RIDGE-AND-FURROW IN KENT

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Ridge-and-furrow is a landscape feature which continues to claim popular interest, especially among local historians. It attracts most interest where it is most apparent. It is arguably no less significant where it is least evident, since the reasons for its absence in one place may help to explain its presence elsewhere. The total distribution of this relict feature of the British landscape is unknown. Interest in it was generated in Britain in the immediate post-war years by M. W. Beresford[1] and Eric Kerridge.[2] In brief, Beresford is the protagonist of the school of thought which identifies ridge-and-furrow with the open field system and equates the pattern of ridges with that of former strips and furlongs. Kerridge considers the feature to be essentially the product of ploughing for drainage purposes. Debate about the origins of ridge-and-furrow usually leads to the conclusion that there is no single explanation. The only constant in the equation is that it is the product of the plough; but, since the plough is a variable in its own right, it also enters the area of debate.

The first extended map of ridge-and-furrow was initiated in the late 1940s.[3] It covered the county of Buckinghamshire, a territory which spans a variety of geological formations and soil types. It was predictable that a major contrast would be evident between the occurrence of the feature on the chalk lands in the south and the clay lands of the north. The survey enabled this to be expressed quantitatively for the first time. It also revealed the nearly complete absence of ridge-and-furrow on the Clay-with-flints.

The survey has been slowly extended to other counties. A four-county map – Buckinghamshire, Bedfordshire, Oxfordshire and Warwickshire – was published in the *Geographical Journal* in 1965.[4] The map of Warwickshire sprang from a more fundamental study of the feature by D. J. Pannett. Maps showing the distribution of ridge-and-furrow in Leicestershire, Northamptonshire and Cambridgeshire have been completed, but remain unpublished. As might be expected, the feature

[1] 'Ridge-and-furrow and the Open-fields', *Econ. Hist. Rev.*, 2nd series, i (1948), 34–5.
[2] 'Ridge-and-Furrow and agrarian History', *Econ. Hist. Rev.*, 4 (1951), 14–36.
[3] W. R. Mead, 'Ridge-and-furrow in Buckinghamshire', *Geog. Journ.*, cxx (1954), 34–42.
[4] M. J. Harrison, W. R. Mead and D. J. Pannett, 'A Midland Ridge-and-furrow Map', *Geog. Journ.*, cxxxi (1965), 365–9.

reaches a climax of occurrence in Leicestershire and Northamptonshire; it is absent from the peat lands of Cambridgeshire.

The extension of the exercise to Kent carries the enquiry into an area which has features that distinguish it from other counties investigated. Kent has a greater range of soil and rock types than any other county mapped. It has always supported a greater variety of farming systems than most counties. The field systems of Kent have different origins from those of the Midlands. The ploughs used in Kent – and to a certain extent the ploughing patterns – were often distinctive. Turn-wrest – or one-way – ploughs were used almost everywhere until the First World War. It has been argued that it would be difficult to throw land into ridge-and-furrow with a turn-wrest plough.

The ridge-and-furrow map of Kent, reproduced in Fig. 1, has been compiled in the same way as those for the other counties. It is based upon the 1:10,000 scale vertical air photographs taken by the R.A.F. between 1946–63. The patterns of ridge-and-furrow detectable on them have been transferred to 1:25,000 Ordnance Survey maps. The result confirms the general field observation that ridge-and-furrow has a meagre occurrence in Kent; but it illustrates for the first time the maximum detectable extent of it. Very little ridge-and-furrow revealed by the air photographs has topographic expression on the landscape today. There is a certain amount in parkland and in paddocks, which have been long under permanent grass. No doubt much ridge-and-furrow was destroyed by the ploughing campaigns of the two world wars. By the end of the Second World War, for example, the arable acreage of Kent had risen very close to its peak of the early 1870s.[5]

The distribution of ridge-and-furrow coincides principally with the heavy soil area of the Wealden clays. It is most evident in the triangle of land between the towns of Ashford, Tonbridge and Maidstone. Outside the Weald, over 80 per cent of the fields bearing the imprint of ridge-and-furrow are located on spreads of similarly heavy clay soil.

In form, all Kentish ridge-and-furrow is more or less straight and is contained within the field boundaries as they are outlined on the present-day map. The aratral curves that are such distinguishing features of Midland England are completely absent. Because of the historical origins of the field systems and agrarian practices of Kent, it is unlikely that ridge-and-furrow in Kent represents the fossilization of blocks of co-operatively ploughed, medieval strip holdings as it does over much of Midland England.[6] A. R. H. Baker has shown that the open fields of

[5] G. H. Garrad, *A Survey of the Agriculture of Kent*, London, 1954, 227.

[6] W. G. Hoskins, *Studies in Leicestershire's agricultural History*, Leicester, 1949, 95–8. J. C. Jackson, 'The Ridge-and-furrow Controversy', *Amateur Historian*, v (1961), 23–28, A. R. H. Baker and R. A. Butlin, 'The Evidence of Ridge-and-furrow', in A. R. H. Baker and R. A. Butlin, *Studies of Field Systems in the British Isles*, Cambridge, 1973, 34–5.

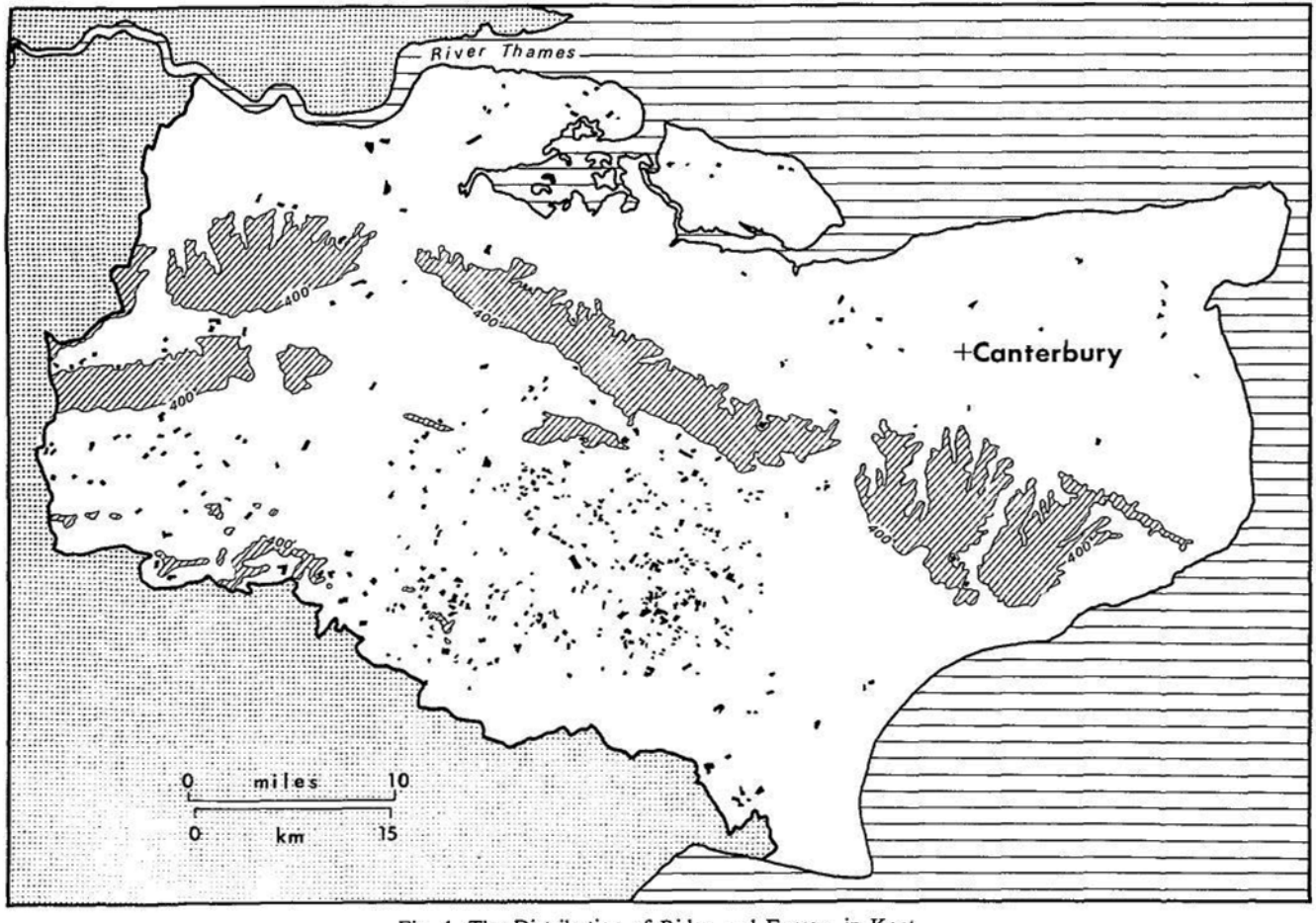

Fig. 1. The Distribution of Ridge and Furrow in Kent.

seventeenth- and eighteenth-century Kentish estate maps were far removed in origin and function from the common fields of Midland parlance. The existence of coaration can be substantiated, but where agricultural co-operation was practised in medieval Kent it did not of necessity include the cultivation and grazing of arable fields in common. Usually, it involved only a few tenants and not the entire community of a township as was common in the Midlands.[7] In fact, the patterns of subdivided fields and ridge-and-furrow show no positive correlation, but rather they are mirror images of each other. Most subdivided arable fields in Kent were to be found on the fertile, lighter soils of north and east Kent, few were located on the clays of the Weald, the Blean or the Clay-with-flints country. It would seem that the thickly wooded, heavy soil areas where remains of ridge-and-furrow are concentrated today were enclosed directly from the waste and were rarely subdivided into unenclosed parcels.[8]

It is also argued that, owing to the nature of Kentish turn-wrest ploughs, it would have been difficult to produce ridge-and-furrow in Kent.[9] Fitzherbert drew attention to the peculiarity of these implements in 1523 when he wrote, 'In Kente they have other maner of plouves, and some wyll tourne the shellbredth at every landes ende, and plouve all one waye.'[10] The turn-wrest plough, described by William Marshall as more akin to, 'a carriage rather than a *plow*', was almost the only type known in Kent for about 400 years.[11] A comparison of ploughing with fixed mould-board and turn-wrest ploughs is illustrated in Fig. 2. M. Nightingale, presumably without examining air photographic evidence, concludes that, 'The use of a one-way plough has prevented ridge-and-furrow from making its appearance'.[12] Certainly, ridge-and-furrow is not an inevitable consequence when ploughing with a turn-wrest as it is when working in lands with a fixed mould-board implement, but its conscious construction is not precluded.

[7] A. R. H. Baker, 'Some Fields and Farms in medieval Kent', *Arch. Cant.*, lxxx (1965), 152–74; A. R. H. Baker, 'Field Systems of south-east England', in Baker and Butlin, *op. cit.*, 377–429.

[8] A. R. H. Baker, 'Field Patterns in seventeenth Century Kent', *Geography*, lix (1965), 18–30; D. Roden and A. R. H. Baker 'Field Systems of the Chiltern Hills and Parts of Kent from the late thirteenth to the early seventeenth Century', *Trans. Inst. of Br. Geogs.*, xxxiii (1966), 73–88; J. L. M. Gulley, *The Wealden Landscape in the early seventeenth Century and its antecedents*, unpublished University of London Ph.D. thesis, (1960), 354–5, 364–5.

[9] R. Arnold, *A Yeoman of Kent*, London, 1949, 84–5; M. Nightingale, 'Ploughing and Field Shape', *Antiquity*, xxvii (1953), 20–6.

[10] J. Fitzherbert, *Husbandry* (1523), paragraph 2.

[11] W. Marshall, *The rural Economy of the southern Counties*, i, 1798, 69–70, cf. also J. Boys, *A general View of the Agriculture of Kent*, 1796, 45–9; G. H. Garrad *op. cit.*, 123–5; C. W. Chalklin, *Seventeenth Century Kent. A social and economic History*, London, 1965, 107–8.

[12] M. Nightingale, *Some Evidence of open Field Agriculture in Kent*, unpublished University of Oxford B. Litt. thesis, 1952, 43.

The distribution of ridge-and-furrow in Kent shows a strong positive correlation with heavy soils and suggests that far from being an inevitable result of ploughing, the creation of ridge-and-furrow might have been a planned attempt to rid soils of excess moisture in the years before tile drains were widely available. This is an hypothesis, which receives considerable support from the publications of late-eighteenth and early-nineteenth century agricultural commentators. John Boys, of Betteshanger in Kent, wrote in his 1796 *Report to the Board of Agriculture* that upland clays were drained by 'laying the land in ridges, and leading the water, by means of furrows, into narrow channels made with the spade, and thence by a general conductor to the streams'.[13] He considered the flattish ridges made on clayland in Kent by the turn-wrest plough very much superior to the high, round ridges of other counties produced by fixed mould-board ploughs. In particular, he thought that crops grown on flat ridges were not so starved of moisture in dry summers as those growing on high-backs.[14] But ridging-and-furrowing of upland clays to improve drainage was not a universal practice at the end of the eighteenth century in Kent. When Arthur Young visited the Wealden parish of Ulcombe in 1784 he was, 'perfectly petrified at finding every field ploughed as flat as if the soil was blowing sand; they use the turn-wrest plough, and consequently there is not a single furrow in the field'.[15] William Marshall was particularly critical of those who farmed the Clay-with-flints when he commented that, 'What probably adds much to the stubbornness, and gluey texture, of these strong flinty lands, is their being laid flat, with the turn-wrest plough; without ridges to shoot off, or furrows to carry away, the waters which fall on them'.[16] On the other hand, there are frequent references to ridging-and-furrowing on the London and Wealden clays. On the 2nd January, 1822, William Cobbett noted that the furrows of the Bromley clay lands were, 'shining with wet', while George Colgate, of Brockley Green Farm, Lewisham, writing in 1845, described the way in which they were constructed using a patent cutting plough introduced by a Mr. Cook about 1820. 'The ordinary mode of farming,' he said, 'is to lay the ground in ridges, called "half-rod lands", or oftener "five-bout lands", with a round or swing plough.'[17] William Marshall, John Boys and George Buckland all noticed the ridging of land for drainage in various parts of the Weald, while Boys

[13] J. Boys, *op. cit.*, 130–1.
[14] *Idem.*
[15] A. Young, 'A Fortnight's Tour in Kent and Essex', *Annals of Agric.*, ii (1784), 68–9.
[16] W. Marshall, *op. cit.*, ii, 407; Assistant tithe commissioner T. S. Woolley, P.R.O. IR18/3717; G. Colgate in G. Buckland, 'On the Farming of Kent', *Journ. Roy. Agric. Soc. Eng.*, vi (1846), 269.
[17] W. Cobbett, *Rural Rides*, London, 1853 edition, 56; G. Colgate in G. Buckland, *op. cit.*, 266–7.

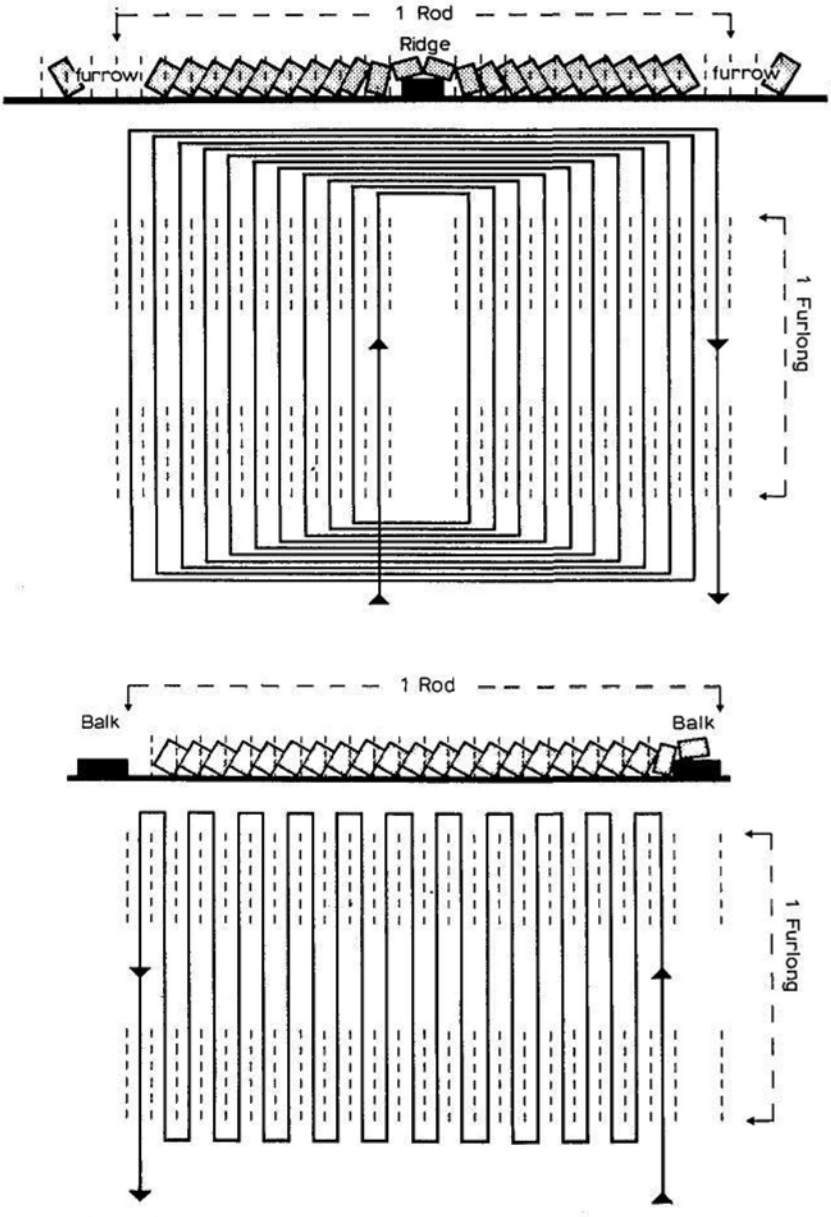

Fig. 2. Ploughing with a fixed Mould-board (top) and a Turn-wrest (bottom). After M. Nightingale, 1953.

refers to it on the London clay of north Kent and in the Isle of Sheppey as well.[18]

There is then, a body of written evidence to suggest that ridge-and-furrow was used as a means of surface drainage in the first part of the nineteenth century, though adoption of the practice was by no means universal. Contrastingly, opinion about the treatment of light soils in Kent was unanimous. Invariably, they were laid plain with a turn-wrest plough, which left the land in the words of John Boys, 'as level as if it were dug with the spade; which is a great advantage in dry soils; for such, admitting a quick filtration of the water, require neither furrows nor ridges'.[19]

In short, the ridge-and-furrow map of Kent and this accompanying note illustrate three points. Firstly, that few fields bear the imprint of ridge-and-furrow and that none is of 'Midland' type. Secondly, that the use of turn-wrest ploughs did not preclude the construction of ridge-and-furrow but enabled the soil to be laid flat with ease where desired. Thirdly, that both the distribution of ridge-and-furrow, revealed by a study of air photographs, and the comments of eighteenth- and nineteenth-century agricultural writers, suggest that in Kent it was a device employed to rid heavy soils of excess moisture. It would be interesting to enquire if there exists any appreciable relationship between under-draining (by mole or tile) and ridge-and-furrow, as has been demonstrated for Berkshire, Buckinghamshire and Oxfordshire by F. H. W. Green.[20] Finally, any study of a relict feature in the English landscape calls increasingly for reference to a broader European context. Ridge-and-furrow is a European landscape feature. Its presence or absence may well be explicable in European rather than English terms.[21]

[18] W. Marshall, *op. cit.*, i, 350; ii, 142; J. Boys, *op. cit.*, 56, 70, 72, 193. G. Buckland, *op. cit.*, 293.
[19] J. Boys, *op. cit.*, 55.
[20] 'Ridge-and-furrow, Mole and Tile', *Geog. Journ.*, 141 (1975), 88–93.
[21] Harrison, Mead and Pannett, *op. cit.*, 368–9.