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EXCAVATIONS AT THE DORSEY, COUNTY ARMAGH, 1977

by C.J. LYNN

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Two small excavations were carried out on separate sections of large-scale earthworks usually considered to form an enclosure, but perhaps better described as a series of cross-ridge dykes, in response to apparent dating opportunities. Radiocarbon dates from one site and dendrochronological dates from the other show that the monuments were built in the Early Iron Age.

The earthworks, known collectively as 'the Dorsey', are among the largest and most intriguing monuments in Ulster. Their date, purpose and former extent have been the subject of learned speculation for over 200 years and detailed descriptions have been published (Lett 1898 and Tempest 1930). Despite lengthy discussion and a series of excavations in the late 1930s (Davies 1938; 1940a and b), no firm evidence for the date of the earthworks had been recovered. The small excavations described here took place as reactions to the recognition in field-walking of relatively straightforward dating opportunities, only now made possible by the development of laboratory dating techniques.

It is normal in an account of an excavation to give a comprehensive description of the site or monument in which the work took place so that the excavation strategy and its result can be related to visible features of the site and the immediate environment. But in this case, because the monument would take much longer to describe than the excavation itself and because of the existence of other published accounts, a summary will have to suffice. The reader requiring detail is referred to Tempest's excellent description (1930) and to Davies' discussion (1955) of the result of his excavations in the late 1930s. A revised detailed account of the Dorsey will be published in a forthcoming archaeological survey of County Armagh (HMSO).

THE EARTHWORKS

The Dorsey lies in south Armagh, 2 km north-west of Silver Bridge on either side of the main road from Newtownhamilton to Dundalk, in the townlands of Dorsy and Tullynavall. Note that the spelling of the townland name differs from the conventional spelling of the name of the monument. It has often been described as an enclosure, with a perimeter of 4.3 km (2.7 miles) and a very irregular trapezoidal plan, apparently determined by the local topography (Fig. 1). Parts of the earthworks and stretches of 'piling' across boggy areas (recorded by the Ordnance Survey in the 19th century) have been removed, but some gaps in the plan can be filled in from old maps and air photographs. Other

lengths of the 'perimeter', totalling about a third, either never existed or have to be completed from guesswork.

The main surviving parts of the Dorsey lie on the south side in two separate sections, each comprising a central massive embankment with a deep ditch on either side. The top of the central bank is up to 8 m higher than the adjacent ditch bottoms and there are discontinuous remains of a second, smaller bank on the south of both sections. The main earthworks cut off the ends of two ridges, that on the west descending from the south and that on the east descending from the north. The earthworks end at streams or bogs in the lower ground on either side of the ridges, but they are said to have been linked by a piled structure in the intervening bog (Tempest 1930, 204–5).

The northern sections, which appear to have comprised a single bank and ditch of relatively slight proportions, run in an irregular loop from the outer ends of the southern sections. This gives the appearance on plan of an enormous enclosure in a broken landscape, containing boggy hollows, smooth ridges (now in pasture), streams, and low, rocky knolls. It is not, therefore, possible to view more than two-thirds of the circuit from a single vantage point. Apart from its possible uses as an enclosure, earlier commentators agreed that the Dorsey's primary function was to control one of the few ancient routeways from the south into Ulster, the one that leads from north Louth into the plain of Armagh or Navan Fort (*Emain Macha*). It may be significant that the Irish word rendered as Dorsy or Dorsey means 'doors' or 'gates'.

DATING

In the absence of documentary references and indeed of any context for its construction in the Early Christian and medieval periods, all earlier writers considered that the Dorsey was likely to be of prehistoric date. This view is strengthened by comparison of the Dorsey with substantial linear earthworks elsewhere in Ireland, for example the 'Black Pig's Dyke' (Kane 1909; Walsh 1987) in Co Monaghan and similar monuments in Britain, some of which are considered to be prehistoric. The date

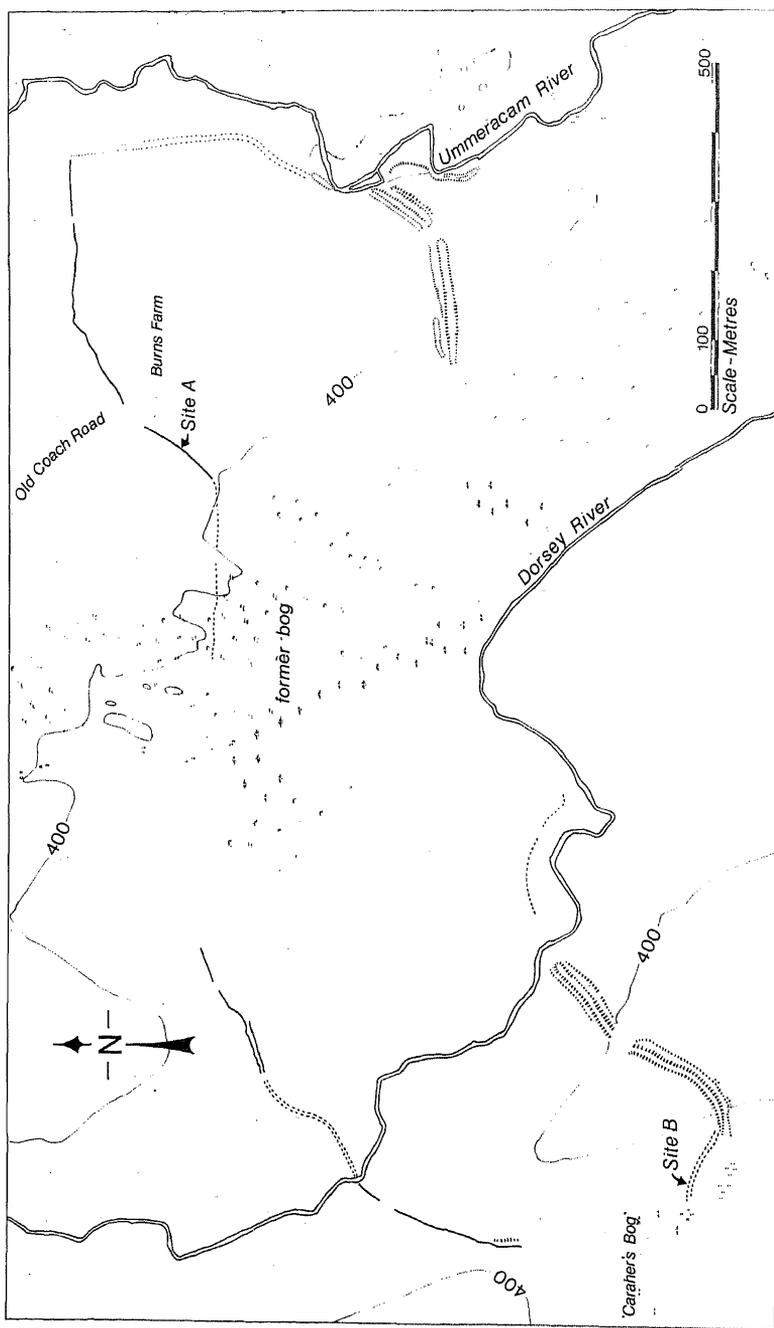


Fig. 1. Topography of the earthworks in Dorsey and Tullynavall with locations of sites excavated in 1977. Destroyed sections dotted, the northern earthwork shown as a single solid line.

of the monument, therefore, could have been anywhere in the millennium from 500 BC to AD 500, although a date in the first few centuries AD was considered a little more likely by some.

It is fair to record that Davies's excavations in the late 1930s, while producing useful details about the scale, profiles and positions of the earthworks, did not contribute material evidence to the debate on dating. This was simply because no datable artefacts were found in key contexts and it is indeed quite probable that the earthworks could be excavated on a very large scale without recovering artefactual dating evidence. In contrast, as a result of the small opportunistic excavations here under discussion (see also Hamlin and Lynn 1989, 21–4) and from subsequent work carried out in the Palaeoecology Centre, Queen's University, Belfast, we now have scientific determinations of the ages of timbers used in constructions underneath and near these remarkable and still enigmatic earthworks. Since the timbers were felled at the time of construction or use of parts of the monument we can claim to have dated the Dorsey for the first time. This has only been possible since the techniques of ¹⁴C dating and dendrochronology became available in Belfast, that is, within the last 20 years.

SITE A, DORSY TOWNLAND

In the spring of 1977 the owner of a section of the monument on the north-east, Mr S. Burns, drew the attention of the Archaeological Survey to an exposed layer of charcoal apparently sealed under the low bank. The charcoal appeared when a pre-existing field gateway was being widened. The writer was asked to carry out a small excavation to check on the context of the charcoal, and, if appropriate, to obtain sufficient for radiocarbon dating.

The Site

The charcoal was exposed at a point on the relatively slight north-eastern section of the Dorsey where it rises up the western slope of the ridge, on the crest of which is the 'old coach road' or *Bealach Mór na Feadha* (Tempest 1930, 190). This is said to be an ancient routeway, but is now only a farm lane where it cuts this northern section of the rampart. The point of excavation (Fig. 1, grid ref H 950195) lies near the west end of the visible bank and ditch of the northern embankment on the eastern ridge. Here an indistinct bank can be traced on the north side of the ditch and the earthwork continues upslope to the east for some 50 m. until it is lost in a small farm enclosure (the former 'pound' excavated by Davies (1940b)). It can be traced easily as a substantial field boundary on the east side of the farm lane where the single visible bank is on the south side of the ditch. The longer of the excavated trenches, A, was 90 m. west of the ridge-top farm lane (Fig. 2). On average the bank was only some 50–60 cm. high and was about 5 m. wide. The accompanying ditch on the south was a more substantial feature, about 5 m. wide and 1.2 m. deep

before excavation. Further upslope the ditch became even more marked, but recently the low bank has been thickly planted with conifers. The southern edge of the ditch is occupied by a thorn hedge and there is no sign of a bank on this side.

Trench A

The trench first excavated, A, was 10.8 m. long and 2 m. wide and was laid out at right angles to the line of the bank, several metres upslope from the original exposure of charcoal (Fig. 2). Apart from the ditch bottom the trench was excavated to subsoil, with results which amply fulfilled the aims of the project. Not all of the features exposed, however, can be interpreted with confidence.

The subsoil was a soft, orange-brown clay with angular rock fragments overlying bedrock of silurian shale. A buried soil horizon was partly preserved under the bank and in patches the surface of the subsoil was discoloured by humus staining. Beneath the tail of the bank on the south-east side there was a continuous layer (1) of hard greyish clay up to 5 cm. thick. This may represent a pre-bank leached horizon and it overlies a patchy layer of subsoil which appeared iron-enriched (indicated by a dashed outline in section). Layer (1) was covered by a slightly brown-tinged grey soil, layer (2), 7.5 cm. deep on average, with a level surface, patchy concentrations of humus and occasional flecks of charcoal, apparently representing a pre-bank topsoil. These layers were not present in section to the north-west of a later slot (5). It appears from the section (reflected in the drawing, Fig. 2, section A–B) that this absence could be accounted for, in part at least, by deliberate truncation of the surface under the first artificial deposit, layer (3). It is possible that there was a slight rise here in the pre-bank surface which may have been deturfed before deposition of (3).

Layer (3) extended regularly across the full width of the trench and had the profile of a low bank, steep on the south-east, facing the ditch and gently sloping on the north-west, with a maximum height of only some 30 cm. It was an intensely-burned deposit of soft, light, grey-brown soil with thin but distinct patches of fine charcoal and patches of dusty, brick-red soil. On the top, near the edge of the steep south-east side, there were three large patches of charcoal (indicated by shading), evidently derived from substantial timbers, one at least 20 cm. in diameter. When first revealed these were thought to represent the tops of thick upright post-butts, charred *in situ*. Further excavation, however, revealed that the timbers were lying haphazardly; they were encased in (3) and there were similar patches of charred wood elsewhere in the deposit. These observations suggest that the three patches of charcoal were aligned fortuitously in this apparently significant position on plan.

Layer (3) was capped by a deposit of clean red clay (vertical shading) and small stones (4), more numerous lower down the slope. It is tempting to suggest that this

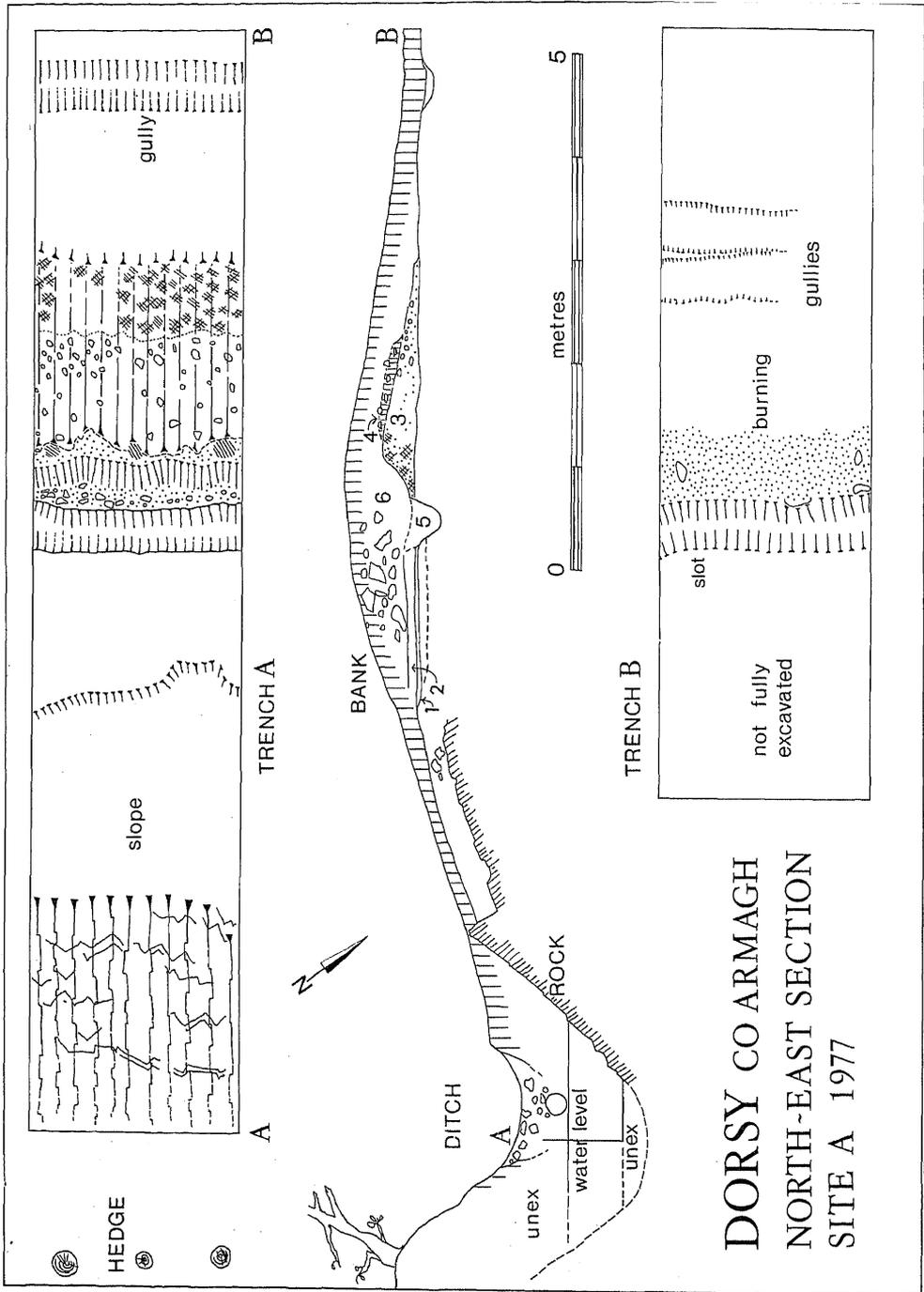


Fig. 2. Site A, plans of trenches A and B with section of trench A.

represents upcast from the cutting of the next feature, a linear hollow or gully (5). The gully (5) was probably dug through (1), (2) and subsoil which (when mixed) could have been the parent materials of (4). Layer (4), however, could derive from elsewhere or could indeed have been produced by weathering of layer (3).

The clear-cut gully (5) neatly defined the south-east edge of (3), and ran parallel to the line of bank and ditch. The gully was 40–45 cm. wide and 30 cm. deep with a flat-bottomed V-profile. Its fill comprised soft brown soil and small stones with patches of clean sandy soil in the bottom. The fill merged gradually into the superimposed bank deposit (6), but the position of the interface is suggested by a dashed line on section A–B (Fig. 2). There is no doubt that the fill of (5) and the bank deposit (6) are distinct layers. The north-west side of the gully was clearly cut through (3), but its fill did not show clear signs of contamination from the burning and charcoal of (3). The gully did not exhibit any darker or softer patches, or basal depressions, which would indicate positively that it acted as a foundation trench for vertical timbers. Layers (3) and (4) were sealed by hard, redeposited clayey subsoil (6) with concentrations of angular stones, clearly the denuded remnant of a larger bank. The maximum width of the deposit was 5 m and its height only 45 cm. To the NW of the tail of the bank a shallow gully filled with soft loam was cut in sub-soil and ran across the trench parallel to the bank. This was probably a remnant of recent agricultural activity.

The Ditch

To the south-east of the bank the surface of subsoil, covered by modern topsoil, sloped down gently over a distance of 2 m. to where the upper edge of a rock-cut ditch plunged at an angle of 45°. Only the north-west slope of the ditch was excavated and the bottom was not reached owing to the effluent from a piped drain. The overall depth of the ditch, however, may be estimated at around 2 m. and, if roughly symmetrical in profile, the steep-sided part of the ditch would have been some 3.5 m. wide. The upper ditch fill comprised a mixture of material disturbed by recent drains. It merged downwards into a sticky grey-blue silty clay. The modern hedge on the south-east edge of the ditch probably rests on a considerable depth of fill.

Trench B

When the excavation of trench A was almost complete a further trench, B, 7.5 by 2 m., was laid out parallel to A some 4 m. to the north-east (Fig. 2). This trench was not fully excavated (owing to the sudden need to move to site B).

Here there was much less bank material, but traces of a burnt deposit, similar to the layer (3) in A, survived. A gully, probably a continuation of (5) in trench A, lay in the same relative position. In trench B further shallow gullies, probably from recent cultivation, penetrated the surface of the subsoil in a position which would have

been well sealed by bank material in A. Enough was uncovered in trench B to indicate that the deposits and features in or under the bank material had probably been similar, before erosion and disturbance, to those in A. Surface inspection of the slight bank running uphill to the site of the former pond suggested that it may indeed have been best preserved where sectioned by trench A. It seems worthwhile, therefore, to discuss the possible significance of the deposits in trench A at greater length than they may seem to warrant at first sight.

INTERPRETATION

It cannot be proved stratigraphically that the bank (6) and the ditch were made at the same time, but this is obviously likely. The sloping berm between the bank and ditch could be an original feature of the terrain or an artificial construction, accentuated by weathering and silting from the bank slope into the ditch. Alternatively it could be a product of cultivation or result from a deliberate attempt to level the bank into the ditch. Trench A, layer (6), directly opposite a section where the ditch may have been largely rock-cut, contained only a moderate amount of angular stones, but material in a bank does not always reflect the lithology of the immediately adjacent section of ditch. In any case the rock, excavated last, would lie in the upper part of the bank from where it might have been cleared away, leaving layer (6), perhaps mainly composed of the clay subsoil from over the rock on the ditch line, intact. The quarried stone may, indeed, have been set aside for use in a different structure elsewhere.

There was no superficial sign of a bank on the south side of the ditch in this area and the excavation did not attempt to explore the possibility. Certainly the visible bank lies on the south side of the ditch in the portion of the northern section of the Dorsey running east from the old road down towards the Ummeracam River. We can only speculate that the position of the bank relative to the ditch was of little concern or that builders of separate sections were not well coordinated. Nevertheless, the depth from the top of the single bank to the base of the ditch must have had some significance, otherwise a ditch with smaller banks on both sides would have been easier to construct. It is possible that this was in fact the original configuration and that recent owners of adjoining sections have levelled banks on different sides into the ditch to convert the monument into a more conventional field boundary.

The unusual nature and relationships of the basal deposits of the bank in trench A make its interpretation difficult. The first anomaly was the absence of pre-bank soil, layers (1) and (2), on the north-west for which partial deturfing, as a first step in construction, is a possible but not entirely convincing explanation. The existence and composition of the burned layer (3) are also unusual. Clearly, the deposit did not originate simply as a pile of wood burning on a subsoil surface which became heat-reddened. The interleaving of burnt

soil and charcoal in a single deposit can only result from the burning of a mixture of wood and soil in conditions where, at least initially, there is free circulation of air. Such a deposit might be produced by the burning and then collapse of wooden buildings which had daubed walls or roofs lined with turves, but this is unlikely to be the case here. Burning of dry tree-stumps with soil attached to the roots could perhaps produce a burnt charcoal layer of soil of this type.

Another possibility is that the burnt deposit (3) represents the remains of a pre-bank palisade or heavy wooden fence founded in the gully (5). The cutting of the gully, however, post-dates the deposition of (3), although it must be admitted that the coincidence of the line of the gully and the steep south-east edge of (3) suggests that there was some relationship between the two features. If the burnt deposit (3) represents the remains of material bedded in (5), then the stratigraphic sequence can only be rationalized by suggesting that (5) was over-cut in a thorough clearing-out of the charred post-butts bedded in it. Why would this be necessary, especially when everything was about to be covered by a bank? While the gully may have acted as a palisade trench it is a somewhat slight feature for this purpose. The most ambitious interpretation would see (3) as the burnt remains of a brushwood fence, replaced by (5), a palisade slot, its timbers eventually being removed and the line of the previous timber defences being covered by the bank (6) at the same time as the ditch was dug. At the other extreme, an equally plausible interpretation (but with implications of minimal controversy) would suggest that: some turves were stripped from the line of the proposed rampart; roots and brushwood cleared from the path of the (proto-) Dorsey were piled up and burned producing (3); a palisade trench (5) was marked out, but never used; instead an earthwork bank, of which (6) is a remnant, was thrown up from a substantial ditch.

Despite misgivings about the detailed interpretation of the deposits uncovered in these small excavations, two important conclusions do come through clearly. First, the Dorsey earthworks may not be single-phase constructions. Not only is there a possibility that different sections of earthworks were built at different times (Tempest 1930, 236; Lynn 1989), but we must now bear in mind that the final earthworks, of which we see the denuded remains, may have been preceded by less permanent timber structures and/or smaller earthworks on the same or different lines. Secondly, and more important (considering the aims of excavation), there seems no reason to dissociate layer (3), with its rich, sealed deposits of charcoal, from the construction of the rampart at this point. If (3) was a pre-bank palisade it appears to have been covered by the bank almost as soon as it was burned, so that the age difference between the felling of timbers for the palisade and the construction of the bank is unlikely to be significant in relation to the precision of radiocarbon age estimations. In short, the dating of charcoal from layer (3) seems to provide the best possible opportunity we are likely to encounter for

radiocarbon dating of the construction of (this part of) the Dorsey.

Three samples were submitted for radiocarbon dating to the Palaeoecology Centre, Queen's University, Belfast (Table 1). They were collected separately in the field and comprised large pieces of oak charcoal from different concentrations in layer (3) trench A.

Table 1
Radiocarbon dates from Site A

Lab No.	Sample	¹⁴ C Date	Calibrated Ranges (2 sigma)
UB 2219	A	2020 ± 45 bp	161 BC – AD 73
UB 2220	B	2240 ± 45 bp	387 BC – 191 BC
UB 2221	C	2015 ± 45 bp	157 BC – AD 76

The fact that UB 2220 does not overlap with the other two dates at 2 sigma could be explained by the possibility that the sample material comprised discrete lumps of charred long-lived timber. It is possible that UB 2220 came from nearer the centre of a tree or branch than did UB 2219 and UB 2221. Even so we have no way of knowing how close either of these samples came to the outside of the trees whose felling we would like to date, and the upper age limit would have to be extended by up to 200 years to allow for the old wood effect (Warner 1990). In this context we do not need to proceed further with debate and can conclude that the dates fall consistently in the Early Iron Age and are wholly compatible with the more exact dendrochronological date which became available later for palisade timbers excavated at site B (p. 75).

SITE B, TULLYNAVALL TOWNLAND

When the sampling at site A was nearing an end a brief inspection of the entire monument was carried out. This revealed that the owner of a field at its extreme south-west corner had *that day* begun bulldozing on part of the supposed former line of the Dorsey in preparation for drainage works. In the process the stumps of several aligned oak timbers, set vertically in the ground, had been uncovered. These appeared to stand roughly in their original positions, perhaps having been set in a trench. The posts were immediately reminiscent of the lines of 'piling' reported from this very position by both Tempest (1930, 207) and Davies (1940b, 284–7). The landowner, Mr P. Duffy, agreed to suspend bulldozing to allow investigation of the rapidly disintegrating timbers. The trenches at site A were backfilled and the small excavation team transferred to site B.

The Site

Site B lay at the south-west corner of the Dorsey, immediately north-west of the west end of the massive southern earthworks (Fig. 1 and Fig. 3, inset). In the first quarter of this century the land immediately to the west was a narrow strip of bog (more extensive in the last



Pl. 1. Vertical air photograph of the south-west end of the Dorsey, taken on 13 November 1928 and showing the line of a ditch (arrowed) crossing site B (*Crown Copyright*).

century) which joined a wider band of bogland running westwards a little further north. By 1977 the strip of bog had been removed and replaced by a small conifer plantation. By 1988 even this had been removed and the entire area bulldozed to subsoil and laid out in pasture fields. No trace of the bog survives and truncated ditches are the only features of the Dorsey which might survive in the area (Tempest 1930, points 17 to 21).

This formerly wet land, called 'Carraher's Bog' by Tempest, would have provided a suitable western termination for the large earthworks descending that side of the ridge. But it is clear that defensive works of some kind, flanking the bog, carried on from the present end of the earthworks for some 100 m. to the north-west before disappearing on the site of the cut-away bog. It is not clear if this built defence carried on to join with the next certain piece of the Dorsey (also levelled) 240 m. to the north. It is necessary to quote extensively from earlier descriptions of the Dorsey in this area so that the results of the salvage excavation described here may be interpreted in the light of the fullest available information. This section (16–17, Fig. 3) was described by Tempest (1930, 207) as follows:

'At the point 16 ... the rampart turns north-westwards, ending in its present finely preserved condition at the hedge. At point 17 are two small earthen hillocks' [not extant in 1977] 'and between these points, 16 and 17, across the corner of the field, can be traced the very shallow depression marking the inner fosse' [Plate 1, arrowed] '... In this field outside the line of the entrenchment and from a foot to 3 inches under the surface there are now a number of pieces of blackened oak some of them 10 feet long. They appear to be lying horizontally in the NE by N and SW by S direction ... the farmer ... stated that the plough often caught in these pieces ... Neighbours ... also stated that that particular corner of the field had been humpy and unlevel and that it had been levelled and lowered within the last 6 or 8 years.'

Tempest (*ibid.*, 234–5) later had an opportunity to examine some of the piles *in situ*:

'That which was entirely uncovered measured 10 feet in length by about 15 ins. in diameter. It

maintained this width for about 8½ feet of its length, after which it tapered rather abruptly to a point ... Soundings with a spade revealed the existence of quite a number of other "piles" in the ground around ... They appeared to lie outside – that is, on the bog side, of the site of the rampart and trench, but Mr Duffy mentioned other piles, somewhat shorter in length, which from their position would have been under the rampart.'

The evidence for the existence of a rampart and its position relative to the ditch is not made clear in this account. But in a supplementary note Tempest (1931, 409–10) repeats an account of the levelling of a bank in this field:

'The last vestige of this was levelled in 1916 ... One of the men who did the work, Pat Loy ... describes the rampart then as consisting of a hollow on the field side and then a slight mound or rise about 1 foot high, varying from about 26 feet wide at point 16 to 8 or 9 feet at 17. Because the surface water could not drain off the field, Mr Carragher had the mound removed and levelled into the rushy part of the old bog below it. Pat Loy states that the mound consisted of hard "till" or sub-soil clay about 2 feet in thickness, resting on bog beneath which covered [*sic*] the whole corner of the field to a depth of a foot or more ... He does not remember meeting with any of the oak piles or beams which are now to be found in that corner. It would seem fairly likely therefore that the rampart material was originally carried from the fosses and supported over the bog by a platform or raft of beams (some of which remain to this day).'

The information which Tempest collected may be summarized thus: a ditch (visible on the 1928 air photograph, Pl. 1) extended the line of the northern ditch of the main earthwork and ran in a north-westerly direction for some 80 m. The ditch was dug along the edge of the bog and the associated rampart was piled downslope on top of the bog edge where it may have been supported by a raft of large horizontal beams. Other piles, beams and posts turned up in the damp field bottom at the base of the ridge, but there appears to be no specific record of any being seen upslope or to the north-east of the ditch line where the timbers under discussion at present were uncovered.

In 1938 Davies (1940b, 284–5) excavated a series of trenches in 'the rough bog-land at the western end of field 4.655', that is, the area in which the present excavation took place. In his account of the excavation Davies does not refer to Tempest's observations, published only a few years previously. A relettered copy of Davies's site plan (*ibid.*, fig. 3) is reproduced here (Fig. 4). In the original publication this was accompanied by a number of drawn sections and a brief text, as follows:

'In 1938 we excavated the rough bog-land at the western end of field 4.655. I traced the rampart and ditch across the field, when a storm levelled the standing corn ... In the bog the sole signs of the ditch were slight depressions in till, and the rampart had been mainly cleared away ... As in certain parts of the southern stretch, it was carried on lines of piles, which seem to have crossed it diagonally at intervals ... The piles which we found were wedged in place with stones and horizontal logs ... the stumps of the piles were rounded, sometimes split vertically; they were not sunk more than six inches into till ... As far as could be determined, there had been in this area two ramparts, the outer consisting of a clay bank without piling.'

Davies does not seem to have had very solid evidence for either of his ramparts, but suggests that they may have created artificial sides for an elevated ditch, 'a device used on certain portions of the Roman Vallum in Northern England' (*ibid.*, 285–6).

The Excavation

The approximate extent of the bulldozed area, some 20 by 30 m., is shown with dashed outline on Fig. 3. The line of slightly displaced oak uprights visible before excavation corresponds with the narrow linear feature which bisects the area roughly east-west. Time permitted only a hurried examination of the features, but a large irregular area, some 20 m. by 6 m., around the line of the posts was cleared of loose disturbed soil and the surface of subsoil was exposed over most of the area. Wooden posts and other features were found in an area measuring 15 by 5.5 m., shown in outline at the top of Fig. 5A with details in Fig. 5B.

The oak posts stood in the trench or foundation slot, of which a continuous length of 19.5 m. was exposed. The feature was generally deeper and wider at the east end and disappeared altogether on the west. This may, however, result from its originally having been cut through a superficial boggy layer at the west end which had rotted away or been removed. The feature survived only as a cut into subsoil with infill of sticky grey clay, presumably redeposited subsoil altered by leaching. There were no extensive external archaeological deposits, bulldozed soil and patches of ploughsoil rested directly on subsoil over most of the area. Where apparently best preserved, the trench was about 45–60 cm. wide and 45 cm. deep with a steep-sided U-section. Its course was slightly curved and locally irregular (Fig. 5B).

Embedded in the trench were the well-preserved butts of over 30 stout oak posts, sometimes wedged in place by riven oak boards jammed between the posts and the edge of the trench (Pl. 2). The butts were axe-rounded and they were 20 cm. in diameter on average. Some of the timbers were simply round branches while others were split sections of larger logs, sometimes

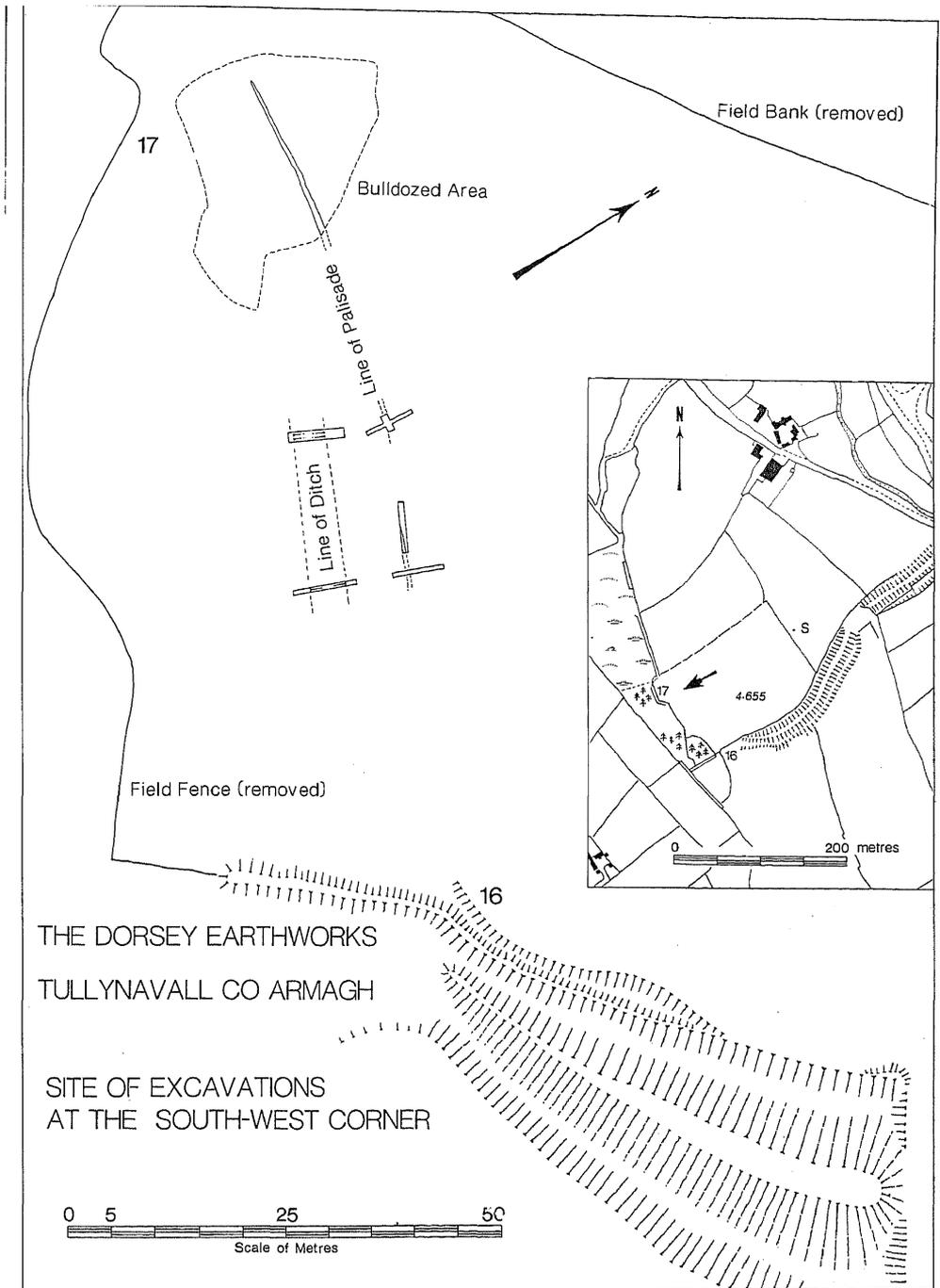


Fig. 3. Site B, showing layout of trenches in relation to extant earthwork with (inset) local field boundaries.

appearing to have been roughly squared. Usually only about 25 cm. of the post-butts were reasonably well preserved in the fill of the trench. Often a thinner decayed projection survived to a higher level (Fig. 5, sections A–B, C–D), sometimes protruding above the surviving fill of the trench. In several cases the oak side-pieces, the longest of which was 1.5 m. long, protruded well above the intact fill of the trench into disturbed soil. It was clear that the recent bulldozing and perhaps ploughing had disturbed the posts to some extent, but it was surprising that so many timbers remained more or less *in situ* given that the upper parts of most of them were encased in disturbed soil. The locations of several missing posts were identified by topsoil-filled holes with corresponding impressions in the floor of the gully. Indeed when the posts surviving *in situ* were removed it was noted that in many cases they too left distinct hollows, about 1 cm. deep, in the floor of the trench.

Several other features were found to the north of the trench. These were three pits, 1–3, and a very degraded sliver of dark oak, approximately 1.6 m. long, resting on the surface of subsoil (Fig. 5B). This is labelled ‘branch’ on Fig. 5B, but it may be a shrivelled remnant of a larger beam, such as those described by Tempest. The pits, all approximately 15–20 cm. deep, lay roughly in line 4 m. north of the palisade slot. Pit 1, the most westerly, was simply filled with blue-grey clay, but 2 and 3 retained remains of the butts of upright posts (Fig. 5B).

The posts in the palisade trench were photographed *in situ* (examples in Pl. 2) and on removal. The most degraded specimens were discarded, but a majority was passed, with a number of the riven side-pieces, to the Palaeoecology Centre, Queen’s University, Belfast, for dendrochronological study. Eleven timbers, mostly axe-marked post-butts, were eventually conserved.

Conserved Oak Timbers (Fig. 6)

1. Roughly cylindrical post-butt, 45 cm. long and about 17 by 13 cm. in section. Base recently cut off for tree-ring dating (not illustrated).
2. Large rounded post-butt, 60 cm. long with axe-trimmed base 21 cm. in maximum diameter. There is a deep transverse slot 35 cm. from the base, but degradation of the wood has destroyed its upper edges.
3. Post-butt 53 cm. long and 22 cm. in maximum diameter with a sub-triangular section. Base damaged, top rotted. There is a gouged-out transverse slot, 11 cm. wide and 8 cm. deep, 24 cm. above the base.
4. Substantial timber, subrectangular in section, some 74 cm. long and about 17 cm. square. A flat-bottomed slot 11 cm. wide and 6 cm. deep has been gouged out across one face, 10 cm. from the base. There appear to be traces of another slot on the opposite face.
5. Large timber, 74 cm. long and 23 cm. in maximum diameter, with a flattish wedge-shaped cross-section. One of the side-pieces.
6. Large post-butt, 74 cm. long with rectangular section, a maximum of 22 by 13 cm. approximately. A deep hole has been cut between two adjacent flat faces leaving a bridge of wood intact. The hole is about 9 cm. deep and narrows to a width of 5 cm.
7. Post-butt 45 cm. long, flattened base, rectangular section, about 10 by 14 cm. The timber seems to be a split-off quarter of a branch (not illustrated).
8. Post-butt lacking base. Surviving length 66 cm., from round to subrectangular in section, maximum diameter 20 cm. A large hole has been cut between two adjacent faces leaving a bridge of wood intact at the angle between.
9. Rounded branch, presumably a post-butt, 68 cm. long and 12 cm. in maximum diameter. A transverse recess 6 cm. wide and 5 cm. deep has been cut in the side 20 cm. from the base.
10. Post-butt (length of branch) with oval section, 14 cm. in maximum diameter and 72 cm. long.
11. Large timber 72 cm. long, maximum diameter 19 cm. Triangular cross-section with the smallest side convex, apparently forming about one-sixth of the circumference of a large tree. Probably used as a side-piece.

It was at first suspected that the carved holes in timbers 6 and 8 and the slots on 2, 3, 4 and 9 were the remains of crude joints and that the timbers might have seen service in an earlier structure. It now seems more likely that the holes at least were provided for the attachment of ropes for dragging the timbers to the site. A rope simply tied around the log could easily slip off or could be broken by abrasion on the ground. Similar holes were cut into the butt of the large central post of the phase 4 structure excavated by D.M. Waterman in Navan Fort, Co. Armagh.

Trial-trenches A–E to the East

Sufficient long-lived oak timber had been uncovered from the palisade trench to give confident expectation that the material could be matched against a floating master tree-ring chronology (M.G.L. Baillie, pers comm) and that they could be dated when the chronology became fixed in time (see below page 75). Although the timbers could be argued to have formed part of the Dorsey it was felt desirable to spend a little time in tracing the line of the palisade trench eastwards across the field to see if its relationship to the main rampart at 16 could be worked out. Accordingly, two narrow test-trenches, B and E, 50 cm. wide and 6 m. long, were opened across the line of the palisade trench, projected eastwards from the bulldozed area (Fig. 5A).

In the middle of trench B a gully cut in subsoil and filled with grey soil was located underneath about 30 cm. of topsoil. The gully, which we presume to have been the palisade trench first exposed further west, was 30 cm. wide and 20 cm. deep. The remains of only one, very degraded, post survived *in situ*. No traces of the former presence of other posts were observed. The cutting was expanded in the middle to a width of 2 m. This confirmed the existence of the linear (palisade) trench, but no further posts were found. In cutting E a single squared post, apparently in an isolated post-hole, was found on the projected line of the palisade trench. A narrow cutting, C, some 6 m. by 60 cm. was opened in the hope of revealing a greater length of the palisade trench. The trench was found in the south-east corner of the cutting and the decomposed remains of three or four spaced post-butts were exposed and left in position.

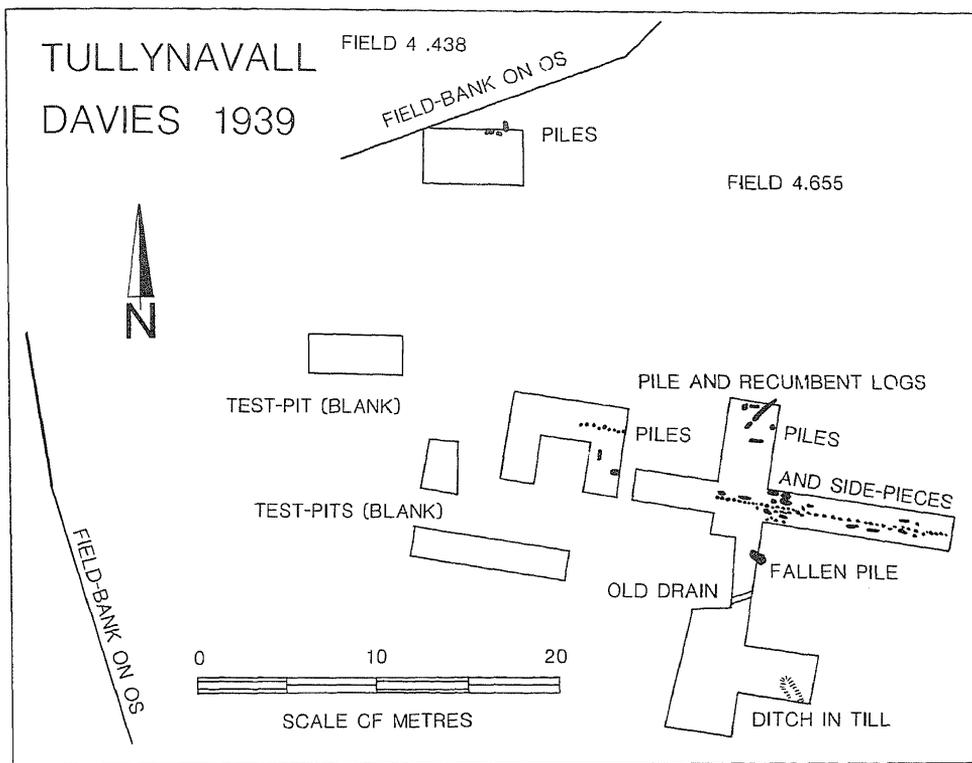


Fig. 4. Copy of plan of 1939 excavation at site B (after Davies 1940b, fig. 3).

While it is, therefore, clear that the palisade followed in general a steady course towards point 16, its line was somewhat irregular.

To the south of cuttings B and E two further trenches were excavated in the centre of a vague hollow, roughly on the line of the ditch visible in the air photograph (Pl. 1). Trench A was 6.6 m. long and 1 m. wide and encountered a substantial ditch 4 m. wide and 1.6 m. deep. The ditch was of wide U-section with a flat bottom on hard stony subsoil. The lowest 50 cm. of fill was a sticky blue/grey clay covered by 35 cm. of dark brown peat. This was in turn covered by 20 cm. of turfy brown soil (cut by a recent land drain), capped by 50 cm. of light, grey-brown, clayey topsoil. There seems little doubt that this is the ditch interpreted as a prolongation of the 'inner fosse' by Tempest and also visible on the air photograph. In trench D, 17 m. further east, the surface of a ditch of similar proportions, presumably the same one, was exposed on the same line. The top of a layer of peat in its upper fill was exposed some 80 cm. below the surface, but excavation was not carried further.

The line of the ditch was not recognised in hand clearance of loose soil in the bulldozed area south of the palisade slot. Time did not, however, permit this work

to be so painstaking as to warrant a certain denial of the existence of the ditch in this area. Neither was it possible to excavate the likely junction of the excavated ditch and palisade slot with the main earthwork at point 16. The area was not then under immediate threat and some evidence bearing on the assumptions made in the interpretation below may remain to be checked another day, despite subsequent bulldozing of the area to the west of the end of the main earthwork.

INTERPRETATION

It was certain at the time of excavation that considerable levelling had taken place in the field since it was described in 1938 by Davies. Not only had the surface been lowered, probably removing the remains of the larger horizontal timbers and truncating other features, but field drainage and complete removal of the bog which lay to the south-west of the ridge had clearly promoted rapid decay of those timbers which remained in place. If the 1977 bulldozing had not been discovered by a happy coincidence, it is certain that the palisade trench and its timbers would have been completely removed from the

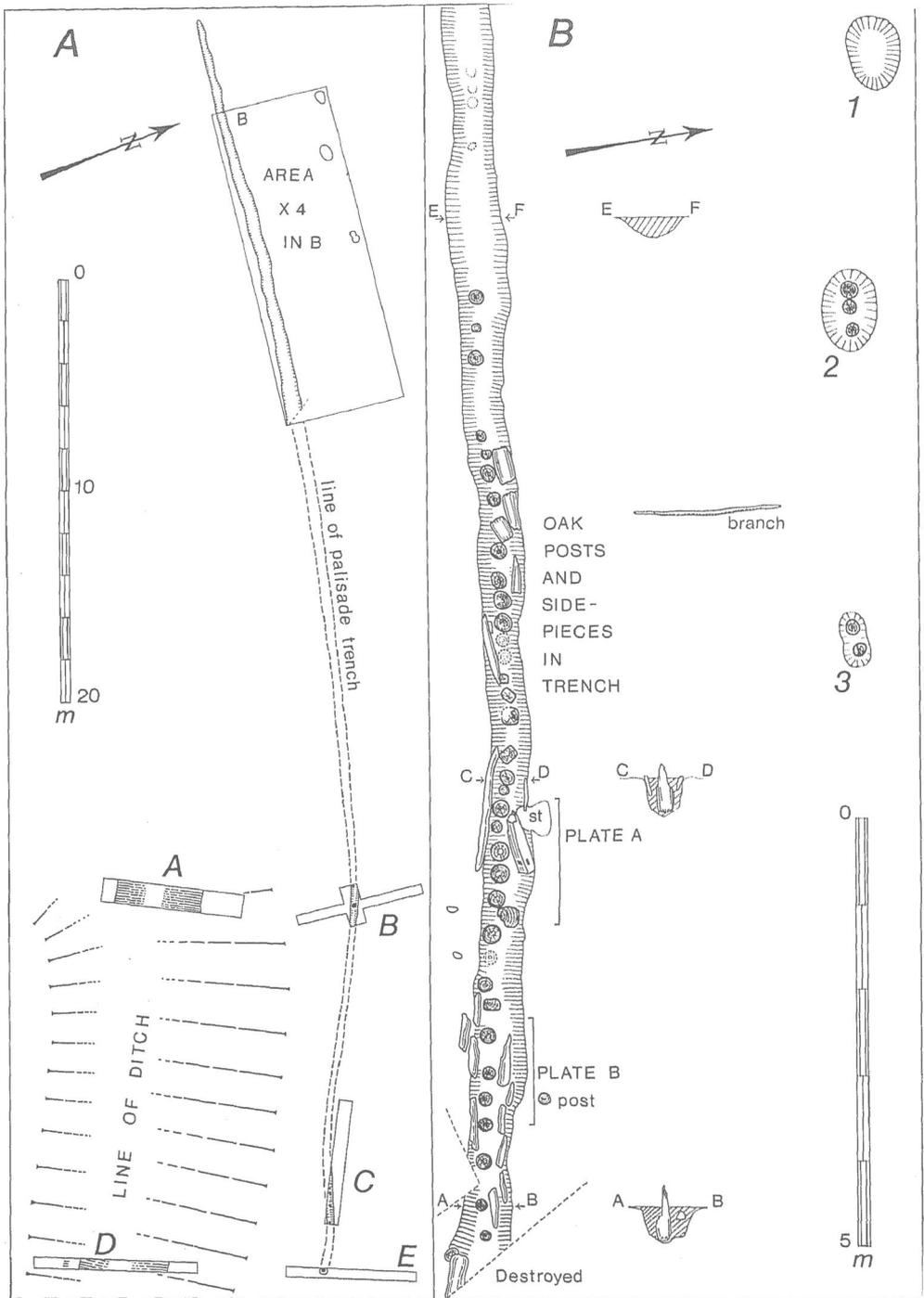


Fig. 5. A: site B, layout of excavated trenches. B: plan of timbers in excavated palisade trench. "Plate A" = Pl. 2A; "Plate B" = Pl. 2B.

lower, south-west, end of the field. It is also clear that more intensive cultivation of the hillslope at a higher level, where the palisade trench angles up towards point 16, is truncating the feature so that it too may disappear from here before long.

According to Mr Loy's account (Tempest 1931, 409–10), the low bank levelled into the bog in 1916 was on the downhill side of the ditch (assuming that his 'hollow on the field side' equates with the line of our ditch). This bank would then be a prolongation of the main bank of the earthworks now surviving only as far as point 16. The line of the palisade slot seems to have been roughly parallel with the ditch and 7.5 m. north of its edge on that side. It is tempting to suggest that this space might have been occupied by a bank, but there is no positive evidence that a bank existed on this side. As we have seen, however, Davies suggested that there had been two ramparts although his evidence for this is not clear (1940b, 285).

In a trial section cut through the main rampart, Davies (*ibid.*, 286–7 and pl. 1, facing page 342) found, in the southern corner of the field with the standing stone (S, inset on Fig. 3), what in section looks like a similar (palisade) trench running parallel to the northern ditch of the main earthwork. He did not, however, refer to the feature in his text. Davies' trench or slot was deep, 1 m. below the surface of subsoil, and narrow, only 50 cm. wide. Its base was filled with grey clay with an upper fill of light brown earth, capped by topsoil. He may have presumed (perhaps rightly) that it was a drain, but it may be significant that the feature could have been parallel to the ditch and was 7.3 m. away from it.

If the feature that Davies found in the standing-stone field was a palisade slot it could, arguably, have been another part of that revealed in the present investigation and would support the suggestion that the palisade slot and timbers excavated in 1977 were contemporary with the main earthwork. On the other hand, the feature at present under discussion, even if not completely contemporary with the main earthwork, is unlikely to be very different in date. The 'palisade' seems clearly to be part of the Dorsey defences and is unlikely to be an unrelated feature of different date which happens fortuitously to have been discovered nearby. The date of the palisade and the timber it contained must, at least roughly, also be the date of the main Dorsey earthworks.

It is significant that a trench, interpreted as a contemporary palisade slot, was found in an excavation of the 'Black Pig's Dyke' near Scotshouse, Co. Monaghan (Walsh 1987). The profile of the Monaghan earthwork is similar to the southern sections of the Dorsey and earlier writers (for example Kane 1909 and Davies 1955) have suggested that they form part of a single contemporary defensive system cutting off the northern part of Ireland from Dundalk Bay to Bundoran, Co. Donegal. The palisade trench excavated by Walsh, however, ran close to the edge of the northern ditch and had much charcoal in its fill.

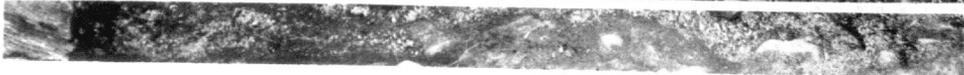
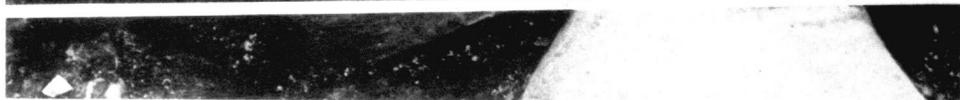
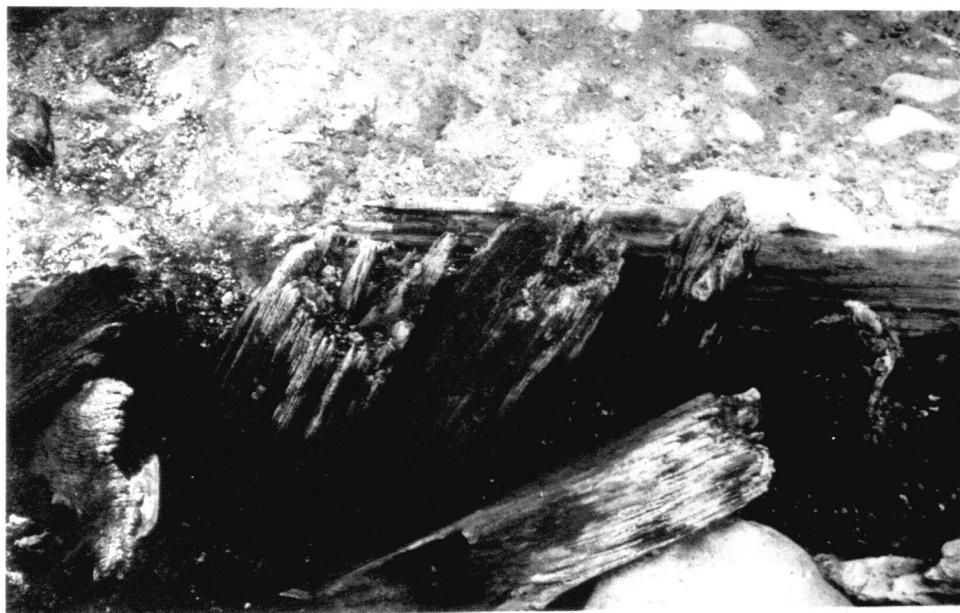
An intriguing possibility, only recognised after

fieldwork had ceased, is that the stretch of timber post-butts and side-pieces excavated in 1977 is the same as that exposed by Davies in 1938. When the field plans (Figs. 4 and 5) are orientated and overlaid at the same scale to obtain the best fit of field boundaries, it appears that Davies' 'piles and side-pieces' (Fig. 4) ran parallel to those found in 1977 and about 7 m. to the north. If the lines of posts are the same feature, the south-western field boundary seems to have advanced 7 m. to the north-east since Davies' time. This seems unlikely, but the boundary here was certainly ill-defined in the 1930s and may have been formalised in a more easterly position after final drainage of the narrow stretch of bog and its plantation with conifers.

The possibility that the timbers had been exposed in an earlier hand excavation (Davies found a 13 m. long stretch (1940b, 285, Fig. 3)) would explain why the tops of the timbers exposed in 1977 stuck up into what was clearly disturbed soil (Fig. 5B). If the soil had been disturbed by ploughing or bulldozing, the timbers would surely have been much more dislocated. But an earlier excavation, exposing only the tops of the posts and side-pieces, then backfilled, would have produced the effect noted in 1977. Davies merely says of this part of the excavation that the rampart 'was carried on lines of piles, which seem to have crossed it diagonally at intervals ... The piles which we found were wedged in place with stones and horizontal logs ... The stumps of the piles were rounded, sometimes split vertically; they were not sunk more than six inches into till ...' (*ibid.* 285).

Davies clearly believed that the lines of posts were piles running at oblique angles under the line of a rampart. The suggestion that they represent a free-standing palisade (or a palisade/revetment to a long-vanished bank) running in a bedding trench parallel to a ditch seems more plausible. Davies said that the stumps of the 'piles were rounded, sometimes split vertically'. He does not say that he withdrew all of them from the ground and examined their bases. He describes their profile in horizontal section which would be apparent without either excavating or removing them completely. Shaking them around or withdrawing a few would be enough to enable him to say that they were not sunk more than six inches into till. Davies did not mention that his posts were in a linear trench, but if he did not excavate down around the posts he would not have found one. If he saw these timbers at the outset as 'piles', he would have assumed that they were driven. The fact that the piles were wedged in place with stones and horizontal logs (side-pieces) strongly suggests that they had been set in a trench similar to that uncovered in 1977. On balance it seems reasonable to conclude that the line of posts exposed in 1977 is likely to be the main line of 'piles and side-pieces' exposed and wisely reburied by Davies in 1938.

In summary, the 1977 excavation exposed a line of oak posts in a trench or palisade slot which was traced at intervals over a distance of some 70 m. running south-



eastward from the west corner of 'field 4.665' towards the western end of the extant earthworks at point 16 (of Tempest's 1930 numbering). The suggested palisade ran, for some of its length at least, parallel to (east of) a filled-in ditch (visible on the air photograph (Pl. 1)) which appears to continue the line of the northern ditch of the Dorsey north-west from point 16. Earlier accounts indicate that there was a contiguous bank, downslope from (west of) the ditch on the margins of the bog where Tempest suggested that the bank may have been supported on a raft of beams.

DATING

The discussion above was lengthy compared with the size of the excavation, but it is important to understand the evidence for the context of the timbers and their possible relationships to the main earthworks. There is no doubt that they are part of the works known as the Dorsey, but whether they were cut down and used at exactly the same time as the main earthwork was constructed is not certain on the evidence available. It is certain, however, that they are contemporary with a period of construction and use of the Dorsey defences.

The timbers were sampled for dendrochronological analysis by M.G.L. Baillie of the Palaeoecology Centre, Queen's University, Belfast. The study revealed that all of the timbers had been growing at the same time and probably formed a group felled at around the same time. The outermost rings, however, were not present on any of them; only two had evidence of the heartwood/sapwood boundary and one retained some sapwood, enabling estimates of the felling dates to be made (Table 2). Using the Belfast sapwood estimate of 32 ± 9 years, the felling ranges of the timbers were estimated.

Table 2
Dendrochronology of palisade timbers from Site B

	Last Heartwood Ring	Felling Range
Q4629	121 BC	89±9 BC
Q4633	128 BC	96±9 BC
Q2888	127 BC	95±9 BC

IMPLICATIONS

Some discussion of the results has already appeared in print (Baillie 1986 and 1988; Lynn 1980 and 1989), but it is worthwhile to repeat some of the conclusions here. Tree-ring dating of the excavated timbers shows that they were felled and used as part of the Dorsey defences at around 100–90 BC. The Dorsey earthworks (and

Pl. 2. Two views (A and B) of timbers in the Palisade trench of site B, from the North, positions indicated on Fig. 5 B (*Crown Copyright*).

timber structures) can now confidently be seen as field monuments of the Early Iron Age, and cannot have been inspired by frontier works of the Roman period in north Britain. If they are related inspirationally or culturally with any British works, relatives are to be sought in the Iron Age.

The Iron Age dating of the Dorsey cannot confidently be extended to include all similar earthworks or cross-ridge dykes in the north of Ireland. The Dorsey remains a unique and intriguing site. Comparisons and suggestions of contemporaneity with other monuments can only be made with caution (Lynn 1989).

It may be significant, however, that the palisade was built at the Dorsey at the same time, give or take nine years, as the large multi-ring timber structure A of phase 4 was erected, probably for ceremonial purposes, in Navan Fort, Co. Armagh (Waterman and Selkirk 1970; Baillie 1988). Navan is some 28 km. north of Dorsey, but the route blocked by the Dorsey leads through Sliabh Fuaid (Arthurs 1954), via either Keady (to the west) or Newtownhamilton (to the east), to Navan and Armagh. The eastern route appears to have been straddled by another linear earthwork, known as 'the Dane's Cast', 6 km. south of Armagh.

Earlier commentators have concluded that the Dorsey was a fortified frontier post of the population group whose capital was Navan Fort (Tempest 1930, 236; Davies 1955, 35). We now know that construction was being carried out on the Dorsey at more or less the same time as a large ceremonial structure of timber was being built at Navan. This can only reinforce the suggestion that there was some connection between the Dorsey and Navan. We must be a little cautious, however, in assuming that the Dorsey was built and maintained by the northerners. It is very difficult to decide if there was one direction in which the builders of the Dorsey mainly wished to regulate movement. This is complicated by the fact that if large-scale cattle-raiding was a major problem then the 'defences' would face into the builders' territory. It cannot be concluded from superficial appearances that it was necessarily built by northerners fearful either of incursions from the south or cattle-raiding by southerners. It could just as easily have been the other way around. This reminds us that the monument is somewhat remote from any possible major population centres on the north from which reinforcements could be deployed rapidly (Sliabh Fuaid is unlikely to have been populous), but that it is relatively close to the fertile plains of north Louth whose Iron Age inhabitants may have wished to control a route to the north. Defensive works are sometimes built by weaker groups fearful of mobile and ebullient neighbours. A people who could invest in a large wooden ceremonial structure, such as the one at Navan, were not short of techniques or resources. Whether they were also confident and secure is another matter, but it is at least possible that this phase of ritual activity at Navan was triggered by the same circumstances which led to the construction of the Dorsey. It is also possible that the linear earthworks had

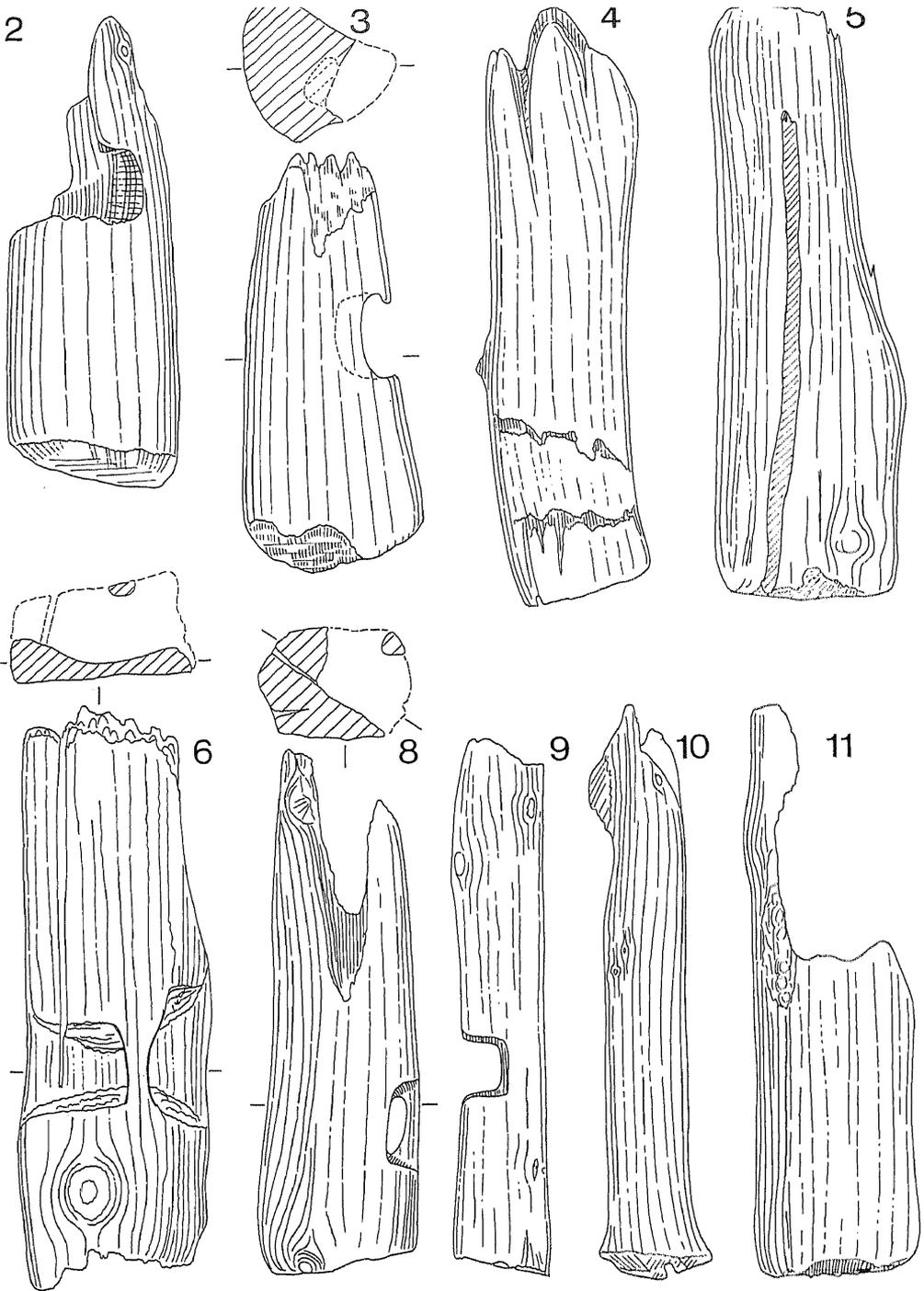


Fig. 6. Timbers recovered from palisade trench after conservation (x 1/8).

a religious as well as a military function in defining the limits of tribal territory on important routeways (Lynn 1992, 55).

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