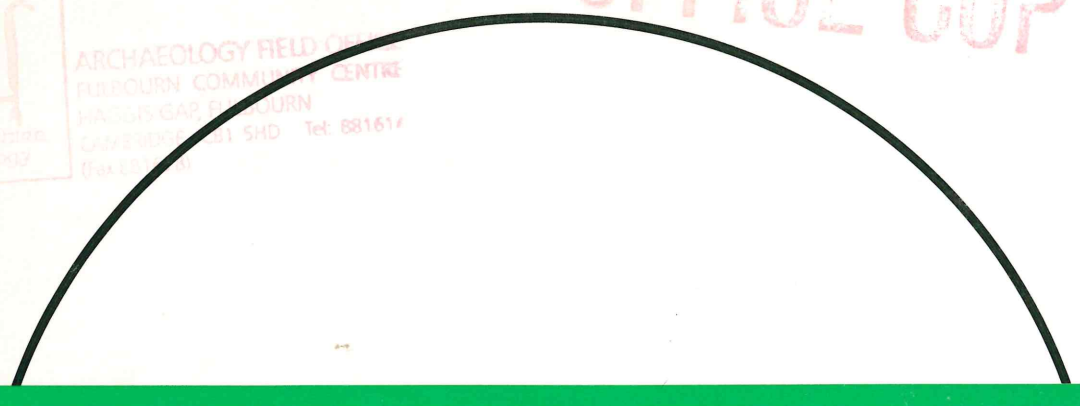


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AFU REPORT
NO.77



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ARCHAEOLOGICAL POTENTIAL

RECOMMENDATIONS

REPLACEMENTS

APPENDIX

GLOSSARY

ARCHAEOLOGY

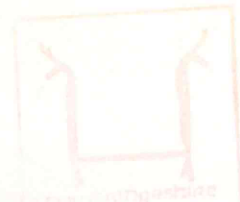
ON THE A15/A16

MARKET DEEPING BY-PASS



Cambridgeshire
County Council

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Desk-top study and Initial Evaluation

TF 138 091

T. REYNOLDS

1992

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**ARCHAEOLOGY
ON THE A15/A16
MARKET DEEPING BY-PASS**

Report no. 77



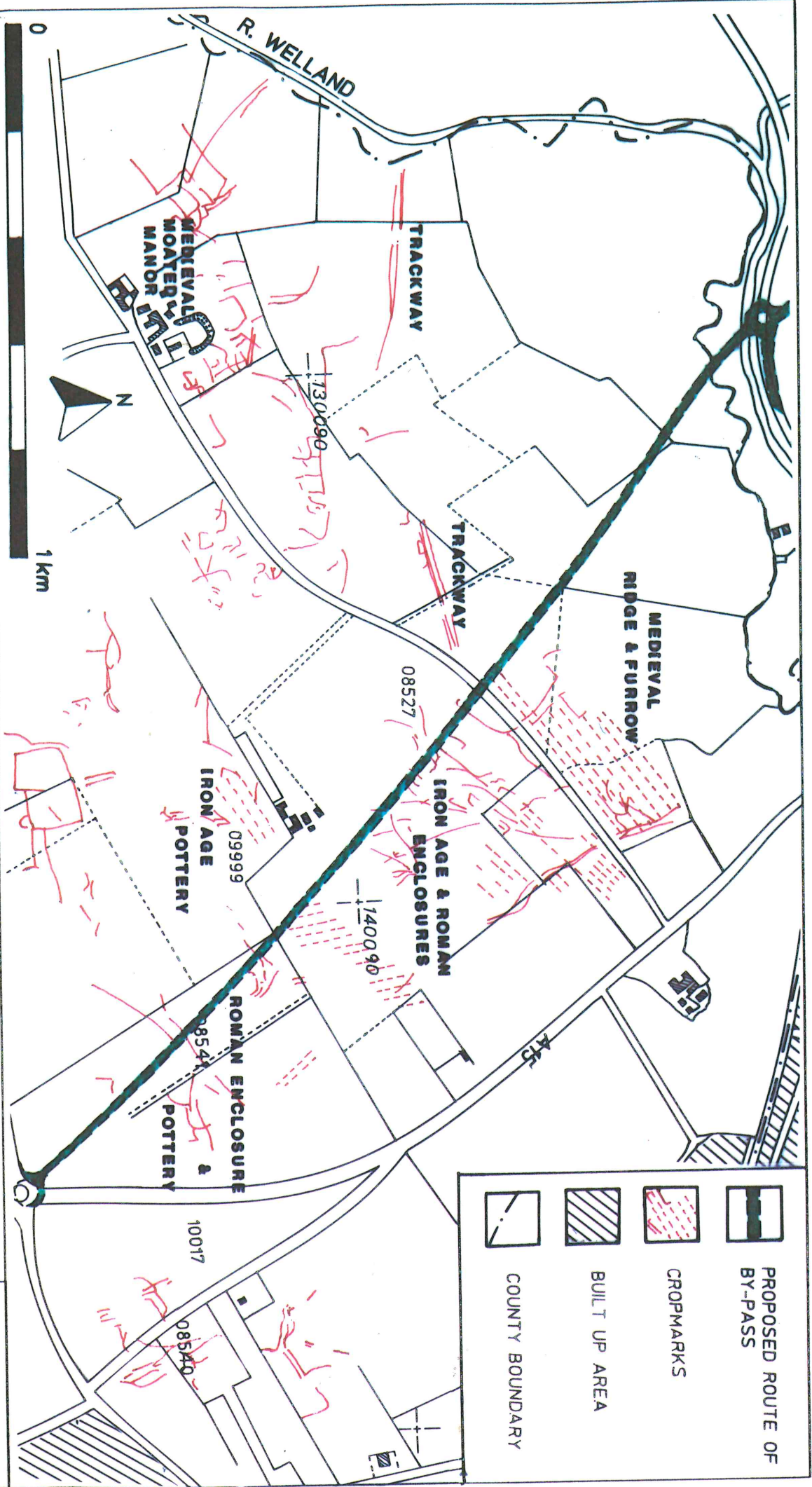
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**PLAN OF CROPMARKS ALONG
PROPOSED MARKET DEEPIING
BY-PASS**

For Interpretation of Cropmarks See Table 1.



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FIG. 1

Initials	Date
R.P.	4 / 92

A15/A16 MARKET DEEPING BY-PASS, 1992

TF138 091

1.0 ABSTRACT.

A proposal for a by-pass between the A15 and A16 around Market Deeping has led to a 'desk top' evaluation of the area within the Cambridgeshire county boundary. The aims of the study were: firstly, to assess whether there were likely to be overriding archaeological objections to the proposal, and secondly, to determine what fieldwork would be appropriate to assess the survival and importance of the archaeological remains in the area in question.

The study shows that the area is part of an important archaeological landscape and that further fieldwork is necessary. It is possible that features of archaeological importance may be encountered and recommendations for fieldwork are given but there are no recognised archaeological objections to the route, nor reasons to suggest realignments at this stage.

2.0 INTRODUCTION

2.1 The applicants, Lincolnshire County Council, approached Cambridgeshire County Council Archaeology Section for information and an evaluation on an area of arable land for which a proposal for a by-pass linking the A15 to the A16 had been made. The area is approximately 1.75 km long and centres on TF 138 091 (Fig. 1). Consultation of the County Sites and Monuments Record (SMR) showed a number of cropmark sites within the threatened area. A desk top study and field evaluation were commissioned. This work is limited to the area within Cambridgeshire, the Trust for Lincolnshire Archaeology have been commissioned to study the continuation of the proposed route into Lincolnshire.

3.0 IMPACT OF DEVELOPMENT PROPOSALS.

3.1 The proposal for road construction will disturb archaeological features along the line of the road corridor. Construction will follow removal of topsoil which, if carried out carefully in collaboration with an archaeologist, will enable features cut into the subsoil to be recorded.

4.0 PLANNING POLICIES AFFECTING ARCHAEOLOGICALLY SENSITIVE AREA.

4.1 Department of the Environment circular, Planning Policy Guidance 16 'Archaeology and Planning' 1990 requires local planning authorities to request prospective developers to arrange for archaeological field evaluation before deciding upon a planning application on any site where important archaeological remains may exist. This evaluation may lead to requirements for preservation of all or parts of the site, or for further archaeological work.

4.2 Cambridgeshire County Council Structure Plan requires that, where there is no overriding case for preservation of an archaeological site, opportunities will be sought, prior to the granting of planning permission, for excavation and recording of the site.

4.3 The Cambridgeshire County Council Structure Plan also specifically identifies road schemes in relation to archaeology and planning strategy: 'Account will be taken of these (archaeologically sensitive) areas in the preparation of local plans and other policy documents, in development control and in the design of road schemes' (Structure Plan Policy 14.54)

5.0 GEOLOGICAL AND TOPOGRAPHICAL BACKGROUND.

5.1 General Character.

The lower Welland valley in this area is wide and marked by the presence of two water courses, the Welland itself and the Maxey Cut. In between these two is an 'island' of first terrace gravels and alluvial deposits. The Cambridgeshire portion of the by-pass lies entirely upon this 'island'. There are four alluvial belts in the area, each with palaeo-stream channels running through them. The most northerly belt crosses the proposed route and runs just south of Deeping Gate (French et al. forthcoming). It comprises a single stream channel, it has yet to be fully investigated but seems to pre-date most archaeological features. However, an enclosure, of probable prehistoric date, does seem to respect the channel margin at the apex of one meander loop.

The second alluvial belt is immediately west of Northborough and is not yet investigated. The third belt lies approximately parallel to the Maxey Cut and can be related to the archaeological features of Neolithic date at Etton. The fourth belt runs parallel and adjacent to the South Drain and can be associated with a 14C date of 7350+/- 90 years BP (GU-5126) (French et al. forthcoming).

5.2 The fields under evaluation are located on fluvial first terrace sands and gravels made up of limestone and flint with occasional Bunter pebbles and ironstone. Deposits of alluvial sands, silts and clays overlie the gravel whilst local soil varies in composition from clay loam to sandy clay loam, sandy loam, and silt loam. The soils are generally permeable and well drained. Present land use is arable farming.

5.3 The site is low lying between the 7 and 8 metre contours, with gentle slopes from north to south and from west to east.

6.0 ARCHAEOLOGICAL & HISTORICAL BACKGROUND.

6.1 Introduction.

River valleys have always been important as communication routes. They were also suited for early settlement, as light gravel soils were easily cleared of vegetation and ploughed with primitive implements. As such they are usually occupied and farmed, both for arable and pasture, from the earliest times. The Welland valley contains useful arable land and was being cleared of its natural forest cover in the Neolithic period. Large scale clearance of the valley slopes and upland began in the Iron Age (Pryor et al. 1985a). Extensive Roman agricultural activity is recorded (Simpson 1966; Pryor et al. 1985a). Such land use is demonstrated by the extensive network of boundaries and enclosures associated with villa sites in the valley. The importance of the area in wider communications is clear, as the area is crossed by two major Roman roads, Ermine Street and King Street, and the river was an essential part of the economy of exploiting Barnack stone which was used in Roman buildings as far to the south as London and Rochester. The construction in Roman times of Car Dyke, a canal running to the east of Market Deeping, through Northborough, and on south, demonstrates the importance of water transport in the region. Indeed, this dyke has been interpreted as a canal running from the fens to provision the Romans at York. This use of the water was maintained in Saxon and Medieval times, with economic control of the river falling to the Abbey of St. Peter's in Peterborough. From Christian times the parishes of the area were divided in such a way as to permit access to its resources evenly. Local churches are pre-Norman Conquest establishments and suffered from incursions by the Danes in the 11th century. Once the Abbey took control of the area it was systematically exploited for arable and pasture land, with quarrying local stone as an important part of the economy. This quarrying diminished in the 16th century as resources were depleted. Parliamentary enclosure during the early 19th century has led to fixed field boundary patterns, and land use has remained constant with pasture adjacent to the Welland, and arable farming occurring on the first terrace and extending onto the slopes of the uplands. Industrialisation had little effect on the area except to highlight its importance in communication routes with the building of the Welland Canal and then the Peterborough - Leicester railway (Ryland et al. 1902; Serjeantson et al. 1906).

6.1(i) Archaeological Background.

The Deeping Gate area contains a number of sites known from cropmarks including enclosures, trackways, ridge and furrow, and a ring-ditch. The major source for these is the County Sites and Monuments Record (SMR) (Table 1).

A lack of features in alluvial areas does not accurately reflect a lack of prehistoric land use, as it may be the case that the alluvium covers the features and masks them from aerial photography (French & Wait 1988; Pryor 1985a). Thus it is always important to study the subsurface in such areas. The gap in evidence for archaeological sites between SMR site numbers 08527 and 09999 is due to the presence of a palaeo- stream channel of probable Bronze Age date.

**Table 1. Features recorded in the SMR for
Cambridgeshire in Deeping Gate parish.**

Grid Reference.	Description.
TF137-/091-	Medieval ridge and furrow, known from cropmarks. SMR No 08527A
TF137-/091-	An enclosure, a ring ditch and a trackway, known from cropmarks. SMR No 08527
TF 137-/084-	An enclosure and trackway known from cropmarks. SMR No 08529
TF 1440/0905	Enclosure of Iron age/ Roman type, known from cropmarks. SMR No 08539
TF 147-/085-	Lanes and enclosures, known from cropmarks. SMR No 08540
TF 143-/086-	Enclosure and trackway, known from cropmarks. SMR No 08541
TF 138-/088-	Ridge and furrow, known from cropmarks. SMR No 09999
TF 1325/0830	A ditch, known from cropmarks. SMR No 10143

In addition to the sites listed above (Table 1), a large number of sites are known both from cropmarks and excavation in Maxey parish which is adjacent to that of Deeping Gate. There, a series of Neolithic hengiform monuments, Bronze Age ring ditches, Iron Age dwellings, pits and enclosures and Roman period farmsteads have been discovered (Pryor et al. 1985a & b) and it is likely that the cropmark features of Deeping Gate form part of the same archaeological landscape but are masked from direct association with it by covering alluvium which masks cropmark evidence. The prehistory of Borough Fen, south-east of Deeping Gate, has been studied (Hall 1987) and the sequence of human activities tied into the environmental changes that have marked the fenland area since the last Ice Age. There is little evidence of activity earlier than the Bronze Age, when a number of burial monuments were built along the fen edges followed by direct evidence of settlement taking place in the Iron Age and Roman period, when Car Dyke, a canal some 53m wide in Northborough parish, was constructed. It ran from beyond Market Deeping in the north down through Northborough into the edge of Borough Fen in the south. There are also various Medieval relicts in Maxey and Northborough, including ridge and furrow from field systems, Maxey castle, masonry from religious houses, etc.

6.2 Discussion.

The lower Welland valley has been subject to relatively extensive archaeological study (Pryor et al. 1985a) and yielded a number of sites important at regional, national and even international levels. Such sites include the finds from Fengate (Malim 1989) and Flag Fen near Peterborough, Maxey and Etton (Pryor et al. 1985a & b; 1986), and the Barnack burial (Donaldson 1976, 1977; Kinnes 1976). An important archaeological challenge in this area is how to deal with a relatively undisturbed landscape which places all the individual finds in a broader regional perspective. Additionally, the significant amount of environmental studies of the area make for greater understanding of this landscape, and the local conditions of adjacent river valley and fen make for unusually good preservation of organic materials. The Welland is rich in ritual monuments of prehistoric date which are less disturbed and better preserved than many well known examples from southern England. Welland work has all been conducted recently, and so a much fuller picture of the past is emerging here than is available elsewhere, and this can be applied more widely on a national basis.

7.0 FIELD ASSESSMENT.

7.1 Initial visit.

The route was visited briefly by Tim Reynolds on March 25th and the fields examined with a view to future field walking. The northern part of the route was under winter wheat and so not likely to yield satisfactory results, but the surfaces of the southern fields were clear, with well broken up soil which was recently washed. Only modern finds were, however, visible.

7.2 Fieldwalking.

The route was returned to on March 27th by a team of four archaeologists. The area was walked from south to north along the line of the road corridor, with each walker spaced five paces apart. Material was collected

from the field surface and recording was over every twenty metres so that any concentrations of material could be rapidly identified and located in the field. Find density over the surface was low, however, and so this system was reduced to a recording of material by field in the final account. Two concentrations of sherds were recovered, a southern spread of about 20m² area comprising well-fired Roman sherds with some Medieval and post-Medieval pieces and a more northerly spread of similar size which comprised thick, shell tempered sherds of prehistoric (Iron Age) date. The former surface spread coincides with the cropmark features, numbered 08541 in the Cambridgeshire SMR, whilst the latter lies close to an area of Medieval ridge and furrow which shows as cropmarks and can be related to SMR No 09999, although it is not contiguous with it. The sherds in both surface spreads were in a variety of conditions from quite abraded to relatively fresh. If these are derived from subsurface features, they must have been subject to disturbance some time and are still being damaged.

It should be noted that the route beyond the Castle End - Deeping Gate road as far as the Welland (farmed by D.W. & D.G. Garfield) was under winter wheat standing some 10cms high. Visibility was very poor, so it was decided not to walk this area at this time, although it was examined informally and did not show any significant frequency of finds.

8.0 ARCHAEOLOGICAL POTENTIAL.

The A15/A16 Market Deeping By-Pass has significant archaeological potential at three points. These are where it will pass through areas recorded in the SMR as numbers 08541 (Prehistoric lanes and enclosures), 09999 (Medieval ridge and furrow), and 08527 (prehistoric lanes and enclosures). Fieldwalking has confirmed the importance of two areas which have yielded pottery. It should also be noted that all three sites are really the intermittently visible fragments of a well preserved prehistoric landscape, and the apparently blank areas may also contain important archaeological materials which are presently masked by alluvial cover.

9.0 RECOMMENDATIONS.

9.1 The area in the north, which has not yet been fieldwalked should be revisited after harvest, when the field is in a suitable condition for fieldwalking.

9.2 Topsoil stripping and ditch digging should be undertaken with archaeological supervision.

9.3 Any features uncovered during 9.2 (above) should be selectively excavated and recorded, thus a suitable period of time should be set aside for this purpose.

9.4 A report should be published on results of this project, including analysis of environmental remains, archaeological features and artefacts.

9.5 Artefacts of archaeological importance must be processed, conserved (if necessary) and deposited in an appropriate museum or store.

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11.0 APPENDIX.

List of Aerial Photographs Consulted for Deeping Gate Parish.

Grid Reference. Number in CUCAP Catalogue.

TF 137 / 084 RC8 - BO 229 -231

TF 139 / 084 to 229 - 230
139 / 093

TF 147 / 085 to 231 - 232
150 / 086

All the above are vertical views. Also consulted were oblique views AKO 26 - 27 and AVD 67- 69.

TF 1308 NMR 1308 / 2-3

TF 1309 NMR 1309 / 2-3
/ 4-6

TF 1409 NMR 1409 / 1-4

Records consulted:

CUCAP Cambridge University Committee for Aerial Photography

NMR National Monuments Record.

Also consulted was RAF F22 58/3174 0020 - 0021.

12.0 GLOSSARY.

Alluvial. Sediments laid down by water action.

Artefact. Any object made by people. Generally, this word is used for finds such as pottery, stone tools, or metal objects, but it can be used in a much wider context in that the landscape we have today is a product of human activity and is thus an artefact itself.

BP Years before present (The present being taken to be 1950), introduced to clarify dating after the advent of radiocarbon dating.

Bronze Age. Prehistoric period c. 2000 - 700 BC when bronze was used for many types of tool and weapon.

14C. Radiocarbon, i.e. the isotope of carbon with an atomic weight of 14 rather than the much more common carbon 12, into which it decays at a relatively constant rate. Both are incorporated into the bodies of living things at a known ratio, so that after death the changes in the ratio between 14C and 12C are a reflection of the amount of decay of 14C. Using the decay constant, the age since death of once live materials, such as wood, leather and bone, can be calculated, this is the basis of radiocarbon dating.

Cropmarks. Archaeological features below the ploughsoil can affect the growth of sensitive crops through moisture retention or loss. For example, the growth of cereal crops over buried ditches and pits will encourage rapid growth leading to tall, dark coloured plants, whereas walls and roads will lead to stunting and faster yellowing of the crop. These discrepancies in crop growth can be detected easily from the air, and by taking photographs the cropmark patterns can be plotted onto maps and given provisional interpretation.

Enclosures. An area defined by a continuous surrounding ditch. These may be enclosures around human settlement, fields, or paddocks for stock. Rectilinear enclosures are ones with straight sides and corners, whilst curvilinear enclosures are ones with rounded sides.

Fieldwalking. Technique of archaeological survey. Walking over ploughed and weathered soil, an experienced observer can collect many ancient artefacts, and by plotting the distribution of such find spots on maps an idea of the occupation and use of the landscape can be built up for each period of the past.

Flandrian. The period of time since the end of the last ice age, generally agreed to begin at 10,000 BP and lasting to the present time.

Iron Age. Prehistoric period c. 700 BC - AD 43 when iron was used extensively for tools and weapons. The period traditionally ends with the Roman invasions of AD 43 but in fact there was a considerable time of adjustment after this date when the Iron Age way of life continued with little change from Roman influence.

Medieval. Historic period that begins with William the Conqueror's invasion in 1066. Post-Medieval is generally considered to date from 1500.

Neolithic. Prehistoric period c. 3500 - 2000 BC when farming and pottery were introduced. Stone tools of fine workmanship were produced and exchanged over long distances, but metal was not used at this period.

Palaeo-stream. An ancient stream identified by the characteristics of certain deposits, which are fluvial, and represent the infilling of the original stream channel.

Prehistoric. The period of time before written records, in Britain this period ends with the Roman invasion of AD 43, earliest records are those in Egypt dated to the fourth millennium BC.

Ridge and Furrow. Medieval cultivation techniques led to a phenomenon of corrugated fields. Strips of land were allotted to individuals and a furrow was left between one person's strip and the next, leading to a corrugated ridge and furrow effect. An area of land with all these strips running parallel was called a furlong. These strips usually followed a slightly sinuous course, an elongated reversed S shape to help in turning the plough at the end. Where the strips ended and the ploughs turned soil would be deposited and a 'head' would be created. After a time these may form a boundary in their own right and are called headland boundaries. Ridge and furrow shows up as cropmarks on air photographs, and more rarely, as earthworks in pasture fields.

Ring-ditch. A continuous circular ditch which is all that remains of a ploughed out round barrow, or the drainage ditch (eavesdrip gully) that surrounded a round-house.

Roman. Historic period AD 43 - 410 when most of Britain was part of the Roman empire. The term Romano-British is now widely used to describe the people of this period as few were Roman themselves, but they were a provincial manifestation of the empire developing in a unique way. AD 410 was the date the legions were withdrawn, but the Romano-British culture continued for some time into the 5th century in tandem with Anglo-Saxon migration.