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## FARMS AND FIELDS IN THE CHILTERN<sup>1)</sup>

J. T. COPPOCK

With 11 Figures and 2 Tables

*Zusammenfassung:* Die Farmen des Chilterngebietes und ihre Fluren. Eine durch das Landwirtschaftsministerium im Jahre 1941 durchgeführte Erhebung ergab zum erstenmal eine Aufstellung der Grenzen und Größen aller Farmen in England und Wales. Die vorliegende Arbeit untersucht Farmen und ihre Fluren in den Chilterns, einem mit Feuersteintonen (clay with flints) bedeckten Kreidehöhenzug, sowie in deren nördlichem und südlichem Vorland, das aus Talungen mit tonigen Böden besteht (Abb. 1). Während in den Chilterns selbst Feldbau und Weidewirtschaft nebeneinander vorkommen, ist die nördliche Talung mehr weidebetont; zwischen beide Gebiete schiebt sich jedoch ein schmaler aber ausgeprägter Gürtel, der „Icknield Belt“, der nur ackerbaulich genutzt wird (Abb. 2).

Farmen mittlerer Größe (zwischen 40 und 120 ha) nehmen den größeren Teil des Gesamtgebietes ein (Aufstellung I). Nachdem Farmen verschiedener Größen sich überall finden, ist es nur möglich über das Vorherrschen einer bestimmten Größenklasse in bestimmten Teilgebieten zu sprechen (Abb. 3). Große Farmen finden sich häufig in den Hauptfeldbaugebieten, während sich kleine Farmen nur in den Teilen der Talungen finden, wo der Grafschaft gehörige Kleinpachtgüter vorkommen, oder in den Bezirken, wo Feldgemüsebau herrscht.

Die Lage der Hofstellen ist hauptsächlich agrargeschichtlich bedingt. In den Chilterns selbst und südlich davon wurde die Einhegung früh durchgeführt — falls dies überhaupt je Gewinnflurgebiete waren. In der nördlichen Talung wurde ungefähr die Hälfte des Landes durch Parlamentsverfügungen zwischen 1750 und 1850 eingezogen (Abb. 4). In den Gebieten früher Einhegung herrscht Streusiedlung, wobei die Hofstellen in der Mitte ihres eigenen Grund und Bodens liegen; sog. „Lodge Farms“ (Einödhöfe). In den Bezirken später Einhegung befinden sich die Wirtschaftshöfe, vor allem der kleineren Farmen, häufig als „Village Farms“ (Dorf Farmen) in den Dörfern.

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Das Land englischer Farmen zeigt im allgemeinen sehr unregelmäßige Grundrißformen und überall finden sich verschiedene Typen nebeneinander. Während sonst im Stufenland Farmen mit langgezogener rechteckiger Flur, die sich von der Talung über die Stufe auf die Hochfläche erstreckt, häufig sind, fehlen diese an der Chiltern-Stufe. Derartige Formen finden sich jedoch hier oft im leicht hügeligen Vorland, obwohl hier physisch-geographisch keine Veranlassung besteht, diese Grundrißform zu verwenden (Abb. 5). Das Vorkommen dieser Flurform ist historisch bedingt, da sie meist mit Dorffarmen zusammenfällt.

Die meisten Farmen dieses Gebietes sind „Ring-Fence Farms“, d. h. sie bestehen aus einem einzigen Stück Land, das durch eine ununterbrochene Besitzgrenze umgeben wird. Zahlreiche Farmen haben jedoch auch außerhalb gelegene Landstücke oder Gruppen solcher. Einige dieser lassen sich in ihrer Existenz durch Stadtnähe oder dem Bestreben erklären, eine Waldparzelle zu besitzen. Die meisten dieser „Außenfelder“ liegen jedoch in den tonigen Talungen, die fast ausschließlich feldbaumäßig genutzt werden. Die Gemengelage ergab sich teilweise auch aus der Konzentration der Wirtschaftshöfe in den Dörfern, der Art der Landzuteilung bei der Einhegung, sowie der stückweisen Erwerbung oder der Veräußerung einzelner Landstücke in Gebieten kleiner Farmen.

In jedem der Teilgebiete kommen einzelne Landstücke in einer ansehnlichen Zahl verschiedener Größen vor. In den Chilterns selbst schwankt deren Größe besonders stark, jedoch machen Stücke von über 6 ha den größten Teil aus. Im Icknield Belt finden sich sehr große Felder, einige davon von über 100 ha Größe. Im Vorland sind die Stücke größtmäßig weniger unterschiedlich; in der nördlichen Talung sind sie meist ungefähr 4 ha, während im Gebiet der tonigen Böden im Süden von weniger als 4 ha sehr häufig sind (Aufstellung II).

Das Verteilungsmuster der Landstücke der verschiedenen Größen ähnelt dem der Farmen und es besteht ein Zusammenhang sowohl zwischen den Größen von Landstücken und Farmen als auch zwischen diesen beiden und der Wirtschaftsweise. Feldbauwirtschaft zeigt im allgemeinen eine Tendenz zu großen Höfen und Feldern, Weidewirtschaft zu Höfen und Landstücken mittlerer Größe.

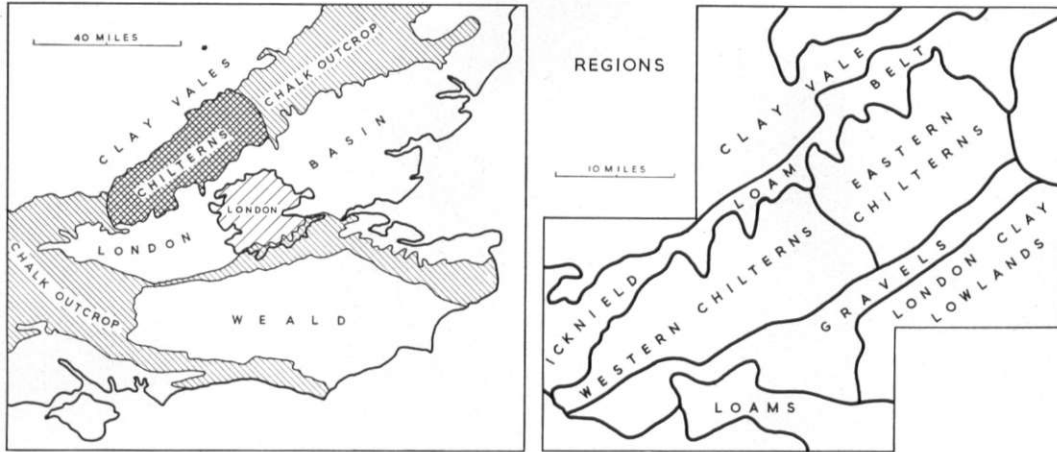


Figure 1: Location and Regions of the Chilterns

Die Landstücke variieren auch in ihrer Grundrißform (Abb. 6). In den Chilterns sind sie meist unregelmäßig, im Vorland häufig rechteckig. Die ersten finden sich in Bezirken früher Einhegung, die letzteren in Bezirken, in denen die Einhegung durch Parlamentsverfügung durchgeführt wurde.

Um zu untersuchen, wie diese verschiedenen Züge sich während der letzten hundert Jahre verändert haben, wurden eine Reihe von detaillierten Einzelstudien durchgeführt. Sie ergaben, daß die erfolgten Veränderungen im einzelnen äußerst kompliziert sind; Farmen in drei angrenzenden Gemeinden im zur Grafschaft Bedford gehörigen Teil zeigten sowohl Größenzunahme als auch -abnahme oder keine Veränderung (Abb. 9). Im allgemeinen läßt sich jedoch eine Tendenz zur Vergrößerung der Farmen während dieser Periode zeigen. Bei den Landstücken ist es ähnlich, obwohl auch Unterteilungen vorkamen. Die meisten Landstücke blieben jedoch unverändert (Abb. 10). Die eingetretenen Veränderungen waren im allgemeinen über das ganze Gebiet verteilt, so daß die Unterschiede zwischen den einzelnen Teilgebieten kaum verändert wurden (Abb. 11). Eine Landschaftsanalyse der Agrarlandschaft wie sie vor hundert Jahren war, würde daher zeigen, daß das Verteilungsmuster von Farmen und Flur sich nur wenig vom heutigen unterschied.

### Introduction

Although English geographers have been much concerned with the use of agricultural land they have paid relatively little attention to the pattern of farms and fields within which this agricultural activity takes place<sup>2</sup>). The reasons for this situation are readily apparent; while the land is directly observable and while there is a considerable body of data (statistical and otherwise) about its use, farms are not directly observable in the landscape and there is little information about their size and shape; for England is unusual among countries with a well-developed system of central and local government in having no official data about the size and shape of individual

<sup>2</sup>) For a general survey see L. D. STAMP, *The Land of Britain*, 2nd. Edn., London, 1950, Chap. XVI.

farms which can readily be consulted by research workers. It is true that even the farmsteads and fields which can be directly observed have commanded relatively little attention; but this may be because these features cannot very profitably be considered in isolation. It has only been possible to examine individual farms or to make historical studies, using the estate records and rich documentary and cartographic resources of the Tithe Surveys of the 1840s<sup>3</sup>). In 1941, however, a survey was made of all farms in England and Wales, and, in conjunction with this investigation, maps were prepared of all farm boundaries; this paper is largely based on an analysis of these maps<sup>4</sup>). The statements made, therefore, relate for the most part to 1941; but this, while regrettable, is inevitable since there is no other source which can be used to examine the situation which exists today. It is probable, however, that it does not differ substantially from that described here.

### The Chilterns

The pattern of farms and fields in any area is related partly to the physical character of the land and to the kind of farming practised, and partly to their evolution. The area investigated, which covers some 1400 square miles (3600 sq. kms.) to the northwest of London (Fig. 1), has certain advantages for a study of this kind, although it was not chosen for this reason; not only does it contain a wide variety of terrain and of

<sup>3</sup>) See H. C. PRINCE, "Tithe Surveys of the Mid-Nineteenth Century", *Agric. History Review*, VII Pt. I, 1959, 14—26.

<sup>4</sup>) National Farm Survey of England and Wales, H. M. S. O., London, 1946. The author is grateful to officials of the Ministry of Agriculture for permission to use this material and for their helpful attitude.

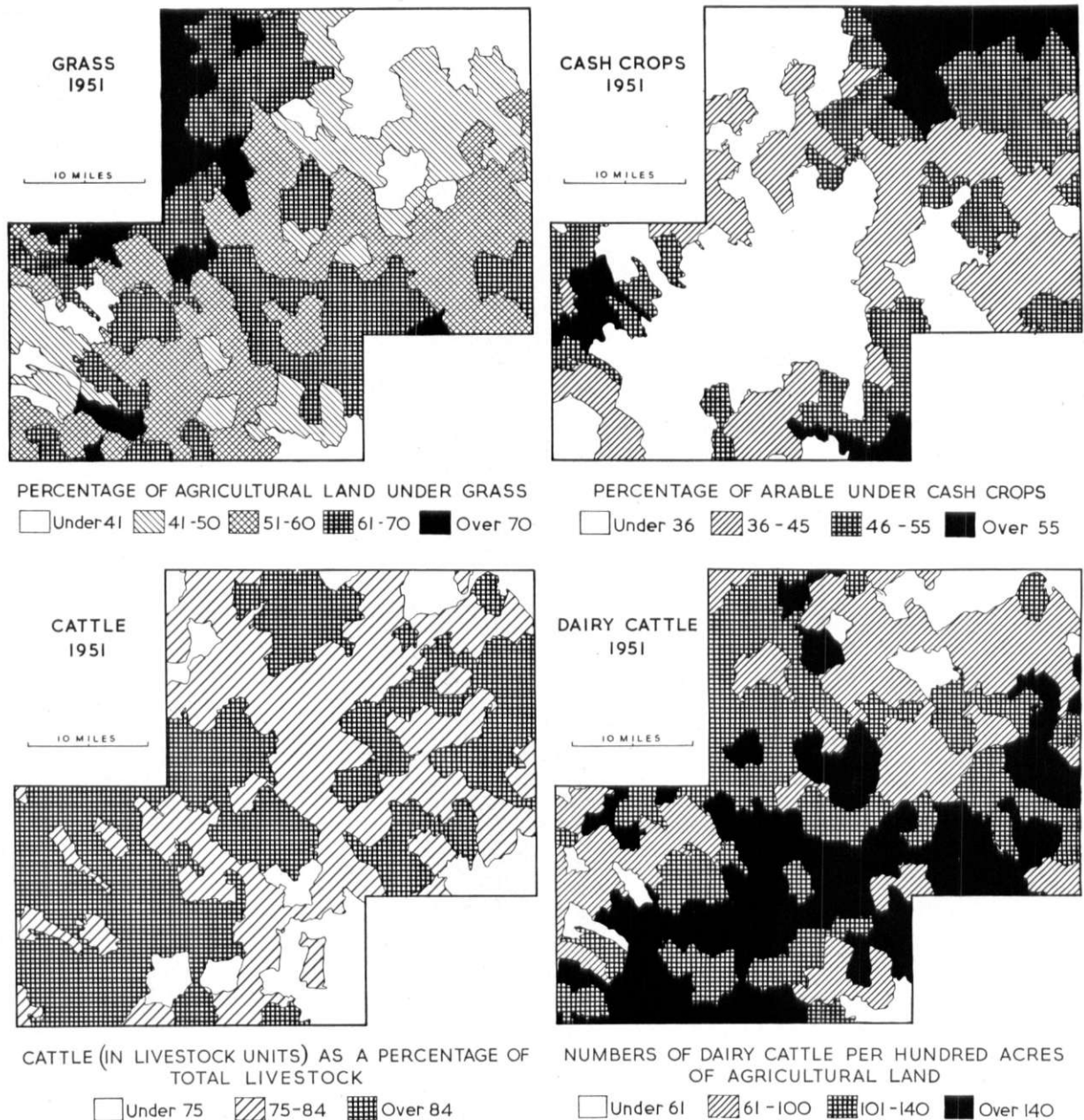


Figure 2: Principal Agricultural Features of the Chilterns

(Source: unpublished parish agricultural statistics)

types of farming, but different parts of the area have markedly different agricultural histories.

The nature of the area has been described elsewhere, and it will be necessary here only to outline its main agricultural characteristics (Fig. 2)<sup>5</sup>. The central feature is the Chiltern Hills, a part of the chalk escarpment which forms

<sup>5</sup> J. T. COPPOCK, "The Changing Arable in the Chilterns 1875-1951", *Geography*, XLII, 1957, 217-222.

the rim of the London Basin. The dip slope of the Chilterns, rising to heights of over 850' (250 m.) along the crest of the escarpment, is covered with clay-with-flints and associated deposits; these give rise to indifferent soils which have long been arable land. The eastern Chilterns, where soils and topography are more favourable to arable cultivation, retain a considerable interest in cereal growing, but elsewhere land use has become more

Table I  
Percentage of Agricultural Land in Farms of different size groups (Sample areas)  
(Source: unpublished parish summaries of agricultural returns, Ministry of Agriculture)

Size Group (acres)	under 25	25— 49 <sup>3</sup> / <sub>4</sub>	50— 74 <sup>3</sup> / <sub>4</sub>	75— 99 <sup>3</sup> / <sub>4</sub>	under 100	100— 149 <sup>3</sup> / <sub>4</sub>	150— 199 <sup>3</sup> / <sub>4</sub>	200— 249 <sup>3</sup> / <sub>4</sub>	250— 299 <sup>3</sup> / <sub>4</sub>	100— 299 <sup>3</sup> / <sub>4</sub>	300— 399 <sup>3</sup> / <sub>4</sub>	400— 499 <sup>3</sup> / <sub>4</sub>	500— 699 <sup>3</sup> / <sub>4</sub>	700— 999 <sup>3</sup> / <sub>4</sub>	1000 and over	300 and over
Chiltern Area	5.4	4.7	5.5	5.5	21.1	11.5	12.3	11.3	8.9	44.0	13.4	7.2	7.4	4.2	2.7	34.9
Eastern Chilterns	1.2	1.1	3.2	2.0	7.5	7.6	9.1	9.7	10.4	36.8	21.2	12.3	13.0	3.6	5.6	55.7
Western Chilterns	3.8	4.5	4.5	6.2	19.0	15.0	17.7	11.6	9.2	53.5	6.0	12.9	6.6	—	—	25.5
Icknield Belt	1.7	1.7	3.8	5.2	12.4	3.0	4.7	2.2	4.7	14.6	12.4	4.3	5.5	22.9	27.9	73.0
Clay Vales	4.1	5.4	12.1	9.7	31.3	13.0	14.1	8.8	2.8	38.7	15.6	6.6	3.0	4.8	—	30.0
South-Hert- fordshire	4.4	5.0	5.0	8.8	23.2	16.3	9.7	13.2	6.7	45.9	18.8	8.0	4.1	—	—	30.9
Mid-Bedford- shire	12.3	8.9	14.7	7.4	43.3	14.8	5.2	7.4	9.0	36.4	4.1	9.8	6.4	—	—	20.3

varied and dairying is the principal activity. Along their southern border is a belt of gravels which has many similar characteristics and even poorer soils. To the north of the Chilterns are the undulating clay vales, with medium to heavy soils, largely under permanent grass; these areas have long been concerned with livestock farming, particularly with the rearing and fattening of sheep and cattle and with dairying. Between the Chilterns and the clay vales lies a belt of loams which, though narrow, is highly distinctive. The easily worked loams of this Icknield Belt have long been almost entirely under arable cultivation. To the south of the Chilterns are both clays and loams; the clays, once wholly under permanent grass producing hay to feed London's cows and horses, now have a mixed economy in which both cereal growing and dairying are important, while the loams, now largely built over, have long been concerned with cash cropping and more recently with market gardening.

The area is not wholly devoted to agriculture. While in the vales nearly all land is used for agriculture, in the Chilterns, and especially the western Chilterns, there are extensive woods, and to the southeast suburban London and the numerous large settlements in the urban fringe occupy much of the land. These differences must be borne in mind in interpreting the maps in this paper; the unshaded areas in Figure 4b give a rough indication of regional differences in the amount of non-agricultural land.

#### Farm Size

The man-made framework within which this farming takes place is very varied, and can be conveniently discussed under the two main headings of farm size and farm layout.

In this discussions of farm size the terms large, medium and small are relative to conditions in England and Wales as a whole. While the largest farms in the area are over 1000 acres (400 Ha.), the lower limit of large farms can conveniently be taken as 300 acres (120 Ha.); such large farms account for more than a third of all improved farmland in this area, compared with less than a quarter in England and Wales. Medium sized farms, those between 100 and 300 acres (40 to 120 Ha.), account for more than two-fifths of the farmland in both the Chilterns and in England and Wales. Small farms, those between 25 and 100 acres (10 to 40 Ha.), account for most of the remainder. Large farms are thus relatively more important than in the country as a whole (Table I). Holdings smaller than 25 acres have been disregarded here, partly because they are too small to be shown at this scale, and partly because it is probable that few of them are true farms<sup>6</sup>). Throughout this area farms of different sizes are found side by side, so that it is possible to speak only of regional tendencies towards the predominance of a particular size of farm. For this reason it is in some ways easier to appreciate the regional differences in farm size from the statistical map in Figure 3, although the location of the data is very imprecise, than from the chorochromatic maps in which the actual location of the farm territory is shown. Both kinds of maps make it clear that most land is in farms of over 100 acres;

<sup>6</sup>) All Ministry of Agriculture data relate to agricultural holdings, i. e. parcels of agricultural land of more than one acre. The term "farm" is used in a general sense to mean the land occupied by a farmer, one whose chief source of livelihood is agriculture. Since most of the larger holdings are also farms, the term farm has been used throughout this paper. For a general discussion see Farm Survey of England and Wales, *op. cit.*, 6—14.

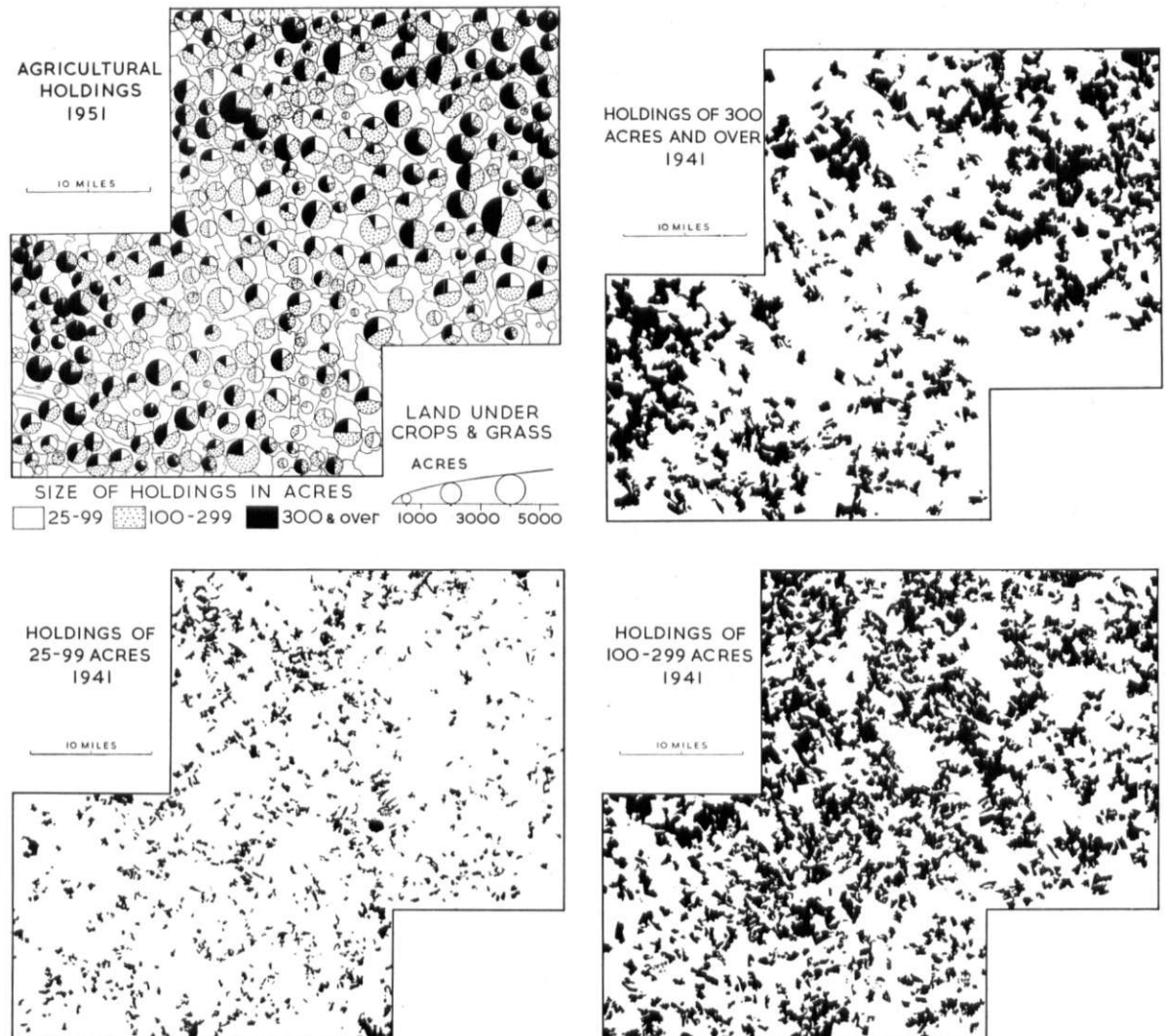


Figure 3: Farm Size

(Source: unpublished parish statistics and Farm Survey maps)

only exceptionally is more than a quarter of farm land in smaller farms, though they are numerous everywhere. Large farms are particularly common in the arable areas of the Icknield Belt and the eastern Chilterns. In the former area most of the land is in farms of 500 acres and over, and there is at least one farm of more than 2000 acres (800 Ha.). Over most of the central and western Chilterns and in the clay vales, much agricultural land is in medium-sized farms; small farms are important only in parts of the vales and in the market gardening areas, particularly those of mid-Bedfordshire and West Middlesex.

The reasons for this pattern are complex. Thus the farms of the arable areas are large partly because mechanised corn-growing increasingly fa-

vours large units; but they have also tended to remain arable throughout the changes in British agriculture since 1870 partly because they are large. The scattered large holdings elsewhere, particularly in the vales, owe little to the type of farming practised; they are normally the home or manor farms of large agricultural estates. Medium-sized farms are more characteristic of the stock-farming and dairying areas; for while these activities do not necessarily imply medium-sized farms, they are suited to such farms, since their labour and capital requirements are smaller than those of arable farming. Moreover, there is less incentive towards the amalgamation of stock and dairy farms. Small farms are characteristic of market gardening, in which a small but intensi-

vely-worked acreage can provide a livelihood; of county council small-holding estates, which are most common in the vales; and of the outskirts of urban areas, where part-time and hobby farming is common.

#### *Farm Layout*

Farms vary not only in size but also in shape, in the layout of their territory on the ground, and in the nature and disposition of their component fields and buildings. Three aspects of farm layout are investigated here; the location of farmsteads, the shape of farm territory, and the size and shape of the component fields.

#### *Farmsteads*

Of all these features, the location of farmsteads is least dependent on the physique of the area and on the type of farming; it is mainly determined by the agricultural history, to which the other features also owe many of their characteristics. The most important reason for differences in the layout of farms throughout this area is the incidence of Parliamentary enclosure<sup>7</sup>). The farms of the Chilterns and much of the area to the south of the Chilterns were enclosed, if they were ever open field, at an early date, so that farms have been developing continuously for a long time, while their origins are often obscure; the vales to the north were the scene of widespread Parliamentary enclosure in the late 18th and early 19th centuries, so that many farms have a known beginning, were laid out in roughly the territory which they now occupy, and have had a comparatively short period in which to develop different characteristics. Many of the observable differences in the agricultural landscape are the product of this fundamental difference, to which Figure 4 gives cartographic expression. The proportion of land in each parish which was enclosed under Parliamentary act has been calculated from the data given in Tate's handlists of enclosure acts, from the figures given in the awards, or, where no figure is given, from the totals of the individual allotments<sup>8</sup>). No distinction has been made between the enclosure of waste and the en-

closure of open-field arable, since the morphological effects are fairly similar and the area of waste enclosed is comparatively small. The map shows that approximately half the land in the vales was enclosed by Parliamentary act, though there is considerable variation from parish to parish, some having been enclosed earlier or by private agreement during the period of Parliamentary enclosure. In the Chilterns there was little Parliamentary enclosure; such as there was concerned mainly the enclosure of heath rather than of open-field arable. South of the Chilterns enclosure was again largely of heath; but the proportion of the area enclosed, though larger than in the Chilterns, was generally much lower than in the vales.

The most obvious expression of this difference in agricultural history is in the location of farmsteads. In the areas of early enclosure farmsteads are normally isolated from other settlements and lie within the farm territory; such farms are sometimes referred to as lodge or court farms, as distinct from village farms, in which the farmsteads lie in nucleated settlements and may even be separated from the farm territory (Fig. 7). To a certain extent this distinction is an arbitrary one, since some farms lie on the outskirts of settlements. Moreover, the settlement pattern itself shows a steady gradation from truly dispersed dwellings, through hamlets and small villages, to large nucleated villages. Nevertheless, the distinction is a valid one and there is a marked contrast between the Chilterns and the areas to the south on the one hand, and the vales to the north on the other. Village farms are numerous in the vales and few in the Chilterns. Moreover, many of the village farms shown in the Chilterns are not true village farms, but isolated farms which have been engulfed by the subsequent growth of a village or hamlet. In the eastern Chilterns the distinction is less clear, because there is a tendency for several farmsteads to lie in close proximity in loosely grouped hamlets. In the vales the village farms are found chiefly in the larger villages; they also tend to be associated with the smaller farms, for large farms, even in the vales, usually have isolated farmsteads. Some of the smaller villages in parishes where there are only two or three large farms provide exceptions to this statement, since the farmsteads may lie in the village and even comprise the bulk of the settlement. The pattern on the Icknield Belt is more varied; in Buckinghamshire, where it is very narrow, many of the farms are village farms, but in south Oxfordshire where it is wide, lodge farms are common except where villages are small, and in Hertfordshire, where much of this land was never

<sup>7</sup>) Enclosure either by private act or under the general acts from 1801. See G. SLATER, *The English Peasantry and the Enclosure of the Common Fields*, London, 1907.

<sup>8</sup>) W. E. TATE, *A Hand-list of Buckinghamshire Enclosure Acts and Awards*, Aylesbury, 1946. Handlists for Berkshire are published in *Berkshire Archaeological Journal*, XLVII, 1943, 56—90; for Hertfordshire, in *Trans. East Herts. Archaeol. Soc.*, 1947, 18—31; for Middlesex, *Trans. London and Middlesex Archaeol. Soc.*, N. S., IX, Pt.iii, 1947, 268—82. For Oxfordshire, see H. L. GRAY, *English Field Systems*, Cambridge (Mass), 1915, 536—542. The data for Bedfordshire have kindly been supplied by the staff of the Bedfordshire County Record Office.

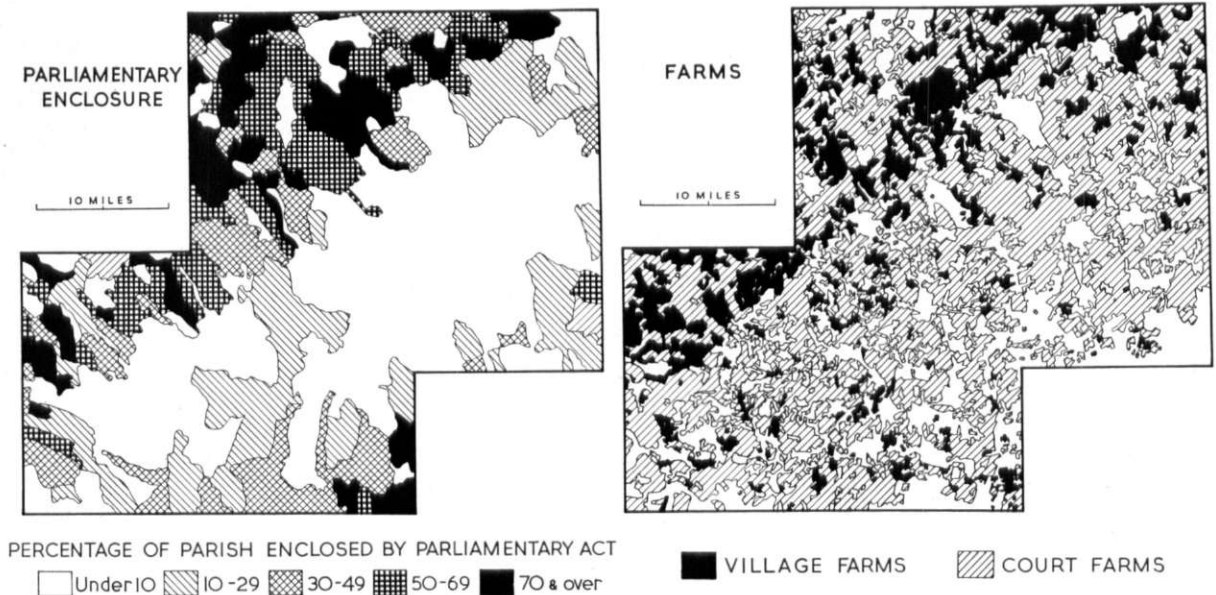


Figure 4: Enclosure and Farmsteads

(Source: Enclosure Acts and Awards and Farm Survey maps)

technically enclosed, village farms are more typical. South of the Chilterns farmsteads are chiefly isolated, though expansion of non-agricultural settlements has produced here, as in the Chilterns, some pseudo-village farms.

#### Farm Shape

Unlike the regular-shaped farms of the New World, English farms have characteristically very varied and irregular shapes, and, as with farm size, farms of different shapes lie intermixed in all areas. Because of this variety and irregularity any rigid classification of farm shape is self-defeating, though conversely, classifications which are too flexible are capable of embracing all the variety of farm shapes in one category of „irregular“. The Farm Survey classified farm layout (which includes more than shape) on the basis of efficiency, using three categories of good, fair and bad<sup>9)</sup>. Such a classification is highly subjective and a simple classification of shape is adopted here. Three classes are recognised, „long“ farms, having a long axis at least twice the short axis, „square“ farms, in which the two axes are nearly equal, and irregular farms, which do not easily fall into either of the preceding categories (Fig. 5).

Long farms appear to show no clearly marked regional grouping. This is surprising in view of the physical character of the area, since elsewhere in England farms in scarpland country often have

an elongated shape similar to that of the parishes in which they lie, embracing a variety of terrain. In part this lack of regional grouping is only apparent; many of the farms in the western Chilterns are elongated, with their long axes running either up and down the steep slopes or along the valley bottoms, but the high proportion of non-agricultural land tends to obscure their relative abundance. Nevertheless, the distribution of long farms is anomalous in that they are not common along the escarpment, where they might be expected, and are numerous in the vales where the land is gently undulating and there is no strong physical incentive towards the adoption of such an inconvenient shape. The infrequency of long farms on the escarpment may be due partly to the great width of the Icknield Belt in south Oxfordshire and north Hertfordshire, which does not favour such a layout, partly to the heavily wooded character of much of the escarpment, and partly to the fact that both the Icknield Belt and the Chilterns have long been arable areas and so had little to offer each other. The prevalence of long farms in the vales has an historical rather than a physical basis. The concentration of many farmsteads in the villages means that farms tend to be laid out in narrow strips radiating outwards from the village.

Square farms are less common than long farms and are found chiefly on the flatter terrain of the eastern Chilterns. But few are strictly square and the recognition of square farms is more arbitrary than that of long. Only in the western Chilterns

<sup>9)</sup> Farm Survey, op. cit., 35—39.

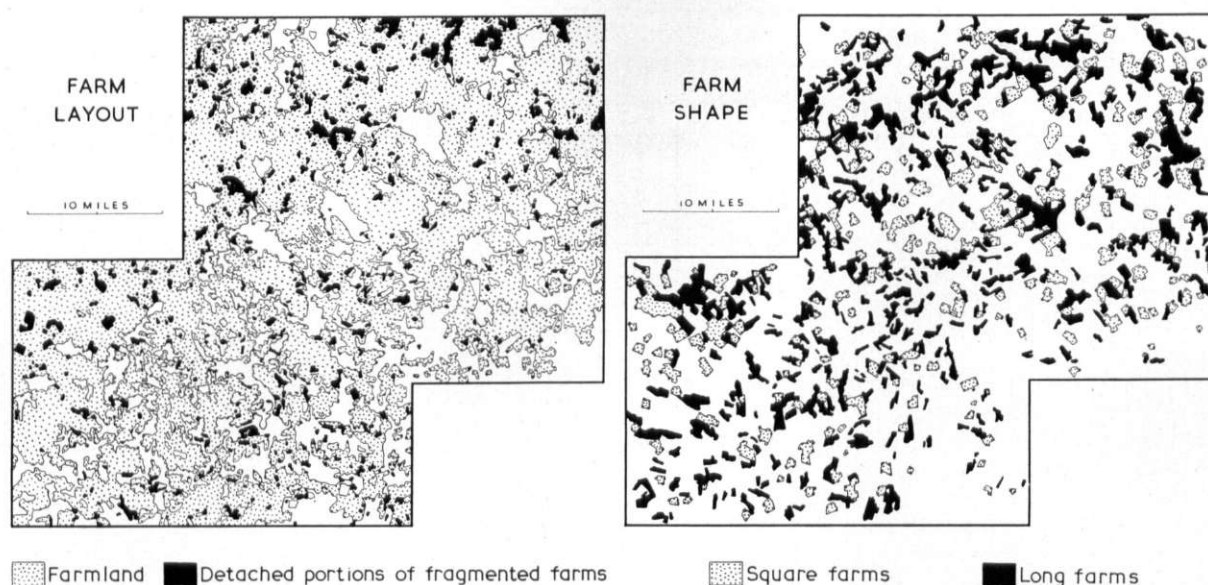


Figure 5: Farm Layout and Shape  
(Source: Farm Survey maps)

does the terrain and the presence of other kinds of land use place any serious obstacle in the way of such regular farm layout; but the evolution of the farming pattern and the process of farm enlargement have made such shapes relatively rare. Irregular farms are widespread, but are most common where much land is devoted to other kinds of land use.

No account has been taken in the preceding analysis of detached portions of farm territory (Fig. 5 a). While the majority of this area lies in ring-fence farms, i. e. farms whose territory is enclosed within a single boundary, many farms have outlying fields or groups of fields<sup>10</sup>). These detached portions (a major cause of bad farm layout) range in size from a single field to a group of fields larger than that surrounding the farmstead, and are separated from their parent holding either by non-agricultural land or by the territories of other farms. In the western Chilterns, where woodland is widespread, blocks of woodland often break up the farm territory; but such farms differ from other fragmented farms in

<sup>10</sup>) According to the National Farm Survey (op. cit., 37—8) nearly one quarter of holdings are fragmented, the proportion being higher among large farms than among small. The number of detached portions is underestimated on the map partly because small fragments have to be disregarded owing to the scale of the map, and partly because noncontiguous holdings which are amalgamated and run as one farm often continue to be returned as separate holdings, despite official instructions to the contrary. For a good example of a fragmented farm in this area, see STAMP, op. cit., Fig. 187.

that all parts of the farm are normally readily accessible from the farmstead, and they are accordingly excluded from this discussion. On the fringes of towns fragmentation has been caused by urban expansion, but elsewhere it is a product of the evolution of the farm pattern. The detached portions only have been shown because many farms have only one or two outlying fields and a misleading impression of the regional importance of fragmentation would be given if all the territory of such farms was shown. It is clear from Figure 5 that fragmentation is characteristic of the clay vales. This distribution is largely the result of the historic differences in farm evolution which have already been noted, for the concentration of many farmsteads in large villages has frequently resulted in the separation of the main body of the farm from the few fields surrounding the farmstead. The allotment of several separate blocks of land to individual owners on enclosure may also contribute to this fragmentation, and it has been accentuated by the tendency for these predominantly small farms to change size by the piecemeal acquisition or loss of single fields. Many of these fragmented farms in the vales thus consist of several detached portions and a village farmstead to which few if any of the fields are attached<sup>11</sup>).

<sup>11</sup>) The highest number of detached portions recorded in a sample survey of one of the counties in which the Chilterns lie was 7. T. W. GARDNER, *The Farms and Estates of Oxfordshire*, University of Reading, Dept. of Agricultural Economics, Miscellaneous Studies No. 5.



Table II

Percentage of Fields over 2 acres in different size groups (sample areas):

Size Groups (acres)	By number							By area						
	3-5	6-10	11-15	16-20	21-25	26-30	over 30	3-5	6-10	11-15	16-20	21-25	26-30	over 30
Eastern Chilterns	30	24	15	12	6	5	8	6	15	18	12	9	10	30
Western Chilterns	28	29	18	8	5	5	8	8	7	7	11	8	9	30
Vale of Aylesbury	28	32	19	10	5	2	3	10	23	23	17	10	4	13
South Hertfordshire	36	46	14	3	1	-	-	19	47	22	7	3	1	1
Icknield Belt	23	21	4	11	6	2	33	3	6	2	7	5	3	74

(Source: O. S. 25" Plans).

### Fields

The most obvious features of the farm layout, and those most susceptible to direct observation, are the fields and their bounding hedges, fences and banks. As with farm territory as a whole, field sizes and shapes vary widely, and in any area fields of many different sizes are found. Everywhere fields tend to be relatively small around farmsteads and larger away from the farm buildings, and since there are more than 100,000 fields in this area, it is obvious that many exceptions will be found to any generalisations that are made. Moreover, there are no convenient statistical data which can be used to analyse regional differences in field size, so that it is necessary to rely on sample studies and impression<sup>12)</sup>.

Although the pattern of fields is very complex, certain general statements can be made about the distribution of different sizes of field (Table II). Fields in the Chilterns vary greatly in size, with fields over 15 acres (6 Ha.) occupying the greater part of the farm territory; fields in the eastern Chilterns tend to be larger than those in the west. Fields in the vales are smaller and more uniform in size, the majority of the area being in fields of about 10 acres (4 Ha.). In the Icknield Belt, fields, if indeed they can be so called, are very large, some extending over several hundred acres (though these are generally subdivided for cropping). South of the Chilterns the pattern is very variable, but on the London Clay fields are very small, being mostly under 10 acres.

The distribution of different sizes of fields is thus broadly similar to that of farms, for there is a very loose association between the two, large farms tending to have large fields and small farms small fields. This association is related to type of farming, for fields in arable areas are generally larger than those in livestock farming areas. But the relationship between field and farm size is far from being a simple one, for it is

affected both by land use in the past and by the evolution of the farm pattern. In the Chilterns, where arable farming was once predominant everywhere, fields tend to be large even though cattle keeping is now widespread; they tend to be irregular in size because this was an area of early enclosure. In the traditional livestock areas of the vales fields are mainly of medium size and are much more uniform. In the Icknield Belt, the absence of stock and the late enclosure reinforce the influence of large farms and arable husbandry. The small fields on the London Clay are more difficult to explain. It is likely that the distinctive hay farming, in which few livestock were kept, tended to preserve the small fields which were probably once more widespread everywhere, while the almost complete absence of arable farming before 1939 has deprived the area of any strong incentive to enlarge fields.

Associated with these differences in field size are differences in field shape and in the nature of the field boundaries (Fig. 6)<sup>13)</sup>. In the Chilterns fields are characteristically irregular and are bounded by sinuous hedges or by woodland. In the vales, many boundaries are rectilinear and are composed of hedges, often on low banks with parallel drainage ditches. On the Icknield Belt, fields tend to be rectilinear, and both straight and sinuous boundaries are found; but hedges are rare, fields usually being bounded by low banks, so that the landscape is open and quite unlike the typical bocage of most of the English countryside. South of the Chilterns, fields are fairly regular in shape, though their boundaries are not usually straight, and the hedges contain numerous trees. In all areas barbed wire fencing has been used to supplement the hedges which were often neglected during the years of agricultural depression between 1880 and 1939.

Field shape and field boundaries are likewise associated with the agricultural history and physique of the area. Where fields are the product of Parliamentary enclosure and were laid out at

<sup>12)</sup> The most convenient source of data is the 25" plans of the Ordnance Survey, on which the size of each parcel of land is recorded.

<sup>13)</sup> A field boundary survey was carried out by students of the Department of Geography, University College London in 1951.

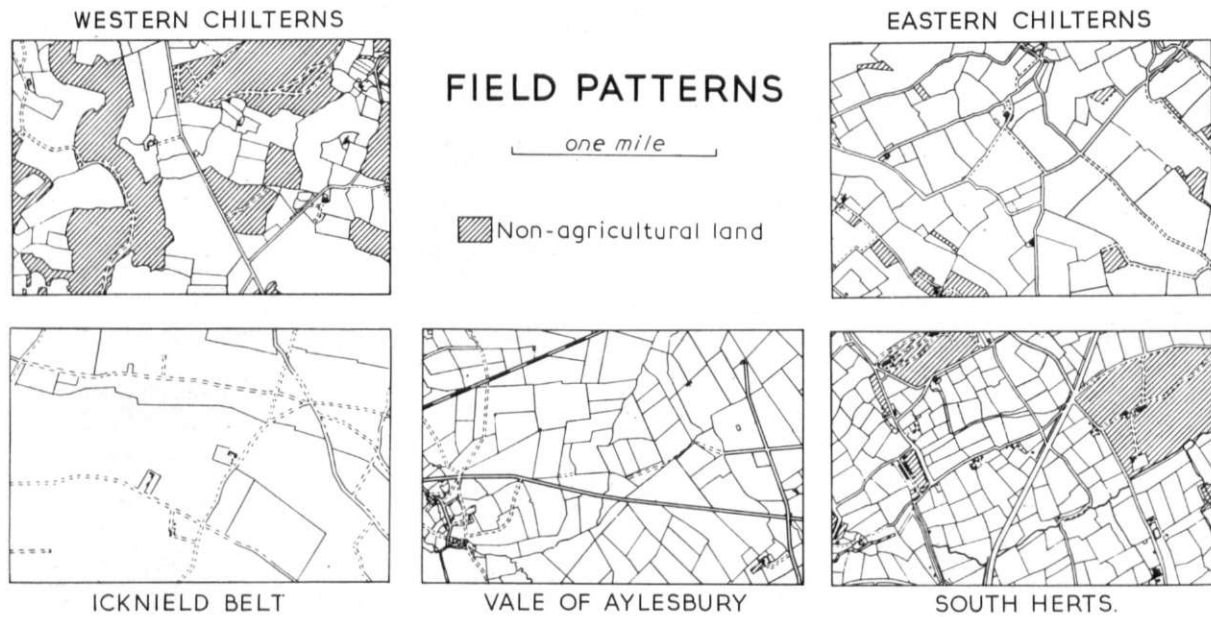


Figure 6: Field Pattern in Sample Areas  
(Source: 1951 Land Use Survey, University College London)

some time after the enclosure award, they tend to be regular in shape and to have straight boundaries, whereas those in areas where enclosure took place early or where fields were formed directly from the waste tend to be irregular in shape (Fig. 6). On the Icknield Belt late (or no) enclosure preserved the open landscape until there was no incentive or need to hedge it. The hedgerow is the predominant type of field boundary everywhere, fences being largely confined to the vicinity of parkland. The clay areas which tend to be both low-lying and ill-drained, show an abundance of drainage ditches (and associated banks), which the relatively well-drained loams and clay-with-flint soils make unnecessary elsewhere.

#### Regional Pattern

From this survey it is possible to construct a composite picture of the agricultural landscape in different parts of this area. Figure 7 shows in detail the layout of two sample farms, one a lodge farm in the western Chilterns, the other a village farm in the clay vales. The farms show many of the characteristic features of the two principal areas discussed; but they give an illusory impression of simplicity. For this reason they are supported by sample areas covering a large number of farms in less detail (Fig. 8). These illustrate the irregularity of pattern and the intermixture of types and sizes which is a feature of all areas; but they also show that there are clear regional differences. In the western Chilterns farms are of

medium size, the farmsteads are isolated, the pattern of farm layout is very irregular, and the farmland is much broken up by woodland. The eastern Chilterns have many of these characteristics, but the farms and fields are larger and the amount of non-agricultural land is smaller. There is little non-agricultural land in the vales and farm layout is often more regular. In the larger villages there is a tendency towards small farms with the farmsteads in the village, surrounded by large farms with isolated farmsteads; but where villages are small they often contain a cluster of two or three large farmsteads. In the Icknield Belt farms and fields are very large, and both lodge and village farms occur. South of the Chilterns the pattern is varied, but farms are generally of medium size, with dispersed farmsteads and small fields.

#### Recent Changes

Since the importance of the origin of these features has been stressed, it is natural to enquire how persistent they are. It is not easy to provide an answer, partly because both farms and fields are so numerous that there are inevitably exceptions to any statements made, but largely because no continuous or unambiguous data exist from which studies of such changes may be made. It has been necessary, therefore, to base these remarks on the study of sample areas.

There are good grounds for assuming that once structures such as field boundaries and farm build-

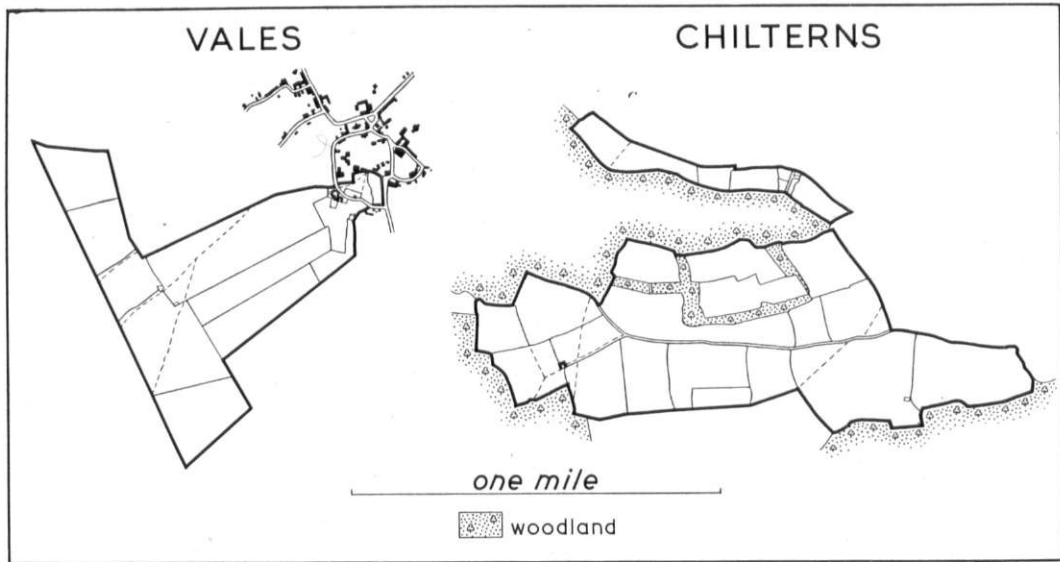


Figure 7: Specimen Farms  
(Source: private enquiry)



Figure 8: Farm Pattern in Sample Areas  
(Source: Farm Survey maps)

ings have been created they tend to persist even when the conditions which called them into being have changed, unless there is a strong incentive to remove them. The presence of farmsteads adapted for a particular size of farm, the existence of large agricultural estates which tend to preserve the farm units into which they are divided, and the fact that expansion of some farms is only possible at the expense of others similarly restrict changes in farm size. But the fact that farm boundaries are not marked by any physical structure (other than the boundaries of their component fields) makes changes in farm size (and consequently in farm layout) much easier, and it is known that such changes are frequent, both through the amalgamation and subdivision of farms, and through the addition and loss of individual fields.

Sample studies show that in detail changes are very complex. This complexity is well illustrated by the comparison of farm layout in three adjacent Bedfordshire parishes in the 1840s and in 1941; in one parish farms have become larger, in the next they are virtually unchanged, while in the third they have decreased as the result of the creation of country council smallholdings (Fig. 9). Despite such great local differences, the general conclusion from the study of a number of such areas is that there has been a widespread increase in the size of farms, and that this is by far the most important change which has occurred. The view that farms have increased in size is support-

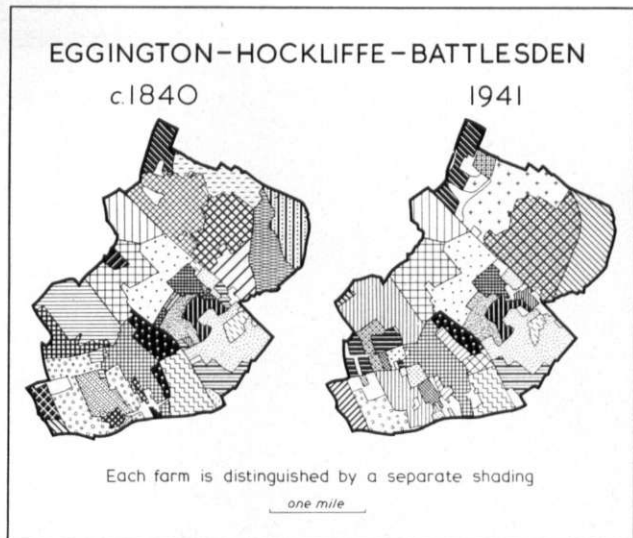


Figure 9: Changes in Farm Pattern in Three Parishes (Source: Tithe Award and Map and Farm Survey maps)

ed by the number of farms on which there are two or more farmsteads; for though farm buildings tend to persist, they often change their function. Many of these former farmsteads now house foremen or other employees or have been let off as residences. The existence of farmsteads is thus no longer a certain indication of the presence of a farm, and on some farms the farmstead may not even be that named on the Ordnance Survey map.

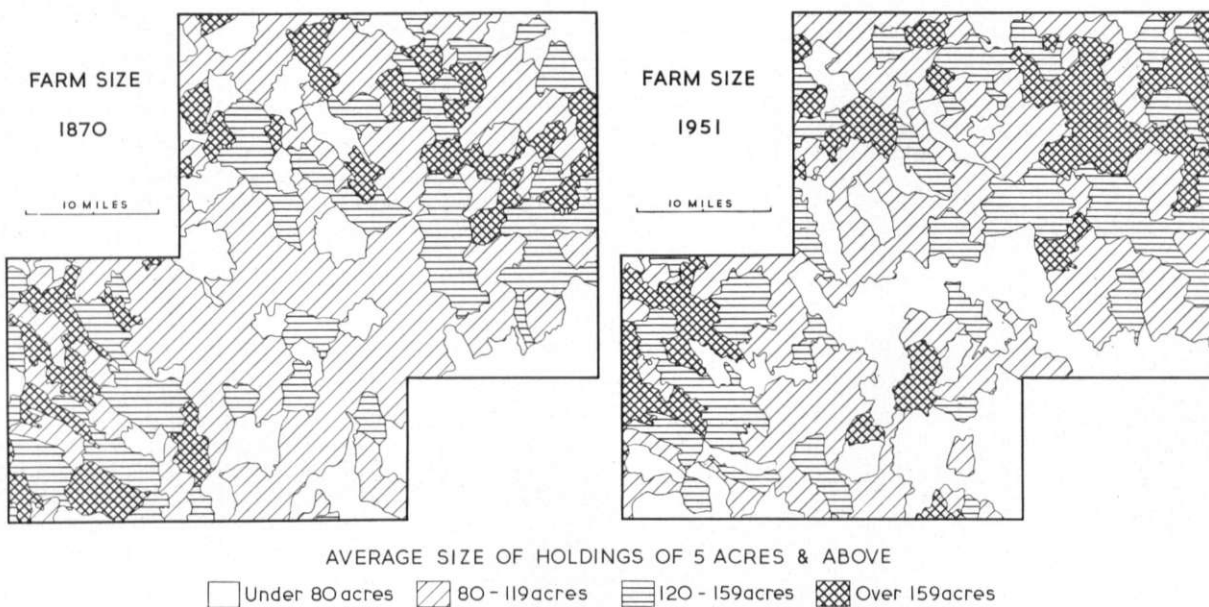


Figure 10: Changes in Field Pattern in Two Parishes

(Source: 1st Edition 6" Map, Ordnance Survey, and Land Use Survey, University College London)

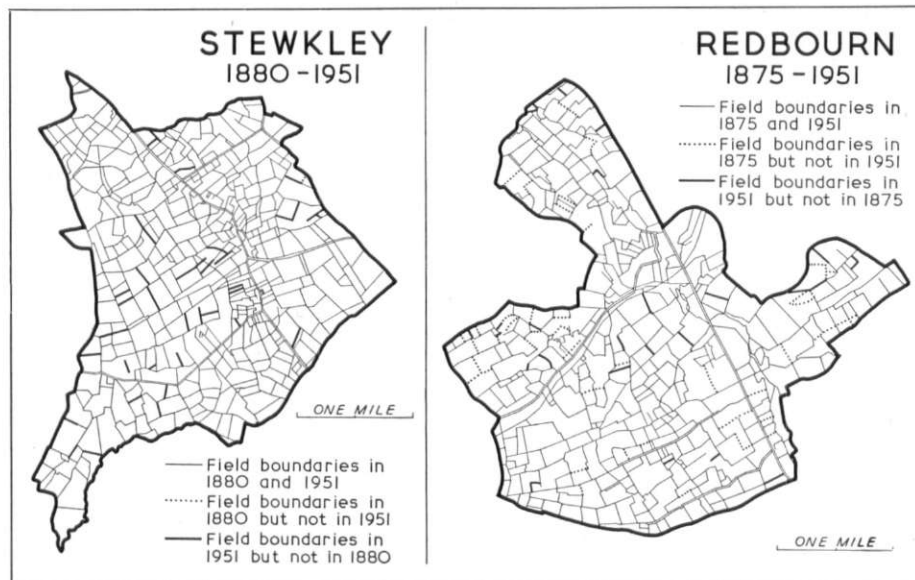


Figure 11: Average Farm Size in 1870 and 1951  
(Source: unpublished parish agricultural statistics)

There is also a tendency for fields to become larger under the stimulus of profitable mechanised arable farming, particularly in those areas, such as south Hertfordshire, where they were formerly very small. But this trend is by no means so clearly marked; most fields are unchanged, while in some areas there is evidence of a contrary movement, the larger fields of poor arable areas being subdivided by post and wire fences as livestock farming, and particularly dairying, has been adopted, while in the former grass areas fields have been enlarged as more land has been brought under the plough. Figure 10 shows these contrary trends in two sample parishes, Stewkley in the clay vales and Redbourn in the Chilterns, but emphasises chiefly the stability of the great majority of fields.

Although changes in farms and fields have undoubtedly taken place over the past hundred years, they have for the most part been widespread, so that regional differences have not been greatly modified. Thus the map of average farm size in 1870 shows a substantially similar distribution of large and small farms to the map for 1951 (Fig. 11)<sup>14</sup>. Although agricultural land use has changed markedly over this period, an analysis of the pattern of farms and fields of one hundred years ago would probably show that it did not differ in any fundamental respect from that of today. The features discussed in this paper are thus relatively persistent features of the landscape.

<sup>14</sup> Average farm size is not a very satisfactory concept; but it provides the only possible example for the whole of the area.

## BERICHTE UND KLEINE MITTEILUNGEN

### GEORGE PERKINS MARSH UND SEINE ERSTE DARSTELLUNG DER FOLGEN DES MENSCHLICHEN WIRKENS AUF DER ERDOBERFLÄCHE <sup>1)</sup>

FRANZ TICHY

DAVID LOWENTHAL, Research Associate und Sachbearbeiter für Kulturgeographie bei der American

<sup>1)</sup> Nach DAVID LOWENTHAL: George Perkins Marsh. Versatile Vermonter. Columbia Univ. Press, New York 1958, 442 S.

Geographical Society, hat in langjähriger Arbeit <sup>2)</sup> einem vielseitig gebildeten aus Vermont stammenden Gelehrten des 19. Jahrhunderts eine Biographie gewidmet, der für das Forstwesen, die Conservation-Bewegung, den Naturschutz und nicht zuletzt für die Geographie nicht nur der Vereinigten Staaten von

<sup>2)</sup> Schon 1952 hat LOWENTHAL auf dem Intern. Geogr. Kongress in Washington einen ersten Bericht über seine Forschungen gegeben. Vgl. seinen Aufsatz „George Perkins Marsh and the American geographical Tradition“ in The Geogr. Review 43, 207–312 (1953).