THE BI-AXIAL LANDSCAPE OF PREHISTORIC BUCKINGHAMSHIRE

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Mr Bull was studying the Ordnance Survey maps of Buckinghamshire with a view to writing a paper about the Midland Open Field system when he noticed that the roads and tracks under study had a preferred orientation. *Overwhelmingly they ran either parallel to the Icknield Way or at right angles to it. He then found that the same phenomenon was apparent over a very wide area – and that it was not true of other orientations. This paper describes his findings, and shows them graphically on Figure 1 (see pocket at back of volume).*

Now at end of this article

This paper sets out to show that the landscape of much of the County of Buckinghamshire is based on a prehistoric bi-axial framework of roads and tracks and that these are still the basic element in today's network. The content is confined to demonstrating the existence of the landscape, justifing its presentation and giving an outline of possible implications. No attempt has been made here to provide definite dating or to discuss the effects on settlement or field systems, although it has major implications for both and is potentially of great historical significance

The evidence is based on existing roads and tracks, a subject which arouses great suspicion among both historians and archaeologists, chiefly because so much suspect material has been published. Christopher Taylor summarises this eloquently in the forward to his book 'Roads and Tracks of Britain'.[1] "The fascination of roads and tracks and the excitement that the process of tracing them onward across country gives, have all too often in the past resulted in complete mental blocks and visual blindness. The same unfortunately exists today. The desire to trace a line of communication, any line, to a significant point, any point, and to clothe it with romantic visions of prehistoric farmers, Roman soldiers or medieval travellers lead to greater and greater flights of fancy and in the end to total nonsense. Nowhere is this better seen than in the work of AlfredWatkins and his book 'The Old Straight Track'. . . Anything remotely involving an established historical fact is ignored. The evidence of scholarly work on historical documents, of scientific archaeological excavation, and worst of all, of plain common sense is completelv rejected unless it fits in with the preconceived line ofargument." This paper does not invite a similar epitaph. The tracks are not notional, but there to be seen on a map.

There are approximately thirty regions or areas within Britain where early 'native' landscapes have been shown to exist. The study of these has lead to the creation of a specialised terminology and although a deliberate effort has been made not to use such words, some are unavoidable and these require explanation: The word commonly adopted to denote a system of features at right angles to one another is 'co-axial' This term is rejected in the present paper, as being at odds with the meaning of 'co-axial' as generally accepted: having a shared axis; for example co-axial cables. Instead the term 'bi-axial' is used, denoting a system with two axes. 'Planned Landscape', indicates a deliberate attempt to parcel-up land in a certain fashion. This is in contrast to a random expansion, which occurs in a more gradual and haphazard fashion. 'Morphological Zone' means an area that is filled with a bi-axial system on the same orientation. 'Horizontal Stratigraphy' refers to the position or direction of various things in relation to each other viewed in a single horizontal plane, as on a map

Figure 1 (see pocket at back) show details of a bi-axial landscape covering most of central and northern Buckinghamshire and the adjoining portions of Oxfordshire, Hertfordshire, Northamptonshire and Bedfordshire. All the lines on the plans show actual roads and tracks: no hypothetical projections have been used.

METHODOLOGY

The method used when constructing the maps has been to select roads and paths that are either parallel or at right angles to the Icknield Way, and which are shown on 6" Ordnance Survey maps.The reasoning behind this choice is given later. When selecting tracks or roads the following criteria were applied:

a) Only roads and paths that are roughly parallel or at right angles to the Icknield Way have been included.

b) Parish boundaries that are linear, that are not based on the course of a brook, and which have the appearance of being part of a former roadway, have been included.

c) Roads and paths known to have modern origins have been excluded although inevitably the plans will contain a small proportion of roads that will prove to be of relatively modern origin. These will not invalidate the overall bi-axial system.

d) Although there is much additional relevant information contained in early maps, for the sake of presenting plans with a data of uniform origin, it has not been included.

e) None of the roads and footpaths used are completely straight. The degree of meander from the stated alignment has been kept to a minimum; however, the inclusion and exclusion of trackways is inevitably subjective to a degree.

f) Known major Roman roads have been included regardless of direction, and they are shown by broken lines; likewise all sections of Grim's Ditch, which are shown hatched.

g) Breaks in tracks have been not been filled in, even though the course is obvious.

FINDINGS

i) The roads/tracks of the area apparently enclose roughly rectangular quadrilateral blocks. These appear to have some uniformity in their size. This is apparent over the whole area, but is exceptionally clear in the Chilterns which has a greater survival of relevant roads and tracks.

ii) There is a parallel network of 'major' long-distance trackways which are approximately just over one mile apart on both axes, and there are a number of lesser parallel tracks in between. Although these lesser trackways are usually only represented by short lengths, the majority are situated halfway between the major roads.

iii) The whole gives the appearance of being another example of a planned landscape, i.e. a landscape that is bi-axial over a large area, that has the appearance of uniformity and that substantially ignores topographical features. That the tracks cross streams without altering alignment is particularly significant, since all of the 'main' medieval roads had their courses determined by the need to use a ford or bridge when crossing a stream. This could indicate that the original system was non-vehicular.

iv) The horizontal stratigraphy of the system is not compatible with most of the Roman roads, and demonstrates fairly conclusively that Roman roads are overlaid or superimposed over an existing road system. It also demonstrates that some 'native' tracks, such as part of Icknield Way were 'Romanized'. (It is of interest that no sign can be seen of any of the minor Roman roads claimed to have been discovered by the Viatores.)[2]

v) The horizontal stratigraphy of the system is only compatible with two sections of Grim's Ditch, and as these are sections that follow the high ground, their alignment may be coincidental. Again, as with the Roman roads, Grim's Ditch appears to have been superimposed over the bi-axial system and the supposition must be that the ditch is a form of boundary marker constructed at a date later than that of the system. The best indication of the age of Grim's ditch is from the A41 Hemel Hempstead By-pass excavation which showed it was not later than early Iron Age.[3]

vi) There are subtle differences in the alignment of the bi-axial network in different areas and it is likely that these represent different morphological zones, but they could be topographical variations within the same overall zone. At the interface of each zone there is usually a junction where the tracks with a different alignment meet, and both tend to overlap into the adjoining zone. The area adjacent to the River Ouse north of Newport Pagnell has smaller and more pronounced zones, probably because here the River and its flood plain have become a large enough barrier to force changes in the 'layout' of the bi-axial system.

VALIDITY

The bi-axial landscape of Bucks was first noted as a system of roads and tracks with a preferred orientation – a preference so marked as visually to swamp all others. This preferred orientaion has axes either parallel or at right angles to the Icknield Way.

It would be easy to 'prove' the existence of any system by omitting from the maps anything that conflicts with it; and since this is just what has been done in Fig 1. it is necessarv to justify it. A similar landscape was noted in Essex and extensively plotted, first by Warwick Rodwell[4] and later by Oliver Rackham.[5] and this has been criticised for being over selective; therefore pains have been taken here to avoid similar criticism.

The justification is contained in Fig 2. which shows every road or track in a randomly chosen area of the County. It is a jumble, but one thing emerges from it: roads and tracks on the preferred axes dominate the landscape and are twice as numberous as roads and tracks in all other directions put together.

A further test is to plot roads and paths on two other axes. Figure 3 is an example showing all those on north–south and east–west axes. This indicates that, although there are roads in both of these directions they are infrequent and appear to be reliant on fords or bridges to cross streams. They also appear to split or divide in a manner not typical of the bi-axial roads and sometimes appear to be composed of intermittent straight sections connecting and utilising small lengths of the pre-existing bi-axial system. Their horizontal stratigraphy suggests that, although they are probably later than the bi-axial roads, they probably pre-date the Roman roads in the area.

Perhaps the most significant test is the way the tracks meshed together when seperately plotted blocks on different Ordnance Survey sheets were joined together. Without doubt they illustrate the presence of a series of long distance trackways traversing the area on the two axes.

PHYSICAL CONSIDERATIONS

A glance at a geological map of the county shows that the various deposits have a formation running parallel to the Icknield Way. This is hardly surprising, as that trackway follows the northern slopes of the Chilterns with its 'upper' branches on the hill chalk and its 'lower' branches on the greenstone of the escarment. This, of course is the same direction as one of the two branches in the bi-axial system. although the significance of this, if any, is unknown.

A simplified description of the area studied is that south to north are low chalk hills, followed by a ridge of limestone which leads onto a low-lying clay plain. This plain contains a few low hills and pockets of sand and gravel in the stream valleys. The area below the Chiltern escarpment is very well endowed with streams which take away the water from the semi-impervious clay sub-soils. These feed into two major rivers, the Thames via the Rivers Thame and Dart, and the Great Ouse, either directly or via the Rivers Twin and Ouzel. Of considerable significance is that it is only when the Ouse widens below Newport Pagnell. that these features seem to have been considered when the bi-axial system was laid out.

HISTORICAL CONSIDERATIONS

A number of arguments will be advanced against these proposals. Three may be anticipated and are considered in the following paragraphs:

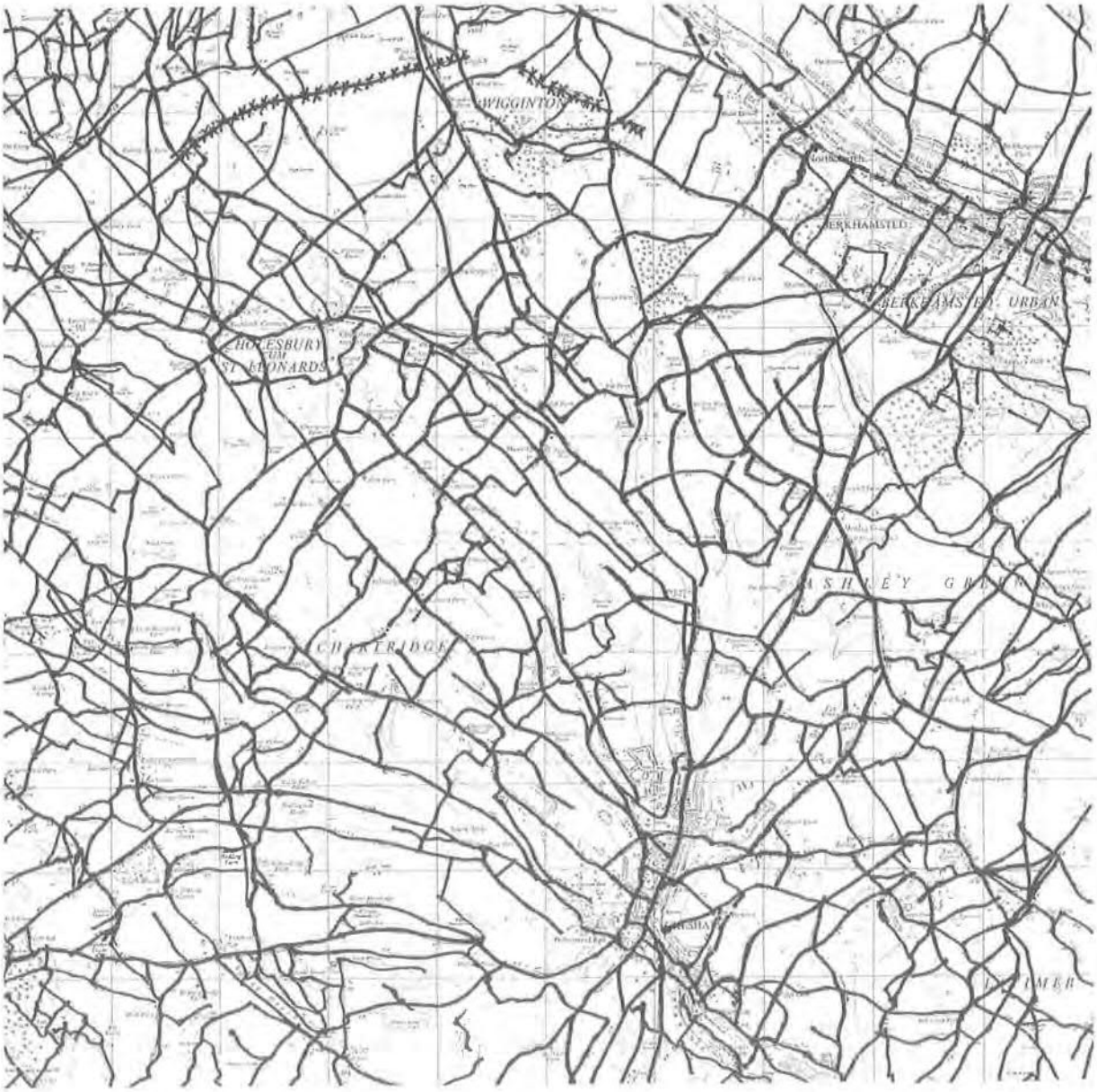

Figure 2. Map showing all roads and paths in an area of S. Bucks., regardless of orientation. Grims Ditch is shown hatched.

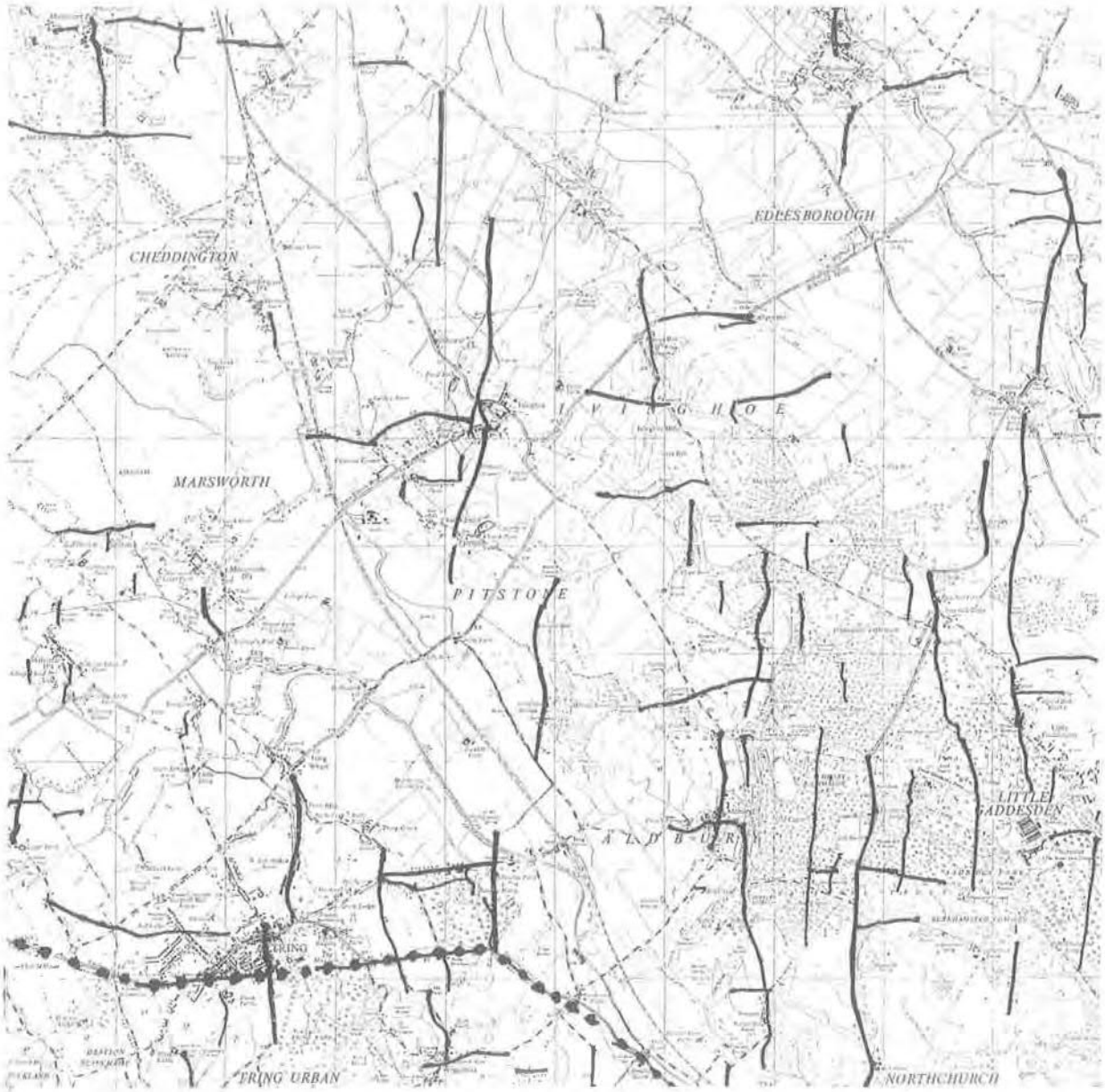

Figure 3. Roads and Paths on a north–south and east– west axis in an area of S. Bucks.

a) The claylands north of the Chilterns would not have been settled until Saxon times; until then they were primary wet forest.

The fact is that the archaeological record clearly shows that settlement began at some unspecified period in prehistory. Field-walking has produced evidence in nearly every field of Roman agricultural activity. Iron Age activity has also been found to be widespread and, perhaps most surprising of all, the whole area contains a fairly uniform scatter of worked flints. With more sophisticated archaeological techniques, settlements belonging to these eras are beginning to emerge. Prehistoric pollen samples are few, but suggest an open cultivated country, not extensively wooded.[6]

b) A 'block' road/track network could not have survived the creation of the open fields.

During the Middle Ages, virtually the whole of Buckinghamshire north of the Chiltern escarpment was covered by the prominent earthworks of ridge and furrow.[7] These are the remnants of strips in the common open fields of the 'Midland' system of arable agriculture that dominated central England. The large common fields re-shaped the whole landscape and their integral strip earthworks virtually destroyed everything in their path, so the survival of earlier features must initially appear doubtful. An immediate assurance that these could survive can be obtained by a cursory examination of a map of any Buckinghamshire open-field village. This will show that the majority of the roads and many of the footpaths are on the alignment of the bi-axial network, as are in most cases the alignment of field furlongs and their associated balks and headlands. Perhaps the most surprising feature is demonstrated on the pre-enclosure map of Padbury, where footpaths run diagonally across furlongs, bisecting all the ridge and furrow strips.[8] The overall impression is that the topography of the Open Field village is adapted from an earlier system and retains much of its former shape and form.

c) Even if a prehistoric bi-axial network had survived the creation of open fields, it would not have survived their enclosure.

The enclosure of the North Buckinghamshire open fields produced today's countryside and was brought into being by means of both private arrangements and public enclosure awards. The former ranged from a partial enclosure in piecemeal fashion having minimal effect on the structure of the landscape, to total and high-handed enclosure causing the village to be deserted and thereby making most of its communication system redundant. The majority of villages had parliamentary enclosure awards, though these often covered only the proportion of the village area that had not been enclosed by other means. Although charged with the task of resetting out roads and paths, the enclosure commissioners were subject to certain restraints. Often there was local resistance to changes in common access, which was often unclear in the commissioners' brief; much of the footway network was consequently preserved. The opportunity was often taken to straighten and widen roads but again options were restricted. Often earlier private enclosure was along a road the course of which could not be altered. Likewise there were points that could not be changed, where the road entered the 'town', where it entered the next parish and where it crossed any ford or bridge. Altogether, with the exception of enclosures that swept away a settlement, enclosure appears to have had a limited effect on the course of roads and tracks.

OTHER BI-AXIAL SYSTEMS

By far the most studied are a number of bi-axial landscapes in Essex brought to prominence in the 1970s by Rodwell.[9] These utilise a combination of tracks, parish boundaries and, more controversially, hedge boundaries. Later some of the same area was restudied by Rackham.[10] who, by extensively using the greater information contained on estate maps, recreated a far more concentrated pattern. Both considered the complex to be of early Iron Age date, but trial excavated evidence revealed no material earlier than Roman. Their results have been challenged by Rippon,[11] who asserts that the complex is late Saxon. However he fails to show convincing reasons for arriving at this conclusion.

Also in the 1970s two bi-axial landscapes were discovered, principally by the use of aerial photography. Bradley and Richards published their 'Prehistoric Fields and Boundaries of the Berkshire Downs'[12] and D L Riley his 'An early system of

land division in South Yorkshire and North Nottinghamshire'[13]. Although different in both presentation and location, these papers both demonstrated landscapes similar to the postulated Buckinghamshire landscape. More recently, Fleming has published his 'The Prehistoric Landscape of Dartmoor: Wider Implications'.[14] This shows a very similar landscape securely dated to the Bronze Age.

DATING CONSIDERATIONS

A pre-Roman origin for the system is suggested based on the following:

1. Medieval open field villages appear to have been structured to fit a pre-existing bi-axial landscape which is not a convenient shape for this system of farming.
2. Roman roads are superimposed over the bi-axial network.
3. The network appears to pre-date Grim's ditch which has an early Iron-Age date.
4. The bi-axial network incorporates the various tracks which make up the Chiltern' section of the Icknield Way and it is therefore rational to consider them as contemporary with the remainder of the network. The date of origin of the Icknield Way is unknown, but few would disagree that its line has been used at least from Neolithic times. However, to balance the argument, the current Icknield tracks could result from a later rationalisation.
5. The network seems to have made little allowance for rivers and streams and the implication is that the crossing of these was not considered of importance at the time when the network was being developed. This would not have been likely with a wheeled transport system, and suggests that the whole network was created exclusively for pack animals and pedestrian traffic. Wheeled vehicles were used in this country from before 2000 BC.[15] Pack-animals were still used up until the railway arrived.
6. On the Chiltern Escarpment the network would appear to be on the same alignment with the 'strip' type of parish. These parishes usually occur where there are hills, and owe their long thin shapes to having equal amounts of rough upland grazing and arable low ground. In parts of Wiltshire and Berkshire the upland parts of each parish very often contain a Neolithic monument, and this has lead to speculation that the village settlement is of a similar date.
7. Similar bi-axial networks exist in other parts of England. The earliest is reliably dated to the Bronze. Age. It appears unlikely that this highly developed system of land allocation should have developed on a number of occasions throughout the ages and that it is more probable that it developed during one single period.
8. It is difficult to imagine how such a network could be installed in a populated and settled countryside. The only convenient time-window was when the land was being cleared or altered to accommodate arable crops. Indeed, allocating the ground into manageable blocks may have been part of the clearing process. This again suggests an origin not later than the Bronze Age, which coincides with its being the most likely period when there was organisation and technology available to plan a society on a large scale. If the network came into being as part of a colonisation and clearing of the landscape, it would be a protracted process and would account for the meandering nature of the tracks and variation in size of the land blocks.

CONCLUSION

A bi-axial system exists in Buckinghamshire and is still evident within the present landscape for all to see. Here, only the bones have been presented, but if this can be developed and flesh added, this may call for profound changes in our underlying historical beliefs.

POSTSCRIPT

A final thought is that this paper outlines a communication network that is a framework for settlement. Surely then, an embryo but related and recognisable pattern of settlement must have come into being when the bi-axial network was created. Paths could only be kept open by the passage of many feet.

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Fig. 1
The Cross Axial Landscape of Northern Buckinghamshire and Adjoining Counties

Tracks (as defined in the text)

Roman Roads

Grim's Ditch

Inclusion of any road or track in the cross axial system does not imply current public right way.

Scale 1" to 1 Mile

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