The numbers of occupiers generally declined over the period 1780 to 1831, but those parishes that experienced

a growth in the number of proprietors, such as Eastry and St. Lawrence, also experienced growth in the number of occupiers. Some of the parishes, such as Wingham and Minster, show an increase in the number of occupiers between 1780 and 1801 and a decline thereafter. On the whole the number of tenants declined over the period, with the number of owner occupiers increasing.

In 1780, the majority of occupiers in the division were tenants. Amongst those who owned all or part of their holding, the occupiers of wholly owner occupied farms outnumber those with mixed tenure farms. However, when it is recalled that the proprietors of wholly owner occupied estates include those with mixed tenure farms, and the occupiers of wholly owner occupied farms include those with mixed tenure estates, it becomes apparent that the number of persons who owned or occupied all their own land without renting any to a tenant or without hiring land from a landlord were only a bare majority of the total owner occupiers.

Between 1780 and 1790, the number of occupiers declined, and there is evidence of an increase in the number of tenant farmers in many parishes. Between 1801 and 1790, some parishes show an increase in the number of occupiers, such as Ash and St. Lawrence. There were also some increases in the numbers of owner occupiers. This was mainly in the form of an increase in the number of occupiers of wholly owner occupied farms, but those with mixed tenure farms also increased. By 1814, the trend towards a growth in the number of occupiers had ceased in some of the parishes in which there had been

growth previously, such as Minster and Wingham. The increase in the number of owner occupiers continued but with a decline in the number of mixed tenure occupiers. Between 1814 and 1822 there were signs of a decline in the number of occupiers, but on a relatively small scale. Some parishes continued to see a marginal growth in the number of occupiers. The proportion of owner occupiers continued to increase in most of the parishes. The growth was mainly amongst the occupiers of wholly owner occupied farms, with some declines amongst the mixed tenure farmers. Between 1822 and 1831, those parishes experiencing more rapid population growth, tended to see an increase in the number of occupiers, but in others that had seen growth previously, such as St. Lawrence, the trend was reversed. Some parishes, such as Woodnesborough and Wingham, experienced comparatively large falls in the number of occupiers, but elsewhere the decline was relatively modest. There was a general reduction in the number of owner occupiers, but mainly to a level around that of 1801. There are signs of stability amongst the mixed tenure occupiers, with decline in numbers in some parishes being offset with increases elsewhere. The trends in the numbers of occupiers are similar to those for the number of proprietors. Although there was a slight decline in the number of occupiers between 1780 and 1831, the different patterns of growth and decline experienced by different parishes meant a redistribution of the number, especially to those parishes in which population growth was greatest.

The seven sample parishes show few trends in the number of occupiers during the eighteenth century. Adisham and Guston saw a decline in the number after 1780, and Lydden

and Monkton after 1790. At Sutton there was a decline after 1760. By contrast the numbers grew at Worth throughout the period, and at Womenswold until 1822. The numbers of tenants declined at different dates for different parishes. At Adisham, the number of tenants reached a peak between 1760 and 1780, with the main period of decline between 1801 and 1815. There was some recovery of the numbers between 1822 and 1831. At Guston, the peak period for tenants was 1770-1780, and at Lydden 1780-90. At Monkton, the numbers declined throughout the period, especially after 1790, and at Sutton there is a similar trend with major declines after 1770 and 1801. There is a decline at Worth after 1750 but with an increase in the numbers after 1801. At Womenswold, the numbers increase until 1740 and, thereafter, remain at roughly the same level. As with the number of proprietors, the trends for the eighteenth century are difficult to discern and are on a small scale compared with the changes after 1790.

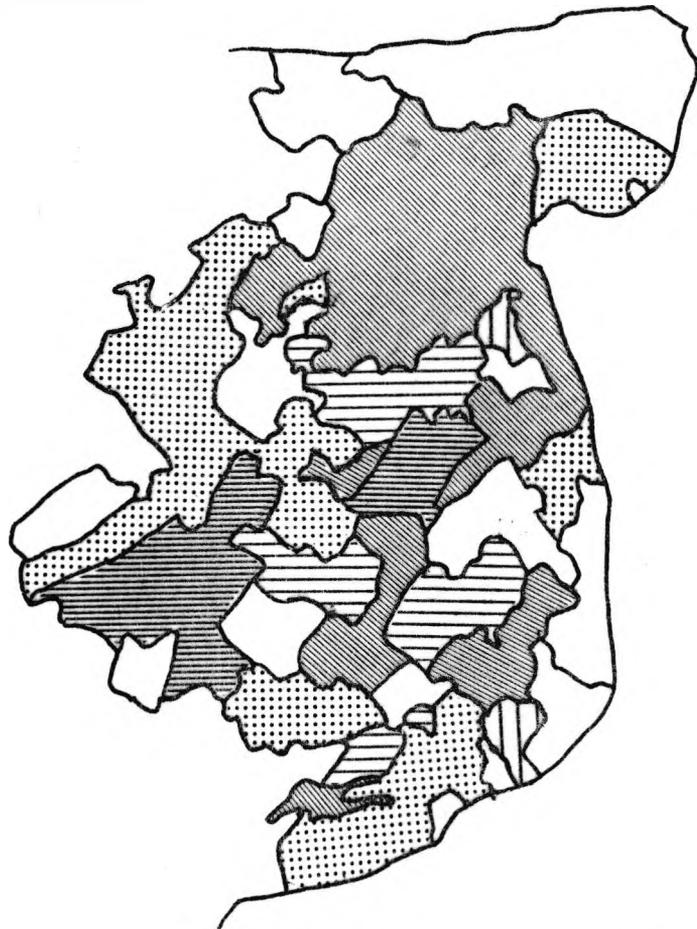
The main feature of the percentage of land under owner occupation is the rapid growth that took place during the period 1790-1801. Although this was the normal pattern, it was not universal. Some parishes show little signs of growth at all. Some of these, such as Guston, were parishes in which there had been little land under owner occupation. At others such as Denton, Coldred, Bishopbourne, and Hougham, had been parishes in which the proportion of land under owner occupation had been relatively high at an earlier date. Again, it was not universal for such parishes not to experience the growth, as for example happened at Shoulden and Staple. The timing of the growth

varied between parishes. Examples of the trend beginning after 1780 can be found, such as Sutton and Eythorne. Generally the most rapid growth was experienced in those parishes in which the proportion of the land under owner occupation had been least during the eighteenth century.

The trends in the proportion of land under owner occupation during the eighteenth century are less marked. In parishes, such as Nonington, Barham, Ickham, Sutton, and Womenswold, there is evidence of a decline in land under owner occupation after the first decade of the eighteenth century. The trend appears downwards until 1740, which marks the nadir of owner occupation. Thereafter, the trend is upwards, with parishes such as Nonington and Ickham, showing strong signs of a recovery to the levels of an earlier date. In 1699, only two of the parishes are known to have had no land under owner occupation. Some 14 had under 10 per cent of their land under owner occupation, 10 had 10 and under 20 per cent, 11 had 20 and under 30 per cent, and 6 had over 30 per cent. The analysis could not be carried out for all the parishes in the division as the pre-1780 land tax assessments do not always list both the occupier and the proprietor and this has resulted in gaps in the series.

The geographical analysis of the percentage of the land tax paid by owner occupiers in each parish between 1699 and 1750 that appears in maps 5.2 to 5.7 is designed to indicate if any part of the division was more hospitable towards owner occupiers than any other part. The later assessments have not been used for this purpose in view of the general overall increase in owner occupation.

MAP 5.2: Owner Occupation in the St Augustine East
Division, 1699.

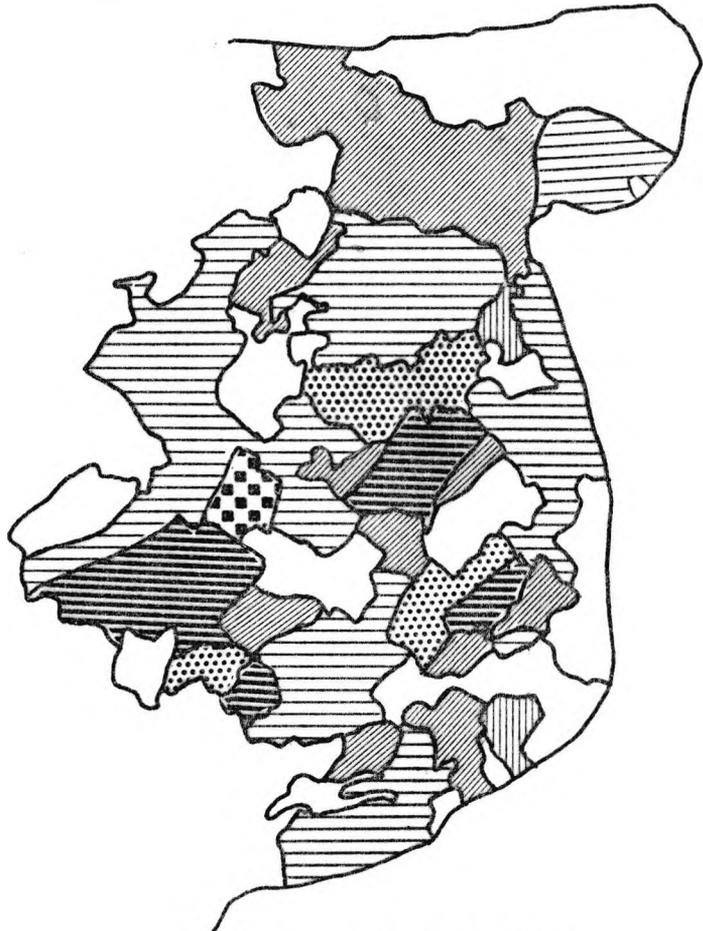


Tax Paid by Owner Occupiers

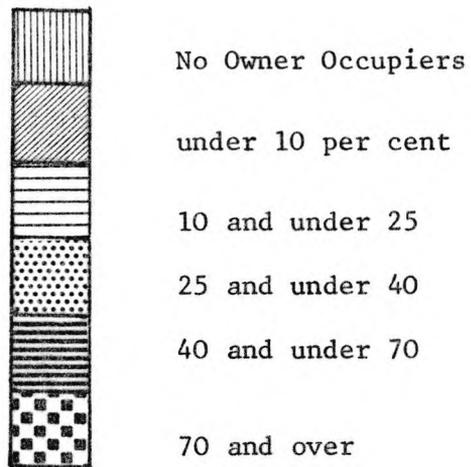


- no owner occupiers
- under 10 per cent
- 10 and under 25
- 25 and under 40
- 40 and under 70
- 70 and over

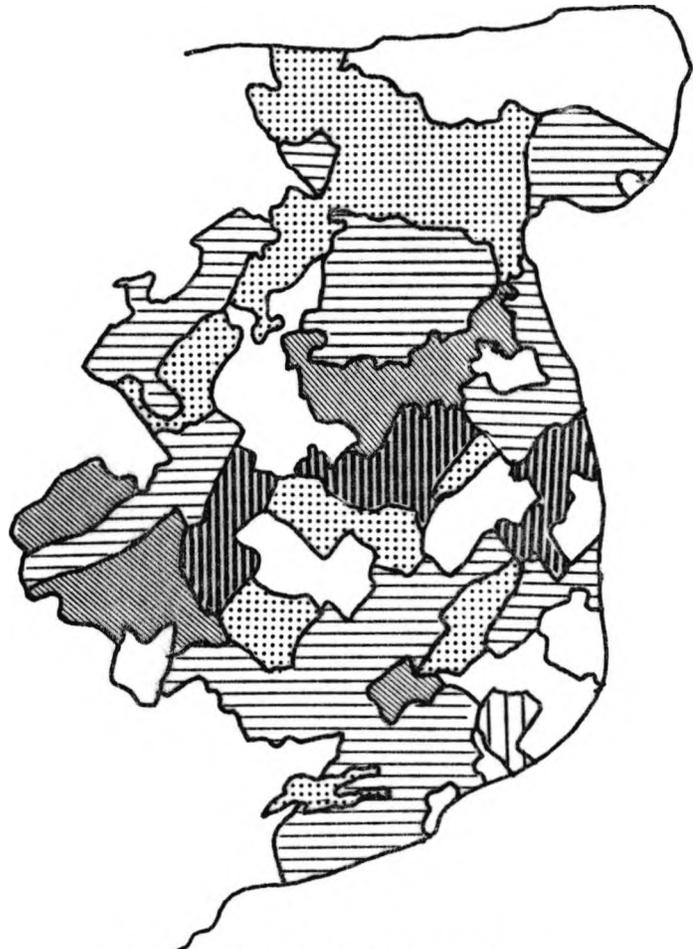
Map 5.3: Owner Occupation in the St Augustine East Division,
1710



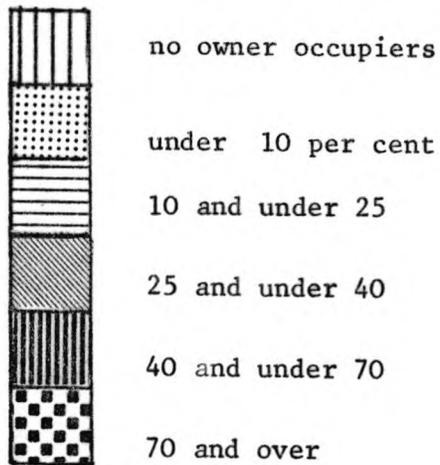
Tax Paid by Owner Occupiers



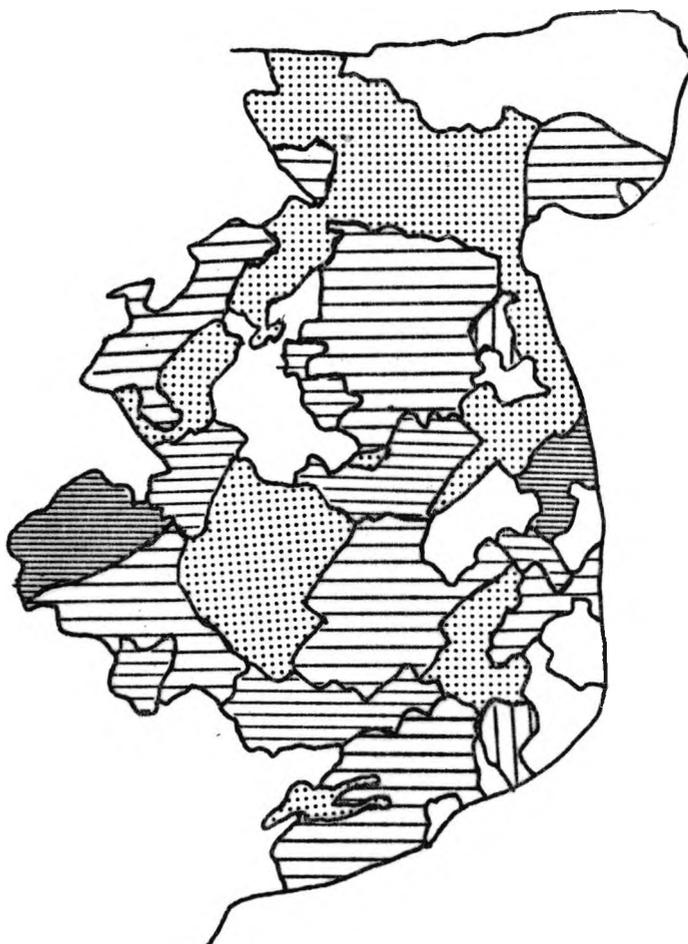
Map5.4: Owner Occupation in the St Augustine East
Division, 1720



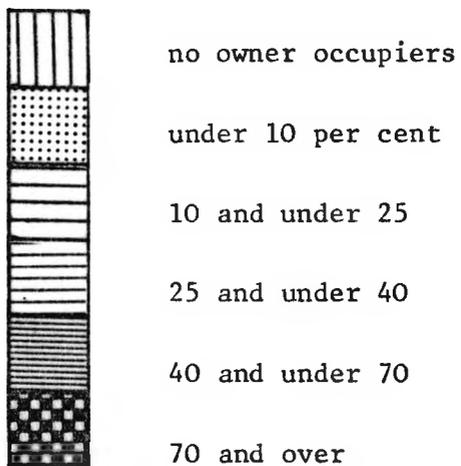
Tax Paid by Owner Occupiers



Map 5.5: Owner Occupation in the St Augustine East
Division, 1730

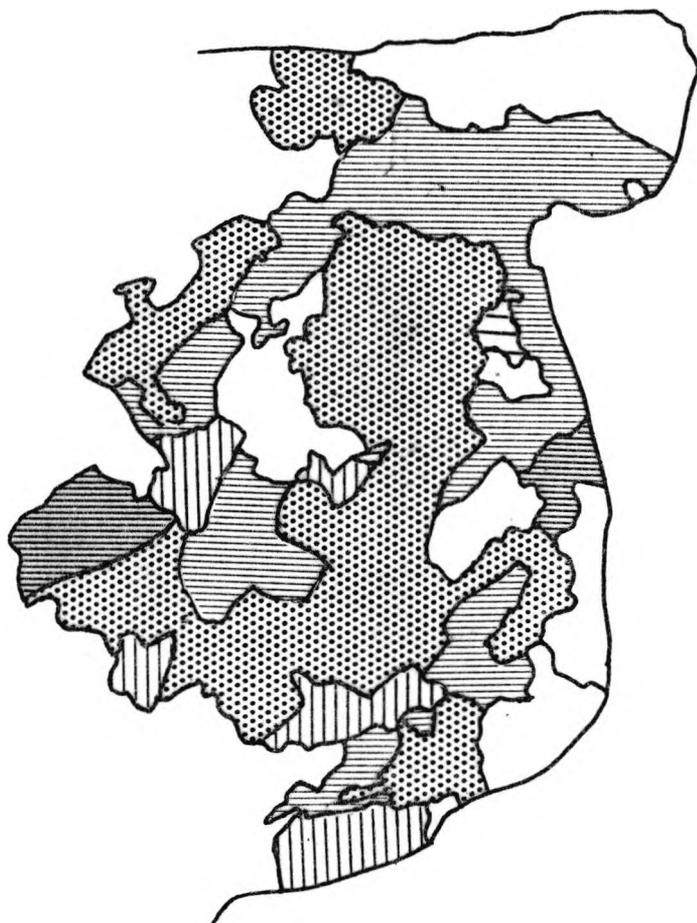


Tax Paid by Owner Occupiers

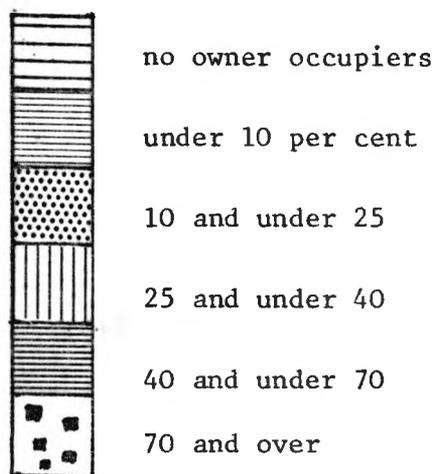


Map 5.6: Owner Occupation in the St Augustine East

Division, 1740

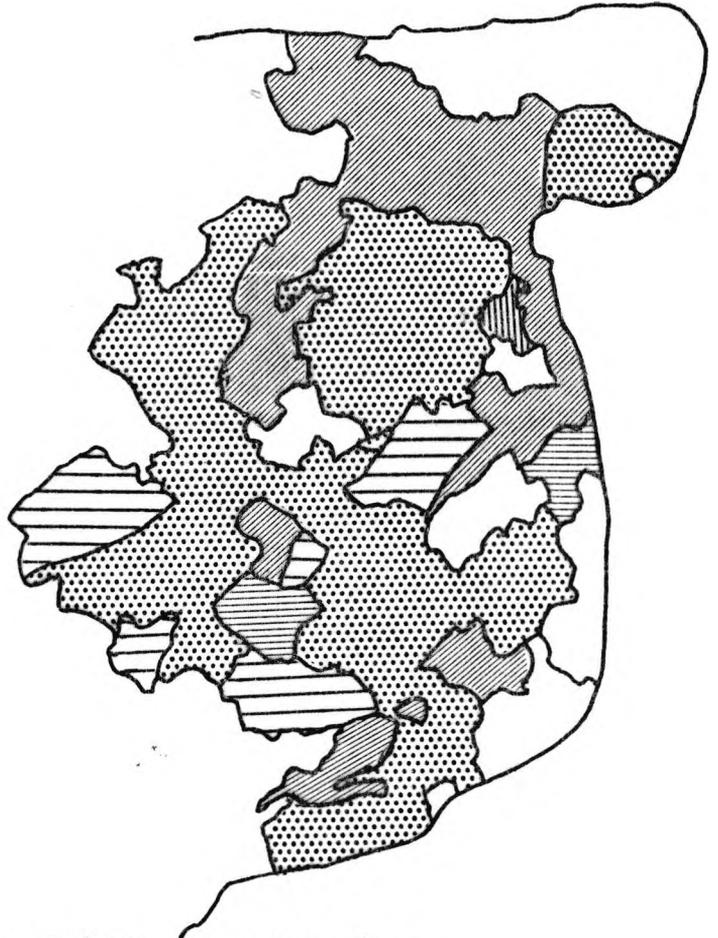


Tax Paid by Owner Occupiers

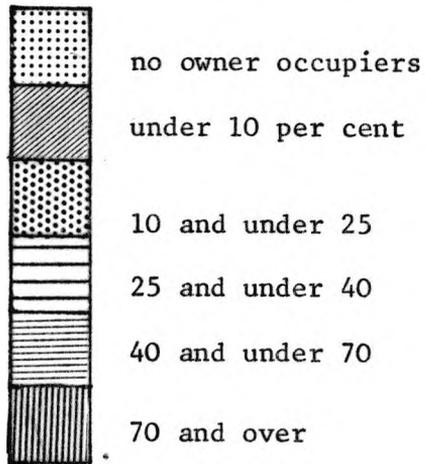


Map 5.7: Owner Occupation in the St Augustine East

Division, 1750



Tax Paid by Owner Occupiers



Rather the dates used are those when owner occupation was least. Map 5.2. shows that in 1699 owner occupiers were present in almost all the parishes of the division but their distribution was very uneven. The proportion of tax paid by them was least in the Stour Valley, in parishes like Preston, Ash, Monkton, Minster, and Worth. They were close to being absent from a number of the smaller downland parishes such as Knowlton and Chillenden, Coldred, and Waldershare. These tended to be parishes dominated by the larger residential estates, such as those belonging to the Narborough and Furnesse families. They were comparatively numerous in those chalk parishes in which such dominance was not marked such as Eastry, Barham, and Womenswold. Larger estates, such as the Dixwell estate in Barham, did have an interest in these parishes but it was not a dominant one. Map 5.3 shows that by 1710 the pattern had begun to alter. In some of the parishes in the Stour Valley and in the downland parishes where owner occupiers had been least, the proportion of tax paid by them increased. This was the situation in Ash, Worth, Coldred, and Waldershare. In some of the parishes around Dover, such as River and Guston, declines in owner occupation took place. The parishes with the greatest proportion of tax paid by owner occupiers remain parishes such as Eastry, Barham, and Womenswold. The situation for 1720, shown in map 5.4, remains substantially that for 1710. The area of limited owner occupation remains primarily Thanet and the Stour Valley together with some of the downland parishes where major residential estates were dominant. The parishes around Deal saw an increase in

owner occupation, such as Great Mongeham and Shoulden, and those around Barham, Easole Borough, and Lydden. The pattern for 1730 shown in map 5.5 shows an extension of the area in which owner occupiers were weak. It now includes the whole of Thanet and the Stour Valley, including the coastal marshes of the Stour in Worth and Shoulden. There were extensive areas in the downland parishes where owner occupiers were weak. Declines also occurred on the Barham Downs. The pattern for 1740 shown in map 5.6 shows a further retreat by owner occupation. The area where owner occupation paid less than ten per cent of the land tax remains largely the same as for 1730, but the area where they paid less than 25 per cent increased with declines in Eastry and Lydden. As map 5.7 for 1750 shows, 1740 represents the lowest point for owner occupation in the division. By 1750 recoveries had begun in parishes such as St. Lawrence, Eastry, and Lydden.

The majority of the land in 1780 was in tenanted estates. Land in mixed tenure estates outweighed that in wholly owner occupied ones. The amount of land in mixed tenure estates retained by the proprietor varied greatly between the parishes. Between 1780 and 1790, there was a tendency for more land to enter into owner occupied estates. This was generally at the expense of the tenanted estates as the land in mixed tenure estates also grew during these years. The trend towards land entering owner occupied estates was more marked between 1790 and 1801. Again this was at the expense of the land in wholly tenanted estates. The proportion of land in mixed tenure estates rose in some parishes and fell in others but there

was some tendency for the proportion of land retained by the proprietor in these to rise. Between 1801 and 1814 there was a further increase in the land under wholly owner occupied estates, with a corresponding fall in land in wholly tenanted estates. There appears to have been some growth in the land in mixed tenure estates but hardly any discernable change in the proportion of land in them retained by the proprietor. The years 1814 to 1822 saw a continued rise in the proportion of land in wholly owner occupied estates but at a slacker pace than during previous periods. Almost half the parishes show a rise in the proportion of land in wholly tenanted estates. There seems to have been some transfer from mixed tenure estates to tenanted estates and there were some reductions in the proportion of the land in those retained by the proprietor. Between 1822 and 1831, there were falls in the proportion of land in wholly owner occupied estates but a rise in both the land in tenanted estates and those of mixed tenure. Some falls in the amount of land retained in the latter can be seen. The main trends would appear to be a rise in owner occupied estates between 1790 and 1814, but with the same trend at a slacker pace in the decade preceeding this and between 1814 and 1822. After 1822 the trend was reversed. The trends in tenanted estates tend to be the reverse of those seen for the owner occupied ones. The trends for mixed tenure estates follow those for owner occupied ones until 1814 and the tenanted estates after 1822.

The trends for the seven parishes during the eighteenth century are difficult to discern. Throughout the period 1699-1770, the majority of the land was in wholly tenanted

estates and the land in mixed tenure estates outweighed that in wholly owner occupied ones. The amount of land in wholly owner occupied estates show signs of having fallen during the first decade of the eighteenth century, Over the same period the land in mixed tenure estates rose. Land in wholly tenanted estates fell between 1699 and 1710, but shows signs of recovery between 1720 and 1730. The land in mixed tenure estates retained by the proprietor rose between 1699 and 1710. Thereafter the pattern is relatively stable and trends become difficult to discern.

The majority of the land was in wholly tenanted farms. The amount of land in mixed tenure farms varied between parishes and in about half the parishes exceeded the proportion of land in wholly owner occupied farms. Between 1780 and 1790 there was an increase in the proportion of the land in wholly owner occupied farms and in the amount of land in mixed tenure farms owned by the occupier. Between 1790 and 1801 the increase in land in owner occupied farms increased and that in wholly tenanted farms diminished. There was an increase in the land in mixed tenure farms and in the proportion of these owned by the occupier. The trend between 1801 and 1814 remained one of the proportion of land in wholly owner occupied farms to increase and that of wholly tenanted farms to fall. There seems to have been little overall change in the proportion of land in mixed tenure farms, with some parishes experiencing falls in this, but the amount of the farms owned by the occupier continued to rise. After 1814 the trend towards an increase in land in owner occupied farms slackened off, though there was a continuing fall in the

amount of land in wholly tenanted farms, Between 1822 and 1831 there was a down-turn in the amount of land in wholly owner occupied farms and a corresponding rise in the land in wholly tenanted farms. The trends in farm tenures are similar to those for estate tenures. The main period of growth in owner occupied farms was between 1790 and 1814, with the trend appearing in the decade before this and continuing towards 1822. There was a reversal of this after 1822.

It is difficult to discern any clear trends in the seven parishes examined between 1699 and 1770. Most of the land was in wholly tenanted farms throughout the period. Some trends amongst the mixed tenure farms can be seen. The land in them increased between 1699 and 1710 and fell between 1710 and 1720. There was a further fall between 1760 and 1770. The proportion of land owned by the occupier in mixed tenure farms shows signs of having fallen over the period 1699 to 1710 and between 1760 and 1770.

The mean estate sizes shows that the largest estates in 1780 tended to be those in mixed tenure. This held true for each of the years examined between 1780 and 1831 and for the sample seven parishes examined between 1699 and 1770. The wholly tenanted estates were generally larger than those under owner occupation, but between 1801 and 1822 the means of the estates under owner occupation grew to a size comparable with the tenanted estates. An examination of the seven parishes reveals that the ranking held true for the period 1699 to 1770. In the seven selected parishes there is little evidence of any major

change in size of the mean estates between 1699 and 1770 or for the mean estates in any of the three tenurial groups. Between 1780 and 1831 there are signs of an increase in the size of mean estate. In 1780 the mean estate of the median parish was 70 acres and in 1831 it was 78 acres. Growth in the mean estates was general but not universal. It was greatest in parishes such as Goodnestone where a single estate can be found acquiring land. However the trend is reversed in those parishes in which the number of proprietors was increasing during the period. At Ash, Buckland and Charlton, Eastry, and Worth the mean estate fell.

There is evidence of regional variations in the size of estates within the division. The parishes in which the estates were smallest tended to be those in the lower Stour Valley. These include Ash, St. Lawrence, Elmstone, Staple, and Woodnesborough. The parish of Great Mongeham, near Deal, was also characterised by the smallness of estates. The parishes on the dip slope tended to have larger estates, especially in those parishes lying to the south and west. The increase in the number of proprietors with wholly owner occupied estates between 1780 and 1822 was accompanied by an increase in the mean owner occupied estate. There are signs of growth in it between 1780 and 1790 but it is particularly noticeable between 1790 and 1801. Between 1822 and 1831 the mean size declines but there are increases in the mean mixed tenure estate. This suggests that the increase in owner occupation between 1780 and 1822 occurred through the passing of larger units into owner occupation than had been the case before and the

decline in owner occupation after 1822 was experienced among the larger units.

The evidence presented here puts some perspective into the tendency often noted for the larger estates to grow. Evidence can certainly be found of such estates increasing in size during the period but the overall effect of this seems to have been relatively modest. The Waldershare Park estate increased from 5,765 acres in 1746 to 8,084 acres in 1789. This was mainly as a result of acquiring 1,130 acres at Fairfield, outside the St. Augustine East division, in 1749. Smaller acquisitions occurred at Guston, Coldred, Northbourne, Eastry, and St. John in Thanet, at regular intervals. The estate was a mixed tenure one. Waldershare Park itself amounted to 612 acres in Waldershare, Coldred, Ewell, Eythorne, and Lydden in 1746. During the years this too was extended. Twenty acres of woodland was added in 1750, 4 acres of land in 1753, and 74 acres in 1763. Partly this was done by purchase and partly by taking land away from certain farms on the estate located close to it.(1) Although this and similar examples of engrossing can be found, the figures presented suggest that the scale on which it was occurring was such as not to have an overall impact on the distribution of the land. While these estates were growing others were declining in size. The eventual pattern is the result of a myriad of small decisions and there is a danger that those for which estate records remain may not be representative.(2)

1. K.A.O. U 471 A3-7, A13.

2. A similar argument is advanced in C. Clay, 'Marriage, Inheritance and the Rise of Large Estates in England, 1660-1815', Econ. Hist. Rev., 2nd series, XXI (1968), pp503-18.

Few clear trends in farm sizes emerge over this period. There is little tendency for the mean size of farms to change between 1780 and 1831, with gains in some parishes being offset by losses in others. The seven selected parishes show little sign of change in the mean farm between 1699 and 1770. Only Adisham shows any clear tendency towards a growth in the mean farm size, and this is after 1780. The impression given is that changes in farm sizes on some estates were compensated for by changes in the opposite direction on others. The ranking of the tenurial groups was for mixed tenure farms to be larger than wholly tenanted ones, and for these to be larger than those under owner occupation. This holds true for the seven parishes between 1780 and 1831. After 1822 there are some signs of a reversal of the positions of wholly tenanted and wholly owner occupied farms. The size of the mixed tenure estates and farms compared with those in the other tenurial groups outweighs the smaller proportion of the land in these than in tenanted and owner occupied farms and estates. It shows that the larger farms and estates came into these categories and one might expect that the more influential landlords and farmers to be found amongst these groups. They would include the Earl of Guildford and most of the land tax commissioners for the St. Augustine East division and farmers such as John Bridges and John Boys.

A few trends in different tenurial groups can be distinguished. There are signs of some growth in mixed tenure farms between 1780 and 1790 and in owner occupied farms between 1790 and 1801. Unlike the wholly owner occupied estates, there is little evidence of a fall in

the sizes of owner occupied farms between 1822 and 1831, suggesting that the reversal of fortunes amongst owner occupiers was concentrated amongst those with smaller holdings. Amongst the seven parishes, mixed tenure farms fall between 1710 and 1720, 1760-70, and 1770-80, but there are few other trends.

The measures of dispersion indicate considerable stability in the distribution of farm and estate sizes in the division between 1780 and 1831 and in the seven parishes between 1699 and 1770. The logarithmic mean estate exhibits the same regional pattern within the division as the mean estate did. The parishes with smaller mean estates tended to be those with smaller logarithmic mean estates. There was less variation than for mean estates with the values being more comparable in different parts of the division. The logarithmic mean farm equally shows few signs of any change in the division between 1780 and 1831 and in the seven parishes between 1699 and 1770. The variations in the logarithmic mean farm between parishes show the same tendencies as the logarithmic mean estate and the mean farm. Between 1780 and 1831 the main feature of the logarithmic mean farm and estate was their stability, though examples can be found of parishes in which they increased in size or declined. The latter tended to be parishes such as Ash and Buckland and Charlton in which the numbers of proprietors and occupiers had been increasing over the period.

The logarithmic standard deviations for both farm and estates show little sign of change in the division between 1780 and 1831 and in the seven selected parishes between 1699 and 1831. Examples can be found of parishes in which

they grew or declined, but the overall impression is one of stability. There are signs of a fall in the logarithmic standard deviation for farms between 1822 and 1831, indicating that there may have been a decline in the number of small farms, so that the dispersion was more concentrated around the mean. Amongst the seven parishes, only Sutton shows any clear trend. Here the logarithmic standard deviation for both farms and estates increased throughout the period, showing that there was an increased dispersion around the mean.

When the two entropy measures are considered the pattern again is of little change either in the division between 1780 and 1831 or in the seven parishes between 1699 and 1770. The pattern appears to be that once the distribution of the land in farms and estates had been established, little occurred to change it later. Exceptions can be found such as Goodnestone, where the entropy of estates reflects the growth of the Goodnestone Park Estate, but the general feature is that the entropies stayed within narrow limits. The measures of dispersion show that the increase in owner occupation that occurred between 1780 and 1822 took place without any significant alteration in the distribution of the land in farms or estates. The overall pattern for the period is one of stability with the exception of the tenurial changes in favour of owner occupation.

The results from this study can be compared with those of some other studies. However the extent to which this is possible is limited by the availability of comparable statistics. Most studies have not adopted the modern threefold tenurial division of farms and estates, nor

have they computed measures of the distribution of land and estates. In a number of cases, it is possible that the trends relate to the methods of computation adopted and they may disappear if this is changed.

The trends in farm sizes for the period have been indicated by several studies. G.E.Mingay found that farms of 21 to 100 acres decreased in number in four of the Kingston estate open field villages in Nottinghamshire between 1690 and 1790 and farms of over 100 acres increased during the same period. On the Bagot estate in Staffordshire farms of between 21 and 100 acres fell between 1724 and 1744, and between 1744 and 1764 while those of over 100 acres rose over the periods. A similar trend was found on the Giffard estate in Staffordshire.(1) J.R.Wordie found an increase in the proportion of land on the Levenson-Gower estates in farms of over 200 acres from 18.8 per cent for 1714-20 to 59.3 per cent in 1829-33. There was a decline in the proportion of the land in farms of between 20 and 100 acres from 46.1 per cent of the land to 14.9 per cent. Over the same period the mean farm of over twenty acres increased from 82.9 to 147 acres.(2) These trends towards greater consolidation of farms and an increase in the size of farms seems to contradict the evidence from the land tax assessments for east Kent where the evidence pointed to the stability in the distribution of farm sizes. Comparisons between the land tax evidence and

1. 'The Size of Farms in the Eighteenth Century', Econ Hist Rev, 2nd ser, XIV (1961-2), pp469-88.

2. 'Social change on the Leveson-Gower Estates 1714-1832' Econ Hist Rev, 2nd ser, XXVIII(1974), pp593-609.

that from estate accounts is not strictly possible. Estate accounts do not include farms under owner occupation other than home farms. They omit the owner occupied part of mixed tenure farms and they will only include the land rented from one landlord. It is quite possible that the leasehold parts of the farms might exhibit a trend in one direction which may be compensated by a movement in a different direction in the remaining parts of the farm.(1) The differences between the wholly owner occupied, wholly tenanted, and mixed tenure farms found in east Kent show that it is necessary to ensure that an index of farm sizes should contain the correct weighting of the different tenures otherwise it will be subject to serious bias.

The figures presented in these two studies are not on the same basis as those in this one and this can influence the interpretation. If J.R.Wordie's figures for the Trentham estate are recalculated so as to reveal the mean farm rather than the mean farm of over 20 acres then a different trend emerges. The mean farm of over 20 acres was 87 acres in 1714, 108 acres in 1779 and 117 acres in 1833. (2) The mean farm was 23.9 acres in 1714, 20.3 acres in 1779, and 15.5 acres in 1833. This points to the mean farm on the estate being somewhat lower than those

1. J.R.Wordie discounts the possibility of any of the tenants on the Leveson-Gower estate owning land outside the estate boundary and claims that it was the policy of the estate not to let to the surrounding freeholders. If this was the case then his figures should be comparable with mine for wholly tenanted farms. Ibid, p594n.

2. Ibid, pp605-8. The Trentham estate has been selected as it is roughly the same size as the Waldershare Park Estate and its acreage was less variable than that for Lilleshall.

in east Kent.

Trends of the sort found by Mingay and Wordie can be found on particular estates in east Kent. Table 5.1 shows the distribution of farm sizes on the Waldershare Park Estate in 1750 and 1789. The calculation excludes

Table 5.1 Farm Size on the Waldershare Park Estate.

<u>Numbers of farms</u>	<u>1750</u>	<u>1789</u>
0-5 acres	8	6
over 5 to 20	5	8
over 20 to 50	3	2
over 50 to 100	4	2
over 100 to 150	3	3
over 150 to 200	3	2
over 200 to 300	3	2
over 300 to 400	4	2
over 400	2	4
Total	<u>35</u>	<u>31</u>
Tenanted Acreage	5270	5443

Source K.A.O. U471

those parts of the estate lying outside the division in St. John in Thanet, Swingfield, and Fairfield. It is the only estate for which records are sufficiently complete and is large enough to allow this exercise to be accomplished. The mean farm on the estate rose from 150.6 acres in 1750 to 175.6 acres in 1789. The mean farm of over 20 acres increased from 234.7 acres to 315.5 acres. The main source of the increase was through the tenants taking on more than one farm. The alterations in farm boundaries were comparatively minor and mainly involved the taking of land into Waldershare Park. On the Waldershare Park

estate similar trends to other studies can be found, though the farms were generally larger. However increases of this sort must have been offset by reductions elsewhere in order to produce the patterns revealed in the land tax assessments.

Some support for the evidence of the land tax assessments does come from some other studies of farm sizes in Kent. On the manor of Southborough in 1621 the mean farm was 22.7 acres and this rose to 31.8 acres in 1743 due to consolidation amongst the smaller holdings. The Fane estate in 1600 consisted of 1,245 acres with a mean farm of 31.9 acres and the Children estate in 1743 with 1,222 acres had a mean estate of 53.1 acres. (1) These figures point to a change in farm sizes during the seventeenth century and early eighteenth century. They may suggest that changes in the pattern of farm sizes in Kent may have taken place before the land tax assessments begin. D.A.Baker has compiled a series of leasehold farms advertised for letting from the Kentish Post during the years 1729-33, 1745-9, and 1760-4. The mean leasehold farm for Kent was similar for each of these periods, 142, 140 and 137 acres. Those for north east Kent were 133.2, 152.5, and 139.6 acres. (2) These figures are subject to the same limitations as those calculated from estate surveys, as is recognised by Dr. Baker. In addition

1. C.W.Chalkin, 'The Rural Economy of a Kentish Wealden Parish 1650-1750', Ag Hist Rev X(1962), pp29-45.

2. Agricultural Prices, Production and Marketing, with special reference to the Hop Industry: North East Kent 1680-1760; unpublished University of Kent at Canterbury Ph.D thesis (1976), ch 3.

the representativeness of the advertisements may vary according to the state of the land market. The index is a bid index and a completions index could vary from this. However it does point to the stability in the pattern of farm sizes. Further support is offered by a study of the rural West Midlands by J.M.Martin. This made use of the land tax assessments but it suffers from the defect that it used an acreage equivalent based on the county land tax quota rather than for each parish. His study included the tenant holdings in 71 Worcestershire villages, 20 Avon Valley villages, and 13 Staffordshire ones for the period 1790 to 1825. It reveals that the numbers of tenants in each of the five size categories he used remained similar with the exception of holdings of under 2.5 acres.(1) These studies lend support to the trends found in the east Kent land tax assessments. It is quite possible that Kent experienced the trends seen elsewhere at an earlier date so that the farm sizes were already optimal and, hence, did not show any clear trend during this period. It is also possible that the farm consolidation that took place in Kent was through enlarging field sizes and improving the internal layout of the farm.(2) It is also possible that a variety of trends were present in the farm structure during the period so that on some estates there were trends towards larger farms while on others there may have been compensating trends against this this so that the overall pattern gives the impression of stability.

1. Social and Economic Trends in the Rural West Midlands 1785-1825, unpublished Birmingham M.Com thesis (1960), appendix I.

2. Baker, op cit, pp16-17.

Most of the land tax studies have pointed to an increase in owner occupation between 1780 and 1832, a conclusion also noted in the study. H.L.Gray found that the number of owner occupiers increased in all classes of Oxfordshire parish between 1785 and 1804, but fell between 1804 and 1832. However the amount of property in owner occupation was greater in 1832 than in 1804 in four of his classes of parish. Some 47 per cent of the parishes in east Kent would have come within Gray's category A parishes in which owner occupiers paid more than 20 per cent of the land tax, compared with 16 per cent of the Oxfordshire ones.(1) However Gray's use of titles to identify those who would mainly come within the category of mixed tenure proprietors is suspect and the figures are not comparable. E.Davies found that the number of owner occupiers increased between 1780 and 1802 and between 1802 and 1832. Non-occupying owners fell in numbers between 1780 and 1802 but rose between 1802 and 1832. The land tax paid by owner occupiers increased between 1780 and 1802 but fell slightly between 1802-1832. This would conform to the trend found in east Kent where there is evidence of a decline in owner occupation after 1822. In some of the counties he found an increase in owner occupiers after 1802 while in others there was a decline. It might be thought that the situation in east Kent might be similar to that in the old enclosed parishes in the Midlands. Davies' study would suggest that

1. 'Yeoman Farming in Oxfordshire from the Sixteenth Century to the Nineteenth', Quarterly Journal of Economics, XXIV (1909-10), pp293-326.

that this was not the case. Owner occupiers were absent in 1780 from 51 per cent of the old enclosed parishes he examined, from 11 per cent of those enclosed by act before 1780-6 and from 17 per cent of the open field parishes; They were absent from 4 per cent of the parishes in the St. Augustine East division.(1) The study by J.D. Chambers also shows an increase in owner occupation after 1790. Some of the series show similarities with the east Kent pattern . The number of owner occupiers in most of the series continued to grow until 1832 but with a slackening of growth after 1812. The east Kent figure shows a similar slackening. Some of the figures show the trends in more detail. In 20 Lindsey parishes a peak was reached in the number of occupiers in 1815 with a fall in the number until 1822, when growth was resumed back to the 1812 level. This would appear to be a trend associated with the parishes enclosed before 1790, as those enclosed later experienced a continuous growth in the numbers.(2) The trends in owner occupation found in east Kent are broadly comparable with those found elsewhere, subject to the qualification that the increase in owner occupiers after enclosure, found in the studies such as that by Chambers, would mean that the secular trend would be likely to be subject to local variations. The pattern of owner occupation as it existed in east Kent in 1780 was far more entrenched than in the old enclosed parishes

1. 'The Small Landowner, 1780-1832, in the light of the land tax assessments', Econ.Hist.Rev. I(1927), pp87-113.

2. 'Enclosure and the Small Landowner', Econ.Hist.Rev., X (1939-40), pp118-27

in the Midlands.

Two studies that show the pattern of landownership during the period 1780 to 1830 reveal a pattern of overall stability that is similar to the east Kent pattern. J.M.Martin divided the Warwickshire parishes according to their date of enclosure and examined them in 1780 and 1825. In each of the groups of parishes, landowners were divided into seven different categories by size. Only in the group owning less than 10 acres are there any major changes in the proportion of the total landowners in the group. In each of the types of parish the number of proprietors falls. Overall this is a fall of 17 per cent but it happens in such a way as not to radically change the proportion of owners in each category.(1) B.L.James found that the number of estates in each size category in the Vale of Glamorgan remained similar in 1780-4, 1810, and 1831 and was similar to the pattern revealed by the tithe surveys. A comparison between the land held by each category of estates in the the 1780s and the 1840s also reveals considerable stability.(2)

The trends in farm sizes in east Kent appear to contradict evidence available from estate surveys, including that for the available estates within the division. The evidence available elsewhere for Kent would be compatible with a trend towards increased farm

1. Warwickshire and the Parliamentary Enclosure Movement, unpublished Birmingham Ph.D thesis (1965), p65.

2. The Vale of Glamorgan 1780-1850, unpublished Wales M.A. thesis (1970-1), pp35-6

sizes during the seventeenth and early eighteenth century and stability in the leasehold farms during the period. As a variety of trends can be found within the parishes of the St. Augustine East division, engrossing on one estate would be compatible with fragmentation elsewhere. The increase in owner occupation found particularly between 1790 and 1814 is confirmed in other studies but the timing and strength of the trends in other studies is likely to be influenced by enclosure. Some support for the idea that the distribution of estates may have been stable over the period comes particularly from the Vale of Glamorgan, though for Warwickshire there appears to have been stability in the overall distribution if not the numbers. Within east Kent a number of different trends can be found and the exploration of these is likely more helpful than general comparisons with other studies in which the precise reasons for variation cannot be established.

II

In order to discover the relationships between the different elements in the agricultural structure, some 24 variables have been extracted and correlated against each other. The objective is to measure the degree of association between the items so that, for example, it is possible to say whether owner occupation was associated with a more fragmented pattern of landownership, or whether it was to be found in those parishes with the larger farms and estates and a more unequal distribution of the land. The variables used cover almost all those computed in appendix A. They include the number of proprietors and occupiers, and the proportion of these who were owner occupiers, the percentage of land in estates and in farms from each tenure group, the mean sizes of estates and of farms in each tenure group, and the measures of the equality of the distribution of the land by farms and by estates. The analysis has been undertaken for three years, 1780, 1801, and 1831. The complexity of the relationships between the variables is likely to have been such that no variable can be explained in terms of any other single variable. It could be anticipated that the degree of variance explained by each relationship would be relatively small. In order to identify the more important relationships, those which are statistically significant at the 99 and 95 per cent confidence levels have been identified. Although some of the relationships may appear obvious and scarcely worthy of mention, the most striking feature to be found in the tables is for how little of the variances such obvious relationships in fact account.

The 1780 correlation matrix is set out in table 5.2. It shows that the number of proprietors were strongly correlated with the number of occupiers. Significant correlations at the higher confidence level can be found between the number of proprietors and the entropies of farms and estates. This points to the proprietors being more numerous in those parishes in which the distribution of land between the proprietors and occupiers was most equal, rather than the number of proprietors being greatest where the distribution was most weighted towards the larger owners. At the lower level of significance the number of proprietors was related to the proportion of the land in mixed tenure estates retained by the proprietor. The number of proprietors was inversely related at a significant level to several of the measures of farm and estate size. Negative correlations were found with the mean estate, mean wholly tenanted estate, and mean rented farm. The inverse relationship with the mean estate is scarcely surprising but it only accounts for 14 per cent of the variation in the dependent variable. The pattern for 1801 is similar. A new correlation exists with the proportion of land in mixed tenure farms owned by the occupier. New inverse relationships with the mean farm, and the logarithmic farm and estate have appeared above the lower confidence level. The 1831 pattern is again similar. Correlations with the percentage of the land in tenanted estates and mixed tenure farms enter, as do inverse correlations with the percentage of land in mixed tenure estates, and the mean mixed tenure estate and owner occupied farm.

Variables Used in Tables 5.2 -5.4

1. Number of Proprietors
2. Percentage of proprietors who were owner occupiers
3. Number of occupiers.
4. Percentage of occupiers who were owner occupiers.
5. Percentage of land in wholly owner occupied estates.
6. Percentage of land in wholly tenanted estates.
7. Percentage of land in mixed tenure estates.
8. Percentage of land in mixed tenure estates retained by the proprietor.
9. Percentage of land in wholly owner occupied farms.
10. Percentage of land in wholly rented farms.
11. Percentage of land in mixed tenure farms.
12. Percentage of land in mixed tenure farms owned by the occupier.
13. Mean estate size.
14. Mean wholly owner occupied estate.
15. Mean wholly tenanted estate.
16. Mean mixed tenure estate.
17. Mean farm size
18. Mean wholly owner occupied farm.
19. Mean wholly rented farm.
20. Mean mixed tenure farm.
21. Entropy of estates.
22. Entropy of farms.
23. Logarithmic mean estate.
24. Logarithmic mean farm.

Table 5.2 1780 Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	1.0																								
2	-0.19	1.0																							
3	0.96*	-0.13	1.0																						
4	-0.15	0.85*	-0.19	1.0																					
5	-0.01	0.50*	-0.06	0.67*	1.0																				
6	0.24	-0.44*	0.14	-0.33**	-0.17	1.0																			
7	-0.20	0.33**	-0.01	-0.01	-0.28**	-0.46*	1.0																		
8	0.28**	0.06	0.31**	-0.03	-0.16	0.15	0.10	1.0																	
9	-0.10	0.67*	-0.08	0.60*	0.66*	-0.39*	0.30**	0.16	1.0																
10	-0.11	-0.39*	-0.05	-0.57*	-0.64*	0.13	0.08	-0.14	-0.56*	1.0															
11	0.22	-0.21	0.13	0.06	0.09	0.23	-0.39*	0.07	-0.34**	-0.59*	1.0														
12	0.21	0.10	0.22	0.14	0.15	-0.10	0.14	0.10	-0.02	-0.18	0.22	1.0													
13	-0.32**	0.49*	-0.30**	0.41*	0.43*	-0.21	0.05	-0.18	0.46*	-0.16	-0.27**	-0.28**	1.0												
14	-0.13	0.45*	-0.15	0.55*	0.78*	-0.24	-0.14	-0.17	0.60*	-0.49*	-0.03	-0.07	0.73*	1.0											
15	-0.28**	0.07	-0.27**	-0.08	-0.29**	0.18	-0.10	-0.04	-0.25	0.33**	-0.13	-0.26	0.44*	-0.14	1.0										
16	-0.23	0.18	-0.17	-0.05	-0.29**	-0.29**	0.75*	0.10	0.17	0.16	-0.35*	-0.10	0.18	-0.11	0.13	1.0									
17	-0.16	0.27**	-0.21	0.38*	0.43*	-0.06	-0.18	-0.21	0.34**	-0.20	-0.11	-0.26	0.73*	0.66*	0.30**	-0.05	1.0								
18	-0.17	0.56*	-0.16	0.56*	0.66*	-0.29**	0.07	-0.04	0.75*	-0.45*	-0.21	-0.17	-0.04	-0.06	-0.06	0.12	0.66*	1.0							
19	-0.32**	-0.05	-0.36*	-0.06	-0.33**	0.06	0.01	-0.21	-0.27**	0.49*	-0.29**	-0.24	0.38*	-0.15	0.79*	0.22	0.38*	-0.09	1.0						
20	0.09	-0.25	0.04	-0.10	-0.05	-0.08	-0.22	0.12	-0.28**	-0.31**	0.63*	0.20	-0.20	0.03	-0.01	-0.07	-0.07	-0.06	0.03	1.0					
21	0.43*	-0.34**	0.35*	-0.33**	-0.27**	0.34**	-0.13	0.19	-0.35*	0.06	0.27**	0.22	-0.51*	-0.52*	0.08	0.23	-0.33**	-0.56*	0.03	0.17	1.0				
22	0.36*	-0.42*	0.34**	-0.57*	-0.47*	0.29**	0.10	0.18	-0.39*	0.40*	-0.07	0.17	-0.48*	-0.61*	0.14	0.09	-0.30**	-0.45*	0.13	0.07	0.60*	1.0			
23	-0.24	0.49*	-0.23	0.49*	0.60*	-0.19	-0.06	-0.20	0.54*	-0.29**	-0.20	-0.20	0.95*	0.84*	0.22	0.02	0.71*	0.87*	0.18	-0.04	-0.50*	-0.42*	1.0		
24	-0.23	0.43*	-0.24	0.49*	0.63*	-0.16	-0.13	-0.23	0.52*	-0.30**	-0.16	-0.19	0.90*	0.87*	0.13	0.06	0.72*	0.87*	0.15	-0.04	-0.42*	-0.44*	0.98*	1.0	

* Statistically significant at the 99 per cent confidence level
 ** Statistically significant at the 95 per cent confidence level

Table 5.3 1801 Correlation Matrix.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	1.0																								
2	-0.11	1.0																							
3	0.95*	-0.10	1.0																						
4	-0.01	0.74*	-0.16	1.0																					
5	0.14	0.29**	-0.01	0.62*	1.0																				
6	0.03	-0.52*	-0.02	-0.24	-0.13	1.0																			
7	-0.12	0.15	-0.03	-0.10	-0.32**	-0.57*	1.0																		
8	0.36*	0.25	0.34**	0.16	0.22	-0.32**	0.18	1.0																	
9	-0.03	0.59*	-0.08	0.52*	0.54*	-0.60*	0.14	0.39*	1.0																
10	-0.21	-0.34**	-0.13	-0.58*	-0.61*	0.32**	0.07	-0.43*	-0.52*	1.0															
11	0.26	-0.17	0.22	0.16	0.18	0.20	-0.21	0.11	-0.35**	-0.62*	1.0														
12	0.32**	0.03	0.27**	0.14	0.40*	-0.27	0.18	0.51*	0.09	-0.37*	0.33**	1.0													
13	-0.37*	0.05	-0.34**	-0.17	-0.33**	0.06	0.09	-0.32**	-0.16	0.44*	-0.33**	-0.30**	1.0												
14	-0.05	0.21	-0.13	0.40*	0.71*	-0.05	-0.16	0.03	0.34**	-0.35*	0.07	0.29**	0.10	1.0											
15	-0.32**	0.14	-0.32**	0.02	-0.19	0.38*	-0.18	-0.33**	-0.20	0.40*	-0.25	-0.39*	0.78*	0.17	1.0										
16	-0.23	0.08	-0.19	-0.10	-0.40*	-0.52*	0.49*	-0.02	-0.01	0.23	-0.25	-0.02	0.40*	-0.22	0.03	1.0									
17	-0.35*	-0.11	-0.38*	-0.07	0.22	0.21	-0.02	-0.39	-0.22	0.35*	-0.18	-0.26	0.91*	0.19	0.74*	0.30**	1.0								
18	-0.19	0.42*	-0.21	0.26	0.24	-0.50*	0.26	0.13	0.61*	-0.22	-0.32**	-0.04	0.45*	0.56*	0.24	0.32**	0.33**	1.0							
19	-0.33**	0.01	-0.35*	-0.04	-0.25	0.19	-0.02	-0.44*	-0.25	0.54*	-0.36*	-0.32**	0.90*	0.13	0.81*	0.35**	0.93*	0.28**	1.0						
20	0.02	-0.13	0.04	0.07	-0.06	0.16	-0.07	-0.08	-0.25	-0.33**	0.60*	0.20	-0.10	0.08	-0.09	-0.06	0.04	-0.18	-0.11	1.0					
21	0.39*	0.00	0.28**	0.26	0.55*	0.03	-0.17	0.21	0.24	-0.38*	0.20	0.36*	-0.17	0.38*	-0.14	-0.31**	-0.05	0.05	-0.09	0.02	1.0				
22	0.27**	-0.01	0.21	0.02	0.33**	0.01	-0.07	0.07	0.15	0.08	-0.22	0.20	0.15	0.30**	0.11	-0.03	0.14	0.23	0.22	-0.26	0.68*	1.0			
23	-0.29**	-0.06	-0.28**	-0.19	-0.21	0.13	0.02	-0.28**	-0.13	0.36*	-0.28**	-0.25	0.94*	0.09	0.74*	0.26	0.89*	0.36*	0.86*	-0.16	0.05	0.31**	1.0		
24	-0.29**	-0.13	-0.30**	-0.16	-0.17	0.19	-0.02	-0.34**	-0.16	0.37*	-0.26	-0.24	0.89*	0.12	0.74*	0.22	0.92*	0.29**	0.88*	-0.14	0.07	0.34**	0.98**	1.0	

* Statistically significant at the 99 per cent confidence level.

** Statistically significant at the 95 per cent confidence level.

Table 5.4: 1831 Correlation Matrix.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	1.0																								
2	-0.9	1.0																							
3	0.96*	-0.06	1.0																						
4	0.11	0.32**	-0.02	1.0																					
5	0.07	0.32**	-0.04	0.42*	1.0																				
6	0.29**	-0.46*	0.25	0.02	-0.19	1.0																			
7	-0.29**	0.11	-0.17	-0.34**	-0.63*	-0.64*	1.0																		
8	0.34**	-0.14	0.33**	0.03	-0.05	0.14	-0.08	1.0																	
9	-0.03	0.39*	-0.08	0.22	0.75*	-0.47*	-0.22	0.19	1.0																
10	-0.19	-0.37*	-0.13	-0.31**	-0.77*	0.32**	0.35**	-0.25	-0.78*	1.0															
11	0.33**	-0.07	0.32**	0.11	-0.04	0.26	-0.18	0.06	-0.41*	-0.24	1.0														
12	0.12	-0.12	0.09	0.17	0.14	-0.02	-0.10	0.23	0.07	-0.17	0.16	1.0													
13	-0.37*	0.26	-0.34**	-0.04	-0.28**	-0.16	0.35**	-0.13	-0.11	-0.07	-0.10	-0.28**	1.0												
14	-0.18	0.14	-0.24	0.27	0.70*	-0.20	-0.38*	-0.06	0.56*	-0.16	-0.02	-0.07	0.17	1.0											
15	-0.20	0.15	-0.19	0.06	-0.23	0.29**	-0.04	-0.03	-0.21	-0.12	0.03	-0.31**	0.85*	0.12	1.0										
16	-0.31**	0.15	-0.29**	0.06	-0.39*	-0.39*	0.61*	-0.08	-0.11	-0.05	-0.15	-0.20	0.58*	-0.13	0.30**	1.0									
17	-0.31**	0.20	-0.35*	0.19	-0.06	-0.06	0.10	-0.16	-0.02	-0.12	-0.07	-0.28**	0.91*	0.33**	0.86*	0.55*	1.0								
18	-0.29**	0.08	-0.30**	0.06	0.29**	-0.29**	0.01	0.11	0.52*	-0.03	-0.04	0.17	-0.03	0.22	-0.06	-0.07	0.03	1.0							
19	-0.27**	0.19	-0.30**	0.21	-0.15	-0.04	0.15	-0.19	-0.10	-0.08	-0.20	-0.15	-0.82*	0.09	0.78*	0.55*	0.89*	-0.04	1.0						
20	0.10	0.13	0.06	0.26	0.07	0.01	-0.06	0.15	-0.13	-0.11	0.63*	0.02	0.07	0.21	0.10	0.12	0.14	0.05	-0.00	1.0					
21	0.45*	0.21	0.37*	0.42*	0.35*	0.25	-0.47*	0.18	0.19	-0.35*	0.30**	0.20	-0.10	0.15	0.10	-0.30**	0.01	0.13	0.00	0.19	1.0				
22	0.31**	0.28**	0.25	0.41*	0.11	0.08	-0.15	0.04	0.09	-0.12	0.10	0.05	0.13	0.00	0.21	0.01	0.17	0.09	0.21	0.14	0.81*	1.0			
23	-0.27**	0.26	-0.27**	0.12	-0.12	-0.08	0.16	-0.14	-0.03	-0.05	-0.11	-0.23	0.91*	0.24	0.87*	0.41*	0.92*	0.01	0.84*	0.02	0.15	0.33**	1.0		
24	-0.25**	0.23	-0.28**	0.23	-0.05	-0.06	0.09	-0.13	0.02	-0.07	-0.14	-0.21	0.87*	0.24	0.84*	0.45*	0.94*	0.04	0.89*	0.03	0.15	0.36**	0.97*	1.0	

* Statistically significant at the 99 per cent confidence level.

** Statistically significant at the 95 per cent confidence level.

The main point to emerge from this is the strong correlation between proprietors and occupiers. There is a close relationship between the number of proprietors and the equality of distribution of land in a parish, shown by correlations with both the entropies of farms and estates. There is an inverse relationship with the size of farms and estates, but this explains comparatively little of the variance. The correlations suggest that there is an inverse relation between the number of proprietors and mixed tenure estates. This could be because they were generally the largest estates and tended to dominate the parishes in which they were present. They were also associated with resident, rather than absentee owners. There does seem to be a relationship between the number of proprietors and mixed tenure farms. This may suggest that mixed tenure farms could be easily built up in those parishes in which landownership was most fragmented or that under these circumstances, an economic holding could only be built up through partly owning the land.

The percentage of proprietors who were owner occupiers shows a strong correlation with the other measures of owner occupation in 1780. There are correlations with the number of occupiers who were owner occupiers, the percentage of land in owner occupied estates, the percentage land in owner occupied farms, the mean owner occupied estate, and the mean owner occupied farm. The number of proprietors occupying all or part of their holding was greatest where conditions were favourable to building up the larger owner occupied farms and estates, which, in turn, led to high proportions of the land in owner occupied

farms and estates. As might be expected, there are inverse correlations with the percentage of land in tenanted estates and rented farms. There is no such inverse relationship with mixed tenure farms and estates. There is a significant correlation with the percentage of land in mixed tenure estates. This is not surprising. The owners of mixed tenure estates rarely rented land from another landlord, and would therefore appear among the occupiers who owned all their farms. The mixed tenure farmers rarely rented land to another farmer and so normally appear amongst those proprietors who occupied all their holding. One would not expect to find inverse correlations between owner occupation and mixed tenure farms and estates. There are two more interesting groups of correlations affecting the percentage of proprietors who were owner occupiers. They correlate with the mean farm and mean estate. Owner occupiers were more numerous in those parishes with the larger farms and estates. There are inverse correlations with the entropies of estates and farms. This shows that owner occupation tended to be associated with the more unequal distributions of land in farms and estates. This is supported by the correlations with the logarithmic means for farms and estates.

This pattern breaks down in 1801. There are no longer significant correlations with the mean estate, mean farm, the entropy measures, or the logarithmic mean measures. The correlation with the percentage of land in owner occupied estates is reduced in importance and that with the land in mixed tenure estates disappears. This suggests that as the proportion of land in owner occupation

increased in all types of parishes after 1780, it was no longer confined to those parishes in which the particular features that encouraged it in 1780 were present. This destroyed the correlations with what, in 1780, were the most favourable factors for it. A further change occurred by 1831. There is a correlation with the entropy of farms but there are correlations with the logarithmic means that approach the level of statistical significance. There is a reduction in the significance of the correlation with the numbers of occupying owners and no longer a correlation with the mean owner occupied farm.

The features with which the proportion of proprietors who were owner occupiers correlate with in 1780 are reproduced in most of the measures of owner occupation. These amount to four main features. Firstly, there is a high degree of correlation between all the different elements of owner occupation, whether measured by numbers of proprietors or occupiers, the percentage of the land in owner occupied farms and estates, or the mean owner occupied farms and estates. Secondly there are inverse correlations with the degree of tenancy but an ambivalent reaction to mixed tenure farms and estates. Some of the measures having correlations with them and other inverse correlations. Generally the number of significant correlations with the mixed tenure measures are fewer than those with tenancy. The third feature is that owner occupation correlates with the mean size of farms and estates, so that it tended to be found in those parishes with the larger farms and estates. Finally there tends to be inverse correlations with the entropies of farms and estates, and positive correlations with the logarithmic

means of farms and estates. Owner occupation in 1780 does not seem to have been associated with parishes in which landownership and occupation were more fragmented. The pattern breaks down in 1801 as the amount of owner occupation increases and it grew in those parishes that in 1780 had been unfavourable to it. The correlations with the sizes of farms and estates and the inverse correlations with equality disappear, and there is a weakening of the correlations between the various measures of owner occupation. By 1831 the reduction in owner occupation brings a limited restitution of the earlier pattern, with some of the correlations that were significant in 1780, but not in 1801, reappearing.

The number of occupiers correlates with many of the factors that the number of proprietors did. Three main features emerge from the tables. They tend to be correlated with the degree of equality in the distribution of farms and estates. The precise measures with which they correlate vary. In 1780 there are correlations with the entropies of estates and farms. In 1801, the entropy of farms drops below the significance level but the inverse correlations with the logarithmic means of estates and farms become significant. There are generally inverse correlations with some of the measures of the size of farms and estates. In 1780 there were inverse correlations with the mean rented farm, mean estate, and mean tenanted estate, and in 1801 also with the mean farm. In 1831, the importance of the inverse correlations with tenancy diminish but there are inverse correlations with the mean mixed tenure estate and the mean owner occupied farm.

The relationship with mixed tenure farms and estates is unclear. In addition to the inverse correlation with the mean mixed tenure estate in 1831, there is, in 1780, a correlation with the percentage of land in mixed tenure estates retained by the proprietor, in 1801 with the percentage of land in mixed tenure farms owned by the occupier, and in 1831 with the percentage of land in mixed tenure farms. These point to mixed tenure farms being associated with a more fragmented pattern of landownership and occupation.

The percentage of occupiers who were owner occupiers correlates with many of the same factors that the proportion of proprietors who were owner occupiers did. In 1780 it correlates with the other measures of owner occupation, such as the mean owner occupied farm and estate, and inversely with the degree of tenancy. There are correlations with the mean farm and mean estate and inversely with the measures of equality. Again the pattern changes in 1801. The correlations with the mean farm, mean estate, and mean owner occupied farm are no longer significant, nor are the inverse correlations with the equality measures. There is a reduction in the significance of the inverse relationship with the degree of tenancy, with the correlation with the percentage of the land under tenanted estates no longer significant. In 1831 the correlations with the other measures of owner occupation are reduced. The correlations with the mean owner occupied estate and the percentage of land in owner occupied farms and estates are no longer significant. There are now correlations with the entropy measures which are the reverse of the relationships

in 1780. Owner occupation seems to have survived to a greater extent in a more fragmented area of landownership and occupation after 1801.

The percentage of land in owner occupied estates show the same correlations as the other measures of owner occupation in 1780. In 1801 there is a reversal of the inverse relationship with the measures of equality. The correlations with the entropies of farms and estates become positive and there are inverse relationships with the logarithmic means of farms and estates, though these fall below the level of significance. In 1831, the strength of these relationships are reduced, suggesting that there is a beginning of a return to the previous pattern. There is some evidence of an inverse relationship with mixed tenure estates strengthening.

The main influences on the percentage of land in wholly tenanted estates in 1780 seem to be the extent of mixed tenure estates and the degree of equality in landownership and occupation. The strongest correlations are inverse ones with the percentage land in mixed tenure estates and in owner occupied farms. As it was unusual for the proprietor of a mixed tenure estate to rent land from another landlord, these two correlations are really two aspects of the same influence. There are inverse correlations with the mean mixed tenure estate and mean owner occupied farm. This suggests that the factors favourable to the emergence of absentee ownership were different from those influencing the emergence of residential owners, with whom the mixed tenure estates were associated. The percentage of land in wholly tenanted estates correlates with the

entropies of farms and estates. The signs of the correlations with the logarithmic means conform to this pattern but the correlations are not significant at the chosen levels. Tenanted estates seem to be a feature of those parishes with a more fragmented pattern of landownership and occupation. In 1801 the entropy correlations disappear, suggesting that as owner occupation increased, it tended to be the larger absentee estates that remained, with the smaller ones changing hands and tenure. The inverse correlations with aspects of mixed tenure estates remain.

The land in mixed tenure estates correlated in 1780 with the other aspects of the system, such as the percentage of land in owner occupied farms and the proportion of proprietors who occupy all or part of their land. There are inverse correlations with the percentage of the land in owner occupied and tenanted estates. The inverse correlation with the percentage of land in mixed tenure farms would reflect the fact that they would appear as land in owner occupied and tenanted estates. In 1831 some differences appear. There is something of an inverse relationship between the land in mixed tenure estates and the degree of equality in the distribution of the land. There are inverse correlations with the entropy of estates and the number of proprietors and a correlation with the mean estate. This suggests that by 1831 mixed tenure estates are a feature of parishes in which the landownership is more concentrated, perhaps a reflection of a trend towards a growth in residential estates. The amount of land in mixed tenure estates retained by the proprietor correlates with little in 1780 and 1831. There are

correlations with the number of proprietors and occupiers at the lower level of significance, indicating that the retention of land in mixed tenure estates is a feature of areas with a more fragmented pattern of landownership and occupation. In 1801 a clearer pattern emerges. The correlations with the number of proprietors and occupiers are still present. There are some correlations with measures of the degree of equality in the distribution of land. There are inverse correlations with the logarithmic means of farms and estates and with the mean estate size. There is something of an inverse correlation with the degree of tenancy, with inverse correlations with the percentage of land in rented farms and tenanted estates, and the mean rented farm and tenanted estate. There are correlations with the other elements of mixed tenure estates such as the percentage of land in owner occupied farms. The correlations suggest that conditions favourable to absentee landlords were not the same as those favourable for residential ones and so one finds an inverse relationship between the elements of mixed tenure estates and tenanted estates, but comparatively little relationship between mixed tenure and owner occupied estates.

The percentage of land in wholly owner occupied farms show a similar pattern of correlations to the other elements of owner occupation in 1780. It is correlated with the other owner occupation measures and with the size of farms and estates. There are inverse correlations with the degree of equality in landownership and occupation, and land under tenancy and in mixed tenure farms. There is a correlation with the percentage of

land in mixed tenure estates. This clear pattern disappears in 1801 with the growth of owner occupation. The inverse correlation with equality becomes insignificant, with the direction of the correlation with the mean farm and estate being reversed. Owner occupation in 1801 is associated with smaller farms and estates, while in 1780 it is found in parishes with larger farms and estates. The inverse correlations with rented farms becomes insignificant. In 1831 there is a strengthening of the inverse correlation with the percentage of land in mixed tenure farms and the correlation with the number of occupying owners disappears. The inverse correlation between the percentage of land in wholly owner occupied farms and that in mixed tenure farms points to the importance in distinguishing between those owner occupiers who owned all their land and those for whom their own land was a limited part of the total holding. The correlations that can be found with aspects of mixed tenure estates suggests that much of the land in wholly owner occupied farms may be associated with persons who were primarily landlords.

The percentage of land in rented farms show inverse correlations in 1780 with the land in owner occupied and mixed tenure farms, and with other elements of owner occupation, such as the percentage of land in owner occupied estates, the percentage of proprietors who were owner occupiers, and the mean owner occupied farm and estate. The inverse correlation appears much stronger with owner occupation than mixed tenure farms, a reflection of the fact that the latter were built up from rented land. There is a tendency for the land in rented farms to

correlate with the equality measures. There is a correlation with the entropy of farms and inverse correlations with the logarithmic mean of estates and farms. There are correlations with the other elements of tenancy such as the mean rented farm and the mean tenanted estate. The main change in 1801 is the reversal of the relationship with equality. There are significant correlations with the mean estate and farm, with the signs being reversed to positive correlations. There is a reversal of the signs of the logarithmic correlations, an inverse correlation with the entropy of estates, and a disappearance of that with the entropy of farms. The percentage of land in rented farms is no longer a characteristic of those parishes with the more fragmented landownership and occupation. This is reversed to a certain extent in 1831 with the disappearance of the correlation with the mean estate and the logarithmic means of estates and farms. It would appear that tenanted farms were most common in parishes with a more fragmented patterns of landownership and occupations in 1780 but the increase in owner occupation after that date led to the survival of tenanted farms where the larger estates were entrenched. By 1831, reductions in the degree of owner occupation saw something of a revival of the 1780 position, but not to the same degree.

The percentage of land in mixed tenure farms is inversely correlated in 1780 with the percentage of land in rented and owner occupied farms. There are also inverse correlations with elements of mixed tenure estates, such as the mean mixed tenure estate and the percentage of land in mixed tenure estates. This would fit in with the inverse

correlation with land under owner occupied farms, as many of these would be part of mixed tenure estates. Land in mixed tenure farms correlates with factors indicating the fragmentation of land ownership. There is an inverse correlation with the mean estate and a correlation with the entropy of estates. A similar pattern exists in 1801 though with some of the elements changed. For example, the correlation with the entropy of estates drops below the significance level but an inverse correlation has developed with the logarithmic mean estate, which would point to the same feature of fragmented ownership. This feature is strengthened in 1831 with correlations with the number of occupiers and proprietors, and the re-entry of the correlation with the entropy of estates. This suggest that mixed tenure farms may be associated with fragmentation in land ownership so that the economic units have to be built by hiring land from several sources, including the farmer notionally renting land to himself. It may mean that with smaller estates it was easier to acquire land as the land market in a particular area would be less dominated by a few sellers. This is supported by the correlations with the proportion of land in mixed tenure farms owned by the occupier. In 1780 there is an inverse correlation with the mean estate and in 1831 with this and the mean farm and tenanted estate. In 1801 there is a clearer pattern with correlations with a number of occupiers and proprietors and the entropy of estates. There are correlations with elements of wholly owner occupied estates, such as the mean owner occupied estate and the percentage of land in owner occupied estates. As

it was unusual for a mixed tenure occupier to rent land to anyone other than himself, the owner occupied estates include these parts of mixed tenure farms owned by the occupier.

The mean estate in 1780 is inversely correlated with various measures that indicate equality. It correlated with the logarithmic means for estates and farms and inversely with the entropies of estates and farms, and the number of occupiers and proprietors. Not only is the mean estate greatest when there are fewer proprietors, but also when the distribution of land is more unequal. The correlation between landownership and occupation, noted when the number of proprietors and occupiers were compared, is carried over into the mean farm and mean estate. These are highly correlated. The size of the mean estate is correlated with several measures of owner occupation such as the percentages of proprietors and occupiers who were owner occupiers, and the percentage of land in owner occupied farms and estates. There are also correlations with certain elements of tenancy. There are correlations with the mean tenanted estate and mean rented farm. Something of an inverse correlation exist with mixed tenure farms, with inverse correlations between the mean estate and the percentage of land in mixed tenure farms and the proportion of mixed tenure farms owned by the occupier. This supports the observation made above that mixed tenure farms tend to be associated with parishes in which the pattern of landownership is fragmented. The main difference between the pattern in 1801 and that of 1780 is the change in owner occupation. We have seen that owner occupation in 1780 correlates with inequality in the

distribution of land and in 1801 this has been reversed. The correlations between the mean estate and several of the elements of owner occupation are removed, such as those with the percentages of proprietors and occupiers who were owner occupiers. The correlations with tenancy are strengthened, with the introduction of a correlation with the percentage of land in rented farms. The 1831 correlations show a disappearance of the inverse correlations with the mixed tenure farms, and the correlation with mixed tenure estates, which appeared in 1801, is strengthened.

The mean owner occupied estate shows the features noted from the other measures of owner occupation in 1780 of correlation with the other elements of owner occupation, the inverse correlation with tenancy, the correlation with the sizes of farms and estates, and the inverse correlation with the degree of equality in the distribution of land. The increase in owner occupation by 1801 is accompanied by a reversal in the relationship with the equality measures. The correlations with the mean farm and estate are no longer significant, and the directions of the entropy correlations are reversed. There are correlations with the mean owner occupied farm and the percentage of mixed tenure farms retained by the occupier. No clear pattern appears in 1831. There is a correlation with the mean farm and with some of the measures of owner occupation such as the percentage of land in owner occupied estates and farms, and an inverse correlation with the percentage of land in mixed tenure estates.

The mean tenanted estate in 1780 correlates with the farming tenancy measures, such as the mean rented farm and the percentage of the land in rented farms. There is also a correlation with the mean farm. The larger farms tended to be either wholly rented or under mixed tenure, and so could be expected to be related to the size of the tenanted estate. There are inverse relationships with the number of occupiers and proprietors and the percentage of land in owner occupied estates, but no significant inverse relationship with any of the mixed tenure variables. The mean tenanted estate is correlated with the mean estate. In 1801 there is a stronger correlation with the mean estate and correlations with the logarithmic means of farms and estates. Inverse correlations exist with the percentage of land in mixed tenure estates retained by the proprietors and the percentage of land in mixed tenure farms owned by the occupier. These suggest that tenanted estates were coming under pressure from proprietors who were tempted to keep more land in hand, and from tenants who were seeking to own a larger proportion of their total holding. In 1831 there is a reduced correlation with some of the indicators of inequality such as the number of proprietors and occupiers, and the reduction in the correlation with the percentage of land in mixed tenure estates retained suggests there was less pressure on tenanted land from this source. It would indicate that proprietors were less inclined to keep land in hand in the changed post-war circumstances.

The mean mixed tenure estate in 1780 shows no significant correlation with the mean estate, indicating that the factors

responsible for its size have little to do with the influences on estate size in general. There are inverse correlations with the percentage of land in owner occupied estates and tenanted estates, and with mixed tenure farms. The proprietors of mixed tenure estates were rarely mixed tenure farmers, and the latter would be included amongst those owner occupied estates. In 1801 correlations with the mean farm, mean owner occupied farm, and mean rented farm have developed and an inverse correlation with the entropy of estates exists. This indicates that mixed tenure estates survived the increase in owner occupation best in parishes with a more concentrated pattern of landownership. The relationship with the mean owner occupied farm is due to the fact that these would be part of mixed tenure estates. In 1831, the inverse relationship between the mixed tenure estate and the degree of fragmentation in landownership is strengthened by correlations with the number of proprietors and occupiers. There is also a correlation with the mean tenanted estate, suggesting that these estates had more in common with the tenanted ones than the owner occupied ones.

The mean farm in 1780 correlates with many of the measures of owner occupation, such as the proportion of proprietors and occupiers who were owner occupiers and the mean owner occupied farm and estate. The mean farm correlates with logarithmic mean farm and estate, and inversely with the entropies of farms and estate. As we have seen the mean farm correlated with the mean owner occupied farm and also with the mean rented farm, but there is no significant correlation with the mean mixed tenure farm. This is probably

due to the fewer number of these compared with the other tenure groups. The pattern changes in 1801 with the growth of owner occupation so that the correlations with the various elements of owner occupation are reduced. The inverse correlation with the entropies are reduced, indicating that the larger farms in 1801 were not necessarily associated with a more unequal distribution of the land. There is a correlation with the mean mixed tenure estate in 1801, indicating the pressure on tenanted estates from owner occupation, so that the larger estates on which one would expect to find the larger farms, would normally contain an element of owner occupation.

The mean owner occupied farm shows the pattern observed with the other elements in owner occupation in 1780. This changes in 1801 with lower correlations with the logarithmic means for farms and estates, and the disappearance of the inverse correlations with the entropies. Correlations develop with the mean estate, mean owner occupied estate, and mean mixed tenure estate. In 1831 the strongest correlation is with the mean estate and there are inverse correlations with the number of proprietors and occupiers .

Of the remaining variables, the main relationships have already been mentioned in relation to other variables . The entropy of estates and the entropy of farms are correlated in each of the three years, as are the logarithmic means of farms and estates. The entropy of estates is inversely related to the logarithmic measures at a significant level in 1780 and the entropy of farms to them in the same year. In 1801 and 1831 the entropy of farms is positively correlated with the logarithmic means. This could indicate more equality in the distribution of land but around

higher mean farms and estates.

Four main conclusions emerge from this regression analysis. There is a high degree of association between the general measures of landownership and those for occupation. This holds true for the number of proprietors when compared with the number of occupiers, the mean farm and the mean estate, the logarithmic means of farms and estates, and the entropies of farms and estates. Owner occupation in 1780 was associated with a particular pattern of landownership and occupation. The various measures of it were highly correlated. There were inverse correlations with the degree of tenancy but no strong inverse relationship with mixed tenure farms and estates. Owner occupation was correlated with the mean farm and the mean estate, and inversely with measures of equality in the distribution of land. This pattern breaks down in 1801 with the increase in owner occupation between 1780 and 1801 so that, for example, the relationship with the equality measures is reversed. By 1831 there is a limited restitution of the earlier pattern. A pattern exists for those parishes with more numerous proprietors. These also tend to have more numerous occupiers, lower mean farm and estates, lower logarithmic mean farms and estates, and higher entropies of farms and estates. These parishes are associated with a greater equality in the distribution of farms and estates, and a more fragmented pattern of landownership and occupation. Mixed tenure farms tend to be associated with parishes with a more fragmented pattern of landownership and occupation. This may mean that it was easier to buy land for owner occupation in these parishes due to the larger number of potential sellers, or that it was necessary

to build up an economic holding by hiring land from several sources, including from the occupiers, Mixed tenure estates tend to be associated with those parishes in which the pattern of landownership is more dominated by a limited number of owners and do not tend to be found in the same parishes as mixed tenure farms. As mixed tenure estates tended to be associated with those proprietors who were resident in the area, this suggests that there may be a difference between the conditions conducive for residential proprietors and for absentee ones.

Comparison of these results and those found in other studies is not really possible. The other studies were not concerned with the measurement of the association between the variables so that the strength of any association and whether this can be regarded as statistically significant is not known. Moreover the variables used in this study are not the same as those used in most of the studies. The threefold tenurial division adopted here, following the normal modern practice, is not that adopted in most of the studies. The correlations show that a twofold tenurial division will not lead to the same conclusions as these will be determined by which category the mixed tenure farms and estates are placed. The statistics presented in most of the studies are not in a form that enable the approach adopted here to be computed. In particular, the emphasis on the date of enclosure may conceal more than it reveals. For example, no statistically significant difference can be detected between the distribution of estates in Warwickshire between parishes enclosed at

different dates,(1) Consequently it is impossible to know whether the differences in the trends in owner occupation, also classified by J.M.Martin according to the date of enclosure, reflect similar influences to those found in this study. At first sight it would appear not, as influences such as the mean estate and the equality of the distribution of the land do not differ between the types of parishes whereas the fortunes of owner occupiers do. However, this presupposes that the variance between the sample means is greater than the variance around them and there is no evidence presented which would enable such a conclusion to be drawn.

A few general points can be made. The high degree of association between the various measures of landownership and occupation suggests that a method of classifying parishes based on their characteristics of landownership is likely to yield the same results as one based on occupation data. This indicates that it would be invalid to dismiss a classification, such as that developed by D.R.Mills,(2) on these grounds. Although the occupiers would be in a position to influence demographic patterns through measures such as their control over poor relief, the degree of association between landownership and occupation suggests that both have a common cause.

The pattern associated with owner occupation in 1780 supports the view advanced by H.G.Hunt that owner occupation

1. J.M.Martin, Warwickshire and the Parliamentary Enclosure Movement, unpublished Birmingham Ph.D thesis (1965),pp65,68

2. Landownership and Rural Population with special reference to Leicestershire in the mid nineteenth century,

unpublished Leicester Ph.d thesis (1963), appendix 4.

in this period had little to do with the survival of peasant cultivators.(1) Rather, most of the land under owner occupation was in the hands of those paying more than £10 land tax and with holdings in excess of 100 acres. One would not find inverse correlations with the degree of equality in the distribution of land or correlations with the mean farm and mean estate if the phenomenon were associated with an independent peasantry cultivating their own land. The pattern found in 1780 is more associated with the existence of owner occupation as part of mixed tenure farms and estates, in which it is subordinate to the tenanted part of an estate or the rented part of a farm. The change in the pattern after 1780 suggests that the influences on owner occupation changed after this date.

1. 'Landownership and Enclosure, 1750-1830', Econ.Hist.Rev., 2nd ser, XI (1958-9), pp502-3.

III

The idea that there may be a relationship between the agricultural structure and demographic elements is to be found in a number of studies. For example, J.D. Henshall has found a strong demographic component in several of the factors influencing the structure of agriculture in Barbados (1). The point has also been noted in several of the land tax studies, but no measurement of the association between demographic factors and the agricultural structure have been made.

It is possible to envisage a mechanism by which either demographic influences altered the agricultural structure or the agricultural structure might influence the demography of the parishes. Parishes in which ownership was diffuse would tend to remain with a diffuse ownership and fragmented holdings because the owners would find it more profitable to let the property in small units to a large population than to attempt the process of engrossing. In parishes where a few owners were dominant then engrossing would provide the better alternative enabling economies of scale to be reaped. For example, poor rates could be saved by not providing for settlements within the parish. In the larger more populous parishes external economies of scale would exist for the providers of cottages who would

1. 'The Demographic Factor in the Structure of Agriculture in Barbados', Transactions and Papers of the Institute of British Geographers, 38 (1966), pp 181-95.

TABLE 5.5: POPULATION PER ACRE IN ST AUGUSTINE EAST DIVISION

	1705	1831
Adisham	0.07	0.22
Ash	0.17	0.31
Barfreston	0.14	0.32
Barham	-	0.24
Bettshangar and Ham	0.06	0.09
Bishopsbourne	-	0.19
Buckland and Charlton	0.10	2.46
Coldred	-	0.09
Denton	0.08	0.16
Eastry	0.18	0.45
Elmstone	0.15	0.27
Ewell	0.05	0.30
Eythorne	0.05	0.30
Goodnestone	0.04	0.24
Guston	0.05	0.13
Hougham	0.07	0.14
Ickham	0.12	0.26
Kingston	-	0.17
Knowlton and Chillenden	0.14	0.24
East Langdon	0.04	0.31
West Langdon	0.10	0.12
Littlebourne	0.14	0.36
Lydden	-	0.15
Minster	-	0.16
Great Mongeham	0.20	0.40
Little Mongeham	0.13	0.08
Monkton	0.11	0.19
Nonington	0.08	0.23
Northbourne	-	0.25

	1705	1831
Preston	0.15	0.34
Ripple	0.06	0.19
River	0.11	0.50
St Lawrence	0.19	0.63
St. M. Cliffe and Oxney	-	0.32
St. Nicholas	0.07	0.21
Sibertswold	0.08	0.18
Shoulden	-	0.19
Staple	-	0.47
Stonar	0.01	0.08
Sutton	0.07	0.18
Tilmanstone	0.11	0.37
Waldershore	0.04	0.07
Westcliffe	0.03	0.08
Whitfield	0.12	0.19

Sources: K.A.O. Q/CTz 2; 1831 census.

be in a position of raising average social costs by more than their own marginal private costs (1).

It was noted above that the growth in the numbers of proprietors and occupiers tended to be greatest between 1780 and 1831 in those parishes in which the population was growing most rapidly. Further, the correlations suggest that there are certain features of the agricultural structure that tend to be found in conjunction with the larger numbers of proprietors and occupiers, and these may also have been associated with the more densely populated parishes.

One way in which the validity of this argument could be tested is to examine the relationship between density of population and the structure of landownership and occupation. The population density per acre in the division for 1705 and 1831 is shown in table 5.5. This shows that in spite of the population growth between the two dates, the relative positions of the parishes in the divisions remained the same. The most populous areas, relative to their size, in 1705 were the same as those in 1831, though the growth of Dover did provide some modifications with Buckland and Charlton replacing Ash at the top of the hierarchy. The most densely populated parishes were the ones in the Stour Valley and Thanet which we have already seen were those in which the mean farm and estate were lowest and the dispersions highest. This would suggest that there should be a negative correlation between the mean estate and farm sizes and population density.

1. For a fuller discussion of this point see H.W. Richardson, The Economics of Urban Size (1973), esp ch 2.

Variables used in Tables 5.6 - 5.7

1. Population
2. Number of Agricultural Workers
3. Agricultural Workers as a percentage of the population
4. Occupiers employing labour
5. Occupiers not employing labour
6. Total Occupiers
7. Agricultural labourers
8. Population per acre

Table 5.6 Demographic Influences on the Agricultural Structure,
1801.

	<u>Variables</u>			
	1	2	3	8
Number of Proprietors	0.88*	0.75*	-0.13	0.87*
Number of Occupiers	0.90*	0.73*	-0.20	0.90*
Percentage of land under owner occupation	0.05	-0.08	-0.11	0.05
Mean Estate	-0.36**	-0.25	0.38*	-0.35**
Mean Farm	-0.41*	-0.27	0.42*	-0.40*
Entropy of estates	0.30**	0.17	-0.12	0.31**
Entropy of farms	0.16	0.20	0.10	0.14

* Statistically significant at the 99 per cent confidence level.

** Statistically significant at the 95 per cent confidence level.

Table 5.7: Demographic Influences on the Agricultural Structure, 1831.

	1	2	4	5	6	7	8
Number of Proprietors	0.75*	0.91*	0.85*	0.55*	0.84*	0.90*	0.21
Number of Occupiers	0.78*	0.90*	0.87*	0.48*	0.83*	0.90*	0.23
Percentage of land under owner occupation	-0.12	-0.14	-0.19	0.07	-0.11	-0.08	-0.03
Mean Estate	-0.33**	-0.33**	-0.28	-0.37*	-0.36**	-0.29**	-0.31**
Mean Farm	-0.36**	-0.35**	-0.28	-0.36**	-0.35**	-0.31**	-0.35**
Entropy of Estates	0.28	0.34**	0.30**	0.34**	0.36**	0.35**	0.09
Entropy of Farms	0.17	0.22	0.24	0.26	0.28	0.27	0.07

* Statistically significant at the 99 per cent confidence level

** Statistically significant at the 95 per cent confidence level.

The parishes with the highest farm and estate sizes should be those with the lowest densities of population.

Tables 5.6 and 5.7 present the results of a regression analysis of the relationships between elements of the agricultural structure and certain variables derived from the census reports. The analysis has been conducted for 1801 and 1831 and the land tax assessments for these years have been used in conjunction with the census reports for the parishes. The land tax parishes have had to be grouped into ecclesiastical parishes for this purpose but this has only a minor influence on the results. Seven variables were selected to represent the agricultural structure namely the number of proprietors and occupiers, the proportion of the land under owner occupation, the mean sizes of estates and farms, and the entropies of estates and farms. Collectively they provide a representative group of measures of the number, size, and distribution of farms and estates, and the tenurial conditions. Two variables were taken from the 1801 census, the population in each parish and the number of agricultural workers. These were also expressed as the population density per acre and the percentage of the population described as agricultural workers. In 1831 six variables were extracted, the population, and the numbers of agricultural workers, occupiers employing labour, occupiers not employing labour, occupiers, and agricultural labourers. The variables extracted enable the relationships between the agricultural structure and the population to be specified and also to examine the relationships with those agricultural variables expressed in the census. In 1831 the component parts of the classification agricultural workers can be examined so

that relationships between the agricultural structure and the larger and smaller resident occupiers and the employees in agriculture can be examined.

Table 5.6 shows that there are high degrees of correlation with the population in each parish and the numbers of proprietors and occupiers. These are also highly correlated with the density of population and the number of agricultural workers. There are inverse correlations with the percentage of the population who were agricultural workers, but these do not meet the criteria of statistical significance. One would expect there to be an inverse relationship between the density of population and the proportion of the population who were agricultural workers as the parishes with the greatest populations would stand at the higher points in the settlement hierarchy and would therefore have the more diversified employment bases. The percentage of land under owner occupation shows little sign of correlating with any of the variables, either positively or inversely. The mean estate and mean farm correlate inversely with the level and density of population. They correlate inversely, but not at a significant level, with the number of agricultural workers. There is a correlation with the proportion of the population who were agricultural workers. The larger estates tended to be found in those parishes in which the population density was least and in which agriculture was the dominant part of the employment base. The entropy of estates correlates with the size and density of population indicating that the more populous parishes were also those in which the distribution of land in estates was most even, but the entropy of farms correlated with none of the variables at

a significant level. The pattern suggested for 1801 is the more populous parishes had the largest numbers of proprietors and occupiers and the smaller mean farm and estate sizes. They also tended to have the more even distribution of estate sizes.

In 1831 the population correlates highly with the number of proprietors and occupiers but the density of population does not do so at a significant level. The number of proprietors and occupiers show a high degree of correlation with the number of resident occupiers, whether measured as the total occupiers, the number employing labour, or the number not employing labour. They also correlate with the number of agricultural workers and the number of agricultural labourers. The percentage of land under owner occupation failed to correlate with any of the variables at a significant level. In the case of occupiers not employing labour the sign is positive but with all the other variables there is an inverse relationship. This may indicate a slight tendency for owner occupiers to be absent from areas of dense population. The mean farm and estate are inversely related to all the variables and only the relationship with the number of occupiers not employing labour fails to reach the level of statistical significance. The larger farms and estates were to be found in the areas of lower population density. These would also be the parishes with the fewer proprietors and occupiers and agricultural workers. The entropy of estates correlates with the various measures of numbers of resident occupiers and the number of agricultural workers and agricultural labourers. The correlations with the size and density of

the population fail to reach the level of significance. This suggests that the equality in the distribution of estates is more closely related to the size of the agricultural sector and the number of occupiers than it is to the population as a whole. While the more populous parishes may also be those in which the distribution of estates was most even, it would be wrong to think in terms of the distribution of land amongst the population being more even. The equality is amongst the proprietors not amongst the population as a whole. The entropy of farms fails to correlate at a significant level with any of the variables, though the pattern of coefficients was similar to those for the entropy of estates.

The correlations suggest that there were many similarities in the relationships between the agricultural structure and the population in both 1801 and 1831. The numbers of proprietors and occupiers correlate highly with the population and the number of agricultural workers in both years but with the density of population only in 1801. The reason for this may be increased urbanisation between the dates. The mean farm and estates correlate inversely with the size and density of the population. The entropy of estates correlated with the population in 1801 and not 1831, and the entropy of farms and the degree of owner occupation did not correlate significantly with any of the variables at either date. The general pattern was for the number of proprietors and occupiers to be related to the population. The mean estate and mean farm were inversely related to population but at a much lower level of significance. The relationship between the number of occupiers and population would

account for 81 per cent of the variation in the dependent variable in 1801 but only 16 per cent of that in the relationship between population and the mean farm. In 1801 these parishes were also those in which the distribution of estate sizes was more even. The demographic variables seem to have little bearing on the dispersion of farm sizes which might suggest that it was the proprietors rather than the occupiers who had the main influence on demographic variables. The degree of owner occupation does not seem to be significantly related to any of the other variables examined.

It is interesting to compare the trends in the agricultural structure with what is known about the trends in agricultural prosperity. The material available for this in east Kent mainly refers to the period for which the trends in the agricultural structure for the St Augustine East division as a whole have been traced. In particular reference is made to the estate rentals for the Conyngham and Cowper estates and the performance of John Bridges' farms at St Nicholas at Wade.

Table 5.8 sets out the rental material for the Cowper estate centred on Wingham Court farm. The tenanted estate covered some 2,307 acres in the Stour Valley with properties in Woodnesborough, Worth, Goodnestone, Ash, Wingham, St Martin's, St Paul's, Fordwich, Hoath, and Herne. In addition to the tenanted part of the estate there were woodlands in hand covering 225 acres, of which 114 acres were in the St Augustine East division. The estate included the manor of Swalecliffe whose principal value lay in the fishing rights attached to it. The manor received an income from leasing the oyster beds. The estate did not include all the property owned by the Cowper family in the area. The jointure estate of Countess Cowper was not merged with the rest until 1827. The estate was fairly constant in size, with the only significant alteration coming in 1805 when there was an exchange of property with Sir Henry Oxenden in order to consolidate their respective estates. There were ten tenants of the estate. There were three farms of between 100 and 200 acres in 1798, four of between 300 and 350 acres, and one, Wingham Court farm, of over 400 acres. The remaining

Table 5.8 : Cowper Estate Rentals

<u>Year</u>	<u>Gross Rents (£)</u>	<u>Repairs (£)</u>	<u>Arrears (£)</u>
1799	1679	90	0
1800	1679	79	0
1801	2056	1156	0
1802	2056	386	0
1803	2056	272	0
1804	2011	15	0
1805	1932	0	0
1806	2015	74	0
1807	2002	10	0
1808	2002	15	2
1809	2002	8	3
1810	2018	8	0
1811	2018	17	0
1812	2021	3	0
1813	3106	0	0
1814	3127	0	0
1815	3137	111	0
1816	3137	204	189
1817	3137	145	0
1818	3137	0	0
1819	3137	0	0
1820	3137	0	0
1821	2510*	0	0
1822	2483*	0	0
1823	2259	0	100
1824	2259	0	200
1825	2259	11	200
1826	2395	6	317
1827	2433	66	317
1828	2433	22	151
1829	2433	37	150
1830	2388	143	206
1831	2388	98	0

* net of rebates.

Source: K.A.O. U449 E13.

properties were a cottage and some woodland. The tenant of Wingham Court farm acted as the estate's steward, collecting the rentals and administering the manor and the woodlands (1).

Table 5.9 sets out the rental material for the Conyngham estate which was situated in Thanet. The material is more fragmentary than for the Cowper estate and so there are gaps in the series. According to a survey in 1816 the estate consisted of 1,248 acres centred on the Minster Court farm. There were some additional properties in Ramsgate but they have been excluded from the analysis. In 1816 there were 20 tenants on the estate. There was one farm, Minster Court, which was 411 acres and two other farms of over 100 acres. Seven of the properties were under 20 acres in size and six others were between 20 and 50 acres in size. The smaller properties compared with the Cowper estate reflects the fact that the estate was situated in the parishes of St Lawrence, Minster, and Sarre. These parishes had extensive marshlands and the properties mainly consisted of marshland pastures. In the 1816 survey there is no mention of any buildings on 14 of the properties. They were just pastures rented in isolation from the farms. Minster Court also had valuable manorial rights, mainly from quit rents and reliefs on urban properties in Ramsgate. The manor brought in a rental of £170 per annum (2).

The use of rental material of this sort is fraught with difficulty. Two main problems arise.

1. K.A.O. U449 E29-30.
2. K.A.I. U438 E16, M1.

Table 5.9: Conyngham Estate Rentals

<u>Year</u>	<u>Gross Rent (£)</u>	<u>Repairs (£)</u>	<u>Arrears (£)</u>
1780	1785	?	?
1790	1607	115	67
1791	1607	152	138
1792	1607	133	22
1793	1607	97	33
1794	1607	114	28
1795	1607	162	22
1796	1607	210	16
1797	1607	172	5
1798	1625	185	0
<hr/>			
1806	1811	?	?
1807	1811	?	?
1808	1811	657	75
1809	1811	400	75
1810	1814	190	75
1811	1814	242	0*
1812	1944	282	0
1813	2084	456	0
1814	2084	244	0
1816	2251	?	?
1823	2379	?	?

Source: U 438 E1 E16

* accumulated arrears written off.

The first concerns how the gross rental should be interpreted. The return to the landlord on his property is often known as rent but in a technical sense is not strictly that. The neoclassical economists defined rent as being the reward accruing to the landlord from the inherent qualities of the land. However the landlord would also provide fixed capital for working the land such as drainage or buildings. For this he would receive interest on his capital. As an entrepreneur he would receive profits for organising the business. The main problem arises with capital since the quantity of land can be adjusted for and it can be assumed that entrepreneurship is constant. For the rational farm, investment will take place up to the point where the marginal efficiency of investment is equal to the cost of the capital. However, whether the investment is undertaken by the tenant or the landlord will depend on the relative bargaining positions of the two parties. The quantity of the investment will be the same whichever of the two undertakes it but the component of the reward to the landlord will vary according to which partner undertakes it (1). In the series, the amount recorded by the stewards as being spent on repairs is included as the best available guide to investment by the landlord. The stewards classified as repairs what would be regarded as gross investment such as the replacement of granary floors. It may also have included some net investment in the form of improvements that may

1. S.N.S. Cheung, The Theory of Share Tenancy with special reference to Asian Agriculture and the First Phase of Taiwan Land Reform (1969).

have been introduced under the guise of replacement. The Conyngham rentals have had to be adjusted for the fact that there were some shifting of the land tax to the tenants in 1798. By the time the second part of the series begins, the tax had been redeemed, or what remained shifted to the tenants, so that the rentals are not strictly comparable.

The second problem concerns how the rentals should be interpreted. A series such as this fairly represents the return that the landlord was getting from his estate but to interpret this as a rent index is not valid. There has been no attempt made in the series to weight the rental material in any way. There is no reason to suppose that the weighting in any way conforms to the distribution of farms by size or type within the area or that the landlords were in any way typical of other landlords. An unweighted index of this sort cannot be relied upon to show the strength of any trend. Indeed, there are doubts as to whether such an index can even show the direction of the trend (1). The rental series are presented as illustrative but no guarantee can be given of their applicability.

The Cowper estate shows an increase in the rentals in 1801 of 22 per cent. This was accompanied by increased expenditure on repairs. A further rise of 54 per cent in the rentals occurred in 1812 without any accompanying increase in repairs expenditure. This followed a valuation of the estate in 1812 and 1813 (2).

1. For a discussion of this point see P.W. Bayley, An Index of Property Rents (1974), deposited in the Institute of Actuaries Library.
2. K.A.O. U449 E 15-16.

Arrears were almost unknown on the estate until 1816.

The end of the war was accompanied by an increase in expenditure on repairs and this would appear to have staved off the immediate post-war crisis. However there were problems on the estate in the early 1820s. Stephen Elgar, the steward, wrote to Lord Cowper in 1821 to say that with the depressed state of agriculture he did not expect the rents to be paid in full, and that most of the landlords in the areas were reducing their rents. He chiefly blamed the poor rates as the cause for the distress (1). In that year the rents were abated by 20 per cent. Again he made a similar complaint in 1822 and there was a rebate of the same amount. The rents were reduced in 1823 but gradually rose during the 1820s. This was accompanied by increasing expenditure by the landlord and mounting arrears. Evidence exists that there were problems with some of the tenants. In 1828 Elgar complained that one of the tenants was having problems in raising the capital to carry on farming and he eventually resigned in favour of his son who was supported by his father-in-law. The main trend was of rising rentals throughout the war period reaching a peak in the immediate post-war years. Thereafter rental levels declined and the rate of change and the arrears point to the 1820s as the main period of post-war recession.

The Conyngham rentals point to a slight fall in rents during the 1780s. The steward had problems in removing some persistent arrears from the accounts during the 1790s though by 1798 this had been accomplished and a modest increase in rents had been achieved.

1. Ibid, E.21.

FIGURE 5.1: John Bridges' Wheat Sales

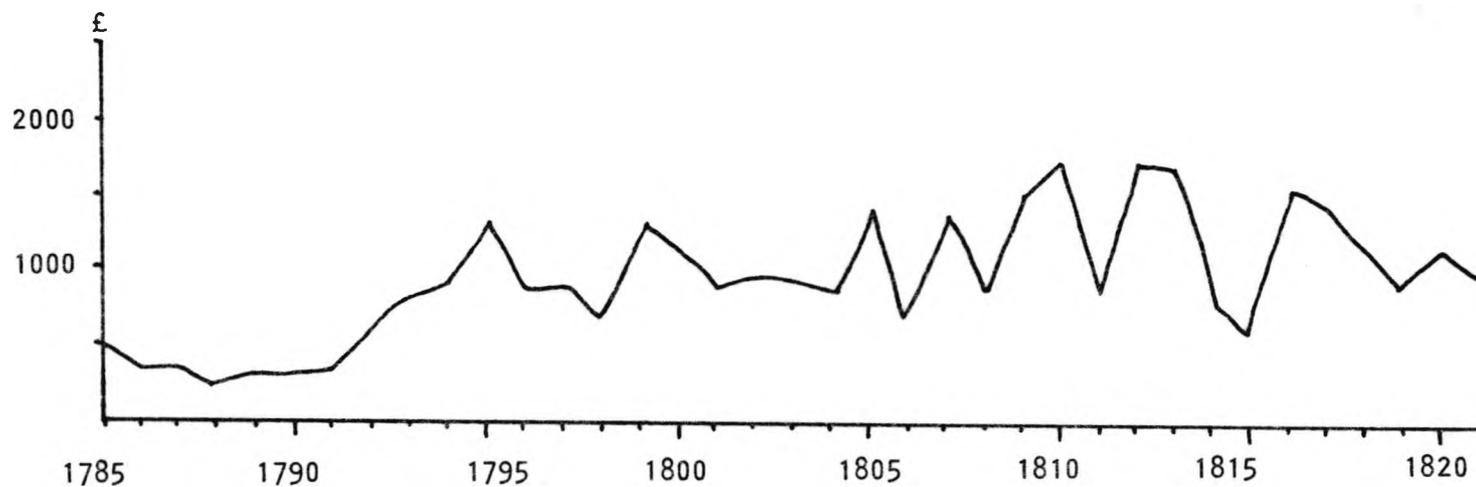
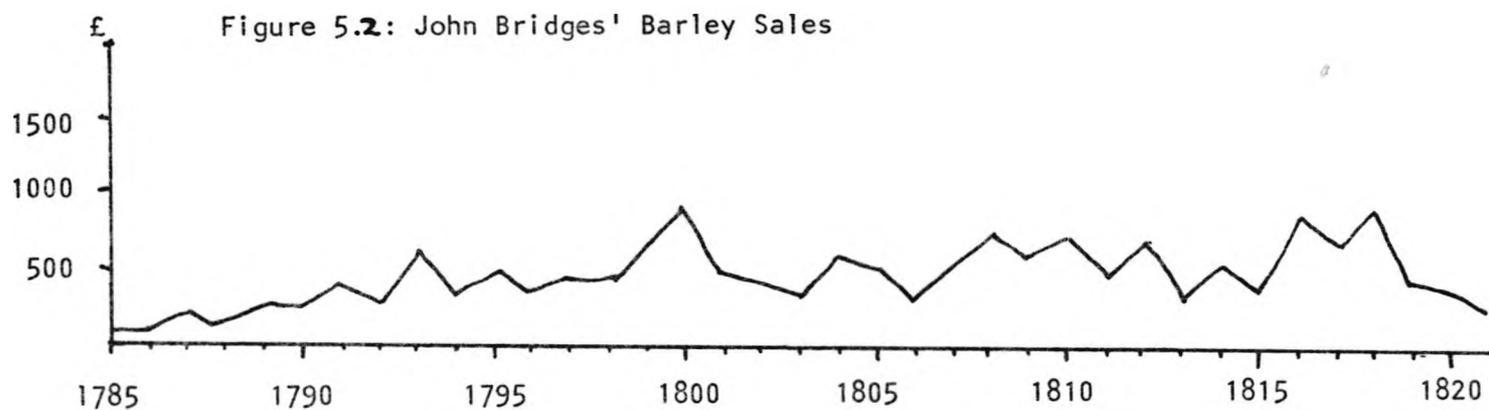


Figure 5.2: John Bridges' Barley Sales



Source K.A.O. U1231 E7-8.

FIGURE 5.3: John Bridges' Cattle Sales

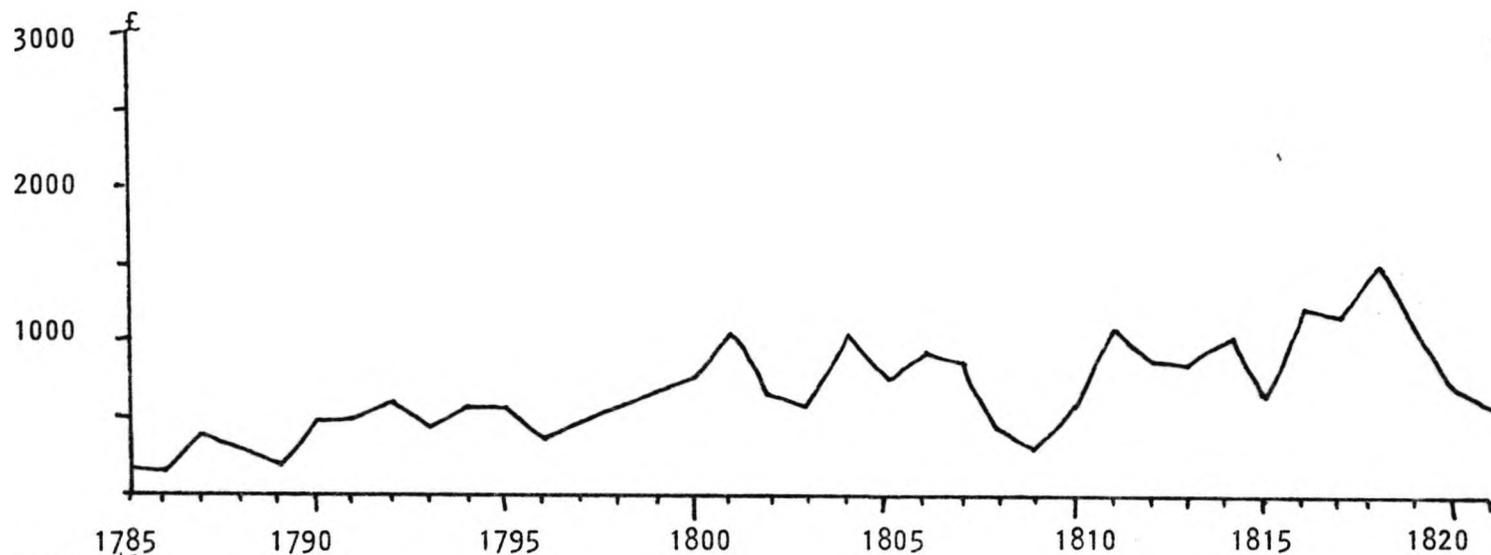
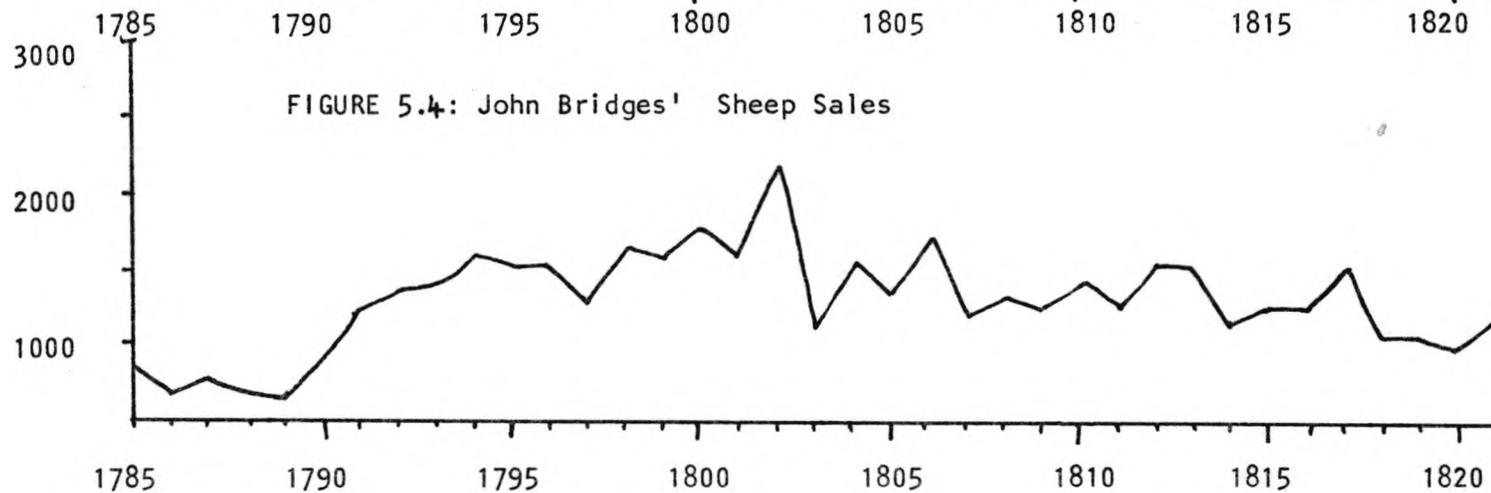


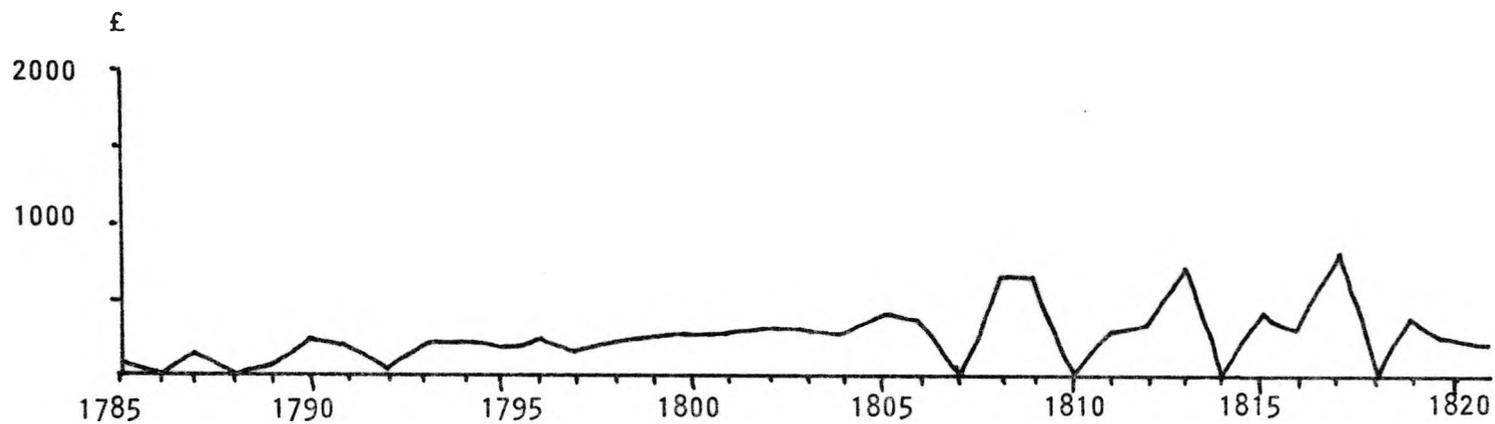
FIGURE 5.4: John Bridges' Sheep Sales



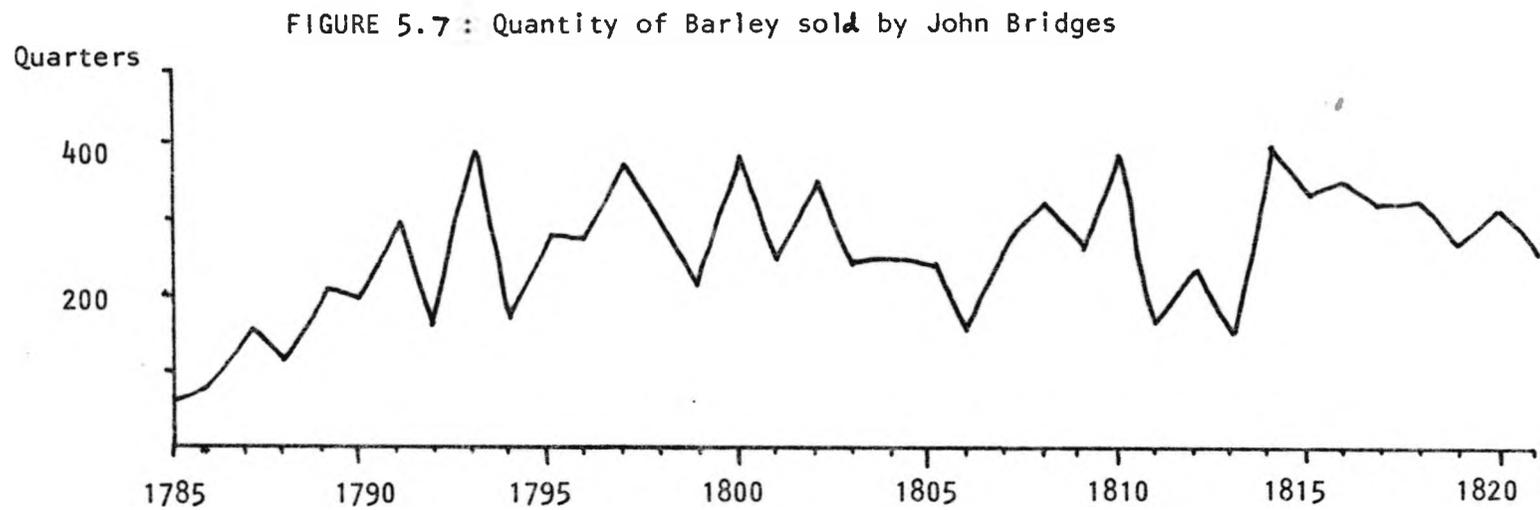
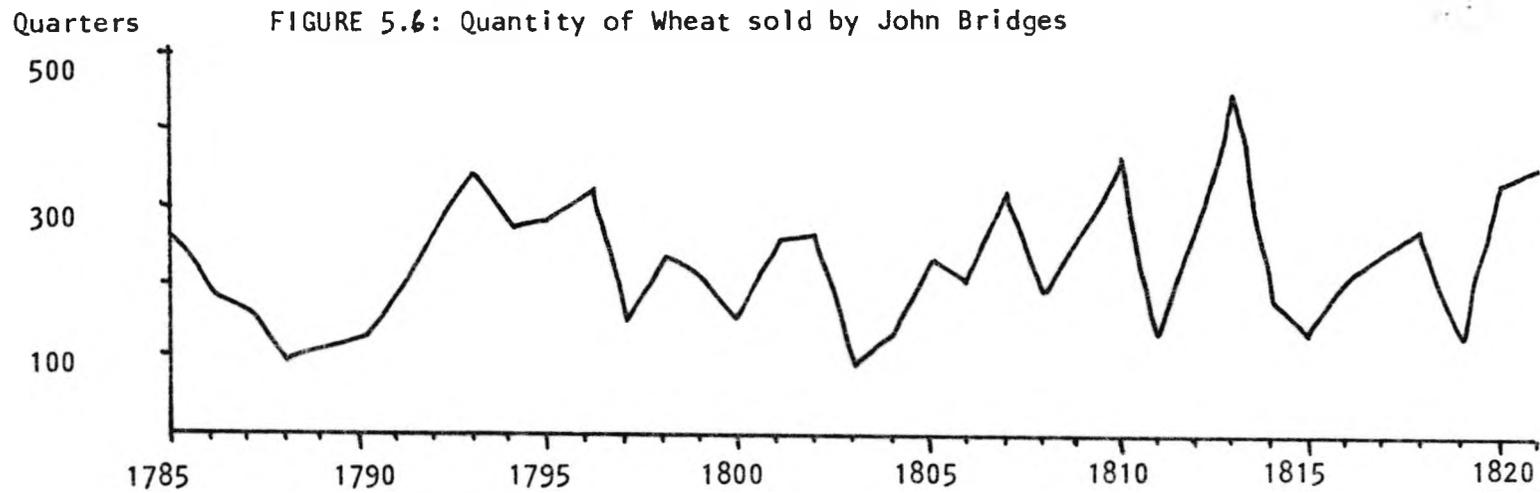
Source: K.A.O. U1231 E7-8.

-472-

FIGURE 5.5: John Bridges' Wool Sales



Source: K.A.O. U1231 E 7-8.



Source: K.A.O. U 1231 E7-8.

Between 1798 and 1806 the rents rose by 12 per cent and there were further rises after 1811. The rises appear to have continued until 1823. During the latter part of the war there was increasing expenditure by the landlord on repairs and improvements to the buildings on the estate. The problem of persistent arrears still remained and this may be a reflection of the smaller units on the estate compared with the Cowper estate. It may reflect an undercapitalisation by the tenants. The estate was obliged to make rebates in 1823. Some 16 per cent of rental due at Lady Day 1823 was rebated and this points to similar trends as the Cowper estate.

The farming accounts of John Bridges are discussed in more detail in appendix E but the main trends are set out in the accompanying figures. The main trends that emerge are the rise in sales of each of the main commodities between 1790 and 1800. Partly this reflects the building up of St Nicholas Court farm but the rate of increase would suggest that it was more than that. The other main trend was the decline in most of the main sources of income after 1818.

The trends observed from these three sources are confirmed by evidence given to various enquiries. In his evidence to the Board of Agriculture in 1816, John Boys reported that he had been obliged to give up farms due to the conditions. Sir Henry Oxenden reported that many occupiers were thinking of quitting and that abatements had been made by many landlords in the area. Thomas Curling from Thanet claimed that all improvements had ceased and ways of reducing the costs of cultivation

were being sought (1). The Select Committee on the Petitions Complaining of Agricultural Distress considered 21 petitions from Kent and heard John Lake of Bapchild give evidence that the state of agriculture was "declining beyond anything I recollect" (2). Further distress occurred during the 1830s. John Cramp from Thanet complained that the costs of cultivation had not fallen by as much as prices. John Neame, a steward in the Faversham and Canterbury areas, claimed that the previous decade had been difficult for farmers with rents having to be paid out of capital even though they had fallen by 10-20 per cent since 1822 (3).

The evidence would point to the period in which owner occupation was increasing being generally favourable for agriculture, with rising sales revenue and rentals. After 1816, things became rather more difficult and the diminution of owner occupation was associated with this period. The evidence presented by C. Clay would also suggest that after 1780 the price of land in relation to its return fell with a diminution from around 29 years purchase in the 1760s and 1770s to around 27 until the end of the century (4). The main period of growth in owner occupation is likely to have been one in which expected returns from land were rising and the relative costs of purchasing it were falling.

1. Board of Agriculture, The Agricultural State of the Kingdom in February, March and April 1816 (1816), pp 128-30, 135-6, 138-40.
2. B.P.P. 1821 IX, pp 68-77; B.P.P. 1822 V, p 65.
3. B.P.P. 1836 VIII pt I, pp 10-18; B.P.P. 1837 V, pp 84-6.
4. C. Clay, 'The Price of Freehold Land in the later Seventeenth and Eighteenth Centuries', Econ.His Rev, 2nd ser, XXVIII (1974), p 174.

At various times during the period there are indications that the system of taxation itself may have had an impact on the agricultural structure. The land and assessed taxes can be regarded as a cost in use of agricultural land and variations in these would have an impact on the profitability of estates and farms in much the same way as a change in revenue or a change in the cost of a farming input. Suggestions that it might be worth pursuing the changing impact of taxation on the agricultural structure come from several sources. For example, H.J. Habakkuk has argued that "in the diminution of the landed gentry the Land Tax occupies a central position". He drew attention to the fact that rentals did not rise by any great extent between 1692 and 1715 and that the land tax represented a heavier burden of taxation on landowners than any of the seventeenth century taxes and for a longer period of time (1).

The land tax was sometimes paid by the tenant and sometimes deducted by the tenant from his rent so that the tax was paid by the landlord. The latter practice was the more normal (2). G.E. Mingay has noted that the Duke of Kingston was able to shift the burden of the tax on to the shoulders of the tenantry during the 1720s, usually without making any compensatory adjustments in the

1. 'English Landownership 1680-1740', Econ.Hist.Rev., X (1940), p 9.
2. E. Laurence, *The Duty of a Steward to his Lord* (1727), pp 42, 131.

rent. In the 1730s and 1740s recession brought an end to this practice (1). On the Conyngham estate in Thanet it was normal in the 1750s for tenants to deduct the land tax from their rent. In 1756 John Swinford took possession of two pieces of marshland in Minster at an annual rent of 25 shillings with the tenant being responsible for paying "all sasses and scotts (except the King's Tax)". Surveys of the same estate in 1811 and 1815 reported that the tenants were responsible for paying land and sewers taxes (2). This raises questions as to where the burden of the tax really lay and, therefore, whether the land tax can be regarded as a tax on the proprietors or the occupiers.

The formal incidence of the land tax was on the occupiers. The tax was assessed on the property of the proprietors but the responsibility for its payment lay with the tenant. As we have seen in Chapter 2 in the Bethlehem Hospital case, if the landlord defaulted on his tax payments, then the distress was levied on the tenant's goods. The law did not lay down what arrangement the parties to the tax should make as to the apportionment of its burden, merely that the person who was physically present at the tax collection point should be responsible for its payment. The land tax could be said to have had a formal incidence on the tenantry but it would appear from the available evidence that the tax was normally

1. 'The Agricultural Depression, 1730-1750',
Econ.Hist.Rev., 2nd ser, XVII (1956), pp 331-3.
2. K.A.O. U438 E 31/5-6, E 45.

shifted from the tenant backwards to the landlord.

This does not wholly resolve the problem. The tax could only be said to bear upon the landlord if the rent paid by the tenant, whose lease made him responsible for the land tax, was less than the market rent in the absence of a land tax by the amount of the tax. Alternatively the gross rent received by the landlord who allowed his tenant to deduct the land tax would have to be the same as that which would be levied in the absence of the tax. The results of this depend on the elasticities of supply and demand for the land. The share of the burden by the tenant and the landlord will be in proportion to the ratio of the elasticities of the supply and demand for land (1). Where the demand for land is elastic, the landlord will bear the greater share of the burden, but will only bear the entire burden if the demand curve is perfectly elastic. The more elastic the supply curve for land, the more of the burden that will be borne by the tenant. The landlord will only bear the entire burden if the supply curve is perfectly inelastic. Elasticity of demand in the case of land tends to be related to the degree to which the consumer requires a specific location. In the case of agricultural users, this is less critical than for most other land uses, except in the case of a few specialised crops, such as hops. One would therefore expect to find a high degree of elasticity in the demand for land as tenants would be indifferent between the land offered by competing landlords providing any intrinsic quality differences were reflected in the rent. The elasticity of land in

1. An explanation of this point can be found in C.M. Allan, The Theory of Taxation (1971), pp 53-6.

total is minimal but the elasticity of supply to a particular use allows the possibility of substitution for another use. For most areas it is likely that this would be limited, but in areas of reclamation or urbanisation this would not be the case. The conclusion would appear to be that in most areas the elasticity of demand for land was likely to be elastic and the supply of land inelastic, and therefore that the bulk of the tax burden would be borne by the landlord. It is unlikely that the tax burden would have been borne by landlords in its entirety as this would depend on unrealistic assumptions about the elasticities of demand and supply. In some areas and for some crops it might be expected that the burden on the tenant was much greater.

This argument would point to the land tax mainly affecting landlords and this was supported in the contemporary literature. For example an anonymous pamphleteer in 1732 wrote:

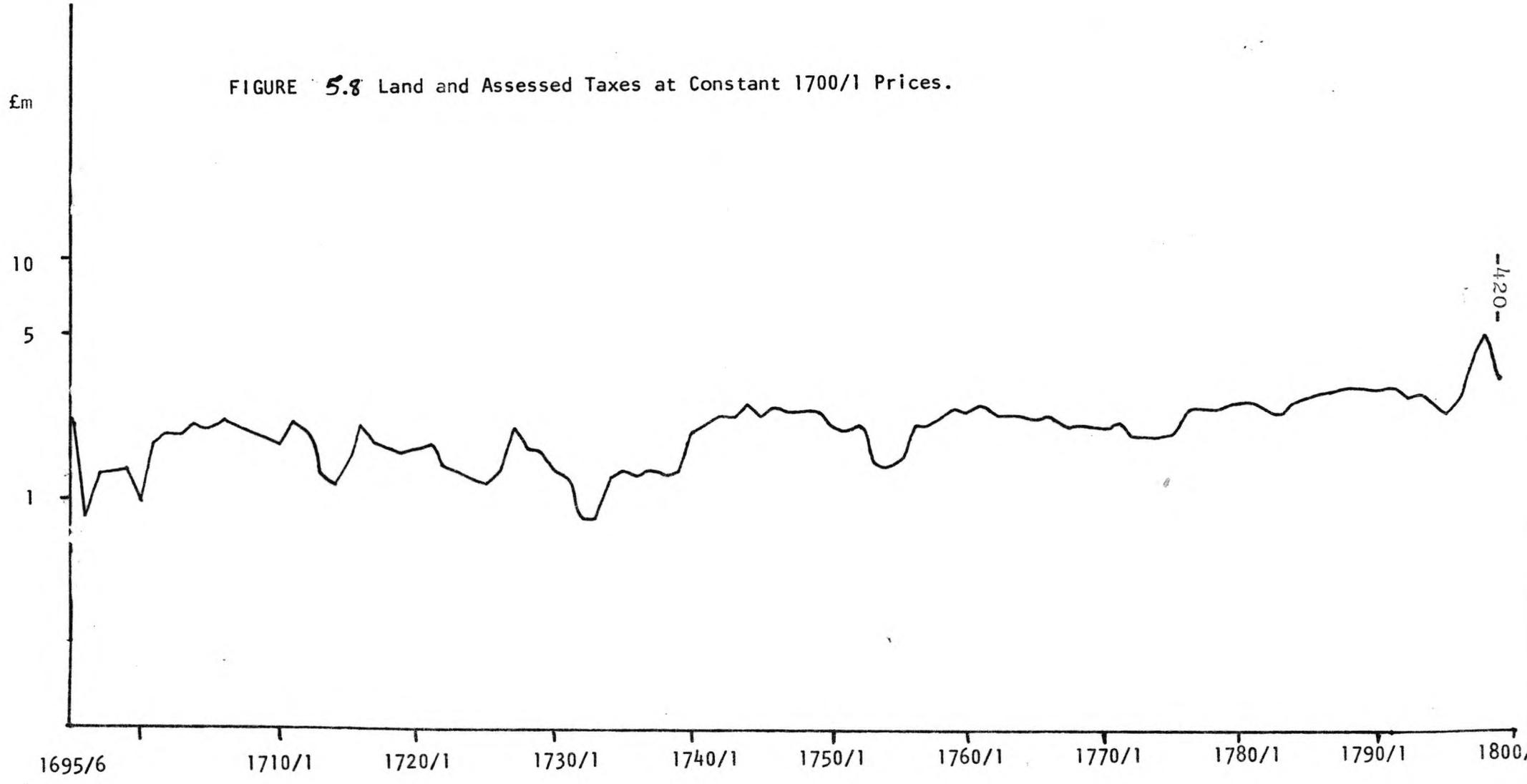
The Land Tax is a partial tax, so it falls on that part of the people who not only bear their proportion of all other publick taxes, but are subject to the Repairs of Churches, the Relief of the Poor, the Amendment of the Highways, and several other extraordinary incumbrances in the respect of parishes where their land lie: for tho' these charges are paid immediately by the occupier, yet they fall ultimately on the landlord; who is obliged on those accounts to let his land so much the cheaper (1).

This is also the conclusion reached in historical writings.

The burden of taxation can be measured in a number of ways but the evidence that is available is fairly limited. In chapter 2 it was shown that the revenue from the land

1. The Case of the Salt-Duty and the Land-Tax offered to the consideration of every freeholder (1732), pp 9-10.

FIGURE 5.8 Land and Assessed Taxes at Constant 1700/1 Prices.



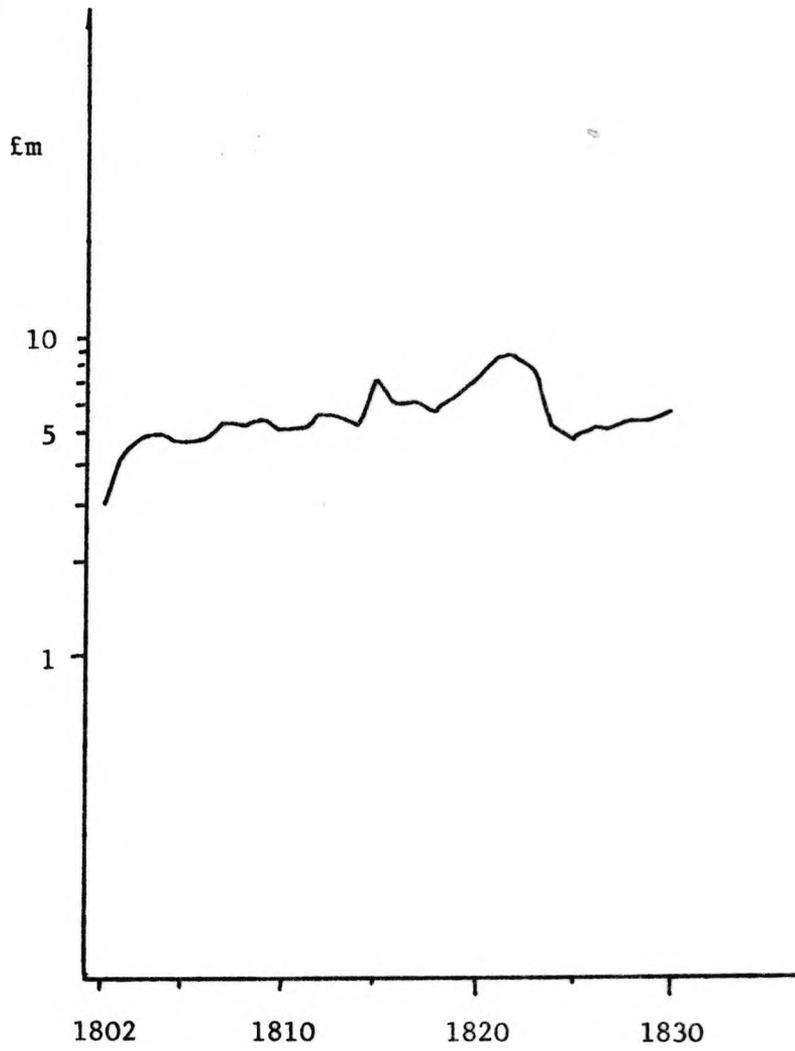


FIGURE 5.9 : Land and Assessed Taxes at
1820-5 constant prices

and assessed taxes rose gradually during the course of the eighteenth century but rapidly after the beginning of the Napoleonic War. These also brought the introduction of income and property taxes with an incidence similar to the ones laid down originally for the land tax.

In order to ensure that changes in prices can be removed as an influence on the trends of the burden of the land tax, the figures have to be corrected for changes in the purchasing power of money. This is done in figures 5.8 and 5.9 which show the revenue from the land and assessed taxes at constant prices. The revenue for the eighteenth century has been corrected by means of the Gilboy-Schumpeter index of producers' and consumers' goods and that for the early nineteenth century by means of the Gayer-Rostow-Schwartz index (1). The figures can be compared with those presented in chapter 2 for current prices.

While the figures for individual years have been affected by price changes the trends have been relatively little altered. The main variations in the revenue until 1787 were due to changes in the rate at which the land tax was levied. The growth in revenue in money

1. F.B. Schumpeter, 'English Prices and Public Finance, 1660-1822', *Review of Economic Statistics*, XX (1938), p 32.
E.W. Gilboy, 'The Cost of Living and Real Wages in Eighteenth Century England', *Review of Economic Statistics*, XVIII (1936), p 136.
A.D. Gayer, W.W. Rostow & A.J. Schwartz, *The Growth and Fluctuation of the British Economy 1790-1850*, Oxford (2 vols, 1953), I, pp 467-85.

terms after 1778 can be seen to have only kept pace with prices until 1798. In real terms the taxes show a more rapid rate of growth during the early part of the Napoleonic Wars than in money terms and this growth was maintained until the early 1820s. The fall in prices after the cessation of hostilities was more rapid than the fall in revenue. The fall in real revenue during the 1820s reflects the reductions in the assessed taxes, but the yield rose in real terms at the end of the period as prices continued to fall. The analysis suggests that in real terms the land and assessed taxes did no more than maintain a constant yield during the course of the eighteenth century, a reflection of their low income elasticity. During the Napoleonic Wars increases in the rates at which the assessed taxes were collected served to produce substantial real increases in revenue that were maintained until after the wars. This evidence lends support to the complaints by farmers that they were under pressure from the burden of taxation after the peace of 1815, as in real terms this rose at a time when their revenues were falling (1).

In chapter 2 it was shown that the burden of the land tax diminished throughout the country as it remained at a maximum rate of four shillings in the pound and in the absence of reassessment could not tap the growing wealth of the country. The extent of the decline in the burden was measured by comparing the land tax assessments with those made for the property tax. The extent of the decline

1. Board of Agriculture, The Agricultural State of the Kingdom in February, March and April 1816 (1816), p 18.

in the tax burden for the land tax varied between areas according to the extent of economic growth. Over most of Kent the land tax valuations stood at between 20 and 35 per cent of the property tax ones in 1815. Although the land tax may have diminished as a burden, other taxes came to be imposed instead. Detailed figures on the burden on particular landlords is difficult to obtain but in some cases this can be done from estate accounts. The position is complicated by the formal incidence of the land tax sometimes being imposed on the tenant by a lease and subject to the qualification that the degree to which the incidence of the tax could be shifted would depend on the elasticities of supply and demand for land. As these may vary between areas, the figures may only give the formal burden of the tax rather than the real one.

The proportion of income taken in direct taxation over the period has been calculated for the Coke estates (1). On the Norfolk estates between 1708 and 1710 the land tax took 17.3 of the gross rents. During these years the land tax stood at four shillings in the pound, and even over the period 1717-18 when the tax was levied at two and three shillings, it still took an average of 13.3 per cent of gross income. These figures show that at the beginning of the eighteenth century the land tax was taking almost its full formal incidence (2). The proportion

1. R.A.C. Parker, 'Direct Taxation on the Coke Estates in the Eighteenth Century', Eng.Hist.Rev, LXXI(1952); Coke of Norfolk: A Financial and Agricultural Study 1707-1842, Oxford (1975), pp 3, 127-8.

2. See also Habakkuk, op cit, p 9.

fell to 9.3 per cent in 1722 and to 3.5 per cent in 1733 when the rate was one shilling in the pound. During the Seven Years War the proportion rose to 10.9 per cent and during the American War of Independence to 8.6 per cent. In 1793 it took 8.0 per cent at a rate of four shillings in the pound. The trend was reversed during the Napoleonic Wars. Land and property taxes took 13.3 per cent of income 1807-16 with a peak of 14.9 per cent in 1807-8. In addition to these there were the assessed taxes. In 1807 they amounted to £564 compared with an average annual income of £40,776 between 1807 and 1816. It would appear that even during the Napoleonic Wars taxation was a lower burden than at the beginning of the eighteenth century.

Figures from Kentish estates would suggest a similar pattern to the Coke estates. On the Conyngham estates in Thanet the land tax took 9.4 per cent of gross rentals in 1779/80. Redemptions of the land tax reduced the burden after 1798 so that in 1806 the proportion taken had fallen to 2.2 per cent, although the gross rental had only increased from £1784 to £1982. The property tax took 15.8 per cent of gross rentals 1807/8 (1). Lord Cowper redeemed the land tax on his estate centred in Wingham during 1799. In the previous year it had amounted to 12.2 per cent of his gross rental on his Kentish estate. The property tax between 1803 and 1816 took 7.4 per cent of his gross rentals (2). St Nicholas Court Farm in St Nicholas at Wade was rented by John Bridges from Mrs. Finch. Between 1792 and 1795 the land tax took 9.8 per cent of its rent. In 1796 the farm was

1. K.A.O. U 438 E20, E1.

2. K.A.O. U 449, E13.

divided between Mrs. Mary and Mrs. Judith Finch. On the section owned by Mrs. Judith Finch between 1796 and 1810, when John Bridges acquired the property, the land tax averaged 9.0 per cent of the rent. Between 1806 and 1810 the property tax took 7.7 per cent of the rental so that in those years land and property taxes took 15.7 per cent of the rental (1). These figures are of similar order of magnitude to those derived from the Coke estates and confirm the increase in tax burden during the Napoleonic Wars compared with the later part of the eighteenth century. They remain below those experienced on the Coke estate at the beginning of the eighteenth century suggesting that the secular trend in the taxation of landed incomes was downward over the period.

In addition to the burden of the taxes there were also compliance costs. These mainly took the form of the burden imposed on the voluntary officials involved in the administration of the taxes, such as the assessors and commissioners, and the costs imposed on the taxpayer in meeting his obligations. Some idea of the extent of these can be gained from the diary of an assessor at Dover, Thomas Pattenden. In 1798 he was involved on nine days in assessment business. In addition he records that he was involved in discussions on the taxes, including studying the acts, on a further three days. On none of the days did he spend the complete day on taxation business but the number of hours spent on it was substantial. Delivering the assessment notices to taxpayers took two days. He worked for five hours on the first day at this in conjunction with three other assessors. Working out

the assessments took three days and he worked for seven hours on this on the first day. Some idea of the compliance costs on the taxpayer can be gained from when Pattenden came to redeem his land tax. This involved four separate visits to the clerk or commissioners to obtain the necessary documents and carry out the procedures (1).

It is possible to offer some impression of the proportion of the population paying direct taxes at the beginning of the eighteenth century as comparisons can be made between the land tax assessments and the assessments made for the duties on baptisms, marriages, and burials. Both have survived for some parishes in the St Augustine East division of Kent.

Table 5.10 shows the proprietary interests of households in six

Table 5.10 Proprietary Interests in East Kent, 1705

Parish	Percentage of households assessed as land tax proprietors	Percentage of proprietors resident in parish	Percentage of land tax paid by resident proprietors
Adisham	27.3	21.4	7.0
Guston	15.0	25.0	5.6
Monkton	15.4	18.2	4.1
Worth	6.9	4.1	1.2
Sutton	5.9	5.3	3.3
Womenswold	8.7	12.5	27.3

Source: K.A.O. Q/CT1, Q/CTz 2.

of the parishes. A proprietary interest is defined as appearing in the proprietors' column of the land tax assessments and does not relate just to interests in land,

1. Dover Public Library, Thomas Pattenden's Diary.

though this would be the principal component. The first column indicates that only a small proportion of the households resident in a parish had a proprietary interest in their parish, though some would have had such an interest in another parish. The second column shows that most of those with a proprietary interest in the parish were non-residents while the third column shows that the interests of residents amounted to a small proportion of the total tax burden of the parish.

In table 5.11 the interests of residents of the parishes as occupiers of taxable property are shown. The main feature

Table 5.11: Residents as Occupiers of Taxable Property, 1705

Parish	Percentage of households appearing as occupiers	Percentage of occupiers resident in parish	Percentage of land tax paid on property occupied by residents
Adisham	95.5	65.6	80.1
Guston	35.0	58.3	85.7
Monkton	56.4	45.8	78.8
Worth	55.2	36.4	71.7
Sutton	41.2	36.8	77.3
Womenswold	60.9	73.7	73.0

Source: K.A.O. Q/CT1, Q/CTz 2.

to emerge is that residents of the parishes were of more significance as occupiers of taxable property than as its proprietors. On average over half the households resident in each of the parishes occupied taxable property within the parish. On average they accounted for over half the total number of occupiers in the parish and occupied in excess of seventy per cent of the property by taxable value. The analysis would suggest that only a small proportion of

the population was formally assessed to the land tax though the majority of households would be affected by the collection process being the occupiers of taxable property and hence responsible for payment to the parochial collectors. The proportions of the households being recorded as the proprietors of taxable property would indicate that direct taxation in the eighteenth century assessed a proportion of the population between that of an under-developed and industrial economy today.

The paucity of subsequent listings of the population make it difficult to compare the results for 1705 with those for a later date. The absence of lists means that residents cannot be separated from non-residents in the tax assessments with any confidence. It is possible though to reach some conclusions about the extent to which the assessed taxes affected the population from assessments for the St Augustine East division for the financial year 1788-9. The assessments list all those who were assessed to the assessed taxes for each parish. Although some of the assessments would have related to non-residents, for example horses or waggons kept on a farm within the parish by the resident of another parish, the lists are likely to have mainly been of residents. Not all residents would have been listed. Those who were exempted from the window tax through poverty and those in multi-occupied dwellings where the landlord was liable for window tax would not have been listed. As an indication of how extensive these groups are likely to have been, the assessment for Denton lists seventeen persons as assessed to the assessed taxes and another seven who were too poor to pay the window tax.



Table 5.12: Percentage of Taxpayers paying each assessed tax, 1788

Parish	Number of Taxpayers	Window Tax	Inhabited House Duty	Male Servants	Female Servants	Pleasure Horses
Gt. Mongeham	26	89	12	4	8	31
E. Langdon	11	100	0	0	0	18
Northbourne	38	97	13	0	3	32
Ripple	14	100	21	14	14	50
Sutton	8	100	0	0	0	38
Shoulden	43	100	14	2	0	16
Adisham	17	100	12	6	6	35
Ickham	30	97	20	7	17	23
Littlebourne	33	97	42	3	15	37
Staple	42	100	5	3	10	14
Wickhambreux	23	100	22	4	4	26
Barfreston	10	100	0	0	10	30
Denton	17	94	0	0	0	18
Eythorn	38	95	13	11	16	42
Minster	41	100	24	0	0	49
Parish	4 wheel carriages	2 wheel carriages	waggon	carts	shops	
Gt. Mongeham	4	0	23	27	0	
E. Langdon	0	0	55	36	0	
Northbourne	0	0	26	21	0	
Ripple	7	0	36	50	0	
Sutton	0	0	50	38	0	
Shoulden	0	0	12	12	0	
Adisham	0	0	47	24	0	
Ickham	6	3	37	40	0	
Littlebourne	0	3	21	42	18	
Staple	0	0	14	29	0	
Wickhambreux	4	4	48	61	4	
Barfeston	0	0	20	3	0	
Denton	0	0	24	12	0	
Eythorn	0	0	18	37	0	
Minster	0	7	39	41	0	

Source: K.A.O. Q/CTz.

The percentage of persons assessed to the assessed taxes paying each of the taxes in fifteen parishes in the division is shown in table 5.12. Almost all those on the assessments paid the window tax. The main exceptions being residents of other parishes with taxable property in the parish and bachelors, usually keeping a horse, who probably resided as part of another household. Comparatively few dwellings in 1788 were also liable to the inhabited house duty. This would indicate that most households occupied houses worth less than £5 per annum. The taxes to affect the greatest number of taxpayers were those on pleasure horses, carts, and waggons. The incidence of these would have been higher still had the duties on horses included at this stage duties on husbandry and draught horses. Even so these duties only affected a minority of the taxpayers. The duties on servants and carriages were paid by a very few taxpayers, mainly the clergy and those described as gentlemen. The assessed taxes would appear to have fallen into three groups. Firstly the window tax taxed almost every household other than those too poor to be assessed to church and poor rates, or living in a multi-occupied dwelling where the landlord was responsible for payment. Secondly, duties like those on carts, waggons, and pleasure horses affected between thirty and forty per cent of those assessed to the window tax and fell on farmers and businessmen like malsters. The third group of taxes comprising the duties on servants, carriages, and inhabited houses fell on less than twenty per cent of the taxpayers. They were paid by the gentry.

VI

Finally in this chapter the impact of economies of scale and agricultural growth are considered. Economies of scale could bring a trend towards larger units in agriculture. Agricultural growth could lead to a situation in which all units would grow at an equal proportional rate. This would mean that the larger units would grow at a larger absolute rate than the smaller ones, and, over time, this would lead to a greater concentration of the industry into fewer larger units.(1)

The main sources of economies of scale in the agriculture of the period were technical economies arising from production, financial economies, and access to innovations. The technical economies arose through the more efficient use of equipment, horses, and manpower on an optimal farm. There is some evidence to suggest that economies of scale in the use of equipment increased during the eighteenth century in Kent. The basic piece of capital equipment on an arable farm, the plough, was not a particularly important source of such economies. The usual plough in use in the area was the Kentish turnwrest plough. This has been universally condemned by commentators from outside the county. Arthur Young, for example, described it as being "exhibited in all its barbarity" and "beneath contempt". He was unimpressed by the furrows it produced except when it was at work

1. For further discussion of this point see S.J. Prais, The Evolution of Giant Firms in Britain: A Study of the Growth of Concentration in Manufacturing Industry in Britain, Cambridge (1976).

on steep hills or laying down land to pasture (1). But as Hall and Russell wrote:

Every agricultural writer has inveighed against the Kentish plough with its three and four horses, a boy to lead, and a man to hold, and every newcomer into the county has begun his farming by replacing it by a modern iron plough. Yet he often recalls it, and since the instrument survives it must possess some good qualities to compensate its acknowledged wastefulness of labour. (2)

During the period experiments with other ploughs proved fruitless though there was some tendency to replace it after 1816 in order to reduce the costs of cultivation by reducing labour costs (3).

The turnwrest plough had a number of features that made it particularly suitable for Kentish conditions. On sloping land, it was able to turn the soil to either side and the shallowness of its furrows reduced soil erosion. The weights could be adjusted so that the furrow depth was in accordance with the depth of the soil. The absence of wheels meant that it was less liable to become clogged up in wet weather on heavy soils and enabled these soils to be worked out of season. The plough tended to be damaged less by the embedded stones that tended to be found in the clay with flints soils than did iron

1. 'A Tour in Sussex', Annals of Agriculture, XI (1789), pp227-8.
2. A.D.Hall & E.J.Russell, A Report on the Agriculture and Soils of Kent, Surrey, and Sussex (1911), p22
3. J.Boys, General View of the Agriculture of the County of Kent, (2nd edn, 1805), pp52-3; Board of Agriculture, op cit, p139.

ones. The plough was valuable on light soils. The heavy sole of the plough and the weight of its team of two to six horses packed the soil into an ideal seedbed, compact on top and crumbling underneath. The ability to plough a furrow seven inches deep was beneficial in an area with a substantial summer deficit of moisture. The plough could be readily adapted into a broad-sharing one for the removal of surface weeds.(1) The operation of the plough did allow for economies of scale as the manpower and number of horses it used were variable. On a light soil it could be worked with two horses, but to get the maximum benefit from the weight of the plough more would have to be used. The main feature of the plough was that it was cheap and easy to maintain. It was adaptable to different scales of operation.

The use of other items of equipment was more subject to economies. The development of the cultivation of beans as a cleaning crop and as a preparation for wheat was accompanied by the adaption of the shim for cultivating beans in rows instead of hops. From 1680 its use spread (2). The use of drills in sowing spread during the 1780s (3). Developments of this sort involve the use of capital equipment which is used for only a limited part of the

1. Hall & Russell, op cit, pp22-3; W. Marshall, The Review and Abstract of the County Reports to the Board of Agriculture, V (1818), p436; J. Boys, General View of the Agriculture of the County of Kent (1st edn, 1794), pp21-2.

2. Baker, op cit, p212.

3. e.g. Annals of Agriculture, VI (1786), pp39-43.

year. The period when it was in use involved a highly intensive use. Economies of scale arise through the ability to finance the capital equipment over the period when it is not in use and in having sufficient to meet the peak demands.

Horses were subject to economies of scale by virtue of the costs of running a team. John Boys in 1797 estimated that each horse cost £41 per annum to keep. Of this only 56 per cent of the costs can be regarded as variable costs that were dependent on the number of horses kept. The remainder were fixed costs that would not alter significantly with the number of horses in use on a farm. These included the wages of the waggoner and his mate, farrier's bills, and collar making. In addition to the costs of the team there would also be the costs of the implements and their maintenance and these are not likely to have altered significantly with the number of horses (1).

Economies of scale in manpower can be illustrated by livestock farming. A shepherd's wages could be spread over the returns from several flock sizes. In this respect, the critical element was probably the number of lambs rather than the number of ewes, so the economy of scale would arise from higher lambing percentages.

The financial economies of scale arise from the diversification of resources so that the farmer was not wholly dependent on farming as his source of revenue. For example in 1816, John Boys was able to draw upon his

1. Annals of Agriculture, XXVIII (1797), pp416-19.

investment with the Commissioners of Margate Pier to pay his property tax when his crop failed to yield sufficient to pay the parish taxes or his labourers' wages (1).

Economies of scale can be seen in the diffusion of knowledge and hence the possibility of speed in innovation. It was the larger farmers who were able to keep in touch with developments outside their locality. The Kent Society for the Encouragement of Agriculture and Industry was founded in 1793 and can be seen to have drawn its membership from the gentry and more substantial farmers in east Kent (2). Robert Legrand of Ash was a member of the Odiham Society of Agriculture, John Boys and William Wyborn were members of the Smithfield Cattle and Sheep Society, and amongst those attending the Woburn Sheep Shearings were William Bushell of Ash, Ambrose Harnett of Minster, and Charles Matson of Wingham (3).

One way in which agricultural growth can be examined is to look at changes in agricultural productivity. There are a large number of scattered references to the yields from particular agricultural enterprises and appendix F contains a number that have come to light for Kent. No claims are made for the comprehensiveness of the list given in appendix F as they tended to be those that came to

1. Board of Agriculture, op cit, p 128.

2. Lists of the membership can be found in Annals of Agriculture XIX (1793), pp541-8; XXI (1793), pp385-409.

3. Annals of Agriculture, V (1786), p287; XXXIV (1800), pp347-60; XXXV (1800), pp225-57; XXXVII (1801), pp193-226.

hand during the course of this study rather than as a result of specific searches. They have been confined to those statements that are specific to a location and a date and so exclude the more general comments of the textbook writers.

The approach adopted has been derived from the work of B.H.Slicher van Bath (1). Emphasis is placed on the number of yields and the trends that they reveal rather than in the specific details of each item. Each is subject to problems in its interpretation as its accuracy is suspect and it may not be representative. However, it is with the directions of the trends rather than the details that these figures are concerned with. Generally it has proved easier to find figures relating to arable rather than to pasture farming. One of the main series for pasture farming, the lactation rate, is wholly unknown for Kent at this time, probably due to the county's unimportance as an exporter of dairy produce. The arable yields have been left as yields per acre rather than being converted into yields per unit input of seed. The available evidence would suggest that the sowing rates per acre were fairly constant over the period. The normal sowing rate for wheat is reported in most sources as three bushels per acre, rising to four bushels where the seed was drilled. A small complication is caused by the difference between the Kentish and the Winchester bushel. It is rarely clear which was used and so the figures are subject to a 5 per cent error

1. 'Yield Ratios 810-1820', A.A.G. Bijdragen, X (1963); 'The Yields of Different Crops (mainly cereals) in relation to the seed c 810-1820', Acta Historiae Neerlandica, II (1967).

on this account. Some isolated figures of yields for minor crops have not been included in the series.

The wheat yields show that the level of yields recorded at the end of the seventeenth century were still being experienced at the beginning of the nineteenth. The normal range of yields at the end of the seventeenth century was between 2 and 2.75 quarters per acre. During the mid part of the eighteenth century something of a divergence between the performance of particular areas seems to have developed, with the yields in Thanet being reported as over 3 quarters per acre while the range of yields at Hogshaw farm was between 1.6 and 2.7 quarters. The divergence between the best and worst performance appears to have become more marked during the course of the century and is brought out most strongly in those sources which reveal yields for a number of areas during the same year. For example the 1801 crop returns show that the yields could vary between 6 quarters per acre on the Romney Marsh and 2.5 quarters in the Weald. The trend suggested is that wheat yields rose from six to seven times the seed input to eight to nine times during the course of the eighteenth century.

Barley yields show a similar pattern to those of wheat yields, with a rise of, perhaps one third, during the course of the century. Again there is a marked discrepancy between the best performances and the worst, with the results for the individual farmers recorded in sources such as the Annals of Agriculture tending to exceed those for the more general sources such as the 1795 harvest enquiry. The trends for oats, beans, and peas are similar to those for barley. A rise in productivity of about one

third during the eighteenth century is indicated but with a wide variety of experiences. At the end of the century there were areas still with the same yields as were recorded at the beginning of the century and with the best performances with up to double the yields of the worst ones.

The series for fleeces is much shorter than that for the arable crops and so trends cannot really be derived. It does point to the variety in the yields from different breeds which can be confirmed by reference to the textbook writers (1). The differences between breeds makes comparison with other areas difficult. Robert Loder at Harwell in the early seventeenth century obtained 1.3 lbs of wool for each of his sheep (2) but these would not be Romney Marsh sheep with their heavy fleeces.

This examination of the economies of scale in agriculture and the changes in productivity suggests that there were economies of scale to be reaped at the time and that the better farmers could have a much higher productivity than the poorer ones. Overall there are signs that there was a slow improvement in productivity during the eighteenth century. However, the trends outlined are such that they would be likely to have only a slow impact on the agricultural structure. There seems to be no reason why they should not have occurred at a time of relative stability in the distribution of farm and estate sizes.

1. For example G.Culley, Observations on Livestock (3rd ed, 1801), pp106-51.

2. B.H.Slicher van Bath, The Agrarian History of Western Europe A.D. 500-1850 (1963), pp286-7.

VII

This chapter has examined the trends in landownership and occupation in the St Augustine East division, mainly between 1780 and 1831. The main feature of this was an increase in owner occupation, particularly between 1790 and 1814, as has been noted in other studies. In east Kent, this increase seems to have begun from a higher level of owner occupation than was the case in the Midlands, especially in the old enclosed parishes. Between 1822 and 1831 there seems to have been something of a reversal of the trend. There were few discernable trends in farm and estate sizes over the period even though examples can be found in the area of estates growing and farm sizes being increased. This would suggest that the trends were not on a sufficient scale to have an impact on the agricultural structure.

In view of the divergent trends present in the area a regression analysis was carried out to see which elements of the agricultural structure were most closely related. This revealed a characteristic pattern for certain parishes of many proprietors and occupiers, low mean farms and estates, and a more even distribution of the land. Some of these elements were found to be related to the size and density of the population. In 1780 owner occupation was associated with a high mean farm and estate and an uneven distribution of the land. This pattern broke down with the increase in owner occupation.

The trends from the estate rentals and farm revenues in the area are similar to those elsewhere. Rentals rose during the Napoleonic Wars to reach a peak around 1815. Thereafter rentals fell, arrears rose, and there are strong indications of recession, especially during

the 1820s. The rise in owner occupation would appear to have taken place at a time when the prospects in agriculture were good and the price of land in relation to its return was low.

There is evidence of economies of scale in agriculture at this time and a slow growth in agricultural productivity. Yields would appear to have risen by about one third during the eighteenth century but of more consequence is the divergence between the best and worst performances during the latter part of the century. However the impact these seem to have had on the agricultural structure seems to have been modest.

CHAPTER 6

THE AGRICULTURAL STRUCTURE AND THE
AGRICULTURAL SYSTEM 1790-1801

This chapter traces the relationships between the agricultural structure and agricultural production in the St Augustine East division. The analysis is confined to the period 1790 and 1801. This is due to the availability of data. As the intention is to produce precisely measured relationships, the study has to be confined to that period for which there are sufficient statistics to make it possible. The techniques used in the chapter cannot be applied to non-quantitative material. The chapter begins by an examination of the theoretical relationships between landownership and occupation and types of farming. It goes on to consider the main sources available for such a study. The nature of farming in the area is demonstrated using the 1795 harvest enquiry and the 1801 crop returns, and the resulting patterns are compared with the data on landownership and occupation derived from the land tax assessments. Finally the relationships are subjected to factor analysis in order to discover how these relate to each other.

I

The existence of relationships between the agricultural structure and agricultural production is suggested by a number of pieces of evidence. Table 6.1 shows the differences in input requirements for different agricultural enterprises in 1977. Differences between the enterprises can be seen in terms of income per hectare, labour input per hectare, and the size of the farms. Similar evidence can be produced from historical data. For example, J. Thirsk has drawn attention to the larger size of farms in the uplands of Lincolnshire compared with the marshland and the fens. These differences in the agricultural system may be related to differences in the cropping patterns between the areas, with the main area for oats being the

fenland, for barley being the upland, and wheat being the marshland (1).

Table 6.1. Differences in Input Structures between Enterprises in England and Wales, 1976/7.

<u>Type of Farm</u>	<u>Income per ha</u> <u>(£)</u>	<u>Standard Man-</u> <u>days per ha</u>	<u>Area</u> <u>(ha)</u>
Specialist dairy	152	9.7	52
Mainly dairy	109	3.1	86
Livestock, mainly sheep	19	0.3	258
Livestock, cattle & sheep	61	3.7	112
Cropping, mostly cereals	67	1.9	148
General cropping	180	2.9	94
Mixed	135	1.0	105
Pigs and poultry	280	1.4	48
Horticulture	210	4.5	24

Figures are the average for full-time farms (275-4, 199 standard man-days).

Source: M.A.F.F., Farm Incomes in England and Wales, 1977 (1978).

The evidence suggests that it would be worthwhile trying to establish the degree to which patterns of landownership and occupation are determined by the nature of agricultural production functional to an area. It suggests that different enterprises may give rise to distinctive input requirements, and these could be reflected in the agricultural structure.

The plausibility of the hypothesis is suggested by the theoretical structure it implies. Each agricultural enterprise has a production function which shows the technological relationship between inputs and the output.

1. English Peasant Farming: The Agrarian History of Lincolnshire from Tudor to Recent Times(1957), chs 10,11,12.

It reveals the greatest output that can be produced from a given input mix under conditions of constant technology. Sub-optimal combinations are reflected in higher costs and, hence, in reduced competitiveness. The hypothesis can, therefore, be translated to mean that each agricultural enterprise gives rise to a particular input requirement. This will be reflected in the supply of inputs by landowners and occupiers and, hence, in the forms of landownership and occupation. The causal link between landownership and occupation and agriculture will lie through inputs, such as the land and fixed capital supplied by the landowner, and the working capital, family labour, and entrepreneurship supplied by the farmer. Inputs, such as hired labour, supplied from outside the firms in the industry, would not provide the necessary causal link with landownership and occupation, but might be expected to vary in association with the inputs supplied by landowners and occupiers. (1)

The production function for an enterprise contains a series of resource-product relationships, enabling the relationships between inputs, such as land, and outputs such as wheat or wool, to be established (2).

1. For example, D.K. Britton and B. Hill have found that labour input correlates with land input. The labour input here includes both hired and family labour. They examined the relationship between farm size as measured in terms of the standard man-day labour input and in acres, and reached the conclusion that "on average there is a strikingly regular relationship" between the two - Size and Efficiency in Farming (1975), pp 19-23.
2. For additional explanation of the terms used see M. Upton, Agricultural Production Economics and Resource Use (1976).

These reveal the changes in output resulting from changes in inputs, and establish the technological aspects of the demand for each factor of production.

If one factor of production is varied while the others remain constant, then its impact on production can be isolated. The range of inputs over which production will take place is bounded by three conditions. The first derivative of the marginal product must be less than zero but the value of the marginal product must be greater than zero. The first derivative of the average product must be less than zero. Finally, the marginal product must be less than the average product. Production outside these limits is irrational for a competitive firm. If a greater quantity of the input is selected, then the firm will be using more resources to produce a given output than if it remained within the desirable range of the input. If a lower input level is selected then the firm will be obliged to pay a higher reward to the factors than their marginal product would justify. A competitive firm will seek to produce up to the point where the marginal revenue derived from a factor of production will be equal to the marginal cost. At a input level below the desired one, the average revenue paid to the factor will exceed the average product, if this maxim is followed.

In most situations there will be more than one variable factor. In the long run all factors can be varied but in the short run some will be fixed. For example, it is likely that the land input will be fixed in the short run. In the long run, additional land may be purchased or hired, or land transferred from another enterprise. Land was normally hired with at least six months notice being required to quit. Even this could understate the time need to integrate new land into an

enterprise. Recent research has indicated that larger farm units may not be as efficient as those they replace for some time after their creation due to the increase in fragmentation that amalgamation initially brings (1). Within existing holdings, land may not be very elastic between enterprises due to factors such as rotations and the suitability of land for different products. For example, if a farmer decides to plant additional spring corn because the land in the autumn was too wet to plough for winter wheat, he will be faced with a period of four to five months when the land will be unproductive before the plan can be implemented. However, the normal situation in any agricultural enterprise is for certain inputs to be variable at any one time whilst others may be fixed. The longer the time period, the more variable factors there will be. This means that it is possible for some inputs to be substituted for others. Resource-resource relationships will be as important as resource-product ones.

If there are two variable factors, the analysis presented for one variable factor can be re-interpreted to permit factor substitution. The situation in which the input for one factor took place outside of the desirable level can also be shown to lie outside the desirable level for the other factor. Suppose that the variable factors are capital and labour. The situation in which the marginal product for labour is negative will correspond to the marginal product for capital being

1. C.J.W. Edwards, 'The Effects of Changing Farm Size Upon Levels of Farm Fragmentation: A Somerset Case Study; Journal of Agricultural Economics, XXIX (1978), pp 143-53.

greater than the average product and, hence, to capital receiving an average return in excess of its average product. When the marginal product for capital is negative, labour will correspondingly receive an average return in excess of its average product. The desirable inputs of the two variable factors correspond and, outside this level there will be excess of one factor, with the law of diminishing returns having taken effect.

A range of input levels can satisfy the conditions laid down as desirable. Each represents a different combination of the variable inputs. The selection of the optimal resource combination from amongst the desirable ones requires that the relative costs of the variable factors be taken into account. Factors will be substituted for each other up to the point where the marginal rate of substitution between the factors is equal to the marginal rate of transformation. At this point, the variable factors will each receive a return that is equal to their marginal product. It represents the least costly means of achieving the maximum possible output, given a quantity of inputs. Departure from this point means that the farmer will either be achieving this output with more resources, and, hence, higher costs than his competitors, or he will produce a lower output with the same resources as his competitors. In a competitive industry, like agriculture, firms tend to be price takers, both of input prices and output prices. The farmer that produces at a sub-optimal level will be paying the same unit price for inputs as his competitors and receiving the same unit price for his products. However, his profits must be at a lower level and he must be more vulnerable to changing economic

circumstances.

In the long run, the farmer that failed to be as efficient as the industry as a whole would go out of business. If the market price for the output were insufficient to allow the industry to be profitable, the least efficient firms would be driven out of business. Their departure would have the effect of shifting the supply curve so that less would be produced at each price level, and this would, in turn, raise the market price. If the industry were profitable, then new entrants would be attracted into it. This would shift the supply curve so that more would be produced at each price level, and the market price would fall. The farmer who made less than average profits initially may well find that he now makes a loss. The competitiveness of agriculture results in a concentration of the firms in the industry around the optimum resource combination.

In the short run, the position of the inefficient farmer may be protected. It is likely that some of the inputs will be supplied by the farmer. In the short run, these may be paid less than their opportunity cost, so that the reduced profitability may take the form of a lower return on working capital or family labour than could be obtained by hiring them to another farmer. This can result even if the farmer is behaving rationally. His objective may not be profit maximization, but that profits are only one of several objectives, and may merely serve as a constraint on the pursuit of the others. Even if the objective is profit maximization, the resources provided by the farmer may continue to be provided at less than their

opportunity cost. They may be regarded as fixed costs without which the farm could not function. In the short run, the profit maximizing farmer will remain in production if he is able to cover his variable costs, even though he may continue to make a loss, as this policy will minimize the size of his loss. If the farmer's own resources are regarded as a fixed cost, then production may continue in the short run, even though no return is being earned on them.

The position of the farmer in the short run may be bolstered, if he is producing at a sub-optimal resource combination, by virtue of operating at too small a scale. As entrepreneurship is indivisible, the smaller scale of operation implies that the proportion of entrepreneurship to the other inputs will be higher than at the greater scales of operation. This should mean that the farm working at a smaller scale should be more flexible and, hence, better able to respond to changing market conditions and the uncertainties of production.

It might be expected that the firms in an industry would be spread around the optimum resource combination. The degree of kurtosis present in the distribution will depend on the rate of change in average costs as one moves away from the optimum combination. The more rapid the rate of increase in average costs away from the optimum, the less competitive will be the firms operating at sub-optimal combinations, and the resulting distribution will be more leptokurtic. Conversely, the less rapid the increase in average costs, the more platykurtic the distribution.

The analysis implies that the variance between enterprise means will be greater than the variance from each enterprise mean. If this fails to be the case, no association will be found between an enterprise and its resource structure even though an enterprise may have a particular input requirement. This is because it will not be sufficiently distinctive from the resource requirements of other enterprises. This could, for example, occur during a period of rapid technological change so that the resource requirements of the innovators differed radically from the resource requirements of the laggards. Although the period under study was one in which innovation was occurring, there are reasons for thinking that it is unlikely to invalidate the method of analysis. The usual pattern found for the adoption of an innovation has been for the distributed lag of its adoption to approximate to the bell shape of the normal distribution curve. This implies that the innovators will be a small proportion of the firms in the industry, and that the majority of firms will adopt an innovation within a short time of each other.

As a broad generalisation, the innovations of the period are more likely to have raised the yield per unit of input than to have resulted in the substitution of one input for another. Mechanisation could result in the substitution of capital for labour. Improvements in yields per acre, coupled with a demand for land from outside agriculture, could bring a substitution of capital or labour for land. The same product would then result from a lower acreage. The characteristic innovations of the period, though, tended to use more inputs to achieve a higher yield per acre,

but without the acreage under cultivation being reduced. Rather reclamation of waste land meant that this was increasing. Typical innovations included the use of cleaning crops as herbicides and fungicides in arable farming, and the cultivation of grasslands through using artificial grasses to deliberately control the quality of the crop, and tending it through measures such as the removal of anthills and weeds and dunging. Both involved an increase in the application of labour and capital to land. The process was one of increasing the scale of operations rather than of substitution, though with reduced inputs per unit of output (1).

The principal exception to this is the threshing machine. This was the earliest mechanised aspect of farming, spreading after 1786 mainly to Northern England (2). It involved the substitution of capital for labour to reduce the unit costs of threshing. There is evidence to suggest that its adoption did not yield significant economies over manual threshing until the second decade of the nineteenth century. At the time of the first edition of his county report, John Boys claimed that his threshing machine threshed wheat at a cost of 1s 5d per quarter compared with a cost of between 2s and 3s if done manually. The threshing cost included the cost of manpower

1. J.D. Chambers & G.E. Mingay, The Agricultural Revolution 1750-1880 (1966), pp 98-99.
2. S. MacDonald, "The Progress of the Early Threshing Machine", Ag. Hist. Rev., XXIII(1975), pp 63-77; "Further Progress with the Early Threshing Machine: A Rejoinder", Ag. Hist Rev., XXVI(1978), pp 29-32.

and horsepower but not the capital costs of the machinery. In 1803, he calculated the cost of threshing to have been 2s 9d per quarter of wheat by machine and 3s to 4s by hand. Again, the threshing costs exclude the capital costs. Between the two estimates he was able to drop two men from the team, although he had to introduce a fifth horse for wheat. He found it necessary, though, to reduce the working day from eight to seven hours on account of the horses. Had Boys been obliged to pay the workforce at the rate per day for threshing rather than that for labouring, he would have found that the operating costs of his threshing machine were within the range of costs for hand threshing. In an earlier estimate of 1793, Boys had put the cost of machine threshing at 2s 3d per quarter of wheat. This used only half the manpower of his later estimates and included capital costs of 9d per quarter. Boys' calculations suggest that during this period a threshing machine would have had little impact on the costs. If it were to be adopted, it would have had to have been because of the higher yields that resulted per unit of input. The machine was reckoned to be much quicker than the manual operation and to leave the corn cleaner (1). Between 1790 and 1804 the cost of labour

1. J. Boys, General View of the Agriculture of the County of Kent (2nd edn, 1805), pp 56-9; A. Young, 'Some Farming Notes in Essex, Kent and Sussex', Annals of Agriculture, XX (1793), pp 248-51; J. Boys, 'Threshing Mill', Annals of Agriculture, XVIII (1792), pp 472-3. As the costs of machine threshing included a significant labour element, it is likely that costs would vary considerably between localities and over time. A similar argument that factor costs influence factor substitution appears in E.J.T. Collins, 'Harvest Technology and Labour Supply in Britain 1790-1870', Econ.Hist Rev, 2nd ser, XXII (1969), pp 453-73.

and capital did not rise at a sufficiently dissimilar rate to make the threshing machine particularly advantageous. The Board of Agriculture estimated that the cost of threshing wheat by hand had risen by 55 per cent in England & Wales, and by 50 per cent in Kent. The cost of capital rose by 33 and 43 per cent respectively, and the cost of horsepower by 23 and 35 per cent (1). Innovation can probably be discounted as a factor likely to cause variations from the enterprise means to be greater than variations between them as, in the one clear example during the period of an innovation that could significantly alter the factor inputs, the economies of such substitution appear to have been uncertain for the innovator.

Except when engaged in monoculture, farms will be multi-product enterprises. This means that the production function must include product-product relationships. Suppose that a farm can produce two products with the available inputs. It is likely that the two products can only be produced in varying proportions due to rising costs of substitution through inputs being more specific to certain enterprises. The proportions of the two products selected will depend on their relative prices and costs. The optimum combination of the two will be where their marginal physical transformation is equal to their relative prices. This must represent the maximum revenue given the prevailing prices, inputs, and technology. Departure from this

1. 'Comparison of the Expenses of Arable Land in 1790 and 1804', Communications to the Board of Agriculture, V (1806), pp 19,23.

optimum enterprise combination must make the farmer less competitive.

The occurrence of one enterprise in conjunction with others can reflect influences other than competition for similar inputs. Certain enterprises can enhance the efficiency of others. For example, a cleaning crop can improve the yield from the crop that succeeds it by acting as a break crop against pests and diseases, and by permitting manual methods of herbicide and fungicide. In Thanet and the lowland areas around Deal, beans were used for this purpose ahead of the wheat crop. The rotation used was often the round tilth system of wheat, barley, and beans, or a four course rotation of peas, barley, beans, and wheat. The beans' function was to act as a nitrogenous crop and to provide fodder for livestock. The round tilth system implies that extraneous manure will be readily available rather than the practice of restoring fertility through a rotation being followed (1). The lightness of the soils, and their consequential proness to infestation, underlines the importance of the cleaning crops. Boys describes how the beans fulfilled this function. The beans would be planted in drills and the furrows harrowed. When they appeared they would be horse-hoed and, often, harrowed across the furrows. They were hand-hoed once they had recovered, with a second hand-hoeing in early summer. Following the second hand-hoeing, the land would be stirred with an earthing plate. After harvest, the land would be scuffed with a broad share and cleaned by harrowing and burning the weeds. On the downland, the function was

1. W. Marshall, The Review and Abstract of the County Reports to the Board of Agriculture, V (1818), p 432.

filled by turnips or, sometimes, barley (1). The cultivation of the cleaning crop would normally be more expensive than that of the crops it assisted. The Board of Agriculture put the costs of cultivating an acre of wheat in Kent in 1804 at 81 per cent of that of an acre of turnip, and an acre of barley at 66 per cent (2). The additional labour input of the cleaning crop should really be costed against the enhanced fertility of the succeeding crop.

Enterprises may be pursued because one provides an input for another. For example, in east Kent there was a marked difference in the crop rotation followed between the areas in which sheep were important and those in which they were not significant. The round tilth system was not generally associated with the keeping of sheep, and was generally associated with rich loams and locations that were exposed in winter. The system tended to be found in areas where the over-wintering of sheep was problematic or where the soil was liable to poaching. This contrasts with the downland areas in which sheep had traditionally been important and the four course rotations used in marshland areas where sheep were kept. The use of turnips and ley grasses in the latter part of the eighteenth century enabled more sheep to be kept and to be fattened more quickly (3). The round tilth system did not

1. J. Boys, General View of the Agriculture of the County of Kent (1st edn, 1794), pp 17-18, 45, 53-4.
2. Communications to the Board of Agriculture, V (1806), p 22.
3. Annals of Agriculture, XV (1791), pp 325-6; Boys (1794), pp 35, 38-40. The distinction is more one of soil type than location. In the downlands, the rich loams followed a round tilth course, while in areas like Thanet, associated with the round tilth system, the poorer soils would have rotations in clover and/or fallow would figure and some turnips might be grown to fatten sheep.

include either turnips or ley grasses whereas the downland rotations and four course rotations did.

The association of one enterprise with another may reflect alternative methods of marketing. For example, grain crops can be marketed in their original form or used as an input in fattening. The poultry rearing industry in east Kent can be seen as an alternative way of marketing corn, particularly of poor quality grain, and the pickling pork industry as an alternative method of marketing peas and beans (1). One enterprise may also occur with another because they are able to use the same asset, but at different times. This can represent an important economy as it enables overhead costs to be spread over a greater output, with a consequential reduction in unit costs. An example of this in east Kent was the practice of growing early peas in conjunction with turnips. On the upland farms in east Kent, peas would typically be followed in rotation by barley, as part of a four course rotation also featuring clover and wheat. By sowing early peas and then following it with turnips, the land could be made to yield an extra crop. The two crops synchronise well as turnips can be sown once the peas have been harvested. The turnips can be pulled or fed to sheep in situ in time to leave the land free and manured for the spring corn (2).

1. Annals of Agriculture, XX (1793), pp 251-2; Boys (1794), p41.
2. Ibid, p 39; Annals of Agriculture, V (1786), p 472.

William Dann of Gillingham grew turnips in conjunction with beans for the same purpose - 'Ledger Account of the farm of Mr. William Dann of Gillingham, Kent for 1797, with remarks', Communications to the Board of Agriculture, II (1800), pp 433-50.

Table E2 : Farm Tenures, 1790

Parish	A	B	C	D
Adisham	6.8	93.2	0	-
Ash	6.4	52.3	41.4	23.0
Barfreton	0.8	71.4	27.8	91.9
Barham	44.2	44.6	11.2	84.2
Betteshanger & Ham	4.7	53.4	41.9	2.1
Bishopsbourne	26.7	59.3	14.0	85.9
Buckland & Charlton	36.0	39.0	25.0	37.8
Coldred	23.4	63.4	13.1	29.8
Denton	33.5	64.4	2.1	32.9
Eastry	40.2	42.9	16.9	45.1
Elmstone	13.6	76.1	10.3	3.2
Ewell	65.9	34.1	0	-
Eythorne	35.1	63.6	1.2	36.1
Goodnestone	33.1	39.9	27.0	17.8
Guston	7.6	85.4	7.0	16.7
Hougham	11.5	71.0	17.5	18.8
Ickham	42.8	55.1	2.1	18.2
Kingston	53.2	42.8	4.8	35.0
Knowlton & Chillender	11.1	84.5	4.4	55.0
East Langdon	4.1	95.2	0.8	66.7
West Langdon	4.6	95.4	0	-
Littlebourne	30.2	65.3	4.5	40.0
Lydden	9.0	73.0	18.0	2.4
Minster	1.8	72.3	25.9	21.5
Great Mongeham	16.3	62.1	21.7	31.1
Little Mongeham & Ashley	16.4	46.6	37.0	8.0
Monkton	5.9	88.1	6.0	40.2
Nonington	16.4	82.8	1.4	10.0
Easole	8.2	91.8	0	-
Frogham	10.9	89.1	0	-
Northbourne	6.0	88.6	5.4	7.1
Tickness	0	100.0	0	-
Poulton	6.9	91.5	1.5	50.0
Preston	6.6	75.0	18.4	30.4
Ripple	9.2	90.8	0	-
River	28.7	15.1	56.2	42.3
St. Lawrence	20.9	51.0	28.1	24.0
St. Margaret & Oxney	-	-	-	-
St. Nicholas	2.5	72.6	24.8	27.2
Shepherdswell	12.3	52.0	35.7	78.7
Shoulden	40.7	37.2	22.1	22.0
Staple	38.8	56.6	4.7	20.0
Stonor	0	100.0	0	-
Stourmouth	21.9	25.4	52.7	47.1
Sutton	0	17.5	82.5	67.8
Tilmanstone	24.4	45.1	30.5	33.3
Waldershare	22.8	77.2	0	-
Westcliffe	0	100.0	0	-
Whitfield	3.2	90.1	6.7	20.0
Wickhambreux	5.3	67.0	27.7	34.5
Wingham	8.2	88.2	3.6	25.0
Womenswold	24.7	57.2	18.1	7.4
Woodnesborough	28.0	47.8	24.2	23.1
Wootton	35.6	64.4	0	-
Worth	21.8	43.9	34.3	2.9

Table E3 : Farm Tenures, 1801

Parish	A	B	C	D
Adisham	29.1	44.8	26.1	7.1
Ash	10.7	55.8	33.6	62.6
Barfreston	34.6	64.4	0	-
Barham	43.5	37.0	19.5	55.4
Betteshanger & Ham	41.4	58.6	0	-
Bishopsbourne	27.8	72.2	0	-
Buckland & Charlton	9.5	29.0	61.6	54.5
Coldred	4.1	71.3	24.5	85.0
Denton	74.6	16.3	9.2	45.5
Eastry	35.1	29.4	35.5	39.1
Elmstone	33.7	24.3	42.0	2.9
Ewell	66.8	12.5	20.8	88.3
Eythorne	36.1	48.9	15.0	32.8
Goodnestone	33.0	24.6	42.4	25.1
Guston	6.4	84.5	9.1	19.4
Hougham	8.6	65.4	26.0	28.9
Ickham	17.4	82.6	0	-
Kingston	51.2	44.8	4.0	65.0
Knowlton & Chillenden	11.5	86.1	2.4	18.2
East Langdon	8.7	62.8	28.6	77.7
West Langdon	2.8	12.5	84.7	0.5
Littlebourne	23.4	48.4	28.2	48.9
Lydden	27.0	52.8	20.2	80.9
Minster	12.5	66.8	20.6	48.6
Great Mongeham	28.8	54.3	16.8	48.7
Little Mongeham & Ashley	49.7	41.9	8.3	12.0
Monkton	8.6	64.6	26.7	51.8
Nonington	9.7	64.3	26.1	11.5
Easole	28.6	71.4	0	-
Frogham	54.1	45.9	0	-
Northbourne	50.9	42.9	6.2	12.5
Tickness	0	100.0	0	-
Poulton	6.9	93.1	0	-
Preston	17.2	39.7	43.0	33.5
Ripple	15.7	84.3	0	-
River	45.7	21.0	33.3	14.8
St. Lawrence	24.4	41.7	33.9	40.7
St. Margaret & Oxney	15.1	41.3	43.6	46.8
St. Nicholas	4.4	67.0	28.5	9.6
Shepherdswell	66.9	27.7	5.4	71.4
Shoulden	23.5	32.2	44.3	73.8
Staple	43.6	36.5	19.9	39.8
Stonar	22.2	77.8	0	-
Stourmouth	16.4	19.1	64.5	55.7
Sutton	7.1	28.6	64.3	56.8
Tilmanstone	52.6	42.1	5.3	-
Waldershare	24.1	75.9	0	-
Westcliffe	0	100.0	0	-
Whitfield	11.8	43.9	44.4	1.2
Wickhambreux	15.4	50.8	33.8	35.0
Wingham	11.6	51.2	37.1	11.4
Womenswold	37.0	62.0	1.0	33.3
Woodnesborough	42.6	40.0	17.4	35.0
Wootton	52.2	47.7	0	-
Worth	30.2	32.6	37.2	11.4

Table E4 : Farm Tenures, 1814

Parish	A	B	C	D
Adisham	32.4	41.6	26.0	10.8
Ash	27.4	39.3	33.3	61.8
Barfreston	32.3	67.7	0	-
Barham	50.4	33.7	15.9	64.4
Betteshanger & Ham	64.3	35.7	0	-
Bishopsbourne	32.8	67.2	0	-
Buckland & Chillenden	9.1	28.6	62.3	52.2
Coldred	3.0	64.8	32.2	68.6
Denton	21.5	60.5	18.0	74.4
Eastry	34.3	40.4	25.3	54.7
Elmstone	21.0	79.0	0	-
Ewell	52.4	33.0	14.6	97.6
Eythorne	58.6	35.2	6.2	68.0
Goodnestone	40.6	30.3	29.1	39.0
Guston	9.4	71.9	18.7	6.3
Hougham	24.1	47.4	28.5	13.4
Ickham	15.4	69.9	14.9	34.2
Kingston	34.0	25.9	40.1	34.4
Knowlton & Chillenden	10.5	88.7	0.8	25.0
East Langdon	43.1	52.6	4.3	94.1
West Langdon	88.9	1.4	9.7	19.0
Littlebourne	38.4	34.8	26.8	43.3
Lydden	33.5	50.6	15.9	94.6
Minster	26.6	23.7	49.7	39.0
Great Mongeham	41.0	44.8	14.2	75.2
Little Mongeham & Ashley	59.6	25.2	15.2	13.5
Monkton	35.0	43.5	21.5	57.7
Nonington	15.8	23.9	60.3	19.9
Easole	85.0	10.0	5.0	9.1
Frogham	67.7	32.3	0	-
Northbourne	66.9	22.1	11.0	33.9
Tickness	1.3	98.7	0	-
Poulton	8.5	91.5	0	-
Preston	57.0	41.8	1.2	60.0
Ripple	60.9	39.1	0	-
River	48.2	30.1	21.7	20.6
St. Lawrence	29.1	47.6	23.3	51.6
St. Margaret & Oxney	67.3	5.3	27.3	12.8
St. Nicholas	15.5	42.3	42.1	62.3
Shepherdswell	36.7	63.3	0	-
Shoulden	61.7	31.2	7.1	41.2
Staple	54.1	32.3	13.6	38.9
Stonar	-	-	-	-
Stourmouth	34.3	37.4	28.3	48.7
Sutton	32.8	2.8	64.4	85.7
Tilmanstone	40.6	47.7	11.7	67.7
Waldershare	24.1	75.9	0	32.0
Westcliffe	40.1	41.7	18.2	60.3
Whitfield	36.7	25.1	38.3	45.8
Wickhambreux	32.1	22.1	45.7	75.4
Wingham	10.5	57.5	32.0	16.2
Womenswold	27.5	51.3	21.2	11.5
Woodnesborough	27.8	39.0	33.2	51.1
Wootton	24.0	76.0	0	-
Worth	53.0	40.0	7.0	57.8

Table E5 : Farm Tenures, 1822

Parish	A	B	C	D
Adisham	32.6	41.4	26.0	15.0
Ash	33.4	44.3	22.2	43.3
Barfreston	30.1	69.9	0	0
Barham	51.4	39.2	9.3	19.0
Betteshanger & Ham	61.0	39.0	0	0
Bishopsbourne	40.4	46.1	13.5	1.6
Buckland & Charlton	72.0	28.0	0	0
Coldred	12.5	55.6	31.9	68.6
Denton	43.0	40.0	16.9	77.5
Eastry	22.5	62.3	15.1	35.1
Elmstone	28.3	71.7	0	0
Ewell	69.2	30.8	0	0
Eythorne	74.3	21.5	4.2	76.5
Goodnestone	56.0	42.9	1.0	77.8
Guston	9.2	72.4	18.4	6.3
Hougham	20.2	44.5	35.3	8.3
Ickham	21.2	75.1	3.7	71.8
Kingston	46.9	38.7	14.4	8.6
Knowlton & Chillenden	10.5	88.7	0.8	25.0
East Langdon	41.6	45.2	13.3	42.3
West Langdon	89.4	0.9	9.7	19.0
Littlebourne	48.4	50.5	1.1	28.6
Lydden	65.6	17.0	17.5	94.6
Minster	14.0	44.4	41.6	48.9
Great Mongeham	34.0	13.1	52.8	42.3
Little Mongeham & Ashley	57.9	40.8	1.4	77.8
Monkton	14.1	65.2	20.6	61.2
Nonington	2.3	37.7	60.0	23.9
Easole	83.6	11.4	5.0	9.1
Frogham	64.3	35.7	0	0
Northbourne	61.2	31.3	7.5	9.8
Tickness	1.3	98.7	0	1.4
Poulton	8.5	89.2	2.3	33.3
Preston	55.5	43.3	1.2	60.0
Ripple	58.9	24.6	16.5	57.6
River	59.9	40.1	0	0
St. Lawrence	29.5	38.7	31.8	35.5
St. Margaret & Oxney	28.0	9.6	62.4	57.1
St. Nicholas	6.2	52.0	41.8	61.3
Shepherdswell	63.2	36.8	0	0
Shoulden	60.5	26.0	13.5	58.5
Staple	49.1	42.3	8.6	58.6
Stonar	-	-	-	-
Stourmouth	27.1	53.1	19.8	67.0
Sutton	88.5	11.5	0	0
Tilmanstone	39.1	50.8	10.2	66.7
Waldershare	24.1	75.9	0	0
Westcliffe	39.4	42.4	18.2	60.3
Whitfield	27.9	45.8	26.3	87.2
Wickhambreux	57.6	20.8	21.6	51.9
Wingham	6.9	68.9	24.5	28.3
Womenswold	40.1	58.2	1.7	50.0
Woodnesborough	32.2	39.5	28.3	53.9
Wootton	37.6	45.9	16.5	7.5
Worth	49.0	37.7	13.3	57.5

Table E6 : Farm Tenures, 1831

Parish	A	B	C	D
Adisham	31.1	46.4	22.6	21.9
Ash	37.3	41.1	21.6	30.9
Barfreston	3.0	68.9	28.1	89.5
Barham	46.3	45.3	8.4	35.2
Betteshanger & Ham	50.3	49.7	0	0
Bishopsbourne	37.5	49.0	13.5	1.6
Buckland & Charlton	28.8	69.9	1.2	50.0
Coldred	25.9	54.5	19.6	25.9
Denton	17.8	49.5	32.7	39.7
Eastry	20.4	53.9	25.7	39.5
Elmstone	21.9	67.4	10.7	36.0
Ewell	33.2	66.8	0	0
Eythorne	69.9	27.1	3.0	84.6
Goodnestone	43.9	56.1	0	45.6
Guston	5.5	75.9	18.6	6.3
Hougham	11.4	56.8	31.9	18.9
Ickham	33.6	52.3	14.2	35.1
Kingston	45.1	22.2	32.7	43.4
Knowlton & Chillenden	30.6	68.6	0.8	25.0
East Langdon	46.7	53.3	0	0
West Langdon	83.3	2.3	14.5	18.8
Littlebourne	48.1	51.9	0	0
Lydden	64.7	30.7	4.5	42.9
Minster	16.4	45.6	37.9	31.2
Great Mongeham	47.4	38.5	14.2	57.8
Little Mongeham & Ashley	54.6	39.7	5.7	18.7
Monkton	19.9	69.2	10.9	71.4
Nonington	1.2	38.5	60.3	14.7
Easole	2.3	97.7	0	0
Frogham	62.0	38.0	0	0
Northbourne	91.8	8.2	0	0
Tickness	1.3	98.7	0	0
Poulton	6.9	90.8	2.3	33.3
Preston	45.3	42.5	12.1	13.4
Ripple	57.3	25.5	17.2	57.6
River	59.9	40.1	0	0
St. Lawrence	33.2	43.3	23.9	35.3
St. Margaret & Oxney	33.3	33.7	33.0	94.5
St. Nicholas	10.9	69.6	19.5	43.8
Shepherdswell	42.7	54.6	2.7	42.9
Shoulden	54.0	26.4	19.6	46.7
Staple	51.3	44.0	4.7	53.3
Stonar	-	-	-	-
Stourmouth	49.7	37.7	21.1	65.7
Sutton	60.6	36.1	3.3	71.4
Tilmanstone	42.5	52.3	5.3	57.1
Waldershare	32.1	67.9	0	0
Westcliffe	41.7	43.1	15.2	33.0
Whitfield	25.9	47.3	26.7	90.0
Wickhambreux	37.8	36.7	25.4	49.5
Wingham	14.6	58.3	27.1	15.5
Womenswold	52.5	44.0	3.5	23.8
Woodnesborough	16.7	55.5	27.8	27.4
Wootton	24.3	75.7	0	0
Worth	45.9	29.6	24.6	23.7

Table E7 : Farm Tenures

Parish	A	B	C	D
<u>1691</u>				
Monkton	3.1	91.1	5.8	25.0
<u>1699</u>				
Adisham	18.0	75.2	6.8	88.9
Guston	8.2	83.5	8.2	53.6
Lydden	19.3	76.1	4.6	63.6
Monkton	4.9	91.2	4.0	32.5
Sutton	32.0	66.0	2.0	20.0
Womenswold	34.7	38.7	26.7	82.5
Worth	1.9	66.4	31.8	7.3
<u>1710</u>				
Adisham	17.5	81.0	1.5	40.0
Guston	2.1	76.7	21.2	31.4
Lydden	33.5	21.5	45.1	16.2
Monkton	6.1	93.2	0.7	85.7
Sutton	2.0	49.2	48.8	80.6
Womenswold	48.0	52.0	0	0
Worth	13.8	83.3	2.8	11.3
<u>1720</u>				
Adisham	15.9	79.9	4.2	44.4
Guston	8.5	78.8	12.6	48.8
Lydden	20.6	79.4	0	0
Monkton	4.2	90.9	5.0	88.0
Sutton	0.8	83.2	16.0	43.9
Womenswold	47.7	52.3	0	0
Worth	14.8	70.9	14.3	17.2
<u>1730</u>				
Adisham	23.2	70.0	6.8	65.9
Guston	7.4	80.3	12.4	47.6
Lydden	25.3	74.7	0	0
Monkton	2.5	90.8	6.7	76.1
Sutton	0	81.6	18.4	40.4
Womenswold	1.7	98.3	0	0
Worth	5.8	89.4	4.8	12.2

Table E7 : Farm Tenures

Parish	A	B	C	D
<u>1740</u>				
Adisham	26.4	72.6	0.9	33.3
Guston	5.9	81.8	12.4	47.6
Lydden	19.7	76.4	3.9	55.6
Monkton	2.9	92.1	5.0	64.0
Sutton	0.4	81.2	18.4	40.4
Womenswold	4.0	96.0	0	0
Worth	8.2	91.3	0.5	66.7
<u>1750</u>				
Adisham	19.9	80.1	0	20.6
Guston	5.0	82.6	12.4	47.6
Lydden	33.0	64.8	2.1	20.0
Monkton	1.0	96.0	3.0	83.3
Sutton	5.9	73.3	20.8	22.6
Womenswold	24.3	75.7	0	0
Worth	4.6	94.6	0.9	50.0
<u>1760</u>				
Adisham	24.3	59.0	16.7	3.7
Guston	5.0	85.0	10.0	58.8
Lydden	19.3	80.7	0	32.1
Monkton	3.6	94.1	2.3	87.0
Sutton	6.3	88.6	5.1	92.3
Womenswold	28.0	72.0	0	80.5
Worth	5.7	94.3	0	0
<u>1770</u>				
Adisham	29.0	71.0	0	0
Guston	4.1	95.9	0	0
Lydden	20.6	79.4	0	0
Monkton	4.4	95.6	0	0
Sutton	0.4	55.6	44.0	26.1
Womenswold	29.3	67.7	3.0	22.2
Worth	6.3	93.7	0	0

Table F : Mean Estate Sizes in the St. Augustine East Division, 1691-1831

Column A - Mean Estate size
Column B - Mean wholly owner occupied estate
Column C - Mean wholly tenanted estate
Column D - Mean mixed tenure estate

Table Fl : Mean Estate Sizes, 1780

Parish	A	B	C	D
Adisham	72.6	213.7	42.9	343.3
Ash	38.8	19.2	39.8	58.3
Barfreston	62.5	77.1	57.6	-
Barham	69.7	38.6	21.0	240.7
Betteshanger & Ham	79.7	55.7	86.5	-
Bishopsbourne	154.0	10.5	240.9	262.8
Buckland & Charlton	64.7	10.0	66.9	165.4
Coldred	117.8	14.1	66.5	891.0
Denton	75.9	66.7	12.2	207.7
Eastry	47.6	45.6	51.3	19.8
Elmstone	33.2	24.0	13.1	220.5
Ewell	99.4	17.1	69.5	333.5
Eythorne	73.2	26.3	130.9	134.7
Goodnestone	54.8	13.8	37.9	905.2
Guston	116.8	9.8	49.8	973.1
Hougham	85.6	29.2	103.9	45.0
Ickham	93.8	48.1	46.7	453.0
Kingston	43.6	62.8	30.1	43.2
Knowlton & Chillenden	62.4	9.7	31.6	361.7
East Langdon	96.8	10.9	168.4	-
West Langdon	99.7	5.4	170.5	-
Littlebourne	70.1	21.1	48.2	193.2
Lydden	74.8	6.1	52.6	286.8
Minster	72.3	14.1	85.3	37.5
Great Mongeham	18.6	15.5	20.5	5.4
Little Mongeham & Ashley	48.5	17.0	55.7	98.1
Monkton	63.9	10.4	79.2	130.9
Nonington	123.3	8.4	44.3	475.3
Easole	67.3	5.9	38.1	487.9
Frogham	46.6	29.2	62.3	-
Northbourne	51.8	14.1	66.0	13.3
Tickness	48.3	0	48.3	0
Poulton	90.0	9.4	71.8	521.5
Preston	27.4	12.0	31.7	-
Ripple	75.6	31.0	86.7	-
River	56.2	26.1	66.2	82.0
St. Lawrence	26.0	5.4	30.2	42.2
St. Margaret & Oxney	121.9	38.4	127.1	-
St. Nicholas	114.7	56.9	139.6	83.0
Shepherdswell	76.5	11.8	61.2	467.0
Shoulden	29.8	43.2	24.1	-
Staple	21.0	17.8	13.9	157.3
Stonar	670.0	670.0	-	-
Stourmouth	27.9	32.4	27.3	23.1
Sutton	62.1	39.8	65.0	-
Tilmanstone	70.3	57.0	84.5	21.1
Waldershare	447.3	41.9	419.4	880.7
Westcliffe	292.3	-	292.3	-
Whitfield	47.0	9.9	64.1	-
Wickhambreux	47.2	31.1	47.8	76.1
Wingham	37.2	9.4	46.1	20.0
Womenswold	48.1	11.2	51.2	86.2
Woodnesborough	30.7	28.4	30.1	63.7
Wootton	92.6	12.6	42.8	158.5
Worth	142.9	105.1	161.2	51.9

Table F2 : Mean Estate Sizes, 1790

Parish	A	B	C	D
Adisham	69.8	-	43.5	726.6
Ash	39.9	21.5	42.6	53.1
Barfreston	62.5	3.8	59.5	139.1
Barham	71.9	40.8	20.3	234.3
Betteshanger & Ham	102.4	-	110.6	82.0
Bishopsbourne	143.0	86.2	157.1	385.5
Buckland & Charlton	54.4	50.9	33.7	132.6
Coldred	127.7	32.9	67.4	894.6
Denton	59.0	12.2	8.9	120.0
Eastry	48.5	53.8	46.8	35.5
Elmstone	33.2	21.8	15.6	220.5
Ewell	122.3	9.0	41.1	425.1
Eythorne	69.4	37.2	96.7	134.4
Goodnestone	69.0	14.3	55.5	444.1
Guston	116.7	20.5	58.0	950.2
Hougham	90.8	47.4	105.7	63.4
Ickham	93.8	82.4	30.2	674.8
Kingston	41.2	43.2	35.6	61.0
Knowlton & Chillenden	78.0	15.2	41.2	361.7
East Langdon	96.8	24.5	112.9	-
West Langdon	116.3	19.4	157.5	48.5
Littlebourne	71.9	39.3	45.1	222.6
Lydden	79.0	6.1	54.9	537.1
Minster	77.4	21.9	103.4	22.0
Great Mongeham	19.0	11.1	23.3	27.1
Little Mongeham & Ashley	74.7	16.0	91.3	264.3
Monkton	62.2	13.0	97.8	15.3
Nonington	129.5	10.9	111.5	237.8
Easole	67.1	6.7	33.1	486.7
Frogham	44.6	24.3	49.7	-
Northbourne	75.1	20.8	92.0	25.6
Tickness	48.3	-	48.3	-
Poulton	90.0	10.2	62.0	525.5
Preston	27.4	12.9	32.4	-
Ripple	75.6	26.1	93.6	-
River	59.1	66.8	45.2	127.6
St. Lawrence	29.8	5.9	32.0	53.3
St. Margaret & Oxney	-	-	-	-
St. Nicholas	114.7	7.7	149.8	81.0
Shepherdswell	73.4	11.1	64.3	254.3
Shoulden	30.8	47.6	23.8	-
Staple	20.2	18.1	13.1	155.3
Stonar	670.0	-	670.0	-
Stourmouth	26.9	58.0	19.0	29.9
Sutton	75.4	196.8	42.2	-
Tilmanstone	59.2	43.2	73.5	-
Waldershare	447.3	41.9	419.4	880.7
Westcliffe	292.3	-	292.3	-
Whitfield	47.0	8.1	60.9	-
Wickhambreux	50.9	22.9	55.0	56.4
Wingham	36.2	7.1	48.5	26.9
Womenswold	48.1	15.0	54.0	91.2
Woodnesborough	31.0	35.8	28.1	40.8
Wootton	101.9	12.6	88.1	232.7
Worth	148.6	96.5	178.7	72.7

Table F3 : Mean Estate Sizes, 1801

Parish	A	B	C	D
Adisham	78.9	44.4	40.4	471.3
Ash	39.0	39.5	37.8	44.6
Barfreston	83.3	6.3	308.3	86.5
Barham	73.0	35.1	22.8	288.3
Betteshanger & Ham	119.5	98.9	140.1	-
Bishopsbourne	143.0	69.5	240.9	-
Buckland & Charlton	61.8	35.9	41.8	200.3
Coldred	117.8	21.1	70.3	836.3
Denton	66.4	111.9	33.9	25.1
Eastry	46.0	36.6	51.6	64.4
Elmstone	27.0	18.9	35.1	-
Ewell	99.4	73.2	12.8	273.3
Eythorne	69.4	33.2	103.6	168.4
Goodnestone	69.0	20.8	55.1	448.9
Guston	140.1	18.8	89.1	950.4
Hougham	90.8	64.9	100.6	63.4
Ickham	101.7	13.1	61.1	465.4
Kingston	46.2	38.3	30.5	239.6
Knowlton & Chillenden	78.0	2.8	48.6	189.1
East Langdon	81.9	54.7	105.2	-
West Langdon	87.2	4.8	128.0	48.5
Littlebourne	82.8	18.7	34.7	282.1
Lydden	74.8	67.1	62.7	164.8
Minster	78.5	29.3	29.3	69.7
Great Mongeham	19.9	13.6	23.8	43.5
Little Mongeham & Ashley	66.9	51.0	59.1	311.9
Monkton	71.6	30.7	121.8	14.7
Nonington	123.0	16.8	153.7	268.5
Easole	93.3	6.7	28.5	220.4
Frogham	49.6	19.2	25.5	503.5
Northbourne	56.6	44.2	87.2	9.4
Tickness	48.3	-	48.3	-
Poulton	99.0	11.4	63.1	525.5
Preston	26.9	16.6	37.3	22.3
Ripple	75.6	29.6	106.3	-
River	49.2	38.0	40.1	99.3
St. Lawrence	22.4	9.2	24.7	44.8
St. Margaret & Oxney	94.2	56.7	148.4	-
St. Nicholas	95.6	35.1	120.1	29.4
Shepherdswell	76.5	47.7	38.4	202.7
Shoulden	32.4	40.9	24.9	43.5
Staple	22.9	21.3	14.1	158.1
Stonar	223.3	74.4	521.1	-
Stourmouth	31.1	64.2	22.9	14.2
Sutton	70.3	76.8	66.1	-
Tilmanstone	59.2	36.5	90.3	-
Waldershare	447.3	41.9	419.4	880.7
Westcliffe	292.3	-	292.3	-
Whitfield	49.7	12.2	87.0	-
Wickhambreux	49.0	47.5	53.6	21.2
Wingham	37.2	7.5	19.4	110.2
Womenswold	40.4	11.5	28.6	195.3
Woodnesborough	30.4	36.0	26.6	27.4
Wootton	127.4	10.5	18.9	240.1
Worth	132.7	91.0	178.2	72.7

Table F4 : Mean Estate Sizes, 1814

Parish	A	B	C	D
Adisham	106.8	41.2	57.6	532.9
Ash	36.4	32.9	36.4	47.9
Barfreston	83.3	11.3	105.3	86.5
Barham	75.4	37.7	17.1	429.4
Betteshanger & Ham	119.5	123.5	97.7	151.0
Bishopsbourne	154.0	91.9	35.7	636.1
Buckland & Charlton	46.9	40.3	41.3	84.7
Coldred	127.7	15.8	90.1	838.2
Denton	81.7	37.0	167.4	64.1
Eastry	46.8	19.7	69.0	147.1
Elmstone	30.9	18.1	37.9	-
Ewell	93.5	84.9	49.5	216.4
Eythorne	77.5	36.3	4.9	227.3
Goodnestone	93.2	33.7	69.5	972.5
Guston	127.4	18.1	84.7	1020.0
Hougham	93.6	51.9	130.8	124.8
Ickham	106.1	19.9	64.5	472.6
Kingston	50.8	18.1	42.2	185.1
Knowlton & Chillenden	62.4	1.3	30.9	375.4
East Langdon	106.5	78.8	138.6	116.8
West Langdon	99.7	11.3	30.7	591.4
Littlebourne	75.9	34.3	53.7	206.8
Lydden	67.7	56.1	65.9	201.4
Minster	70.5	55.5	94.0	57.1
Great Mongeham	19.4	19.9	16.9	33.0
Little Mongeham & Ashley	64.4	50.9	49.9	336.9
Monkton	67.5	26.2	101.0	301.5
Nonington	139.0	38.8	290.0	304.9
Easole	62.6	4.2	32.4	648.4
Frogham	56.0	21.3	36.4	518.7
Northbourne	56.0	51.0	71.5	60.6
Tickness	48.3	-	6.7	131.6
Poulton	99.0	12.7	71.1	525.5
Preston	28.4	27.5	28.3	56.9
Ripple	94.5	115.2	73.8	-
River	51.3	47.2	60.8	19.6
St. Lawrence	22.5	16.0	22.5	34.4
St. Margaret & Oxney	86.3	91.7	75.6	-
St. Nicholas	86.0	36.8	95.3	125.5
Shepherdswell	79.8	40.1	152.6	128.0
Shoulden	32.4	33.1	29.7	63.3
Staple	22.4	16.8	15.5	109.8
Stonar	-	-	-	-
Stourmouth	29.9	13.9	37.7	99.4
Sutton	70.3	92.8	25.3	-
Tilmanstone	56.2	45.4	72.4	-
Waldershare	447.3	41.9	419.4	880.7
Westcliffe	233.8	196.2	84.6	495.7
Whitfield	59.5	40.3	136.4	-
Wickhambreux	54.0	65.3	40.1	-
Wingham	38.3	7.8	16.2	153.0
Womenswold	40.4	16.2	26.3	177.6
Woodnesborough	32.7	30.8	32.3	55.3
Wootton	113.2	21.9	62.7	196.8
Worth	130.4	130.0	143.9	34.7

Table F5 : Mean Estate Sizes, 1822

Parish	A	B	C	D
Adisham	113.4	38.9	73.0	532.9
Ash	37.3	32.7	38.5	46.8
Barfreston	100.0	-	81.8	172.9
Barham	71.9	29.7	39.7	303.9
Betteshanger & Ham	119.5	123.5	97.7	151.1
Bishopsbourne	166.8	79.2	341.8	211.0
Buckland & Charlton	52.3	76.4	14.9	73.3
Coldred	127.7	41.9	82.0	830.6
Denton	81.7	47.6	32.6	142.2
Eastry	42.4	21.6	56.2	85.5
Elmstone	30.9	20.4	38.7	-
Ewell	93.5	77.6	56.9	275.1
Eythorne	77.5	82.8	11.7	171.4
Goodnestone	103.6	42.8	32.8	427.3
Guston	127.4	17.8	91.3	1002.4
Hougham	68.1	30.1	109.7	-
Ickham	101.7	43.2	63.3	604.2
Kingston	49.2	33.3	36.6	180.9
Knowlton & Chillenden	62.4	1.3	30.9	375.4
East Langdon	106.5	78.8	138.6	116.8
West Langdon	99.7	127.3	30.7	-
Littlebourne	82.8	40.4	37.9	219.7
Lydden	64.6	68.4	29.1	221.3
Minster	76.3	33.2	123.0	75.9
Great Mongeham	21.3	18.7	21.9	35.8
Little Mongeham & Ashley	66.7	45.6	68.7	371.7
Monkton	69.5	26.0	132.3	124.1
Nonington	139.3	19.2	180.9	453.3
Easole	62.7	4.6	15.1	650.1
Frogham	59.4	19.4	35.2	537.2
Northbourne	64.8	50.4	131.3	-
Tickness	48.3	-	24.2	131.6
Poulton	90.0	15.2	59.8	525.5
Preston	29.6	31.4	26.5	58.1
Ripple	213.0	107.2	43.7	34.1
River	69.5	58.9	94.8	-
St. Lawrence	21.1	13.8	22.9	33.7
St. Margaret & Oxney	86.3	78.7	89.2	178.4
St. Nicholas	93.7	11.1	108.2	138.3
Shepherdswell	68.0	36.0	75.2	183.2
Shoulden	36.2	39.0	31.3	-
Staple	22.9	17.6	15.7	71.6
Stonar	-	-	-	-
Stourmouth	31.3	25.1	37.0	-
Sutton	75.4	55.3	26.5	422.8
Tilmanstone	48.9	34.4	76.1	-
Waldershare	447.3	41.9	419.4	880.7
Westcliffe	233.8	196.2	290.1	-
Whitfield	59.5	45.1	107.7	10.8
Wickhambreux	51.9	67.4	34.4	-
Wingham	38.5	7.9	16.5	148.9
Womenswold	40.4	44.3	18.1	205.1
Woodnesborough	33.8	37.2	31.8	25.6
Wootton	113.2	21.1	8.4	192.0
Worth	121.8	118.6	133.1	42.9

Table F6 : Mean Estate, 1831

Parish	A	B	C	D
Adisham	139.6	101.0	58.9	366.6
Ash	34.2	30.8	32.3	61.0
Barfreston	100.0	-	6.2	240.7
Barham	78.0	27.4	45.5	348.1
Betteshanger & Ham	119.5	120.2	118.8	-
Bishopsbourne	166.8	51.9	125.2	438.3
Buckland & Charlton	34.8	32.3	38.0	10.4
Coldred	139.3	30.4	110.4	827.9
Denton	96.5	34.5	31.2	172.3
Eastry	38.2	24.8	52.0	13.3
Elmstone	30.9	18.5	40.1	-
Ewell	93.5	44.0	74.3	522.7
Eythorne	48.8	69.0	13.3	113.8
Goodnestone	186.4	33.5	47.6	524.3
Guston	107.8	12.2	52.3	1014.1
Hougham	68.1	30.6	91.7	-
Ickham	101.7	74.3	39.9	625.8
Kingston	46.2	43.5	37.9	87.1
Knowlton & Chillenden	56.7	1.3	33.5	129.5
East Langdon	106.5	32.6	138.6	190.2
West Langdon	63.5	197.9	13.5	9.5
Littlebourne	78.1	39.7	58.3	160.0
Lydden	71.1	73.8	42.0	274.6
Minster	75.3	27.2	112.3	68.7
Great Mongeham	21.3	17.3	20.3	75.9
Little Mongeham & Ashley	66.9	58.2	46.0	349.6
Monkton	76.3	33.8	99.4	234.6
Nonington	145.1	20.2	159.7	454.3
Easole	67.3	3.4	118.9	13.5
Frogham	68.1	19.1	28.0	602.4
Northbourne	69.7	75.5	37.3	-
Tickness	48.3	-	6.7	131.6
Poulton	90.0	10.2	62.0	525.5
Preston	30.2	26.6	30.3	54.9
Ripple	70.9	95.3	46.5	-
River	73.8	63.1	16.4	421.0
St. Lawrence	21.6	13.5	23.6	38.9
St. Margaret & Oxney	82.9	68.0	89.8	141.3
St. Nicholas	93.0	11.1	122.7	93.0
Shepherdswell	68.0	20.0	57.1	303.6
Shoulden	27.2	28.2	17.4	117.8
Staple	22.9	16.7	16.1	111.3
Stonar	-	-	-	-
Stourmouth	29.9	33.8	31.7	8.8
Sutton	70.3	51.9	11.8	528.7
Tilmanstone	56.2	46.5	68.1	-
Waldershare	447.3	42.3	435.2	876.5
Westcliffe	167.0	136.7	207.4	-
Whitfield	59.5	55.8	63.8	-
Wickhambreux	54.0	34.9	51.0	168.0
Wingham	31.8	8.8	30.0	81.3
Womenswold	56.1	6.8	13.0	227.9
Woodnesborough	33.8	26.0	36.9	34.2
Wootton	113.2	21.0	54.5	203.4
Worth	96.5	95.6	91.3	211.5

Table F7 : Mean Estate Sizes

Parish	A	B	C	D
<u>1691</u>				
Monkton	69.5	5.5	112.1	20.2
<u>1699</u>				
Adisham	67.2	39.1	52.4	212.6
Guston	127.4	31.6	132.4	379.1
Lydden	67.7	22.8	121.5	77.7
Monkton	76.3	7.3	116.4	72.8
Sutton	55.5	85.5	47.5	-
Womenswold	63.1	96.8	38.6	198.6
Worth	158.1	38.7	182.6	-
<u>1710</u>				
Adisham	62.6	25.6	53.2	300.2
Guston	127.4	34.0	44.9	984.9
Lydden	74.8	46.6	134.3	51.9
Monkton	67.5	9.2	81.7	85.4
Sutton	55.5	18.7	46.3	189.0
Womenswold	59.4	6.6	46.8	254.2
Worth	151.7	94.4	164.4	238.9
<u>1720</u>				
Adisham	62.6	20.8	53.2	219.7
Guston	116.8	30.9	51.9	956.0
Lydden	71.1	23.5	56.5	579.8
Monkton	69.5	14.6	47.3	523.4
Sutton	55.5	20.6	64.8	-
Womenswold	67.3	6.7	53.1	252.5
Worth	140.2	89.7	158.6	125.0
<u>1730</u>				
Adisham	64.8	40.8	70.3	126.2
Guston	107.8	23.5	56.0	956.0
Lydden	74.8	24.4	59.8	326.5
Monkton	63.9	11.1	74.2	73.5
Sutton	58.6	39.3	61.0	-
Womenswold	72.1	5.1	90.0	10.1
Worth	161.5	40.2	194.7	127.1

Table F7 : Mean Estate Sizes

Parish	A	B	C	D
<u>1740</u>				
Adisham	64.8	51.7	42.6	600.3
Guston	107.8	24.0	94.8	688.1
Lydden	74.8	20.3	58.8	326.5
Monkton	65.7	12.9	49.0	357.7
Sutton	55.5	27.6	60.8	-
Womenswold	53.2	6.7	68.5	23.6
Worth	154.8	66.7	164.3	306.0
<u>1750</u>				
Adisham	60.5	34.0	44.4	599.4
Guston	107.8	26.4	83.0	688.1
Lydden	71.1	26.1	75.9	302.1
Monkton	67.5	11.4	84.3	9.5
Sutton	52.8	27.9	59.0	-
Womenswold	48.1	10.9	44.8	249.1
Worth	148.6	35.1	175.8	23.9
<u>1760</u>				
Adisham	64.8	210.4	42.9	266.5
Guston	116.8	26.4	52.2	956.0
Lydden	79.0	33.6	54.5	215.6
Monkton	63.9	14.5	82.5	4.8
Sutton	48.0	29.0	52.2	-
Womenswold	48.1	12.1	48.1	138.0
Worth	151.7	40.7	186.4	63.8
<u>1770</u>				
Adisham	64.8	93.4	45.2	108.2
Guston	127.4	18.4	52.1	947.6
Lydden	79.0	36.6	58.0	289.9
Monkton	62.2	11.0	46.4	929.9
Sutton	62.1	31.4	71.5	-
Womenswold	48.1	9.4	25.8	163.3
Worth	151.7	74.5	165.5	31.9

Table G : Mean Farm Sizes in the St. Augustine East Division, 1691 - 1831

Column A - Mean farm size

Column B - Mean wholly owner occupied farm

Column C - Mean wholly rented farm

Column D - Mean mixed tenure farm

Table G1 : Mean Farm Size, 1780

Parish	A	B	C	D
Adisham	61.4	169.5	44.3	307.7
Ash	38.8	22.4	29.5	121.2
Barfreston	100.0	-	6.3	240.6
Barham	45.5	54.6	35.4	152.7
Betteshanger & Ham	119.5	-	76.7	205.0
Bishopsbourne	80.1	47.5	90.4	-
Buckland & Charlton	50.3	22.6	62.4	55.7
Coldred	109.4	90.7	116.9	-
Denton	42.5	27.5	37.2	217.7
Eastry	57.8	31.7	38.5	146.0
Elmstone	28.8	22.9	33.1	21.5
Ewell	83.7	111.3	46.0	175.8
Eythorne	77.5	31.5	128.6	90.9
Goodnestone	49.1	109.9	28.6	121.3
Guston	87.6	12.6	112.6	-
Hougham	107.0	29.8	116.9	282.3
Ickham	87.1	90.8	85.7	-
Kingston	37.2	48.9	29.4	18.1
Knowlton & Chillenden	36.7	39.3	36.4	-
East Langdon	81.9	23.1	73.7	143.1
West Langdon	116.3	6.5	217.6	32.3
Littlebourne	43.1	65.0	38.7	43.6
Lydden	67.7	67.1	59.7	213.6
Minster	51.6	9.4	43.2	144.0
Great Mongeham	21.3	11.8	16.4	55.9
Little Mongeham & Ashley	53.7	29.6	48.4	123.4
Monkton	56.3	24.7	65.3	38.0
Nonington	82.2	78.2	83.7	-
Easole	61.7	95.6	37.5	-
Frogham	31.6	29.2	32.8	-
Northbourne	61.1	13.0	53.7	299.8
Tickness	24.2	-	24.2	-
Poulton	99.0	18.9	179.9	15.1
Preston	32.1	11.8	33.7	43.5
Ripple	81.0	24.0	65.1	369.5
River	53.7	28.6	57.8	100.2
St. Lawrence	21.8	8.7	17.7	96.2
St. Margaret & Oxney	188.4	38.4	203.4	-
St. Nicholas	107.5	36.7	103.7	432.6
Shepherdswell	51.0	20.5	63.8	35.4
Shoulden	37.6	46.1	28.1	90.5
Staple	19.0	32.6	13.1	33.1
Stonar	670.0	670.0	-	-
Stourmouth	27.9	42.6	20.4	94.8
Sutton	105.5	-	78.5	213.5
Tilmanstone	66.1	40.1	75.2	131.0
Waldershare	223.7	152.8	259.1	-
Westcliffe	292.3	-	292.3	-
Whitfield	55.8	9.9	83.3	-
Wickhambreux	45.6	22.8	30.8	257.4
Wingham	23.2	10.6	23.9	94.7
Womenswold	32.6	13.8	35.5	87.5
Woodnesborough	32.4	28.2	29.4	79.2
Wootton	59.9	62.6	58.5	-
Worth	181.2	111.5	177.4	718.4

Table G2 : Mean Farm Sizes, 1790

Parish	A	B	C	D
Adisham	75.6	123.4	73.5	-
Ash	38.3	17.7	27.4	114.7
Barfreston	50.0	3.8	44.6	139.1
Barham	51.7	78.3	34.2	171.4
Betteshanger & Ham	89.6	33.6	63.8	300.7
Bishopsbourne	83.4	89.1	69.8	280.4
Buckland & Charlton	37.8	61.1	21.2	113.3
Coldred	127.7	119.7	121.5	200.8
Denton	40.9	32.3	48.9	22.2
Eastry	48.6	52.0	40.2	76.8
Elmstone	28.8	19.6	32.9	22.2
Ewell	83.7	174.6	41.7	-
Eythorne	59.9	42.1	83.9	16.2
Goodnestone	56.5	68.6	35.4	168.0
Guston	100.1	21.3	149.5	98.3
Hougham	103.3	43.0	106.4	523.8
Ickham	97.6	130.5	84.1	51.4
Kingston	40.1	38.6	38.4	73.2
Knowlton & Chillenden	44.6	69.0	43.9	27.6
East Langdon	62.6	43.5	67.6	8.2
West Langdon	116.3	16.2	166.4	-
Littlebourne	43.1	74.6	36.2	40.9
Lydden	71.1	128.2	57.6	256.3
Minster	54.1	8.5	49.7	131.0
Great Mongeham	22.4	9.5	28.5	37.9
Little Mongeham & Ashley	80.2	39.5	72.1	200.3
Monkton	56.3	12.7	80.1	28.4
Nonington	79.4	44.8	92.6	33.6
Easole	52.7	15.1	67.8	-
Frogham	34.3	24.3	36.2	-
Northbourne	70.8	21.1	81.3	134.6
Tickness	24.2	-	24.2	-
Poulton	90.0	22.8	129.5	15.2
Preston	32.8	12.3	35.7	45.3
Ripple	75.6	26.1	93.6	-
River	73.8	42.4	30.0	331.7
St. Lawrence	24.0	21.2	17.8	91.2
St. Margaret & Oxney	-	-	-	-
St. Nicholas	112.4	10.6	122.5	419.1
Shepherdswell	54.0	18.9	47.7	327.5
Shoulden	42.7	58.9	26.9	83.2
Staple	18.0	28.0	13.9	23.6
Stonar	670.0	-	670.0	-
Stourmouth	26.9	29.5	9.8	141.8
Sutton	105.5	-	26.3	290.3
Tilmanstone	66.1	34.3	63.4	342.3
Waldershare	223.7	152.8	259.1	-
Westcliffe	292.3	-	292.3	-
Whitfield	63.8	7.2	89.4	59.7
Wickhambreux	45.6	19.9	39.4	122.1
Wingham	23.6	9.1	27.4	31.3
Womenswold	34.8	27.8	32.1	91.2
Woodnesborough	32.7	34.3	23.9	89.2
Wootton	67.9	90.7	59.7	-
Worth	195.6	108.2	163.0	849.4

Table G3 : Mean Farm Sizes, 1801

Parish	A	B	C	D
Adisham	72.6	105.5	47.9	158.0
Ash	33.3	18.8	26.6	100.1
Barfreston	55.6	34.6	81.8	-
Barham	60.5	100.0	37.9	81.4
Betteshanger & Ham	102.4	98.9	105.1	-
Bishopsbourne	83.4	69.5	90.4	-
Buckland & Charlton	43.8	21.4	17.9	279.0
Coldred	127.7	21.1	136.6	376.0
Denton	62.5	132.0	24.7	24.3
Eastry	45.3	36.7	29.5	137.7
Elmstone	28.8	20.8	15.0	181.3
Ewell	75.7	96.5	24.8	165.1
Eythorne	54.9	39.7	71.6	65.8
Goodnestone	58.3	68.2	25.5	158.2
Guston	116.8	22.5	197.3	63.5
Hougham	115.2	36.8	115.3	388.7
Ickham	87.1	53.1	100.8	-
Kingston	49.2	55.8	42.8	60.3
Knowlton & Chillenden	39.0	35.9	41.3	15.2
East Langdon	62.6	23.1	60.8	152.2
West Langdon	116.3	9.7	29.1	591.4
Littlebourne	42.0	42.6	27.0	770.3
Lydden	79.0	64.1	75.1	143.4
Minster	46.8	31.7	42.8	115.0
Great Mongeham	19.9	12.6	22.6	49.0
Little Mongeham & Ashley	70.2	63.5	73.6	117.3
Monkton	60.6	14.5	72.8	158.1
Nonington	84.8	34.0	83.2	213.7
Easole	56.8	35.2	75.3	-
Frogham	35.7	60.4	24.1	-
Northbourne	56.6	46.1	77.6	56.3
Tickness	24.2	-	24.2	-
Poulton	90.0	22.8	115.2	-
Preston	30.8	13.4	29.4	70.7
Ripple	70.9	29.6	95.6	-
River	49.2	49.0	22.5	196.8
St. Lawrence	17.7	14.0	12.3	63.1
St. Margaret & Oxney	103.6	28.4	122.1	452.2
St. Nicholas	64.9	21.9	53.6	327.1
Shepherdswell	54.0	87.8	26.8	98.9
Shoulden	40.0	23.3	30.3	104.0
Staple	21.0	44.0	11.5	33.5
Stonar	167.5	74.4	260.6	-
Stourmouth	28.9	33.2	8.6	86.8
Sutton	87.9	25.1	50.2	226.1
Tilmanstone	59.2	28.7	63.9	325.4
Waldershare	268.4	161.8	339.5	-
Westcliffe	292.3	-	292.3	-
Whitfield	49.6	15.0	43.5	198.2
Wickhambreux	41.9	25.5	30.5	297.0
Wingham	17.5	11.8	11.4	163.4
Womenswold	32.6	26.7	39.1	10.1
Woodnesborough	31.3	39.1	23.1	46.6
Wootton	67.9	88.8	54.0	-
Worth	181.2	102.2	201.6	394.8

Table G4 : Mean Farm Size, 1814

Parish	A	B	C	D
Adisham	86.4	98.0	62.9	157.4
Ash	31.3	24.4	22.5	103.9
Barfreston	50.0	53.9	48.3	-
Barham	57.4	70.1	37.7	121.6
Betteshanger & Ham	89.6	115.3	63.9	-
Bishopsbourne	83.2	82.0	83.9	-
Buckland & Charlton	37.8	10.3	19.4	211.7
Coldred	139.3	15.3	165.5	246.5
Denton	46.2	32.7	49.4	63.7
Eastry	41.6	26.5	44.1	132.5
Elmstone	30.9	18.1	37.9	-
Ewell	79.2	92.3	52.3	231.1
Eythorne	62.8	64.3	77.4	27.3
Goodnestone	62.1	75.7	33.2	180.6
Guston	116.8	18.7	251.9	262.2
Hougham	96.6	51.6	94.6	427.4
Ickham	101.5	62.4	113.5	120.9
Kingston	44.9	34.5	23.3	305.9
Knowlton & Chillenden	34.7	65.4	34.6	5.2
East Langdon	76.1	91.8	70.0	46.2
West Langdon	99.7	155.1	4.8	67.9
Littlebourne	42.0	55.2	21.6	366.3
Lydden	67.7	47.6	72.0	225.8
Minster	50.7	43.6	21.6	184.6
Great Mongeham	18.6	16.3	17.8	41.5
Little Mongeham & Ashley	67.3	63.0	62.3	112.5
Monkton	51.4	46.0	44.7	101.7
Nonington	104.2	44.0	59.7	301.7
Easole	53.6	70.9	18.8	37.5
Frogham	43.2	68.3	24.5	-
Northbourne	54.2	52.8	48.0	95.1
Tickness	24.2	1.9	28.6	-
Poulton	90.0	20.9	129.5	-
Preston	28.6	28.7	29.1	17.2
Ripple	87.2	115.2	63.3	-
River	62.2	51.7	71.2	85.4
St. Lawrence	16.4	14.5	12.9	58.2
St. Margaret & Oxney	98.7	99.7	22.1	283.2
St. Nicholas	62.5	38.1	41.6	241.4
Shepherdswell	52.5	37.5	68.3	-
Shoulden	36.2	35.2	39.1	33.4
Staple	19.8	24.8	12.5	45.8
Stonar	-	-	-	-
Stourmouth	29.9	19.8	27.5	114.2
Sutton	81.2	38.4	9.8	679.4
Tilmanstone	66.1	57.0	107.3	32.7
Waldershare	268.4	161.8	339.5	-
Westcliffe	233.8	156.2	487.2	213.2
Whitfield	49.6	29.8	37.3	341.8
Wickhambreux	54.0	38.6	26.6	241.9
Wingham	18.0	19.8	12.6	70.6
Womenswold	32.4	25.1	28.7	106.5
Woodnesborough	34.6	26.4	27.3	81.4
Wootton	60.0	40.8	70.4	-
Worth	132.7	131.2	141.5	104.4

Table G5 : Mean Farm Size, 1822

Parish	A	B	C	D
Adisham	86.4	84.4	68.4	157.4
Ash	32.1	31.9	25.2	72.7
Barfreston	62.5	150.4	49.9	-
Barham	54.8	63.9	42.0	107.4
Betteshanger & Ham	102.4	109.3	93.3	-
Bishopsbourne	91.0	101.1	71.1	269.6
Buckland & Charlton	36.7	61.2	18.1	-
Coldred	139.3	48.0	170.3	244.3
Denton	53.1	50.8	47.3	90.0
Eastry	39.9	23.5	45.7	82.1
Elmstone	30.9	20.4	38.7	-
Ewell	79.5	100.0	54.4	-
Eythorne	63.4	98.0	40.4	27.7
Goodnestone	64.3	94.9	47.1	19.3
Guston	116.8	18.4	253.6	257.7
Hougham	76.7	31.8	83.2	263.6
Ickham	97.6	64.6	122.2	45.6
Kingston	44.9	47.7	32.8	219.7
Knowlton & Chillenden	34.7	65.4	34.6	5.2
East Langdon	76.1	110.7	60.1	70.6
West Langdon	67.9	155.9	6.5	-
Littlebourne	42.7	73.4	30.7	29.9
Lydden	67.7	62.2	48.3	248.2
Minster	50.1	26.9	37.4	144.5
Great Mongeham	20.3	15.7	6.0	92.3
Little Mongeham & Ashley	63.6	54.0	95.1	19.1
Monkton	59.1	18.6	81.1	162.7
Nonington	109.0	11.6	72.6	301.1
Easole	57.9	104.9	14.3	-
Frogham	42.8	82.6	23.0	-
Northbourne	62.3	54.5	83.6	69.9
Tickness	24.2	1.9	28.6	-
Poulton	90.0	27.9	126.2	22.8
Preston	29.0	32.8	25.6	17.6
Ripple	66.7	95.4	30.9	187.6
River	69.5	58.9	94.8	-
St. Lawrence	16.2	13.2	11.1	73.4
St. Margaret & Oxney	90.1	41.4	28.3	646.9
St. Nicholas	64.9	19.4	48.3	287.8
Shepherdswell	51.0	58.0	42.3	-
Shoulden	38.4	39.2	30.6	63.4
Staple	20.2	21.5	17.8	29.1
Stonar	-	-	-	-
Stourmouth	160.3	18.2	30.6	-
Sutton	75.4	84.9	40.5	-
Tilmanstone	56.2	40.0	114.1	28.5
Waldershare	268.4	161.8	339.5	-
Westcliffe	292.3	230.1	495.7	213.2
Whitfield	49.6	27.7	58.5	117.3
Wickhambreux	55.1	69.2	26.2	114.1
Wingham	17.6	11.1	14.7	70.0
Womenswold	32.7	50.8	26.8	16.9
Woodnesborough	33.9	30.2	24.5	103.1
Wootton	67.9	63.9	58.4	168.4
Worth	135.1	117.5	155.7	164.2

Table G6 : Mean Farm Size, 1831

Parish	A	B	C	D
Adisham	78.9	141.0	49.5	204.8
Ash	31.8	35.1	22.2	92.7
Barfreston	41.7	14.8	34.4	-
Barham	57.5	66.6	47.3	96.7
Betteshanger & Ham	102.4	120.2	89.1	-
Bishopsbourne	95.3	93.9	81.8	269.6
Buckland & Charlton	30.9	30.1	31.7	16.7
Coldred	139.3	99.1	167.0	150.4
Denton	53.1	27.0	47.8	173.7
Eastry	40.5	19.1	45.7	116.4
Elmstone	39.3	18.9	58.2	46.4
Ewell	75.7	105.6	66.4	-
Eythorne	38.8	70.8	17.9	39.7
Goodnestone	69.0	136.3	49.8	-
Guston	100.1	12.9	151.9	260.7
Hougham	78.8	26.2	81.0	-
Ickham	97.6	91.0	91.1	173.1
Kingston	42.4	40.4	18.8	498.9
Knowlton & Chillenden	32.8	63.7	28.5	5.2
East Langdon	66.6	82.9	56.8	-
West Langdon	87.3	290.6	3.9	50.5
Littlebourne	40.8	62.6	30.8	-
Lydden	78.3	91.2	72.2	32.0
Minster	48.1	30.0	33.8	208.1
Great Mongeham	20.8	18.8	19.8	41.3
Little Mongeham & Ashley	66.8	76.6	62.0	40.1
Monkton	66.5	39.8	75.4	130.3
Nonington	98.7	10.1	55.8	297.5
Easole	52.9	3.4	80.4	-
Frogham	40.2	78.4	22.4	-
Northbourne	69.7	75.5	37.3	-
Tickness	24.2	1.9	28.6	-
Poulten	90.0	22.8	128.4	22.8
Preston	29.6	29.1	25.1	89.6
Ripple	66.7	92.9	32.1	194.8
River	69.5	58.9	94.8	-
St. Lawrence	17.0	13.8	14.3	55.2
St. Margaret & Oxney	71.4	46.0	63.5	227.7
St. Nicholas	61.4	31.4	58.4	-
Shepherdwell	55.6	60.3	55.7	24.7
Shoulden	30.3	32.7	20.7	52.7
Staple	20.2	23.5	18.5	11.8
Stonar	-	-	-	-
Stourmouth	23.8	21.5	19.1	85.2
Sutton	65.9	71.0	63.5	34.4
Tilmanstone	66.1	53.1	97.9	29.6
Waldershare	338.5	217.6	459.4	-
Westcliffe	146.1	162.7	125.9	177.6
Whitfield	49.6	46.3	42.3	79.6
Wickhambreux	56.3	52.6	42.3	134.6
Wingham	19.4	16.0	15.5	55.0
Womenswold	37.4	106.1	21.1	35.6
Woodnesborough	37.3	28.9	32.1	74.3
Wootton	63.9	41.2	77.2	-
Worth	125.9	100.3	109.9	364.9

Table G7 : Mean Farm Size

Parish	A	B	C	D
<u>1691</u>				
Monkton	46.4	9.2	58.2	22.7
<u>1699</u>				
Adisham	55.0	40.9	56.9	122.6
Guston	116.8	38.5	146.3	115.4
Lydden	61.8	25.0	98.3	65.7
Monkton	51.4	14.4	63.4	23.5
Sutton	55.5	112.6	46.4	20.8
Womenswold	48.1	87.5	24.4	269.3
Worth	185.8	23.1	154.1	1180.7
<u>1710</u>				
Adisham	56.7	39.6	66.8	14.0
Guston	127.4	14.9	153.4	148.6
Lydden	67.7	43.3	38.1	320.4
Monkton	48.2	16.1	56.5	16.6
Sutton	62.1	10.4	47.2	128.8
Womenswold	43.9	69.3	32.8	-
Worth	172.8	114.2	193.5	105.5
<u>1720</u>				
Adisham	55.0	32.1	63.1	75.7
Guston	100.1	19.9	157.8	177.2
Lydden	67.7	36.6	86.9	-
Monkton	51.4	16.6	56.5	-
Sutton	70.3	8.2	79.8	56.3
Womenswold	43.9	80.2	31.1	-
Worth	158.1	110.3	164.6	211.9
<u>1730</u>				
Adisham	60.5	42.1	66.9	123.4
Guston	93.4	14.7	160.7	173.1
Lydden	71.1	40.0	96.5	-
Monkton	51.4	14.8	56.5	39.7
Sutton	75.4	-	71.7	97.2
Womenswold	45.9	5.6	52.3	-
Worth	165.1	48.1	195.3	178.7

Table G7 : Mean Farm Size

Parish	A	B	C	D
<u>1740</u>				
Adisham	62.6	68.5	62.8	16.8
Guston	93.4	13.7	143.2	173.1
Lydden	67.7	40.1	83.6	54.9
Monkton	51.4	9.8	64.0	23.7
Sutton	75.4	4.1	77.9	97.2
Womenswold	36.1	8.1	42.2	-
Worth	161.5	55.3	199.6	35.8
<u>1750</u>				
Adisham	62.6	45.2	69.2	-
Guston	93.4	14.0	128.7	173.1
Lydden	59.3	39.2	83.8	30.5
Monkton	50.3	3.9	58.2	35.5
Sutton	75.4	20.7	77.4	219.3
Womenswold	34.8	49.2	31.8	-
Worth	154.1	33.9	189.1	31.9
<u>1760</u>				
Adisham	60.5	220.2	39.7	303.0
Guston	107.8	14.0	170.1	140.1
Lydden	61.8	54.9	63.7	-
Monkton	51.5	9.5	61.8	54.7
Sutton	65.9	22.1	77.9	53.8
Womenswold	37.4	40.4	36.4	-
Worth	172.8	35.2	226.1	-
<u>1770</u>				
Adisham	55.0	87.8	47.7	-
Guston	100.1	19.1	122.2	-
Lydden	64.6	48.8	70.6	-
Monkton	53.7	11.6	64.6	-
Sutton	75.4	4.2	58.6	154.9
Womenswold	31.6	42.3	29.7	15.2
Worth	185.8	67.3	210.9	-

HEADINGS

- Table H - Logarithmic Mean of Estates
Table I - Logarithmic Mean of Farms
Table J - Logarithmic Standard Deviation of Estates
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Table L - Entropy of Estates
Table M - Entropy of Farms

Table H1 : Logarithmic Mean of Estates, 1780 - 1831

Parish	1780	1790	1801	1814	1822	1831
Adisham	24.3	19.3	23.2	30.2	32.0	46.3
Ash	16.1	15.2	14.9	10.1	10.8	9.3
Barfreston	17.5	17.7	23.5	23.5	24.3	24.1
Barham	22.7	22.2	22.4	18.3	17.3	18.5
Betteshanger & Ham	51.6	49.2	69.5	69.0	69.0	69.0
Bishopsbourne	36.6	35.8	35.8	43.0	44.0	44.0
Buckland & Charlton	28.6	22.2	25.2	18.1	15.8	13.8
Coldred	40.2	48.8	46.0	49.4	53.4	63.3
Denton	24.7	20.8	20.9	30.7	32.4	38.3
Eastry	16.4	16.6	16.5	16.2	14.5	13.5
Elmstone	18.2	18.0	15.8	18.6	18.6	18.6
Ewell	35.0	33.4	36.3	33.9	33.8	35.0
Eythorne	38.6	37.4	25.2	24.5	24.4	15.4
Goodnestone	18.1	21.4	22.1	23.0	24.5	35.7
Guston	28.6	33.1	38.1	28.7	32.0	21.1
Hougham	31.7	32.0	32.4	30.3	25.1	24.3
Ickham	21.7	21.4	23.5	22.6	21.7	21.0
Kingston	17.8	15.3	15.5	15.4	14.9	14.5
Knowlton & Chillenden	15.3	23.4	16.9	10.7	10.7	8.6
East Langdon	25.5	27.1	25.1	24.8	24.8	24.8
West Langdon	21.0	29.6	17.6	21.6	21.6	11.0
Littlebourne	23.6	22.1	19.7	23.0	24.9	21.7
Lydden	32.3	34.1	36.2	29.6	27.2	31.2
Minster	14.0	14.7	14.9	16.7	18.9	18.7
Gt. Mongeham	9.0	9.0	9.3	8.7	10.9	10.2
Lt. Mongeham & Ashley	20.2	30.4	25.1	21.5	18.0	18.7
Monkton	17.3	15.0	19.1	18.0	21.1	22.7
Nonington	34.5	37.9	36.8	37.3	34.2	35.4
Easole	15.0	14.4	15.3	8.0	8.0	8.7
Frogham	17.6	19.9	16.3	17.2	16.9	18.0
Northbourne	17.6	24.7	21.4	16.3	15.1	17.7
Tickness	14.2	14.2	14.2	14.2	14.2	14.2
Poulton	19.8	20.4	24.2	24.2	20.4	21.2
Preston	14.1	13.7	14.4	13.2	13.1	12.6
Ripple	25.4	23.9	26.0	34.8	31.5	30.7
River	23.0	28.3	26.8	28.6	29.8	34.9
St. Lawrence	9.6	11.8	8.8	10.4	9.2	9.8
St. Margaret & Oxney	45.6	-	33.6	26.0	32.9	35.1
St. Nicholas	28.9	27.0	23.5	19.5	21.5	22.4
Shepherdswell	21.0	24.9	28.2	28.6	27.2	25.9
Shoulden	12.9	12.6	13.3	13.4	15.5	11.5
Staple	8.4	7.9	8.8	8.9	9.3	9.2
Stonar	670.0	670.0	122.7	-	-	-
Stourmouth	10.6	13.0	13.7	11.4	11.4	10.4
Sutton	28.8	31.4	29.3	26.8	29.0	27.9
Tilmanstone	29.9	22.0	22.5	19.2	15.3	16.6
Waldershare	249.3	548.3	249.3	249.3	249.3	250.4
Westcliffe	224.2	224.7	224.2	141.0	141.0	114.7
Whitfield	20.4	20.2	17.6	19.7	19.0	19.0
Wickhambreux	18.8	20.4	20.6	19.9	20.3	21.4
Wingham	10.5	10.0	10.5	18.3	10.3	8.7
Womenswold	15.3	15.5	12.8	14.4	12.8	13.8
Woodnesborough	14.0	20.0	15.2	16.5	17.1	15.8
Wootton	40.8	36.9	45.4	47.6	46.5	47.8
Worth	48.7	56.9	47.5	47.2	46.2	37.6

Table H2 : Logarithmic Mean of Estates

	Adisham	Guston	Lydden	Monkton	Sutton	Womens- wold	Worth
1691	-	-	-	12.7	-	-	-
1699	21.4	56.7	30.1	16.7	18.3	28.7	56.3
1710	23.2	35.2	35.8	13.7	26.5	20.1	52.2
1720	21.9	33.6	24.4	14.5	25.8	24.9	40.1
1730	23.6	28.9	26.4	14.0	29.0	24.9	47.2
1740	20.5	37.3	26.4	14.7	25.2	19.2	49.5
1750	19.0	37.3	27.4	14.5	24.6	16.4	47.9
1760	23.8	32.5	32.9	15.2	20.9	17.4	54.0
1770	24.5	39.2	31.3	14.2	27.8	15.4	48.8

Table II : Logarithmic Mean of Farms, 1780 - 1831

Parish	1780	1790	1801	1814	1822	1831
Adisham	23.0	32.0	31.4	40.3	40.3	34.7
Ash	11.7	12.0	10.7	7.6	7.7	7.1
Barfreston	17.5	12.0	14.1	12.0	12.4	11.9
Barham	17.6	18.3	21.8	18.3	17.8	18.3
Betteshanger & Ham	82.4	40.9	65.5	60.1	63.2	63.0
Bishopsbourne	22.2	28.8	27.8	33.4	32.3	34.5
Buckland & Charlton	21.0	13.0	12.7	10.8	10.4	12.5
Coldred	48.0	58.6	51.1	61.8	67.2	84.8
Denton	20.0	19.4	20.4	20.4	22.2	24.8
Eastry	13.9	15.6	14.7	12.6	13.5	12.6
Elmstone	18.0	17.9	17.0	18.6	18.6	23.7
Ewell	33.8	28.7	28.4	32.7	30.0	30.0
Eythorne	36.1	34.5	25.4	28.5	25.2	14.2
Goodnestone	17.4	18.2	16.5	19.7	21.4	19.1
Guston	27.4	36.2	41.9	32.7	36.1	24.2
Hougham	29.0	28.2	30.6	28.7	27.5	24.0
Ickham	18.7	27.6	25.2	28.5	26.3	23.7
Kingston	15.4	15.5	18.8	15.5	17.2	12.7
Knowlton & Chillenden	14.0	25.8	15.9	14.1	14.1	10.0
East Langdon	23.0	24.2	21.4	22.9	25.3	18.2
West Langdon	30.6	32.4	26.9	18.3	24.4	13.0
Littlebourne	12.0	12.0	11.7	11.3	11.5	11.4
Lydden	31.6	34.8	40.7	31.6	30.3	40.6
Minster	12.8	12.7	11.3	11.3	11.9	10.5
Gt. Mongeham	8.9	9.1	8.6	8.1	8.8	10.2
Lt. Mongeham & Ashley	21.5	33.5	29.1	24.4	22.4	27.0
Monkton	20.0	18.7	19.8	17.5	17.5	20.2
Nonington	23.9	26.3	25.0	29.7	28.4	21.0
Easole	12.5	13.2	12.3	9.4	10.1	9.4
Frogham	12.0	13.5	13.7	14.0	12.6	12.6
Northbourne	16.5	24.2	20.4	17.6	20.3	17.6
Tickness	9.3	9.3	9.3	9.3	9.3	9.3
Poulton	27.7	25.4	25.4	25.4	24.7	25.7
Preston	15.9	17.2	15.3	13.4	13.4	12.9
Ripple	24.3	26.0	27.5	36.4	27.2	28.0
River	18.9	25.1	22.6	34.8	29.8	32.8
St. Lawrence	7.0	8.1	6.0	6.8	6.6	7.1
St. Margaret & Oxney	95.5	-	30.6	25.8	31.6	32.9
St. Nicholas	25.1	26.4	11.4	10.2	21.5	10.9
Shepherdswell	19.1	17.9	17.8	18.5	19.0	20.1
Shoulden	15.1	15.5	18.5	15.8	16.8	12.9
Staple	7.6	7.7	8.2	7.8	8.1	9.0
Stonar	670.0	670.0	124.6	-	-	-
Stourmouth	7.6	7.7	7.7	8.0	8.4	6.3
Sutton	42.3	39.6	37.2	24.8	29.9	34.6
Tilmanstone	26.1	20.1	20.3	28.7	21.6	25.1
Waldershare	128.1	256.2	192.2	192.2	192.2	243.0
Westcliffe	224.2	224.7	224.2	98.1	181.8	83.9
Whitfield	18.2	19.8	17.3	15.7	15.9	18.3
Wickhambreux	15.4	16.4	14.2	17.6	18.4	20.7
Wingham	7.8	7.9	5.8	6.0	5.8	6.4
Womenswold	10.0	10.3	11.7	13.0	11.6	10.6
Woodnesborough	13.4	20.3	15.7	16.5	16.1	17.4
Wootton	20.9	21.3	18.4	21.1	26.1	20.8
Worth	47.4	59.9	57.1	45.3	48.0	48.1

Table I2 : Logarithmic Mean of Farms

	Adisham	Guston	Lydden	Monkton	Sutton	Womens- wold	Worth
1691	-	-	-	15.8	-	-	-
1699	21.0	37.7	28.5	18.4	22.2	17.7	53.5
1710	25.2	33.9	29.6	15.9	30.9	15.9	51.5
1720	21.8	33.9	30.9	15.1	36.7	15.2	46.4
1730	23.7	29.8	33.2	16.1	35.7	13.4	46.5
1740	23.5	36.1	32.7	17.6	27.4	13.1	45.9
1750	22.3	36.1	29.0	15.2	27.4	11.7	45.8
1760	20.3	37.7	26.7	14.6	24.3	13.3	48.5
1770	20.1	35.2	28.7	16.4	28.8	11.0	53.5

Table J1 : Logarithmic Standard Deviation of Estates, 1780 - 1831

Parish	1780	1790	1801	1814	1822	1831
Adisham	32.4	26.6	31.6	41.2	44.3	60.8
Ash	21.4	20.9	20.4	16.1	17.0	15.3
Barfreston	24.1	24.2	33.4	33.4	37.4	37.2
Barham	29.1	29.0	29.2	25.0	23.4	25.0
Betteshanger & Ham	56.8	62.8	79.8	79.9	79.9	79.9
Bishopsbourne	53.0	50.5	50.5	59.6	63.2	63.2
Buckland & Charlton	35.9	28.7	32.3	23.5	21.2	16.9
Coldred	50.4	57.7	54.5	59.1	61.7	71.4
Denton	32.8	27.1	29.1	40.0	40.3	47.8
Eastry	23.8	23.8	22.5	23.1	20.8	19.3
Elmstone	20.2	20.1	17.8	20.6	20.4	20.4
Ewell	45.1	46.0	47.4	43.7	43.7	44.3
Eythorne	45.9	43.6	35.4	35.1	35.0	22.2
Goodnestone	23.7	28.6	29.1	32.9	34.5	51.9
Guston	37.4	41.5	49.4	38.2	41.3	29.8
Hougham	42.8	49.4	45.0	41.4	32.8	32.3
Ickham	33.7	33.1	35.4	36.0	34.2	33.7
Kingston	23.7	20.7	21.6	21.4	20.7	21.1
Knowlton & Chillenden	23.8	33.7	28.4	19.7	19.7	17.0
East Langdon	40.8	41.4	37.2	39.9	39.9	39.9
West Langdon	29.5	38.1	24.7	29.1	29.1	16.4
Littlebourne	31.0	30.0	28.2	30.8	34.0	30.1
Lydden	37.7	39.8	43.2	36.6	33.9	38.2
Minster	20.9	21.8	22.3	24.8	27.4	27.7
Gt. Mongeham	12.0	12.4	12.6	11.8	14.0	13.4
Lt. Mongeham & Ashley	26.6	39.3	34.4	29.7	26.4	27.3
Monkton	23.1	21.2	26.2	24.9	28.3	30.4
Nonington	47.9	52.2	49.7	52.2	49.1	51.5
Easole	22.0	21.7	22.9	13.0	13.0	14.3
Frogham	23.4	24.2	21.2	22.5	22.6	24.4
Northbourne	23.9	33.1	28.5	23.6	24.5	25.5
Tickness	20.7	20.7	20.7	20.7	20.7	20.7
Poulton	27.6	28.0	32.4	32.4	28.0	28.5
Preston	18.0	17.6	17.8	17.0	16.9	16.9
Ripple	34.6	33.8	35.6	46.0	40.3	38.7
River	30.0	35.3	32.2	34.1	37.8	42.4
St. Lawrence	13.5	16.0	12.4	13.7	12.3	12.5
St. Margaret & Oxney	59.5	-	44.1	37.3	39.7	42.2
St. Nicholas	40.6	39.1	33.6	31.2	35.4	35.6
Shepherdswell	28.0	33.0	36.1	36.9	33.6	31.8
Shoulden	16.9	16.8	17.5	17.7	20.2	15.7
Staple	11.6	11.0	11.9	11.8	12.1	12.1
Stonar	0	0	119.7	-	-	-
Stourmouth	15.6	17.0	19.0	16.9	17.1	15.7
Sutton	36.3	40.2	37.2	33.1	36.9	33.5
Tilmanstone	36.6	28.4	28.6	25.6	20.9	22.4
Waldershare	245.7	355.9	245.7	245.7	245.7	246.5
Westcliffe	209.9	210.3	209.9	144.9	144.9	121.1
Whitfield	25.4	25.3	24.2	28.6	27.8	27.9
Wickhambreux	24.3	26.5	27.0	27.3	27.1	28.4
Wingham	15.0	13.7	14.6	14.4	14.4	11.8
Womenswold	21.6	22.1	18.4	19.3	18.3	20.5
Woodnesborough	17.9	21.4	18.9	20.6	21.3	20.3
Wootton	50.0	46.9	57.3	59.4	58.6	55.8
Worth	63.1	72.4	60.7	60.7	58.6	48.2

Table J2 : Logarithmic Standard Deviation of Estates

	Adisham	Guston	Lydden	Monkton	Sutton	Womens- wold	Worth
1691	-	-	-	20.6	-	-	-
1699	29.2	66.5	36.4	25.9	25.7	35.9	72.3
1710	30.6	44.3	42.7	21.8	32.5	27.4	68.7
1720	29.9	41.7	30.5	22.6	32.5	32.9	57.5
1730	31.7	36.9	32.7	21.1	35.6	33.3	65.1
1740	28.1	47.1	32.7	21.9	32.3	25.5	67.2
1750	25.7	47.1	33.3	21.6	31.0	22.3	64.3
1760	31.0	41.4	39.0	21.7	27.2	22.9	69.7
1770	31.4	47.7	37.9	20.8	35.7	21.7	64.6

Table K1 : Logarithmic Standard Deviation of Farms, 1780 - 1831

Parish	1780	1790	1801	1814	1822	1831
Adisham	30.5	42.7	40.4	50.5	50.5	44.4
Ash	18.2	9.5	16.0	13.2	13.7	13.2
Barfreston	26.6	17.4	20.2	17.4	19.7	16.3
Barham	22.2	23.5	27.9	24.4	23.1	23.8
Betteshanger & Ham	81.7	51.8	70.0	66.2	71.2	71.0
Bishopsbourne	31.2	39.4	37.3	44.7	45.1	48.0
Buckland & Charlton	27.0	17.7	17.4	14.7	13.9	15.8
Coldred	59.9	70.2	62.7	74.3	77.8	92.9
Denton	25.1	24.3	27.3	26.6	29.6	31.0
Eastry	22.3	23.2	20.5	18.7	19.5	18.7
Elmstone	19.8	19.8	19.0	20.6	20.4	26.0
Ewell	42.7	37.3	37.2	41.2	38.9	38.4
Eythorne	42.7	38.8	32.4	36.8	34.1	19.2
Goodnestone	23.7	25.3	24.1	27.5	29.1	27.4
Guston	35.5	45.4	52.3	43.8	46.9	34.4
Hougham	42.9	41.3	45.6	41.3	37.5	34.4
Ickham	30.9	43.3	38.9	44.1	41.7	38.8
Kingston	20.1	20.4	25.7	21.5	23.5	18.4
Knowlton & Chillenden	20.0	30.8	22.0	19.8	19.8	16.0
East Langdon	34.8	34.2	31.6	35.6	39.0	29.2
West Langdon	38.9	39.7	35.7	27.1	34.0	22.0
Littlebourne	16.7	16.7	16.2	15.5	16.0	16.0
Lydden	38.1	41.3	47.7	38.6	37.7	48.1
Minster	19.5	19.4	18.0	17.9	18.2	16.2
Gt.Mongeham	12.3	13.4	11.9	11.0	12.0	13.4
Lt.Mongeham & Ashley	30.0	42.8	39.9	34.0	31.4	35.7
Monkton	20.1	25.1	27.0	23.6	23.7	27.4
Nonington	33.4	36.1	36.1	41.6	41.2	33.7
Easole	19.0	18.8	18.2	14.0	15.2	15.1
Frogham	15.8	16.5	17.7	18.8	17.3	17.1
Northbourne	25.8	33.3	28.0	25.3	30.2	25.5
Tickness	13.5	13.5	13.5	13.5	13.5	13.5
Poulton	36.6	33.0	33.0	33.0	32.6	33.2
Preston	19.8	20.8	19.0	17.2	17.2	17.2
Ripple	34.3	34.2	36.7	46.8	35.3	34.9
River	25.3	33.5	28.6	41.5	37.8	39.9
St. Lawrence	10.3	11.6	8.8	9.5	9.2	9.8
St. Margaret & Oxney	112.4	-	41.6	37.5	37.3	38.3
St. Nicholas	38.3	41.4	18.6	17.2	35.4	18.0
Shepherdswell	24.3	23.2	23.7	24.2	24.2	25.6
Shoulden	20.4	21.7	23.3	20.4	21.5	17.8
Staple	11.1	10.8	11.6	10.9	11.5	12.2
Stonar	0	0	119.2	-	-	-
Stourmouth	12.7	12.6	13.1	13.7	14.2	10.9
Sutton	53.5	49.7	42.8	31.8	38.3	40.4
Tilmanstone	32.7	27.1	27.1	36.5	27.8	32.1
Waldershare	137.2	190.8	188.7	188.7	188.7	235.4
Westoliffe	209.9	210.3	209.9	118.5	185.1	94.4
Whitfield	25.3	27.8	23.0	21.9	23.5	24.9
Wickhambreux	21.8	23.3	20.6	25.0	26.6	28.2
Wingham	11.1	11.1	8.3	8.8	8.6	9.1
Womenswold	14.3	15.2	16.2	17.0	16.2	15.6
Woodnesborough	17.8	22.0	19.6	21.0	20.4	21.8
Wootton	28.1	29.6	25.6	27.9	34.5	28.4
Worth	67.1	82.1	77.0	59.9	62.9	62.7

Table K2 : Logarithmic Standard Deviation of Farms

	Adisham	Guston	Lydden	Monkton	Sutton	Womens- wold	Worth
1691	-	-	-	22.3	-	-	-
1699	28.2	48.6	35.0	25.3	29.1	23.4	73.9
1710	32.1	45.9	36.3	22.5	36.4	21.0	70.8
1720	29.3	41.6	38.2	22.4	43.7	20.4	66.8
1730	32.2	37.5	40.6	22.3	44.5	18.9	68.1
1740	32.4	44.8	39.6	24.4	37.2	17.1	66.8
1750	30.3	44.8	34.8	21.8	34.8	15.9	64.4
1760	27.8	48.3	33.4	21.3	31.2	17.8	69.1
1770	26.6	44.4	35.5	23.9	38.4	15.1	74.4

Table Ll : Entropy of Estates, 1780 - 1831

Parish	1780	1790	1801	1814	1822	1831
Adisham	0.703	0.636	0.650	0.634	0.642	0.676
Ash	0.917	0.746	0.820	0.841	0.839	0.874
Barfreston	0.513	0.514	0.535	0.535	0.512	0.509
Barham	0.710	0.701	0.699	0.636	0.621	0.617
Betteshanger & Ham	0.860	0.865	0.847	0.852	0.852	0.852
Bishopsbourne	0.618	0.618	0.618	0.646	0.646	0.646
Buckland & Charlton	0.785	0.769	0.758	0.743	0.634	0.694
Coldred	0.604	0.615	0.637	0.641	0.653	0.672
Denton	0.642	0.673	0.662	0.700	0.694	0.691
Eastry	0.788	0.785	0.769	0.782	0.779	0.791
Elmstone	0.712	0.710	0.774	0.778	0.769	0.769
Ewell	0.698	0.637	0.727	0.717	0.716	0.718
Eythorne	0.833	0.830	0.773	0.717	0.715	0.714
Goodnestone	0.651	0.633	0.634	0.585	0.554	0.444
Guston	0.468	0.500	0.507	0.436	0.459	0.420
Hougham	0.796	0.795	0.802	0.729	0.746	0.743
Ickham	0.635	0.615	0.599	0.597	0.593	0.591
Kingston	0.783	0.755	0.728	0.680	0.679	0.717
Knowlton & Chillenden	0.554	0.546	0.545	0.488	0.488	0.470
East Langdon	0.657	0.660	0.681	0.597	0.597	0.597
West Langdon	0.340	0.362	0.329	0.331	0.331	0.319
Littlebourne	0.717	0.702	0.635	0.702	0.710	0.691
Lydden	0.691	0.693	0.790	0.770	0.750	0.761
Minster	0.604	0.596	0.598	0.682	0.689	0.712
Gt. Mongeham	0.827	0.829	0.822	0.795	0.834	0.811
Lt. Mongeham & Ashley	0.788	0.776	0.764	0.723	0.669	0.682
Monkton	0.606	0.597	0.619	0.621	0.656	0.651
Nonington	0.688	0.697	0.686	0.669	0.655	0.659
Easole	0.471	0.469	0.287	0.254	0.254	0.259
Frogham	0.712	0.707	0.592	0.550	0.523	0.494
Northbourne	0.690	0.689	0.740	0.678	0.632	0.626
Tickness	0.314	0.314	0.314	0.314	0.314	0.314
Poulton	0.488	0.486	0.500	0.501	0.486	0.488
Preston	0.859	0.843	0.855	0.817	0.798	0.797
Ripple	0.699	0.695	0.707	0.717	0.783	0.763
River	0.755	0.817	0.848	0.853	0.758	0.771
St. Lawrence	0.799	0.803	0.811	0.864	0.851	0.824
St. Margaret & Oxney	0.767	-	0.748	0.730	0.683	0.752
St. Nicholas	0.642	0.629	0.642	0.707	0.720	0.727
Shepherdswell	0.587	0.711	0.726	0.722	0.735	0.704
Shoulden	0.784	0.764	0.763	0.765	0.773	0.802
Staple	0.739	0.733	0.714	0.718	0.720	0.719
Stonar	0	0	0.583	-	-	-
Stourmouth	0.772	0.796	0.804	0.776	0.766	0.744
Sutton	0.792	0.744	0.737	0.629	0.693	0.651
Tilmanstone	0.741	0.714	0.717	0.695	0.645	0.623
Waldershare	0.681	0.681	0.611	0.681	0.681	0.684
Westcliffe	0.852	0.854	0.852	0.773	0.773	0.888
Whitfield	0.730	0.728	0.700	0.720	0.712	0.714
Wickhambreux	0.759	0.763	0.803	0.785	0.791	0.794
Wingham	0.674	0.618	0.652	0.627	0.621	0.607
Womenswold	0.692	0.706	0.699	0.700	0.696	0.588
Woodnesborough	0.827	0.809	0.845	0.856	0.854	0.841
Wootton	0.743	0.661	0.654	0.742	0.737	0.668
Worth	0.767	0.794	0.772	0.781	0.786	0.809

Table L2 : Entropy of Estates

	Adisham	Guston	Lydden	Monkton	Sutton	Womens- wold	Worth
1691	-	-	-	0.567	-	-	-
1699	0.691	0.715	0.749	0.623	0.707	0.783	0.761
1710	0.750	0.480	0.775	0.605	0.776	0.699	0.783
1720	0.747	0.497	0.634	0.607	0.793	0.720	0.766
1730	0.753	0.487	0.640	0.604	0.804	0.698	0.737
1740	0.691	0.639	0.640	0.603	0.791	0.710	0.776
1750	0.684	0.639	0.667	0.589	0.791	0.697	0.771
1760	0.734	0.497	0.683	0.604	0.781	0.705	0.781
1770	0.736	0.512	0.678	0.600	0.787	0.693	0.763

Table M1 : Entropy of Farms, 1780 - 1831

Parish	1780	1790	1801	1814	1822	1831
Adisham	0.780	0.820	0.807	0.819	0.819	0.808
Ash	0.887	0.705	0.805	0.826	0.812	0.841
Barfreston	0.235	0.477	0.492	0.477	0.443	0.527
Barham	0.776	0.748	0.755	0.727	0.721	0.709
Betteshanger & Ham	0.788	0.804	0.873	0.885	0.858	0.857
Bishopsbourne	0.681	0.769	0.714	0.807	0.790	0.796
Buckland & Charlton	0.774	0.724	0.636	0.627	0.602	0.735
Coldred	0.776	0.775	0.726	0.754	0.765	0.846
Denton	0.803	0.803	0.655	0.802	0.796	0.793
Eastry	0.709	0.781	0.734	0.725	0.780	0.763
Elmstone	0.797	0.798	0.772	0.778	0.769	0.778
Ewell	0.748	0.687	0.755	0.765	0.749	0.760
Eythorne	0.744	0.828	0.813	0.815	0.735	0.730
Goodnestone	0.741	0.709	0.691	0.708	0.710	0.668
Guston	0.635	0.673	0.666	0.612	0.631	0.588
Hougham	0.733	0.726	0.736	0.748	0.785	0.755
Ickham	0.667	0.748	0.751	0.739	0.739	0.722
Kingston	0.778	0.744	0.777	0.737	0.781	0.684
Knowlton & Chillenden	0.761	0.797	0.774	0.779	0.779	0.702
East Langdon	0.666	0.779	0.760	0.731	0.774	0.708
West Langdon	0.367	0.370	0.343	0.321	0.333	0.320
Littlebourne	0.674	0.674	0.670	0.657	0.664	0.700
Lydden	0.776	0.787	0.802	0.790	0.775	0.808
Minster	0.737	0.715	0.741	0.720	0.723	0.686
Gt. Mongeham	0.781	0.795	0.797	0.777	0.789	0.825
Lt. Mongeham & Ashley	0.811	0.784	0.815	0.774	0.765	0.790
Monkton	0.743	0.726	0.727	0.734	0.669	0.689
Nonington	0.704	0.748	0.732	0.696	0.685	0.672
Easole	0.466	0.514	0.478	0.337	0.341	0.446
Frogham	0.700	0.617	0.690	0.672	0.641	0.613
Northbourne	0.699	0.752	0.737	0.722	0.759	0.626
Tickness	0.633	0.633	0.633	0.633	0.633	0.633
Poulton	0.554	0.546	0.546	0.546	0.548	0.548
Preston	0.817	0.816	0.816	0.808	0.812	0.812
Ripple	0.670	0.662	0.750	0.759	0.750	0.738
River	0.712	0.686	0.794	0.855	0.758	0.771
St. Lawrence	0.760	0.767	0.749	0.841	0.829	0.817
St. Margaret & Oxney	0.830	-	0.687	0.676	0.575	0.760
St. Nicholas	0.715	0.705	0.649	0.639	0.638	0.660
Shepherdswell	0.725	0.673	0.704	0.716	0.721	0.705
Shoulden	0.775	0.753	0.792	0.774	0.774	0.816
Staple	0.782	0.789	0.750	0.748	0.770	0.794
Stonar	0	0	0.851	-	-	-
Stourmouth	0.677	0.674	0.682	0.690	0.707	0.684
Sutton	0.701	0.665	0.623	0.537	0.718	0.803
Tilmanstone	0.726	0.650	0.704	0.782	0.722	0.708
Waldershare	0.792	0.792	0.851	0.851	0.851	0.872
Westcliffe	0.852	0.854	0.852	0.719	0.809	0.845
Whitfield	0.659	0.646	0.659	0.654	0.717	0.733
Wickhambreux	0.756	0.789	0.774	0.751	0.776	0.778
Wingham	0.749	0.735	0.739	0.759	0.752	0.734
Womenswold	0.677	0.684	0.733	0.740	0.735	0.662
Woodnesborough	0.814	0.803	0.847	0.839	0.824	0.831
Wootton	0.694	0.670	0.587	0.691	0.737	0.679
Worth	0.735	0.765	0.766	0.778	0.786	0.815

Table M2 : Entropy of Farms

	Adisham	Guston	Lydden	Monkton	Sutton	Womens- wold	Worth
1691	-	-	-	0.752	-	-	-
1699	0.780	0.626	0.776	0.761	0.744	0.715	0.738
1710	0.809	0.577	0.754	0.746	0.762	0.707	0.762
1720	0.795	0.608	0.781	0.729	0.817	0.698	0.787
1730	0.796	0.598	0.787	0.701	0.805	0.656	0.789
1740	0.791	0.695	0.794	0.753	0.724	0.699	0.790
1750	0.751	0.695	0.791	0.720	0.639	0.689	0.781
1760	0.743	0.673	0.764	0.710	0.652	0.704	0.770
1770	0.758	0.668	0.769	0.735	0.733	0.712	0.758

Appendix B: 1705 Marriage Duties Act Assessments.

The Marriage Duties Act assessments were made for a tax originally levied under the act 6&7 William and Mary c6 of 1694. The tax raised its revenue by levying duties upon burials, baptisms, and marriages. So that the tax base would not be eroded, annual dues were also levied on bachelors of twenty five years of age and over and widowers who had not produced a child within the previous five years. The rates were levied on a sliding scale. An ordinary person would pay two shillings upon marriage. This rose to £1.12s for a person with £600 personal estate or an annual income of £50; to £5.2s for a reputed esquire; and to £50.2s for a duke. Other rates existed for the marriage of an elder and a younger son of those of higher status. Those receiving alms were exempted from the duties, but the parish was obliged to pay their burial dues.(1)

The duties were originally levied for five years and were subsequently renewed for a further five years. The St. Augustine East assessments were made during the last year of the taxes' life. The tax was not a fiscal success. The yield was poor with only £498,158 being raised during its entire life, and only £66,635 being received in its peak year, 1699. (2)

1. Details of the duties can be found in D.V.Glass, London Inhabitants within the Walls, 1695, London Record Society, II(1966), pp ix-xviii.

2. B.P.P. 1868-9 XXXV, pp 14-38

The nature of the tax implied that the method of assessment would involve an enumeration of the population and the registration of its vital events. Its administration followed the standard format for the land and assessed taxes. Local commissioners supervised the work of the parochial assessors and heard appeals. The assessments were made for the land tax parishes rather than for ecclesiastical parishes. Parochial collectors collected the duties and paid them to the receiver general. (1) Like the window tax, the duties became the nominal responsibility of the JPs rather than the land tax commissioners after the first year. The overlap between the work of the two bodies in the St. Augustine East Division was such that the land tax commissioners continued to handle Marriage Duties Act business. They can be found hearing appeals and dealing with collectors' arrears. (2)

The surviving assessments are close to being a census of the population. In the St. Augustine East division, assessments have survived for 46 of the 55 parishes. In 1801, these parishes accounted for 89 per cent of the division's population. They represent the largest collection made under the tax for a rural area, and, probably, the largest enumeration of a rural area surviving from the period before the 1841 census. They provide much social and

1. The administration of the tax in Bristol is discussed in E. Ralph & M.E. Williams (eds), The Inhabitants of Bristol in 1696, Bristol Records Society (1968), pp ix-xviii.

2. K.A.O. Sa/Z 03 eg 5 June, 3 July, 11 Sept, 20 Oct 1705, 6 Aug, 3 Sept 1706.

demographic information and, for this study, are a source of the incidence of surnames and Christian names in the population. Some of the assessments have been used in earlier studies.(1)

The quality of the assessments is generally high. Two-thirds of them yield sufficient information to enable household size and composition to be analysed. The quality, though, is not comparable with the most outstanding examples of pre-census listings. For example, only three assessments give occupations and only eleven identify the population enumerated by both Christian name and surname. For five assessments there is evidence that they do not enumerate the entire population. The Hougham assessment does not give the number of servants in John Sutton's household. The Barham assessment indicates the presence of children and servants in the households but not their number. For Minster in Thanet, the assessment lists 111 persons, mainly male, including 12 bachelors over 25 years of age. If the latter groups are excluded, then it is likely that the others are taxpayers and head of households. The East Langdon assessment lists mainly husbands and wives and appears to

1. T.P.R.Laslett, 'Size and Structure of the household in England over three centuries', Population Studies, xxiii (1969), and 'Introduction' and 'Mean Household Size in England' in T.P.R.Laslett(ed), Household and Family in Past Time, Cambridge(1972). Laslett uses nine of the assessments in the compilation of his standard of 100 English communities. They are those for Ash, Eastry, Ickham, Littlebourne, Monkton, Preston, St Nicholas at Wade, Shepherdswell, and Woodnesborough. His sample also includes the 1676 Compton census assessment for Goodnestone next Wingham.

omit children. The Hougham population has been calculated as that listed as the assessment is unlikely to understate the total by more than a handful. The population of Barham and Minster have been estimated by applying a multiplier of 4.5 to the number of households.(1) That for East Langdon has been estimated by assuming that children amounted to 44 per cent of the population.(2)

The fifth problem assessment is that of Goodnestone. The assessment appears to be of tolerable quality, identifying sons and daughters, and listing persons who could be servants. The population of 77 is much lower than the Compton census figure of 281 for 1676.(3) The most likely explanation is that offered by T.P.R.Laslett that the communities were not constant.(4) The population for the neighbouring parish of Wingham seems to have risen from 300 to 580. It has been decided in this case to let the figure for 1705 stand.

The population of the division for 1705 can be estimated as 9650. This uses the estimated populations of East Langdon, Barham and Minster, and assumes that the 46 parishes have the same proportion of the population as they did in 1801.

1. Laslett has calculated the mean household size for 34 Kentish parishes in 1705 to be 4.434:(1972), p138.
2. Ibid, p148, gives a proportion of 42.6 per cent.
3. C.W.Chalkin, 'The Compton Census of 1676, The Dioceses of Canterbury and Rochester',; in A Seventeenth Century Miscellany, Kent Records, XVII (1960), p168.
4. The World We Have Lost (1965), p254.

Table B1. Population listed in 1705 assessments.

Parish.	Population	Per cent listed
Adisham	125	68.0
Ash	1182	94.9
Barfrestone	50	78.0
Barham	468*	48.3*
Betteshangar & Ham	40	62.5
Buckland & Charlton	107	70.1
Denton	92	98.9
Eastry	465	84.9
Elmstone	54	100.0
Ewell	73	100.0
Eythorne	73	100.0
Goodnestone	77	100.0
Guston	80	82.5
Hougham	184	71.7
Ickham	263	100.0
Knowlton & Chillenden	106	100.0
East Langdon	70*	55.7*
West Langdon	76	81.6
Littlebourne	272	100.0
Minster	445*	24.9*
Great Mongeham	158	100.0
Little Mongeham	162	78.4
Monkton	208	100.0
Easole Borough	87	100.0
Frogham Borough	100	100.0
Watching Borough	119	100.0
Poulton	12	100.0
Preston	258	100.0
Ripple	69	98.6
River	121	79.3
St. Lawrence	607	91.6
St. Nicholas	249	99.6
Sheperdswell	160	80.6
Stodmarsh	54	79.6
Stonar	8	75.0
Sutton	60	100.0
Tilmanstone	119	96.6
Waldershare	35	51.4
Westcliffe	36	33.3
Whitfield	125	100.0
Wickhambreux	213	100.0
Wingham	580	100.0
Womenswold	108	100.0
Woodnesborough	430	100.0
Wotton	85	84.7
Worth	120	81.7
Total	7985	93.1

* Population estimate

The assessments identify 7985 persons of whom 93 per cent are identified by name. Those who are not identified are mainly servants, with the occasional apprentice or relative whose patrynomic cannot be assumed. The assessments identify some 77 per cent of the estimated population of the division. The proportions identified by surname vary between parishes. Some 26 have at least 90 per cent of their populations named, and these include most of the larger parishes. Only six identify less than 70 per cent of the population. These include the three assessments that do not list all those resident and three small parishes in which the proportion of servants is exceptionally high. Table B1 shows the proportions identified by surname in each parish. The documents are not always easy to interpret and discrepancies in number of households and people can be found between the estimates of Chalkin and Laslett and between both and the estimates presented. These are relatively minor and do not influence the conclusions.

Ten assessments have been used to analyse Christian names. They have been selected as they name at least 90 per cent of their population by both Christian name and surname.(1) Table B2 identifies the assessments used and gives their population and sex ratios. The parishes are fairly representative of the division, both geographically and in terms of population size.

1. Some other assessments that meet the criteria have been rejected as abbreviated Christian names mean these cannot be always identified.

Table B2: 1705 Assessments used for the Analysis of

<u>Christian names.</u>		% identified	Males per 1000
Parish	Population	by forename	females
Denton	92	92.4	878
Ickham	263	99.2	1121
Littlebourne	272	99.3	1109
Gt. Mongeham	158	99.4	1000
Monkton	208	98.6	1167
Poulton	12	100.0	3000
Ripple	69	98.6	1061
St. Nicholas	249	94.4	1204
Wingham	580	96.7	976
Woodnesborough	430	99.5	928
Total	2333	97.8	1032

Table B3 shows the population growth that took place during the period in the St. Augustine East Division. The 1705 estimate has been derived from the Marriage Duties

Table B3: Population of the St. Augustine East Division

1705	9,650
1801	17,491
1811	19,758
1821	23,154
1831	26,402

Sources: K.A.O Q/LTz 2; B.P.P 1801-2, B.A.P. 1812 XI; B.P.P. 1833 XXXVI.

Act assessments. Its degree of accuracy depends on the completeness of their enumeration and the assumption that the distribution of population in the division in 1705 was similar to that of 1801. The censuses of 1801 to 1831 were tallies of the population rather than detailed questionnaires, and are probably not wholly

accurate(1) The population totals reveal some interesting changes in the annual rate of population growth. Between 1705 and 1801, the division's population grew at an annual rate of 0.62 per cent. This increased to 1.23 per cent between 1801 and 1811 and to 1.6 per cent between 1811 and 1821. Between 1821 and 1831 the growth rate fell slightly to 1.32 per cent. The pattern is therefore one of an increasing rate of growth until 1821 with a slight slackening off thereafter.

If the growth rates are applied to intercensal years, then the population for those years can be estimated. This is of particular value for the period 1705 to 1801 due to the length of the interval. Table B4 shows the resulting populations that can be projected back from 1801 using the annual growth rate for 1705-1801. For such a projection to hold true, depends on there being a constant growth rate. This is unlikely to have been the case. Numerous studies have pointed to an increase in the growth rate during the eighteenth century. The consensus view is that the population of England and Wales stagnated during the first half of the century and growth accelerated after about 1750.(2) The higher rate of population growth in St. Augustine East Division between 1801 and 1811 compared

1. Details of the way in which they were conducted can be found in Interdepartmental Committee on Social and Economic Research, Guides to Official Sources no. 2: Census Reports of Gt. Britain 1801-31 (1951), pp4-15

2. See for example M.W.Flinn, British Population Growth 1700-1850 (1970), pp 16-24.

Table B4. Population Projections for the St. Augustine East Division.

	Projection 1	Projection 2	Projection 3	Projection 4
1700	9,356	10,289	8,662	
1710	9,954	9,389	10,026	9,141
1720	10,590	8,710	12,683	10,089
1730	11,267	9,979	10,930	10,055
1740	11,987	10,968	11,001	9,827
1750	12,753	10,761	11,284	10,444
1760	13,568	11,042	10,097	11,174
1770	14,435	14,570	13,410	12,565
1780	15,358	13,817	14,543	13,741
1790	16,339	15,028	14,543	14,913
1800	17,384	18,275	20,425	17,433

Projection 1 assumes an annual growth rate of 0.62 per cent
 Projection 2 assumes a baptism/population ratio of 42 per 1000 and that St Augustine East produced 62 per cent of the lath's baptisms.

Projection 3 assumes a burial/population ratio of 35 per 1000 and that St Augustine East produced 62 per cent of the lath's burials.

Projection 4 deducts 62 per cent of the excess of baptisms over burials from each population and assumes a 10 per cent under registration of baptisms and burials.

with 1705-1801 would suggest that the rate of growth rose during the course of the century.

An alternative projection requires other evidence. There are a limited number of population estimates for particular parishes in the division. John Boys quotes censuses taken for two parishes. At Minster-in -Thanet the population in 1774 was 696 and for St. Lawrence and Ramsgate it was 2726 in 1773 and 3601 in 1792.(1) These point to an annual growth rate of 0.65 per cent per annum for Minster between 1705 and 1774 and one of 0.06 per cent between 1774 and 1801. Caution

1. General View of the Agriculture of the County of Kent, (1st edn, 1794), pp 14-15.

should be used in interpreting these figures as Minster is one of the parishes for which the 1705 population has been estimated from the number of households. For St. Lawrence and Ramsgate, the annual growth rate rose from 1.48 per cent for 1773-92 to 1.67 per cent for 1792-1801. This compares to a biannual rate of 0.59 per cent for St. Lawrence alone between 1705 and 1801. The uncertain quantity here is how far these figures reflect the growth of Ramsgate rather than the rural part of St. Lawrence.

Projections have been made using the parish register abstracts published in the early census reports. Their use is fraught with difficulties. The baptisms and burials recorded were not always accurately compiled from the registers. The registers, themselves, were incomplete and do not record all births, deaths, and marriages due to factors such as nonconformity. The years selected by Rickmann may not have been representative. There is evidence that 1710, 1720, 1730, and, possibly, 1740 may have been years with a higher mortality rate than adjacent years.⁽¹⁾ All of which points to extreme caution in interpreting any projections using this material.

A series of projections have been produced using a variety of assumptions to manipulate the parish register abstract data. Two methods are available. A ratio of baptism or burials to the population can be applied to the parish register abstracts. The projection depends on its accuracy on the constancy in the birth or death rates or through a change in the efficiency of registration. In Table B4, the second projection uses a baptism rate of

1. Flinn, op cit, pp 19-20.

42 per 1000 and the third a burial rate of 35 per 1000. In both cases it is assumed that the Eastern Division accounts for 62 per cent of lath's total. The rates selected are arbitrary but give close fits to the total population for 1705 and 1801.(1) If a constant ratio is applied then the relationships between each total will remain the same.

The final projection uses the alternative method, that of deducting the excess of baptisms over burials from successive population tables. Again it has been assumed that the Eastern Division accounts for 62 per cent of the baptisms and burials in the lath and it was assumed that under-registration was by 10 per cent. The abstracts record the baptisms and burials on an annual basis only after 1780. For the earlier dates in the projection the decennial totals have been compiled from an average of the two terminal years in the decade. The accuracy of this projection is dependent on constancy in the efficiency in registration. It may also be affected by migration. Emigration might cause an ageing in the population and a greater proportionate reduction in baptisms than in the population as a whole. Immigration could cause the reverse.

1. J.T.Krause has produced an estimate of the crude birth rate for 21 rural East Kent parishes for 1700-9 of 33 per 1000 and a crude death rate of 24.- 'English Population Movements between 1700 and 1850' in M.Drake (ed), Population in Industrialization.(1969), p124. Even without allowing for under-registration, these would produce populations of 12,500 to 13,500, far in excess of the 1705 estimate. Strangely Krause cites the 1705 Marriage Duties Act assessments as his source.

The evidence from the parish register abstracts points to little growth in the population during the first half of the eighteenth century. During the second half of the century, it grew at a relatively rapid rate. The turning point for the increased rate can be tentatively placed in the decade 1760-70. The baptism data shows a secular increase throughout the century. The nadir occurred in 1720. The trend is downwards between 1700 and 1720 and then rises to 1760. After 1760 the rate of increase rises. The number of baptisms recorded in 1760 were only 27 per cent higher than they were in 1720 but those in 1770 were 32 per cent higher than in 1760. The burial data is less clearcut. Burials rose between 1700 and 1720, and then fell to 1760. There is a rise of 33 per cent between 1760 and 1770, thereafter they remain on a plateau a little above their 1770 level. The number of marriages show a steady rise after 1754, the year for which they were first recorded in the abstracts.

The three projections derived from the abstracts exhibit similar trends. They suggest that the population showed little signs of growth between 1700 and 1750 and probably hovered around the 10,000 mark. The high figure from the burial projection in 1720 and the low figure from baptism point to that year being one of high mortality, perhaps resulting in a fall in fertility with fewer of a cohort of women of childbearing age surviving to complete their families. The 1700 burial projection population is low compared with the others and the 1705 figure. This might suggest low mortality during the first decade

of the century.(1) Two of the projections support a growth in the population between 1750 and 1760 to about 11,000. All the projections point to more rapid growth after 1760, particularly between 1790 and 1801.

If the supposition that the population of the division stood at 10,000 in 1750 and 11,000 in 1760 is correct, then this points to an annual growth rate of 1.04 per cent between 1750 and 1801, and of 1.14 per cent for 1760 to 1801. The annual growth rate before 1750 would be negligible. The reasons why the population might have grown after 1750, and more rapidly after 1760, are unclear. The higher population figures from the burial projections than from others, point to higher mortality rate than later in the century. The parish register abstracts show that in 1710, 1720, 1730, and 1740, the four main urban areas in the region; Canterbury, Dover, Deal, and Sandwich, had an excess of burials over baptisms. In 1720 this was also true of St. Augustine but in 1710 and 1730, the excess of baptisms over burials in the lath was not sufficient to offset the excess of burials in the urban areas. This could indicate that during the early part of the eighteenth century, an increase in the population in St. Augustine would have been absorbed in maintaining the population of its urban areas.

The assessments enable the more common names in which the majority of the identification problems result. Table B5 lists those names that occurred at an incidence of 25 or more per 1000 and should be viewed in conjunction with Table 4.17.

1. This would lend weight to Krause's contention even though the figures do not support the precise ones he puts forward - op cit.

Table B5: The Most Common Names in the St. AugustineEast Division, 1705

Austin	Knight
Adams	Knott
Ansell	Knowler
Bush	Lacy
Bax	Lade
Baker	Lilly
Bailey	Lawrence
Balsey	May
Bean	Maxted
Bing	Matson
Beer	Minter
Burvill	Marsh
Brice	Morris
Brooks	Martin
Brockman	Nash
Bradley	Neame
Barton	Pett
Brown	Pittock
Cooper	Pettit
Cock	Philpot
Castle	Pilcher
Cousins	Palmer
Coller	Paine
Curling	Peirce
Denne	Parker
Danton	Pritchard
Drayson	Paramor
Elgar	Rose
Fagg	Rigden
Fuller	Rogers
Friend	Read
Gibbs	Reynolds
Goodban	Spaine
Goldfinch	Safery
Gore	Sutton
Garrett	Solly
Grant	Smith
Gibbons	Sanders
Hogben	Sharp
Hogman	Tucker
Huts on	Taylor
Hills	Terry
Hammond	White
Harvey	Wood
Harrison	Wilson
Horn	Walker
Joad	Wild
Jull	Wright
Jones	Woodward
Kebble	Young
Kingsford	

Appendix C : 1795 Harvest Enquiry for Kent (P.R.O. HO 42/37)

The harvest enquiry of 1795 was the first of a series of official enquiries to take place into the state of agriculture during the subsequent decade (1). The motivation behind each was similar. During the latter part of the eighteenth century, Great Britain had ceased to be a net exporter of grains, coming to rely instead on regular importation to supplement home production. War with France disrupted foreign supplies and increased the demand for grains from the armed forces and their animals. Deficiency would, in these circumstances, be likely to cause a shortage of foodstuffs. Even if the shortage was not severe, expectations of famine, coupled with rising prices, would be such as to generate social discontent. Each of the official enquiries took place in years when it was feared that the harvest would be poor. Their main function was to provide the government with information about the state of the harvest. Any data generated about the structure of agriculture would be largely incidental to this aim.

The 1795 enquiry was carried out by the Duke of Portland as Secretary of State for Home Affairs. Its stimulus was the expectation that the 1795 harvest would prove to be deficient, and this would compound the shortages already experienced as a result of the poor harvest of 1794. The wet autumn of 1794 impeded the sowing of the wheat crop. Those farmers able to put seed in found that as it germinated it was attacked by the pests that had multiplied in the previous two mild winters. This coincided with the realisation that what had previously been thought to have been a good crop, proved to yield poorly upon being threshed. The cold spring of 1795 delayed the sowing of the spring corn and damaged still further the young wheat (2).

1. See W.E.Minchinton, 'Agricultural Returns and the Government during the Napoleonic Wars', Ag.Hist. Rev..I (1953).
2. The frost was bad enough to kill oysters in the grounds at Whistable, Faversham and Queenborough in March, 1795, and over 100 newly-shorn sheep in June at Nackington and St. Nicholas at Wade-Kentish Gazette, 13.3.1795, 23.6.1795.

Unseasonal frosts in July did still more damage and caused the harvest to be delayed. The harvest, though, dispelled the worst fears of famine. The spring corn proved to be a good crop and the wheat crop good enough to be threshed for market soon after harvest, rather than having to be dried (1).

During the winter of 1794/5 a number of charitable schemes for aiding the poor were launched. Subscriptions were raised at Nonington, Wingham, Barham, Ash, St. Nicholas at Wade and Littlebourne (2). A number of these were revived, including one for the relief of the industrious poor in the Isle of Thanet, as the harvest approached. Resolutions were passed at meetings in Canterbury, Faversham, Margate and Maidstone to reduce the consumption of wheat flour (3). A few incidents have come to light which reveal the tensions present. At Lamberhurst in February 1795, a crowd threatened to destroy a mill that had sent flour out of the district, and had to be protected by troops (4). In March, troops at Canterbury had obliged the butchers to accept only 4d per lb for meat, and the Middlesex Militia were deployed to a new location after a similar incident at Chatham. Troops continued to patrol Chatham market in March and April following threats of rioting by striking workers from the Royal Dockyard (5). Following a food riot at Lewes, two members of the Oxford Militia were shot and two others hanged (6). There are no reports of rick-burning, but John Boys complained of pilfering from his granaries and barns (7).

1. Kentish Gazette, 18.11.1794, 12.12.1794, 16.1.1795, 13.2.1795
10.3.1795, 7.4.1795, 12.6.1795, 7.8.1795, 11.9.1795.
2. Kentish Gazette, 6.1.1795, 13.1.1795, 30.1.1795
3. Kentish Gazette, 17.7.1795, 31.7.1795.
4. Kentish Gazette, 6.2.1795.
5. Kentish Gazette, 31.3.1795, 7.4.1795.
6. Kentish Gazette, 16.6.1795.
7. Kentish Gazette, 3.7.1795.

The nature of the crisis is illustrated in figure C.† which shows the prices of the main grain crops in Kent between 1793 and 1796 (1). The price of wheat in 1793 shows the pattern found in a typical year. Prices began to rise in March to reach a pre-harvest peak in June. After the harvest they fell to a level slightly above the plateau reached prior to the pre-harvest increase. 1794 began in the same fashion. Prices began to rise in February and fell in June and July. However the harvest served only to interrupt the trend of rising prices for a short while. During the remainder of the year and into 1795, the rate of price increase accelerated to reach a peak in August, 1795 at a level 121 per cent higher than the 1794 pre-harvest peak. The harvest of 1795 brought a brief respite but, by 28 October, the date on which Portland began his enquiry, prices were again accelerating to a new peak. This was reached in March 1796. During the remainder of 1796 the trend was downward, with the exception of the usual seasonal rise between March and June. The pattern for barley and oats prices departs from that of wheat in certain respects. Their prices also rose to a peak in August 1795. After the 1795 harvest the secular trend in their prices was downward. In October 1795, however, they too were showing signs of further increases. Their prices did reach a secondary peak in January 1796, but this is some way below the previous one.

At the time the enquiry was commenced the 1795 harvest had failed to reverse the trend of rising grain prices. The government's concern at this was shared by many private individuals. For example, on the day before Portland began his enquiry Arthur Young dispatched his second circular letter of the year to his correspondents. Like the first, this was concerned

1. The prices were originally published weekly in the London Gazette and reprinted as monthly averages by the Annals of Agriculture. The Kentish prices tend to exhibit the same trends as the London ones on account of the importance of the London market to Kentish producers.

with the scarcity of provisions, on account of "the high price of corn continuing so much longer than was expected and the result of the new crop being uncertain". (1) Portland's enquiry can therefore be seen to have taken place at a time of considerable uncertainty as to the likely trend of future prices.

The Duke of Portland asked each of the lords lieutenant to procure

an account of the produce of the late crop of the several articles of grain grown in the said county, comparing the same with the produce of a fair crop of every such article of grain in common years and with the produce of the crop of 1794 of every such article of grain.

The request was passed on by the lords lieutenant to the magistrates sitting in each petty session area. The information was generally collected within three months of the commencement of the enquiry. In Kent magistrates' meetings were held between 21 November 1795 and 12 January 1796, with the Duke of Dorset returning their reports to Portland between 24 November and 19 January.

The general method adopted for collecting the data was for the constables to procure returns for their areas. This was the normal method of local government administration at the time, being used, for example, to secure nominations for the posts of surveyor of highways, overseer of the poor, and land tax assessor for each parish. Some variations from this procedure occurred. For example, the magistrates for the lower part of the Andover division summoned a meeting of the principal farmers, dealers and millers in their area to secure the information.

There is evidence to suggest that some difficulty was experienced in making the returns. The Lord Lieutenant of Berkshire told Portland that he could not imagine how the magistrates in his county were going to obtain this information and expected the results to be "little more than guesswork" (2).

1. Annals of Agriculture, XXV (1795), p344
2. Minchinton, *op.cit.*, p33

The Kentish magistrates did have some problems. The magistrates of the Faversham division of Scray Upper were obliged to hold several meetings, with adjournments, before they finally collected the information. The magistrates of the two St. Augustine divisions were unable to procure returns from 13 of their 81 parishes. In the Malling division of Aylesford South, the magistrates concluded that "the exact knowledge of an average crop of corn we deem is very difficult to obtain" and failed to give a precise return of their pea crop "for want of information".

The surviving returns do not exist for all areas. They remain for 12 of Kent's 15 petty session areas. D.B. Grigg believes that not all the areas replied to the enquiry (1) so that absence of a return may mean that one was never compiled. For one type of area no return was sought by Portland and so their lack of coverage constitutes an element of bias in the returns. The boroughs lying outside the jurisdiction of the county magistrates do not appear to have been included. In Kent, they mainly comprise Canterbury and the liberties of the Cinque ports. They should not have been excluded on the grounds that they were urban areas as this is not strictly true. They included rural parishes such as Sarre, Birchington and Ringwould as well as partially urbanised ones such as St. Mary Bredin in Canterbury. Further, many of the larger urban areas in the county such as Maidstone, Chatham and Greenwich fell within the county magistrates' jurisdiction and hence would have been included in the survey. Fortunately the areas involved are small. It is probable though that the agriculture conducted within them differed from that in the surrounding parishes as it is likely to have been more intensive in order to compete with urban uses for the available land.

Portland's letter did not specify the information he sought in any detail. As a result the request was interpreted in a number of different ways, and the Kentish returns, in common with

1. D.B. Grigg, 'The Changing Agricultural Geography of England : a commentary on the sources available for the reconstruction of the agricultural geography of England 1770-1850,' Institute of British Geographers Transactions, XLI (1967), p81

those for other counties, vary considerably in their format (1). The units which the returns cover are not consistent. The two St. Augustine divisions returned an account of the produce for each parish, while the other divisions submitted a combined report for their entire areas. The quality of the returns is variable. The magistrates for Shepway Lower and the Faversham divisions confined their reports to general impressions of the harvests in their areas while the other returns are of a more statistical nature. The basis for the statistics also varies. Four divisions returned the total production for each crop and seven the yield per acre. In each case the information was returned for 1794, 1795 and "a fair crop in a common year". No examples have been found in Kent of a return of the number of acres devoted to each crop, although this did happen in other counties (2).

Portland did not specify the crops about which he was seeking information and, consequently, different divisions produced returns for different crops. Wheat, barley and oats were included by each division in Kent but the other crops included varied. The additional crops to figure in certain returns are peas, beans and rye (3). The omission of peas and beans was in some cases deliberate and in others inadvertent. The Sutton at Hone Lower return did not include beans because few were grown in the area, but the Malling division return did not include peas through inability to secure information. The inconsistency in the returns of peas and beans means that little can be inferred from their omission. Only the Blackheath division made a return of rye. Its absence from the other returns is almost certainly because of its unimportance as a crop. For both the Malling and Sutton at Hone Lower divisions the magistrates reported that

1. Grigg, (1967), p 81; D. Thomas, Agriculture in Wales during the Napoleonic Wars, Cardiff (1963), p 41
2. D.B.Grigg, The Agricultural Revolution in South Lincolnshire, Cambridge (1966), pp 70-1; J. Thirsk, 'Agrarian History, 1540-1950,' Victoria County History of Leicestershire, II (1954), p 244.
3. In Leicestershire some minor crops also figure - *ibid.*

the crop was little cultivated in their areas. The 1801 crop returns point to the minimal importance of the crop in the county. Rye was grown on a small scale in north-west Kent and in a few isolated parishes outside that area, but most parishes did not grow the crop at all (1). Further confirmation of the unimportance of rye comes from a number of contemporary observers, including John Boys, John Jacob, William Bland and William Dann (2).

The main problems in using the 1795 harvest returns derive from the inconsistency in the nature of the data returned and the possibility that the known difficulties in their compilation may have resulted in inaccuracy. The returns for Lincolnshire, Leicestershire and south Lancashire have been used but Thomas has concluded that those for Wales are too inconsistent and have too poor a coverage to be systematically analysed (3). Certainly this problem does not feature in the St. Augustine returns. These cover most of the parishes in the two divisions. The main area of the eastern division for which information is lacking lies around Dover. The returns for Whitfield, Poulton, Hougham and Buckland & Charlton are all missing. The returns have a common format in that they contain the total production of wheat, barley, oats, beans and peas. There are no inconsistencies that prohibit the analysis of the east Kent returns.

1. P.R.O. HO 67/4, 20. There is some uncertainty as to how a nil return for rye in the 1801 crop returns should be interpreted. The crop was initially omitted from the enquiry, and the forms were printed without any space being reserved for its return. It was only included after the enquiry had begun. In some cases a nil return could represent the fact that the correction was not made. It is further complicated by the fact that rye in Kent was normally grown as an early fodder crop and would have been harvested long before the enquiry was commenced. Indeed other crops may subsequently have been grown on the same land.
2. Annals of Agriculture, XXIV (1795), pp 85, 175; XV (1791), p 252; XII (1789), p 134.
3. J.P.Dodd, 'South Lancashire in Transition: A Study of the crop returns for 1795-1801', Transactions of the Historical Society of Lancashire and Cheshire, CXVII (1965), pp 94-6, 98-102; Thomas, op cit., p 41.

Direct evidence to test the accuracy of the returns is largely lacking. This would require an independent source and none exists. It is possible to make some judgement about the accuracy of the source in two ways. Firstly, the data can be analysed to see if the results are internally consistent. The greater the degree of internal consistency, the more probable it is that the results are accurate. Secondly, there are some less complete sources with which the data can be compared. The chief alternative source is the replies to the two circular letters on the scarcity of provisions sent by Arthur Young to his correspondents. These can be compared with the 1795 returns for the areas in which the correspondents lived. It is desirable to assess the accuracy of the returns on an area by area basis as the quality in each petty session area is likely to have been related to the quality of local government and the degree of persistence of each group of magistrates in obtaining satisfactory results.

When the data is analysed, a high degree of internal consistency is revealed. The St. Augustine East data were examined to see the percentage of gross revenue derived from each crop in 1794, 1795 and a normal year and the production of each crop in 1794 and 1795 as a percentage of that in a normal year. The results are very similar for neighbouring parishes. This also holds true when St. Augustine East parishes are compared with those in neighbouring St. Augustine West division, for which similar information was collected by a different group of magistrates. There is the possibility that the results may have been edited at some stage to make them consistent but it is difficult to conceive who might have done this or with what motive. By the time the returns were assembled the immediate crisis was over and they seem to have been forgotten. For the Scray Lower division the magistrates returned both the total production and the yield per acre, so that the acreage under the crops implied in the return can be calculated. This is shown in table C.1.

Table C.1 : Acreage under various crops in the Scray Lower division

<u>Crop</u>	<u>Normal</u>	<u>1794</u>	<u>1795</u>
Wheat	4990	4638	4944
Barley	816	544	987
Oats	2820	2182	2941

If the returns were internally inconsistent then the acreages would appear erratic. Some difference in the acreages could be expected due to rotations and farmers responding to the changing prices of the crops, but in spite of this the acreages are in broad agreement. The yields per acre were rounded to the nearest 0.5 quarter, which makes it surprising that the fluctuations are not more marked due to rounding errors. This alone could cause variations in the derived acreages of between 4 per cent either way in the case of oats and 10 per cent either way for wheat. Yet the results do not show any undue variations.

Confirmation of the 1795 returns can be sought in the replies to Arthur Young's circular letters. His second letter of 1795 asked his correspondents to compare the 1795 harvest with that of 1794 for wheat, rye, barley, oats, peas, beans and potatoes. Two Kentish farmers replied to this letter, William Dann of Gillingham and John Boys of Betteshanger (1). No returns have survived for the Milton and Teynham division of Scray Upper, in which Dann resided, so that his observations cannot readily be compared with the 1795 returns. Boys, though, was a resident of the St. Augustine East division for which returns do exist. None appear to have been made for his home parish but his observations can be compared with those for the neighbouring parishes of Eastry, Tilmanstone, Northbourne and Worth. Boys does not state the precise area on which he was commenting, but it seems reasonable that he would have been most influenced by events in his immediate neighbourhood, as it is likely that he would be most familiar with these. The comparison between Boys' estimates and the 1795 returns are shown in table C.2.

1. Annals of Agriculture, XXV (1795), pp 493-4; XXVI (1795), pp 124-6.

Table C.2: Production in 1794 and 1795 as a percentage of a normal crop

<u>1794</u>	<u>Wheat</u>	<u>Barley</u>	<u>Oats</u>	<u>Beans</u>	<u>Peas</u>
John Boys	87.5	66.7	66.7	100.0	6.25
St. Augustine East	96.9	86.5	91.9	80.1	31.5
Eastry	108.4	58.0	78.5	81.5	22.7
Tilmanstone	112.5	90.2	105.2	69.4	0
Northbourne	112.5	94.6	87.5	73.3	10.0
Worth	87.5	88.0	100.0	62.3	10.0
<u>1795</u>					
John Boys	75.0	125.0	125.0	100.0	100.0
St. Augustine East	84.0	102.8	115.2	94.8	88.7
Eastry	89.9	141.6	92.3	91.3	106.8
Tilmanstone	82.5	138.25	116.5	111.3	26.7
Northbourne	93.75	105.5	102.0	122.2	128.0
Worth	75.0	126.0	100.0	87.7	100.0

Source : P.R.O. HO 42/37 ; Annals of Agriculture, XXVI (1795), p 124

The similarities between Boys' estimates and those derived from the 1795 returns is remarkable. It would be unlikely if they exactly coincided especially as there are no returns for Betteshanger. If Boys was referring to his own experience, then it is likely that this would in any case differ from the average of any of the parishes in which he had a farm.

Table C.3 presents the production returned for the parishes in the St. Augustine East division for "a fair crop in a common year". This is the data analysed in chapter 6.

Table C.3: Crop Production in St. Augustine East Division

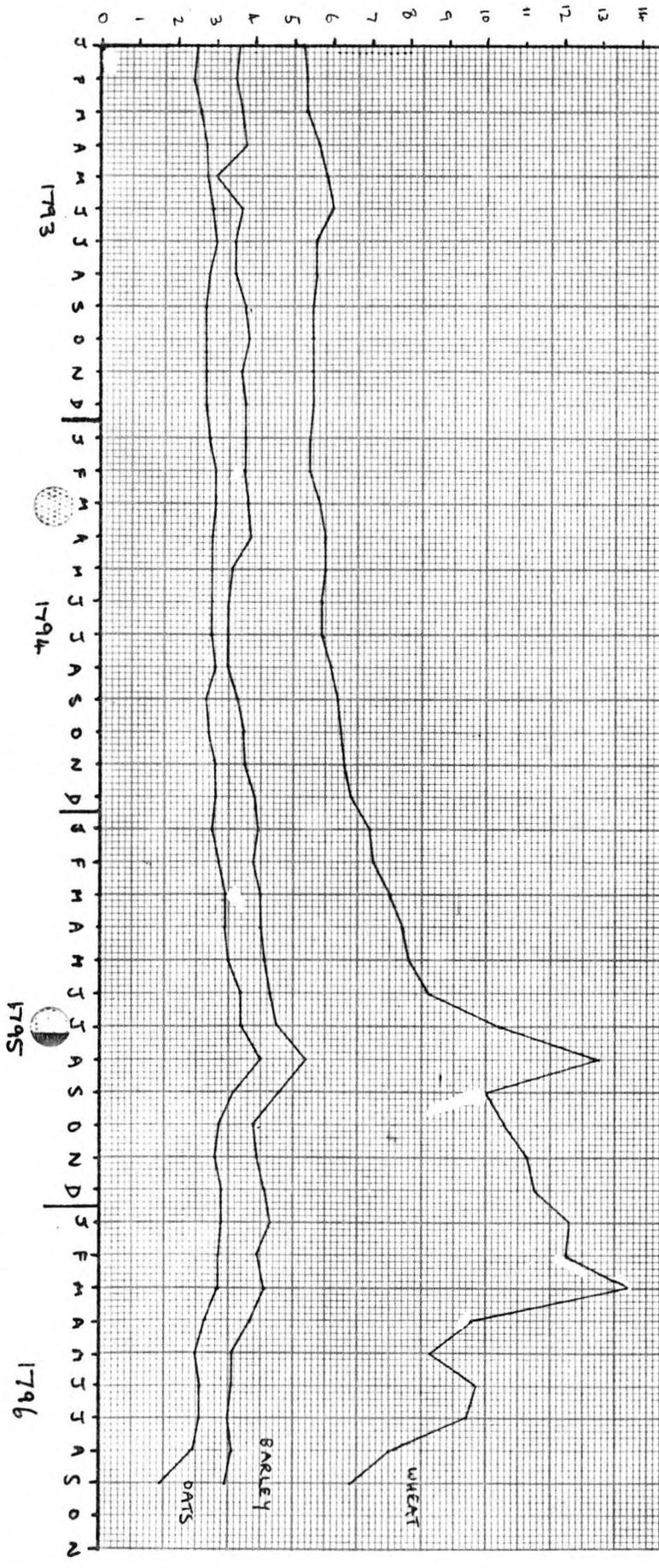
Parish	"Fair crop in a common year". (Quarters)				
	Wheat	Barley	Beans	Peas	Oats
Adisham	607	395	232	118	382
Ash	2700	2100	2000	1000	1250
Barfreston	210	240	60	40	180
Barham	468	570	133	143	653
Bishopsbourne	287	274	223	49	344
Chillenden	130	130	40	10	60
Coldred	450	332	240	25	500
Denton	127	150	60	40	200
Eastry	1446	966	1002	220	522
Elmstone	225	160	180	90	250
Ewell	421	290	130	20	377
Eythorne	460	440	180	60	300
Goodnestone	850	510	560	300	330
Guston	711	458	388	50	552
Ickham	1002	776	726	209	233
Knowlton	62	40	45	7	70
East Langdon	487	453	189	37	346
West Langdon	220	270	50	10	150
Littlebourne	798	652	720	161	347
Lydden	294	170	60	20	300
Minster	2500	1840	800	650	700
Great Mongeham	630	600	250	60	40
Little Mongeham & Ashley	247	279	54	40	164
Nonington	600	490	230	225	330
Easole	140	122	38	35	68
Frogham	150	140	50	30	160
Northbourne	800	1250	90	150	600
Tickness	127	37	84	19	18
Ripple	400	400	120	40	150
River	260	270	180	0	240
St. Lawrence	2066	2611	1447	561	677
St. Margaret & Oxney	390	350	50	0	40
St. Nicholas	1146	1075	580	346	362
Shepherdswell	700	400	350	80	750
Shoulden	250	300	250	40	0
Staple	750	675	620	280	200
Stodmarsh	320	292	380	0	60
Stonar	40	25	50	20	16
Sutton	280	250	95	18	125
Tilmanstone	200	183	62	15	97
Waldershare	250	240	80	30	160
Westcliffe	430	220	130	10	190
Wickhambreux	1034	711	654	180	180
Wingham	1500	1000	800	350	350
Womenswold	263	164	71	34	310
Woodnesborough	1800	500	1750	250	400
Wootton	180	160	100	40	190
Worth	1200	500	1060	30	60
Total	30608	24550	17713	6142	13983

Returns missing : Betteshanger & Ham, Buckland & Charlton, Hougham, Kingston, Monkton, Poulton, Preston, Whitfield.

Selling
per
quintal

FIG. 1: PRICES FOR MAJOR GRAINS WHEAT, 1993-6.

Source: Annals of Agriculture



Appendix D: The Crop Returns of 1801 for Kent (P.R.O. HO 67/4, HO 67/20)

The crop returns of 1801 were collected at the request of the Secretary of State for Home Affairs, Lord Pelham. On 17 August 1801, he sent a circular letter to the bishops requesting them and the resident clergy of their respective dioceses to procure a report of the number of acres in the parishes of England and Wales sown with the crops of wheat, barley, oats, turnips or rape, peas, and beans since the harvest of 1800. This method of seeking information was not unique. In 1800, the bishops had been asked to circulate a questionnaire among their clergy seeking information on the yield per acre of wheat, barley, oats and, potatoes and the state of the hay, bean, and turnip crops. (1)

Within a few days the bishops replied assuring Pelham that they would,

"with as little delay as possible set on foot the proposed enquiry, which I hope and believe will meet with due and respectful attention." (2)

Some of the bishops foresaw problems in the enquiry. The Bishop of St. David's said that in his extensive diocese, with its numerous large parishes, accurate returns would take some time to compile. (3) The Bishop of Peterborough, sensing the urgency of the situation, said that he would endeavour to secure the returns before Parliament reassembled. (4) In a number of dioceses delays occurred in the distribution of the forms due to insufficient numbers being sent to the bishops by the Home Office. The Bishop of Chichester wrote to say that he had received 198 forms and needed another hundred (5), while the Bishop of Lincoln complained that he had received 196 and needed another 1200 (6)!

1. P.R.O. HO 42/53. No Kentish returns survive though the survey was carried out. Ibid ff 69, 203, 330.
2. P.R.O. HO 42/62 f414, letter from Archbishop of Canterbury, 20 Aug. 1801.
3. HO 42/57, 20 Aug. 1801
4. HO 42/62 f 424, 22 Aug. 1801
5. HO 42/57, 22 Aug. 1801.
6. Ibid, 30 Aug. 1801.

Some of the prelates were concerned about the expected accuracy of the returns. The Bishop of Lincoln thought that the information procured would be by "no means correct" (1).

The Bishop of Worcester wrote that he was,

"apprehensive that it will not be in the power of the clergy to report, themselves, with any degree of exactness, the quantity of land in tillage within their respective parishes, or to procure such an account of it from others. I shall however communicate to the clergy of my diocese your Lordship's letter and recommend the contents of it to their attention as far as I properly can." (2).

Meanwhile, a second circular letter from Pelham modified the survey. In the original request, no information was sought on the acreage under rye, an important crop in the north and west of England and in Wales. This second letter extended the enquiry to include rye. However, some of the printed forms had been distributed to the clergy before the second letter was received. This had already happened in the Diocese of Chichester where the bishop had distributed the forms to the western part. He did not think that this was a serious omission as rye was rarely grown in that area. In the eastern part of the diocese, it was more common and alterations were made to the forms (3). In the Diocese of Rochester, six of the returns have no column for rye, indicating that here, too, the distribution of forms had begun before Pelham's second letter was received. The prelates appear to have remedied this by a subsequent enquiry. Cowden's return is dated 26 September 1801 and has no columns for rye. On 7 October 1801, the bishop wrote to the vicar to confirm that no rye was grown in the parish (4).

As well as securing the cooperation of the bishops, and in spite of reservations felt by some, Pelham also seems to have secured the general cooperation of the clergy. The returns were made by the resident ministers rather than by the incumbents

1. Ibid.
2. HO 42/62 f420, 21 Aug.1801.
3. HO 42/57, 29 Aug.1801.
4. HO 67/4, letter from Thomas Harvey, 10 Oct.1801

so that plural livings and non-residence can be excluded from influencing the results. In some cases one minister returned for several neighbouring parishes. For example, John Liptrott returned as vicar of Offham and curate of Snodland. Only in two cases in Kent does evidence survive to show that clergymen were unable to comply with Pelham's request. James Reeve of Maidstone wrote that he was prevented from making a return as,

"the farmers in general are unwilling to give any information on this subject." (1)

J.R.Papillon of Tonbridge Town was unwilling to carry out the onerous task that the request implied. He confessed himself, "totally at a loss how to proceed in the business. I was enabled to give the information to Government last year from the statements of a few intelligent persons on whose judgement I could rely, but in the present instance it seems to me necessary that every landholder should make a just return of the number of acres in his occupation, and this, I cannot obtain. Indeed, my lord, I do not see how it can be done without the assistance of the farmer and it is by no means a popular measure with any one of them in this extensive parish." (2)

The existence of a covering letter for the return from R.Skelton of Lewisham, no longer extant, suggests that subsequent loss rather than failure to meet Pelham's request is the cause of current gaps in the series. (3) There remain 194 returns for Canterbury diocese and 37 for Rochester. For east Kent the returns are fairly comprehensive. The main areas for which returns are lacking are the Isle of Sheppey, the area to the east and south of Maidstone between Hartlip and Headcorn, the North Downs between Stalisfield and Dunkirk, Goudhurst, and Hawkhurst; and the eastern Romney Marsh. In the St. Augustine East division gaps are centred on Barham, Dover, and Sandwich.

1. Ibid., 4 Nov 1801
2. Ibid., 17 Oct 1801
3. HO 67/20, 3 Oct 1801

For west Kent, the coverage is more limited. The few returns that survive for Rochester Diocese are supplemented by those for Shoreham Deanery in Canterbury Diocese. The main areas for which returns survive in west Kent are to the west and south of Maidstone, including parts of the Medway valley, the Downs and the Weald, and a narrow strip from Speldhurst in the south to Eltham and Crayford in the north. The conclusions that can be drawn from the returns about the agricultural geography of Kent in 1801 are considerably more speculative for the west of the county than for the east.

The returns that survive in no sense constitute a random sample of those for the whole county. No control can be exercised over the number of returns which has survived nor can the probability of any return surviving be accurately assessed. Providing all the returns were completed and had an equal chance of survival, gaps in the series would not prejudice the calculations made from them. In the Diocese of Canterbury, at least, there were certain influences tending towards a self selection of the surviving returns. Two types of parish seem to have had a significantly lower than average chance of entering returns that survive, namely urban parishes and those that were ecclesiastically extra-parochial.

A number of small towns, situated in large rural areas, such as Deal, Hythe, Wye, Eltham, Dartford, and Queenborough have surviving returns. The curate of Maidstone which contained a large rural area, was certainly requested to make a return. Returns are lacking from the more intensively urban parishes. No returns survive for Deptford, Greenwich, Woolwich, Rochester, Chatham, Sandwich, and Canterbury, while one Dover parish submitted an unofficial, unrequested return. There is some evidence that the omission was systematic and intended, at least by the Archbishop of Canterbury. William Tournay, rector of St. James, Dover wrote:

"As Rector of this parish, I have not been instructed to make any return. I send one however merely for the sake of suggesting that, if all the parishes in towns have been omitted, the amount of acres not returned may be considerable."

The vicar of Woodnesborough, near Sandwich, noted:

"The parishes in some market towns received no printed

forms although they had land in tillage."

Tournay's supposition that the urban parishes had large areas under crops is borne out by the facts. His own small parish of 190 acres contained 18 acres of crops. This omission does diminish the value of the returns in assessing the impact of local urban markets and the competition of housing and industry for land on agricultural production.

Extra parochial places include parishes with abandoned churches, generally in marshland areas, and woodland areas of recent or continuing colonisation. Unless these areas were normally under the ecclesiastical administration of another parish, they were likely to be overlooked. Among those with no surviving returns are Dunkirk, Sarre, Acol, Blackmanstone, Hurst, and Eastbridge. In two cases a neighbouring minister returned for the extra parochial place. The curate of Alkham returned for Poulton and the vicar of Folkestone for Hawkinge. (1) The bias resulting from this is to understate the areas of Kent in which arable farming was of marginal significance. In both this case and that of the urban parishes, the number of parishes and their total acreages is small compared with that for the county so that the results are not significantly affected.

In addition to requesting information on the eight crops, the forms provided a space for general comments by the minister. The wording of some of the remarks suggests that specific information was sought by the Home Office on enclosure and the extent of waste land within the parishes. A number of the clergy took advantage of the opportunity to comment on local factors affecting the returns. Other subjects discussed included the state of the harvest, poor laws, the organisation of the survey, and even the relationship between mortgages and the growth of smuggling! These provide a valuable commentary on the returns and a useful local supplement to the writings of more general observers such as John Boys. Many of the commentators on the returns had a direct interest in agriculture as corporate tenants of glebe land and tithes. Two related questions need to

1. The return for Poulton is in the general remarks column of Alkham and Chapel-le-Ferne. That for Hawkinge is written on ordinary paper following the layout of the form.

be answered before an analysis of the returns can be made.

Firstly, how accurate a guide are they to contemporary agriculture and secondly, how should they be interpreted?

To raise such questions is to take a sceptical view of the returns although it needs to be borne in mind that many of the points considered are equally applicable to modern statistics. Both questions are affected by how the information was collected.

Three methods seem to have been used by the ministers in compiling their returns, namely personal observation, calculation from the tithe book, and securing information from farmers. Sometimes more than one of these methods was used but all three have certain defects that reduce the accuracy of the returns.

Personal observation seems, at first sight, to be the surest means of obtaining accurate results. It avoids the problems of refusal to give information or the giving of misleading information by interested parties. The ministers who tried to use this approach found it was not without its defects. The minister of Elham wrote to apologise for the delay in making a return, explaining that he was "newly arrived, and a stranger to its boundaries." The vicar of Leigh turned to this method because "the farmers have a great dislike to give any intelligence on the subject." In his large divided parish, he did not think that his estimates were very accurate. Unless a survey of the parish had been made fairly recently, there would be no accurate account of field sizes and omissions and double counting would also be likely. William Tournay of Hougham thought that the timing of the survey precluded reports based on personal observation. For this to be done accurately, it needed to be carried out before the harvest, or at least before the stubble in the fields were ploughed up.

Several ministers calculated the acreage devoted to the various crops from tithe payments. The method of recording crops in the tithe books was often not identical with that requested in the returns. Three parishes, Hunton, Langley, and Pluckley, do not distinguish between the types of lent corn. W. Dilney, rector of Pluckley, explained that as the tithe tenant "receives the same sum for each sort of lent corn, they are put down in a lump". Two further difficulties exist calculating acreages from tithes. Some land was tithe free, having been redeemed by a capital payment at some point. There was an incentive to do this and then to

cultivate a higher value crop. H. Friend, rector of Frittenden, observed that the crop usually planted subsequent to the redemption was hops, which would not affect the returns. Some tithes were let or sub-let to the occupiers, for example, this occurred with parts of Coldred and Waldershare parsonages. In such cases, an estimate would be needed to supplement the calculation.

Those clergymen who reported the method they used to compile the returns, favoured a return from each farmer stating the crops he had grown. For two parishes, Eastchurch and Leysdown on the Isle of Sheppey, the original farmers' schedules have survived to show the cropping variations between sizes of farms. Several clergy reported that the farmers were reluctant to supply the information. From Woodnesborough it was reported:

"The vicar with great difficulty procured the opposite returns. An idea of an excise or something they knew not what had alarmed many of the farmers."

The farmers' apprehensiveness was, perhaps, not misplaced. The returns were collected by a person who often had an interest in the tithe. At the time, the government was increasing taxation and had extended it to certain agricultural inputs, including horses and servants.

The respondents noted two effects of the farmers' reluctance to give information. A proportion of the farmers refused to give any information at all, while a number understated the crops they had grown. For a small number of parishes, the outright refusal rate was very high. From Plaxtol it was reported:

"The return of this form has been delayed to this day in the expectation that a greater number of the landholders in this parish would have sent in an account of their farms. What is transmitted is a very small proportion of the number of acres in the parish."

At Farningham, containing 2,880 acres, six farmers refused to make a return, occupying 236, 206, 174, 52 and 25 acres and "a small farm", amounting to no return for a quarter of the parish. Where this occurred, most of the parishes concerned remedied the deficiency by using an alternative source of information. From Eastchurch it was reported:

"Two farmers refused to make any return, but obtained a very exact one from ye person who measured their land at harvest".

John Evans, curate of Detling, relied on information supplied by the "principal grower in the parish" to overcome the reluctance of the farmers. The outright refusal of farmers to supply information does not seem to have affected the returns in general, though care needs to be exercised in interpreting the returns for Farningham and Plaxtol.

The understatement by the farmers of the crops they grew was reported by several curates. From Hadlow it was said :

"The inclosed are the sums of the several accounts returned to me : but from the general backwardness of the farmers to communicate on such like occasions there is little doubt of their being short of the full amount".

J. Tucker, the curate of Wingham, noted the "cold caution of farmers in general in answering all enquiries of this kind."

V. Knox of Tunbridge reported :

"I am told that in some particulars, the farmers withhold the information from groundless fears and apprehensions of injuring themselves by the disclosure".

Thomas Harvey of Cowden said that a few farmers were unable to supply the information out of ignorance.

While some ministers thought that their returns were inaccurate, others held a contrary view. A. Purshouse wrote :

"After much difficulty, I have at length been able to arrive at the knowledge of the number of acres in the parishes of Brabourne and (Monks) Horton sown since the harvest of the year 1800; and I have the satisfaction of assuring your Lordship that they are here reported to a great degree of accuracy."

A. Stephens, vicar of Graveney, claimed :

"According to my judgement this is a true account."

Others, too, shared this view.

There is no means of discovering which of these two views was of most general applicability. It is possible to make some

estimates of the likely range of inaccuracy and to attempt to diminish its influence. Henry Verden, curate of Chislet wrote :

"The enclosed is the most accurate account I have been able to procure. I should think a sixth part of the whole might be added to make up for the Farmers' Coyness e the lands sown with clover, canary e radishes e fallow lands : all of which are omitted in this paper."

In this area, fallow and seed crops were important in terms of land used. On the neighbouring St.Nicholas Court farm, 1791-5, fallow and seed crops amounted to 19.7% of total arable land. (1) This would suggest that the "Farmers' Coyness" should not be exaggerated as a source of inaccuracy. The overall accuracy of the returns is suggested by their consistency. Neighbouring parishes had similar proportions of their land under individual crops which indicates that the returns are accurate enough to show the distribution of enterprises and enterprise combinations. The maps show the distributions of the crops returned in the enquiry throughout Kent.

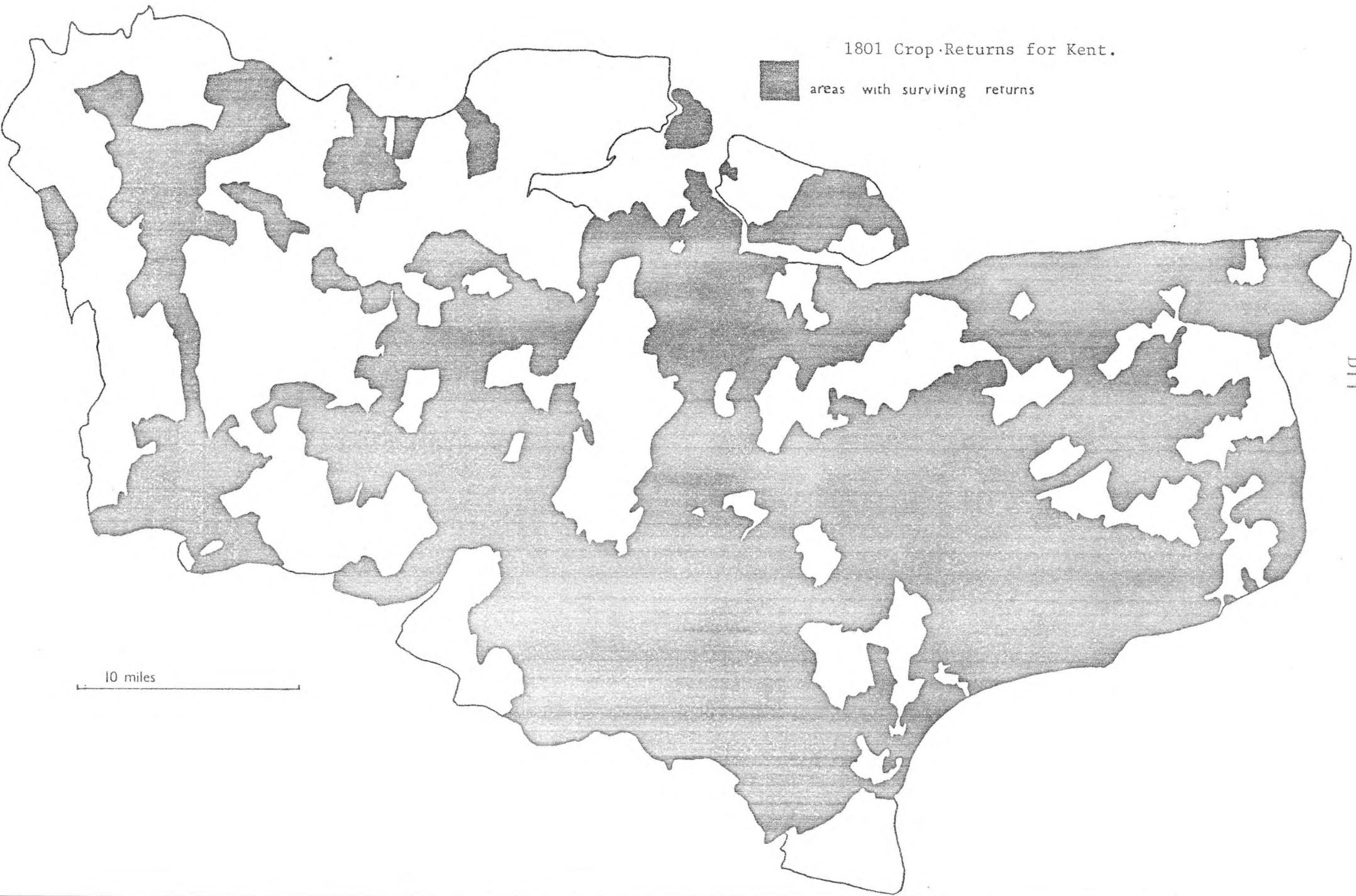
1. K.A.O. U1231 E7

Table D.1 : 1801 Crop Returns for the St. Augustine East Division

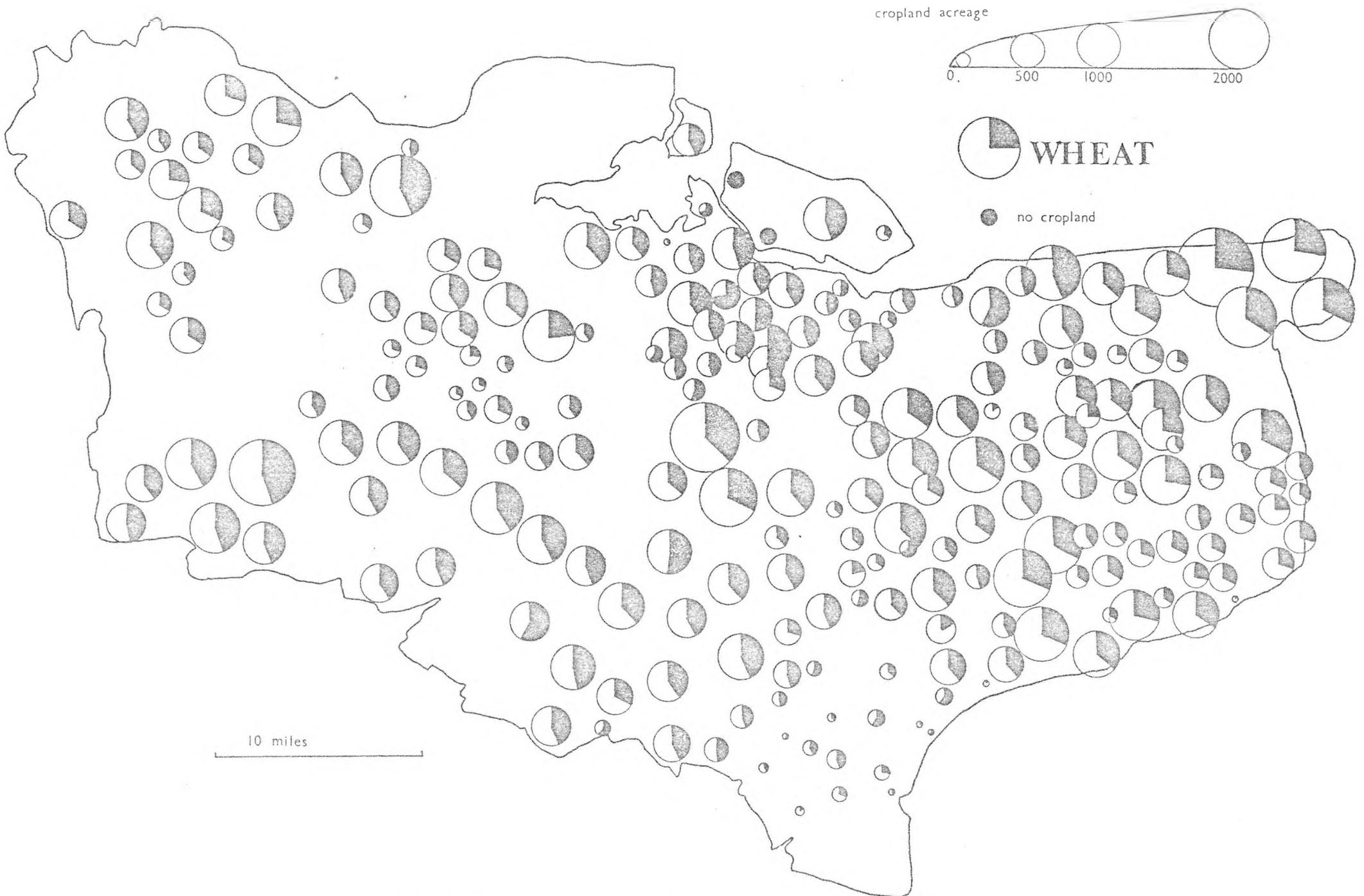
<u>Parish</u>	<u>Wheat</u>	<u>Barley</u>	<u>Oats</u>	<u>Peas</u>	<u>Beans</u>	<u>Turnips</u> <u>/Rape</u>	<u>Rye</u>	<u>Potatoes</u>
Adisham & Staple	507	245	209	207	180	77	0	5
Betteshanger	79	73	21	0	14	10	0	2
Buckland	138	99	65	4	76	40	0	2.5
Chillenden	54	40	10	4	9	13	0	0
Denton	105	34	64	16	17	10	0	2
Elmstone	86	27	20.25	34.75	85.25	11.5	0	0.25
Ewell	175	85	112	36	70	60	0	3
Goodneston	272.5	216.5	97	165.5	146	67	0	1
Hougham	412	266	255	16	144	63	0	16
Ickham	347	196	152	122	121	65	0	3
Kingston	336	98	110	40	25	75	0	6
Littlebourne	267	172	80	112	160	84	0	6
Lydden	129	82	117	23	25	31	8	0
Minster	710	350	260	260	320	130	1	25
Gt.Mongeham	175	200.33	48	43	57	36.5	2.5	8
Monkton & Birchington	813	818.5	339	343	293	261	0	28.5
Nonington	359.75	298.25	237	184.5	90	113.25	2	4.75
Northbourne & Shoulden	665	591	180.5	152.75	256	191.75	1	14.75
Poulton	94	39	81	0	39	13	0	4
Preston	246.5	116	28.5	99.25	248	0.75	2.25	3.25
Ripple	133	211	66	46	35	57	0	3
River	96	57	103	17	27	25	0	10
St.Lawrence	637.25	536.75	234.5	246.5	410.25	108.25	1	28
St.Margaret	184	133	189	36	28	28	0	2
St.Nicholas	390	325	90	208	221	130	0	8
Stodmarsh	60	36	30	10	80	10	0	1
Sutton	169	150	113	25	35	77	0	1
Tilmanstone	103	134	69	23	30	22	0	1
Waldershare	156	124	43	21	0	7	0	0
Whitfield	148.75	53	148	42.5	71.5	1.75	0	1
Wingham	463.5	276.5	101	234.5	300.75	73	0	4
Womenswold	107.5	86.5	52.5	46.5	4.5	63	0	2.5
Woodnes- borough	447.25	154.25	86.75	89.25	365.5	21.5	0	5.5
Wootton	115	50	62	16	33	21	0	3

1801 Crop Returns for Kent.

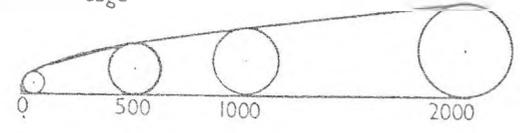
■ areas with surviving returns

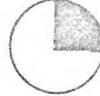


10 miles

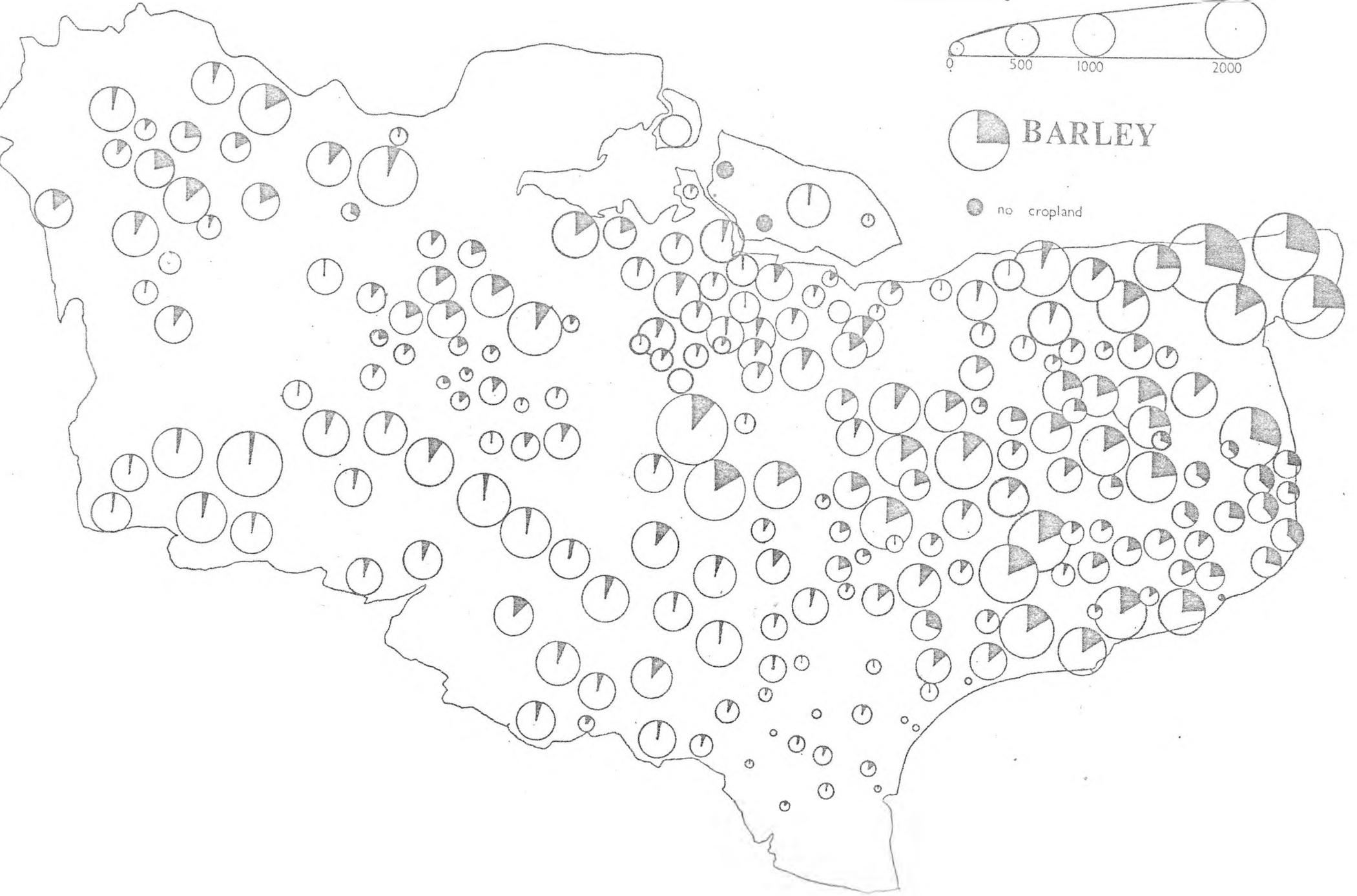


cropland acreage

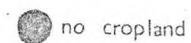
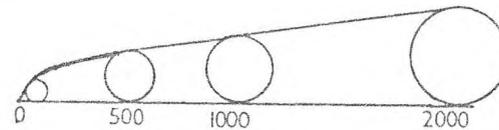


 **BARLEY**

 no cropland

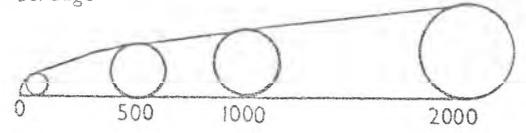


cropland acreage



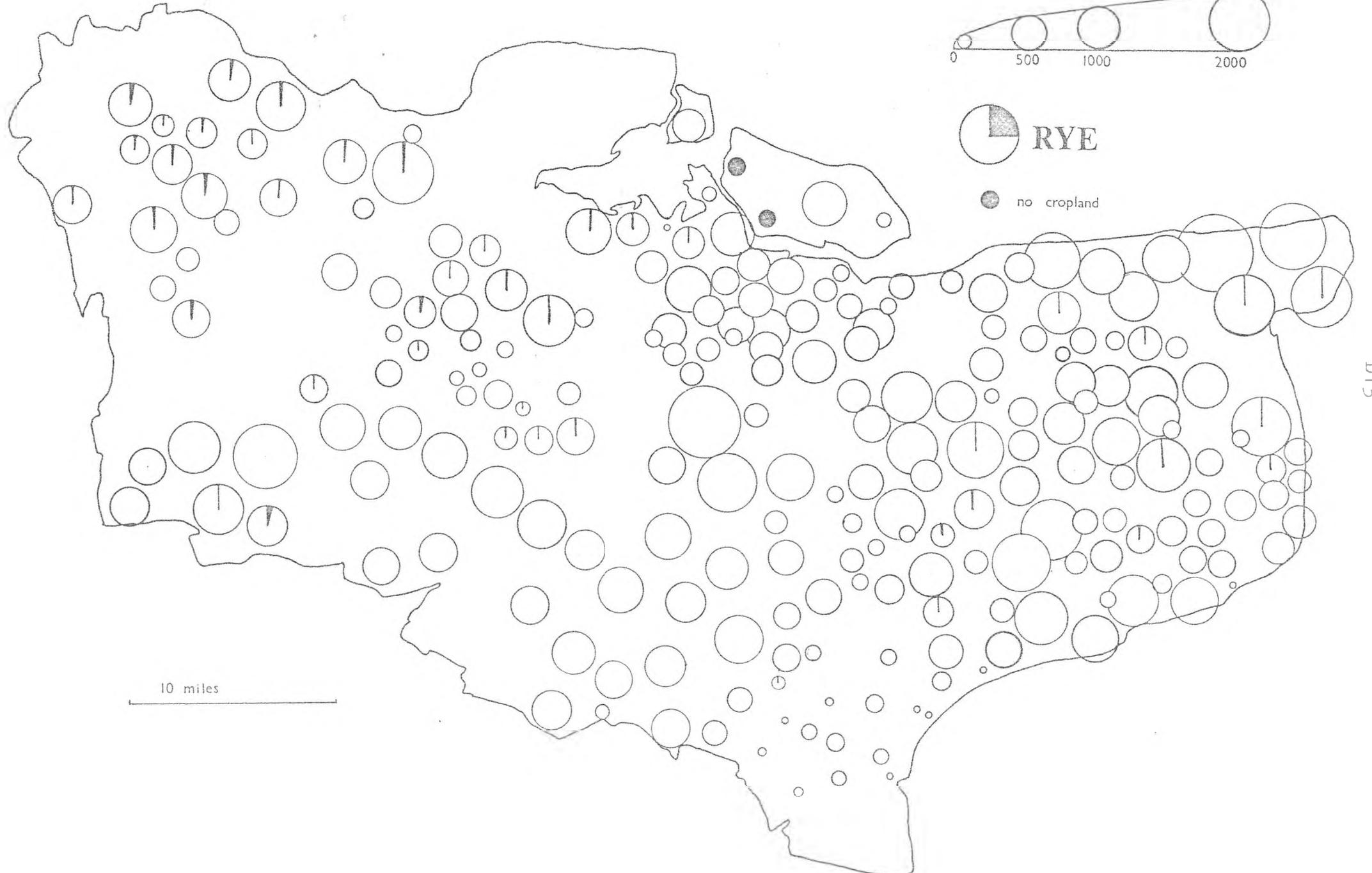
10 miles

cropland acreage

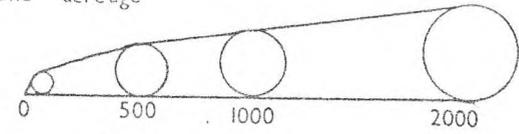


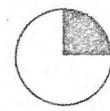
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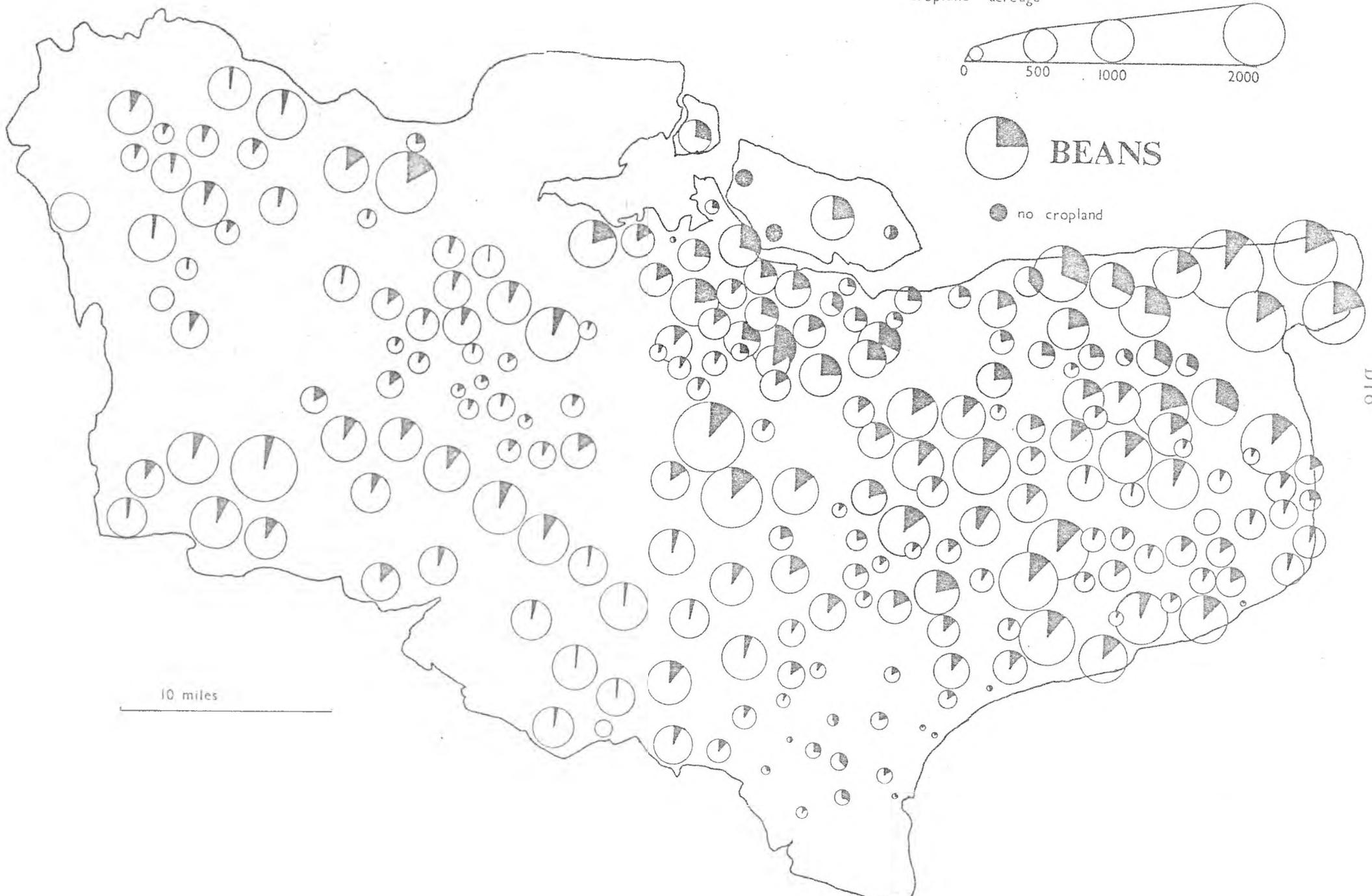


cropland acreage



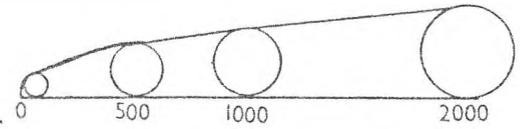
 **BEANS**

 no cropland

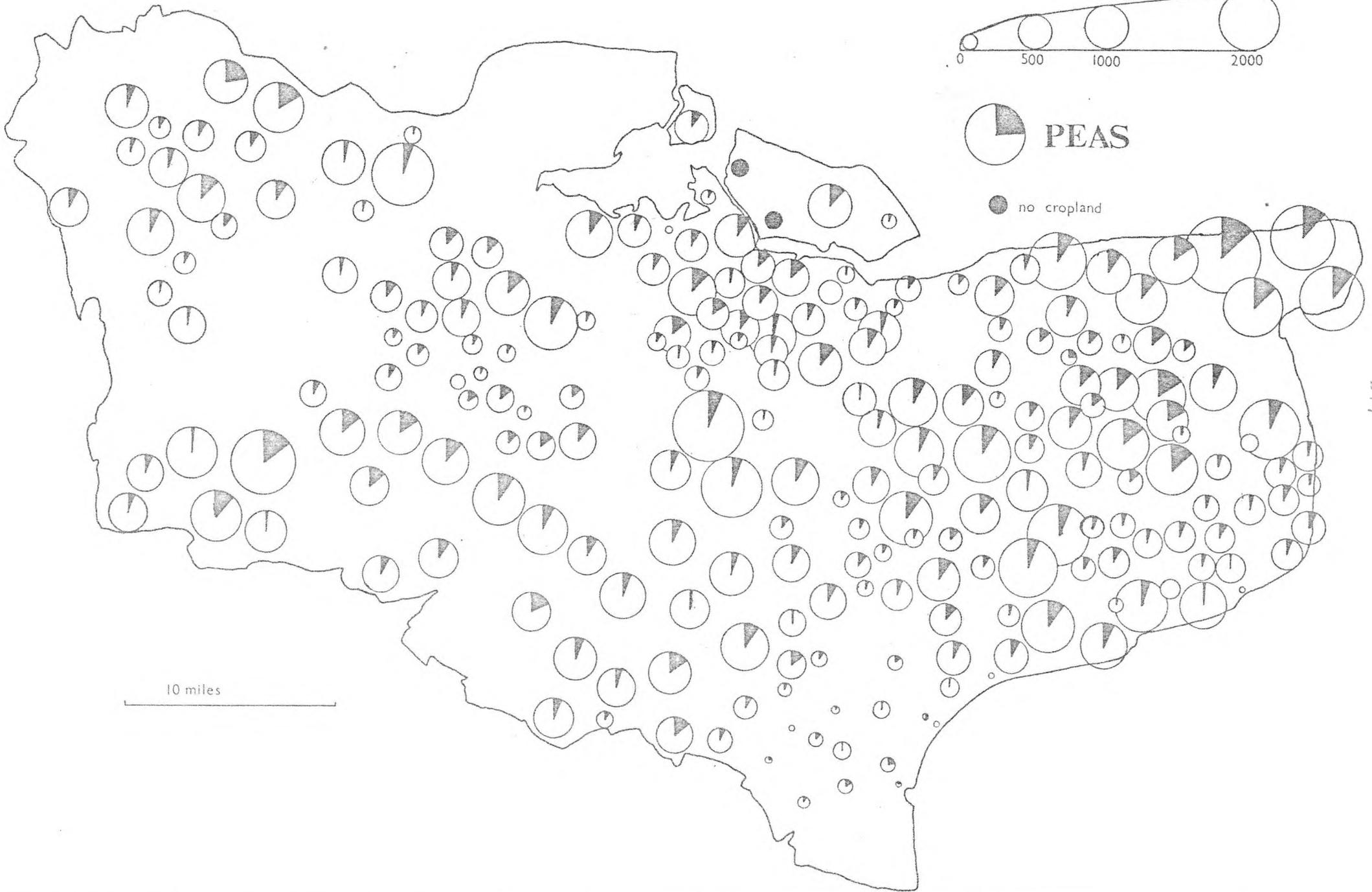


10 miles

cropland acreage

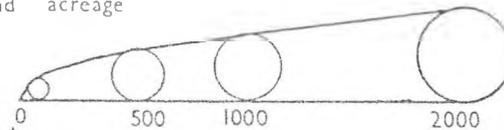


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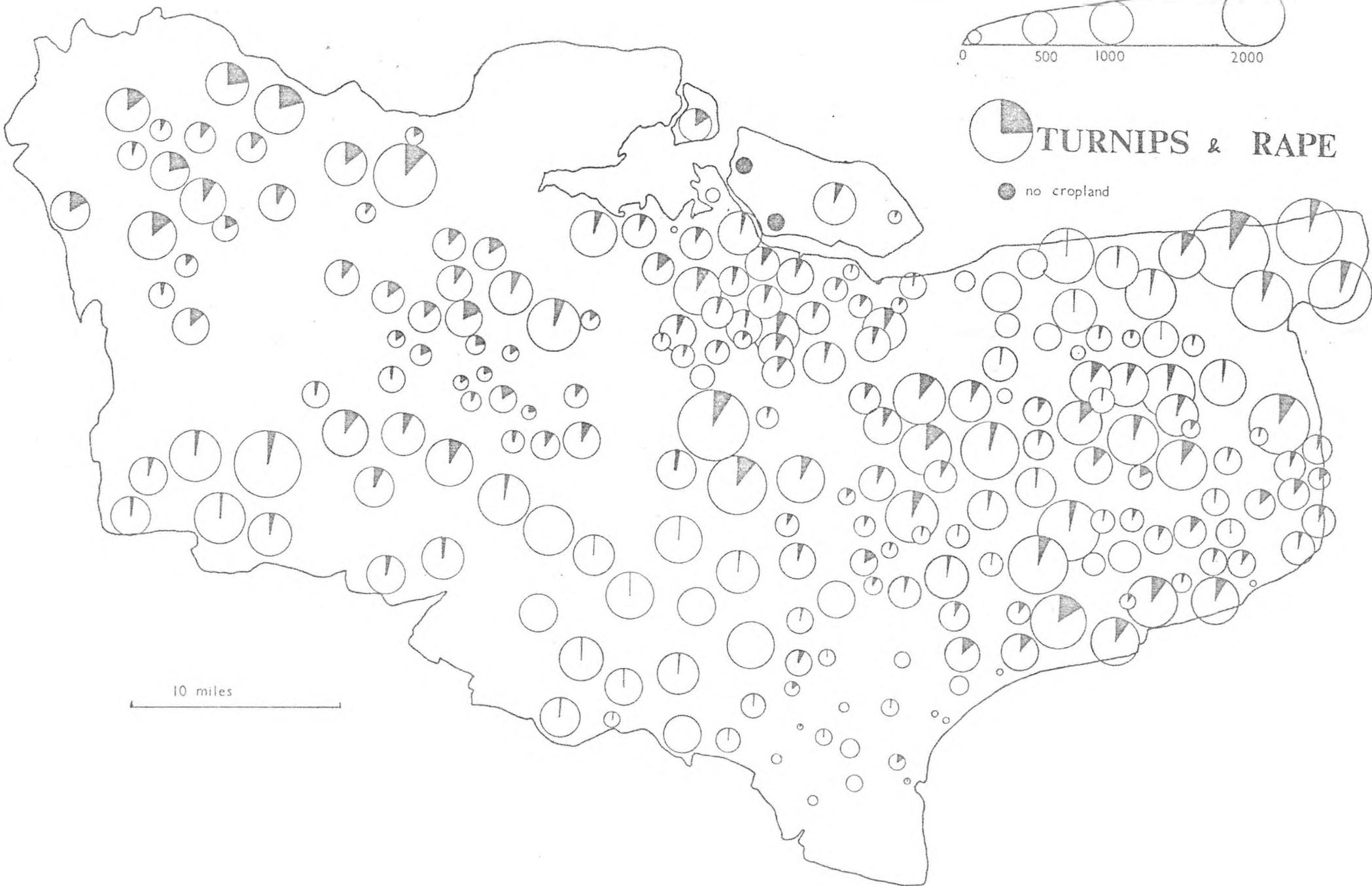
10 miles

cropland acreage



 **TURNIPS & RAPE**

 no cropland

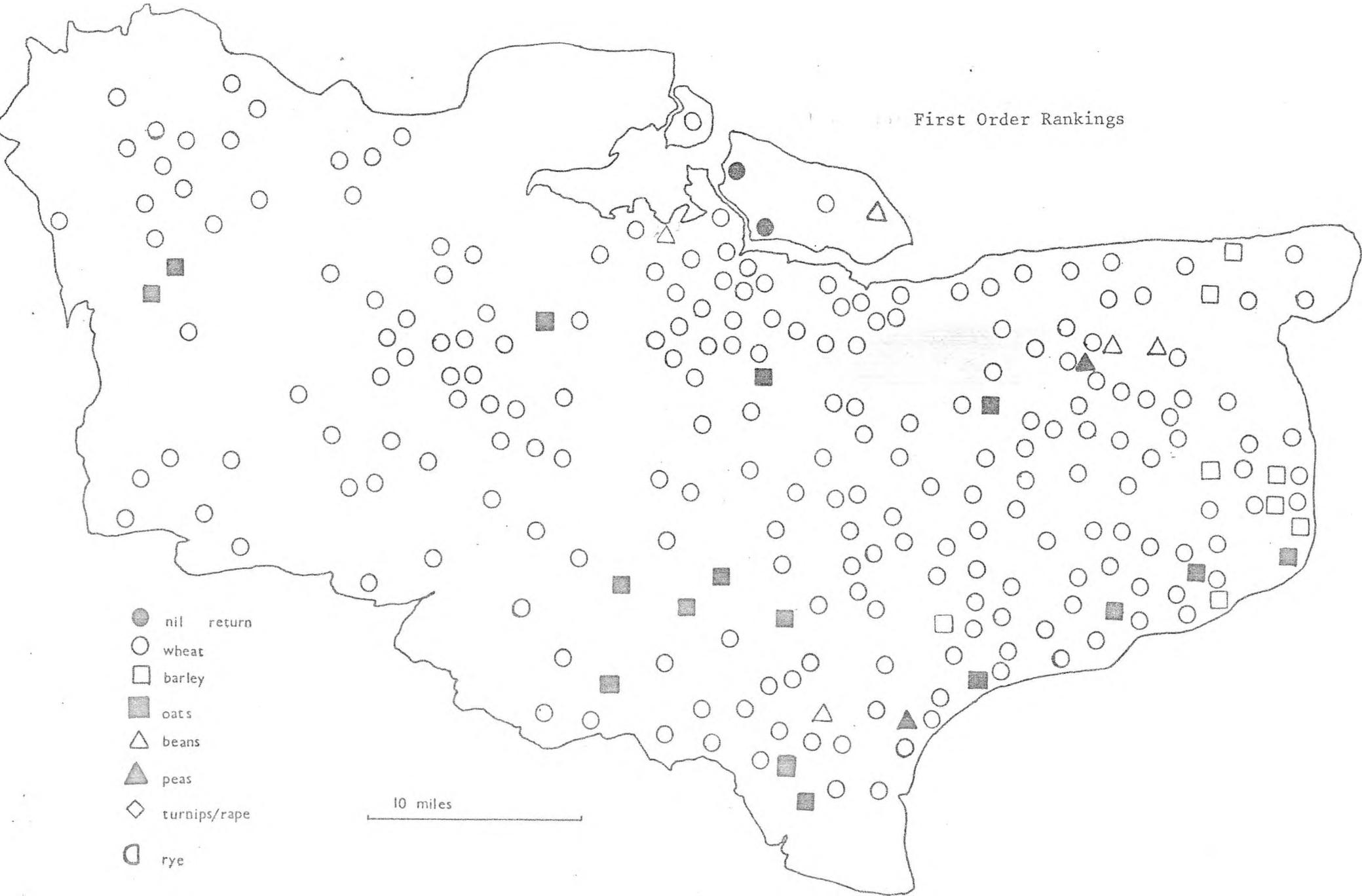


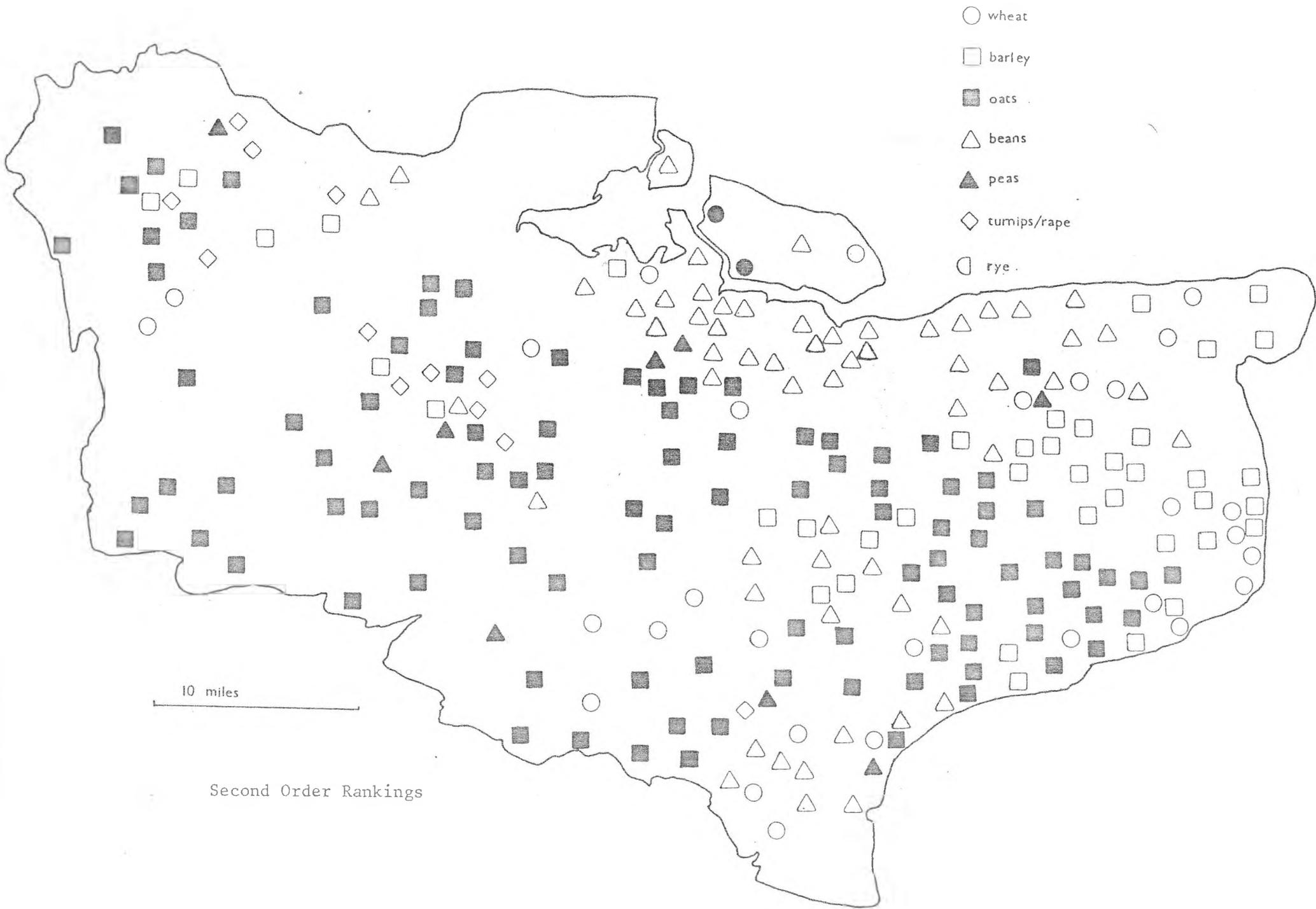
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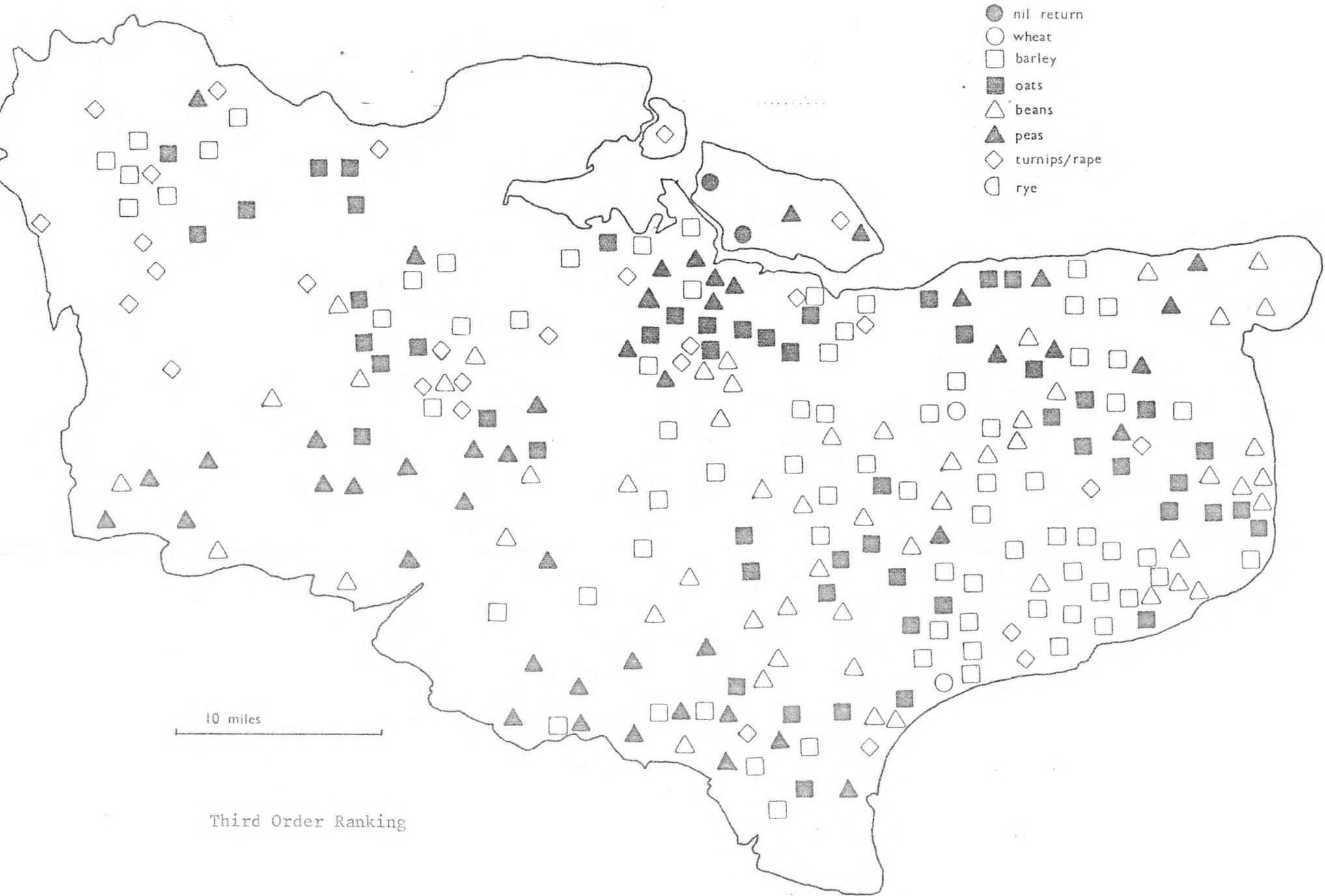
First Order Rankings

- nil return
- wheat
- barley
- oats
- △ beans
- ▲ peas
- ◇ turnips/rape
- ◐ rye

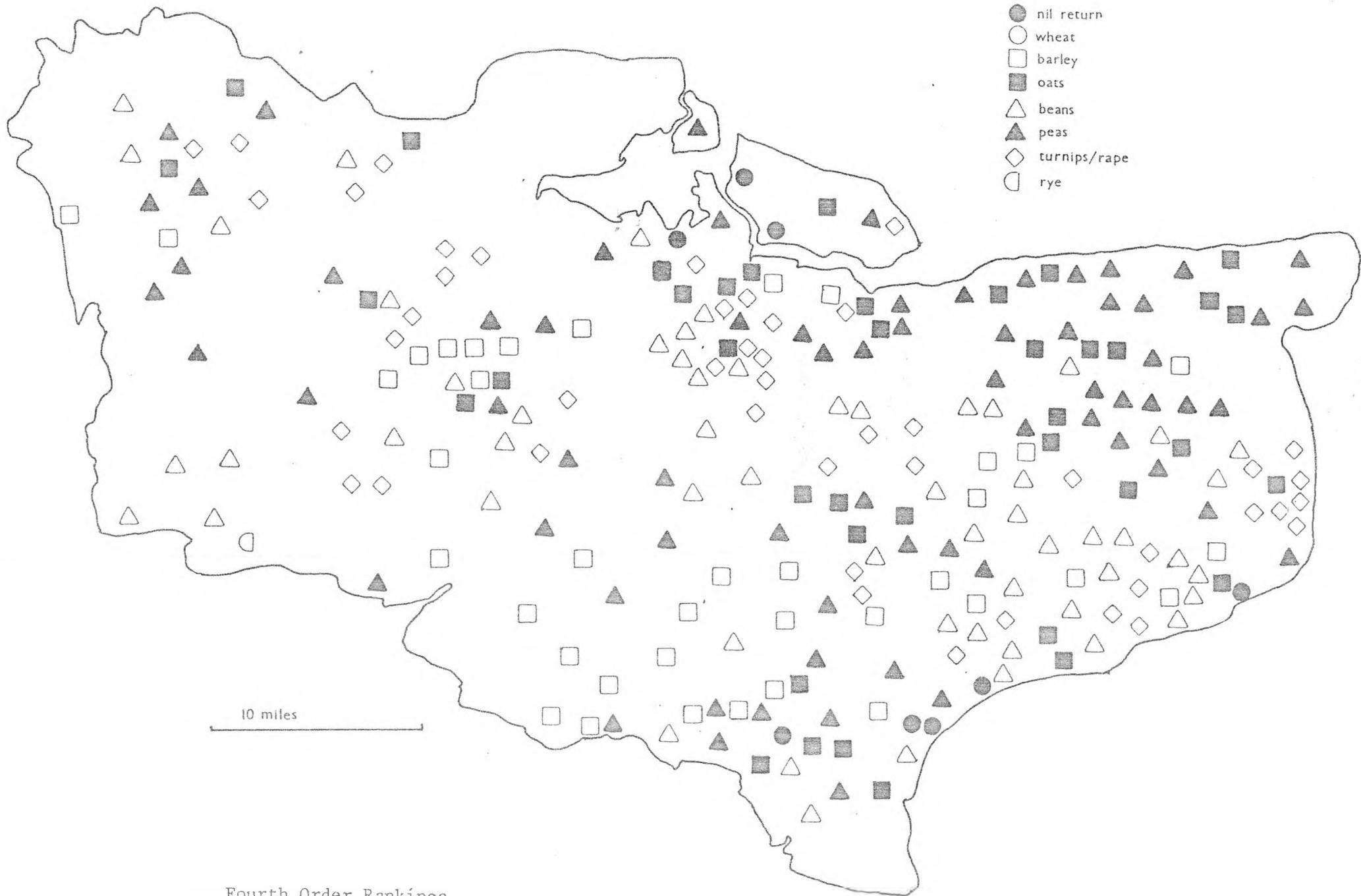
10 miles







Third Order Ranking



Fourth Order Rankings

Appendix E : Farm Accounts of John Bridges of St. Nicholas at Wade (1)

There are relatively few farming accounts in existence and the quality of these is highly variable. The accounts produced by John Bridges are of a relatively high standard. Their main limitation is the absence of a day book and certain problems in the derivation of some costs. John Bridges had a long farming career, from 1779 to 1823. It was spent on several farms but all within the parish of St. Nicholas at Wade in the Isle of Thanet.

John Bridges was born on 2 November, 1759, the younger brother in a family of two sons and three daughters. The Bridges family had farmed at St. Nicholas from before 1700. John's father, Edward Bridges, owned some marshland in the parish and farmed three small farms. When he died in 1765 most of his land was disposed, but two small properties at Chamberswall were retained. These were managed by the children's guardians, their uncle and maternal grandfather.

John was sent to a succession of schools until he was 16. The farms were thought by their guardians to be too small to support both the brothers. Consequently it was decided to find a suitable opening for John, as the younger of the two, outside of farming. Attempts to apprentice him to a doctor in Ashford, a linen draper in London, and an uncle, who was an attorney in Canterbury, though, proved unsuccessful. Meanwhile John's grandfather died in 1776 and his uncle in 1777, and John joined his elder brother, Edward, in the business in 1777.

The partnership between Edward and John was shortlived for by 1779 they had disagreed about the management of the farms. It was decided that Edward should retain the occupation of the farms but that the stock should be divided between them. The farms were heavily indebted to tradesmen and to their mother and sisters, who had invested in the farms legacies received from their father. Indeed, after the debts and legacies had been paid, Edward and John received a mere £1 11s 6d. It would be wrong to conclude that John started his own farming career penniless. Other business interests, such as managing his grandfather's tithe gathering concern at Harbledown, and investments brought him an income of nearly £200 per annum.

When the partnership was dissolved, John took possession of some marshland held under a beneficial lease from the Archbishop of Canterbury. These he stocked by using capital borrowed from friends and relatives. Uncle Lacy, the attorney from Canterbury, lent him £400 and the neice of his godfather furnished a further £100. More than £1,000 was lent by his mother and his sisters. All this money was borrowed while John was under 21 and unable to contract a legal debt. As a newcomer to the fattening business of the marshes, he was fortunate in securing the advice and support of Henry Collard of Monkton, a very experienced farmer.

Over the next few years, John gradually extended his business. He began to acquire more land. In 1782 he leased 24 acres of marshland from his brother on a 14 year lease at £24 per annum rent. In 1784, he took over his brother's farms at Chamberswall and leased a further area of marshland from his mother. Edward Bridges died two years later. Through inheritance from his brother and from one of his sisters, John was able to increase his equity stake in the business. The emphasis on fattening was reduced as more land away from the marshes was acquired. Arable crops became of increasing importance to him.

This state of affairs is shown in the farming accounts for the period 1785-90. The centre of his activities was the farm at Chamberswall. Normally 50-60 per cent of his income came from crops. Most of the remainder came from the sale of fat livestock, with an erratic contribution from wool sales. At this time he kept a flock of 400-500 sheep and lambs and these provided the majority of his income from livestock. From 1787, there is a trend towards increasing revenue from sales of cattle. The main arable crop was wheat, followed by barley and beans. Oats, peas, and canary were also grown. At Chamberswall, John Bridges was able to keep 170 acres under arable crops and ley grasses. The acreage under wheat varied from 34 to 63 acres. Barley was grown on between 21 and 43 acres, and beans on a similar acreage. The remaining crops would normally have under 10 acres devoted to them. Normally about 15 acres were kept under sainfoin and lucern. Trefoil and clover were grown in some years, but this was mainly for their seeds.

In 1790 a change occurred in John's career that established him as a major farmer. In that year he began to lease St. Nicholas Court Farm. He had been interested in acquiring this farm for some time. Negotiations for the lease had been going on for two years prior to this, from the time that his cousin, Thomas Bridges, indicated his intention to give up the farm. In order to secure the lease, John had been obliged to do a great deal of lobbying. This had included a journey to Yorkshire to discuss terms with the owner's agent, who subsequently died before the agreement could be put into writing. In his notes, John Bridges records that he despaired of ever gaining the farm, but eventually he was successful. St. Nicholas Court remained the core of his farming activities for the rest of his life. He continued to acquire smaller properties in the parish but, as a condition of obtaining the lease, he was obliged to surrender his lease of the Chamberswall property. Essentially the business was a mixed tenure farm comprising the leased St. Nicholas Court Farm, marshlands under owner occupation, and some smaller properties in St. Nicholas village let to tenants.

The only major change to occur to disturb this pattern took place in 1810 and reflects the complexities of landholding that are frequently overlooked when the focus of attention is a series of estate accounts. St. Nicholas Court consisted of a freehold part owned by Miss Elizabeth Southeron and a leasehold estate in the possession of Mrs. Judith Finch. The head lessor of the latter was Queens' College, Cambridge. In 1810, John purchased Mrs. Finch's lease for £10,150. This made him the head lessee of the property and, in effect, the owner occupier of that part of the farm. The lease was granted for 21 years, with renewal of each seven year period as it elapsed. A reserved grain rent worth £125 per annum was charged, compared with the rent of £900 per annum that he paid Mrs. Finch. The College's practice was to charge two years rack rent as the fine on renewal. The College's interest in the management of the estate was minimal, this being the responsibility of the head lessee. Their consent had to be sought, though, when the tenant wished to commit an act of waste. In 1814, for example, John Bridges had to seek their consent when he wished to plough up some marshland.

The acquisition of St. Nicholas Court brought a modification in John Bridges' farming. It doubled the amount of arable land at his disposal. This was normally about 340 acres. On average nearly 90 acres were under wheat, 70 acres under barley, 60 under beans, 20 under peas and 25 under oats. Crops normally contributed 50-60 per cent of the revenue, much as they did at Chamberswall. The main cash crops were wheat and barley. Regular sales were also made of oats, beans, and peas. Seeds, such as canary and radish, were regularly grown and provided a small supplementary income. Clover, trefoil, and sainfoin were grown but mainly for consumption on the farm. In some years small quantities of these were sold. There was a ready market for fodder crops amongst the hotel keepers of Broadstairs, Ramsgate, and Margate.

For the period 1791-5, it is possible to trace the rotations employed on the farm. Two principal rotations were in use. On some of the land, John Bridges used a round tilth rotation of wheat, barley, and beans. The beans served to prepare the land for the wheat, then barley was grown after the wheat had sapped the fertility. On the remainder, a four course rotation was employed. The basic pattern was for the rotation to be wheat, fallow, barley, and beans. The beans would again act as a cleaning crop and prepare the land ahead of the wheat, but fallow was needed before the barley crop could be taken. Several variations on this were also used. Oats, tares, or canary could be substituted for barley, and peas for beans. Grasses did not form part of the rotation but were used for short leys within a series of cycles. Few root crops were grown. Fallow was preferred to turnips in the four course rotation. This reflects the lightness of the soil which would have made it difficult to obtain a good turnip crop. An interesting omission is rye. Rye was often grown in Thanet as an early fodder crop for sheep.

Most of the wheat was sold to two or three dealers. The barley was brought entirely by one dealer. Throughout most of John's career this was Mr. Osbourne, a hoy owner from Sandwich.

The livestock of the farm were sheep, cattle, pigs, and poultry. Sheep were the main source of revenue from livestock until 1810. The flock was built up following the move to St. Nicholas Court. In 1794 it reached 1,012 adult sheep, and, thereafter, was normally in excess of 900 sheep. These were

accompanied by 350-400 lambs. The breeding flock consisted of 350-450 ewes. Most of the remaining adult sheep were tegs being fattened. The sheep kept were mainly Romney Marsh breed but a few Southdowns and some Dorset horned sheep were also kept. St. Nicholas Court is in a fairly exposed location and so most of the lambs were sold in the autumn. This may account for the practice of shearing the lambs. Tegs and wethers were brought from more sheltered areas, like Littlebourne, for fattening on the farm. Rams were hired to other farmers in the area. Most of the sales of sheep went to two butchers. Wool provided a useful supplement to the sales of fat sheep. The sales tended to be irregular in order to take advantage of market prices. It brought in, on average, about £300 per annum. The average weight of the fleeces obtained are much what would be expected from ewes and young sheep of the Romney Marsh breed.

The movement to St. Nicholas Court saw an increase in the revenue from cattle. After the Napoleonic Wars it provided the majority of the earnings from livestock. The cattle were bought from Welsh drovers at Canterbury and Ashford, and the revenue came from sales of fatstock for slaughter. Dairy produce from the herd was almost entirely for domestic consumption though, occasionally, a cow and calf or a heifer in calf was sold to a local farmer or smallholder for use as dairy cattle. The same butchers bought both the sheep and the cattle. The pigs and poultry were kept mainly for domestic consumption. The sales of pork and eggs were almost insignificant.

Evidence comes from John Bridges' accounts of the problems of the marshland pastures and the ways in which they were improved over the period. The coastal marshes were at risk from flooding with the danger of great losses of stock through drowning. In 1807, for example, Thomas Garrett, a neighbour of Bridges, lost 61 ewes when the seawall was breached in a high tide. In February, 1791, a high tide flooded the St. Nicholas Court marshland. No losses occurred as the tide was at noon and "by the help of many labourers a good deal of water was kept out". The inundation spoiled the land for two or three years. After this experience, Bridges built a brick bridge over the main drainage channel so that stock could escape from the marshes in floods. He also had built some mounds above the normal height of the marshes

on which stock could seek refuge if the seawall was breeched. The foreshore provided the Thanet farmers with seaweed for manure and sand. In 1812 Bridges built a new road out to the seawall and improved the road along it in order to make it easier to fetch these from the beach. The drainage problems of the marshes were a perennial source of dispute between the St. Nicholas farmers and the Commission of Sewers. The former regarded themselves as too highly taxed in relation to the protection they enjoyed from the sea defences. In 1813, for example, Bridges joined with other farmers in an unsuccessful attempt to force the Commission to alter the tax burden and improve the defences.

The interests of John Bridges were not confined to farming. He had married Elizabeth Denne from Monkton in 1789. In 1805, after a series of miscarriages, John Thomas Bridges was born and he, eventually, succeeded his father. As he acquired status in the farming community, John Bridges was called upon to act as executor and trustee on behalf of neighbouring farmers. He diversified his business interests with investments in the Funds, mortgages, and loans to tradesmen. He also served a period as a Commissioner of Sewers.

John Bridges was an active opponent of the St. Nicholas Bay Harbour and Canal Company and acted as secretary to the group of farmers opposing its plans. During the period there were a number of proposals to improve navigation on the River Stour between Canterbury and Sandwich. For example, J.Hodskinson produced a plan in 1792 which involved removing the barriers to navigation at Fordwich and building a towpath so that horses could haul the barges instead of men (1). The St. Nicholas Bay Company proposed a new line from Fordwich, through Chislet, to a new dock at St. Nicholas. In spite of opposition, they obtained an Act of Parliament for this in 1811 (2). The opponents

1. A Plan and Estimates for Improving and Extending the Navigation of the River Stour from Sandwich to Canterbury, in the County of Kent, Canterbury (1792)
2. 51 Geo III 1811 c144

included the towns of Margate and Sandwich who stood to lose trade if the scheme went through, milling interests on the River Stour, and the owners and occupiers of land through which the proposed navigation would pass (1). The St. Nicholas and Chislet farmers raised three main objections to the scheme. The company proposed to take a good deal of valuable farming land for the harbour, canal, and access roads. They were worried lest the labourers required to build the scheme and the access roads should become chargeable against the parish rates. Finally there were fears that the canal would act as a barrier to prevent stock from being removed from the marshes in the event of flooding (2). The last resulted in a number of clauses in the Act requiring the company to build bridges across the canal at various points. The construction was never undertaken.

Certain trends emerge from the accounts. During the course of the 1780s and early 1790s, most of the sources of revenue show an upward trend. This reflects the way in which the business was being built up, particularly after the move to St. Nicholas Court. Of more significance is the downward trend that sets in after 1818. Most of the revenue accounts reveal this, and it is marked in the case of cattle and wheat sales. Costs, though, did not fall as rapidly as revenue. For example, in 1815 the rent on the tenanted part of St. Nicholas Court rose from £172 per annum to £202. It remained at this level until March 1822, when the landlord "agreed to reduce this rent to £180 per annum on condition that should the times again turn in my favour, I must expect to pay as before". Bad debts were also increasing. In 1817, one John Smith left for Jamaica still owing John £100. In 1821 Edward Pilcher, a miller and the major purchaser of his wheat crop, failed owing him £167. By the early 1820s it is clear that the business was going through a testing time. However John Bridges died in 1823 and with his death the farm accounts ceased. He was succeeded by his son, John Thomas, who gave up farming, becoming instead a rentier landlord.

1. House of Commons Journal, LXVI (1810-11), pp201, 216, 230, 233, 236, 243, 248, 260, 268.
2. KAO U1231 09, 010.

Table E1 : Main Sources of Revenue

<u>Year</u>	<u>Wool</u>	<u>Livestock</u>	<u>Crops</u>
	£	£	£
1785/6	58	593	633
1786/7	-	435	652
1787/8	130	629	740
1788/9	-	511	577
1789/90	64	369	759
1790/1	215	866	752
1791/2	168	1,240	1,110
1792/3	15	1,466	1,273
1793/4	206	1,347	1,673
1794/5	233	1,665	1,660
1795/6	212	1,607	2,292
1796/7	227	1,396	1,627
1797/8	166	1,251	1,777
1798/9	239	1,788	1,793
1799/1800	308	1,817	3,213
1800/1	315	2,150	3,366
1801/2	308	2,217	2,039
1802/3	367	2,459	2,023
1803/4	322	1,279	2,085
1804/5	327	2,263	1,766
1805/6	403	1,659	2,619
1806/7	366	2,163	2,000
1807/8	-	1,618	2,705
1808/9	660	1,248	2,193
1809/10	625	1,113	2,639
1810/11	-	1,632	2,925
1811/12	254	1,925	2,376
1812/13	331	1,996	3,098
1813/14	731	1,909	2,875
1814/15	-	1,714	1,914
1815/16	383	1,467	1,532
1816/17	292	2,117	3,307
1817/18	825	2,245	2,697
1818/19	-	2,091	2,835
1819/20	345	1,661	1,931
1820/21	254	1,197	1,927
1821/22	222	1,239	1,610

Table E2 : Sales of Cash Crops

<u>Year</u>	<u>Wheat</u>		<u>Barley</u>	
	£	Qts.	£	Qts.
1785/6	441	246	74	61
1786/7	339	176	85	75
1787/8	325	148	164	157
1788/9	237	92	114	111
1789/90	302	108	246	211
1790/1	309	119	227	196
1791/2	334	181	392	298
1792/3	631	270	256	162
1793/4	815	338	650	386
1794/5	905	268	289	168
1795/6	1,308	281	487	281
1796/7	852	313	352	274
1797/8	865	140	466	369
1798/9	712	232	484	309
1799/1800	1,260	202	701	215
1800/1	1,093	147	939	380
1801/2	884	248	492	244
1802/3	959	257	453	350
1803/4	927	81	311	242
1804/5	864	122	615	249
1805/6	1,410	219	556	342
1806/7	713	192	313	151
1807/8	1,394	306	558	256
1808/9	873	180	744	324
1809/10	1,494	259	606	257
1810/11	1,716	370	740	385
1811/12	856	122	455	160
1812/13	1,733	260	738	230
1813/14	1,690	445	305	144
1814/15	862	169	581	394
1815/16	624	122	406	325
1816/17	1,568	190	901	342
1817/18	1,428	228	682	309
1818/19	1,152	256	949	318
1819/20	907	120	422	262
1820/21	1,134	320	381	303
1821/22	971	342	253	239

Table E3 : Rotations at St. Nicholas Court, 1791-95

	<u>1791</u>	<u>1792</u>	<u>1793</u>	<u>1794</u>	<u>1795</u>
Belleisle 17 acres	W	Su	Ba	Be	W
Chalkpit	W	Su	O	Be	W
Portobello	W	O/Ca	Be	W	Su
Frost 16 acres	W	Ba	Be	W	Su
Whitepost 14 acres	Ba	Be	W	Ba	Be
Whitepost 13 acres	Ba	P	W	Ba	Be
Sarre Road	Ba	Be	W	Su	Ba
Hales	O	Su	W/Ba	P/St	Ba/St
24 acres 5 acres	O	Pasture	Pasture	Pasture	W
Frost 10 acres	Be	W	Ba	Be	W
24 acres 19 acres	Be	W	Su	Ba	Be
Garden	Be	W	Ba	Be	W
Marsh	R	W	O	Su	?
Hill 6 acres	P	Ba	Be	W	O
Hill 19 acres	P	Ba	Su	Ba/O	Be
Bushmarch	Cl	W	Su	Ca	Be
Dools	Ca	Be	Ca	W	Be
Warehome	Su	Ba	St	St	St
Below Lane	Su	W	Ba	O/Ta	Be/Su
Belleisle 20 acres	Su	O	P	W	Ba

W - wheat	Su - summerland
Ba - barley	Be - beans
O - oats	Ca - canary
P - peas	St - sainfoin
R - radish	Cl - clover
Ta - tares	

Table E4 : Crop Yields (Quarters per Acre)

<u>Year</u>	<u>Wheat</u>	<u>Barley</u>	<u>Beans</u>	<u>Peas</u>	<u>Canary</u>
1785	4.4	3.1	3.5	4.2	-
1786	3.7	4.5	3.8	4.1	3.6
1787	4.0	5.0	3.1	2.7	5.8
1788	2.6	5.0	4.1	3.7	2.7
1789	4.0	5.4	2.8	3.1	-
1790	3.5	5.0	3.6	4.7	4.0
1791	3.2	4.2	-	-	-
1792	2.5	3.8	3.2	-	-
1793	4.2	4.3	1.7	-	-
1794	3.5	4.1	2.7	-	-

1785-90 Chamberswell

1791-94 St. Nicholas Court

Table E5 : Livestock Account

<u>Year</u>	<u>Cattle Sales</u>	<u>Sheep Sales</u>	<u>Lean Stock Purchased</u>
	£	£	£
1785/6	152	343	355
1786/7	156	208	291
1787/8	368	245	402
1788/9	280	183	136
1789/90	179	144	344
1790/1	460	388	652
1791/2	484	723	507
1792/3	551	875	769
1793/4	426	904	838
1794/5	538	1,097	832
1795/6	557	1,013	691
1796/7	344	1,007	438
1797/8	455	783	727
1798/9	588	1,146	730
1799/1800	646	1,108	726
1800/1	780	1,299	1,086
1801/2	1,062	1,119	1,600
1802/3	658	1,677	187
1803/4	596	602	875
1804/5	1,055	1,070	592
1805/6	762	860	389
1806/7	919	1,219	695
1807/8	890	700	368
1808/9	443	800	132
1809/10	324	743	372
1810/11	624	916	928
1811/12	1,118	750	662
1812/13	902	1,057	616
1813/14	874	1,015	602
1814/15	1,040	654	333
1815/16	681	748	417
1816/17	1,284	765	439
1817/18	1,205	1,022	804
1818/19	1,540	541	1,019
1819/20	1,115	543	374
1820/21	723	473	471
1821/22	591	648	347

Table E6 : Flock Management

<u>Year</u>	<u>Number of Adult Sheep</u>	<u>Number of Lambs</u>	<u>Mean Adult Fleece lbs</u>
1786	332	126	5.1
1787	337	110	5.4
1788	298	143	5.7
1789	229	187	7.6
1790	337	148	5.2
1791	686	279	5.3
1792	853	223	5.0
1793	785	273	5.9
1794	1,012	285	5.9
1795	829	315	5.7
1796	895	371	5.3
1797	803	306	4.9
1798	973	354	5.5
1799	993	282	5.6
1800	1,031	332	5.2
1801	866	360	5.6
1802	1,174	525	4.8
1803	1,090	420	4.5
1804	855	363	5.4
1805	971	421	5.6
1806	1,006	339	5.5
1807	1,011	485	5.8
1808	890	505	5.8
1809	1,007	486	5.1
1810	922	369	4.5
1811	874	356	5.0
1812	1,034	475	4.9
1813	971	345	5.1
1814	858	371	4.8
1815	890	349	4.9
1816	921	300	4.8
1817	829	366	5.3
1818	750	330	5.3
1819	748	440	6.0
1820	840	363	4.9
1821	886	372	4.6
1822	1,012	371	4.7

Appendix F: Some Measures of the Productivity of KentishAgricultureWHEAT (Quarters per Acre)

1691-2:	Thomas Clunn, Monkton. (1691)	2
	Roger Belsey, Monkton (1692)	2.5
	Baker (1976), p201	
1697	Thomas Proud, Faversham	2.25
	Baker (1976), p201	
1716	Francis Pettey, Ash next Sandwich	2.75
	Baker (1976), 201	
1722-37	Hogshaw Farm, Milstead	2.1
1738-53	Hogshaw Farm, Milstead	2.3
	Baker (1976), p733	
1736	Thanet	at least 3, often 4-5.
	Lewis (1736)	
1757	Anne Read, Bapchild	2.6
	Baker (1976), p201	
1768	William Hall, Elmstone	1.0
	(to illustrate poor state of farm when he took it over)	
	<u>A.A.</u> , V (1786), p102	
1773-80	Monkton Parsonage (1773)	2.5
	East Peckham Rectory (1776)	2.1
	Preston next Wingham (1780)	3.0
	Westcliffe (1780)	2.5
	Birchington (1778)	3.5
	Willesborough (1778)	2.25
	Godmersham (1779)	2.25
	C.C.A.L. Dean's books	
1782	William Hall, Elmstone	4.6
	<u>A.A.</u> , IV (1785), p505	
1784	Mr Gilby, Denton near Gravesend	2.5-4.25
	Ulcombe	2.5
	Faversham	3.5-4.0
	Howletts	4.0
	Romney Marsh	8.0
	Young (1784)	
1785	William Hall, Elmstone	4.0
	Hall (1785)	

1786	Wrotham-Maidstone	2.5		
	Ashford	2.5-3.0		
	Young (1786)			
1788	William Bland, Sittingbourne	3.0-5.0		
	Bland (1788)			
1790	William Dann, Gillingham	2.5-2.75		
	Dann (1791)			
1791	William Dann, Gillingham	3.5-3.75		
	Dann (1792)			
1792	William Dann, Gillingham	3.0		
	Calehill	2.5-3.0		
	Young (1793)			
1795		Fair Crop	1794	1795
	Malling Division	3	3	2
	Aylesford East	2.5	3	1.75
	Tonbridge Division	2.75	2	1.9
	Scray Lower	2.5	2.5	2.5
	Sutton at Hone Lower	2.5	2.5	2
	Dartford Division	2.5	2.2	1.8
	Aylesford North	2.5	2.4	1.8
	P.R.O. HO 42/36-7			
	John Jacob, Sextries	3.0		
	Jacob (1800)			
1799	John Boys, Betteshanger	1.9		
	Boys (1800)			
	Earl of Darnley, Cobham	2.5-3.0		
	Darnley (1800-1)			
1800	Port of Rochester District	4.0		
	P.R.O. BT6/139			
	Kent	2.75 (3.4 normal)		
	House of Lords (1800)			
1801	Beakesbourne	3.0		
	Forwich	2.5		
	High Halden	3.0 but normally 2.5		
	Kingsnorth	3.0		
	Lenham	3.5-4.0		
	Linstead	3.5		
	Littlebourne	3.0		
	Luddenham	4.0		
	Monkton & Birchington	3.0		
	Newchurch	4.0		
	Postling	2.5		

St Mary in the Marsh	5.5-6.0
Smarden	2.5
Stouting	2.5
Wootton	3.0
P.R.O. HO 67/4	
Mereworth	3.5
Offham	2.5-3.0
Ryarsh	2.5
Yalding	3.0
P.R.O. HO 67/20	

BARLEY (Quarters per Acre)

1722-37	Hogshaw Farm, Milstead	2.3
1738-53	Hogshaw Farm, Milstead	2.8
	Baker (1976), p733	
1736	Thanet	5.0-7.0
	Lewis (1736)	
1773-80	Monkton	3.0
	East Peckham	3.1
	Birchington	4.0
	Willesborough	3.5
	Godmersham	3.0
	Preston next Wingham	3.0
	Westcliffe	3.0
	C.C.A.L., Dean's books	
1784	Mr Gilby, Denton near Gravesend	5.0
	Young (1784)	
1785	William Hall, Elmstone	7.0-8.0
	<u>A.A.</u> , IV (1785)	
	Mr Jessard, Woodnesborough	8.0-9.0
	<u>A.A.</u> , IV (1785)	
1786	Wrotham-Maidstone	upto 5.0
	Ashford	4.0-5.0
	Young (1786)	
	John Boys, Betteshanger	3.3
	<u>A.A.</u> , V (1786)	
	William Hall, Elmstone	3.0 after wheat-9.0 after peas or beans
	<u>A.A.</u> V (1786)	

1788	William Bland, Sittingbourne	6.0		
	<u>A.A.</u> , X (1788)			
1790	John Harrison, Preston next Wingham	4.0		
	<u>A.A.</u> , XIV (1790)			
	William Dann, Gillingham	4.0		
	<u>A.A.</u> , XV (1791)			
1791	William Dann, Gillingham	5.0		
	<u>A.A.</u> , XVII (1792)			
1792	William Dann, Gillingham	5.0		
	Mr Darrell, Calehill	3.5		
	Young (1793)			
1795		Fair crop	1794	1795
	Malling Division	4	3	5.5
	Aylesford East	3	3.5	4
	Tonbridge Division	4	2	5
	Scray Lower	4.5	4.5	5
	Sutton at Hone Lower	3.75	2.5	4
	Dartford Division	3.7	3.2	3.3
	Aylesford North	3.6	3.3	3.9
	P.R.O. HO 42/36-7			
1800	Port of Rochester District	5.0		
	P.R.O. BT 6/139			
	Kent	3.75, normally 3.95		
	House of Lords (1800)			
1801	Fordwich	4.0		
	Kingsnorth	5.5-6.5		
	Lenham	3.5		
	Littlebourne	4.0		
	Newchurch	5.0		
	Smarden	3.0-4.0		
	P.R.O. HO 67/4			
	Mereworth	5.0		
	Offham	3.0-4.0		
	Ryarsh	3.0		
	Yalding	4.5		
	P.R.O. HO 67/20			

OATS (Quarters per acre)

1704	Thomas Davis, Wickhambreux	3.0		
	Baker (1976),p219			
1722-37	Hogshaw Farm, Milstead (black)	2.8		
1738-53	Hogshaw Farm, Milstead (black)	2.9		
	(white)	3.6		
	Baker (1976),p733			
1773-80	Monkton (1773)	3.5		
	East Peckham (1776)	3.1		
	Birchington (1778)	4.0		
	Willesborough (1778)	4.0		
	Godmersham (1779)	3.0		
	Preston next Wingham (1780)	3.0		
	Westcliffe (1780)	3.0		
	C.C.A.L Dean's book			
1784	Mr Gilby, Denton near Gravesend	6.0-10.0		
	Ulcombe	3.0		
	Romney Marsh	11.0		
	Young (1784)			
1785	William Hall, Elmstone	5.0-6.0		
	<u>A.A.</u> ,IV(1785)			
1786	John Boys,Betteshanger	1.1-1.25 (sheep down)		
	<u>A.A.</u> ,V (1786)			
1788	William Bland,Sittingbourne	7.0-8.0		
	<u>A.A.</u> ,X (1788)			
1792	East Kent	under 3.0		
	Mr Darrel, Calehill	4.0		
	Young (1793)			
1795		fair crop	1794	1795
	Malling Division	4	3	5
	Aylesford East	3.5	3.5	4
	Tonbridge Division	4	2	5
	Scray Lower	6	6	7
	Sutton at Hone Lower	3.75	2.5	4
	Dartford Division	3.8	3.5	3.7
	Aylesford North	4.2	3.8	4.4
	P.R.O. HO 42/36-7			

1800	Port of Rochester District	6.0
	P.R.O. BT 6/139	
	Kent	4.4, normally 4.3
	House of Lords (1800)	
1801	Beakesbourne	4.0
	Fordwich	4.5
	Kingsnorth	5.5-6.5
	Lenham	3.0
	Littlebourne	4.0
	Newchurch	5.0
	Smarden	3.0-4.0
	P.R.O. HO 67/4	
	Mereworth	6.0
	Offham	4.0-5.0
	Ryarsh	4.0
	Yalding	4.0-4.5
	P.R.O. HO 67/20	

BEANS (Quarters per acre)

1722-48	Hogshaw Farm, Milstead	3.7
	Baker (1976), p733	
1773-80	Monkton (1773)	3.0
	East Peckham (1776)	3.2
	Birchington (1778)	3.5
	Willesborough (1778)	3.5
	Godmersham (1779)	3.0
	Preston next Wingham	
	(1780)	4.0
	Westcliffe (1780)	3.0
	C.C.A.L., Dean's Book	
1782	William Hall, Elmstone	6.0
	<u>A.A.</u> , IV (1785)	
1784	Mr Gilby, Denton near Gravesend	3.0-7.0
	Ulcombe	2.5
	Faversham	up to 6.0
	Howletts	3.5-6.0
	Romney Marsh	12.0
	Young (1784)	
1785	William Hall, Elmstone	4.0
	<u>A.A.</u> , IV (1785)	

	William Hall, Elmstone	5.2		
	<u>A.A.</u> , V (1786)			
1786	Ashford	3.5-4.0		
	Young (1786)			
1788	William Bland, Sittingbourne	5.0, sometimes 6.0-8.0		
	<u>A.A.</u> , IX (1788)			
1790	John Harrison, Preston next Wingham	4.0-5.0		
	<u>A.A.</u> , XIV (1790)			
	William Dann, Gillingham	3.75		
	<u>A.A.</u> , XV (1791)			
1792	William Dann, Gillingham	3.5		
	<u>A.A.</u> , XX (1793)			
1795		Fair crop	1794	1795
	Malling Division	3.5	2.5	4.5
	Aylesford East	2.5	2.25	2.0
	Tonbridge Division	3.5	2.5	3.25
	Dartford Division	3.1	2.6	3.4
	Aylesford North	3.3	2.6	3.0
	P.R.O. HO 42/36-7			
1800	Port of Rochester District	5.0		
	P.R.O. BT 6/139			
	Kent	2.9, normally 3.5		
	House of Lords (1800)			
1801	Beakesbourne	4.0		
	Fordwich	4.0		
	Lenham	3.0		
	Littlebourne	4.0		
	Newchurch	6.0		
	P.R.O. HO 67/4			
	Mereworth	6.0		
	Offham	4.0-5.0		
	Ryarsh	2.5		
	Yalding	4.0		
	P.R.O. HO 67/20			

PEAS (Quarters per Acre)

1722-53	Hogshaw Farm, Milstead	2.4
	Baker (1976), p733	

1773-6	Monkton (1773)	3.0		
	East Peckham (1776)	3.1		
	C.C.AL. Dean's Book			
1784	Ulcombe	3.0-4.0		
	Young (1784)			
1785	William Hall	4.0		
	<u>A.A.</u> ,IV (1785)			
1786	Ashford	3.0		
	Young (1786)			
1788	William Bland	4.0-5.0		
	<u>A.A.</u> ,X (1788)			
1790	William Dann, Gillingham	3.0		
	<u>A.A.</u> ,XV (1791)			
1795			Fair crop	1794 1795
	Aylesford East	1.5	1	2
	Tonbridge Division	2.5	1.5	2
	Sutton at Hone Lower	3	1.5	2.25
	Darford Division	2.3	1.4	2.1
	Aylesford North	2.4	1.2	2.0
	P.R.O. HO 42/36-7			
1800	Port of Rochester District	5.0		
	P.R.O. BT 6/139			
	Kent	2.9, normally 3.1		
	House of Lords (1800)			
1801	Beakesbourne	4.0		
	Fordwich	2.0		
	Lenham	2.5		
	Littlebourne	3.0		
	Newchurch	5.0		
	P.R.O. HO 67/4			
	Mereworth	5.0		
	Offham	4.0		
	Ryarsh	2.5		
	Yalding	3.0		
	P.R.O. HO 67/20			

FLEECES (lbs per sheep)

1786	Mr Wall, Romney Marsh	7.0	(2 year old wether)
	Young (1786)		

- 1788 Daniel Price, Fairfield 6. 1
6.9 (ewes)
4.1 (Southdown wethers)
A.A., XXI (1793)
- 1789 John Boys, Betteshanger up to 12.0 (Romney Marshes)
A.A., XII (1789)
- 1790 William Dann, Gillingham 3.25 (1790), 3.5 (1789)
(west country)
John Boys, Betteshanger 4.3 (Southdowns)
A.A., XV (1791)
- 1791 William Dann, Gillingham 3.75 (west country)
3.0 (Southdowns)
A.A., XVI (1791)
- 1792 Mr Walter, Romney 6-7 fat barrend, 9-10
2 year wethers
Mr Nichols, Romnay 9 3 year ram
Boys & Ellman (1793)
- 1794 Romney Marsh young sheep 5, ewes 6, wethers
8-9
Boys (1794).

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The argument presented above indicates that farms are likely to be multi-product, either because it is more profitable than the production of one product, or because of joint supply conditions. Comparison between patterns of landownership and occupation and single agricultural enterprises is unlikely to be fruitful except, as in the case of hops, the other enterprises are subsidiary to a dominant one, and merely serve to produce its inputs (1). Rather it would be desirable to compare landownership and occupation with enterprise combinations.

II

The hypothesis can be tested statistically at one of several scales. Ideally it would be done at the scale of the production unit as there will then be a direct link between the factor inputs and the decision maker. Larger areal units, such as the parish, are a less desirable alternative. Parish totals are an average of the farms within its boundaries. They are only as good as the deviations from the parish mean. If the parish contains wide variations in land quality, the deviations may be substantial. Further complications are caused by the wide variations in the size of parishes so that, for this reason alone, one might expect the

1. G. Buckland, 'On the Farming of Kent', Journal of the Royal Agricultural Society of England, VI (1846), pp 273,276; A. Young, 'Notes at Teston, near Maidstone, Kent', Annals of Agriculture, XLII (1804), pp 194-201; Sir Charles Middleton, 'Queries relative to the farm at Teston in Kent', Communications to the Board of Agriculture, II (1800), pp 119-27; D. Harvey, 'Locational Change in the Kentish Hop Industry and the analysis of land use patterns', Transactions and Papers of the Institute of British Geographers, XXXIII (1963), pp 137-8.

representativeness of the parish figures to vary between parishes (1).

The choice of approach is largely governed by the availability of the data. That for individual farms is very limited. Farm accounts would be ideal for the purpose as these would give information about both inputs and outputs. Only one set of accounts of sufficient quality came to light during the study, namely those for John Bridges of St Nicholas at Wade (2). Estate accounts will not serve the purpose. For the area under study they tend to be fragmentary. They relate to the estates of the non-resident peerage, such as the Cowpers, Conynghams, and Norths, rather than to the resident local gentry. The estates are not typical and, as non-resident landowners, there were no home farms (3). Estate accounts are unlikely to be helpful even if a more representative group had survived. Unless they record the details of the tenants' production, they will not give specific enough information about the agriculture. In the surviving estate accounts, sufficient detail is only given in the irregular farm valuations. Moreover, the estate accounts cannot give any information about farms in owner occupation, other than home farms, and only a partial account of those under mixed tenure. The

1. J.T. Coppock, 'The parish as a geographical-statistical unit', Tijdschrift voor Economische en Sociale Geografie, 51(1960), pp 317-26; J.C. Weaver, 'The County as a Spatial Average in Agricultural Geography', Geographical Review, 46 (1956), pp 536-65.
2. K.A.O. U 12 31.
3. K.A.O. U 471, U 449, U 438.

exception to this is where the estate included a tithery. The valuation of a tithery involved estimating the acreage under each crop and the yield per acre. A search of the Dean and Chapter of Canterbury Cathedral's estate accounts revealed valuations of eight titheries in Kent during the period 1690-1830 (1). They were all made between 1773 and 1780, and three were situated within the St Augustine East division. As property of this nature formed a greater part of the portfolio of the Dean and Chapter than was normal for a landowner, this shows that the source is not likely to prove to be sufficiently numerous to be representative.

Probate inventories provide an insight into the activities of individual farms for the period before 1750. Each inventory deals with a farm at the point when its trading activities cease with the death of the entrepreneur. It forms the final balance sheet for the firm. Inventories cannot list inputs incapable of being devised, such as labour, or those supplied by the landlord. They may, however, include stocks in hand awaiting marketing, livestock, capital, and sometimes, growing crops. Their use is subject to some well-known problems such as how to deal with property held in the right of a wife, the reliability of the valuations, and the detail with which property is recorded (2). There are also some less

1. C.C.A.L., Dean's Books, 1691-1854.
2. F.W. Steer, Farm and Cottage Inventories of Mid-Essex 1635-1749, Essex Record Office (1950); J. West, Village Records (1962), p 92.

well-known problems concerning how representative a sample drawn from the probate inventories can be (1).

1. M.W. Barley found that only a minority of the adults of Farnsfield in Nottinghamshire left a will and the proportion diminished after 1700 - 'Farmhouses and Cottages, 1550-1725', Econ.Hist.Rev, 2nd ser, VII(1954-5), p 292. E. Markkanen has found that there is a significant difference between the age at death of those adults who left inventories and the population of all adults at death in Finland - 'The Use of Probate Inventories as indicators of personal wealth during the period of industrialisation', Scandinavian Economic History Review, XXVI (1978), p 75. There are doubts as to how representative the inventories are of different social groups. For example, D.A. Baker has produced figures to show that 46.3 per cent of the inventories for Ash next Sandwich between 1680 and 1760 are for yeoman and husbandmen, 9.4 per cent for tradesmen, and 6 per cent widows. The Marriage Duties Act Assessment of 1705 for the parish shows that husbandmen, both with servants and without, amounted to 22.1 per cent of households, tradesmen to 18.7 per cent, and widows to 14.5 per cent - Agricultural Prices, Production and Marketing, with special reference to the Hop Industry: North-East Kent 1680-1760, unpublished University of Kent at Canterbury Ph.D. thesis (1976), p 162; K.A.O. Q/CTz 2. It is not enough to argue, as J. Thirsk does, that it is sufficient for the inventories to contain a wide variety of social groups. If the statistics derived from them are not to contain a serious bias, the sample of probate

inventories must contain similar proportions of the social groups to the rest of society - 'The content and sources of English Agrarian History after 1500', Ag.Hist.Rev., III (1955), p 72. No account seems to have been taken of how different consumption patterns can influence the representativeness of the probate inventories. If it were the norm to ensure that lifetime consumption was equal to lifetime income, or that lifetime income should be greater than lifetime consumption, so that property could be bequeathed, then a sample of the population from the probate inventories could be expected to have different quantities of capital than a sample drawn from the living population - A. Ando and F. Modigliani, 'The Life Cycle Hypothesis of Saving', American Economic Review, 53 (1963), pp 55-84.

The probate inventories for north-east Kent have been analysed by D.A. Baker. His sample area includes the northern part of the St Augustine East division. However, the way in which the statistics are presented really rules out their use in this study. He has presented them for three individual parishes and for three groups of parishes, and for two periods of 30 and 50 years respectively (1). This means that the figures are too generalised to be of use in this context. The nature of the probate inventories means that this is almost inevitable. As so few of the population of farmers die in any one year, it is necessary to group the inventories either into large areas, as J. Thirsk has done, or into long time periods, as has been done by J.A. Yelling (2).

1. Baker, op cit, chs 3,4.
2. English Peasant Farming; 'Probate Inventories and the Geography of Livestock Farming: A study of east Worcestershire, 1540-1750', Transactions and Papers of the Institute of British Geographers, LI (1970), pp 111-13; 'Changes in Crop Production in East Worcestershire', Ag.Hist.Rev., XXI (1973), pp 18-34.

The resulting loss of accuracy is much greater than if the surviving parish based statistics are used and it is doubtful whether the resulting statistics can be made to reveal the information that is sought in this chapter. An alternative methodology, which involves directly comparing individual farms, has not been tried as yet (1).

The absence of alternative data means that the hypothesis has to be tested against that collected for parishes. In effect, this means using the data collected by the various government enquiries into the state of agriculture during the first eight years of the Napoleonic Wars (2). Two of these enquiries have produced extensive evidence on the agriculture of east Kent, namely the harvest enquiry of 1795 and the 1801 crop returns. The 1801 crop returns give the acreages under wheat, barley, beans, peas, oats, potatoes, rye, and turnips or rape for each parish. They survive for 36 parishes covering all or part of 40 land tax parishes (3). The 1795 harvest returns take the form of the quantity of wheat, barley, oats, beans, and peas grown in each parish in 1794, 1795, and a "fair crop in a common year". These cover 47 of the 55 land tax parishes in the division (4).

1. R.J.C. Manton & J.M. Norris, 'The Analysis of Farm Organisation: An Approach to the Classification of Agricultural Land in Britain', Geografiska Annaler, 52B (1969), pp 95-103.
2. For details see W.E. Minchinton, 'Agricultural Returns and the Government during the Napoleonic Wars', Ag.Hist.Rev. I (1953), pp 29-43.
3. P.R.O. HO 67/4.
4. P.R.O. HO 42/37.

The two reports can be supplemented by other sources, such as the reports from the other harvest enquiries of the period and the returns on hop production(1). They are contemporary with the first census of 1801 which provides information about the labour supply in the area. They coincide with an improvement in both the quality and quantity of contemporary writing on agriculture, including the publication of the Board of Agriculture's county surveys and the Annals of Agriculture.

Detailed critiques of the main sources are provided in the appendices but there is an important general observation that must be made. Most of the harvest enquiries only give information about arable farming, in particular about cereal production. They do not yield information about livestock. The exception to this are the lieutenancy enquiries into the state of military preparedness, which may list livestock, manpower, stocks of food, and transport. These have only survived for four parishes in east Kent (2). Some others who have used these sources have fallen into the trap of ignoring pastoral farming. This criticism can be levelled at the

1. B.P.P. 1821 XVII, 343.
2. I am grateful to Mrs Anthea Newman for drawing my attention to this source. The lists are for Ash, Elmstone, Woodnesborough, and Staple. The document was found in 1936 and deposited at the Beaney Institute in Canterbury. Enquiries made during the summer of 1977 revealed that the document can no longer be located and I have been forced to rely on Mrs. Newman's transcript which covers only Ash.

studies by D. Thomas of the Welsh returns and those by T.R.B. Dicks and M. Overton of those for the West Country (1). Methods do exist to overcome this problem. If enterprise combinations are examined, a combination can be identified from only some of its components. This means using evidence from, say, contemporary observers to deduce when those parts of a combination that cannot be measured statistically occurred in conjunction with the parts that can be so measured. Statistical methods such as factor analysis can enable the same approach to be used in a more rigorous fashion. If a principal components approach is used, then the observed data is serving as a proxy for the underlying relationships and the analysis is concerned to identify interrelated characteristics. From these, factors can be derived that may not themselves be directly measurable. For example, if a high degree of correlation were to be found between large farms, a low labour input, and a high altitude, this may indicate a sheep farming component, even though no information about the number of sheep may be available.

1. D. Thomas, Agriculture in Wales during the Napoleonic Wars: A Study in the Geographical Interpretation of Historical Sources, Cardiff (1963); T.R.B. Dicks, The South-Western Peninsulas of England and Wales: Studies in Agricultural Geography, 1550-1900, unpublished Wales Ph.D thesis (1964); M. Overton, 'The 1801 crop returns for Cornwall', in M. Havinden (ed), Husbandry and Marketing in the South West 1500-1800, Exeter (1973), pp 39-62.

III

Attention is now turned to the distribution of enterprises revealed in the 1795 harvest enquiry. The evidence presented in Appendix C suggests that reliance can be placed on this source but problems arise as to how the information it contains can be realised. This is in the form of the number of quarters produced in each parish of the five crops in 1794, 1795, and "a fair crop in a common year". Output data as a means of analysing the structure of agriculture has a conceptual weakness in that it reflects a number of influences beyond the control of the farmer. For example, the relatively poor wheat harvest of 1795 reflected factors such as autumnal rains, that reduced the land planted with wheat, and the damage done to the young plants by the erratic spells of alternately freezing and thawing weather that were experienced during the winter (1). Neither of these was under the control of the farmer so that production reflects the impact of these autonomous factors as well as managerial decisions. Input data, by contrast, mainly reflects entrepreneurial decisions. The conceptual weakness of output data can be overcome in this case by concentrating on the data returned for a normal year's production rather than on that for 1794 and 1795. It is likely that the return for normal production would have averaged out the unusual aspects of any one year. Moreover, it would reflect the expectations of farmers. By using this rather than the returns for 1794 and 1795,

1. Kentish Gazette, 18.11.1794, 12.12.1794, 16.1 1795, 13.2 1795, 10.3.1795, 7.4 1795, 12.6.1795, 7.8.1795.

it is likely that the autonomous influences can largely be removed. They would figure only in so far as they were expected to happen by farmers and be taken into account in planning production.

For the data to be of any use, they cannot be left as physical production units. A common basis is necessary for comparing, say, quarters of wheat with quarters of peas. Two possibilities exist. The crops could be reduced to a common energy base or to a common money base. With modern data either approach could be used. There would be considerable value in using an energy base in order to provide an accurate valuation of those crops primarily produced as an input for other enterprises. This approach has probably to be discounted in view of the number of imponderables. For example, the energy value of by-products, such as wheat straw, and the loss of energy in the digestive processes of the consuming animal have to be estimated. This can depend on whether, for example, wheat was threshed by hand or machine. Hand threshed straw was thought to be less clean than that threshed by machine and, therefore, would have a higher energy content(1). Yet the number of threshing machines cannot be estimated with any certainty. A money base is probably the only feasible alternative.

1. J. Boys (1805), p 56.

Several alternative money bases exist in the literature (1). The main choice is between a gross output base and a gross margin base. The gross output approach weights the production by the sale price. The gross margin approach deducts the direct costs of production from this, thus showing the amount remaining for the payment of overhead costs, including a residual element for profit. The gross margin approach has certain limitations that makes it desirable to use the gross output approach in the present context. It tends to weight the results in favour of those enterprises with low variable costs and high overhead costs. The low variable costs will then be deducted and the enterprise will appear to be more "profitable" than one whose total costs may be the same but which has a higher proportion of variable costs. Both the gross output and the gross margin approaches apply standardised value for the sale of the products. The standardised values are averages which may be subject to substantial deviations. The gross margin approach then goes on to apply standardised costs which are derived from a standardised method of production. Rather than risking inaccuracy from deviations from the mean at two stages, the gross output method has been selected as it confines these to just one stage. With

1. M.S. el Adeemy, 'Types of Farming in North Wales', Journal of Agricultural Economics, XIX (1968), pp 301-15;
B.G. Jackson, C.S. Barnard and F.G. Sturrock, The Pattern of Farming in the Eastern Counties: A Report on a Classification of Farms in Eastern England, Cambridge (1963).

modern data where it is possible to monitor the standardised values against a sample of farms, this objection would not carry such weight, but, in the absence of such a sampling panel, it would be preferable to avoid the risks associated with the gross margin approach.

The gross output approach requires that the physical production units are weighted by their sales price. This presents certain conceptual and practical problems. Two particular conceptual problems exist. Firstly, sales need not be of equal importance for all the crops within the study. Certain crops may be grown mainly as cash crops while others may be produced as inputs for other enterprises. The proportion of the total crop traded will, therefore, be much greater in the case of the cash crop than that grown as an input. In the latter case, the bulk of the crop will not contribute to its weighting as it is transferred between one enterprise and another within the same farm without being valued at a market price. For both the crops, the valuation based on sales price will give the opportunity cost of the crop. However, for the cash crop this will also represent the value to the producer. For the crop produced as an input, the sale price represents the minimum value to the producer. If the crop is being retained for use on the farm, then its value to the farmer should exceed its market price. It must therefore be borne in mind that the method of valuation adopted assumes that the entire crop is sold and, probably, undervalues input crops. There are reasons for believing this to be the case with beans, peas, and, perhaps, to a lesser extent, oats, compared with barley and wheat. Certainly if rye were included in the analysis, its value

would be seriously open to question as, in Kent, it was mainly cut green as an early fodder crop for sheep, whereas its sale price would be as an inferior grain for human consumption (1).

The second conceptual problem concerns the existence of by-products. Certain crops produce by-products of value, such as wheat straw. These have an economic significance but the sale price of the marketed product excludes these. The price for wheat is that of the threshed grain. Any valuation of these is rendered impossible by the absence of information on the quantity of the by-product and its value to the farm, as they were largely unmarketed. Similar problems also exist where one crop improves the yield of another. It could be argued that a part of the wheat yield should be attributed to beans on account of their function as a cleaning crop. The conceptual problems show that the approach is not free from ambiguities and that care is necessary in interpreting the results.

The practical problems concern the choice of suitable prices with which to weight the output data. It was decided to use the average prices for Kent derived from the London Gazette, published as a monthly average in the Annals of Agriculture. Other price data could have been used. The strongest contender would have been the prices paid in Canterbury market each week, which appear in the Kentish Gazette. The Canterbury prices have a strong claim being those paid in the major market town of the region. However they were discarded for two reasons. Firstly, Canterbury serves as a market to a wider area

1. Annals of Agriculture, XV (1791), p 252; XXIV (1795), p 175.

than just the St Augustine East division, so that the prices prevailing would also reflect supply conditions in other areas. This would not be significant but for the importance of other markets for certain parts of the division, particularly Margate, Sandwich, Deal, Dover, Folkstone, and Elham. Canterbury prices would therefore not accurately reflect the prices received in the division due to the existence of other markets. Secondly, much of the produce from the area was not marketed locally but was destined for the London market (1). By using the London Gazette prices, the London market is taken into account as the average will be influenced by prices at markets such as Dartford and Greenwich. The London Gazette prices for Kent move very closely in line with those for London.

The weighting used was an arithmetic mean of the price for each crop each month between September 1791 and August 1794. The use of an arithmetic mean is not desirable due to the fact that equal quantities of the crops were not marketed in each of the months. Unless

1. Between 1812 and 1820 Kent was the third largest exporter of wheat to London after Essex and Suffolk and the third largest exporter of flour after Essex and Norfolk. Under 31 Geo III c 30 England and Wales was divided into twelve maritime districts for which prices were calculated before the export of grain could take place. The prices taken for the first district, which consisted of Kent, Sussex, and Essex, were those prevailing at the Mark Lane Corn Exchange in London -
Report of the Select Committee on Petitions

Complaining of Agricultural Distress, B.P.P. 1820 II, 255.

the prices can be weighted according to the total amount of the crop sold in a given month, a bias is built into the weightings towards those months in which less of the crop was sold and against those in which an above average amount was sold. There is evidence that the amounts of the crops sold in each month did vary. Table 6.2 shows the average amount of each crop sold in each month in London during 1786-90.

Table 6.2: Percentage of the annual crop sold in each month
London, 1786-90

<u>Month</u>	<u>Wheat</u>	<u>Barley</u>	<u>Oats</u>	<u>Rye</u>	<u>Beans</u>	<u>Peas</u>
January	10.2	15.2	6.1	10.3	9.4	13.9
February	10.7	15.0	9.7	8.9	9.9	12.0
March	9.2	14.7	10.8	8.2	8.8	10.1
April	8.6	12.6	10.0	5.2	7.6	5.6
May	7.0	9.3	7.4	9.2	7.1	3.8
June	7.0	5.7	9.4	11.2	7.3	3.1
July	6.3	2.3	8.5	7.6	6.8	3.5
August	6.5	1.2	7.4	6.5	7.1	4.8
September	5.4	1.2	8.0	5.4	6.7	5.9
October	8.2	6.9	9.6	7.4	12.1	9.8
November	10.9	8.0	7.3	11.8	8.8	14.1
December	10.0	8.0	5.9	8.5	8.5	13.4

Source: Annals of Agriculture

It shows that there was substantial variation in the proportion of the annual crop marketed in London each month. However, no weighting of the prices is possible due to the fact that the quantity of the St Augustine East crop marketed at different times during the year is unknown.

The choice of September 1791 to August 1794 as the base period for weighting the production is largely arbitrary. Other periods could be used for equal validity. Although the choice is arbitrary, it can be justified.

To weight the production by the prices of one year suffers from the disadvantage that the year in question may not be typical. Hence it is desirable to use a longer period in order to average out the atypical. A three year period can be justified through its validity in the permanent income hypothesis (1). This theory suggests that income and consumption can be divided into permanent and transitory elements. There is argued to be no correlation between transitory income and permanent consumption, permanent income and transitory consumption, and transitory income and transitory consumption. The three year time horizon is built into the theory to explain how a change in income can ultimately be reflected in a change in consumption. The theory provides a good explanation of the behaviour of groups with more erratic incomes such as farmers and the self-employed. Some evidence has also been produced which suggests that the three year horizon may be too long (2).

The period September 1791 to August 1794 was selected as the base being the full three year period prior to 1794 harvest. The cut-off point of August 1794 was selected as the enquiry sought information about the harvests of 1794, 1795, and a normal year. The normal year weighting was designed so that there should be no influence from the two more recent years that the enquiry deemed to be unusual. The approach implies that the normal year should be an average for the early 1790s and that what was regarded

1. M. Friedman, A Theory of the Consumption Function (1957)
2. R.S. Holbrook, 'The Three-Year Horizon: An Analysis of the Evidence', Journal of Political Economy, LXXV (1967), pp 750-4.

as normal would be revised to incorporate more recent experience with the earlier experiences being discarded.

As the 1801 crop returns were made of the acreage under each crop, they are in terms of a common unit and so present fewer comparative problems than do the 1795 harvest returns. There remain, though, certain complications that need to be discussed. The parishes for which the returns were made are not the same as those used in the land tax assessments, or the 1795 harvest enquiry, or the normal local government functions, though they are the same ones as used in the 1801 census. In the St Augustine East division, the civil and ecclesiastical parishes, generally, were co-extensive. The main problems arise through the existence of boroughs, particularly where these cross parish boundaries. In laths, such as Sutton at Hone Lower and Shepway, the problem is such as to make it impossible to compare the land tax assessments with the 1801 crop returns. In the St Augustine East division, the problems are comparatively minor. For example, the three Nonington boroughs have to be grouped into one parish in order to make a comparison.

Ecclesiastical administration meant that the parishes returning under the 1801 enquiry are not exactly the same as the true ecclesiastical parishes. Some parishes with a common minister made just one return. In the St Augustine East division, this was the case with Adisham and Staple and Northbourne and Shoulden, and the Monkton return includes Birchington, which lay outside the division. The effect of this is to create larger parish units and, hence, greater deviations around the parish means, and to increase the number of geographically separated areas covered by a single return.

For example, Adisham and Staple are separated by the parish of Wingham.

The acreages under certain of the crops present some problems in interpretation. In appendix D, it was noted that rye was not originally included in the enquiry and, therefore, its absence may mean that the deficiency was not remedied rather than that none was grown in the parish. An additional complication is that the crop was cut as an early fodder crop and the land put down to another crop. It is possible under these circumstances for the land to have been overlooked, particularly if the return was made on the basis of personal inspection rather than from a return by farmers or from the tithes. A similar problem exists to a certain extent with peas and beans, and may affect the crops put in after them, such as turnips.

The interpretation of the acreage under potatoes is uncertain. Potatoes were grown in gardens as a domestic crop as well as commercially for animal as well as human consumption. They could also be used as an undercrop for fruit or hops. It is not clear whether the ministers adopted a consistent approach in their treatment of potatoes grown in gardens. C. Philpot, the rector of River, wrote:

No potatoes grown in this parish for sale. They are generally sown on small patches of ground where the dunghills or mixens of the former year stood and account in the whole to 2 or 3 acres.

He returned three acres as being under potatoes. William Chafy of Sturry and Swalecliffe excluded from his returns "potatoes in small gardens and upon lands under a rood".

James Thurston, the vicar of Ryarsh, noted:

Potatoes are seldom cultivated in my parish except by poor people in their gardens.

He recorded no potatoes in his return. Thomas Baker of Chiddingstone recorded three acres of potatoes noting:

The chief of the potatoes planted in this parish was in the kitchen-gardens and corners of fields; none of which probably exceed $1/8$ of an acre.

At Shipbourne, it was noted that no potatoes were planted on their own but a few were grown in the young hop gardens, and none of these were recorded in the return. Potatoes grown in gardens could amount to a significant part of the total acreage under the crop. At Bredgar, six acres were returned as being under potatoes but the curate thought that there were another three or four acres growing in gardens.

The acreage under turnips presents some problems in interpretation. Example can be found of their being grown as under crops and it cannot be certain as to whether these were recorded as well as the field crops. At Chiddingstone, turnips were grown in small irregular patches in the hop gardens. The practice of growing them amongst peas and beans may have resulted in some being overlooked (1). The acreage under turnips was not actually recorded in the returns. Rather the acreage recorded was that under turnips or rape. Little evidence has been found that the acreages recorded were rape rather than turnips and it has been assumed that turnips were normally the crop recorded.

The interpretation of the acreages under wheat and, to a lesser extent, oats have to take into account the special conditions of the time. With the normal sources of imported grains being disrupted by the

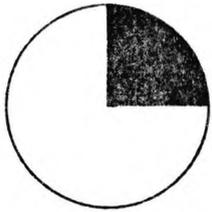
1. Annals of Agriculture, IV (1785), p 221; v (1786), p 472.

war, and an increased demand from the armed forces and their animals, there is evidence that the acreage under these crops was increasing.

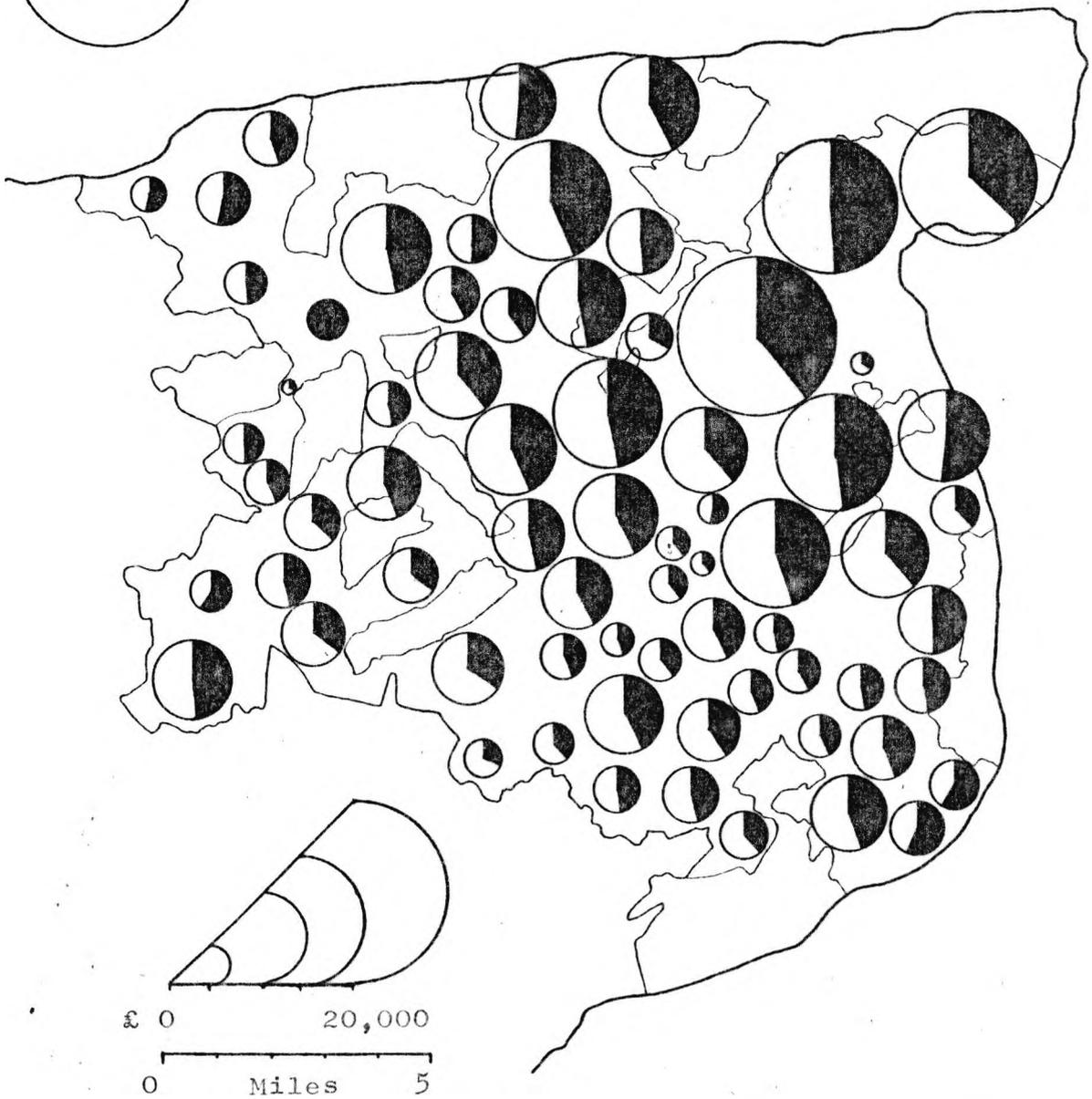
IV

Maps 6.1 to 6.5 present the information on the distribution of each enterprise from 1795 harvest enquiry by plotting pie charts for each parish representing the total revenue from the five crops and indicating the proportion provided by each enterprise. Map 6.1 plots the distribution of wheat. It shows that wheat was grown extensively in each parish in the district. For the division as a whole, wheat provided 43 per cent of the revenue and this proportion is typical of that for most of the parishes. There is a tendency for wheat to contribute a lesser proportion in the inland south-western parishes of the Downs. Typical parishes are Denton (32 per cent), Bishopsbourne (35 per cent) and Barham (34 per cent). Wheat accounted for a higher proportion of the total revenue towards the north and east, with the highest proportions on the coast south of Pegwell Bay. For example, Worth derived 52 per cent of its revenue from wheat, Great Mongeham 50 per cent, and Westcliffe 56 per cent.

Map 6.2 plots the distribution of barley. Each parish in the division grew the crop but its contribution to the total revenue was much lower than that for wheat. In the division as a whole, it accounted for 22 per cent of the revenue. It was most important in the parishes in the south-east and in Thanet. Here it accounted for about 30 per cent of revenue. For example, in St Lawrence it amounted to 30 per cent of revenue, Ripple 30 per cent,

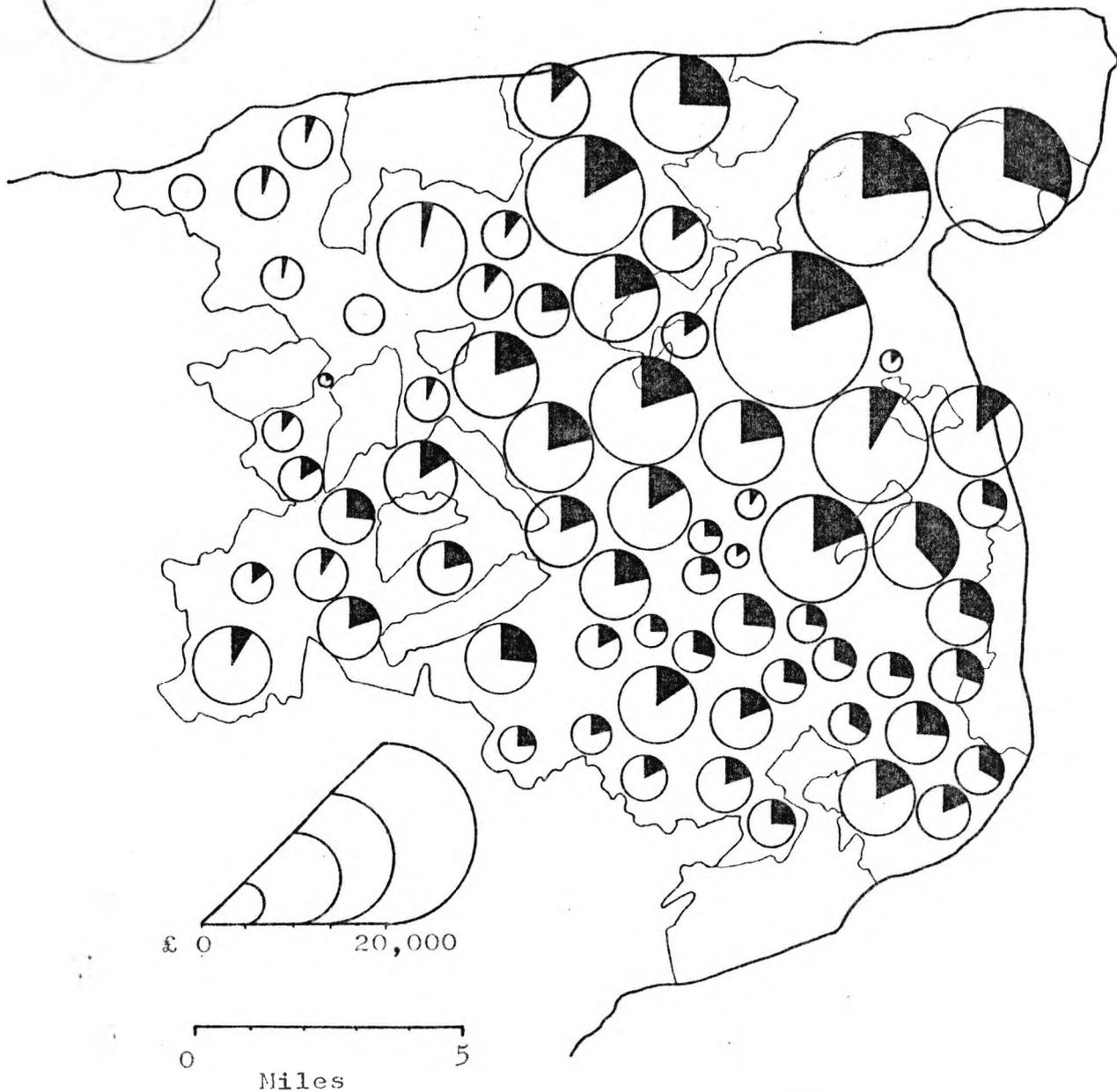


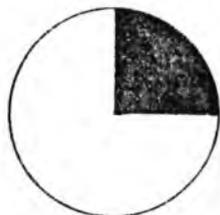
Map 6.1: Wheat Revenue as Proportion of the Total



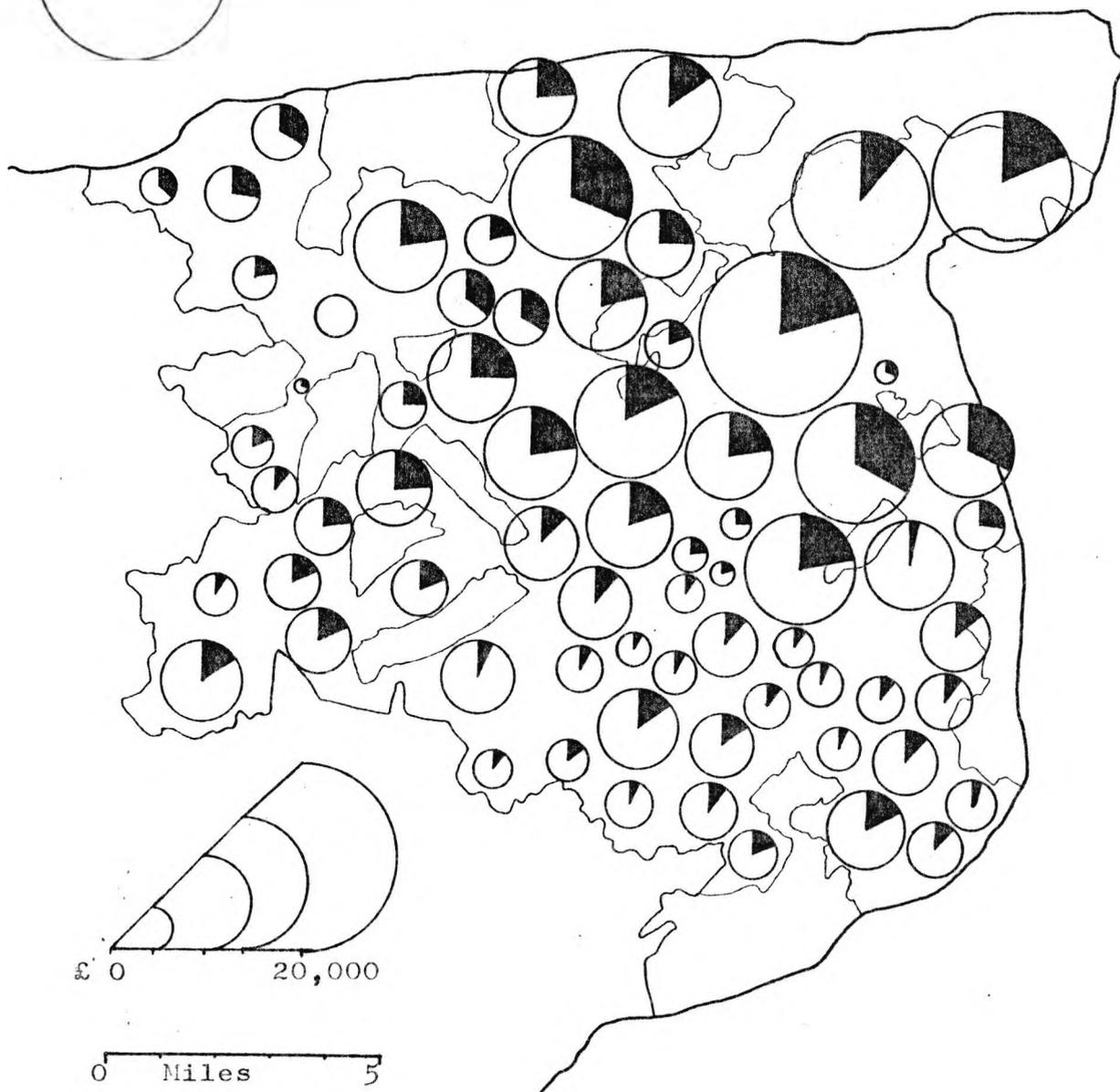


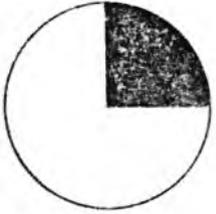
Map 6.2: Barley Revenue as Proportion of the Total



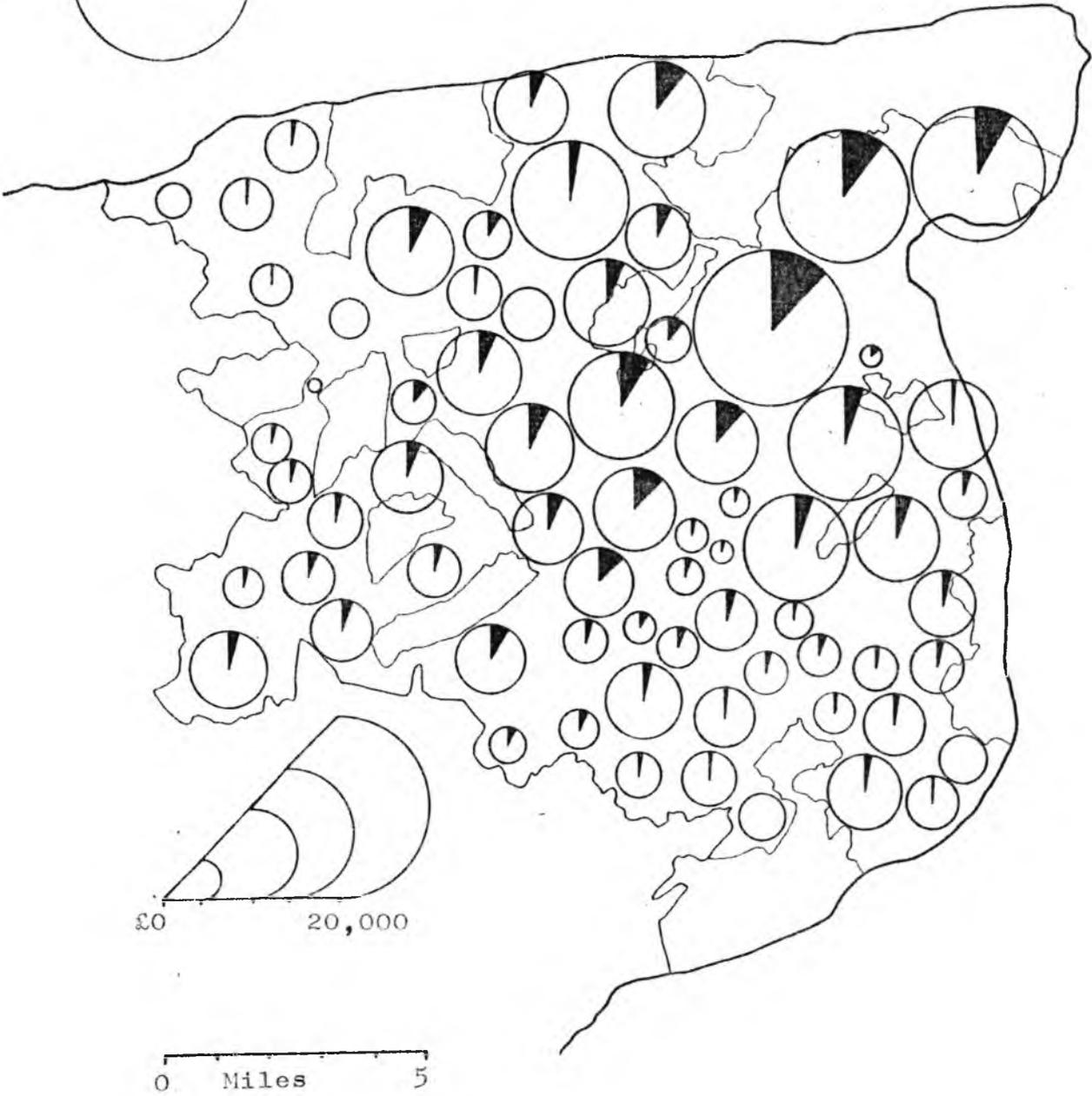


Map 6.3: Bean Revenue as Proportion of the Total



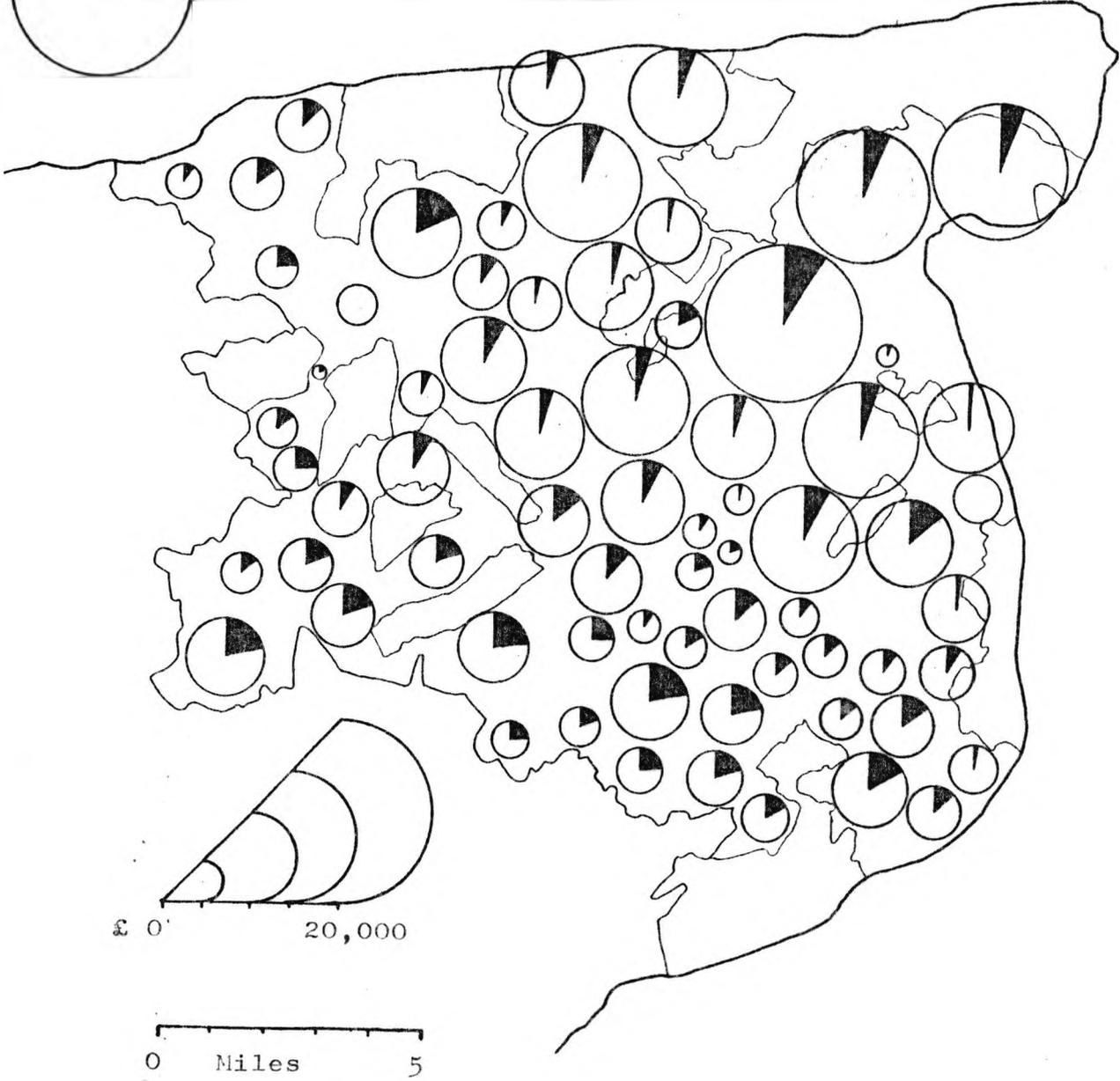


Map 6.4: Pea Revenue as Proportion of the Total





Map 6.5: Oats Revenue as Proportion of the Total



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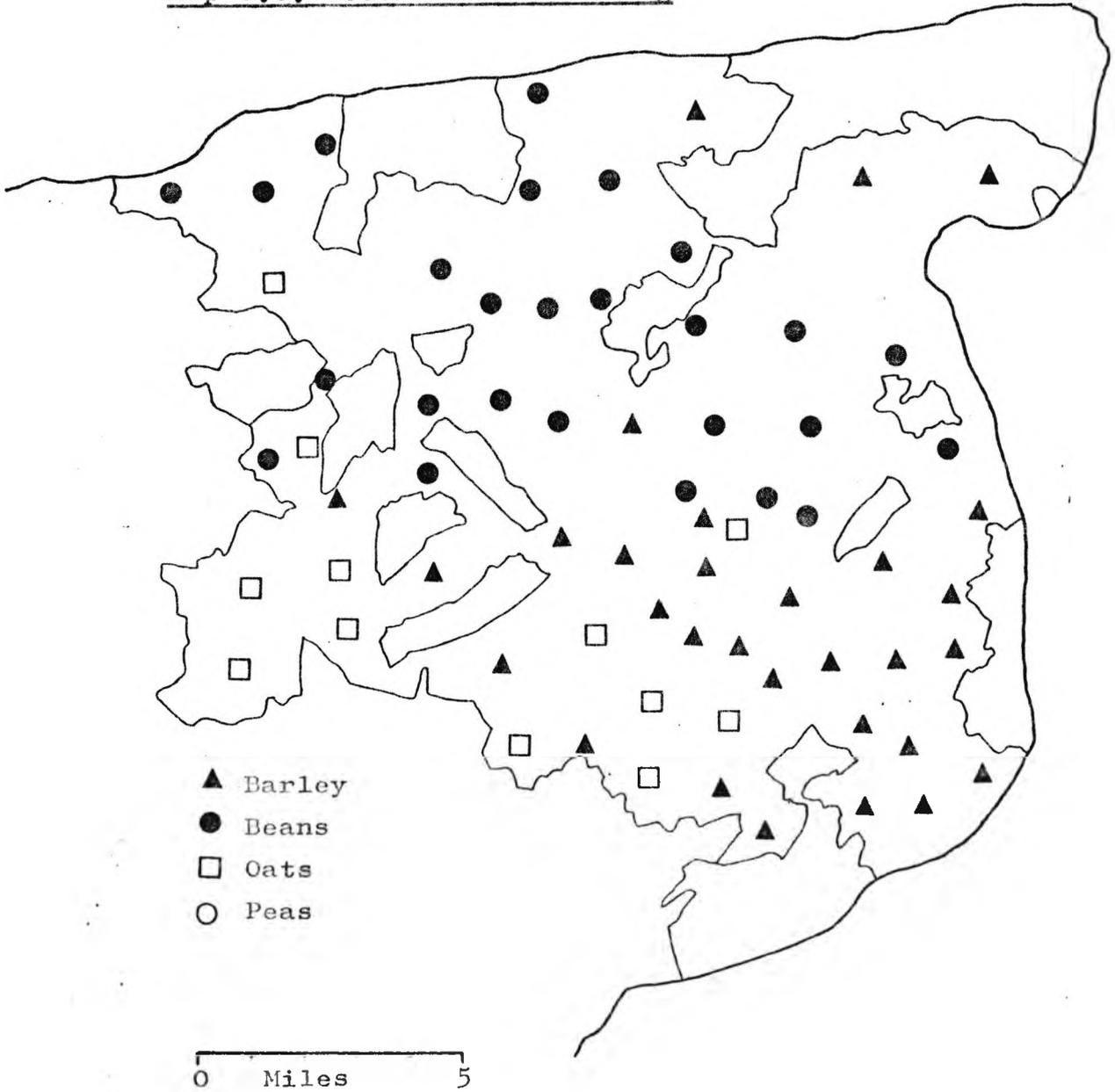
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Northbourne 38 percent, and St. Margaret and Oxney 33 per cent. Inland, it accounted for between 20 and 25 per cent of the revenue. It was of least importance in the parishes at the mouth of the Stour, falling to 8 per cent in Woodnesborough, and 14 per cent in Worth. The proportion is also lower on many of the parishes of the North Downs dipslope. For example, at Tickness Borough it provided 10 per cent of the revenue, Eastry 19 per cent, and Knowlton 16 percent.

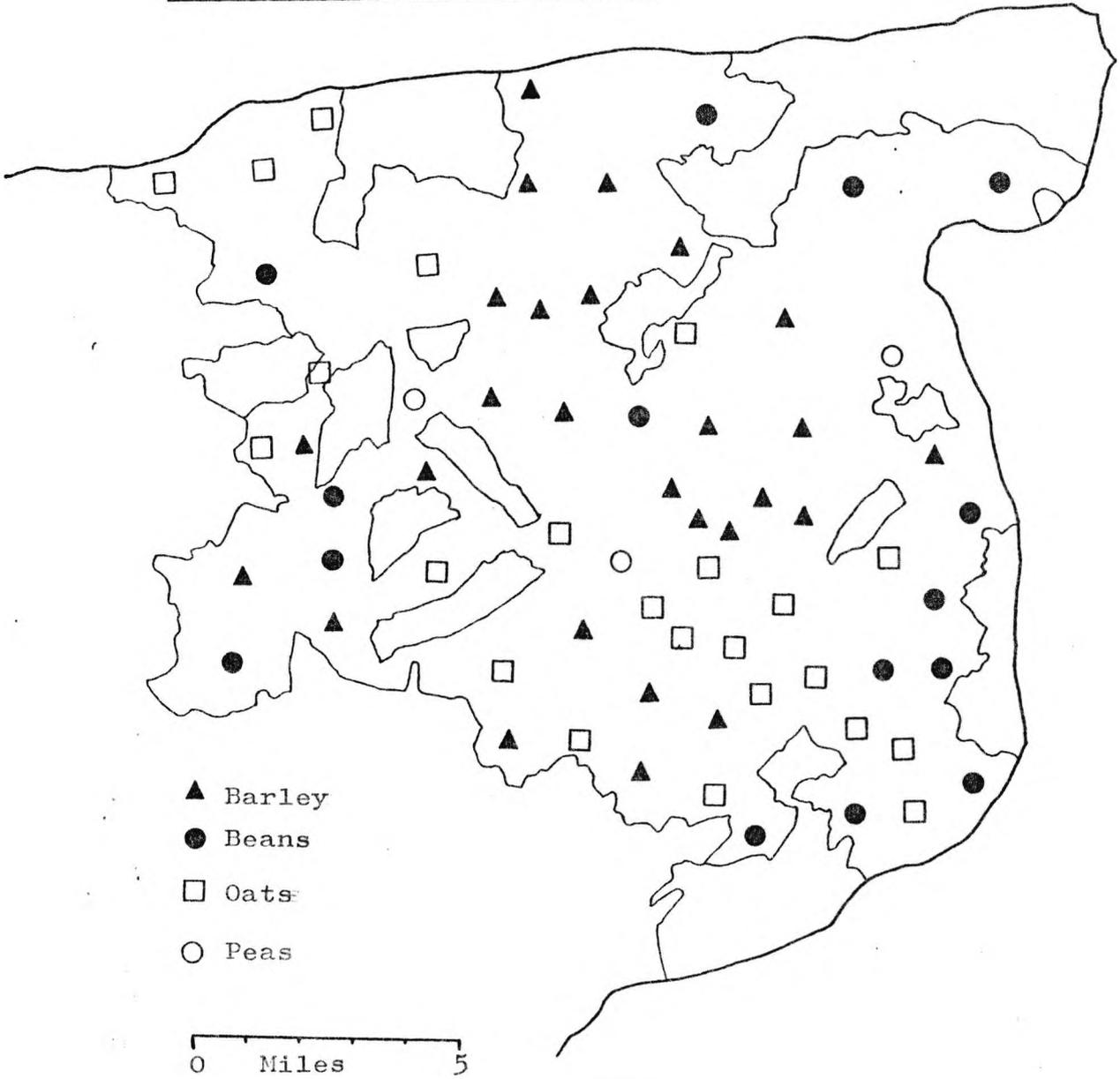
The distribution of beans is shown in Map 6.3. Beans were grown throught the region and accounted for 18 per cent of the division's revenue in a normal year. The main area in which they were significant was the Stour Valley. In parishes like Ash (20 per cent), Woodnesborough (32 per cent), and Stonar (30 per cent), they were of particular importance. Their influence declines to the north and south of the Stour. In Thanet, in spite of their important contribution to other enterprises, they accounted for only 18 percent of the revenue in St Lawrence, 15 per cent in St Nicholas, and 11 per cent in Minster. On the North Downs dipslope, they gradually diminish in importance, falling to 8 per cent at Womenswold, 8 per cent at Barfreston, and 7 per cent at Little Mongeham.

The distribution of peas, as shown in Map 6.4, is characteristic of a crop of only local significance. In the division as a whole it accounted for only 7 per cent of the normal revenue. Three parishes, St. Margaret and Oxney, Stodmarsh, and River did not normally grow the crop at all, but in only eight parishes did it account for more than ten per cent of their revenue. The main area in which the crop was grown was in the

Map 6.6. Second Order Ranking



Map 6.7 Third Order Ranking



Stour Valley, accounting for 12 per cent of the revenue in Staple, Ash, and Elmstone, and 15 per cent in Stonar. Along the North Downs it was scarcely present, accounting for only 2 per cent of the revenue at Coldred, Ewell and West Langdon, and 1 per cent at Westcliffe.

Oats, too, were significant only locally. Their distribution is shown in Map 6.5. In the division as a whole they accounted for 10 per cent of the revenue in a normal year. They were mainly grown along the North Downs. Here they could account for over 20 per cent of the revenue in a parish. For example, at Coldred they provided 22 per cent of the revenue, Lydden 24 per cent, Barham 23 per cent, and Womenswold 25 per cent. Their importance was markedly reduced towards the Stour Valley and the coast. At St Margaret and Oxney they fell to 3 per cent, Ripple 9 per cent, and Great Mongeham 2 per cent. In the Stour Valley, typical proportions were Ash 9 per cent, Goodnestone 8 per cent, and Wickhambreaux 4 per cent.

It was argued that enterprises would be pursued in combination and, hence, to look at each individually would be misleading. The distributions shown in Maps 6.1 to 6.5 need therefore to be reinterpreted to reveal combinations of crops. Two methods of doing this can be adopted. Firstly, the enterprises can be ranked in order of importance in each parish and distribution maps prepared showing the rankings of each of the crops. This is done in Maps 6.6 and 6.7. These show the crops ranked second and third in each parish. No first order ranking map was prepared for, in each parish, the first ranked crop was wheat. It was not thought to be of value to prepare fourth and fifth ranked

crops as the crops in this position were, for most of the parishes, of relatively minor importance, normally contributing less than 10 per cent of the revenue in the case of the fourth ranked crops, and under 5 per cent for the fifth rank. In any case the fifth rank was mainly peas. Map 6.6 shows the crops ranked second in each parish. It shows that the region can be divided into three areas. Firstly, in downland parishes, such as Coldred, Lydden, Denton, and Womenswold, oats were the second most important crop. The parishes in this category are few in number and confined to the upper dipslope. On the lower dipslope of the Downs and in Thanet, the second ranked crop was barley. In the Stour Valley and that part of the dipslope covered by the loamy and silty argillic brown earths, beans were the second ranked crop. The map suggests that the basic enterprise combinations are wheat and oats, wheat and barley, and wheat and beans, with a clearly defined geographical area for each.

In Map 6.7 the third ranked crops show a more fragmented pattern. In Thanet and along the south-eastern coast, beans ranked as the third crop, to produce a wheat-barley-beans combination. The upper dipslope of the Downs had barley as the third crop where oats had been the second, and oats where barley had been second, to produce a wheat-oats-barley combination. The lower dipslope of the Downs generally had oats as the third crop which would also produce a wheat-barley-oats combination. Most of the Stour Valley parishes and where the lower dipslope was overlain by silty deposits, barley was the third crop, which would produce a wheat-beans-barley combination. The third ranking, then, would suggest

that the region could be divided into three main areas: the Stour Valley and those parts of the lower dipslope of the Downs with a silty overlay, where the combination was wheat, beans, and barley; a coastal strip comprising Thanet and the parishes of the south east coast where the combination was wheat, beans, and barley; and the remainder of the lower dipslope of the Downs and the upper dipslope, for which the combination was wheat, barley, and oats.

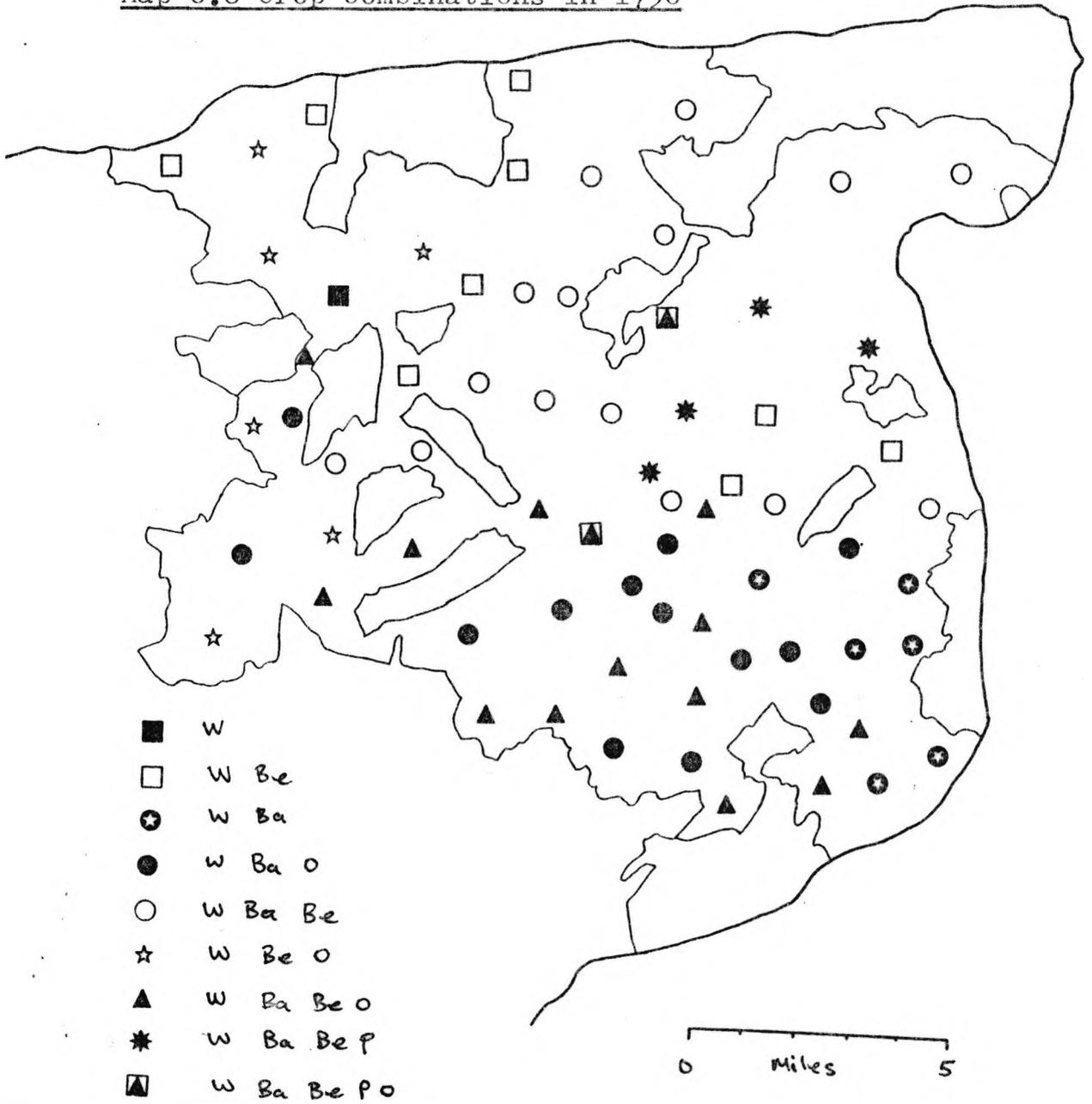
The combination established through Maps 6.6 and 6.7 are helpful in establishing the broad outlines of the enterprise combinations but they do not distinguish between those crops which are statistically significant in an enterprise combination and those which were also grown. This is because all the first three crops were taken into account, even though, in some cases, the second or third crop may not have been important. The fourth or fifth crops were excluded even if the revenue produced was enough to be taken into consideration. For example, Ripple was included within the wheat-barley-beans combination on the south east coast. Yet beans, the third crop, contributed only 10 per cent of the revenue. In contrast, at Nonington oats, the fifth ranked crop, contributed 11 per cent of the revenue but neither oats nor beans, the fourth ranked crop, were used in the determination of the combination.

One method of establishing cut off points in enterprise combinations is that developed by Weaver and further extended by Thomas (1). This involves comparing

1. J.C. Weaver, 'Crop-Combination regions in the Middle West', Geographical Review, 44 (1954), pp 175-200; 'Crop Combination regions for 1919 & 1929 in the Middle West', Geographical Review, 44 (1954), pp 560-72; Thomas op.cit., pp 79 -94.

the actual crops with ideal combinations using a least squares approach. The best fitting of the ideal combinations is taken to be the most accurate description of the combination. The method was developed to derive crop combinations from the percentages of land devoted to a particular crop but any information can be used so long as it shows the percentage contribution made by each enterprise. The method has been applied to the percentage contribution made by each crop to the total labour input and to gross output data as well as to the land input, for which it was originally devised. The crops are ranked in descending order of importance and then compared with the ideal types. With five crops, monoculture will be represented by one crop producing 100 per cent of the revenue and the remaining crops zero per cent. Where two crops are dominant, the ideal type would give the first two crops 50 per cent each, and the remaining three zero per cent, and so on, until with five crops of equal importance, each crop in the ideal type would contribute 20 per cent of the revenue. The actual distribution is compared with each ideal in turn and the deviations from the ideal squared and summed. The ideal for which the sum of the squared deviations is least is regarded as that which most accurately describes the distribution. This procedure establishes how many of the crops grown are significant to the enterprise combination. From the crop rankings, the significant crops can be indentified. This procedure seem laborious until it is realised that even with as few as five crops, 31 enterprise combinations are possible. Each additional crop causes the possibilities to increase exponentially, so that with six crops 63 combinations are possible, and with seven 127.

Map 6.8 Crop Combinations in 1790



W- wheat

Be- beans

Ba- barley

P- peas

O- oats

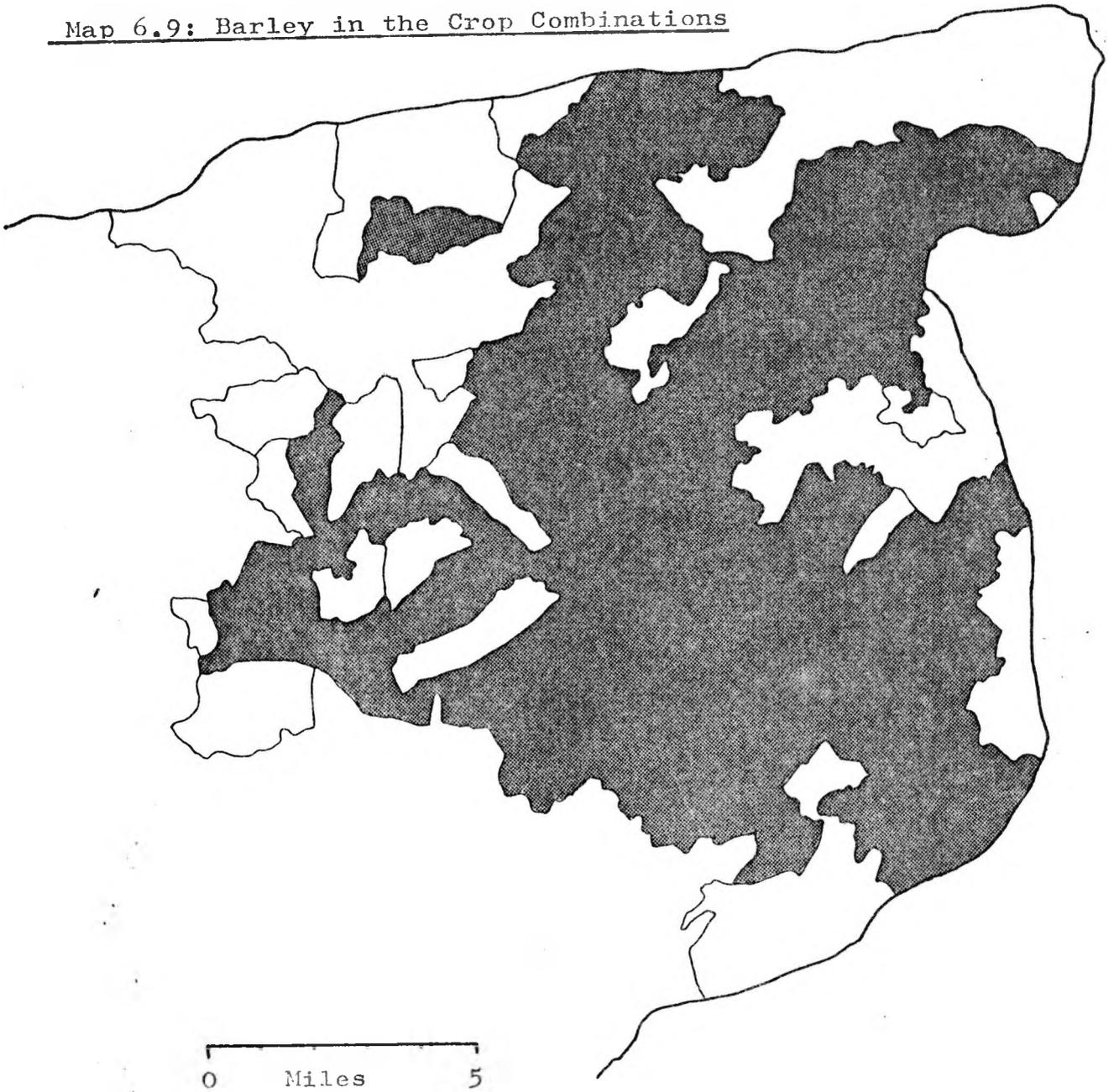
In the St Augustine east division, only seven of the 31 possible combinations were actually present, and three of these accounted for 69 per cent of the parishes in 1790.

The resulting crop combinations are plotted in Map 6.8. The outline enterprise combinations derived from the distribution Maps 6.6 and 6.7 can be modified to remove crops from the first three that do not appear significant in the least squares method and to add fourth and fifth ranked crops where appropriate. Thanet and the south east coast appeared originally as being an area of wheat-barley-beans. After the least squares analysis has been completed, it can be seen that the two are not similar. In the south east coastal parishes, beans are not significant and so the distribution becomes wheat and barley. In Thanet, the fourth ranking crop, peas, is not sufficiently important to figure in the combination and so the combination remains wheat-barley-beans. The Stour Valley and part of the lower dipslope also originally appeared as wheat-barley-beans combination. This can now be seen to have been insufficiently subtle and that four variations on this exist. In the western part of the Stour Valley, in parishes like Wickhambreux, Littlebourne, and Wingham, wheat, barley, and beans form the combination and this links them with the Wantsum Valley in Thanet. In the eastern Stour Valley, in parishes like Ash, Stonar, and Staple, peas are also significant, and at Elmstone all five crops appear in the combination. Within the Stour Valley itself, then, the role of peas is the critical element. On the overlain part of the lower dipslope a rather confused pattern emerges. In the parishes lying to the south of the Stour, like Worth and Woodnesborough, the original distribution is modified by

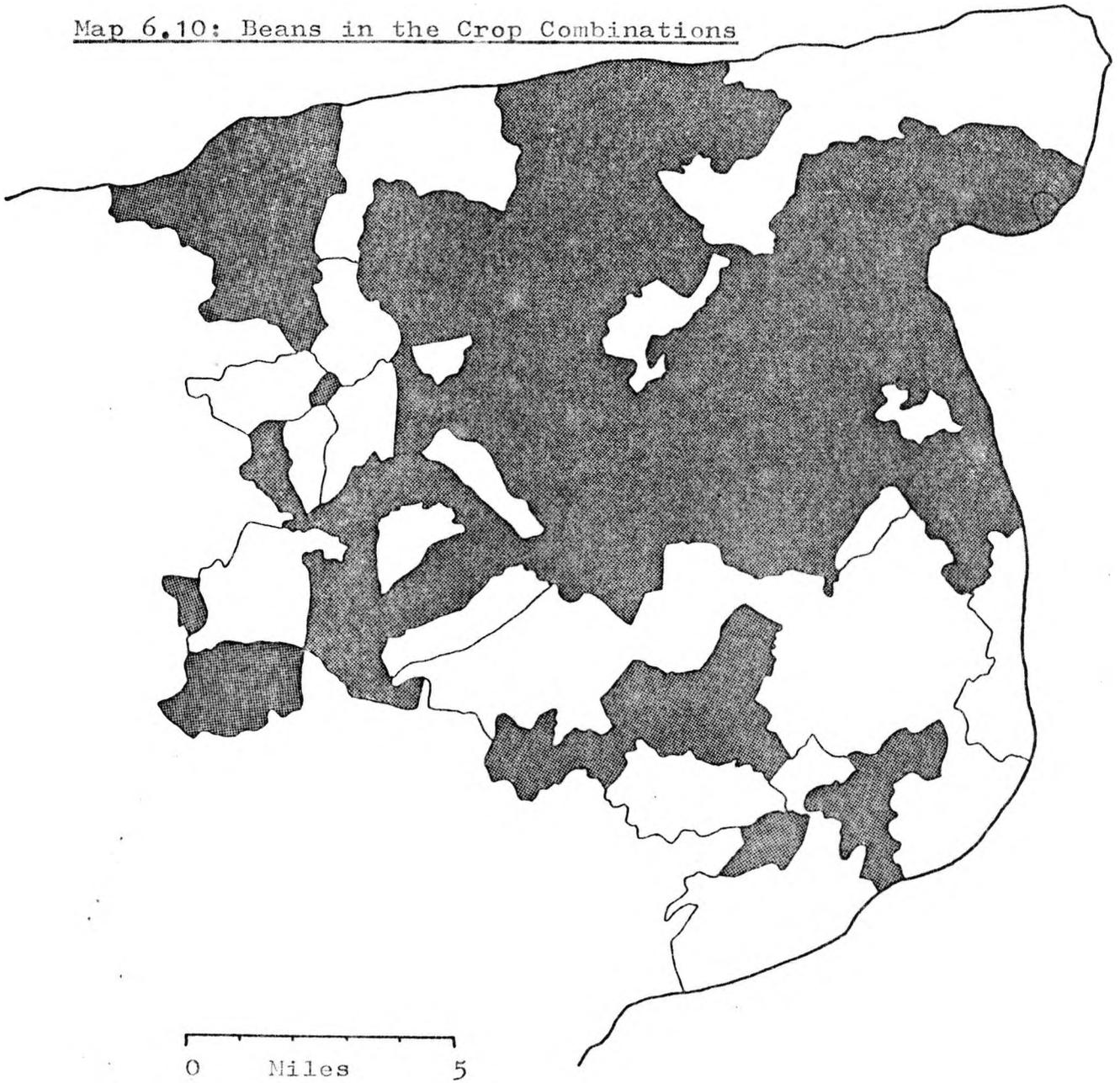
the failure of barley to be significant so that the distribution becomes one of wheat and beans. Elsewhere is a mixture of the Stour Valley elements already outlined and those found on the rest of the dipslope. On the remainder of the dipslope there seem to be no real difference between the high and low dipslope. Rather the basic combination is wheat, barley, and oats. The distinction lies between those parishes in which beans are significant and those where they are not. The original pattern is, therefore, modified by the failure of the third ranked crop to be of significance, and by the addition of fourth ranking crops in other instances. The method used has allowed the cut-off points in the combinations to be determined with some confidence.

Weaver's method can also be used to elaborate on the distribution of the individual enterprises outlined in maps 6.1 to 6.5. The method can be used to establish those areas in which the crop forms part of the resulting enterprise combination and, therefore, the area over which it is economically significant. This is done in Maps 6.9 to 6.12. No map has been prepared for wheat as it is significant throughout the region, forming part of each enterprise combination. Map 6.9 shows the distribution for barley. This shows that barley was important throughout the region with one exception. It did not figure in the enterprise combinations for the parishes lying to the south of the Stour's mouth, in parishes such as Worth and Woodnesborough. The distribution of beans is similarly widespread. Beans are absent only from part of the dipslope of the Downs, in a line of parishes running east from Barham to Northbourne, and then south east to Westcliffe, Lydden,

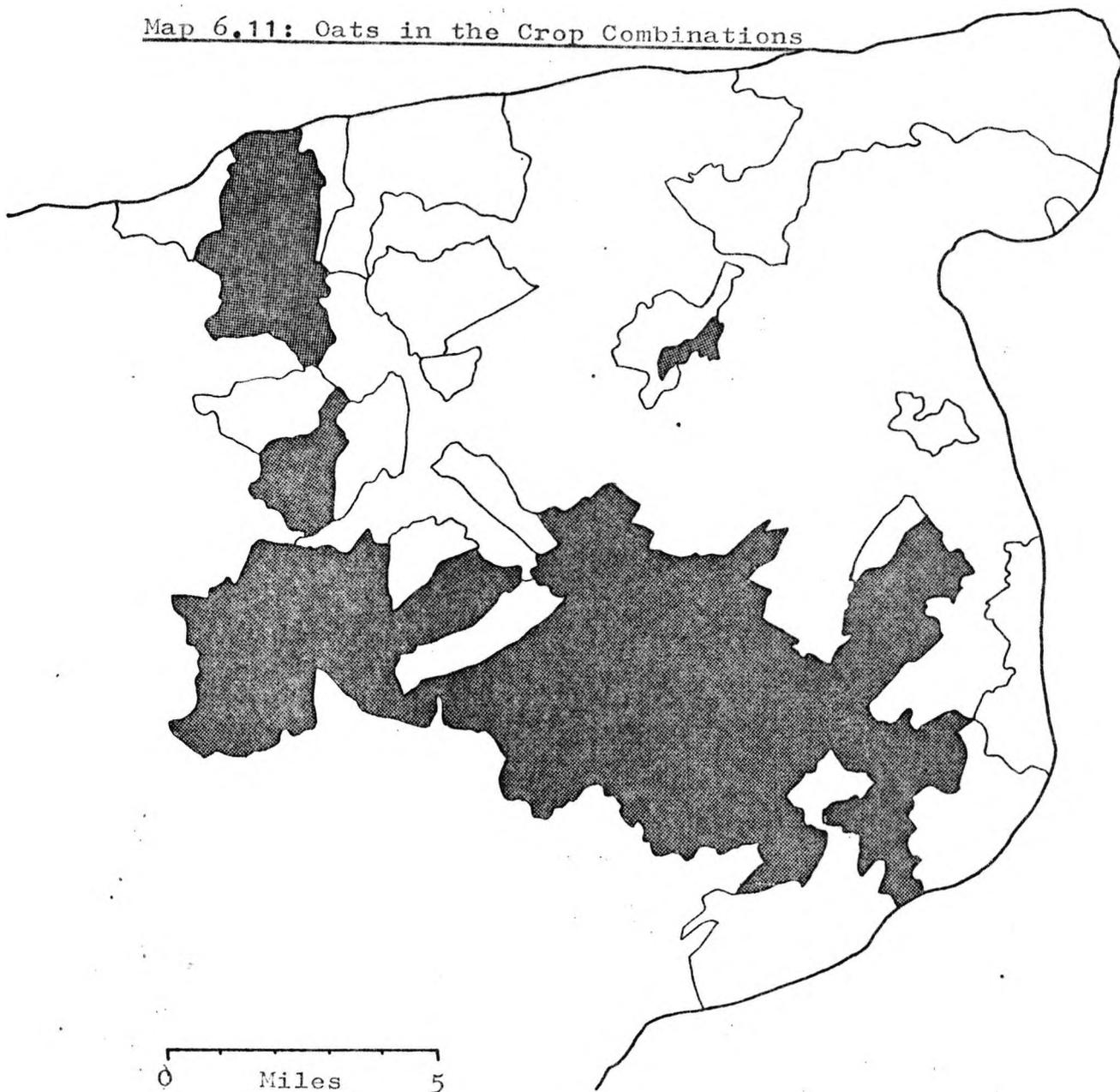
Map 6.9: Barley in the Crop Combinations



Map 6.10: Beans in the Crop Combinations



Map 6.11: Oats in the Crop Combinations



Map 6.12: Peas in the Crop Combinations



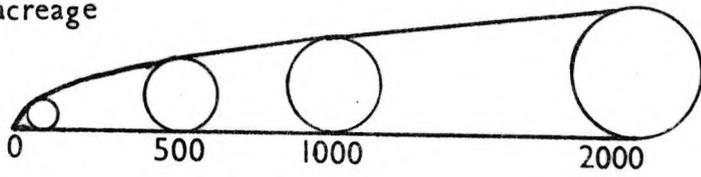
and Ewell. The distribution of oats, shown in map 6.11, is more limited. It is only significant on the southern part of the dip slope. The distribution of peas is still more limited, as shown in Map 6.12. Only in the eastern part of the Stour Valley do they appear as part of the enterprise combinations.

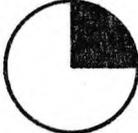
The relative importance of the cereal crops can be established by calculating the gross revenue per acre from them for each parish. The results of this vary between areas. It shows that there was a wide range of values within the area, from £0.38 in Stonar to £4.21 in Staple. The main trend to emerge is of the increasing importance of the crops as one moves to the north and east of the region. The lowest values occur for coastal parishes, such as Shoulden, Worth, and St Margaret and Oxney, and this is likely to reflect the importance of marshland pastures in these parishes. Low values were experienced on the higher parts of the dip slope. For example, the figure for Ewell was £1.23 and Sibertswold £1.93. Similar values existed for the western parishes in the Stour Valley, such as Wickhambreux and Littlebourne. The highest values were to be found in the eastern part of the Stour Valley and in Thanet, such as Ash, Woodnesborough, Elmstone, and St. Lawrence.

The 1801 crop returns provide information about the input of land for different enterprises. Maps 6.13 to 6.19 plot the distributions for each of the crops returned, with the exception of potatoes. Map 6.13 shows that wheat was widely grown throughout the area. It accounted for 32 per cent of the cropland in the division. In Thanet it took 28 to 29 per cent of the land.

MAP 6.13

cropland acreage



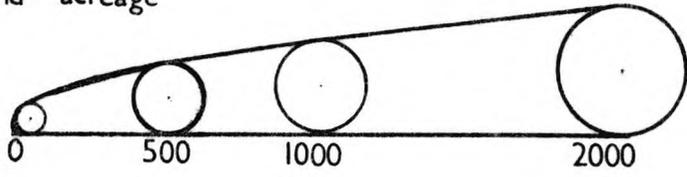
 WHEAT

 no cropland



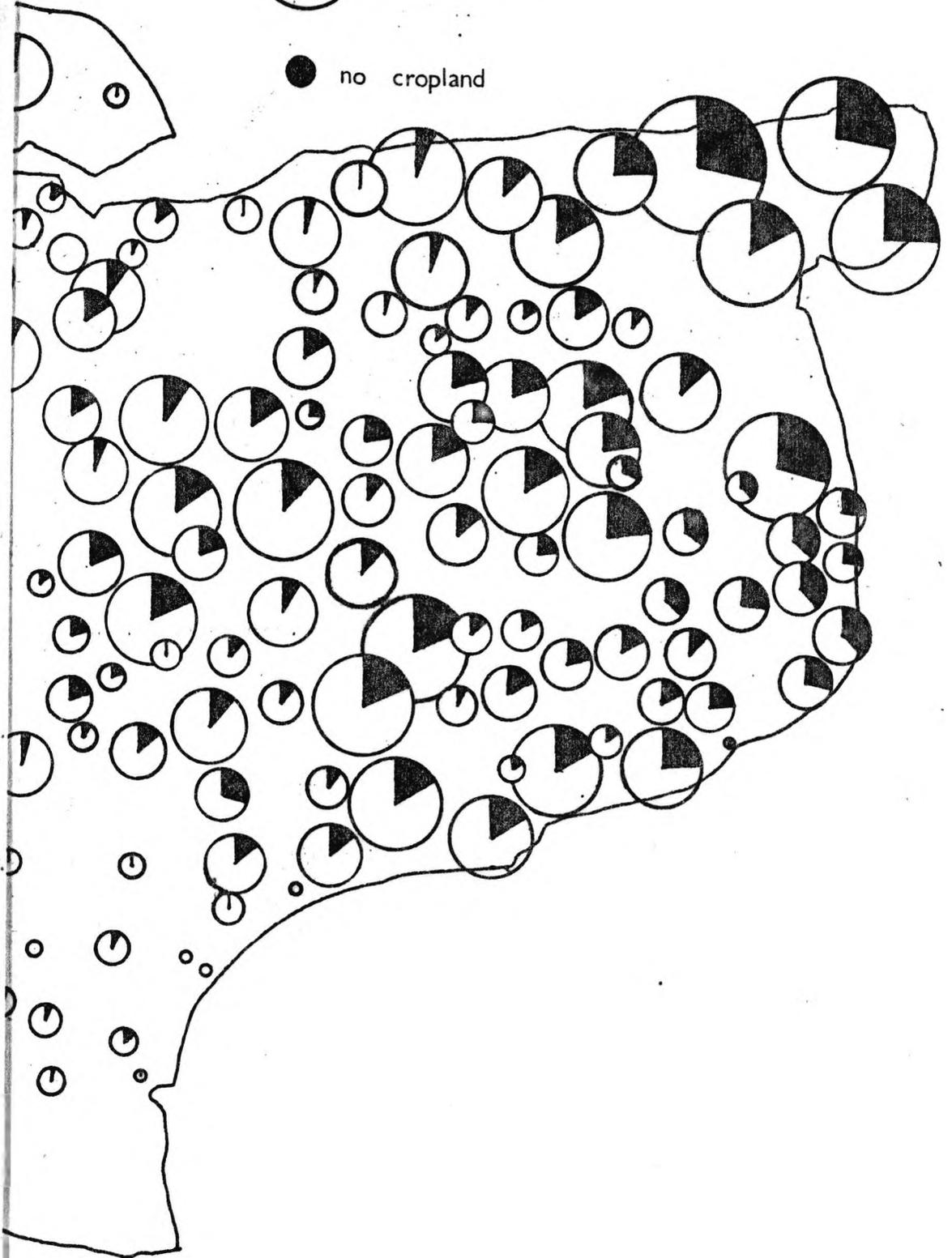
MAP 6.14

cropland acreage



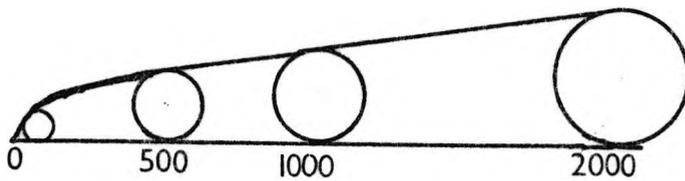
 **BARLEY**

 no cropland



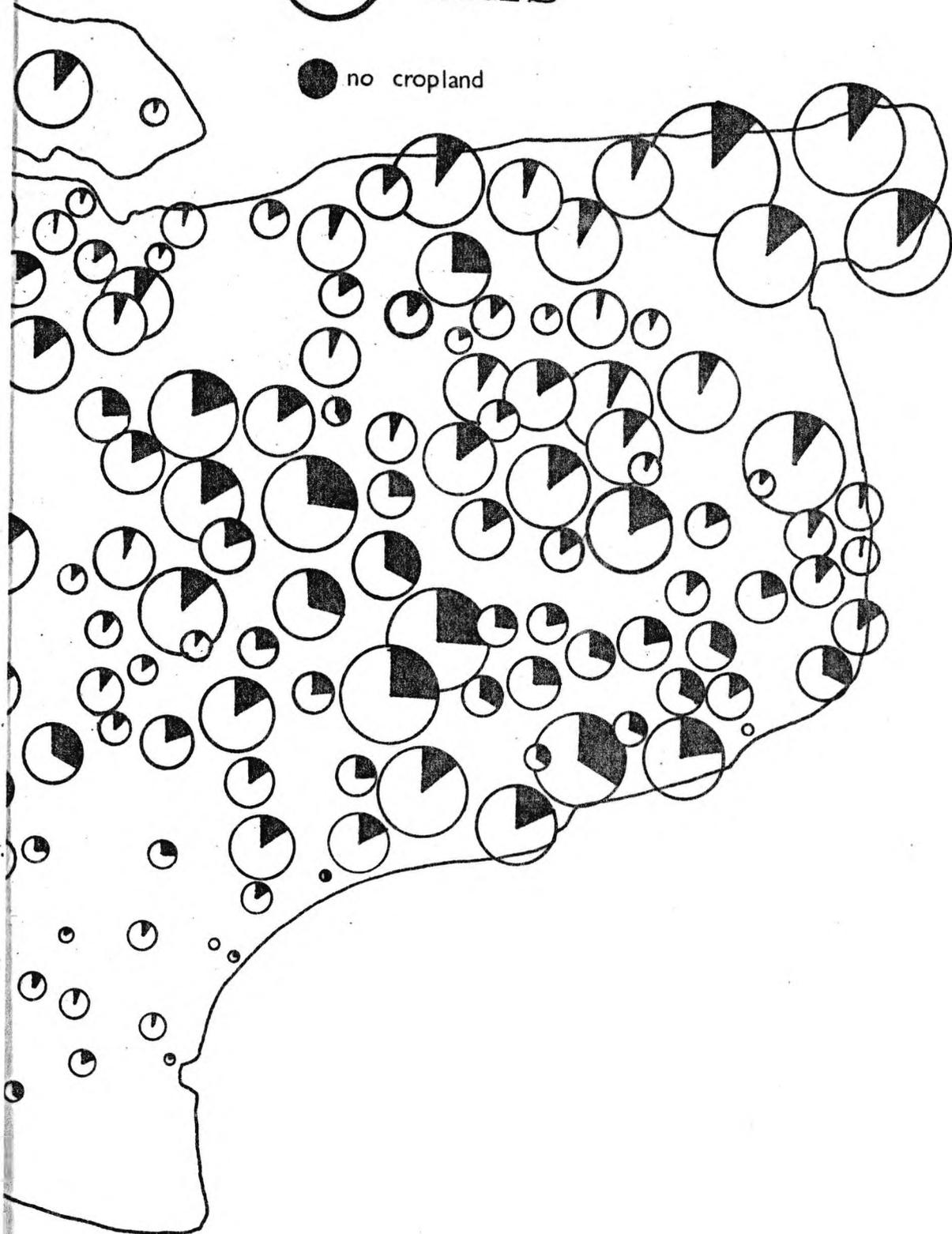
MAP 6.15

cropland acreage



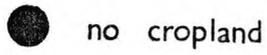
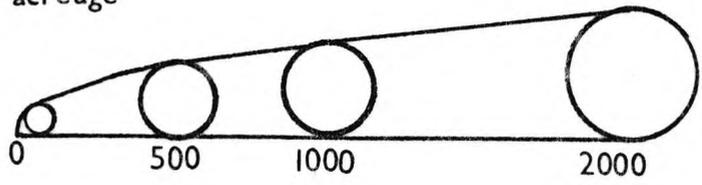
 **OATS**

 no cropland



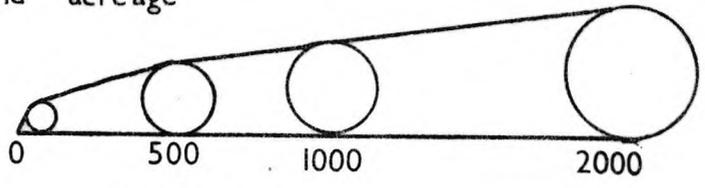
MAP 6.16

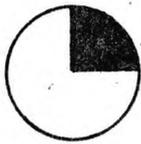
cropland acreage



MAP 6.17

cropland acreage



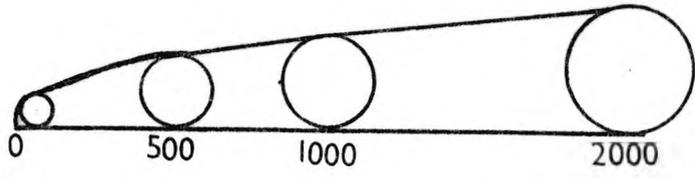
 **BEANS**

 no cropland

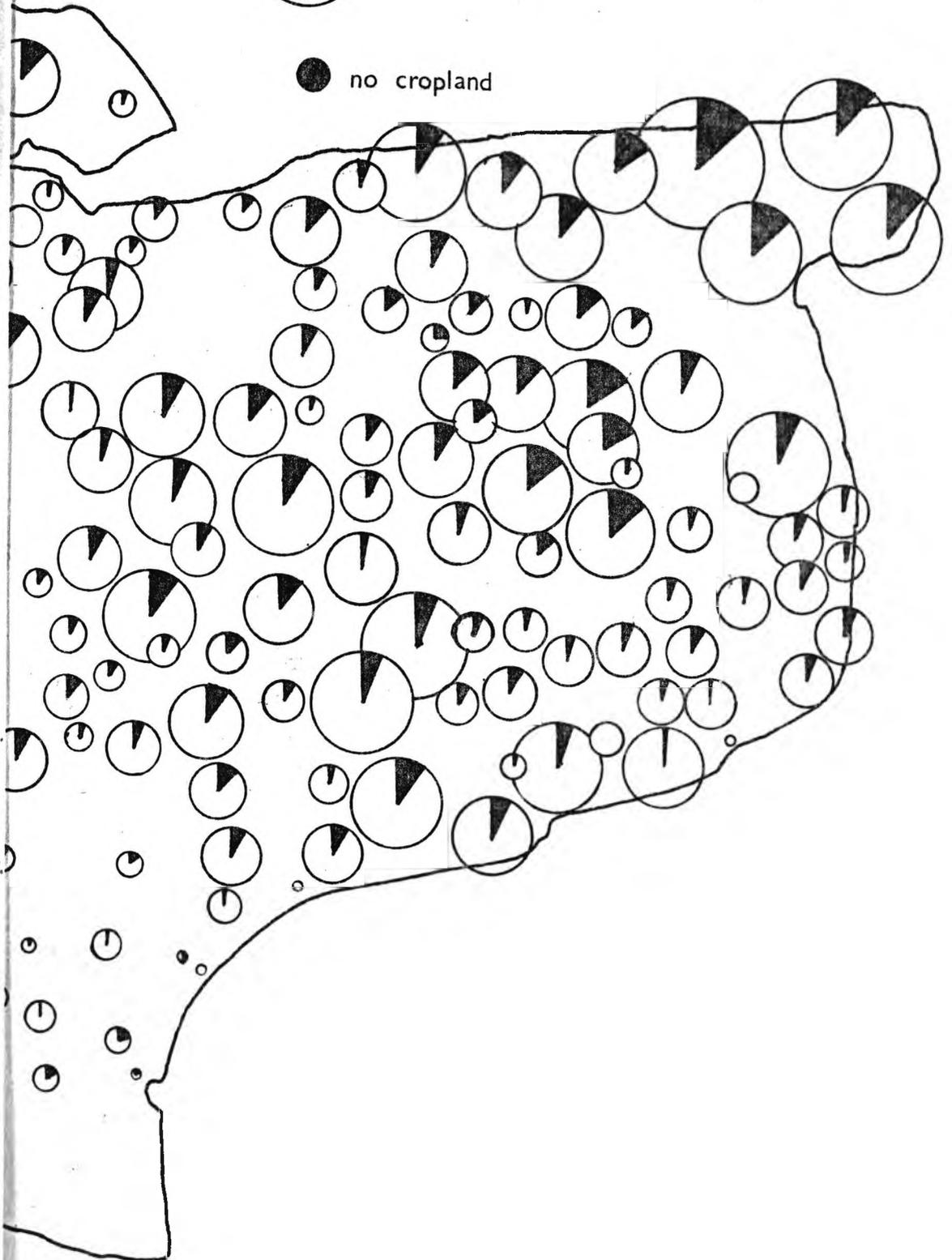


MAP 6.18

cropland acreage

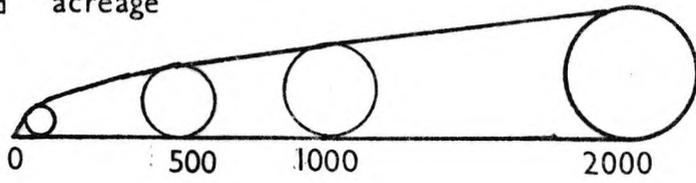


● no cropland



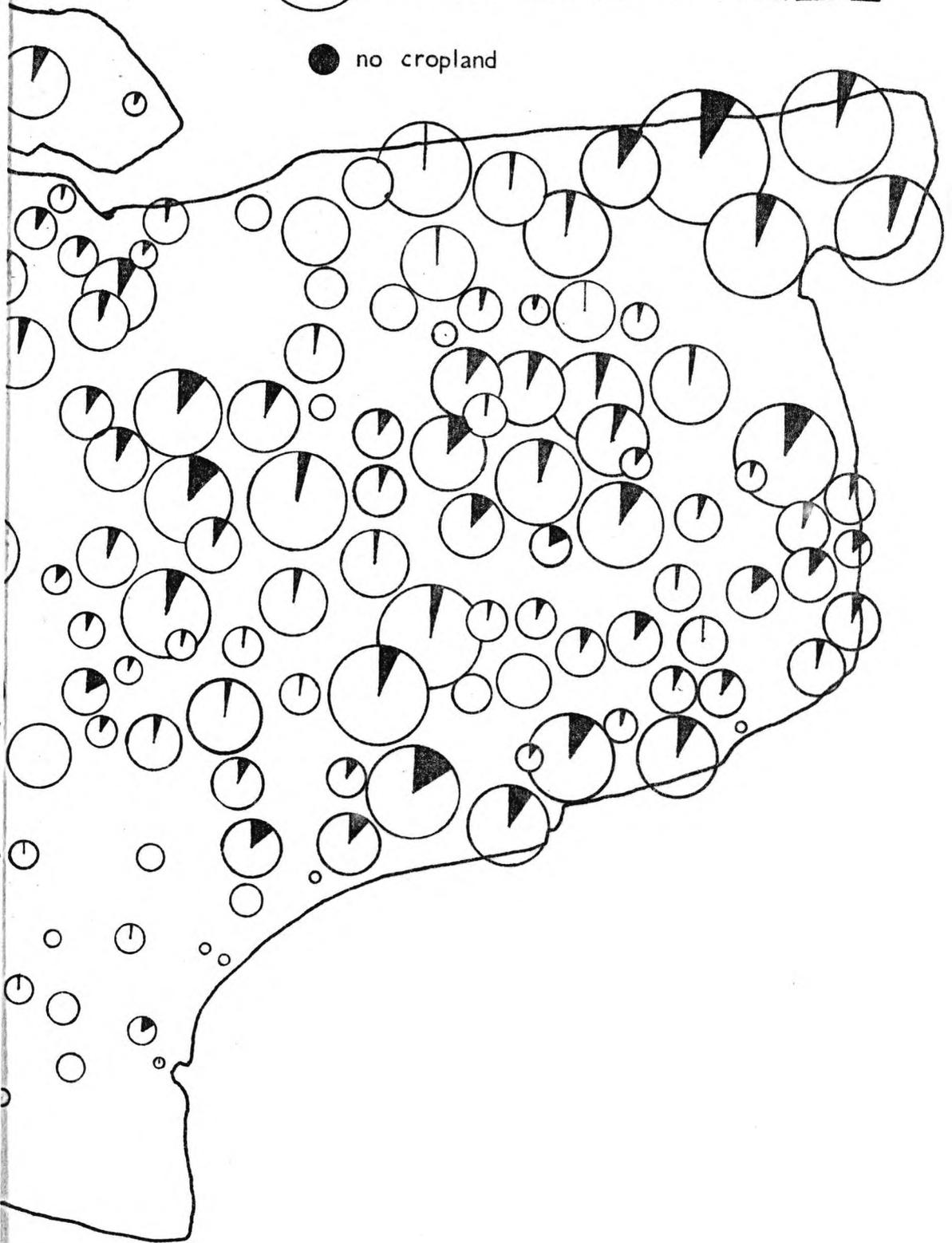
MAP 6.19

cropland acreage



 **TURNIPS & RAPE**

 no cropland



For example, at St Lawrence it took 29 per cent and at St Nicholas at Wade 28 per cent. It took similar proportions in the western Stour Valley and on the coast between Deal and Dover. Higher proportions were found inland in some of the Downland parishes.

At Kingston, wheat accounted for 49 per cent of the cropland, at Waldershare 44 per cent, and at Chillenden 42 per cent.

The distribution of barley, shown in Map 6.14, reveals a more distinctive regional pattern. Overall, it accounted for 22 per cent of the cropland. The main barley growing areas were the parishes between Dover and Deal and in Thanet. The former had the greater proportion of cropland under barley. At Great Mongeham, 35 per cent of the cropland was under barley, at Tilmanstone 35 per cent, and at Ripple 38 per cent. In Thanet, Monkton had 28 per cent of the cropland under barley and St. Nicholas 24 per cent. The importance of the crop diminished to the south and west of these areas. At Denton, it took only 14 per cent of the cropland and at Ewell 16 per cent. It was not of particular importance in the Stour Valley. For example, at Woodnesborough it accounted for 13 per cent of the cropland, and at Adisham 17 per cent.

Map 6.15 shows the distribution of oats. It took 13 per cent of the cropland. This is almost the inverse of that for barley. The higher proportions tend to be found in the south and west of the area. At Poulton it amounted to 30 per cent of the cropland and at Denton to 26 per cent. Thanet, the area between Dover and Deal, and the Stour Valley had much lower proportions. For example, at Great Mongeham oats took 8 per cent of the

cropland, at Preston 4 per cent, and at St Lawrence 11 per cent.

The parishes in which rye was grown is shown in Map 6.16. It was only grown in isolated parishes. It was found in only seven of the parishes that made a return in 1801. In six of these, it accounted for less than one half of one per cent of their cropland. At Lydden it was of greatest importance accounting for 2 per cent of the cropland.

Beans were grown throughout the region but their importance varied between areas. Overall, they accounted for 14 per cent of the cropland. They were of greatest importance in the Stour Valley where they accounted for 32 per cent of the cropland at Elmstone and 33 per cent at Preston. In the western part of the Stour Valley and in Thanet they amounted to between 10 and 18 per cent of the cropland. Over much of the dipslope of the Downs they were of little importance. They were not grown at all at Waldershare and accounted for 1 per cent of the cropland at Womenswold and 4 per cent at Kingston.

The distribution of peas is similar to that for beans. Overall, they accounted for 10 per cent of the cropland. The main areas in which they were cultivated were the Stour Valley and Thanet. At Elmstone, they accounted for 13 per cent of the cropland and at St Lawrence 11 per cent. In some of the parishes on the Downs, peas seem to replace beans. At Womenswold where only 1 per cent of the cropland was under beans, 13 per cent was devoted to peas, and at Nonington 7 per cent of the cropland was under beans and 14 per cent under peas.

MAP 6.20 FIRST ORDER RANKING



● nil return

○ wheat

□ barley

■ oats

△ beans

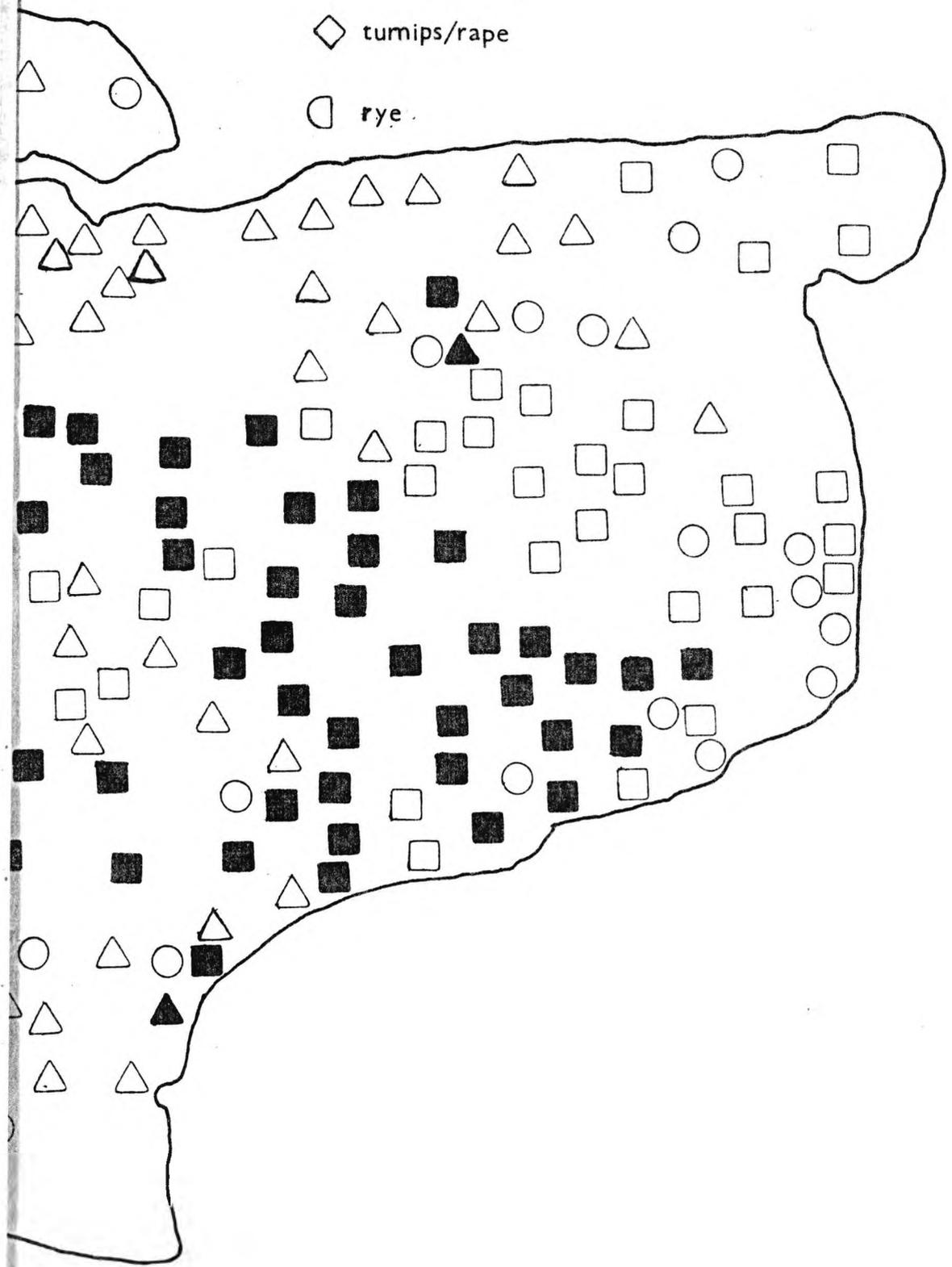
▲ peas

◇ turnips/rape

◐ rye

MAP 6.21

SECOND ORDER RANKING

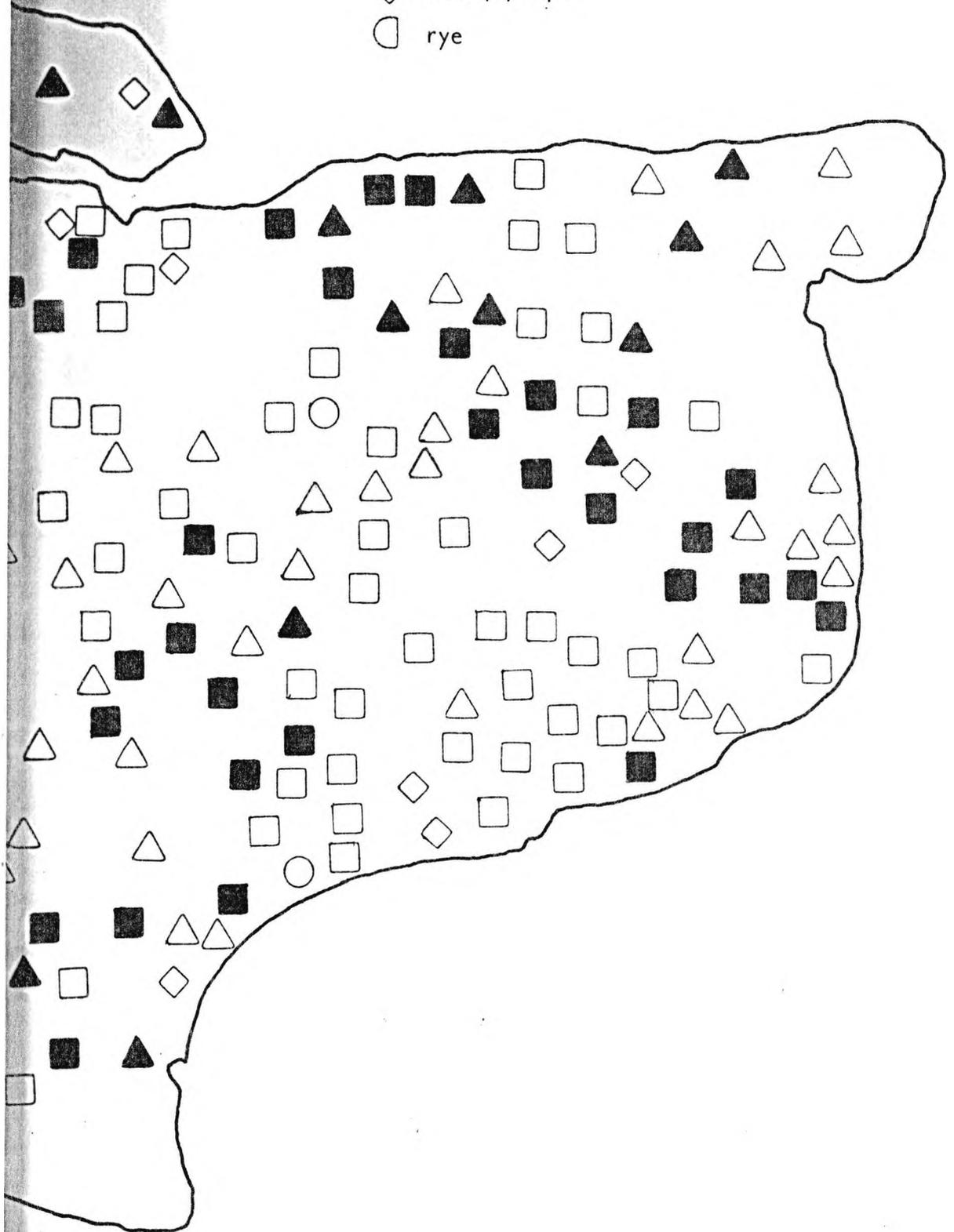


- nil return
- wheat
- barley
- oats
- △ beans
- ▲ peas
- ◇ turnips/rape
- ◐ rye

MAP 6.22

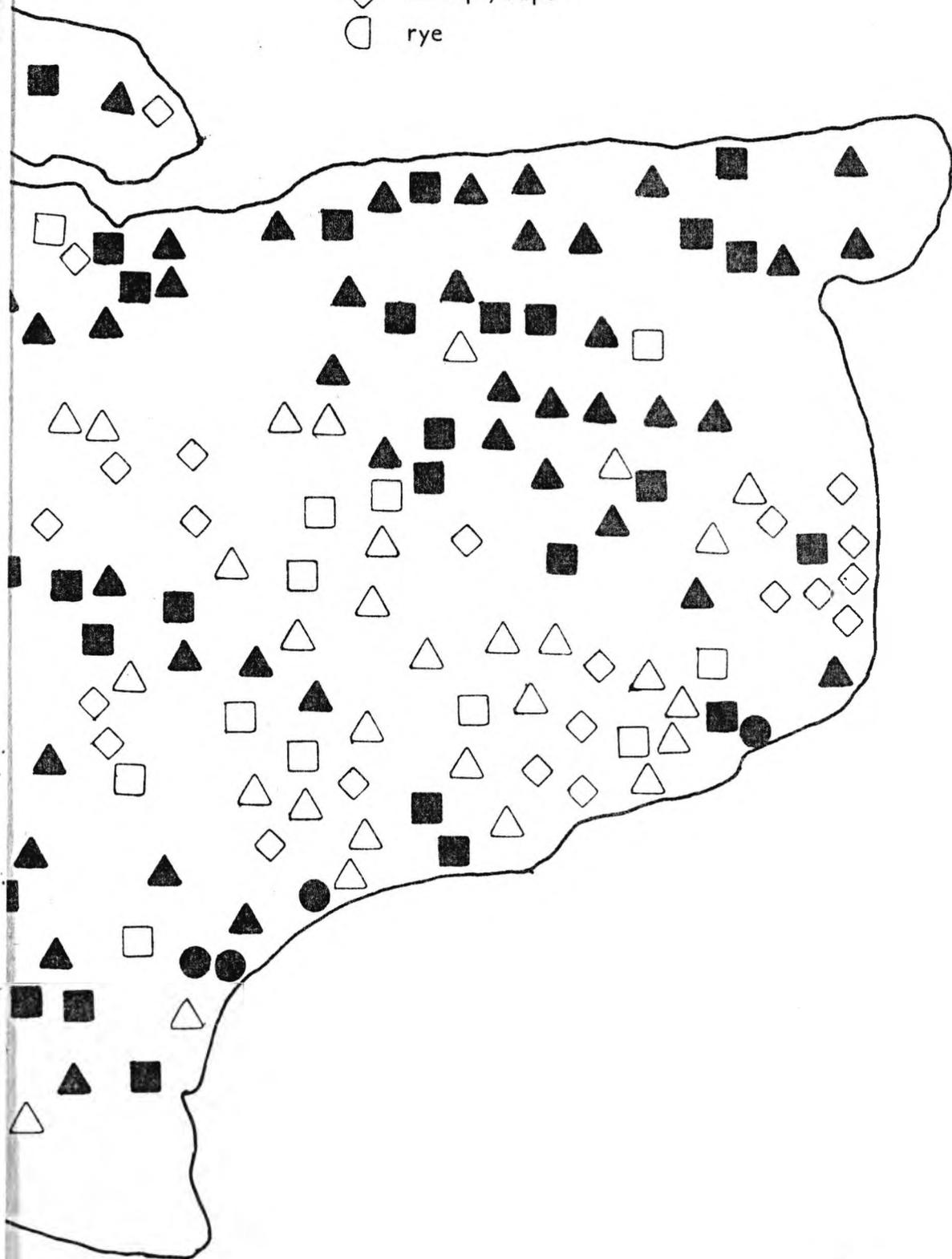
THIRD ORDER

RANKING



- nil return
- wheat
- barley
- oats
- △ beans
- ▲ peas
- ◇ turnips/rape
- ◐ rye

MAP 6.23
FOURTH ORDER
RANKING



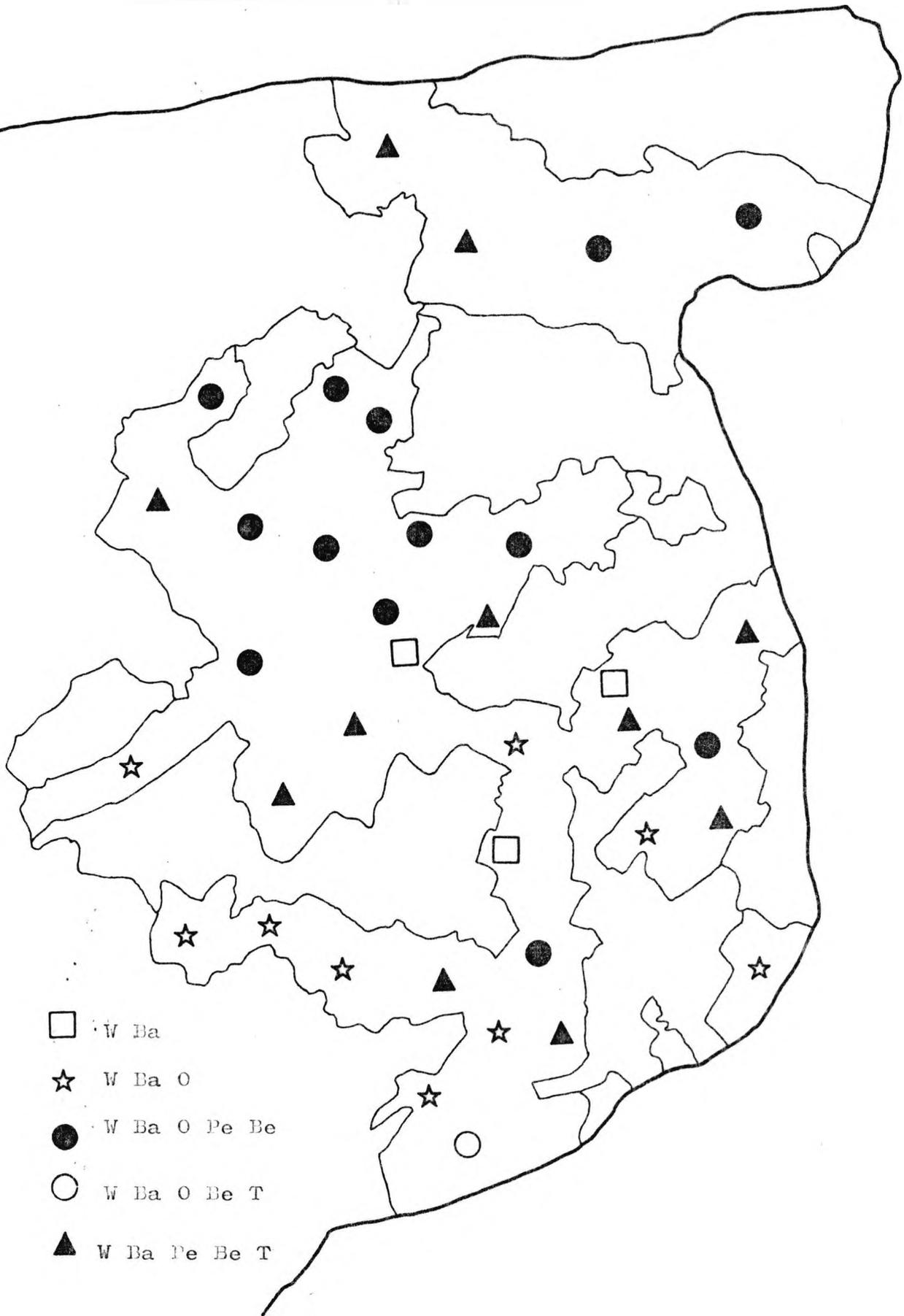
Turnips were of relatively minor importance throughout the region. They accounted for 7 per cent of the cropland. In some of the downland parishes, they could account for over 10 per cent of the cropland. For example, at Sutton they amounted to 13 per cent of the cropland and at Kingston to 11 per cent. It was within this area that the folding of sheep was of most importance. Over most of the remainder of the area, the land devoted to turnips amounted to 4 to 9 per cent of the cropland.

Potatoes were returned as being grown in almost every parish in the area but in only in eight cases did the proportion amount to more than one per cent of the cropland and, overall, it came to only 0.7 per cent. Several of these parishes, such as Minster, St Lawrence, and River, were situated near rapidly growing urban areas. The general unimportance of the crop would suggest that it was not in general use as an animal feed in spite of the various articles in the Annals of Agriculture on the subject (1).

In Maps 6.20 to 6.23 the rankings of the various crops are mapped. Wheat was the first ranking crop in most of the parishes of the area. It was replaced by barley in some of the parishes in the two main barley growing areas and by beans in one or two of the parishes in the Stour Valley. Oats were the first ranking crop in some of the downland parishes around Dover. A clearer regional pattern emerges from the second ranking crops.

1. Annals of Agriculture, XVI(1791), pp 304-10; XIX(1793), pp 52-7, 165-7; XXIX(1797), pp 150-9; VIII(1787), pp 97-100; XXIII(1795), pp 426-32.

Map 6.24 Crop Combinations, 1801



Wheat is second in those parishes in which it was not of first importance. In Thanet and in a belt of parishes from Deal north west to Canterbury, barley appears as the second crop. In the Stour Valley, beans are the second crop and in the upper parts of the dipslope, it is oats. The third rankings show a more confused pattern. Oats or beans are the third crop in the barley parishes between Deal and Canterbury, and beans or peas perform this function in Thanet. On the upper dipslope, barley is the third crop. It is very difficult to recognise any clear pattern from the fourth rankings, though turnips figure around Deal, peas in the Stour Valley, and beans on the upper dipslope.

As with the 1795 harvest returns, the method devised by Weaver and Thomas has been applied to the crop returns. The resulting pattern is shown in map 6.24. Five crop combinations were found in the area. The most common was a five crop combination, comprising wheat, barley, oats, peas, and beans. This was mainly found in the Stour Valley and in some of the Thanet parishes. Two variations on this exist. At Hougham, turnips replaced peas in the combination. In Thanet, around Deal, and to the south of the Stour Valley, the basic combination also included turnips. On the upper dipslope, the characteristic combination was wheat, barley, and oats, and few isolated parishes on the Downs had a wheat and barley combination.

The crop combinations have been used to establish which areas particular crops were of significance by mapping the parishes in which they figured in the crop combinations. Wheat and barley were part of each of the combinations and so no distribution maps have been prepared.

Map 6.25: Oats in the Crop Combinations



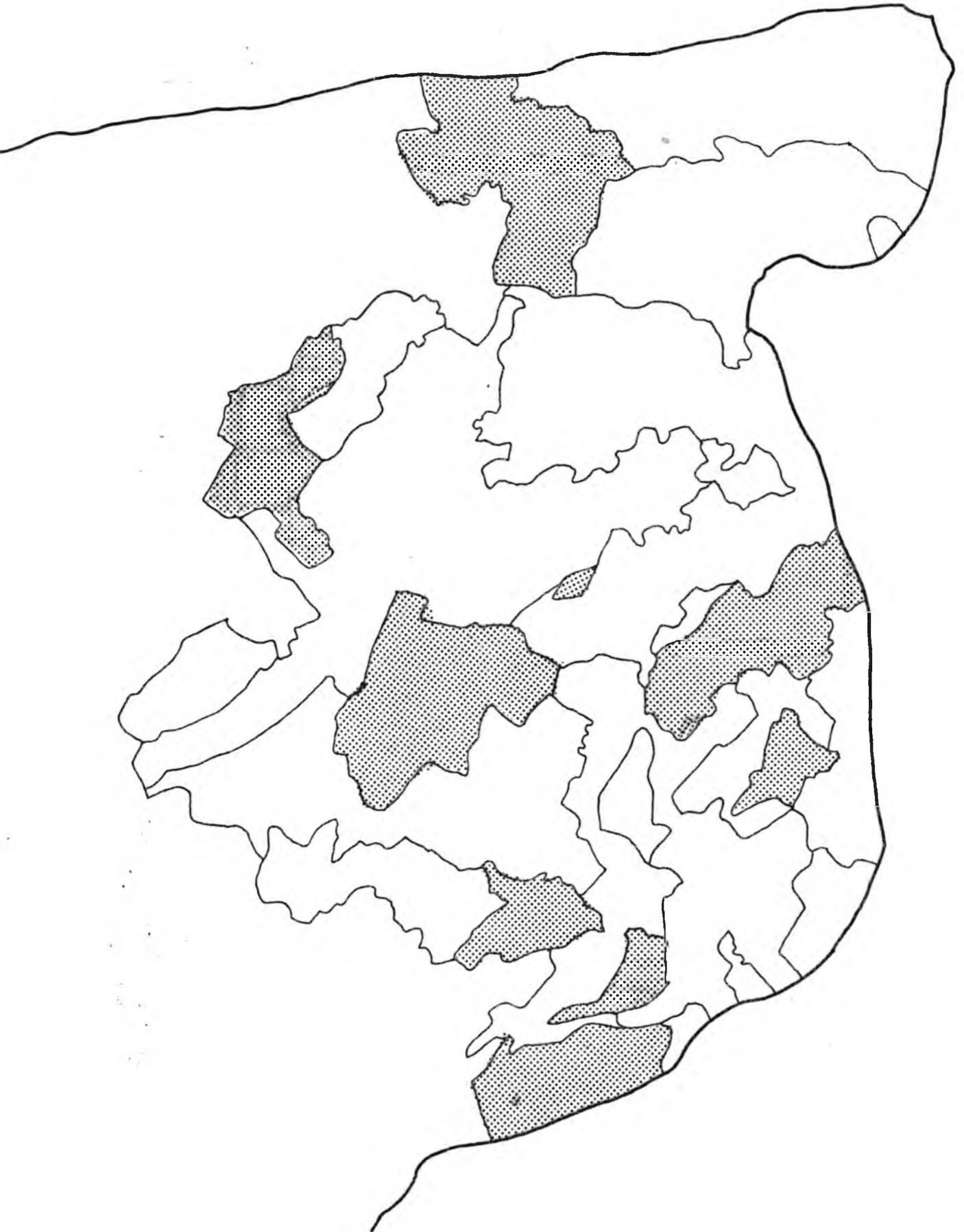
Map 6.26: Peas in the Crop Combinations



Map 6.27: Beans in the Crop Combinations



Map 6.28: Turnips in the Crop Combinations



Map 6.25 shows the distribution of oats. It formed part of the crop combination in each case, except for the three parishes with the wheat and barley combination. It can, therefore, be said that the wheat, barley, oats combination lay at the heart of the arable system throughout the region. Peas were found in most of the combinations. They were absent from the wheat, barley, and oats combination found on the upper dipslope but, apart from that, were found throughout the region. The pattern for beans is almost identical to that for peas. Again, they were absent from the combinations found on the upper dipslope but were universal elsewhere. These distributions attest to the importance of beans and peas in the rotations of the area that so struck observers such as Arthur Young. The distribution of turnips was more localised. They formed part of only two combinations found in the area. They were associated with the wheat, barley, oats, peas, beans, and turnip combination found in the upland areas. There is a distinction between the areas with this combination and those with the wheat, barley, oats, peas, and beans combination. The latter was found in the Stour Valley and in Thanet, in areas where there was adequate marshland pasture and areas in which the soil was relatively good. Turnips seem to have been a characteristic of areas with relatively poorer soils, on which folding would be beneficial, with an absence of marshland pastures, on which sheep could be fattened. The evidence would suggest that they were a means by which the margins of efficient sheep production could be extended(1).

1. Annals of Agriculture, XV (1791), pp 325-6.

Direct comparisons between the distributions from the 1795 and 1801 returns are not possible. One was on an input basis and the other on an output basis. Between the two surveys, additional land was brought into the cultivation of wheat to meet wartime demand. Both sources point to the importance of wheat in the area. Both, too, stress the importance of barley to the area. The 1795 returns point to a smaller role for oats than do the 1801 returns. This may be for two reasons. The acreage under oats may have increased between the two dates due to the demand for them to feed the army's horses. Alternatively, the distinction may be between the areas in which they were important as a cash crop, as shown in the 1795 returns, and those in which they would be grown for use on the cereal farms to feed the horses. Similar points may also apply to beans and peas which appear to have a more restricted importance if looked at on an output basis than on an input one.

The returns from the enquiries of 1795 and 1801 do not contain information about all aspects of the farming systems. They have to be supplemented in the case of livestock and those crops that were not the subject of the enquiries. As was noted above, livestock returns are only available for the parish of Ash near Sandwich. These reveal that in 1798, the parish had a flock of 2,041 sheep, 442 pigs, and 548 cattle. Some 38 per cent of the cattle were described as oxen, and 27 per cent as young cattle. The number of sheep recorded give a stocking rate of 0.3 per acre over the parish as a whole. Comparisons between the different livestock types can only be done if they are reduced to a common basis. This can be a money base or an energy base derived from the

general feeding requirements of the different types of livestock. Neither can be done very precisely with material from this period but some general indications can be derived from the application of some modern cow equivalent ratios to the material. It has been assumed that the cows should be weighted as 1 cow equivalent, the oxen as 0.8, young cows as 0.6, pigs as 0.5, and sheep as 0.2 (1). Such contemporary evidence as is available suggests that the figures are of the right order of magnitude. For example, Daniel Price of Appledore wrote in 1809 that the normal practice in Cranbrook and the Romney Marsh was for the grazier to keep one cow in summer for every five sheep kept on the upland farm during the winter (2). The ratios applied suggest that the stocking rate for Ash was 0.16 cow equivalents per acre. Cattle amounted to 41.5 per cent of the total cow equivalents, at a rate of 0.07 per acre. Pigs amounted to 20.5 per cent of the livestock, and sheep to 38 per cent on this basis.

Ash was one of the parishes in the Stour Valley. It contained marshland as well as arable and the numbers of livestock kept probably reflect this. The number of pigs kept are a reflection of the importance of peas and beans in the crop rotations. The 1795 harvest enquiry reveals that in a normal year, beans contributed 20 per cent of the revenue for the parish and peas 12 per cent.

1. These are taken from W.B. Morgan & R.J.C. Manton, Agricultural Geography (1971), p 107.
2. A System of Sheep-Grazing and Management as Practised in Romney Marsh (1809), p68.

The systems of livestock management in east Kent can be divided into three main forms. Firstly, there were the fattening enterprises of the marshland parishes. The livestock fattened were cattle and sheep. The parishes within this system were those in Thanet, along the Stour Valley, and at the mouth of the Stour, south of Pegwell Bay. The livestock were fattened on the grasslands and so there was less emphasis on fodder crops in the system. This can be illustrated from John Bridges' farm. In spite of a flock of between 800 and 1,000 adult sheep, and substantial cattle sales, he never had more than 27 acres under sainfoin, lucern, or clover at St Nicholas Court between 1791 and 1795, and did not grow any turnips. From the fragmentary evidence that has survived, it would appear that the system had many features in common with the better known one of the Romney Marsh. In essence, it involved adjusting the number of livestock to the available grass feed rather than converting the surplus into an alternative animal feed for use at another time.(1)

On the Romney Marsh, the capacity of the land increased substantially in the summer. Arthur Young noted that the land could support 2.5 sheep per acre

1. G. Allanson, Kent or Romney Marsh Sheep: A Study of a Famous Breed in its local and national settings, Wye College (1961). Descriptions of the system can be found in Price, op cit; J. Boys, 'Account of the Romney Marsh', Annals of Agriculture, XII (1794), pp 388-400.

in the winter and 6 or 7 in summer. When the land was tugged, it could take 10 to 14 sheep (1). If the land were not adequately stocked during the summer, then the value of the pasture would diminish as it ran to seed and became too long for the sheep to graze. The size of the flock that the land could support would be limited by the number of breeding ewes that could be fed during the winter. As we have seen, the provision of winter feed from fodder crops was limited and would do little to increase the numbers. Within the modern system in the area, this is due to the opportunity cost of the fodder crops which pay less well than the alternative cash crops. It never seems to have been the practice to agist breeding ewes, probably because of the damage mismanagement can cause. In the Romney Marsh, lambs were boarded out in upland areas in the winter and taken back to fatten in the spring. In east Kent, the surplus Romney Marsh lambs were purchased in August for fattening the following year. Because the marshland areas were much smaller than the Romney Marsh, it is likely that the same farm units contained the combination of upland and marshland farms that the Romney Marsh system required. John Boys, for example, tenanted land at Ash as well as his upland farms. The problem still remained how to find stock to absorb the additional summer grazing. The solution adopted was to fatten cattle as well. Attention is normally focussed on the large number of cattle purchased

1. A. Young, 'Some Farming Notes in Essex, Kent and Sussex', Annals of Agriculture, XX (1793), p 265.

From the Welsh drovers for fattening, but it must also be remembered that Kent had a recognised breed of cattle that were thought highly of at the time, especially as a dairy cattle (1). If John Bridges is typical, then wool production took second place to sheep fattening, and dairy production was unimportant compared with cattle fattening. Neither pigs nor poultry formed a significant part of the livestock enterprise.

The second main livestock system is that of the downland farms of east Kent. Sheep were important to this system. Originally the sheep were fed on the downland pastures and seeds but the practice of growing turnips allowed the flocks to be increased, and enabled farms that had been unable to sustain a flock to start to keep sheep (2). The sheep played an important role in the arable farming. They were folded, often on turnips, and so were able to enhance the fertility of poor soils, as well as compressing it into a good seedbed (3). Romney Marsh sheep were used in folding as well as the new Southdowns (4). The sheep were also used to clear weeds, particularly the more persistent ones such as charlock (5).

1. Boys (1794), p20; J. Lawrence, A General Treatise on Cattle, the Ox, the Sheep, and the Swine (1805), pp 51,55.
2. Boys (1794), p46; Annals of Agriculture, XV (1791), pp 325-6
3. Annals of Agriculture, V (1786), p 448.
4. Sheep Farming in Romney Marsh in the XVIII Century, Wye College (1956), pp 9-10; Annals of Agriculture, XXIII(1795),p382
5. R. Trow-Smith. A History of British Livestock Husbandry 1700-1900 (1959), p 38.

The third main livestock system was pig and poultry fattening. As we have already seen, this can be regarded as an alternative means of marketing grain. There is evidence of this in the number of pigs being kept in Ash, an average of 1.3 per household. Evidence has already been presented of John Boys' involvement in fattening hogs and Mrs Boys' poultry business. Evidence of turkeys being reared can be found in the 1770s (1). Although the evidence is fragmentary, these enterprises could be expected to be found wherever peas and beans were produced on any scale, though, if John Bridges is typical, this does not seem to have been the case in Thanet.

The enterprise combinations derived from the 1795 and 1801 surveys do not produce information on all the arable crops grown in the area. Only those areas in which the round tilth system of wheat, beans, and barley was in use or, as at Whitfield, where the rotation was fallow, wheat, beans, barley, would all the crops in the rotations have been returned. The round tilth system was found in parts of Thanet, the western part of the Stour Valley on the better soils, on the loamy soils of the dipslope, and around Deal and Sandwich. In the areas in which a four course rotation was in use, it was normal for clover to enter the rotation. Thus in Thanet, clover was an alternative to beans in a rotation that went fallow or peas, barley, beans, and wheat. In some areas additional crops were added to the rotation. In Thanet, seed crops were grown, including radish and canary. Canary was also grown at Elmstone and in

the Deal area. It would normally replace wheat in the rotation (1).

Some fruit farming developed around Sandwich but this did not occur on any scale until the later part of the nineteenth century. The same area also had some market gardening (2). Hops were not a particularly important crop in the area. Parts of the division lay on the outer fringes of the hop growing belt that surrounded Canterbury. A peak acreage of 851 acres in the division was reached in 1826. This amounted to 1.7 per cent of the acreage under the crop in the county. Some 28 parishes in the division grew hops at some time between 1807 and 1831. In 1807, 21 parishes in the division grew them. In 12 of these, less than 15 acres were under the crop, indicating that it was grown only by one farmer on any scale. The main area of growth was the Stour Valley where in 1807 Adisham had 32 acres of hops, Ash 118 acres, Goodnestone 47 acres, Ickham 84 acres, Littlebourne 30 acres, Staple 24 acres, Wingham 94 acres, and Woodnesborough 70 acres (3).

1. Boys (1805), pp 72-82; J. Boys & J. Ellman, 'Agricultural Minutes taken during a ride through the counties of Kent.... in 1792', Annals of Agriculture, XIX (1793), p80; A Young, 'A Fortnight's Tour in Kent and Essex', Annals of Agriculture, II (1784), pp 72-3; W. Hall, 'A System of Husbandry Explained', Annals of Agriculture, IV (1785), p 221-2.
2. D. Harvey, 'Fruit Growing in Kent in the Nineteenth Century', Archaeologia Cantiana, LXXIX (1964), pp 106-7; E. Melling (ed), Kentish Sources III: Aspects of Agriculture and Industry, Maidstone (1961), pp 27-8.
3. Harvey (1963), p 125; B.P.P. 1821 XVII, 343.

The returns for 1795 and 1801 provide evidence of the changing pattern of agricultural production in east Kent during the eighteenth century. A comparison between these figures and those produced by D.A. Baker from probate inventories indicates four main trends between 1760 and 1790. The increase in wheat production, that took place during the course of the later seventeenth and early eighteenth centuries, was sustained during the later part of the century, especially in Thanet. Between 1711 and 1760 wheat accounted for 29.6 per cent of the crop acreage in four Thanet parishes. The 1801 crop returns show that it had risen to 35 per cent at Minster and 29 per cent at St Lawrence. The 1795 returns show that it provided 49 per cent and 37 per cent of the revenue respectively.

The importance of barley continued to decline. A diminution of its importance was noted by D.A. Baker between 1680-1710 and 1711-1760. In Thanet over the period 1711-60, it had taken 40 per cent of the acreage, and in Chislet it accounted for 26 per cent. At Minster in 1801, it took 17 per cent of the acreage, at St Lawrence 25 per cent, and at Chislet 16 per cent. The decline of barley is likely to have been associated with the continued growth in the proportion of the acreage under peas and beans. It is likely that this feature enabled wheat to be increased. Beans accounted for 18 per cent of the acreage in Thanet 1711-60 and 28 per cent at Chislet, and peas took 2 per cent of the acreage in each case. In 1801 the proportions were 19 per cent for beans and 11 per cent for peas at St Lawrence, 15 and 13 per cent at Minster, and 27 and 11 percent at Chislet. Finally, the area under oats seems also to have increased.

At Chislet, it increased from 4 per cent 1711-60 to 8 per cent in 1801, and in Thanet from 2 per cent in 1711-60 to 13 per cent at Minster in 1801, and 11 per cent at St Lawrence (1) It is not clear why the last should have occurred. It could reflect an increase in the demand for horses from the increased cultivation of cleaning crops, or it could be due to marshland being brought under the plough. The increase in peas reflects a change in one of the rotations in the area. The traditional Thanet rotation, on the poorer soils, was fallow, barley, clover or beans, and wheat. During the later part of the eighteenth century, there was a decline in the use of fallowing ahead of the barley crop. The normal course adopted was to take a pea crop instead of the fallow in alternate cycles (2). Summer fallowing did not disappear due to its value in keeping these light lands free from weeds, but its importance was reduced.

V

In order to establish the relationships between the different agricultural enterprises and their impact on the agricultural structure more precisely, a principal components analysis was carried out on the data for 1795 and 1801 (3). Nine variables were extracted from the

1. Baker, op cit, pp 173-6.
2. Boys & Ellman, op cit, p 83; Boys (1805), p 72.
3. For an introduction to factor analysis, of which principal components analysis is one variety, see R.J. Rummel, 'Understanding Factor Analysis', Journal of Conflict Research, XI (1967), pp 444-80. Details of the methods used in this study can be found in A.L. Comrey, A First Course in Factor Analysis (1973).

1795 harvest enquiry and the land tax assessments for 1790 in order to carry out this analysis for circa 1790. The variables selected were indices for wheat, barley, beans, peas, and oats. The production recorded for each parish as a "fair crop in a common year" was expressed in terms of the parish acreage. This was intended to give a measure of the intensity of production of each crop between parishes. The gross revenue from the five crops in each parish was computed by applying the standard values to the production, and this was also expressed in terms of the parish acreage. The remaining variables are of the agricultural structure. These are the mean farm size and mean estate size for each parish and the proportion of the land under owner occupation computed from the land tax assessments.

Sixteen variables were used in the analysis for 1801. The acreages under wheat, barley, oats, peas, beans, turnips, rye, and potatoes were taken from the 1801 crop returns and they were expressed in terms of the parish acreage. That for hops is a mean parish acreage for the years 1807-15. The three measures of the agricultural structure, the mean farm, mean estate, and percentage of land under owner occupation, were taken from the land tax assessments for 1801. The census of 1801 was used to provide four variables relating to the labour supply for agriculture. The population of each parish, the number of agricultural workers, and the number of females were expressed in terms of the parish acreage. Agricultural workers were also expressed as a percentage of the total population to give an indication of the importance of agriculture to the employment structure of a parish. The total population was included amongst the variables as a

variety of responses have been found to changes in population and population density in other studies (1). The number of females was included as this seemed the most readily available measure of casual labour in agriculture.

Factor analytic methods are designed to enable complex and poorly defined relationships amongst large numbers of imprecisely measured variables to be determined. The techniques were originally developed in psychology, but the problems of inadequate data and the complexity of the phenomena studied mean that the approach has a ready application to historical research. The main limitation is their complexity but their value is such that they repay the time spent on their study.

In principal components analysis, the correlation coefficient between two variables can be shown to be the cosine of the angle between two vectors. The relationships between these vectors can be established by fitting a series of reference vectors such that, at each stage, the maximum variance is extracted. The variance extracted is measured by the eigenvalue, and the contribution each variable makes to the reference vector is measured by the eigenvectors. The eigenvectors produce a factor matrix which can be rotated into a mathematically equivalent form. This is done in order to simplify the structure, removing the overlapping elements in the factors. Finally the factors can be identified from an examination of the variables that most highly correlate with them.

1. For an introduction to these see D.B. Grigg, 'Population Pressure and Agricultural Change', Progress in Geography, VIII (1976), pp 135-76.

Table 6.3 presents the correlation matrix for 1790. The complexity of the relationships is likely to be such that no one variable could be explained in terms of any other single variable. Consequently one would not expect to find particularly high values amongst the correlation coefficients. Consequently, those correlation coefficients that are statistically significant at the 95 and 99 per cent confidence levels have been identified, so that the more important correlation coefficients can be identified. Before the correlation coefficients were calculated, the data was normalised. This was done partly to remove any skewness present in the variables, and partly so that each variable would be expressed in a pure number, so as to overcome any problems arising from the variables using different units of measurement.

Wheat produces statistically significant correlation coefficients with six of the remaining variables. There are particularly strong relationships indicated with barley, beans, and peas, and the revenue per acre, but very little of consequence with oats. The strongest correlation is with beans, supporting the view expressed in the contemporary literature that beans represented the best preparation for wheat. The high correlation with peas is probably due to the correlation between beans and peas. This suggests that the areas which were most suited for the cultivation of beans were also most suited to the cultivation of peas, and probably reflects the growing use of peas in the bean growing areas to reduce the land under fallow. The correlation between wheat and barley reflects the fact that the two crops were used in two of the most important rotations in the

Table 6.3. 1790 Correlation Matrix

	<u>Wheat</u>	<u>Barley</u>	<u>Beans</u>	<u>Peas</u>
Wheat	1.0			
Barley	0.696*	1.0		
Beans	0.858*	0.456*	1.0	
Peas	0.706*	0.593*	0.743*	1.0
Oats	0.183	0.245	0.071	0.176
Revenue per acre	0.950*	0.763*	0.714*	0.797*
Mean Farm	-0.372*	-0.350**	-0.301**	-0.310**
Mean Estate	-0.381*	-0.354**	-0.321**	-0.304**
% under owner occupation	-0.070	-0.059	0.106	-0.022

<u>Oats</u>	<u>Revenue per acre</u>	<u>Mean Farm</u>	<u>Mean Estate</u>	<u>% under owner occupation</u>
1.0				
0.290**	1.0			
-0.240	-0.419*	1.0		
-0.198	-0.429*	0.945*	1.0	
0.038	-0.029	-0.259	-0.251	1.0

* statistically significant at the 99 per cent confidence level.

** statistically significant at the 95 per cent confidence level.

area. The round tilth rotation included wheat, barley, and beans, and the four course rotations followed in Thanet, the Stour Valley, and the better soils on the dipslope included the same three crops. The failure to find statistically significant correlations between oats and the other four crops, and the fact that the correlation between oats and the revenue per acre is significant only at the lower confidence level is likely to be due to the fact that oats was used in a number of rotations on the poorer soils of the dipslope in which the other crops were unimportant. Boys reports some nine rotations followed on ploughed downland. Wheat appears in only five of these, barley in four, and peas in one. Beans do not figure in these systems at all. This was the area in which the distribution of oats was at its peak (1).

The mean farm and the mean estate are inversely correlated with each of the five crops. The correlation is strongest in the case of wheat but does not meet the criterion of significance in the case of oats. The correlations with the revenue per acre can be improved by transforming the data into logarithms. The correlation coefficient between revenue per acre and mean farm would then rise to -0.63 and that between revenue per acre and mean estate to -0.61. However, even without the transformation, they are statistically significant at the higher confidence level. The inverse correlations suggest that mean farm and estate size might be positively correlated with a form of farming not covered by the data.

1. Boys (1794), pp 36-7.

The most likely candidate for this is pastoral farming. The hypothesis suggested is that the size of farms and estates is inversely correlated with arable farming, and correlated with pastoral farming. Although this point has often been made in the past, it has rarely been measured. The mean farm and the mean estate show a high degree of correlation, showing that those parishes with small farms also tended to be those with small estates.

None of the other variables correlate with the percentage of land under owner occupation at a significant level. None of the five crops produces a correlation coefficient that significantly departs from zero, and neither does the revenue per acre. The most likely explanation of this is that owner occupation was not associated with any particular farming system in the area. It would suggest that one could not argue that owner occupation was the preserve of pastoral farming. The strongest correlations are the inverse ones between the percentage of land under owner occupation and the mean estate and farm sizes. It suggests that owner occupation may be more marked in parishes with smaller farms and estates but the relationships are not significant even at the lower confidence level.

Table 6.4 presents a similar analysis to that for 1790. The additional variables make it more complex. Certain of the relationships present in table 6.3 change in table 6.4 and this could be due either to the fact that the cropping data is presented on an input rather than an output basis, or to the changing circumstances between the two dates.

The main relationships between the crops are between wheat and barley, beans and peas, and between

Table 6.4. Correlation Matrix for 1801

	<u>Wheat</u>	<u>Barley</u>	<u>Oats</u>	<u>Peas</u>	<u>Beans</u>	<u>Turnips</u>	<u>Rye</u>	<u>Potatoes</u>	<u>Hops</u>	<u>Mean Farm</u>	<u>Mean Estate</u>	<u>% land under owner occupation</u>	<u>Population</u>	<u>Agricultural Workers</u>	<u>Females</u>	<u>% Agricultural Workers</u>
Wheat	1.0															
Barley	0.588*	1.0														
Oats	-0.027	-0.080	1.0													
Peas	0.331	0.203	-0.205	1.0												
Beans	0.433**	0.037	-0.255	0.615*	1.0											
Turnips	0.381**	0.594*	-0.005	0.149	-0.174	1.0										
Rye	-0.076	0.057	0.006	-0.039	0.021	-0.095	1.0									
Potatoes	0.161	0.348**	0.076	0.028	0.052	0.133	0.029	1.0								
Hops	-0.159	-0.088	0.069	-0.144	-0.265	-0.203	-0.162	-0.390**	1.0							
Mean Farm	-0.218	-0.070	-0.091	-0.318	-0.401**	-0.267	-0.079	-0.235	0.835*	1.0						
Mean Estate	-0.171	-0.030	-0.021	-0.400**	-0.349**	-0.094	-0.032	-0.007	0.338	-0.017	1.0					
% land under owner occupation	-0.065	-0.140	-0.149	0.198	0.189	-0.162	-0.139	-0.223	0.074	-0.062	-0.462*	1.0				
Population	0.387**	0.345**	-0.098	-0.049	0.164	0.300	0.003	0.278	-0.340	-0.287	0.118	-0.332	1.0			
Agricultural Workers	0.378**	0.208	-0.047	0.295	0.158	0.170	-0.218	-0.215	0.006	-0.253	-0.263	0.577*	0.085	1.0		
Females	-0.062	-0.123	-0.006	-0.158	-0.078	-0.059	-0.054	0.058	0.134	0.084	-0.015	-0.088	-0.011	-0.053	1.0	
Agricultural Workers	-0.158	-0.205	0.084	0.070	-0.071	-0.090	-0.192	-0.290	0.315	0.055	-0.439**	0.778*	-0.481*	0.567*	0.264	1.0

* Statistically significant at the 99 per cent confidence level.
 ** Statistically significant at the 95 per cent confidence level.

barley and turnips. At the lower level of significance are correlations between wheat and beans, wheat and turnips, potatoes and barley, and an inverse relationship between potatoes and hops. The correlations between wheat and barley, beans and peas, and wheat and beans have already been commented upon. The relationship between turnips and barley would be due to the fact that they were both crops that tended to be grown upon the lighter soils. This and the absence of any correlation between turnips and oats would suggest that the increase in turnip cultivation in downland parishes, noted by Boys and others, was a feature of the better soils. Of the nine downland rotations mentioned by Boys, turnips appear in the same four as barley and in no others. Neither oats nor rye have any significant correlations with any of the other crops.

The mean farm and mean estate again show inverse relationships with the main crops but only in the case of beans and peas are these significant. A strong correlation emerges between the size of farms and the production of hops. This is not surprising. There were substantial economies of scale to be reaped in hop production. The technical economies revolve round the efficient use of capital equipment, such as oasts. There were also important financial economies of scale. The cultivation of hops required heavy outlays on manures, poles, and labour before any return was realised. Although the returns from hop cultivation could be great, so too could the losses. Capital was needed to buy the inputs and to sustain the losses. It is interesting to note that there was no relationship between hops and the percentage of the land under owner occupation.

D. Harvey found that in 20 Mid-Kent parishes, circa 1840, there was a correlation coefficient of 0.78 between the percentage of land under hops and the percentage of the land under owner occupation (1). It is not clear whether the difference is due to a different area being selected for measurement or due to the different time period. The data for 1801 show no relationships between the mean farm and the mean estate, in contrast to that for 1790. This is a freak result. The correlation coefficient between the mean farm and the mean estate for all the parishes in the division was 0.91 in 1801. The parishes for which the 1801 crop returns have survived include a disproportionate number of the parishes that deviate from the trend. It provides a warning to those who would glibly assume that, because a series of documents have survived, they can in any sense be said to constitute a representative random sample. The percentage of land under owner occupation correlates with only one other variable at a significant level, that is inversely with the mean estate.

The demographic variables show some interesting relationships. The number of agricultural workers and the population were correlated with the cultivation of wheat, and population with the cultivation of barley. These two crops appear to have been grown in the areas where the labour supply was most available. It is, perhaps, a little surprising not to have found any significant correlation

1. Harvey (1963), p 136.

between the labour supply and the growth of the cleaning crops. The number of females appears to be unrelated to any of the other variables investigated, which suggests that resident casual labour was of limited importance in any of the farming systems followed in the area. There is an inverse correlation between the percentage of the population who were agricultural labourers and the population. This is much as would be expected. The smaller settlements would be those with the least developed employment bases and, hence, with the greatest proportion of agricultural labourers. The settlements that occupied the upper positions in the hierarchy would have more diversified employment.

Some of the demographic variables correlate with some aspects of the agricultural structure. The mean estate is inversely correlated with the percentage of the population who were agricultural workers. This indicates that the larger estates were to be found in those parishes with a more highly developed group of industries and services. It might suggest that the larger estates tended to be found in those parishes the gentry found conducive to their residence, such as Wingham or Barham. The demographic variables shed some light on owner occupation. This correlates with the number of agricultural workers and, especially, with the proportion of the population who were agricultural workers. There is an inverse correlation with population that almost reaches the criterion of statistical significance. It indicates that owner occupiers found survival easier in the more rural parishes where there would be less competition for the available land.

The factors were computed by using the Jacobi method to extract the eigenvalues and eigenvectors. The results of this analysis are presented in table 6.5 and 6.6. For the 1790 data, only four of the eigenvalues proved to be positive but for the 1801 data there were fifteen. As each eigenvalue measures the amount of the variance extracted at each stage, it would be illogical to use the negative ones. The tables show the amount of variance extracted by each factor as a proportion of the total. The fourth factor in 1790 is of little consequence. Of the factors for 1801, only the first four can really be considered general ones, as the remainder tend to owe much of the variance they extract to a single variable. A cut off point has been determined at the tenth factor as, thereafter, no variable has an eigenvector in excess of 0.5 before being normalised. The communalities measure the degree of overlap between the variables and the factors. A figure in excess of one means that the variable can be predicted entirely from the factors. The closer the communality approaches to one, the more of the variance that has been explained by the factors. The communalities are computed as the sum of squares of the variable's loading on the factors. The factors that can be extracted from the 1790 data can explain much of the incidence of wheat, barley, and beans but are not particularly helpful in explaining the mean estate or the degree of owner occupation. The first ten factors extracted from the 1801 data explain most of each of the variables .

The factors in an unrotated form are very difficult to interpret due to the degree of overlap between them. They have, therefore, been rotated by means of the

Table 6.5 Unrotated Factor Matrix, 1790

<u>Variables</u>	<u>Factors</u>				<u>Communalities</u>
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	
Wheat	0.74	-0.28	0.05	0.05	1.89
Barley	0.34	0.63	0.24	0.02	0.93
Beans	0.32	0.32	-0.54	-0.07	0.70
Peas	0.25	0.03	-0.54	-0.02	0.44
Oats	0.19	-0.11	0.29	-0.81	0.40
Revenue per acre	0.08	-0.43	-0.06	0.37	0.31
Mean Farm	0.22	0.24	0.50	0.41	0.48
Mean Estate	0.19	-0.35	0.13	-0.08	0.29
% under owner occupation	0.22	-0.22	0.06	0.16	0.23
Eigenvalue	3.32	1.28	0.79	0.31	-
Percentage of variance extracted	58.2	22.5	13.9	5.4	

The eigenvectors have been normalised.

ble 6.6 Unrotated Factor Matrix, 1801

riables	Factors															Communalities*
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u>	<u>VIII</u>	<u>IX</u>	<u>X</u>	<u>XI</u>	<u>XII</u>	<u>XIII</u>	<u>XIV</u>	<u>XV</u>	
eat	0.36	0.15	-0.30	-0.11	-0.11	0.05	0.23	-0.30	0.05	-0.001	-0.48	0.36	0.12	-0.44	-0.05	0.85
rley	0.33	0.02	-0.45	0.03	0.02	-0.04	0.07	0.26	-0.01	-0.22	-0.26	-0.40	-0.51	0.23	0.08	0.84
ts	-0.06	-0.09	-0.02	0.50	0.14	-0.22	0.62	-0.43	0.03	0.02	0.14	-0.11	-0.07	0.15	-0.16	0.98
as	0.23	0.33	0.10	-0.25	-0.14	-0.15	0.25	0.14	-0.35	-0.14	0.57	0.08	-0.25	-0.26	-0.11	0.84
ans	0.25	0.27	0.29	-0.38	-0.15	0.13	0.23	-0.19	0.03	-0.04	-0.11	-0.22	0.33	0.55	0.12	0.91
rnips	0.28	0.01	-0.38	0.29	-0.06	-0.23	-0.25	0.13	-0.41	0.14	0.13	0.005	0.53	0.20	-0.13	0.92
e	0.06	-0.03	0.08	-0.07	0.79	0.33	0.09	0.09	-0.29	-0.14	-0.07	-0.18	0.18	-0.19	-0.03	0.99
tatoes	0.27	-0.15	0.06	0.26	-0.10	0.23	0.25	0.45	0.47	-0.36	0.21	0.14	0.30	-0.05	0.04	0.98
ps	-0.37	-0.02	-0.38	-0.28	-0.16	-0.03	0.24	-0.05	-0.07	-0.20	0.09	-0.40	0.34	-0.23	-0.02	0.97
an Farm	-0.34	-0.04	-0.41	-0.28	0.05	0.15	0.21	0.25	0.22	0.33	0.11	0.15	0.01	0.18	-0.08	1.05
an Estate	-0.07	-0.39	-0.11	-0.20	-0.02	-0.09	-0.23	-0.32	-0.04	-0.67	0.10	0.19	-0.01	0.15	-0.03	0.99
land under ner occupation	-0.15	0.48	0.06	0.11	0.02	-0.08	-0.24	0.03	0.30	-0.22	-0.12	-0.23	0.04	-0.06	-0.65	0.95
pulation	0.35	-0.14	-0.13	-0.05	-0.01	0.23	-0.27	-0.37	0.33	0.26	0.40	-0.41	-0.02	-0.24	0.04	0.89
gricultural rkers	-0.02	0.41	-0.33	-0.01	0.34	0.16	-0.11	-0.22	0.15	-0.08	0.28	0.38	-0.07	0.28	0.05	0.94
males	-0.11	-0.02	-0.04	0.24	-0.37	0.76	0.01	-0.09	-0.35	-0.04	-0.002	0.03	-0.13	0.09	-0.25	0.99
Agricultural rkers	-0.27	0.42	-0.07	0.33	-0.09	0.06	-0.09	-0.05	-0.01	-0.19	0.004	-0.11	0.06	-0.15	0.65	0.99
genvalue	3.43	3.01	1.84	1.38	1.19	1.06	0.94	0.86	0.76	0.66	0.42	0.31	0.20	0.13	0.09	-
centage of riance extracted	21.1	18.5	11.3	8.5	7.3	6.5	5.8	5.3	4.7	4.1	2.6	1.9	1.2	0.8	0.6	

e eigenvectors have been normalised.

* for first ten factors.

Kaiser Varimax method. The results of this are presented in table 6.7 and 6.8. The factors reveal the interrelationships between the variables, showing which combinations of the variables make up the different farming systems in the area. Ideally, the factors can be named through an interpretation based on the variables that are most highly correlated with each factor. It is not really possible to do this in the present study as, in each case, there are too few variables with high correlations with the factor. This indicates that the factors are highly correlated with variables that cannot be measured. In particular, too little is revealed about the details of inputs by the generalised measures used in this study. The information needs to be supplemented by studies of individual farms as neither the statistics used here nor the writings of contemporary observers are sufficiently detailed in this respect.

Two of the factors from the 1790 analysis can be readily interpreted. Factor III shows a high loading against barley and mean farm size and lower correlations with peas and revenue per acre. This is suggestive of the farming to be found in the Stour Valley. This was the area in which peas figured most strongly in the crop combinations and it is also an area with high revenue per acre. A similar combination can also be found in eastern Thanet as, for example, at Minster and St Lawrence. The mean farm sizes were relatively low in this area. For example, at Ash in 1790 it was 38 acres and at St Lawrence 24 acres. The weightings against barley and oats suggests that this should be differentiated from the area around Deal. In the fourth factor, there is a high loading on oats and moderate loading against the mean farm and the revenue per acre.

Table 6.7. Rotated Factor Matrix, 1790

<u>Variables</u>	<u>Factors</u>			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
Wheat	0.71	-0.45	-0.12	0.05
Barley	0.21	0.38	-0.66	0.02
Beans	-0.08	-0.33	0.09	-0.07
Peas	-0.06	-0.46	0.29	-0.02
Oats	0.33	0.05	-0.21	-0.81
Revenue per acre	0.16	-0.33	0.28	0.37
Mean Farm	0.35	0.38	-0.60	0.41
Mean Estate	0.32	-0.19	0.04	-0.08
% under owner occupation	0.28	-0.18	0.01	0.16

Table 6.8 Rotated Factor Matrix, 1801

Variables	Factors									
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u>	<u>VIII</u>	<u>IX</u>	<u>X</u>
Wheat	-0.55	0.09	-0.28	0.15	0.18	0.06	0.01	-0.10	-0.20	-0.02
Barley	-0.23	0.51	-0.33	0.00	0.17	0.05	-0.30	0.28	-0.43	-0.26
Oats	-0.16	-0.38	-0.30	-0.09	-0.27	0.07	-0.21	-0.31	0.14	0.16
Peas	-0.22	0.43	-0.25	-0.16	0.24	0.29	-0.26	0.31	-0.45	-0.31
Beans	-0.41	-0.03	-0.14	-0.03	0.25	0.07	-0.02	-0.01	-0.14	0.10
Turnips	-0.05	0.34	-0.29	-0.16	0.08	0.11	-0.23	0.01	-0.23	-0.53
Wye	0.15	-0.07	-0.13	-0.02	0.64	-0.64	-0.04	0.39	-0.01	0.02
Potatoes	-0.03	0.14	-0.39	-0.33	-0.02	-0.10	-0.69	0.12	-0.20	0.10
Crops	-0.06	0.24	0.15	0.56	-0.01	0.23	0.06	0.29	-0.42	0.10
Lean Farm	0.01	-0.03	0.53	0.57	-0.00	-0.21	0.14	-0.08	-0.21	0.28
Lean Estate	-0.04	0.24	-0.24	0.28	0.03	0.27	0.17	0.48	-0.15	-0.10
Land under owner Occupation	-0.11	0.06	-0.02	-0.13	-0.28	0.19	-0.14	0.08	-0.05	0.40
Population	-0.32	-0.33	0.02	0.12	0.08	-0.26	0.38	-0.46	0.37	0.11
Agricultural Workers	-0.32	-0.03	-0.05	0.23	0.14	-0.19	0.11	0.06	-0.07	0.39
Females	0.38	-0.20	-0.11	0.04	0.44	-0.38	-0.03	0.03	0.21	-0.01
Agricultural Workers	0.09	0.01	-0.09	-0.09	-0.18	0.12	-0.17	0.09	-0.01	0.28

This is suggestive of the pattern on the upper dip slope.

At a parish such as Denton, for example, there was a mean farm of 41 acres, revenue per acre of £0.8, and oats produced 24 per cent of the revenue. The two general factors are more difficult to interpret. The first factor has a high loading on wheat and correlates with barley, oats, the mean farm, mean estate, and owner occupation. The second factor does not correlate highly with any of the variables but is related to barley and the mean farm, and inversely related to wheat, beans, peas, revenue per acre. The inverse relationship with the heart of arable production, the wheat-beans combination, and its correlation with farm size makes it tempting to regard this as a livestock factor. As it is correlated with barley, this would suggest that the particular livestock factor is sheep farming.

The greater number of variables available for the 1801 analysis means that it is a little easier to draw conclusion from the factors. The first factor is most highly correlated with females and against wheat and beans. There are also loadings against barley, peas, population, and agricultural workers. The factor is inversely related to all the main elements of cereal production in the area. This would suggest that it is a livestock factor. The correlation with females is intriguing. This may indicate the type of livestock enterprise as there would be more opportunity for female employment in pigs, poultry, or cattle production than sheep. The second factor is most highly correlated with barley and shows loading on hops, turnips, and the mean estate. There are inverse relationships with population and oats. This is suggestive of the outlying parts of the

hop production area, in parishes such as Northbourne and Nonington. The central part of the hop growing area, such as Ash and Woodnesborough, had relatively high densities of population but as one moves out of the Stour Valley and on to the dipslope, so hops continue to be present but in parishes with lower population densities. These are also important barley producing parishes and have relatively high proportions of their cropland under turnips and peas.

The third factor is most highly correlated with the mean farm size and against all the crops, except hops. The absence of any other high positive loadings makes this difficult to interpret but the inverse relationship with arable farming suggests that this is a livestock factor. Some of the downland parishes, such as Ewell, show a relatively large mean farm size together with the presence of hops and, in 1790, low revenues per acre from the crops. This is suggestive of a sheep farming factor.

The fourth factor has particularly high loadings on hops and mean farm size, and lesser ones on agricultural workers and mean estate size. It is inversely related to potatoes. This is the hop farming factor. Hops and the mean farm size tend to be related due to the economies of scale in hop production. Hop farming has a relatively high labour input and, so, one might expect a relationship with agricultural workers. Mean farm and estate sizes are highly correlated to complete the pattern. The inverse correlation with potatoes might seem surprising, especially when it is recalled that they were sometimes grown as an undercrop in immature hop plantations. In east Kent, potatoes form the greatest part of the cropland

in coastal locations, and hops do not thrive in such an environment.

The remaining factors are more specific and, hence, apply to a more limited area. For example, the fifth factor is highly correlated with rye, with lesser loadings on females, beans, and peas. The distribution is inversely related to oats and owner occupation. This is suggestive of the farming system in Thanet. This was an area of rye production and relatively dense population, and has important concentrations of beans and peas. The inverse relationships with oats and owner occupation suggest that the system is that for this area rather than the area around Deal where similar crops are to be found. As the amount of variance extracted by each factor falls, so diminishing returns sets into their interpretation and it would be unwise to dwell too long on the minor factors.

VI

In this chapter, the distributions of the main arable enterprises in east Kent for the period 1790-1801 have been plotted and some suggestions have been made as to the likely distributions of livestock enterprises. Agricultural production and the agricultural system have been compared, initially by regression analysis, and subsequently the interrelationships between the correlation coefficients have been explored through the use of principal components analysis. This has enabled a series of factors to be identified that can be related to the different farming systems in operation in the area. As yet, the naming of the factors is tentative and the explanation of why particular variables are associated in a particular way with other variables can only be limited.

Further research has to be done at the level of the individual farm before these questions can be answered with any certainty. The analysis points to the great complexity of the farming systems in the area at this time and warns against glib generalisations. In this study, it was hoped to be able to compare the trends found in east Kent with those found in other areas. However, this has not been possible as an examination of the literature reveals that there are no similar studies of comparable depth. The ones that come closest to this are those by J. Thirsk and D.R. Mills for Leicestershire and by J.M. Martin for Warwickshire (1). However, the distributions described in these are in very general terms and do not, for example, contain details of the enterprise combinations or the correlation coefficients between the different elements. In the absence of precision, comparison is likely merely to be misleading. In the absence of similar measures, there can be no confidence as to whether the trends observed are genuinely similar or genuinely different and, certainly, no reasons for differences can be established. The information revealed in this chapter indicates the value of a more systematic approach to the data than has been normal in historical research. It suggests that the type of linear programming approach that is often used to

1. J. Thirsk, 'Agrarian History, 1540-1950', in V.C.H., Leicestershire, II (1954); D.R. Mills, Landownership and Rural Population with special reference to Leicestershire in the mid nineteenth century, unpublished Leicester Ph.D. thesis (1963); J.M. Martin, Warwickshire and the Parliamentary Enclosure Movement, unpublished Birmingham Ph.D thesis (1965).

determine optimum production in agriculture can be used to analyse historical patterns of agricultural production. Techniques, such as factor analysis, enable the relationships between inputs and outputs to be more precisely determined than has been the case in more traditional studies.

CONCLUSION

This study has traced the pattern of landownership and occupation in the St Augustine East division of Kent, mainly over the period 1780 to 1831. The main features of this have been the relative stability in farm and estate sizes and the changes in tenurial conditions. Examples can be found of estates growing and landlords enlarging the farms in their possession but these do not seem to have had a discernable impact on the overall structure. Compared with the changes in tenure, these changes seem small. There was an increase in owner occupation between 1780 and 1822, especially between 1790 and 1814. This seems to have been associated with the improvement in agricultural expectations together with a relatively low price of land in relation to its yield. The process was terminated by the post-war recession, which seems to have been particularly severe during the 1820s. There is evidence of a decrease in owner occupation between 1710 and 1740. This may have been associated with the agricultural depression of the 1730s and 1740s. The study points to the importance of mixed tenure farms and estates during the period. Numerically they were few and they included a minority of the land, but their size greatly exceeded that of the wholly tenanted and wholly owner occupied farms and estates. The study used the land tax assessment data together with the available data on agricultural inputs and outputs to carry out of a multivariate analysis in order to show how the land input varied between the different farming systems. A number of different systems were found but the method has been so little used in agricultural studies that its conclusions must be tentative.

Before the study of the land tax assessments could begin, it was necessary to establish that the source could be used for the purpose. In particular, it was necessary to investigate the criticisms made of the land tax assessments in the literature. A study of the administration of the land tax in Kent was carried out in order to see whether the supposed decline in administrative standards had any impact on the quality of the assessments. The evidence found here indicates that the original statement was, at best, an overstatement. Four main methodological problems in using the assessments were considered. The quantity of non-agricultural property in them was measured and this was not found to be significant. The way in which the assessors treated the different property rights in land was found to be a reasonable one and one which identified the agricultural land market rather than the investment market in land. The latter was mainly a market in reversionary interests. The methods of assessing the tax were examined and regression analysis showed that there was a close relationship between the tax paid and the acreage of holdings. The identification of the proprietors and occupiers was considered so that the error resulting from the grouping together the payments made on the different properties held could be established. This pointed to few identification problems at the scale of the parish but to the need to establish the identity of the common names at the level of the division as most of the identification problems were found with these.

The approach adopted in this study has been somewhat different from the others using the land tax assessments. Rather than discussing the problems of the assessments, an attempt has been made to measure their importance. The relationships between the different elements of the agricultural structure have been measured and the relationships between landownership and occupation and agricultural production have been analysed in a formal context. This has made comparison with the more impressionistic methods of earlier studies difficult. It has shown that methods such as multivariate analysis can yield important results in agrarian history, once the barriers to their use have been removed.

APPENDICES

Appendix A: Landownership & Occupation Statistics

List of Tables

Table A: Percentage of Land Tax Paid by Owner Occupiers.

Table B: Number of Proprietors.

Table C: Number of Occupiers.

Table D: Estate Tenure.

Table E: Farm Tenure.

Table F: Mean Estate Sizes.

Table G: Mean Farm Sizes.

Table H: Logarithmic Mean of Estates.

Table I: Logarithmic Mean of Farms.

Table J: Logarithmic Standard Deviation of Estates.

Table K: Logarithmic Standard Deviation of Farms.

Table L: Entropy of Estates.

Table M: Entropy of Farms.

Note: There are some small discrepancies in the tables. These are mainly due to rounding errors but in a few instances this is because the identity of a proprietor or occupier cannot be identified, for example due to a term such as "sundry tenants". The influence of this is small.

Table A : Percentage of the Land Tax Paid by Owner Occupiers in the St Augustine East Division, 1691-1831.

Parish	1691	1699	1710	1720	1730	1740	1750	1760	1770	1780	1790	1801	1814	1822	1831
Adisham	-	24	18	18	28	27	20	25	29	22	7	31	35	36	36
Ash next Sandwich	-	7	19	17	17	14	14	11	13	14	14	32	48	43	42
Barfreston	-	-	-	-	5	3	31	29	31	31	26	35	32	30	28
Barham	-	43	53	31	15	17	11	19	32	46	54	54	60	53	49
Betteshangar & Ham	-	5	6	6	7	7	7	7	8	16	6	41	64	61	50
Bishopsbourne	-	-	-	35	42	43	33	27	27	14	39	28	33	41	38
Buckland & Charlton	-	21	15	16	22	11	11	34	18	15	45	42	42	72	29
Coldred	-	8	17	19	20	19	20	17	23	24	27	25	25	34	31
Denton	-	-	-	-	36	34	34	29	33	23	34	79	35	56	31
Eastry	-	54	48	42	39	22	27	32	25	25	48	49	47	28	31
Elmstone	-	16	15	-	-	-	21	36	24	29	22	35	21	28	26
Ewell	-	20	21	18	30	35	36	-	-	53	66	85	67	69	33
Eythorne	-	-	-	-	12	12	15	13	22	27	36	41	63	78	71
Goodnestone	-	10	10	-	-	-	-	-	-	33	38	44	52	57	44

Table A continued.

Parish	1691	1699	1710	1720	1730	1740	1750	1760	1770	1780	1790	1801	1814	1822	1831
Guston	-	13	9	15	13	12	11	11	4	4	9	8	11	10	7
Hougham	-	19	21	15	23	26	24	28	8	10	15	16	28	23	17
Ickham	-	14	21	6	5	5	18	18	24	30	43	17	20	24	39
Kingston	-	21	22	15	48	44	37	21	35	55	56	54	48	48	59
Knowlton & Chillenden	-	6	7	42	34	29	12	12	31	13	14	12	11	11	31
East Langdon	-	7	-	-	6	5	1	1	1	5	5	31	47	47	47
West Langdon	-	3	5	6	7	5	4	1	2	2	5	3	91	91	86
Littlebourne	-	11	15	15	21	22	21	-	-	25	32	37	50	49	48
Lydden	-	22	41	21	25	22	33	19	21	10	9	43	49	82	66
Minster	-	7	8	7	5	4	4	4	4	4	7	23	46	34	28
Great Mongeham	-	-	29	50	31	24	19	15	4	22	23	37	52	56	56
Little Mongeham	-	29	30	24	19	19	16	16	15	20	19	51	62	59	56
Monkton	5	6	7	9	8	6	4	6	4	9	8	22	47	27	28
Nonington	-	25	27	5	4	4	25	24	25	25	16	13	28	17	10

Table A continued

	1691	1699	1710	1720	1730	1740	1750	1760	1770	1780	1790	1801	1814	1822	1831
Easole Borough	-	68	72	70	5	2	2	63	63	65	8	29	85	84	2
Frogham Borough	-	-	-	-	9	13	21	20	14	30	11	54	73	70	62
Northbourne	-	-	-	-	-	-	-	-	-	7	6	52	71	69	92
Tickness Borough	-	9	9	30	9	0	0	0	0	0	0	0	1	1	1
Poulton	-	7	-	5	5	4	3	-	-	8	8	7	8	9	8
Preston	-	7	9	10	7	6	7	8	9	10	12	32	57	56	47
Ripple	-	6	6	13	20	18	17	13	7	8	9	16	61	68	67
River	-	25	8	12	12	6	5	23	27	25	53	51	53	60	60
St Lawrence	-	15	13	16	13	9	12	11	10	16	28	37	41	41	42
St Margaret & Oxney	-	-	-	-	-	-	-	-	-	2	-	36	71	64	65
St Nicholas at Wade	-	-	5	5	6	12	7	10	10	17	9	7	42	18	19
Shoulden	-	16	23	43	47	41	40	32	41	44	46	56	65	68	63
Sibertswold	-	38	4	9	9	10	49	6	11	12	40	71	37	63	44
Staple	-	29	38	28	29	21	18	23	35	46	40	52	59	54	54
Stourmouth	-	-	-	9	9	1	2	5	16	18	47	52	48	40	43

Table A continued

	1691	1699	1710	1720	1730	1740	1750	1760	1770	1780	1790	1801	1814	1822	1831
Stonar	-	0	0	26	0	0	74	0	42	100	0	22	-	-	-
Sutton	-	32	41	8	7	8	10	11	12	8	56	44	88	88	63
Tilmanstone	-	9	9	6	16	19	21	13	22	32	35	36	49	46	45
Waldershare	-	10	15	19	19	19	19	15	23	23	23	24	24	24	32
Westcliffe	-	0	0	0	0	-	-	-	-	0	0	0	51	50	47
Whitfield	-	-	-	31	27	31	19	17	9	7	5	12	55	51	50
Wickhambreux	-	13	23	20	18	17	15	14	16	14	15	27	67	69	50
Wingham	-	-	-	-	-	-	8	10	6	7	9	16	16	14	19
Womenswold	-	57	48	48	2	4	24	28	30	13	26	37	30	41	53
Woodnesborough	-	25	27	30	20	17	24	25	26	26	34	49	45	47	24
Wootton	44	51	33	20	19	19	21	37	63	37	36	52	24	39	24
Worth	-	4	14	17	6	9	5	6	6	21	23	35	57	57	52
Sarre	-	-	-	14	14	-	-	-	-	-	11	-	-	-	-
Walmer	-	-	-	17	21	-	-	-	-	-	57	-	-	-	-

Table B : Proprietors in the St. Augustine East Division, 1691 - 1831

- Column A - Number of Proprietors
- Column B - Percentage of Proprietors who occupy all
or part of their land
- Column C - Percentage of Proprietors who occupy none
of their estate
- Column D - Percentage of Proprietors who occupy all
their estate
- Column E - Percentage of Proprietors with mixed
tenure estates

Table B1 : Proprietors, 1780

Parish	A	B	C	D	E
Adisham	25	12.0	88.0	4.0	8.0
Ash	177	23.2	76.8	13.6	9.6
Barfreston	8	25.0	75.0	25.0	0
Barham	66	50.0	50.0	30.3	19.7
Betteshanger & Ham	9	22.2	77.8	22.2	0
Bishopsbourne	13	46.2	53.8	38.5	7.7
Buckland & Charlton	21	42.9	57.1	28.6	14.3
Coldred	13	30.8	69.2	23.1	7.7
Denton	14	42.9	57.1	14.3	28.6
Eastry	57	31.6	68.4	24.6	7.0
Elmstone	13	46.2	53.8	38.5	7.7
Ewell	16	56.3	43.8	37.5	18.8
Eythorne	18	66.7	33.3	55.6	11.1
Goodnestone	34	26.5	73.5	23.5	2.9
Guston	12	33.3	66.7	25.0	8.3
Hougham	35	25.7	74.3	20.0	5.7
Ickham	26	30.8	69.2	19.2	11.5
Kingston	35	51.4	48.6	34.3	17.1
Knowlton & Chillenden	10	20.0	80.0	10.0	10.0
East Langdon	11	45.6	54.5	45.6	0
West Langdon	7	42.9	57.1	42.9	0
Littlebourne	39	33.3	66.7	15.4	17.9
Lydden	19	15.8	84.2	5.3	10.5
Minster	77	22.1	77.9	10.4	11.7
Great Mongeham	47	29.8	70.2	25.5	4.3
Little Mongeham & Ashley	31	38.7	61.3	29.0	9.7
Monkton	37	27.0	73.0	24.3	2.7
Nonington	20	40.0	60.0	20.0	20.0
Easole	11	45.5	54.5	36.4	9.1
Frogham	19	47.4	52.6	47.4	0
Northbourne	33	27.3	72.7	24.2	3.0
Tickness	3	0	100.0	0	0
Poulton	11	45.5	54.5	36.4	9.1
Preston	54	22.2	77.8	22.2	0
Ripple	15	20.0	80.0	20.0	0
River	21	38.1	61.9	28.6	9.5
St. Lawrence	125	31.2	68.8	21.6	9.6
St. Margaret & Oxney	17	5.9	94.1	5.9	0
St. Nicholas	30	33.3	66.7	23.3	10.0
Shepherdswell	24	45.8	54.2	37.5	8.3
Shoulden	63	30.2	69.8	30.2	0
Staple	48	33.3	66.7	29.2	4.2
Stonar	1	100.0	0	100.0	0
Stourmouth	29	17.2	82.8	13.8	3.4
Sutton	17	11.8	88.2	11.8	0
Tilmanstone	16	43.8	56.3	37.5	6.3
Waldershare	3	66.7	33.3	33.3	33.3
Westcliffe	4	0	100.0	0	0
Whitfield	19	31.6	68.4	31.6	0
Wickhambreux	56	17.9	82.1	12.5	5.4
Wingham	71	26.8	73.2	18.3	8.5
Womenswold	21	52.4	47.6	28.6	23.8
Woodnesborough	96	30.2	69.8	27.1	3.1
Wootton	11	54.5	45.4	9.1	45.5
Worth	52	30.8	69.2	28.8	1.9

Table B2 : Proprietors, 1790

Parish	A	B	C	D	E
Adisham	26	3.8	96.2	0	3.8
Ash	152	27.6	72.4	17.8	9.9
Barfreston	8	25.0	75.0	12.5	12.5
Barham	64	45.3	54.7	23.4	21.9
Betteshanger & Ham	7	28.6	71.4	0	28.6
Bishopsbourne	14	50.0	50.0	42.9	7.1
Buckland & Charlton	25	44.0	56.0	28.0	16.0
Coldred	12	33.3	66.7	25.0	8.3
Denton	18	66.7	33.3	22.2	44.4
Eastry	56	48.2	51.8	39.3	8.9
Elmstone	13	38.5	61.5	30.8	7.7
Ewell	13	46.2	53.8	23.1	23.1
Eythorne	19	63.2	36.8	52.6	10.5
Goodnestone	27	44.4	55.6	37.0	7.4
Guston	12	50.0	50.0	41.7	8.3
Hougham	33	27.3	72.7	21.2	6.1
Ickham	26	34.6	65.4	26.9	7.7
Kingston	37	59.5	40.5	51.4	8.1
Knowlton & Chillenden	8	25.0	75.0	12.5	12.5
East Langdon	11	18.2	81.8	18.2	0
West Langdon	6	33.3	66.7	16.7	16.7
Littlebourne	38	36.8	63.2	21.1	15.8
Lydden	18	11.1	88.9	5.6	5.6
Minster	72	31.9	68.1	16.7	15.3
Great Mongeham	46	43.5	56.5	37.0	6.5
Little Mongeham & Ashley	29	44.8	55.2	37.9	6.9
Monkton	38	42.1	57.9	36.8	5.3
Nonington	19	52.6	47.4	21.1	31.6
Easole	11	36.4	63.6	27.3	9.1
Frogham	20	20.0	80.0	20.0	0
Northbourne	33	24.2	75.8	18.2	6.1
Tickness	3	0	100.0	0	0
Poulton	11	36.4	63.6	27.3	9.1
Preston	54	25.9	74.1	25.9	0
Ripple	15	26.7	73.3	26.7	0
River	20	50.0	50.0	45.0	5.0
St. Lawrence	109	38.5	61.5	22.0	16.5
St. Margaret & Oxney	-	-	-	-	-
St. Nicholas	30	33.3	66.7	16.7	16.7
Shepherdswell	25	56.0	44.0	40.0	16.0
Shoulden	61	29.5	70.5	29.5	0
Staple	50	32.0	68.0	28.0	4.0
Stonar	1	0	100.0	0	0
Stourmouth	30	30.0	70.0	16.7	13.3
Sutton	14	21.4	78.6	21.4	0
Tilmanstone	19	47.4	52.6	47.4	0
Waldershare	3	66.7	33.3	33.3	33.3
Westcliffe	4	0	100.0	0	0
Whitfield	19	26.3	73.7	26.3	0
Wickhambreux	52	25.0	75.0	13.5	11.5
Wingham	73	37.0	63.0	21.9	15.1
Womenswold	21	52.4	47.6	33.3	19.0
Woodnesborough	95	33.7	66.3	27.4	6.3
Wootton	10	40.0	60.0	20.0	20.0
Worth	50	36.0	64.0	34.0	2.0

Table B3 : Proprietors, 1801

Parish	A	B	C	D	E
Adisham	23	34.8	65.2	26.1	8.7
Ash	176	35.2	64.8	21.6	13.6
Barfreston	6	83.3	16.7	50.0	33.3
Barham	63	49.2	50.8	31.7	17.5
Betteshanger & Ham	6	50.0	50.0	50.0	0
Bishopsbourne	14	57.1	42.9	57.1	0
Buckland & Charlton	22	40.9	59.1	27.3	13.6
Coldred	13	30.8	69.2	23.1	7.7
Denton	16	62.5	37.5	43.8	18.8
Eastry	59	55.9	44.1	45.8	10.2
Elmstone	16	50.0	50.0	50.0	0
Ewell	16	81.3	18.8	62.5	18.8
Eythorne	19	78.9	21.1	63.2	15.8
Goodnestone	27	51.9	48.1	44.4	7.4
Guston	10	60.0	40.0	50.0	10.0
Hougham	33	27.3	72.7	21.2	6.1
Ickham	24	33.3	66.7	20.8	12.5
Kingston	33	45.5	54.5	39.4	6.1
Knowlton & Chillenden	8	37.5	62.5	12.5	25.0
East Langdon	13	46.2	53.8	46.2	0
West Langdon	8	37.5	62.5	25.0	12.5
Littlebourne	33	48.5	51.5	27.3	21.2
Lydden	19	42.1	57.9	31.6	10.5
Minster	71	45.1	54.9	29.6	15.5
Great Mongeham	44	52.3	47.7	47.7	4.5
Little Mongeham & Ashley	21	57.1	42.9	52.4	4.8
Monkton	33	54.5	45.5	51.5	3.0
Nonington	20	50.0	50.0	35.0	15.0
Easole	8	75.0	25.0	37.5	37.5
Frogham	18	44.4	55.6	38.9	5.5
Northbourne	32	68.8	31.3	65.6	3.1
Tickness	3	0	100.0	0	0
Poulton	10	30.0	70.0	20.0	10.0
Preston	55	50.9	49.1	49.1	1.8
Ripple	15	40.0	60.0	40.0	0
River	24	54.2	45.8	37.5	16.7
St. Lawrence	145	49.7	50.3	34.5	15.2
St. Margaret & Oxney	22	59.1	40.9	59.1	0
St. Nicholas	36	27.8	72.2	11.1	16.7
Shepherdswell	24	62.5	37.5	41.7	20.8
Shoulden	58	46.6	53.4	43.1	3.4
Staple	44	36.4	63.6	31.8	4.5
Stonar	3	66.7	33.3	66.7	0
Stourmouth	26	38.5	61.5	23.1	15.4
Sutton	15	40.0	60.0	40.0	0
Tilmanstone	19	57.9	42.1	57.9	0
Waldershare	3	66.7	33.3	33.3	33.3
Westcliffe	4	0	100.0	0	0
Whitfield	18	50.0	50.0	50.0	0
Wickhambreux	54	35.2	64.8	25.9	9.3
Wingham	71	45.1	54.9	22.5	22.5
Womenswold	25	60.0	40.0	48.0	12.0
Woodnesborough	97	44.3	55.7	39.2	5.2
Wotton	8	75.0	25.0	25.0	50.0
Worth	56	51.8	48.2	50.0	1.8

Table B4 : Proprietors, 1814

Parish	A	B	C	D	E
Adisham	17	52.9	47.1	41.2	11.8
Ash	189	52.4	47.6	40.2	12.2
Barfreston	6	50.0	50.0	16.7	33.3
Barham	61	63.9	36.1	52.5	11.5
Betteshanger & Ham	6	66.7	33.3	50.0	16.7
Bishopsbourne	13	61.5	38.5	46.2	15.4
Buckland & Charlton	29	55.2	44.8	41.4	13.8
Coldred	12	41.7	58.3	33.3	8.3
Denton	13	76.9	23.1	23.1	53.8
Eastry	58	67.2	32.8	58.6	8.6
Elmstone	14	35.7	64.3	35.7	0
Ewell	17	58.8	41.2	41.2	17.6
Eythorne	17	88.2	11.8	64.7	23.6
Goodnestone	20	65.0	35.0	60.0	5.0
Guston	11	72.7	27.3	63.6	9.1
Hougham	32	50.0	50.0	46.9	3.1
Ickham	23	39.1	60.9	26.1	13.0
Kingston	30	56.7	43.3	43.3	13.3
Knowlton & Chillenden	10	20.0	80.0	10.0	10.0
East Langdon	10	60.0	40.0	50.0	10.0
West Langdon	7	71.4	28.6	57.1	14.3
Littlebourne	36	58.3	41.7	38.9	19.4
Lydden	21	52.4	47.6	47.6	4.8
Minster	79	62.0	38.0	39.2	22.8
Great Mongeham	45	55.6	44.4	48.9	6.7
Little Mongeham & Ashley	23	69.6	30.4	65.2	4.3
Monkton	35	65.7	34.3	60.0	5.7
Nonington	18	77.8	22.2	61.1	16.7
Easole	12	83.3	16.7	75.0	8.3
Frogham	15	60.0	40.0	53.3	6.7
Northbourne	31	77.4	22.6	74.2	3.2
Tickness	3	33.3	66.7	0	33.3
Poulton	10	40.0	60.0	30.0	10.0
Preston	52	57.7	42.3	55.8	1.9
Ripple	12	50.0	50.0	50.0	0
River	23	60.9	39.1	56.5	4.3
St. Lawrence	144	54.2	45.8	34.7	19.4
St. Margaret & Oxney	24	66.7	33.3	66.7	0
St. Nicholas	40	50.0	50.0	27.5	22.5
Shepherdswell	23	78.3	21.7	60.9	17.4
Shoulden	58	63.8	36.2	62.1	1.7
Staple	45	55.6	44.4	48.9	6.7
Stonar	-	-	-	-	-
Stourmouth	27	59.3	40.7	51.9	7.4
Sutton	15	66.7	33.3	66.7	0
Tilmanstone	20	60.0	40.0	60.0	0
Waldershare	3	66.7	33.3	33.3	33.3
Westcliffe	5	80.0	20.0	60.0	20.0
Whitfield	15	80.0	20.0	80.0	0
Wickhambreux	49	55.1	44.9	55.1	0
Wingham	69	37.7	62.3	20.3	17.4
Womenswold	25	52.0	48.0	40.0	12.0
Woodnesborough	90	47.8	52.2	43.3	4.4
Wootton	9	66.7	33.3	22.2	44.4
Worth	57	61.4	38.6	56.1	5.3

Table B5 : Proprietors, 1822

Parish	A	B	C	D	E
Adisham	16	62.5	37.5	50.0	12.5
Ash	184	50.5	49.5	38.0	12.5
Barfreston	5	20.0	80.0	0	20.0
Barham	64	64.1	35.9	50.0	14.1
Betteshanger & Ham	6	66.7	33.3	50.0	16.7
Bishopsbourne	12	75.0	25.0	58.3	16.7
Buckland & Charlton	26	61.5	38.5	46.2	15.4
Coldred	12	50.0	50.0	41.7	8.3
Denton	13	84.6	15.4	46.2	38.5
Eastry	64	48.4	51.6	43.8	4.7
Elmstone	14	42.9	57.1	42.9	0
Ewell	17	64.7	35.3	52.9	11.8
Eythorne	17	70.6	29.4	52.9	17.6
Goodnestone	18	66.7	33.3	50.0	16.7
Guston	11	72.7	27.3	63.6	9.1
Hougham	44	52.3	47.7	52.3	0
Ickham	24	41.7	58.3	33.3	8.3
Kingston	31	51.6	48.4	41.9	9.7
Knowlton & Chillender	10	20.0	80.0	10.0	10.0
East Langdon	10	60.0	40.0	50.0	10.0
West Langdon	7	71.4	28.6	71.4	0
Littlebourne	33	57.6	42.4	33.3	24.2
Lydden	22	72.7	27.3	68.2	4.5
Minster	73	61.6	38.4	41.1	20.5
Great Mongeham	41	58.5	41.5	51.2	7.3
Little Mongeham & Ashley	21	76.2	23.8	71.4	4.8
Monkton	34	61.8	38.2	58.8	2.9
Nonington	18	55.6	44.4	44.4	11.1
Easole	12	58.3	41.7	50.0	8.3
Frogham	14	50.0	50.0	42.9	7.1
Northbourne	28	82.1	17.9	82.1	0
Tickness	3	33.3	66.7	0	33.3
Poultton	11	36.4	63.6	27.3	9.1
Preston	50	52.0	48.0	50.0	2.0
Ripple	16	50.0	50.0	43.8	6.3
River	17	70.6	29.4	70.6	0
St. Lawrence	154	55.8	44.2	39.6	16.2
St. Margaret & Oxney	24	66.7	33.3	62.5	4.2
St. Nicholas	37	43.2	56.8	21.6	21.6
Shepherdswell	27	74.1	25.9	59.3	14.8
Shoulden	52	63.5	36.5	63.5	0
Staple	44	59.1	40.9	47.7	11.4
Stonar	-	-	-	-	-
Stourmouth	26	50.0	50.0	50.0	0
Sutton	14	78.6	21.4	71.4	7.1
Tilmanstone	23	65.2	34.8	65.2	0
Waldershare	3	66.7	33.3	33.3	33.3
Westcliffe	5	60.0	40.0	60.0	0
Whitfield	15	73.3	26.7	66.7	6.7
Wickhambreux	51	52.9	47.1	52.9	0
Wingham	67	37.3	62.7	19.4	17.9
Womenswold	25	36.0	64.0	28.0	8.0
Woodnesborough	87	44.8	55.2	41.4	3.4
Wootton	9	77.8	22.2	22.2	55.6
Worth	61	60.7	39.3	57.4	3.3

Table B6 : Proprietors, 1831

Parish	A	B	C	D	E
Adisham	13	46.2	53.8	23.1	23.1
Ash	201	44.3	55.7	35.8	8.5
Barfreston	5	40.0	60.0	0	40.0
Barham	59	61.0	39.0	47.5	13.6
Betteshanger & Ham	6	50.0	50.0	50.0	0
Bishopsbourne	12	75.0	25.0	50.0	25.0
Buckland & Charlton	39	35.9	64.1	30.8	5.1
Coldred	11	54.5	45.5	45.5	9.1
Denton	11	81.8	18.2	36.4	45.5
Eastry	71	49.3	50.7	46.7	2.8
Elmstone	14	42.9	57.1	42.9	0
Ewell	17	29.4	70.6	23.5	5.9
Eythorne	27	51.9	48.1	37.0	14.8
Goodnestone	10	60.0	40.0	30.0	30.0
Guston	13	53.8	46.2	46.2	7.7
Hougham	44	38.6	61.4	38.6	0
Ickham	24	45.8	54.2	37.5	8.3
Kingston	33	54.5	45.5	42.4	12.1
Knowlton & Chillenden	11	36.4	63.6	9.1	27.3
East Langdon	10	60.0	40.0	40.0	20.0
West Langdon	11	36.4	63.6	27.3	9.1
Littlebourne	35	60.0	40.0	34.3	25.7
Lydden	20	60.0	40.0	55.0	5.0
Minster	74	54.1	45.9	32.4	21.6
Great Mongeham	41	61.0	39.0	56.1	4.9
Little Mongeham & Ashley	21	57.1	42.9	52.3	4.8
Monkton	31	45.2	54.8	41.9	3.2
Nonington	17	47.1	52.9	35.3	11.8
Easole	11	45.5	54.5	36.4	9.1
Frogham	13	53.8	46.2	46.2	7.7
Northbourne	26	84.6	15.4	84.6	0
Tickness	3	33.3	66.7	0	33.3
Poulton	11	36.4	63.6	27.3	9.1
Preston	49	51.0	49.0	44.9	6.1
Ripple	16	50.0	50.0	50.0	0
River	16	75.0	25.0	68.8	6.3
St. Lawrence	150	61.3	38.7	44.7	16.7
St. Margaret & Oxney	25	72.0	28.0	60.0	12.0
St. Nicholas	37	40.5	59.5	21.6	18.9
Shepherdswell	27	55.6	44.4	44.4	11.1
Shoulden	69	55.1	44.9	50.7	4.3
Staple	44	59.1	40.9	52.3	6.8
Stonar	-	-	-	-	-
Stourmouth	27	48.1	51.9	37.0	11.1
Sutton	15	66.7	33.3	60.0	6.7
Tilmanstone	20	55.0	45.0	55.0	0
Waldershare	3	66.7	33.3	33.3	33.3
Westcliffe	7	57.1	42.9	57.1	0
Whitfield	15	53.3	46.7	53.3	0
Wickhambreux	49	49.0	51.0	40.8	8.2
Wingham	83	44.6	55.4	28.9	15.7
Womenswold	18	33.3	66.7	16.7	16.7
Woodnesborough	87	32.2	67.8	26.4	5.1
Wootton	9	66.7	33.3	22.2	44.4
Worth	77	50.6	49.4	48.1	2.6

Table B7 : Proprietors

Parish	A	B	C	D	E
<u>1691</u>					
Monkton	34	41.2	58.8	32.4	8.8
<u>1699</u>					
Adisham	27	33.3	66.7	22.2	11.1
Guston	11	36.4	63.6	27.3	9.1
Lydden	21	57.1	42.9	52.3	4.8
Monkton	31	38.7	61.3	35.5	3.2
Sutton	19	21.1	78.9	21.1	0
Womenswold	16	31.3	68.8	25.0	6.3
Worth	47	17.0	83.0	17.0	0
<u>1710</u>					
Adisham	29	34.5	65.5	27.6	6.9
Guston	11	36.4	63.6	27.3	9.1
Lydden	19	68.4	31.6	57.9	10.5
Monkton	35	28.6	71.4	20.0	8.6
Sutton	19	31.6	68.4	21.1	10.5
Womenswold	17	41.2	58.8	29.4	11.8
Worth	49	22.4	77.6	20.4	2.0
<u>1720</u>					
Adisham	29	34.5	65.5	24.1	10.3
Guston	12	58.3	41.7	50.0	8.3
Lydden	20	40.0	60.0	35.0	5.0
Monkton	34	23.5	76.5	17.6	5.9
Sutton	19	21.1	78.9	21.1	0
Womenswold	15	40.0	60.0	26.7	13.3
Worth	53	28.3	71.7	24.5	3.8
<u>1730</u>					
Adisham	28	39.3	60.7	32.1	7.1
Guston	13	61.5	38.5	53.8	7.7
Lydden	19	47.4	52.6	36.8	10.5
Monkton	37	21.6	78.4	16.2	5.4
Sutton	18	11.1	88.9	11.1	0
Womenswold	14	21.4	78.6	14.3	7.1
Worth	46	23.9	76.1	19.6	4.3

Table B7 : Proprietors

Parish	A	B	C	D	E
<u>1740</u>					
Adisham	28	28.6	71.4	25.0	3.6
Guston	13	53.8	46.2	46.2	7.7
Lydden	19	42.1	57.9	31.6	10.5
Monkton	36	33.3	66.7	25.0	8.3
Sutton	19	15.8	84.2	15.8	0
Womenswold	19	26.3	73.7	21.1	5.3
Worth	48	25.0	75.0	18.8	6.3
<u>1750</u>					
Adisham	30	26.7	73.3	23.3	3.3
Guston	13	46.2	53.8	38.5	7.7
Lydden	20	65.0	35.0	55.0	10.0
Monkton	35	22.9	77.1	17.1	5.7
Sutton	20	20.0	80.0	20.0	0
Womenswold	21	23.8	76.2	19.0	4.8
Worth	50	24.0	76.0	20.0	4.0
<u>1760</u>					
Adisham	28	10.7	89.3	3.6	7.1
Guston	12	50.0	50.0	41.7	8.3
Lydden	18	27.8	72.2	11.1	16.7
Monkton	37	27.0	73.0	24.3	2.7
Sutton	22	18.2	81.8	18.2	0
Womenswold	21	33.3	66.7	23.8	9.5
Worth	49	24.5	75.5	20.4	4.1
<u>1770</u>					
Adisham	28	21.4	78.6	10.7	10.7
Guston	11	27.3	72.7	18.2	9.1
Lydden	18	33.3	66.7	22.2	11.1
Monkton	38	23.7	76.3	21.1	2.6
Sutton	17	23.5	76.5	23.5	0
Womenswold	21	42.9	57.1	23.8	19.0
Worth	49	14.3	85.7	12.2	2.0

Table C : Occupiers in the St. Augustine East Division, 1691 - 1831

- Column A - Number of Occupiers
- Column B - Percentage who own all or part of their land
- Column C - Percentage who own none of their land
- Column D - Percentage who own all of their land
- Column E - Percentage with mixed tenure farms

Table C1 :Occupiers, 1780

Parish	A	B	C	D	E
Adisham	30	10.0	90.0	6.7	3.3
Ash	177	23.2	76.8	12.4	10.7
Barfreton	5	40.0	60.0	0	40.0
Barham	101	32.7	67.3	28.7	4.0
Betteshanger & Ham	6	33.3	66.7	0	33.0
Bishopsbourne	25	24.0	76.0	24.0	0
Buckland & Charlton	27	33.3	66.7	29.6	3.7
Coldred	14	28.6	71.4	28.6	0
Denton	25	24.0	76.0	20.0	4.0
Eastry	47	38.3	61.7	19.1	19.1
Elmstone	15	40.0	60.0	26.7	13.3
Ewell	19	47.4	52.6	36.8	10.5
Eythorne	17	70.6	29.4	41.2	29.4
Goodnestone	38	23.7	76.3	13.2	10.5
Guston	16	25.0	75.0	25.0	0
Hougham	28	32.1	67.9	25.0	7.1
Ickham	28	28.6	71.4	28.6	0
Kingston	41	43.9	56.1	41.5	2.4
Knowlton & Chillenden	17	11.8	88.2	11.8	0
East Langdon	13	38.5	61.5	15.4	23.1
West Langdon	6	50.0	50.0	33.3	16.7
Littlebourne	63	20.6	79.4	15.9	4.8
Lydden	21	14.3	85.7	9.5	4.8
Minster	108	15.7	84.3	5.6	10.2
Great Mongeham	41	34.1	65.9	19.5	14.6
Little Mongeham & Ashley	28	42.9	57.1	28.6	14.3
Monkton	42	23.8	76.2	19.0	4.8
Nonington	30	26.7	73.3	26.7	0
Easole	12	41.7	58.3	41.7	0
Frogham	28	32.1	67.9	32.1	0
Northbourne	28	32.1	67.9	25.0	7.1
Tickness	6	0	100.0	0	0
Poulton	10	50.0	50.0	40.0	10.0
Preston	46	26.1	73.9	13.0	13.0
Ripple	14	21.4	78.6	14.3	7.1
River	22	36.4	63.6	27.3	9.1
St. Lawrence	149	26.2	73.8	18.8	7.4
St. Margaret & Oxney	11	9.1	90.9	9.1	0
St. Nicholas	32	31.3	68.8	25.0	6.3
Shepherdwell	36	30.6	69.4	27.8	2.8
Shoulden	50	38.0	62.0	32.0	6.0
Staple	53	30.2	69.8	20.8	9.4
Stonar	1	100.0	0	100.0	0
Stourmouth	29	17.2	82.8	10.3	6.9
Sutton	10	20.0	80.0	0	20.0
Tilmanstone	17	41.2	58.8	35.3	5.9
Waldershare	6	33.3	66.7	33.3	0
Westcliffe	4	0	100.0	0	0
Whitfield	16	37.5	62.5	37.5	0
Wickhambreux	50	17.2	82.8	10.3	6.9
Wingham	114	16.7	83.3	14.9	1.8
Womenswold	31	35.5	64.5	29.0	6.5
Woodnesborough	91	31.9	68.1	25.3	6.6
Wootton	17	35.3	64.7	35.3	0
Worth	41	39.0	70.0	34.1	4.9

Table C2 : Occupiers, 1790

Parish	A	B	C	D	E
Adisham	24	4.2	95.8	4.2	0
Ash	152	27.6	72.4	13.8	13.8
Barfreston	10	20.0	80.0	10.0	10.0
Barham	89	32.6	67.4	29.2	3.4
Betteshanger & Ham	8	25.0	75.0	12.5	12.5
Bishopsbourne	24	29.2	70.8	25.0	4.2
Buckland & Charlton	36	30.6	69.4	22.2	8.3
Coldred	12	33.3	66.7	25.0	8.3
Denton	26	46.2	53.8	42.3	3.8
Eastry	56	48.2	51.8	37.5	10.7
Elmstone	15	33.3	66.7	20.0	13.3
Ewell	19	31.6	68.4	31.6	0
Eythorne	22	54.5	45.5	50.0	4.5
Goodnestone	33	36.4	63.6	27.3	9.1
Guston	14	42.9	57.1	35.7	7.1
Hougham	29	31.0	69.0	27.6	3.4
Ickham	25	36.0	64.0	32.0	4.0
Kingston	38	57.9	42.1	55.3	2.6
Knowlton & Chillender	14	14.3	85.7	7.1	7.1
East Langdon	17	11.8	88.2	5.9	5.9
West Langdon	6	33.3	66.7	33.3	0
Littlebourne	63	22.2	77.8	17.5	4.8
Lydden	20	10.0	90.0	5.0	5.0
Minster	103	22.3	77.7	11.7	10.7
Great Mongeham	39	51.3	48.7	38.5	12.8
Little Mongeham & Ashley	27	48.1	51.9	33.3	14.8
Monkton	42	38.1	61.9	26.2	11.9
Nonington	31	32.3	67.7	29.0	3.2
Easole	14	28.6	71.4	28.6	0
Frogham	26	15.4	84.6	15.4	0
Northbourne	35	22.9	77.1	20.0	2.9
Tickness	6	0	100.0	0	0
Poulton	11	36.4	63.6	27.3	9.1
Preston	45	31.1	68.9	17.8	13.3
Ripple	15	26.7	73.3	26.7	0
River	16	62.5	37.5	50.0	12.5
St. Lawrence	135	31.1	68.9	23.7	7.4
St. Margaret & Oxney	-	-	-	-	-
St. Nicholas	30	33.3	66.7	26.7	6.7
Shepherdswell	34	41.2	58.8	35.3	5.9
Shoulden	44	40.9	59.1	29.5	11.4
Staple	56	28.6	71.4	25.0	3.6
Stonar	1	0	100.0	0	0
Stourmouth	30	30.0	70.0	20.0	10.0
Sutton	10	30.0	70.0	0	30.0
Tilmanstone	17	52.9	47.1	47.1	5.9
Waldershare	6	33.3	66.7	33.3	0
Westcliffe	4	0	100.0	0	0
Whitfield	14	35.7	64.3	28.6	7.1
Wickhambreux	58	22.4	77.6	12.1	10.3
Wingham	112	24.1	75.9	21.4	2.7
Womenswold	29	37.9	62.1	31.0	6.9
Woodnesborough	90	35.6	64.4	26.7	8.9
Wootton	15	26.7	73.3	26.7	0
Worth	38	47.4	52.6	39.5	7.9

Table C3 : Occupiers, 1801

Parish	A	B	C	D	E
Adisham	25	32.0	68.0	20.0	12.0
Ash	206	30.1	69.9	18.9	11.2
Barfreston	9	55.6	44.5	55.6	0
Barham	76	40.8	59.2	26.3	14.5
Betteshanger & Ham	7	42.9	57.1	42.9	0
Bishopsbourne	24	33.3	66.7	33.3	0
Buckland & Charlton	31	29.0	71.0	19.3	9.7
Coldred	12	33.3	66.7	25.0	8.3
Denton	17	58.8	41.2	35.3	23.5
Eastry	60	55.0	45.0	43.3	11.7
Elmstone	15	53.3	46.7	46.7	6.7
Ewell	21	61.9	38.1	52.4	9.5
Eythorne	24	62.5	37.5	50.0	12.5
Goodnestone	32	43.8	56.3	28.1	15.7
Guston	12	50.0	50.0	33.3	16.7
Hougham	26	34.6	65.4	26.9	7.7
Ickham	28	28.6	71.4	28.6	0
Kingston	31	48.4	51.6	45.2	3.2
Knowlton & Chillenden	16	18.8	81.3	12.5	6.3
East Langdon	17	35.3	64.7	23.5	11.7
West Langdon	6	50.0	50.0	33.3	16.7
Littlebourne	65	24.6	75.4	23.1	1.5
Lydden	18	44.4	55.6	33.3	11.1
Minster	119	26.9	73.1	18.5	8.4
Great Mongeham	44	52.3	47.7	45.5	6.8
Little Mongeham & Ashley	20	60.0	40.0	55.0	5.0
Monkton	39	46.2	53.9	35.9	10.3
Nonington	29	34.5	65.5	24.1	10.3
Easole	13	46.2	53.8	46.2	0
Frogham	25	32.0	68.0	32.0	0
Northbourne	32	68.8	31.3	62.5	6.3
Tickness	6	0	100.0	0	0
Poulton	11	27.3	73.7	27.3	0
Preston	48	58.3	41.7	39.6	18.8
Ripple	16	37.5	62.5	37.5	0
River	24	54.2	45.8	45.8	8.3
St. Lawrence	179	40.2	59.8	30.7	9.5
St. Margaret & Oxney	20	65.0	35.0	55.0	10.0
St. Nicholas	53	18.9	81.1	13.2	5.7
Shepherdswell	34	44.1	55.9	41.2	2.9
Shoulden	47	57.4	42.6	40.4	17.0
Staple	48	33.3	66.7	20.8	12.5
Stonar	4	50.0	50.0	50.0	0
Stourmouth	28	35.7	64.3	14.3	21.4
Sutton	12	50.0	50.0	25.0	25.0
Tilmanstone	19	57.9	42.1	52.6	5.3
Waldershare	5	40.0	60.0	40.0	0
Westcliffe	4	0	100.0	0	0
Whitfield	18	50.0	50.0	38.9	11.1
Wickhambreux	63	30.2	69.8	25.4	4.8
Wingham	151	21.2	78.8	17.2	4.0
Womenswold	31	48.4	51.6	45.2	3.2
Woodnesborough	94	45.7	54.3	34.0	11.7
Wootton	15	40.0	60.0	40.0	0
Worth	41	70.7	29.3	53.7	17.0

Table C4 : Occupiers, 1814

Parish	A	B	C	D	E
Adisham	21	42.9	57.2	28.6	14.3
Ash	219	45.2	54.8	35.2	10.0
Barfreston	10	30.0	70.0	30.0	0
Barham	80	48.8	51.3	41.3	7.5
Betteshanger & Ham	8	50.0	50.0	50.0	0
Bishopsbourne	24	33.3	66.7	33.3	0
Buckland & Charlton	36	44.4	55.6	33.3	11.1
Coldred	11	45.5	54.5	27.3	18.2
Denton	23	43.5	56.5	30.4	13.0
Eastry	63	61.9	38.1	54.0	7.9
Elmstone	14	35.7	64.3	35.7	0
Ewell	20	50.0	50.0	45.0	5.0
Eythorne	21	71.4	28.6	57.1	14.3
Goodnestone	30	43.3	56.7	33.3	10.0
Guston	12	66.7	33.3	58.3	8.3
Hougham	31	51.6	48.4	45.2	6.5
Ickham	24	37.5	62.5	25.0	12.5
Kingston	34	50.0	50.0	44.1	5.9
Knowlton & Chillenden	18	11.1	88.9	5.6	5.6
East Langdon	14	42.9	57.1	35.7	7.1
West Langdon	7	71.4	28.6	57.1	14.3
Littlebourne	65	32.3	67.7	29.2	3.1
Lydden	21	52.4	47.6	47.6	4.8
Minster	110	44.5	55.5	30.9	13.6
Great Mongeham	47	53.2	46.8	46.8	6.4
Little Mongeham & Ashley	22	72.7	27.3	63.6	9.1
Monkton	46	50.0	50.0	39.1	10.9
Nonington	24	58.3	41.7	37.5	20.8
Easole	14	71.4	28.6	64.3	7.1
Frogham	21	42.9	57.1	42.9	0
Northbourne	32	75.0	25.0	68.8	6.3
Tickness	6	16.7	83.3	16.7	0
Poulton	11	36.4	63.6	36.4	0
Preston	51	58.8	41.2	56.9	2.0
Ripple	13	46.2	53.8	46.2	0
River	19	73.7	26.3	57.9	15.8
St. Lawrence	198	39.4	60.6	32.8	6.6
St. Margaret & Oxney	21	76.2	23.8	66.7	9.5
St. Nicholas	55	36.4	63.6	25.5	10.9
Shepherdswell	35	51.4	48.6	51.4	0
Shoulden	52	71.2	28.8	63.5	7.7
Staple	51	49.0	51.0	43.1	5.9
Stonar	-	-	-	-	-
Stourmouth	27	59.3	40.7	51.9	7.4
Sutton	13	76.9	23.1	69.2	7.7
Tilmanstone	17	70.6	29.4	47.1	23.6
Waldershare	5	40.0	60.0	40.0	0
Westcliffe	5	80.0	20.0	60.0	20.0
Whitfield	18	66.7	33.3	61.1	5.6
Wickhambreux	49	55.1	44.9	44.9	10.2
Wingham	147	17.7	82.3	9.5	8.2
Womenswold	31	41.9	58.1	35.5	6.5
Woodnesborough	85	50.6	49.4	36.5	14.1
Wootton	17	35.3	64.7	35.3	0
Worth	56	62.5	37.5	53.6	8.9

Table C5 : Occupiers, 1822

Parish	A	B	C	D	E
Adisham	21	47.6	52.4	33.3	14.3
Ash	214	43.5	56.5	33.6	9.8
Barfreston	8	12.5	87.5	12.5	0
Barham	84	48.8	51.2	44.0	4.8
Betteshanger & Ham	7	57.1	42.9	57.1	0
Bishopsbourne	22	40.9	59.4	36.4	4.5
Buckland & Charlton	37	43.2	56.8	43.2	0
Coldred	11	54.5	45.5	36.4	18.2
Denton	20	55.0	45.0	45.0	10.0
Eastry	68	45.6	54.4	38.2	7.4
Elmstone	14	42.9	57.1	42.9	0
Ewell	20	55.0	45.0	55.0	0
Eythorne	19	63.2	36.8	52.6	10.5
Goodnestone	29	41.4	58.6	37.9	3.4
Guston	12	66.7	33.3	58.3	8.3
Hougham	39	59.0	41.0	48.7	10.3
Ickham	25	40.0	60.0	32.0	8.0
Kingston	34	47.1	52.9	44.1	2.9
Knowlton & Chillenden	18	11.1	88.9	5.6	5.6
East Langdon	14	42.9	57.1	28.6	14.3
West Langdon	6	83.3	16.7	66.7	16.7
Littlebourne	64	29.7	70.3	28.1	1.6
Lydden	21	76.2	23.8	71.4	4.8
Minster	111	40.5	59.5	26.1	14.4
Great Mongeham	43	55.8	44.2	44.2	11.6
Little Mongeham & Ashley	22	72.7	27.3	68.2	4.6
Monkton	40	52.5	47.5	45.0	7.5
Nonington	23	43.5	56.5	21.7	21.7
Easole	13	53.8	46.2	46.2	7.7
Frogham	21	33.3	66.7	33.3	0
Northbourne	30	76.7	23.3	70.0	6.7
Tickness	6	16.7	83.3	16.7	0
Poulton	11	36.4	63.6	27.3	9.1
Preston	51	51.0	49.0	49.0	2.0
Ripple	17	47.1	52.9	41.2	5.9
River	17	70.6	29.4	70.6	0
St. Lawrence	199	43.2	56.8	36.2	7.0
St. Margaret & Oxney	23	69.6	30.4	60.9	8.7
St. Nicholas	53	30.2	69.8	20.8	9.4
Shepherdswell	36	55.6	44.4	55.6	0
Shoulden	49	67.3	32.7	59.2	8.2
Staple	50	52.0	48.0	46.0	6.0
Stonar	-	-	-	-	-
Stourmouth	27	48.1	51.9	44.4	3.7
Sutton	14	78.6	21.4	78.6	0
Tilmanstone	20	75.0	25.0	55.0	20.0
Waldershare	5	40.0	60.0	40.0	0
Westcliffe	4	75.0	25.0	50.0	25.0
Whitfield	18	61.1	38.9	50.0	11.1
Wickhambreux	48	56.3	43.8	45.8	10.4
Wingham	146	17.1	82.9	11.0	6.2
Womenswold	31	29.0	71.0	25.8	3.2
Woodnesborough	86	45.3	54.7	30.0	9.3
Wootton	15	46.7	53.3	40.0	6.7
Worth	55	67.3	32.7	56.4	10.9

Table C6 : Occupiers, 1831

Parish	A	B	C	D	E
Adisham	23	26.1	73.9	17.4	8.7
Ash	216	41.2	58.8	33.8	7.4
Barfreston	12	16.7	83.3	8.3	8.3
Barham	80	45.0	55.0	40.0	5.0
Betteshanger & Ham	7	42.9	57.1	42.9	0
Bishopsbourne	21	42.9	57.1	38.1	4.8
Buckland & Charlton	44	31.8	68.2	29.5	2.3
Coldred	11	54.5	45.5	36.4	18.2
Denton	20	45.0	55.0	35.0	10.0
Eastry	67	52.2	47.8	43.3	9.0
Elmstone	11	54.5	45.5	45.5	9.1
Ewell	21	23.8	76.2	23.8	0
Eythorne	34	41.2	58.8	38.2	2.9
Goodnestone	27	22.2	77.8	22.2	0
Guston	14	50.0	50.0	42.9	7.1
Hougham	38	44.7	55.3	34.2	10.5
Ickham	25	44.0	56.0	36.0	8.0
Kingston	36	50.0	50.0	47.2	2.8
Knowlton & Chillenden	19	21.1	78.9	15.8	5.3
East Langdon	16	37.5	62.5	37.5	0
West Langdon	8	50.0	50.0	25.0	25.0
Littlebourne	67	31.3	68.7	31.3	0
Lydden	18	66.7	33.3	55.6	11.1
Minster	114	35.1	64.9	26.3	8.8
Great Mongeham	42	59.5	40.5	52.4	7.1
Little Mongeham & Ashley	21	57.1	42.9	47.6	9.5
Monkton	36	38.9	61.1	33.3	5.6
Nonington	25	32.0	68.0	12.0	20.0
Easole	14	35.7	64.3	35.7	0
Frogham	22	31.8	68.2	31.8	0
Northbourne	26	84.6	15.4	84.6	0
Tickness	6	16.7	83.3	16.7	0
Poulton	11	36.4	63.6	27.3	9.1
Preston	50	50.0	50.0	46.0	4.0
Ripple	17	47.1	52.9	41.2	5.9
River	17	70.6	29.4	70.6	0
St. Lawrence	190	48.4	51.6	41.1	7.4
St. Margaret & Oxney	29	62.1	37.9	51.7	10.3
St. Nicholas	56	26.8	73.2	21.4	5.4
Shepherdswell	33	45.5	54.5	39.4	6.1
Shoulden	62	61.3	38.7	50.0	11.3
Staple	50	52.0	48.0	44.0	8.0
Stonar	-	-	-	-	-
Stourmouth	34	38.2	61.8	32.4	5.9
Sutton	16	62.5	37.5	56.3	6.3
Tilmanstone	17	64.7	35.3	52.9	11.8
Waldershare	4	50.0	50.0	50.0	0
Westcliffe	8	50.0	50.0	37.5	12.5
Whitfield	18	44.4	55.6	27.8	16.7
Wickhambreux	47	51.1	48.9	40.4	10.6
Wingham	136	27.2	72.8	17.6	9.6
Womenswold	27	22.2	77.8	18.5	3.7
Woodnesborough	79	35.4	64.6	21.5	13.9
Wootton	16	37.5	62.5	37.5	0
Worth	59	66.1	33.9	57.6	8.5

Table C7 : Occupiers

Parish	A	B	C	D	E
<u>1691</u>					
Monkton	51	27.5	72.5	15.7	11.8
<u>1699</u>					
Adisham	33	27.3	72.7	24.2	3.0
Guston	12	33.3	66.7	25.0	8.3
Lydden	23	52.2	47.8	47.8	4.3
Monkton	46	26.1	73.9	17.4	8.7
Sutton	19	21.1	78.9	15.8	5.3
Womenswold	21	23.8	76.2	19.0	4.8
Worth	40	20.0	80.0	15.0	5.0
<u>1710</u>					
Adisham	32	31.3	68.8	25.0	6.3
Guston	11	36.4	63.6	18.2	18.2
Lydden	21	61.9	38.1	52.4	9.5
Monkton	49	20.4	79.6	18.4	2.0
Sutton	17	35.3	64.7	11.8	23.5
Womenswold	23	30.4	69.6	30.4	0
Worth	43	25.6	74.4	20.9	4.7
<u>1720</u>					
Adisham	33	30.3	69.7	27.3	3.0
Guston	14	50.0	50.0	42.9	7.1
Lydden	21	38.1	61.9	38.1	0
Monkton	46	17.4	82.6	13.0	4.3
Sutton	15	26.7	73.3	6.7	20.0
Womenswold	23	26.1	73.9	26.1	0
Worth	47	31.9	68.1	21.3	10.6
<u>1730</u>					
Adisham	30	36.7	63.3	33.3	3.3
Guston	15	53.3	46.7	46.7	6.7
Lydden	20	45.0	55.0	45.0	0
Monkton	46	17.4	82.6	8.7	8.7
Sutton	14	14.3	85.7	0	14.3
Womenswold	22	13.6	86.4	13.6	0
Worth	45	24.4	75.6	20.0	4.4

Table C7 : Occupiers

Parish	A	B	C	D	E
<u>1740</u>					
Adisham	29	27.6	72.4	24.1	3.4
Guston	15	46.7	53.3	40.0	6.7
Lydden	21	38.1	61.9	33.3	4.8
Monkton	46	26.1	73.9	15.2	10.9
Sutton	14	21.4	78.6	7.1	14.3
Womenswold	28	17.9	82.1	17.9	0
Worth	46	26.1	73.9	23.9	2.2
<u>1750</u>					
Adisham	29	27.6	72.4	27.6	0
Guston	15	40.0	60.0	33.3	6.7
Lydden	24	54.2	45.8	50.0	4.2
Monkton	47	17.0	83.0	12.8	4.3
Sutton	14	28.6	71.4	21.4	7.1
Womenswold	29	17.2	82.8	17.2	0
Worth	48	25.0	77.1	20.8	4.2
<u>1760</u>					
Adisham	30	10.0	90.0	6.7	3.3
Guston	13	46.2	53.8	38.5	7.7
Lydden	23	21.7	78.3	21.7	0
Monkton	46	21.7	78.3	19.6	2.2
Sutton	16	25.0	75.0	18.8	6.3
Womenswold	27	25.9	74.1	25.9	0
Worth	43	27.9	72.1	27.9	0
<u>1770</u>					
Adisham	33	18.2	81.8	18.2	0
Guston	14	21.4	78.6	21.4	0
Lydden	22	27.3	72.7	27.3	0
Monkton	44	20.5	79.5	20.5	0
Sutton	14	28.6	71.4	7.1	21.4
Womenswold	32	28.1	71.9	21.9	6.3
Worth	40	17.5	82.5	17.5	0

Table D : Estate Tenures in the St. Augustine East Division, 1691 - 1831

- Column A - Percentage of land in wholly owner occupied estates
- Column B - Percentage of land in wholly tenanted estates
- Column C - Percentage of land in mixed tenure estates
- Column D - Percentage of land in mixed tenure estates occupied
by the proprietor

Table D1 : Estate Tenures, 1780

Parish	A	B	C	D
Adisham	11.8	52.0	37.8	27.0
Ash	6.7	78.9	14.4	48.3
Barfreston	30.8	69.2	0	0
Barham	16.8	15.0	68.0	42.5
Betteshanger & Ham	15.5	84.5	0	0
Bishopsbourne	2.6	84.2	13.1	88.3
Buckland & Charlton	4.4	59.0	36.5	29.9
Coldred	2.8	39.1	58.2	36.0
Denton	12.6	9.2	78.2	12.8
Eastry	23.4	73.6	2.9	40.5
Elmstone	27.8	21.2	51.0	3.3
Ewell	6.5	30.6	62.9	74.1
Eythorne	20.0	59.6	20.4	36.1
Goodnestone	5.9	50.9	43.2	61.6
Guston	2.1	28.4	69.5	2.2
Hougham	6.8	90.2	3.0	90.9
Ickham	9.9	34.4	55.7	35.7
Kingston	49.4	33.6	17.0	31.4
Knowlton & Chillenden	1.5	40.5	58.0	19.1
East Langdon	5.1	94.9	0	0
West Langdon	2.3	97.7	0	0
Littlebourne	4.6	45.9	49.5	41.4
Lydden	0.4	59.2	40.3	23.4
Minster	2.0	91.9	6.1	31.9
Great Mongeham	21.3	77.5	1.2	63.6
Little Mongeham & Ashley	10.1	70.3	19.6	50.4
Monkton	4.0	90.5	5.5	94.6
Nonington	1.4	21.6	77.1	31.2
Easole	3.2	30.9	65.9	93.1
Frogham	29.7	70.3	0	0
Northbourne	6.6	92.6	0.8	16.7
Tickness	0	100.0	0	0
Poulton	3.8	43.5	52.7	8.7
Preston	9.8	90.2	0	0
Ripple	8.2	91.8	0	0
River	13.3	72.8	13.9	82.2
St. Lawrence	4.5	79.9	15.6	75.0
St. Margaret & Oxney	1.9	98.1	0	0
St. Nicholas	11.6	81.2	7.2	73.7
Shepherdswell	5.8	43.4	50.9	11.4
Shoulden	43.7	56.3	0	0
Staple	24.7	44.1	31.2	68.2
Stonar	100.0	0	0	0
Stourmouth	16.0	81.1	2.9	71.4
Sutton	7.5	92.5	0	0
Tilmanstone	30.5	67.7	1.9	60.0
Waldershare	3.1	31.3	65.6	29.9
Westcliffe	0	100.0	0	0
Whitfield	6.7	93.3	0	0
Wickhambreux	8.2	83.1	8.6	83.2
Wingham	4.6	90.8	4.5	54.9
Womenswold	6.7	50.7	42.7	14.8
Woodnesborough	25.1	68.4	6.5	22.8
Wootton	1.2	21.0	77.8	45.8
Worth	21.2	78.1	0.7	23.1

Table D2 : Estate Tenures, 1790

Parish	A	B	C	D
Adisham	0	60.0	40.0	17.0
Ash	9.6	77.3	13.1	43.3
Barfreton	0.8	71.4	27.8	91.9
Barham	13.3	15.4	71.3	56.6
Betteshanger & Ham	0	77.1	22.9	24.4
Bishopsbourne	25.8	54.9	19.3	67.0
Buckland & Charlton	26.2	34.8	39.0	49.2
Coldred	6.4	35.2	58.4	35.8
Denton	4.6	5.0	90.4	32.9
Eastry	43.6	50.0	6.5	65.9
Elmstone	20.2	28.8	51.0	3.2
Ewell	1.7	18.1	80.2	80.0
Eythorne	28.3	51.4	20.4	36.1
Goodnestone	7.7	44.7	47.7	63.5
Guston	7.3	24.9	67.8	2.2
Hougham	11.1	84.7	4.2	87.1
Ickham	23.6	21.1	55.3	35.3
Kingston	53.8	35.0	12.0	25.0
Knowlton & Chillenden	2.4	39.6	58.0	19.1
East Langdon	4.6	95.4	0	-
West Langdon	2.8	90.3	6.9	26.7
Littlebourne	11.5	39.6	48.9	41.6
Lydden	0.4	61.8	37.8	23.9
Minster	4.7	90.9	4.4	61.2
Great Mongeham	21.5	69.2	9.3	16.2
Little Mongeham	8.1	67.5	24.4	46.1
Monkton	7.7	91.0	1.3	50.0
Nonington	1.8	40.8	58.0	25.4
Easole	2.7	31.4	65.9	8.3
Frogham	10.9	89.1	0	-
Northbourne	5.0	92.9	2.1	62.5
Tickness	0	100.0	0	-
Poulton	3.1	43.8	53.1	8.7
Preston	12.2	87.8	0	-
Ripple	9.2	90.8	0	-
River	50.9	38.3	10.8	14.3
St. Lawrence	4.4	66.1	29.5	78.8
St. Margaret & Oxney	-	-	-	-
St. Nicholas	1.1	87.1	11.8	67.7
Shepherdswell	6.1	38.5	55.4	62.0
Shoulden	45.6	54.4	0	-
Staple	25.1	44.3	30.8	47.7
Stonar	0	100.0	0	-
Stourmouth	35.9	49.3	14.8	73.1
Sutton	56.0	44.0	0	-
Tilmanstone	34.6	65.4	0	-
Waldershare	3.1	31.3	65.6	29.9
Westcliffe	0	100.0	0	-
Whitfield	4.5	95.5	0	-
Wickhambreux	6.0	81.2	12.8	68.5
Wingham	4.3	84.5	11.2	43.4
Womenswold	10.4	53.5	36.1	43.5
Woodnesborough	31.7	60.1	8.3	23.2
Wootton	2.5	51.9	45.7	72.5
Worth	22.1	77.0	1.0	77.8

Table D3 : Estate Tenures, 1801

Parish	A	B	C	D
Adisham	14.7	33.4	51.9	31.3
Ash	21.9	62.8	15.6	62.9
Barfreston	3.8	61.7	34.6	89.1
Barham	15.2	15.8	68.9	56.6
Betteshanger & Ham	41.4	58.6	0	-
Bishopsbourne	27.8	72.2	0	-
Buckland & Charlton	15.9	39.9	44.2	60.0
Coldred	4.1	41.3	54.6	38.2
Denton	73.8	19.2	7.1	70.6
Eastry	36.3	49.4	14.2	89.1
Elmstone	35.0	65.0	0	-
Ewell	46.0	2.4	51.6	75.8
Eythorne	30.2	31.4	38.3	28.2
Goodnestone	13.4	38.4	48.2	62.7
Guston	6.7	25.4	67.8	2.2
Hougham	15.2	80.6	4.2	22.6
Ickham	2.6	40.1	57.2	25.8
Kingston	32.6	36.0	31.4	67.3
Knowlton & Chillenden	0.4	38.9	60.6	19.0
East Langdon	30.9	69.1	0	77.7
West Langdon	1.4	91.7	6.9	26.7
Littlebourne	6.1	21.6	72.3	42.9
Lydden	28.3	48.5	23.2	64.8
Minster	11.1	75.2	13.8	83.4
Great Mongeham	32.7	57.3	9.9	42.9
Little Mongeham & Ashley	39.9	37.9	22.2	48.9
Monkton	22.1	77.3	0.6	60.0
Nonington	4.8	62.5	32.7	24.2
Easole	2.7	7.7	89.5	28.9
Frogham	15.0	28.6	56.4	69.3
Northbourne	51.3	48.2	0.5	75.0
Tickness	0	100.0	0	-
Poulton	2.3	44.6	53.1	8.7
Preston	30.3	68.1	1.5	84.6
Ripple	15.7	84.3	0	-
River	29.0	37.3	33.6	64.2
St. Lawrence	14.1	55.5	30.4	76.0
St. Margaret & Oxney	35.5	64.5	0	-
St. Nicholas	4.1	90.8	5.1	60.9
Shepherdswell	26.0	18.8	55.2	81.2
Shoulden	54.4	40.9	4.6	38.7
Staple	29.5	39.1	31.3	70.2
Stonar	22.2	77.8	0	-
Stourmouth	47.7	45.3	7.0	66.7
Sutton	43.7	56.3	0	-
Tilmanstone	35.7	64.3	0	-
Waldershare	3.1	31.3	65.6	32.0
Westcliffe	0	100.0	0	-
Whitfield	12.3	87.7	0	-
Wickhambreux	25.1	70.9	4.0	51.1
Wingham	4.5	28.7	66.8	17.0
Womenswold	13.7	28.3	58.0	40.8
Woodnesborough	46.5	48.8	4.7	46.3
Wootton	2.1	3.7	94.2	53.3
Worth	34.3	64.7	1.0	22.2

Table D4 : Estate Tenures, 1814

Parish	A	B	C	D
Adisham	15.9	25.4	58.7	32.9
Ash	36.3	47.7	16.0	72.3
Barfreston	2.3	63.2	34.6	87.0
Barham	26.3	8.2	65.3	52.4
Betteshanger & Ham	51.7	27.2	21.1	60.0
Bishopsbourne	27.5	8.9	63.5	8.2
Buckland & Charlton	35.6	39.5	24.9	24.4
Coldred	4.1	41.1	54.7	38.2
Denton	10.5	47.3	42.3	57.9
Eastry	24.6	48.3	27.1	80.7
Elmstone	21.0	79.0	0	-
Ewell	37.4	21.8	40.8	71.2
Eythorne	30.3	0.7	69.0	47.1
Goodnestone	21.7	26.1	52.2	57.9
Guston	9.1	18.1	72.8	2.0
Hougham	26.0	69.9	4.2	46.7
Ickham	4.9	37.0	58.1	26.7
Kingston	15.4	36.0	48.6	66.5
Knowlton & Chillenden	0.2	39.6	60.2	17.4
East Langdon	37.0	52.0	11.0	93.0
West Langdon	6.5	8.8	84.7	99.5
Littlebourne	17.6	29.5	53.0	61.2
Lydden	39.5	46.4	14.2	63.6
Minster	30.9	50.7	18.5	81.9
Great Mongeham	50.0	38.7	11.3	15.1
Little Mongeham & Ashley	51.6	23.6	24.8	40.4
Monkton	23.2	51.3	25.5	94.8
Nonington	17.1	46.4	36.6	29.5
Easole	5.0	8.6	86.4	93.2
Frogham	20.3	26.0	61.8	85.5
Northbourne	67.7	28.8	3.5	85.2
Tickness	0	9.2	90.8	1.4
Poulton	3.8	43.1	53.1	8.7
Preston	54.0	42.1	3.9	78.8
Ripple	60.9	39.1	0	-
River	52.0	46.4	1.7	40.0
St. Lawrence	24.6	45.8	29.6	55.8
St. Margaret & Oxney	70.8	29.2	0	-
St. Nicholas	11.8	55.4	32.8	91.3
Shepherdswell	30.6	41.5	27.9	22.1
Shoulden	63.4	33.2	3.4	36.0
Staple	36.5	30.8	32.7	70.0
Stonar	-	-	-	-
Stourmouth	24.1	51.3	24.6	97.5
Sutton	88.0	12.0	0	-
Tilmanstone	48.5	51.5	0	-
Waldershare	3.1	31.3	65.6	32.0
Westcliffe	50.4	7.2	42.4	1.7
Whitfield	54.2	45.8	0	-
Wickhambreux	66.6	33.4	0	-
Wingham	4.2	26.3	69.5	16.5
Womenswold	16.0	31.2	52.7	26.2
Woodnesborough	40.8	51.7	7.5	53.1
Wootton	4.3	18.5	77.3	25.6
Worth	56.0	42.6	1.4	74.5

Table D5 : Estate Tenures, 1822

Parish	A	B	C	D
Adisham	17.1	24.1	58.7	32.9
Ash	33.3	51.0	15.7	62.2
Barfreston	0	65.4	34.6	87.0
Barham	20.7	19.9	59.5	54.7
Betteshanger & Ham	51.7	27.2	21.1	44.0
Bishopsbourne	27.7	51.2	21.1	61.3
Buckland & Charlton	67.5	10.9	21.6	21.1
Coldred	13.7	32.1	54.2	38.2
Denton	26.9	6.1	66.9	43.7
Eastry	22.3	68.3	9.4	58.7
Elmstone	28.3	71.7	0	0
Ewell	43.9	21.5	34.6	73.0
Eythorne	56.5	4.4	39.0	53.8
Goodnestone	20.7	10.6	68.8	52.6
Guston	8.9	19.5	71.6	2.0
Hougham	23.1	76.9	0	0
Ickham	14.2	36.3	49.5	19.5
Kingston	28.4	36.0	35.6	55.5
Knowlton & Chillenden	0.2	39.6	60.2	17.4
East Langdon	37.0	52.0	11.0	93.0
West Langdon	91.2	8.8	0	0
Littlebourne	16.3	19.4	64.3	50.4
Lydden	72.2	12.3	15.6	63.6
Minster	17.9	61.8	20.4	80.2
Great Mongeham	45.0	42.7	12.3	92.6
Little Mongeham & Ashley	48.9	24.5	26.6	37.7
Monkton	22.0	72.7	5.2	91.0
Nonington	6.1	57.7	36.2	29.1
Easole	3.6	10.0	86.4	93.2
Frogham	14.0	29.6	64.6	86.0
Northbourne	63.8	36.2	0	0
Tickness	0	9.2	90.8	1.4
Poulton	4.6	42.3	53.1	8.7
Preston	53.1	43.0	3.9	78.8
Ripple	66.2	30.8	3.0	75.0
River	59.9	40.1	0	0
St. Lawrence	26.0	48.0	26.0	56.1
St. Margaret & Oxney	56.9	34.4	8.6	77.8
St. Nicholas	2.6	65.5	31.9	91.0
Shepherdswell	31.4	28.7	39.9	79.6
Shoulden	68.4	31.6	0	0
Staple	36.6	27.9	35.5	49.6
Stonar	-	-	-	-
Stourmouth	40.4	59.6	0	0
Sutton	52.4	7.5	40.1	90.1
Tilmanstone	45.9	54.1	0	0
Waldershare	3.1	31.3	65.6	32.0
Westcliffe	50.4	49.6	0	0
Whitfield	50.5	48.2	1.2	22.2
Wickhambreux	68.8	31.2	0	0
Wingham	4.0	26.9	69.2	14.2
Womenswold	30.7	28.7	40.6	25.6
Woodnesborough	45.5	51.9	2.6	56.4
Wootton	4.1	1.7	94.2	36.8
Worth	55.9	43.0	1.2	69.0

Table D6 : Estate Tenure, 1831

Parish	A	B	C	D
Adisham	16.7	22.7	60.6	31.9
Ash	32.3	52.6	15.1	77.8
Barfreston	0	3.7	96.3	29.2
Barham	16.7	22.7	60.5	53.8
Betteshanger & Ham	50.3	49.7	0	0
Bishopsbourne	15.6	18.8	65.7	33.8
Buckland & Charlton	28.5	69.9	1.5	60.0
Coldred	9.9	36.0	54.0	38.9
Denton	13.0	5.9	81.1	22.0
Eastry	30.1	68.9	1.0	45.5
Elmstone	25.8	74.2	0	0
Ewell	11.1	56.1	32.9	67.3
Eythorne	52.3	13.1	34.6	58.1
Goodnestone	5.4	10.2	84.4	45.6
Guston	5.2	22.4	72.4	2.0
Hougham	17.4	82.6	0	0
Ickham	27.4	21.3	51.3	21.7
Kingston	39.9	37.2	22.8	84.7
Knowlton & Chillenden	0.2	37.5	62.3	49.2
East Langdon	12.2	52.0	35.7	96.4
West Langdon	85.1	13.6	1.4	66.7
Littlebourne	17.5	29.9	52.7	58.2
Lydden	57.1	23.6	19.3	46.7
Minster	11.7	68.5	19.7	81.4
Great Mongeham	45.4	37.2	17.4	58.4
Little Mongeham & Ashley	45.6	29.5	24.9	40.4
Monkton	18.6	71.5	9.9	95.2
Nonington	4.9	58.3	36.8	14.1
Easole	1.8	96.4	1.8	25.0
Frogham	12.9	19.0	68.1	72.1
Northbourne	91.7	8.2	0	0
Tickness	0	9.2	90.8	1.4
Poulton	3.1	43.8	53.1	8.7
Preston	39.6	49.2	11.1	66.0
Ripple	67.2	32.8	0	57.6
River	58.8	5.6	35.6	3.0
St. Lawrence	27.9	42.1	29.9	45.2
St. Margaret & Oxney	49.2	30.3	20.5	74.6
St. Nicholas	2.6	78.5	18.9	89.3
Shepherdswell	13.1	37.3	49.6	62.0
Shoulden	52.5	28.7	18.8	56.7
Staple	38.2	28.7	33.1	47.2
Stonar	-	-	-	-
Stourmouth	41.9	54.9	3.2	37.7
Sutton	44.3	5.6	50.1	37.2
Tilmanstone	45.5	54.5	0	0
Waldershare	3.2	32.4	65.3	44.8
Westcliffe	46.8	53.2	0	0
Whitfield	50.0	50.0	0	0
Wickhambreux	26.4	48.2	25.4	94.5
Wingham	8.0	52.2	40.0	27.0
Womenswold	2.0	15.4	82.6	62.2
Woodnesborough	20.3	73.9	5.8	69.5
Wootton	4.1	16.0	79.8	25.3
Worth	47.6	46.7	5.7	72.2

Table D7 : Estate Tenures

Parish	A	B	C	D
<u>1691</u>				
Monkton	2.6	94.9	2.6	78.1
<u>1699</u>				
Adisham	12.9	52.0	35.1	31.6
Guston	6.8	66.2	27.1	21.7
Lydden	17.6	76.9	5.5	84.6
Monkton	3.4	93.5	3.1	90.3
Sutton	32.4	67.6	0	0
Womenswold	38.3	42.0	19.7	93.2
Worth	4.2	95.8	0	0
<u>1710</u>				
Adisham	11.3	55.6	33.1	20.6
Guston	7.3	22.4	70.3	2.2
Lydden	36.1	56.7	7.3	64.7
Monkton	2.7	86.4	10.9	37.0
Sutton	7.1	57.1	35.8	95.6
Womenswold	3.3	46.4	50.3	88.9
Worth	12.7	84.1	3.2	45.0
<u>1720</u>				
Adisham	8.0	55.6	36.3	26.8
Guston	13.2	18.5	68.2	2.2
Lydden	11.6	47.6	40.8	22.1
Monkton	3.7	52.0	44.3	11.1
Sutton	7.8	92.2	0	0
Womenswold	2.7	47.3	50.0	90.0
Worth	15.7	81.1	3.4	47.6
<u>1730</u>				
Adisham	20.2	65.8	13.9	53.3
Guston	11.8	20.0	68.2	2.2
Lydden	12.0	42.1	45.9	29.0
Monkton	2.8	91.0	6.2	77.4
Sutton	7.5	92.5	0	0
Womenswold	1.0	98.0	1.0	66.7
Worth	4.9	91.7	3.4	45.3

Table D7 : Estate Tenures

Parish	A	B	C	D
<u>1740</u>				
Adisham	19.9	47.0	33.1	20.6
Guston	10.3	40.6	49.1	3.0
Lydden	8.6	45.5	45.9	29.0
Monkton	4.9	49.7	45.4	2.6
Sutton	7.8	92.2	0	0
Womenswold	2.7	95.0	2.3	57.1
Worth	8.1	79.6	12.4	3.5
<u>1750</u>				
Adisham	13.1	53.9	33.0	20.6
Guston	9.4	41.5	49.1	3.0
Lydden	20.2	37.3	42.5	31.3
Monkton	2.9	96.3	8.0	75.0
Sutton	10.6	89.4	0	0
Womenswold	4.3	71.0	24.7	81.1
Worth	4.7	89.9	0.6	41.7
<u>1760</u>				
Adisham	11.6	59.0	29.4	45.3
Guston	9.4	22.4	68.2	2.2
Lydden	4.7	49.8	45.5	32.1
Monkton	5.5	94.3	0.2	50.0
Sutton	11.0	89.0	0	0
Womenswold	6.0	66.7	27.3	80.5
Worth	5.5	92.8	1.7	12.5
<u>1770</u>				
Adisham	15.4	54.8	29.8	45.6
Guston	2.6	29.7	67.6	2.2
Lydden	10.3	48.9	40.8	25.3
Monkton	3.7	56.9	39.3	1.8
Sutton	11.9	88.1	0	0
Womenswold	4.7	30.7	64.7	39.2
Worth	6.0	93.6	0.4	75.0

Table E : Farm Tenures in the St. Augustine East Division, 1691 - 1831

Column A - Percentage of land in wholly owner occupied farms
Column B - Percentage of land in wholly rented farms
Column C - Percentage of land in mixed tenure farms
Column D - Percentage of land in mixed tenure farms owned
by the occupier

Table E1 : Farm Tenures, 1780

Parish	A	B	C	D
Adisham	18.4	64.9	16.7	19.4
Ash	7.2	58.3	33.5	19.4
Barfreston	0	3.8	96.2	32.0
Barham	34.4	52.3	13.3	85.0
Betteshanger & Ham	0	42.8	57.2	27.2
Bishopsbourne	14.2	85.8	0	0
Buckland & Charlton	13.3	82.6	4.1	50.0
Coldred	23.7	76.3	0	0
Denton	13.0	66.5	20.5	46.9
Eastry	10.5	41.1	48.4	29.2
Elmstone	21.2	68.9	10.0	83.3
Ewell	49.0	28.9	22.1	18.5
Eythorne	16.7	48.8	34.5	30.7
Goodnestone	29.5	44.5	26.0	11.8
Guston	3.6	96.4	0	0
Hougham	7.0	74.2	18.9	13.8
Ickham	29.8	70.2	0	0
Kingston	54.5	44.3	1.2	16.7
Knowlton & Chillenden	12.6	87.4	0	0
East Langdon	4.3	55.4	40.3	1.9
West Langdon	1.9	93.5	4.6	10.0
Littlebourne	23.9	71.3	4.8	28.1
Lydden	9.4	75.5	15.0	2.9
Minster	1.0	70.5	28.4	10.4
Great Mongeham	10.8	50.8	38.4	29.3
Little Mongeham & Ashley	15.7	51.5	32.8	13.0
Monkton	8.3	88.4	3.2	26.7
Nonington	25.4	74.6	0	0
Easole	64.5	35.5	0	0
Frogham	29.7	70.3	0	0
Northbourne	5.3	59.6	35.1	4.1
Tickness	0	100.0	0	0
Poulton	7.6	90.8	1.5	50.0
Preston	4.8	77.6	17.7	28.3
Ripple	4.2	63.2	32.6	12.2
River	14.5	68.5	17.0	60.0
St. Lawrence	7.5	59.9	32.6	26.6
St. Margaret & Oxney	1.9	98.1	0	0
St. Nicholas	8.5	66.3	25.2	33.3
Shepherdswell	11.2	86.9	1.9	20.0
Shoulden	39.2	46.4	14.4	30.8
Staple	35.6	48.0	16.4	63.5
Stonar	100.0	0	0	0
Stourmouth	15.8	60.7	23.5	9.6
Sutton	0	59.5	40.5	18.6
Tilmanstone	21.4	66.9	11.7	87.1
Waldershare	22.8	77.2	0	0
Westcliffe	0	100.0	0	0
Whitfield	6.7	93.3	0	0
Wickhambreux	5.2	55.9	38.9	26.4
Wingham	6.8	86.0	7.2	4.8
Womenswold	12.3	70.3	17.3	3.8
Woodnesborough	22.0	61.8	16.1	28.2
Wootton	36.8	63.2	0	0
Worth	21.0	59.7	19.3	1.9