

EXCAVATIONS ON BRIDGET'S AND BURNTWOOD FARMS, ITCHEN VALLEY PARISH, HAMPSHIRE, 1974. MARC 3 SITES R5 AND R6

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SUMMARY

A linear soil mark was excavated in two places and was confirmed to be a rural road, hollowed in places, of Roman date. Contemporary land boundaries, along one of which was a cemetery, were excavated. Evidence of late Neolithic and Bronze Age activity in the form of pits and scoops was recorded. The negative lynchet of a 'Celtic' field was investigated. Molluscan analysis revealed a succession from partial clearance of woodland in the late Neolithic, through woodland in the Bronze Age, to open country in the Iron Age and Roman periods.

INTRODUCTION

Four kilometres north-east of Winchester a low spur, marked by the 91 m (300') contour, overlooks a major bend of the river Itchen. The boundary of the parishes of King's Worthy and Itchen Valley bisects the spur, Fig. 1. Aerial photographs have revealed a complex of soil and crop marks covering 13.5 ha, Fig. 2, at SU 505305. Among the marks are four ring ditches to the north and a fifth smaller one (MARC3 R30, Fasham forthcoming) to the south; a hill-top enclosure, presumed to be of Early Iron Age date, of 3.25 ha defined by a ditch some 7 m wide; and adjacent to it, downhill, a series of rectangular enclosures with associated streets of Roman date. The date of the rectangular enclosures was confirmed by the unpublished excavations undertaken by the Itchen Valley Historical and Archaeological Society in 1971–3, when evidence for late Iron Age occupation was also found. South and north-east of the settlement area are the remains of

pre-Roman 'Celtic' fields. A linear feature, best interpreted as a road, extended north-east from the Roman settlement, running across country and up a slope for some 2 km. It was visible as a dark soil mark and occasionally as parallel ditches—the latter at one point clearly cutting across a 'Celtic' field.

The proposed extension of the M3 from Popham to Compton (Biddle and Emery 1973) ran along the linear feature for some 1300 m. This feature was excavated on Bridget's Farm Site R5, SU 51373453, where it was no longer visible on aerial photographs, Fig. 2. The objective was to determine what had happened to it. At Site R6 on Burntwood Farm, SU 51133411, there were two reasons for the excavation. The linear feature deviated to the east, and it was hoped that excavation would shed some light on the cause of this deviation, perhaps an unseen settlement or something else important enough to be avoided. At the same point the study of aerial photographs and of a fluxgate gradiometer survey (carried out by the staff of the Ancient Monuments Laboratory) suggested the possible existence of an enclosure on the east. The fluxgate gradiometer survey gave strong indications of occupation at the north of the area, Fig. 3 and Appendix. Clearly the relationship of the linear to the possible enclosure and to the 'Celtic' fields, and the cause of the deviation needed to be understood.

Underlying both excavations was the need to understand the significance of the linear mark and what, physically, it resulted from.

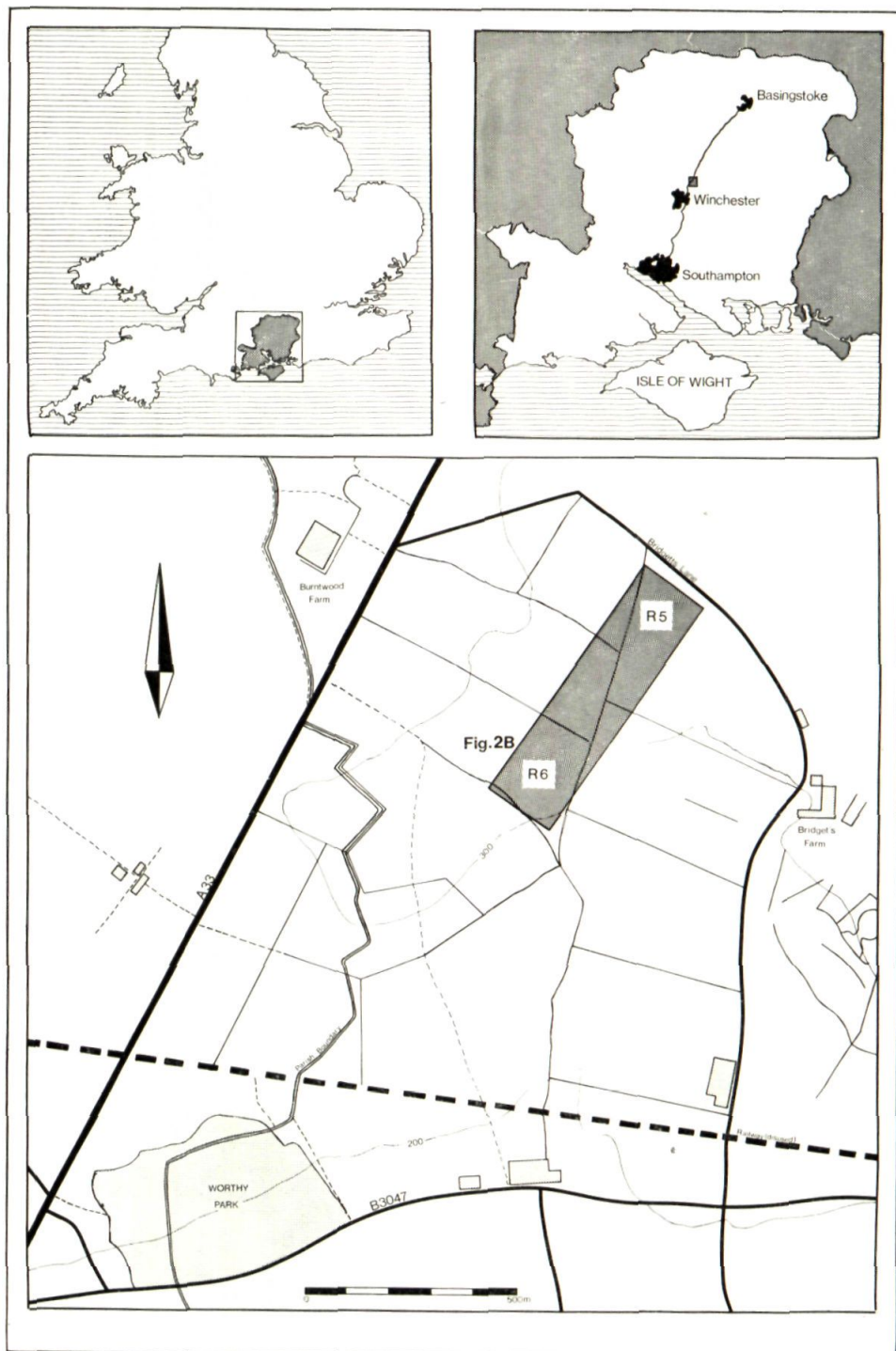


Fig. 1. Location map of the excavations on Bridget's Farm, Site R5, and Burntwood Farm, Site R6, and details of crop marks south of Bridget's Farm.

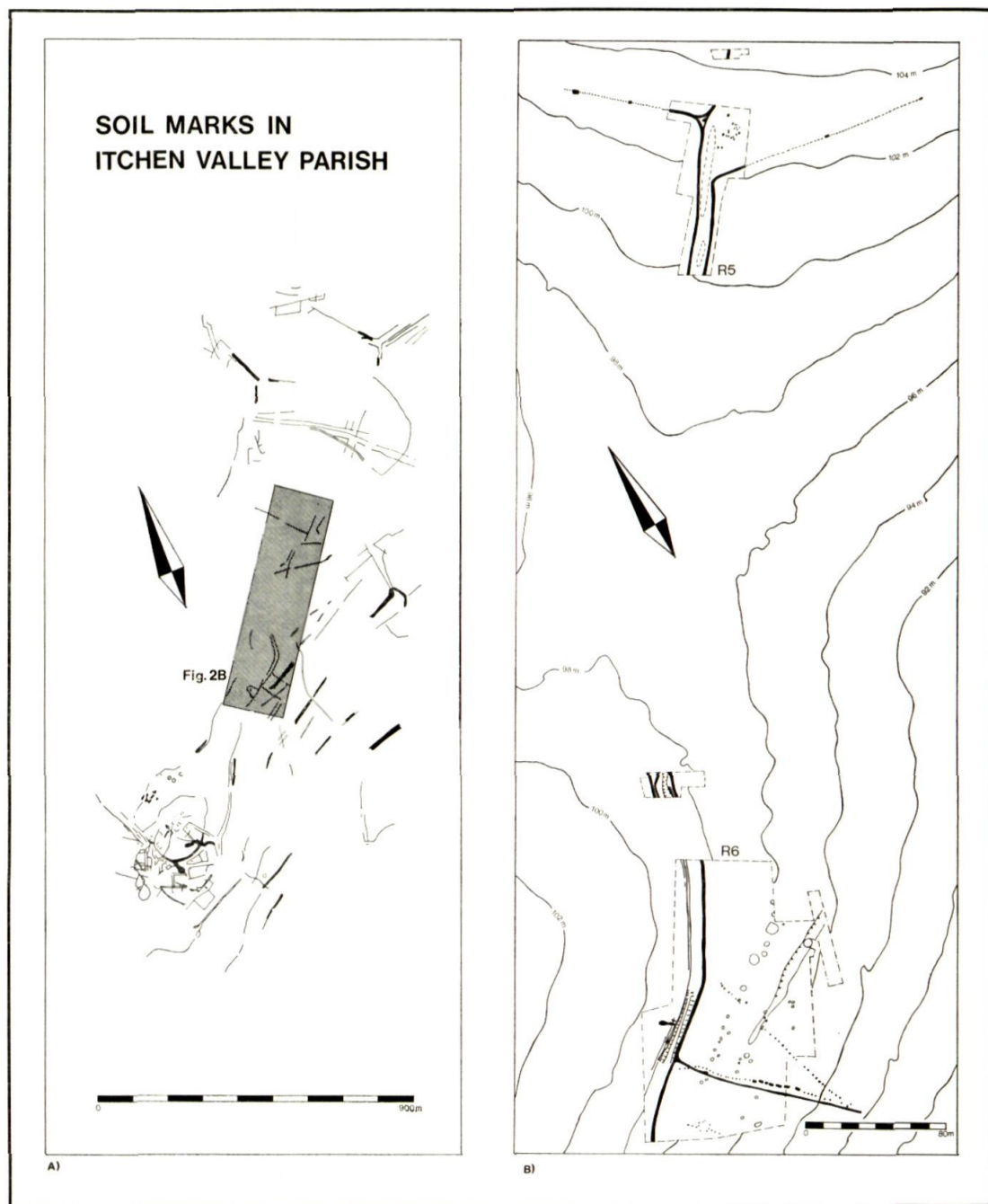


Fig. 2. (A) Soil and crop marks on the west side of Itchen Valley Parish. (B) Plan showing the relationship of the two sites, Bridget's Farm, Site R5, and Burntwood Farm, Site R6.

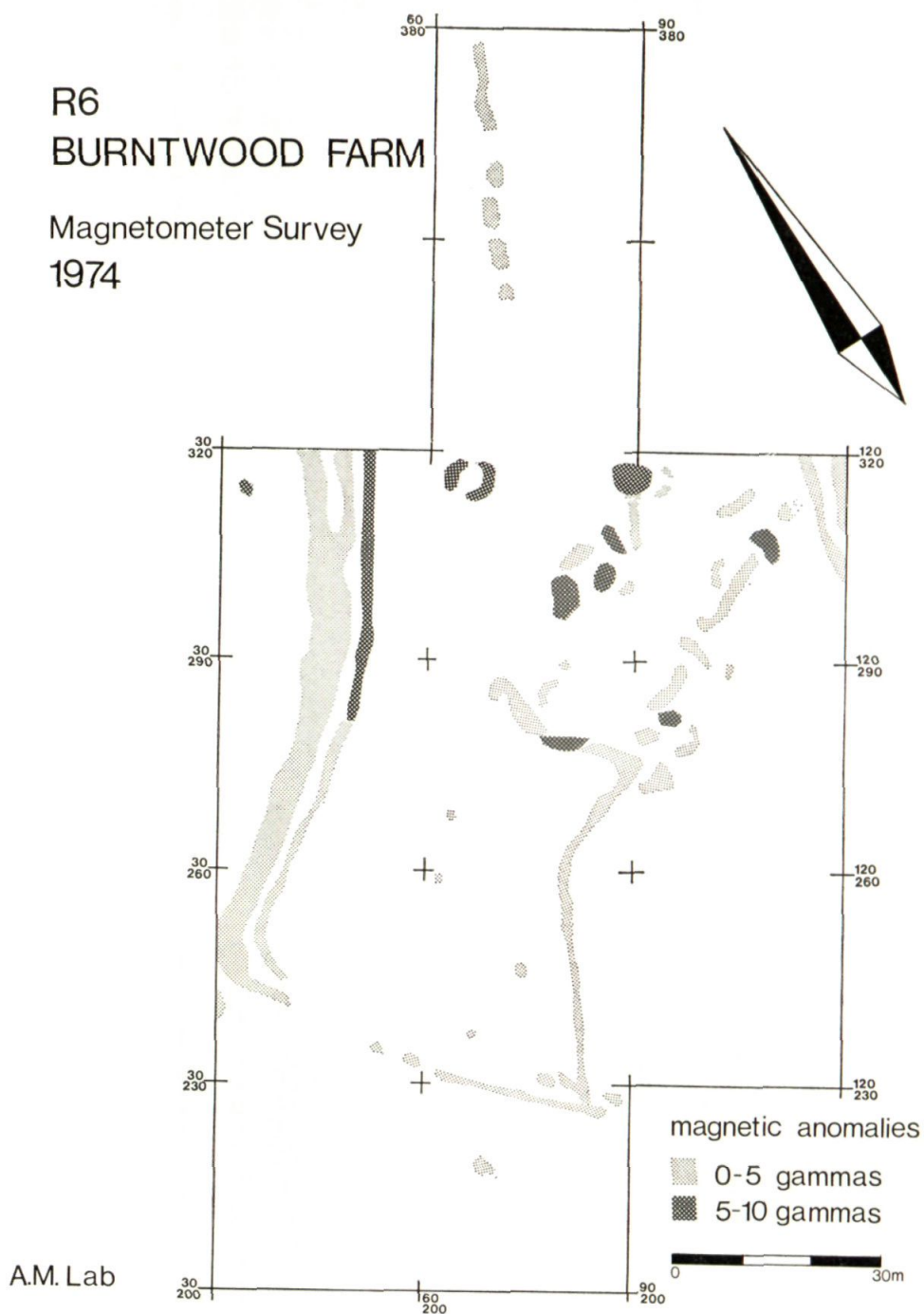


Fig. 3. Burntwood Farm, Site R6. Fluxgate gradiometer survey of part of the site.
The co-ordinates correlate with those on Fig. 4.

LOCATION

Both sites were on Upper Chalk, but R5 lay immediately south of a low ridge capped by Clay-with-flints. R6 was on the west slope of a dry north-south valley, and R5 lay at the head of that valley.

METHOD OF EXCAVATION

On both sites ploughing had cut into the surface of the chalk. The topsoil, therefore, was removed mechanically with a D6 caterpillar tractor towing an earthmoving box. At R6 1.3 ha were stripped and at R5 0.27 ha. Features cut into the chalk were then excavated by hand, each feature having a unique number with related layer numbers, e.g. Feature 104/1-3 or Feature 76/1-3. Linear features were given alphabetical segment codes with related layer numbers, e.g. Feature 2A/1-3. An extensive programme of sampling, especially for land molluscs, was undertaken on both sites. Sample columns, where relevant, are shown on the section drawings. Time and cost did not allow for the analysis of all samples, and of the surplus some have been discarded and others deposited with the Hampshire County Museum Service (Acc. Nos. R5 - A 1978 16/5 and R6 - A 1978 17/5).

PHASING

The features examined can be grouped broadly as follows:

- Phase 1. a. Features of uncertain origin and date. Site R6.
- Phase 1. b. Pre-Iron Age features. Sites R5 and R6.
- Phase 2. Iron Age features. Site R6.
- Phase 3. Roman track and land boundaries. Sites R5 and R6.
- Phase 4. Roman cemetery. Site R6.
- Phase 5. Post-holes of probable late- or post-Roman date. Site R6.

DESCRIPTION (All measurements are from, or at, the top of the chalk)

Phase 1. a. Features of Uncertain Origin and Date, Figs. 5 and 6

On R6 there were thirty-two features of uncertain origin and date. Fourteen were circu-

lar hollows, and the remainder oval or sub-circular. The pits were either steep-sided with rounded bases or had gently sloping sides with irregular bottoms, Figs. 5 and 6. The dimensions ranged from: circular, diameter 80-280 cm and depth 24-93 cm; oval, length 100-400 cm, width 50-250 cm and depth 21-70 cm. Each feature was filled in a similar manner, the lower part with a grey cemented chalk silt containing tubular chalk accretions, small chalk lumps and patches of chalk rubble, above which was a deposit of dark brown humus containing a few fragments of chalk and flint. The only finds were pieces of white quartzite sandstone, probably burnt sarsen, all occurring in the brown loam deposits. In places, the sides of these pits had been badly shattered, making it difficult to define the edges precisely.

Only one of the features, No. 170, was clearly a solution hole.

(I am grateful to Dr. R. J. Small for discussing these features.)

Phase 1. b. Pre-Iron Age Features

On both sites there were features of different character, probably of pre-Iron Age date. On R6 there were four circular or oval scoops different from the features described above. Their sizes varied from: width 250-720 cm, length 415-740 cm and depth 47-100 cm. Finds were recovered from them all. All had gently sloping sides with rounded bottoms and were filled with a deposit of cemented chalk silt and small chalk rubble, above which were layers of dark brown loam with chalk and flint fragments and pieces of quartzite sandstone (sections on Fig. 5). The upper fills produced a few flint flakes and cores, and a few small sherds of Iron Age and Romano-British pottery, probably introduced during later cultivation. From the lower deposits came more flakes and cores, and from Feature 76 at least one Neolithic sherd. Feature 76 produced clear evidence of human activity while the pit was open. Lying just above the primary grey, chalky silt and at the base of the brown loam was a spread of flint nodules, lumps of quartzite sandstone, animal bone (pig, cattle and sheep/goat size), baked clay

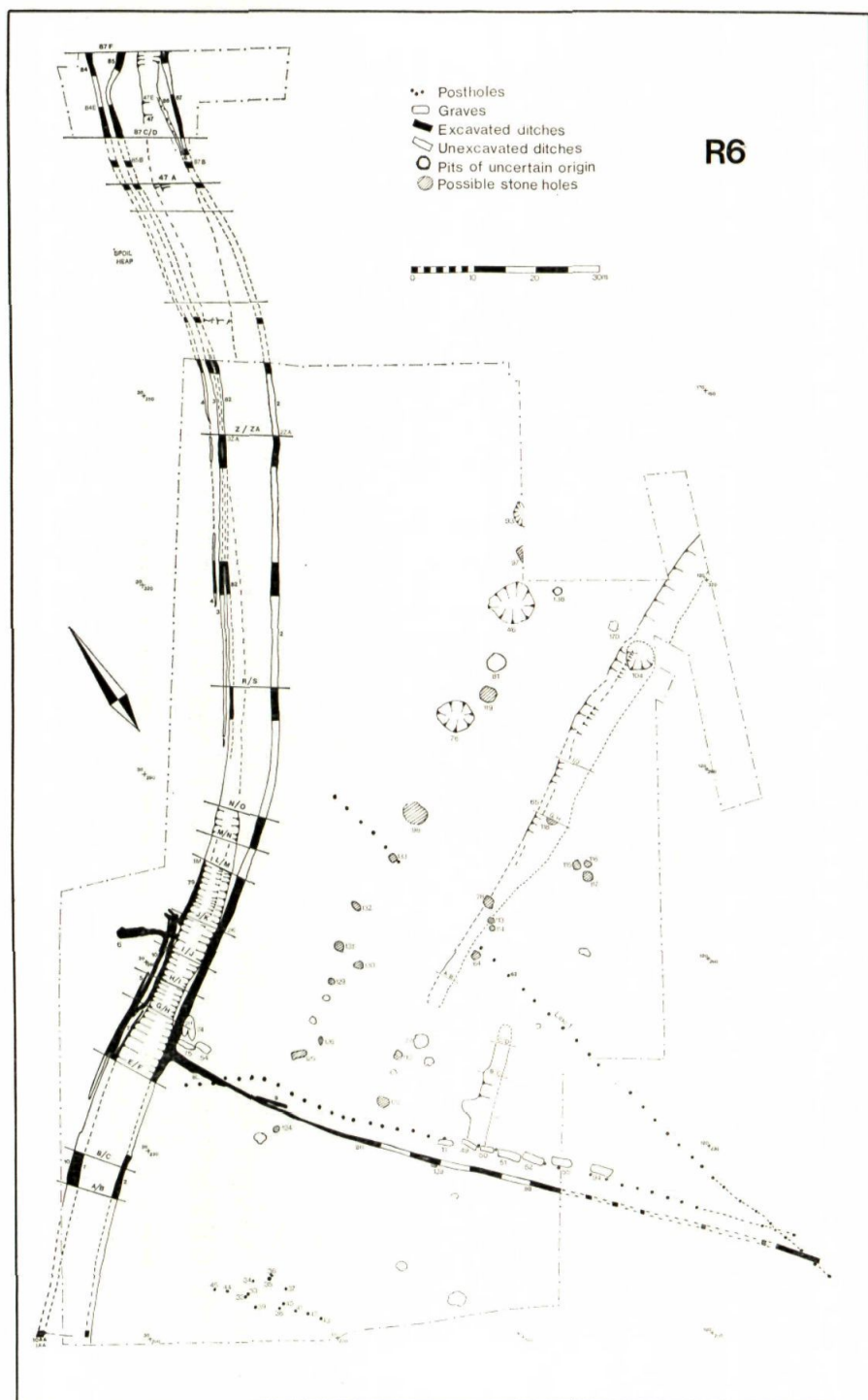


Fig. 4. Burntwood Farm, Site R6. General plan of the features recorded.



Fig. 5. Burntwood Farm, Site R6. Sections of features of uncertain origin and date, possibly stone-holes, Nos. 138, 81, 115 and 77, and of late Neolithic pits, Nos. 104 and 76. The dotted line through No. 104 approximates to the bottom of the later lynchet, Feature 65.

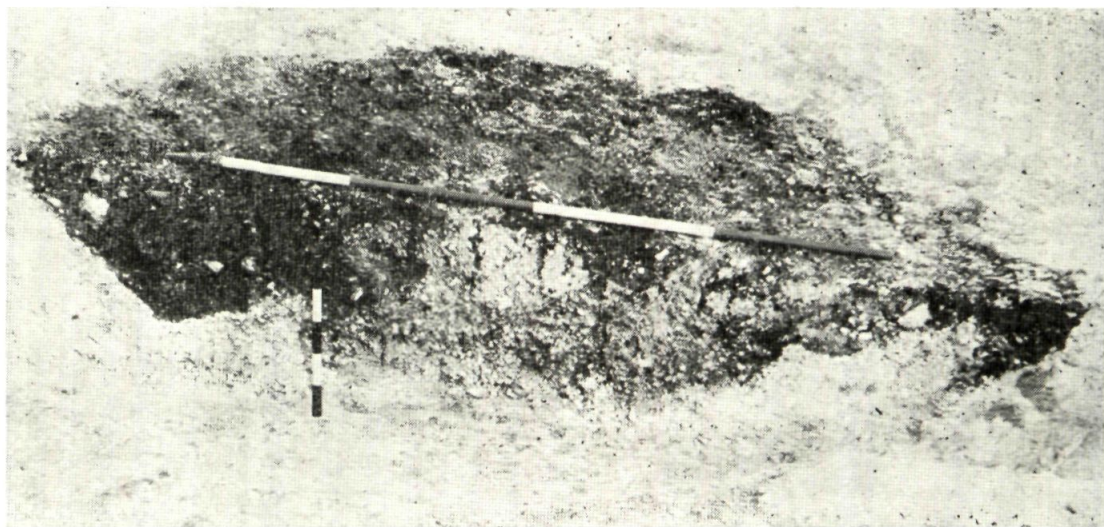


Fig. 6. Burntwood Farm, Site R6. Feature 119, possible stone-hole box-sectioned. View from south. Scales 2 m and 0.5 m. Photo: G. H. Smith.

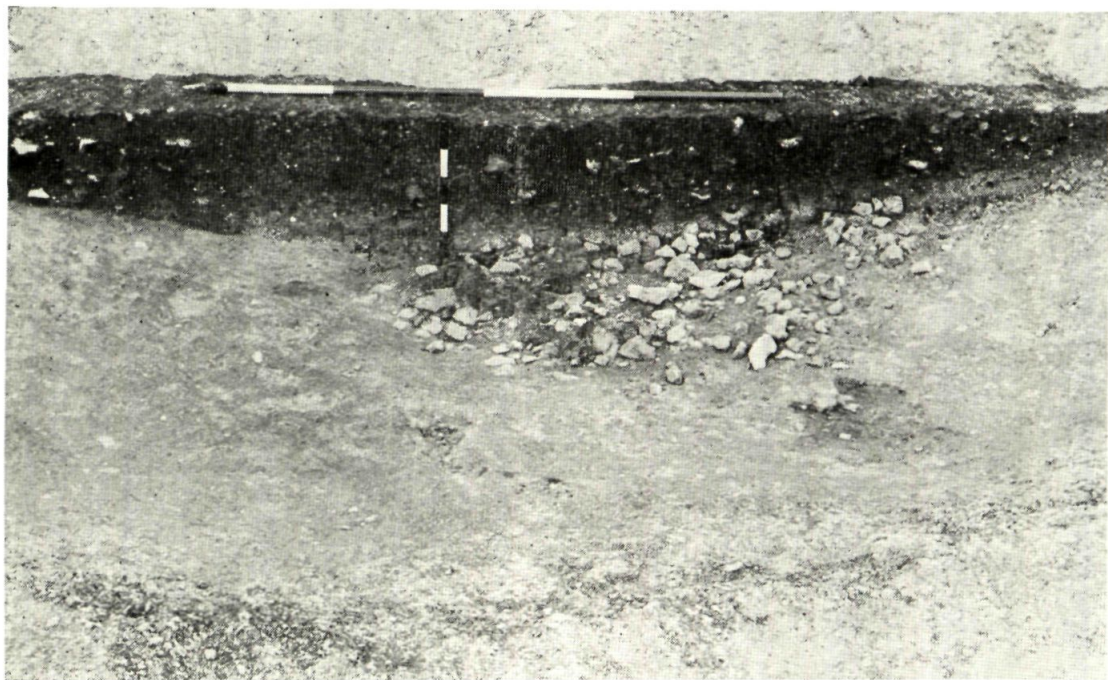


Fig. 7. Burntwood Farm, Site R6. Feature 76 half-sectioned, showing the spread of occupation debris in the bottom. From south. Scale 0.5 m. Photo: G. H. Smith.

and pottery, Fig. 7. The pottery was flint-gritted. Sealed by this rubbish was a layer of grey, chalky silt, from which came one sherd of Mortlake Ware.

A core and a scatter of flakes were found in the bottom of Feature 93. Features 46 and 104 were similar in size, shape and fill and were probably contemporary and also man-made.

Feature 75, on the east side of the Roman track, was a short linear feature, 3.3 m long, 67 cm wide and 27 cm deep; it was not cut by the road ditch. The sides sloped steeply and the ends gently. From the chalk rubble, Fig. 10, came five flint flakes, one end scraper and one broken borer; two flakes were in the loam above the chalk. These finds are not particularly diagnostic, but they would not be out of place in a late Neolithic or Early Bronze Age context. This feature cannot be securely dated.

The dating evidence for this group of features is not satisfactory, and rests on the stratigraphic situation of Feature 104 underneath a lynchet, Feature 65, and the securely stratified sherd of Mortlake Ware in Feature 76.

The snails in Features 76 and 104 show that, when the features were originally formed, there was a small clearing, that woodland regenerated while the scoops were filling up, and that open country species dominated the upper fill of the features—probably related to the development of the field system. The similarity of the snail assemblages suggests that the two features were contemporary.

On R5 there were twenty circular or sub-circular pits, all grouped together, Fig. 8. They were of two types; fifteen had steeply sloping, almost vertical, sides with round or flat bases, and five were shallow, round-bottomed, irregular scoops, Fig. 9. Diameters ranged from 55–145 cm, depth from 5–94 cm. The greatest volume was 0.8 m³. Seven pits, Features 10, 11, 15, 16, 18, 24 and 25, were less than 30 cm deep and were all, except Feature 10, filled with a single deposit of homogeneous, brown clay-loam with scattered chalk fragments and a few small flints. Feature 10 was filled with a deposit of black loam with a

few burnt flints and charred oak and hazel wood fragments and hazel nuts, beneath a layer of brown clayey loam with a few chalk granules. The hazel nuts were submitted via the Ancient Monuments Laboratory to Harwell for radiocarbon dating. The result was 3790 ± 100 bp, 1840 ± 100 BC (HAR 1695).

The deeper pits filled naturally with chalk rubble and brown loam. A compacted and cemented chalk silt occurred at the base of nine of these pits. Possible recuts were noted in Features 12, 13, 17, 20 and 22. The shape and dimensions of Feature 21 suggest that it was probably a post-pit, but the functions of the remainder are not clear. There may have been a functional difference between the shallow scoops and the deeper pits. Artefacts were rare and totalled three flint cores, twenty-eight flakes, one retouched flake and three flint chips. Animal bones were equally scarce; 70 grams of sheep/goat bone, a cattle skull from Feature 27, which produced a radiocarbon date of 2800 ± 80 bp, 850 ± 80 BC (HAR 2745), and a tibia and ulna of the common shrew (Coy and Winder, archive). Charcoal of oak, hazel, cf. blackthorn, hawthorn-type and conifer were recovered from various pits (Keepax, archive).

Analysis of snails in samples taken from Features 10, 22, 26 and 28 showed very similar profiles with a predominance of shade-loving species throughout, suggesting that the pits were contemporary and dug in a wooded environment. The molluscan evidence for contemporaneity is at variance with the radiocarbon dates (see below, p. 72).

Phase 2. Iron Age Features

Three other features on R6 are of pre-Roman date. Feature 6, a ditch, was some 10 m long, aligned east-west and on the west side of the Roman track; the flanking ditches of the track cut it, Figs. 10 and 11. The western 4–4.5 m were about 1.4 m wide with sloping sides and flat bottom, and 0.5 m deep; the upper fill had been recut. The next 4 m were much shallower and narrower, being about 70 cm wide and 20 cm deep. For the eastern 1.5 m it split into two narrow, shallow gullies, Features 6E and 102, about 10 cm deep and 20

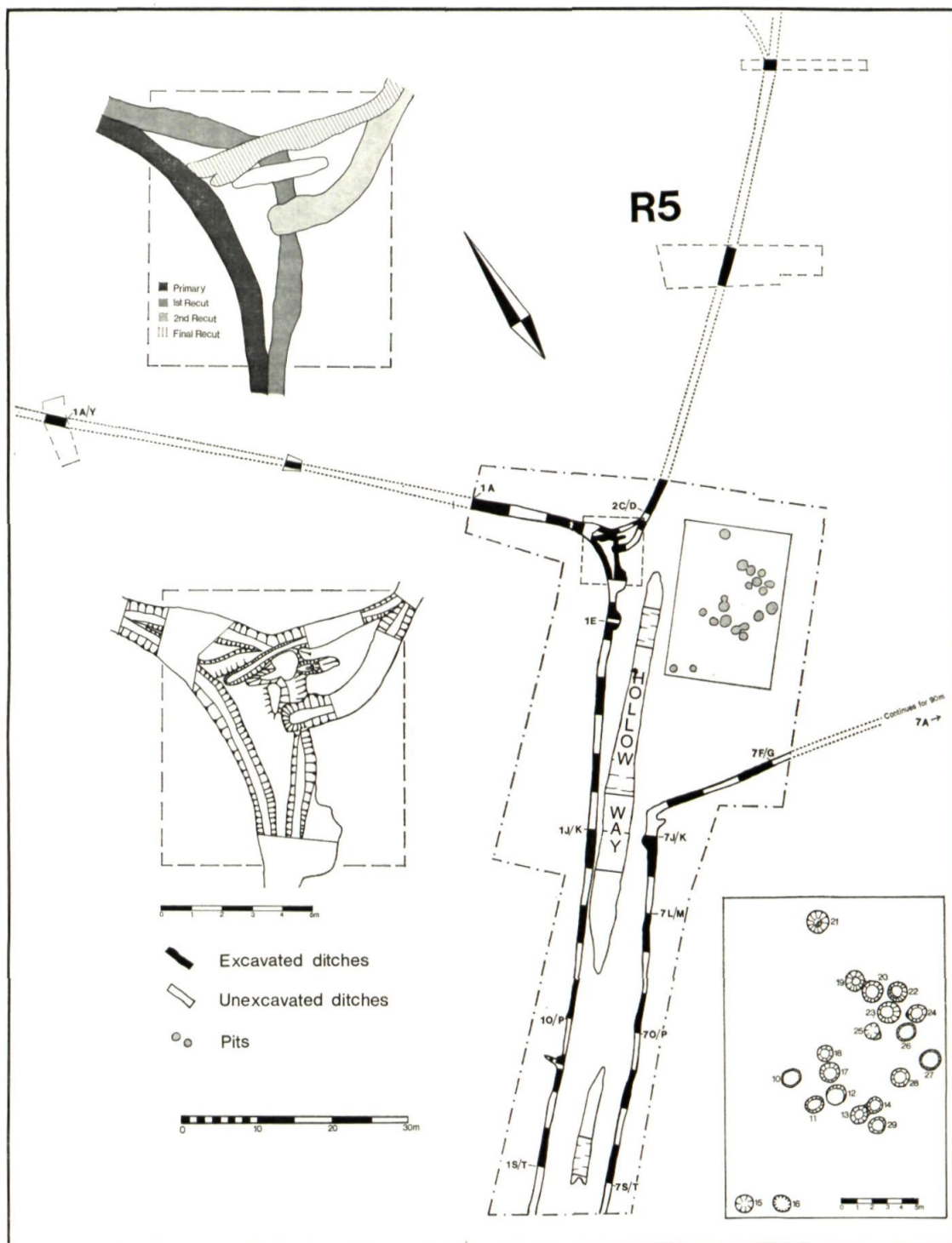


Fig. 8. Bridget's Farm, Site R5. General plan of the features excavated. Details include the prehistoric pits and the junction of the road ditches on the west of the hollow-way.



Fig. 9. Bridget's Farm, Site R5. Sections of prehistoric pits.

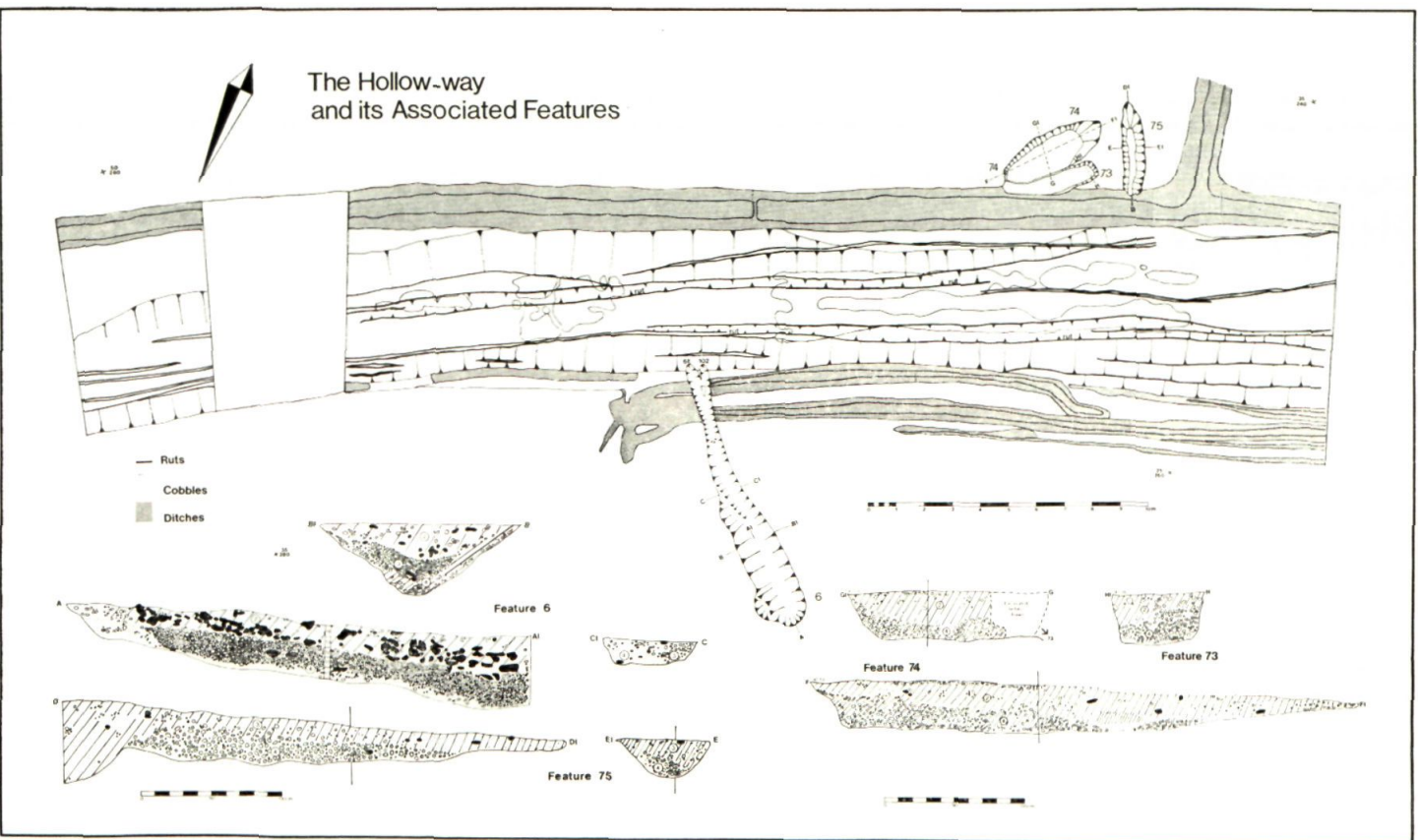


Fig. 10. Burntwood Farm, Site R6. Plan and sections of Features 6, 73, 74 and 75, showing their horizontal relationship to the road and hollow-way. They are shown, deliberately incorrectly, as cutting the road and hollow-way. Details of wheel ruts in the hollow-way are also illustrated.

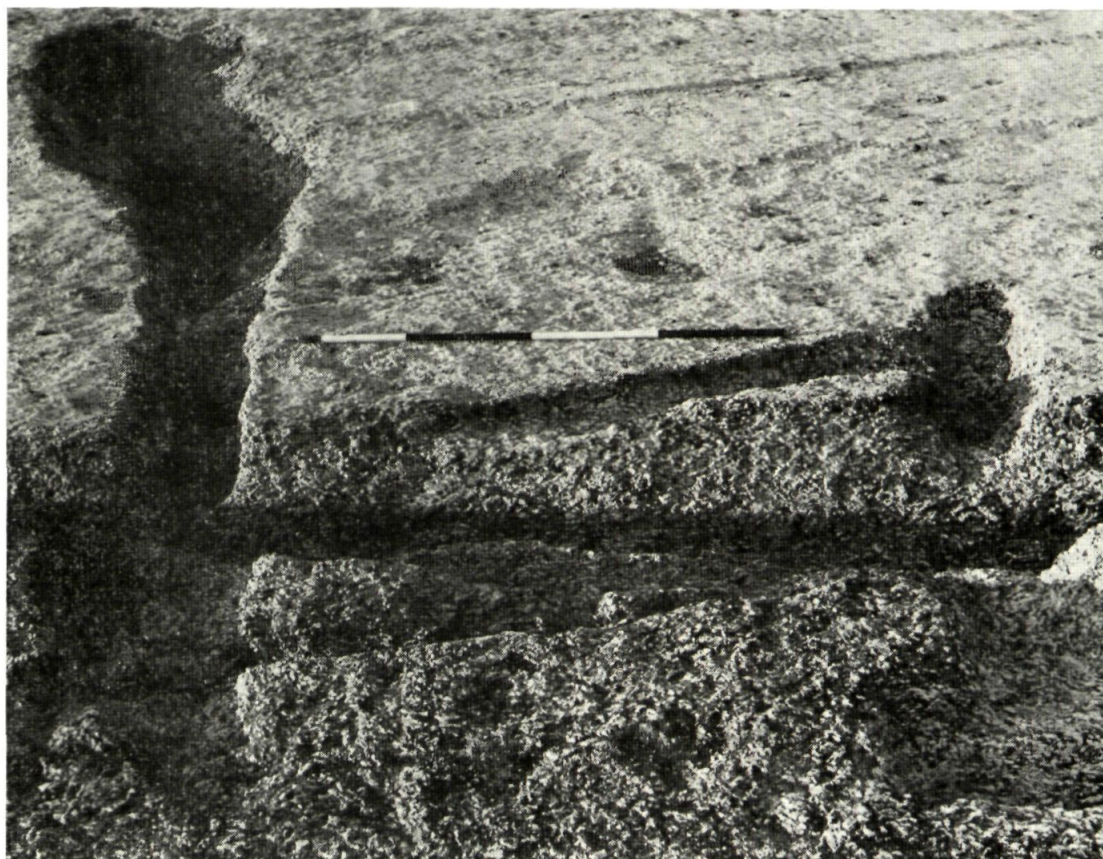


Fig. 11. Burntwood Farm, Site R6. View from the east along Feature 6, across the side of the hollow-way (immediate foreground) and the numerous road ditches. Scale 2 m. Photo: G. H. Smith.

cm wide, Fig. 10. The few finds consisted of 73 flint flakes, 13 flint chips, two cores, eight burnt flints and two sherds of undiagnostic Iron Age pottery. Feature 6 was located at the point of deviation of the Roman track, and also where the side ditches gave every indication of having been dug by gangs (below, p. 51). Molluscan evidence from the west end of the feature shows that shade-loving and open-country species were present in equal proportions in the primary and secondary chalk silts. However, after the recutting, there appears to have been a period of stabilisation when open country species dominated.

The final prehistoric features were the negative lynchets, Features 65 and 66, Fig. 12. They

were part of a vestigial 'Celtic' field system visible on aerial photographs as long, dark marks with sharply defined edges on the north-west, uphill side, particularly Feature 65. A length of 95 m of Feature 65 was uncovered, of which 62 m were excavated. The uphill side was clearly defined as a gentle scarp, which faded away from the edge of the field. The width of the lynchet, as indicated by the spread of its brown loam fill on the chalk, varied from 5.25 m to 10.4 m, and its depth from 10 cm to 50 cm, the latter where it cut across an earlier pit, Feature 104, and the plough had cut deeper into the soft fill of the pit.

Ten metres south-east of the southern end

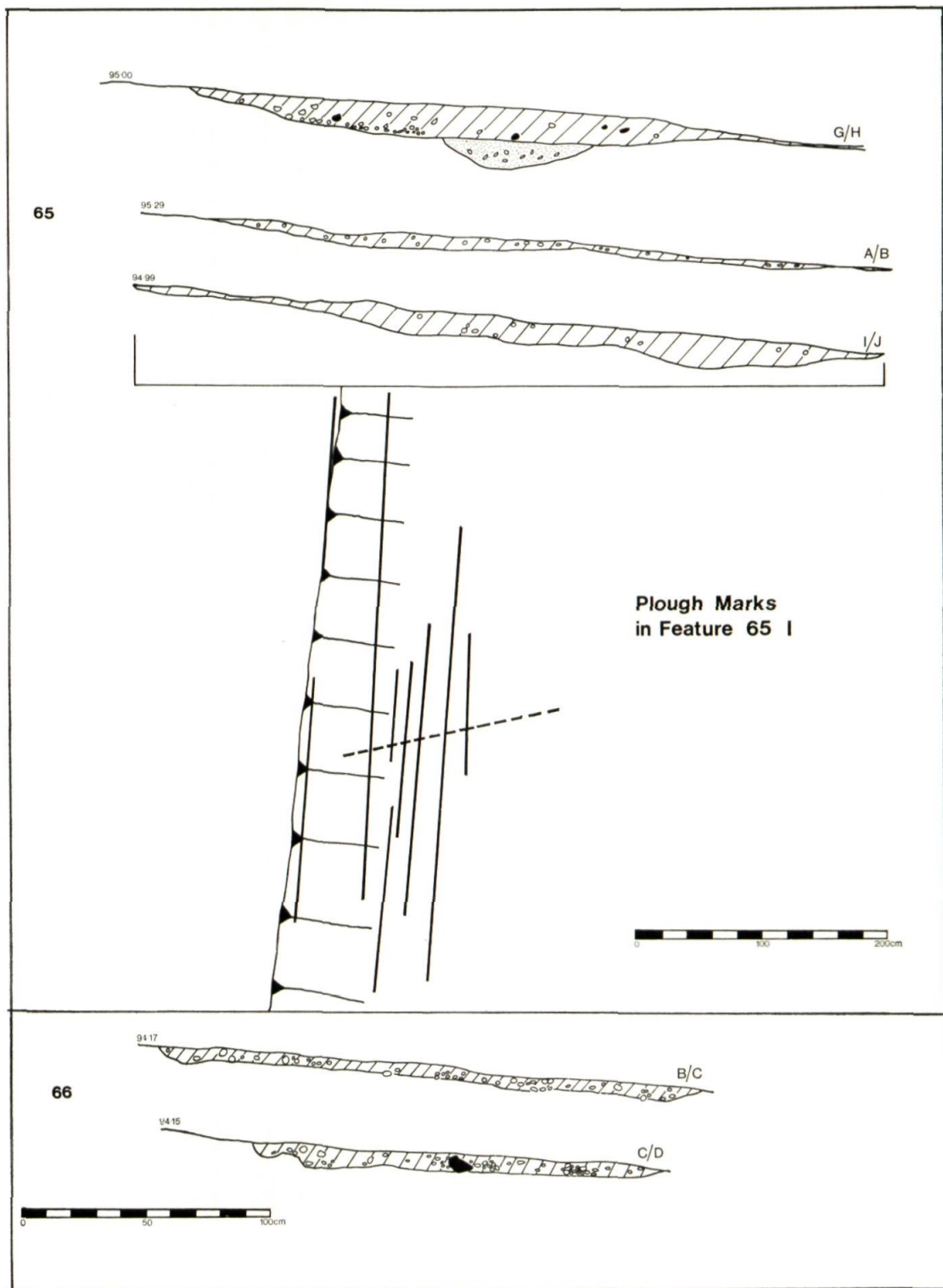


Fig. 12. Burntwood Farm, Site R6. Sections of lynchets 65 and 66, and plan of plough marks in segment I of 65.

of Feature 65 was a second lynchet, Feature 66. Its alignment was almost parallel with Feature 65, and it ran for about 20 m to the south of Feature 65. It lay across two shallowly disturbed areas, but where discernible, the uphill side was defined by a gentle scarp, which disappeared down the slope. It was about 5 cm deep and between 1.6 and 2.2 m wide. It did not extend south of the Roman land boundary, Feature 8, and had presumably been totally ploughed away in that area. The relationship of the two lynchets suggests a staggered corner to the fields. Despite intensive cleaning of chalk on the uphill side of both lynchets, there was no evidence, apart from some root holes, of any form of field boundary. Ploughmarks, Fig. 13, detectable in Segment I of Feature 65, were represented by lines of brown humus resting on the chalk. They could not be sectioned. The clearest examples ran parallel to the line of the lynchet with only one possible mark at right angles.

The only finds from the fill of the negative lynchets were in Feature 65 and consisted of three Iron Age sherds, six Romano-British sherds, one flint core, which had had secondary use as a hammerstone, and four flakes. The flint artefacts all came from the segment of Feature 65 which cut the earlier pit, Feature 104.

Phase 3. Roman Track and Land Boundaries

The apparent Romanisation of the settlement site to the south, represented by the rectangular enclosures, was accompanied by dramatic change in the rural landscape. A Roman road, hollowed in places and defined by side ditches, cut across the former field system, and from it ran land boundaries unknown in number and total extent. Of those excavated, one, adjacent to the deviation, was bounded by a linear cemetery. The road ran from south-west to north-east.

On R6 the road deviated to the east and, at the north end of the site, was clearly of two phases with modified alignments. The width of the roadway between the flanking ditches varied from 4.9 to 7.8 m. The ditch sections are shown in Fig. 14. The measurements for the ditches are always given in the order:

depth (from top of chalk), bottom width, and width at top of chalk.



Fig. 13. Burntwood Farm, Site R6. View from the north of plough marks in Segment I of lynchet 65. Scales 0.5 m and 2 m. Photo: G. H. Smith.

The east side of the road was defined by ditch No. 2, originally at least 35 cm by 49 cm by 75 cm. It had been recut twice; measurements for the recuts were: earliest, 18–47 cm, 22–76 cm and 69–153 cm, and latest, 44–68 cm, 18–58 cm and 82–155 cm.

At the north of the site the east side of the road was defined by two ditches. The outside one, No. 87, probably the same as ditch No. 2, continued in a straight line with dimensions varying from 20–35 cm, 28–35 cm and 118–32 cm. The northern portion had been recut; the recut, continuing beyond the limit of the excavation, measured 15–35 cm, 18–22 cm and 50–68 cm. An inner ditch, No. 86, diverged from 87 before turning east and fading out. It was a shallow ditch, 9 cm by 26–34 cm by 44–8 cm. There was no clear stratigraphic relationship between the two ditches.

On the east side of the road the pattern of the ditches changed dramatically just north of the earlier Feature 6. To the south, when the ditches were recut, they were often slightly realigned. Thus the principal ditch, No. 10, cut

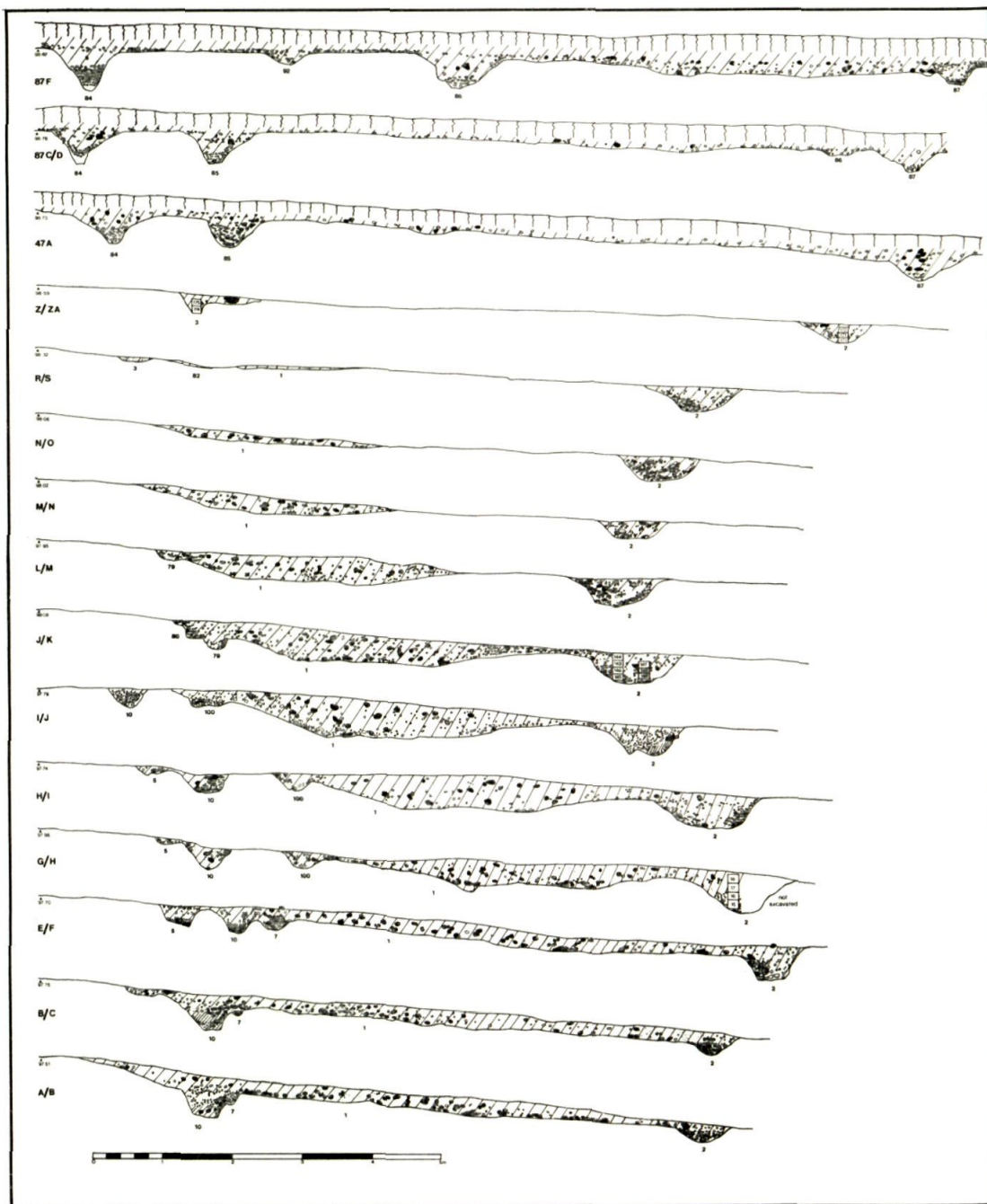


Fig. 14. Burntwood Farm, Site R6. Selected sections from north (top) to south of the road and ditches, illustrating the development of the hollow-way.

ditch 5, but was cut by and replaced by 7, the alignment of which was continued by 100. The dimensions of the ditches were: No. 5, 4–28 cm, 14–32 cm, 33–56 cm; No. 10, 18–47 cm, 22–76 cm, 69–153 cm; No. 7, 4–18 cm, 8–18 cm, 33–56 cm, and No. 100, 23–36 cm, 14–40 cm and 43–84 cm.

North of Feature 6 the west side of the road was defined by ditch 79, which was visible in places only as a stain in the chalk—elsewhere its dimensions were 38 cm, 16–21 cm and 40–64 cm; ditch 79 was a recut of ditch 80. Ditch 79 stopped 11 m north of Feature 6, and there was a gap of 15 m until ditch 3, measurements 12–33 cm, 8–30 cm and 42–53 cm, which continued to the spoil heap. Ditch 4, 13 cm, 12–20 cm and 21–33 cm, ran parallel to ditch 3. North of the spoil heap were two ditches on the west side of the road: 84, possibly the same as ditch 4, continued in a straight alignment, and measured 42–65 cm, 8–14 cm and 78–118 cm; 85, the probable continuation of 3, measured 37–49 cm, 16–20 cm and 70–122 cm. Ditch 84 probably relates to ditch 87 on the east, and 85 was parallel to 86.

On Bridget's Farm the road, 6.4 m to 8.8 m wide, was flanked by ditches (for sections, see Fig. 16). Ditch 7 on the east, 17–36 cm, 8–30 cm and 64–110 cm, defined the road limits for some 40 m before turning sharply through 70° to run eastward across country for 125 m where it terminated. Aerial photographs suggest that the terminal was one side of an entrance through what had become, at this point, a land boundary. It was not possible to test this by excavation. As a land boundary it measured 19–50 cm, 5–36 cm and 60–118 cm. There was no evidence for recuts.

Ditch 1 defined the western side of the road and, like ditch 7, it turned acutely to become a land boundary. As a road ditch it measured 41–4 cm, 25–30 cm and 111–38 cm, and this section had a recut with dimensions 14–32 cm, 5–31 cm and 59–115 cm. The land boundary element was traced west for 70 m where it was 20–47 cm, 12–34 cm and 95–160 cm. It was clearly visible on aerial photographs continuing west for at least another 70 m. The angle of ditch 1 was made more acute in a

second phase of activity represented by ditches 9, 3 and 6.

In a third phase the alignment of the road was continued north-east by ditch 2, the junction of which with ditches 3, 6 and 9 was redesigned in a fourth phase, ditch 5. The north-east extension ran for 82 m before disappearing where it started to cross the Clay-with-flints on the top of the small ridge that defined the valley.

On both sites the road between the ditches had been worn down, in places, into a hollow-way. On R5 it was shallow with a maximum depth of 9 cm and a width of 1.7–5.0 m. At the south of R6 the hollow-way covered the entire area between the ditches, but, as the road deviated and traffic had taken the shortest line through the corner, hollowing became concentrated with a minimum width at the bottom of 1.94 m and a depth of 57 cm below the surface of the chalk. The narrowing and deepening of the hollow-way through the bend is best illustrated in Fig. 14. The presence of ruts in the bottom of the hollow-way is indicative of either wheeled traffic or sleds, in addition to the erosion of the chalk caused by animal and human feet. There were many ruts, Figs. 10 and 15, particularly where the hollow-way was shallow. Along the deeper stretch it is possible to suggest two horizontal spacings between the ruts: a narrow one of 1.1 m and a wider one of 1.8–2.0 m, with a maximum depth of 5 cm and width of 60 cm. As the hollow-way wore down, an attempt was made to stabilise both the erosion and the balance of the vehicles. Flint nodules were introduced as cobbling; it was quite apparent, even though occasionally the cobbling did extend across the full width of the bottom of the hollow-way, that the downhill, east, side of the hollow-way was repaired first. Presumably the wear on that side was initially greater than on the uphill, west, side. The cobbling would appear to be the last phase of road maintenance before it fell into disuse.

Features 73 and 74 on R6 were just north of the junction of the land boundary, Ditch 8, with the track. The former was subrectangular with steeply sloping sides and a flat bottom. It



Fig. 15. Burntwood Farm, Site R6. View from the south of the excavated hollow-way showing ruts. Scale 2 m. Photo: G. H. Smith.

had been cut into the primary silt of the east ditch of the track, Ditch 2, and measured 1.58 m long, 64 cm wide and 36 cm deep. Feature 74 was an elongated oval, 3.85 m by 1.4 m and 35 cm deep, which was cut into Feature 73, Fig. 10. The finds from these features totalled three small abraded sherds of Iron Age and Romano-British pottery and a bronze pin of Roman date. These two features may be associated with drainage of the hollow-way.

Land Boundaries

The two land boundaries, represented by the east and west extension of the flanking ditches on R5, have already been described; for sections, see Fig. 15. On R6 there was one land boundary, Ditch 8, which was traced for 126 m to the east of the track, before it went into the next field. It was cut through the primary fill of the road's east ditch, Ditch 2, and had been recut twice in the first 6 m adjacent to the

road. The ditch was usually flat-bottomed with sloping sides, Fig. 17, and, although precise measurements in the recut area were not possible, it does seem to have been wider and deeper where it was close to the road than elsewhere. Beyond the first 6 m it varied in depth from 7–36 cm, basal width from 10–39 cm and top width from 45–90 cm. The closeness of the graves to the ditch indicates that its bank, if it had one, was on the south side.

The finds from the fill of the hollow-way, road and land boundary ditches on both sites consisted of 155 small, frequently abraded, sherds weighing 650 grams, one bronze tack and one bronze object, three iron nails and 264 pieces of worked flint. The flint collection comprised 227 flakes, seven chips, sixteen burnt flints, four retouched flakes, seven cores, two scrapers and one hammerstone. Almost half the flint material, 122 pieces, came from deposits in the hollow-way in the area of flint

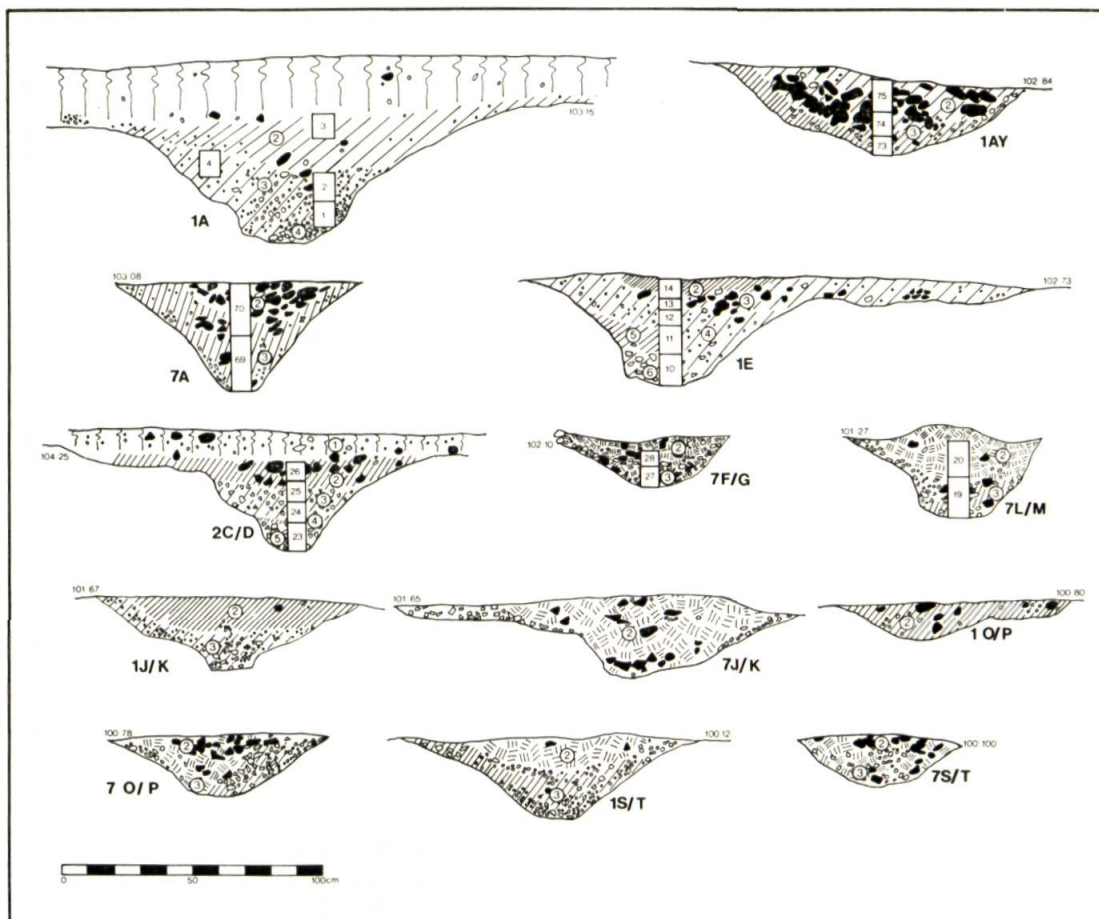


Fig. 16. Bridget's Farm, Site R5. Sections of road and land-boundary ditches.

cobbling on R6, and a further 105 pieces came from the flanking ditches in that area. There was a small concentration of three cores and five flakes in the terminal of the east land boundary, Ditch 7, on R5.

The pottery can be broken down as in Table 1. On R6, around and to the north of Feature 6, the sherds from the west road ditches were predominantly Iron Age, some probably residual. The precise dating of the road, its ditches and the land boundaries, cannot be ascertained from the ceramics. There is an indication from the pottery that the road was in use for most of the Roman period, but precisely when it came into being and fell into disuse is not clear. The aerial

photographic evidence shows that the road relates, in the settlement area, to features of Roman date.

TABLE 1. Analysis of pottery from the hollow-way, road and land boundary ditches on both R5 and R6.

	<i>Number of sherds</i>	<i>Per- centage</i>	<i>Weight of sherds (grams)</i>	<i>Per- centage</i>
Iron Age	53	34.2	229	35.2
Romano-British	61	39.4	304	46.8
Iron Age/ Romano-British	15	9.7	60	9.2
Neolithic	1	16.7	3	8.8
Post Medieval	1		2	
Unidentifiable	24		52	
	155	100.0	650	100.0

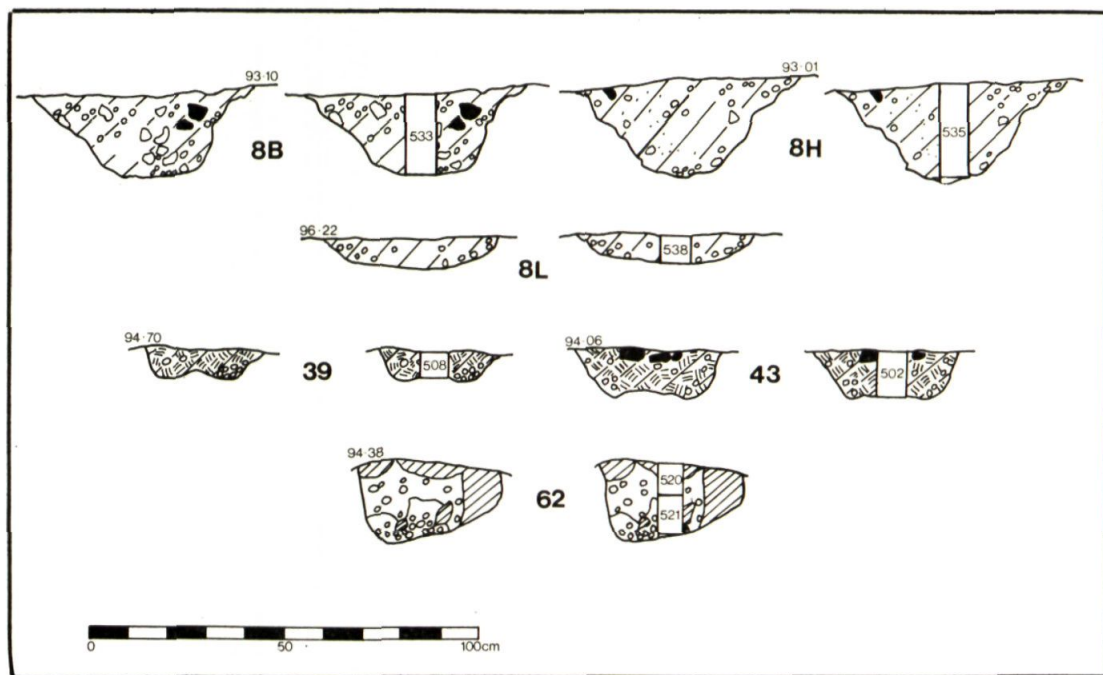


Fig. 17. Burntwood Farm, Site R6. Sections of land-boundary Ditch 8 and Post-holes 39, 43 and 62.

The analysis of land molluscs in samples taken from various segments of the road ditches is typical of open country assemblages, suggesting that there were no hedges alongside the road.

Phase 4. Roman Cemetery

The human bone data was prepared by J. Bayley. The identification of the wood replaced by iron corrosion products was by C. Keepax. Their full reports are in the archive.

A cemetery of eight graves lay alongside the land boundary ditch on R6. Grave 54 was on its own at the junction of the land boundary and the track, and the rest occurred between 45 and 84 m east of the track. All eight graves contained inhumations, on an east-west alignment, buried in coffins identified by soil stains and/or coffin nails. Grave goods were recovered from five graves and indicate a fourth-century date for the cemetery.

In the descriptions of the skeletal remains, age is calculated from tooth-eruption for juveniles (McCall and Wald 1963, 157), and

from the dental wear for adults (Brothwell 1972). In one case, age was estimated from the appearance of the pubic symphysis (Krogman 1962, 92-4). Maximum stature was calculated from long bone measurements using the formulae of Trotter and Gleser (1958). Dental health was, in general, poor, with most of the adults displaying multiple caries and/or teeth lost ante-mortem.

Grave 54, Figs. 18 and 19. Length 2.4 m, width 98 cm, depth from surface of chalk 45 cm. Coffin outline 1.7 m long, 57 cm wide, minimum depth 25 cm. There were 40+ coffin nails, and impressions of oak were on two and probably on two more. The skeleton was extended, lying apparently on its right-hand side with its left leg crossing the right just above the knees. The arms were crossed just above the wrists. The head was to the west. The poorly preserved bones were those of a female individual, of maximum stature 153 cm. Age was difficult to estimate as so few teeth were present, but the individual was pro-

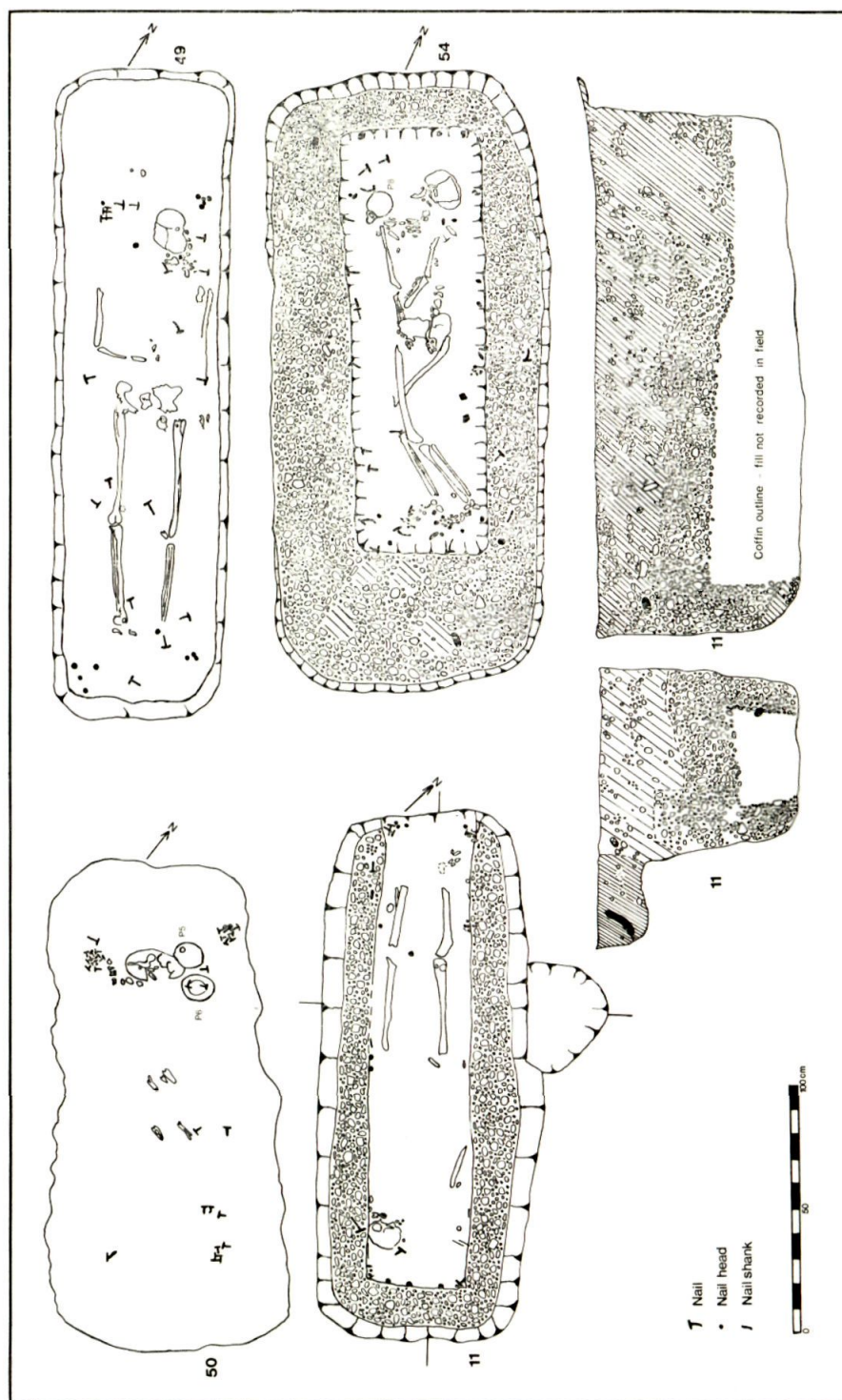




Fig. 19. Burntwood Farm, Site R6. View from the east of Grave 54 showing large size of grave and clear outline of coffin. Scale 0.5 m. Photo: G. H. Smith.

bably aged 25–35, or maybe a little older.

She had been buried with shoes on, and 87 + iron studs and nails from the shoes were recovered. A New Forest grey-ware handled jug of Fulford's (1975) Type 20 was in the grave, Fig. 25. It had probably been placed on the lid of the coffin.

Grave 11, Fig. 18. Length 2.1 m, width 90 cm, depth 80 cm. Coffin outline 1.92 m long, 40 cm wide and 18–36 cm deep. Thirty-six coffin nails and fragments were discovered; thirteen impressions of oak were positively identified with possibly a further six.

Analysis of the positions of the nails suggests that complete boards were used in the manufacture of the coffin. One nail seems out of place, lying at it does point down on the bottom of the coffin between the knees of the skeleton. There were no grave goods. The skeleton was extended, on its back and with its

head to the east. The bones were the very eroded remains of an adult individual aged 17–25 years, and possibly female. The skull was the best preserved part of the body, but even that was far from complete. The jaws were completely missing, only a few loose teeth surviving. One wormian bone was noted in the lambdoid suture.

Grave 49, Fig. 18. Length 2.7 m, width 80 cm, depth 70 cm. The coffin outline was not apparent in the backfill of the grave, but analysis of the nails shows that it was c. 2.10 m long, 35–40 cm wide and at least 20 cm deep. There were thirty-eight nails and fragments, and oak impressions were identified definitely on three and possibly on a further three nails. Sandals or shoes were represented by 102 shoe nails and fragments at the feet of the prone skeleton. There were no grave goods. The skeleton had been buried face down with its head to the west and its left arm bent under the stomach. The bones were in a poor state of preservation; the surfaces were eroded, and the articulations of the long bones completely missing. The individual represented was female, aged 17–25 years with a maximum stature of 166 cm.

Grave 50, Fig. 18. Grave length 1.98 m, width 80 cm, depth 70 cm. No coffin stain was noted. There were forty-three coffin nails, of which thirty-four occurred at corners, giving dimensions of 1.35 m as length and 60 cm as width for the coffin. Wood impressions on the nails were of oak in six instances, and possibly oak in another six. Two vessels accompanied the burial. One was a narrow-spouted flask similar to Fulford's (1975) New Forest Fine Ware Type 2, and a Black Burnished flanged dish of fourth-century form, Fig. 28. The very poorly preserved skeletal remains were those of a juvenile aged $2\frac{1}{2}$ –3 years. The skull was at the west end of the coffin.

Grave 51, Fig. 20. Length 3.65 m at top, 3.2 m at bottom, width 0.92–1.26 m and depth 71 cm. There was no coffin stain, but the 140 + nails provided coffin measurements of 2 m by 1 m by 50 cm. Oak impressions were found on three nails and possibly on a fourth. The coffin was perhaps furnished with a headrest

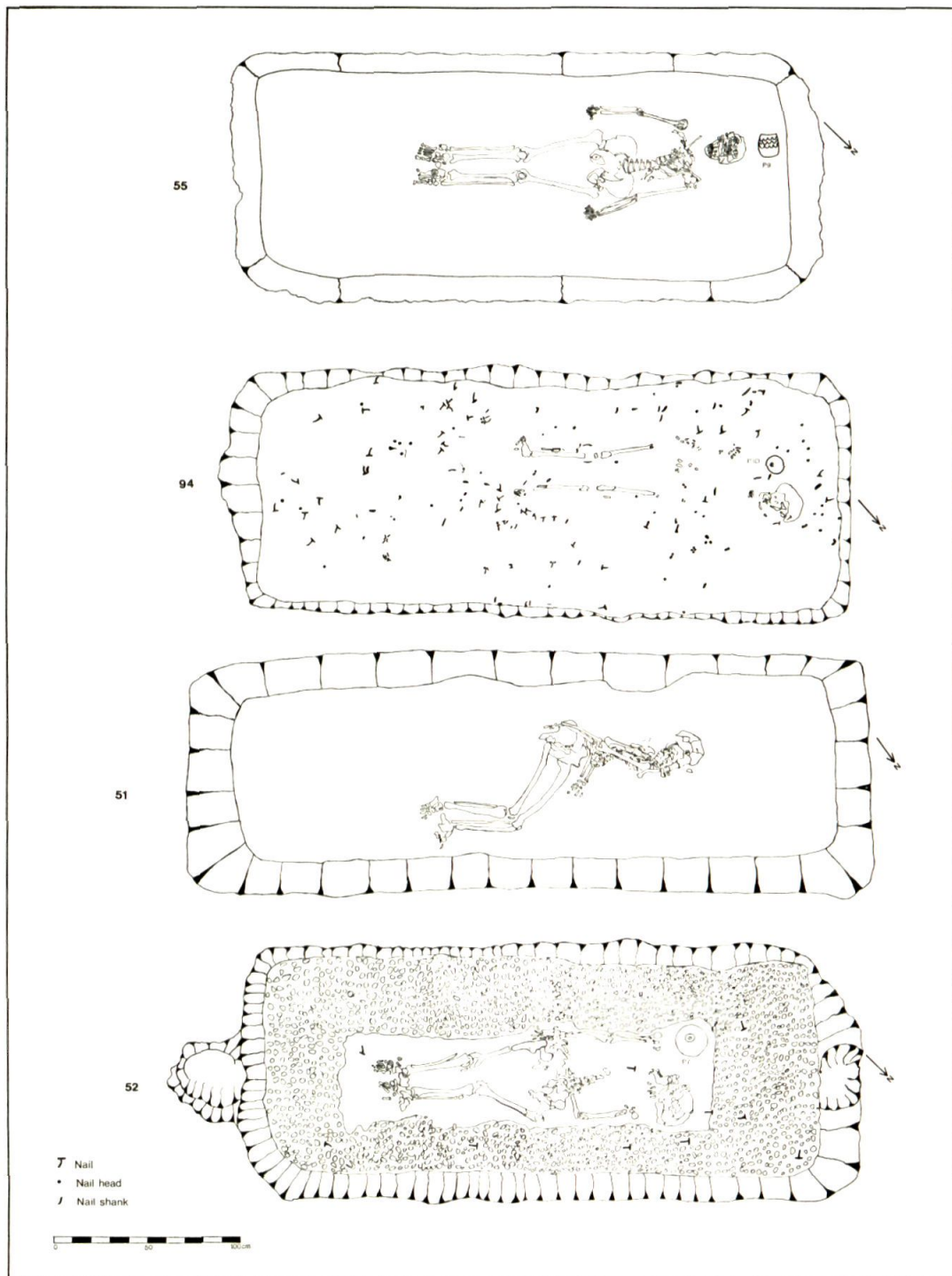


Fig. 20. Burntwood Farm, Site R6. Graves 51, 52, 55 and 94.

and handles, see below, p. 82. The skeleton, head to west, was on its left-hand side with legs drawn up at right-angles to its torso. The rib cage and vertebrae were in some disorder, particularly the cervical vertebrae and some rib fragments which were inside the skull. The coffin was abnormally wide, and perhaps had been deliberately constructed to contain the body in the equivalent of a 'sitting position' on its side. The remains were those of a female. Age was difficult to assess, as most of the molars were either lost ante-mortem or those areas of the jaws were missing. The anterior teeth were quite worn, suggesting a mature adult, probably in her 30s. This estimate is supported by the slight traces of osteo-arthritis also noted.

Grave 52, Fig. 20. Length 3.42 m, width 1.4 m, depth 80 cm. Coffin outline 2 m by 50 cm. There were twenty coffin nails, and three had wood impressions, probably of oak. The skeleton was supine, head to the west, with its left arm folded beneath the stomach. There was a New Forest flask with globular body and narrow neck, similar to Fulford's (1975) Fine Ware Type 8, Fig. 25. The flask had probably been placed on the coffin. The skeletal remains were in only fair condition, the post cranials being worst preserved, with much erosion on the surface and at the articulations. The bones were part of a male aged 25–35 years, and with maximum stature of 170 cm.

Grave 55, Fig. 20. Length 3.42 m, width 1.4 m and depth 83 cm. The coffin reconstructed from the hundred nails and about ten fragments measured 2.7–2.8 m, was 0.85 m wide and ?50 cm high. Two different woods were recognised as impressions on the nails; oak definitely on two, and possibly on two more, and a diffuse porous wood (?birch) on three more. A bag-bodied beaker with beaded rim and rusticated decoration of Fulford's (1975) New Forest Fine Ware Type 47, Fig. 25, was in the grave. The skeleton was on its back with its head to the west. The bones were fairly well preserved. They were the remains of a male, of maximum stature 174 cm. Age was difficult to estimate from the dentition, as so many teeth had been lost ante-mortem. The

appearance of the public symphysis was, however, compatible with an age in the range of 30–40.

Medium amounts of osteo-arthritis were noted, and also some Schmorl's nodes, depressions in the articular surfaces of the vertebral bodies due to a normal though genetically linked degeneration of the intervertebral disc leading to its herniation.

The legs of the skeleton were submitted for radiocarbon analysis; the result was 1980 ± 110 bp, 30 ± 110 BC (HAR 1021). Poor experimental yield in the laboratory measurement may give additional uncertainty in the result quoted.

Grave 94, Fig. 20. Length 3.3 m, width 1.4 m, depth 80 cm. There was no coffin outline, and its size has been estimated from the distribution of the c. 160 nails to be 2 m by 80 cm. Wood impressions on the nails indicated that two woods had been used in coffin construction; oak was present on five nails and possibly on two more, and a diffuse porous wood (?birch) on a further seven nails. A globular-bodied flask with broken neck had been deposited; it is a possible orange Oxidised Ware from the Oxfordshire kilns of Young's Type 01 (1977, Fig. 71). The skeleton was supine with its head to the west. The remains, which were very eroded and fragmentary, were probably those of a female. Age was estimated at 25–35 from the few teeth present.

Feature 125 may have been an unfinished grave.

Phase 5. Post-holes of probable late- or post-Roman date

There were two alignments and a group of post-holes, all east of the road on Burntwood Farm.

Line 1 ran from the south-east corner of the site in a north-westerly direction. It consisted of thirty-two post-holes; and there were two gaps of 6.5 m and 19 m. The shorter one may have been deliberate, but the evidence suggests that the larger one was caused by erosion of the chalk, obliterating the post-holes. Twenty-four post-holes were circular, four rectangular, two ovoid, one oval and one subrectangular. It was possible to measure twenty-

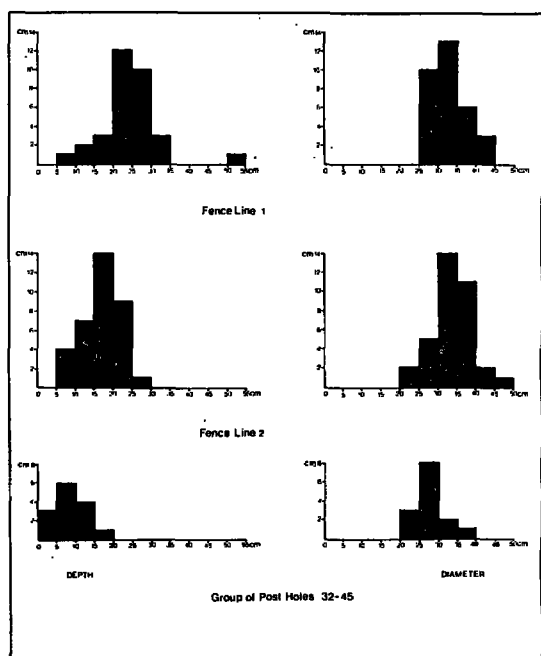


Fig. 21. Burntwood Farm, Site R6. Histograms of depths and diameters of post-holes.

nine distances between the post-holes; minimum distance was 2.1 m, average 2.9 m with a standard deviation of 36 cm, and maximum of 3.45 m. The depths varied from 10 cm to 53 cm with an average of 25 cm and a standard deviation of 7.4 cm. The diameters are portrayed in Fig. 21. There were no relationships with other features.

Line 2 ran from the south-east corner of the site in a westerly direction alongside the land boundary, Ditch No. 8. It consisted of thirty-two circular, two ovoid and one oval post-hole. Thirty distances were measured; the minimum was 1.7 m, maximum 3.05 m, average 2.39 m, with a standard deviation of 30 cm. The depths varied from 8 cm to 27 cm with an average of 18 cm and a standard deviation of 5 cm. The diameters are displayed in Fig. 21. At the south-east corner this line intersected Line 1 and then ran parallel to Ditch 8, 3 m to the north, until it crossed the ditch 9 m east of the track. In the area of the cemetery several post-holes were not identified either because the fill was not sufficiently different from that

of the graves or because the graves had cut away the post-holes. Two post-holes did appear to cut the graves.

Group of Posts. There was a group of fourteen circular post-holes at the south end of the site. They were shallower than those in the two lines, with a minimum depth of 5 cm, maximum of 16 cm, an average of 9 cm and a standard deviation of 3.5 cm. The diameters are shown in Fig. 21. A circular structure does seem to be indicated.

The only finds from the post-holes were a flint, a burnt flint and a heavily abraded sherd of Samian from Post-hole 12, and an iron nail from Post-hole 24.

FINDS METAL, FIG. 22

BRONZE

M1 Bronze pin with transverse ribbed decoration extending 11 mm down the round-sectioned shaft from the head. Roman—cf. Hull 1964, Fig. 24, No. 19 and Webster 1975, Fig. 114, No. 72. R6, Feature 74.

M2 Bronze tack or stud with apparently flat head. Roman—cf. Cunliffe 1971, Fig. 52, No. 165. R6, fill of hollow-way.

There is also a small piece of bronze from a road ditch on R6, not illustrated.

LEAD

M3 Lead merchant's token. Obv: Single-masted sailing ship, prow to left. Rev: TC. No immediate parallels are known, but it is perhaps eighteenth century (M. MacFarlane and D. Hinton, pers. comm.). Upper fill of R6, Feature 65.

IRON

M4 Fragment of knife blade. R6, Feature 8N.

NAILS

Over 400 coffin nails and more than 100 shoe nails were recovered from the graves, many being fragmentary. The nails from Graves 49 and 94 were analysed. There are only thirty-two complete coffin nails from these two features, and their lengths are displayed in Fig. 23. There seem to be three distinct groups of coffin nails; one of 16–26 mm length, one of 35–40 mm and a large group in excess of 55 mm—many of the fragments

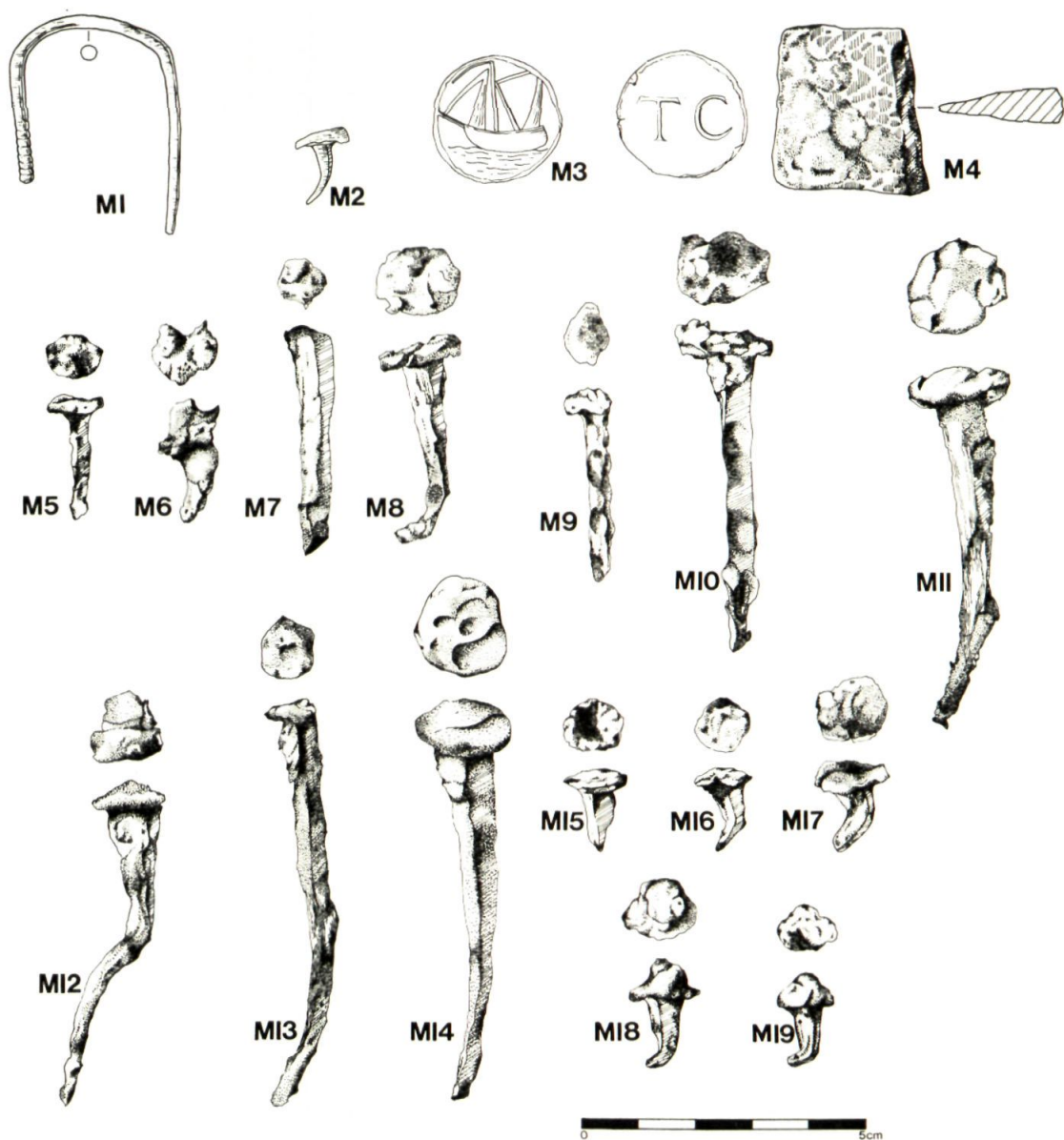


Fig. 22. Burntwood Farm, Site R6. Metal objects. Bronze: M1-2; lead: M3; iron: M4-19. M5-14 are coffin nails of different sizes, and M15-19 are shoe nails.

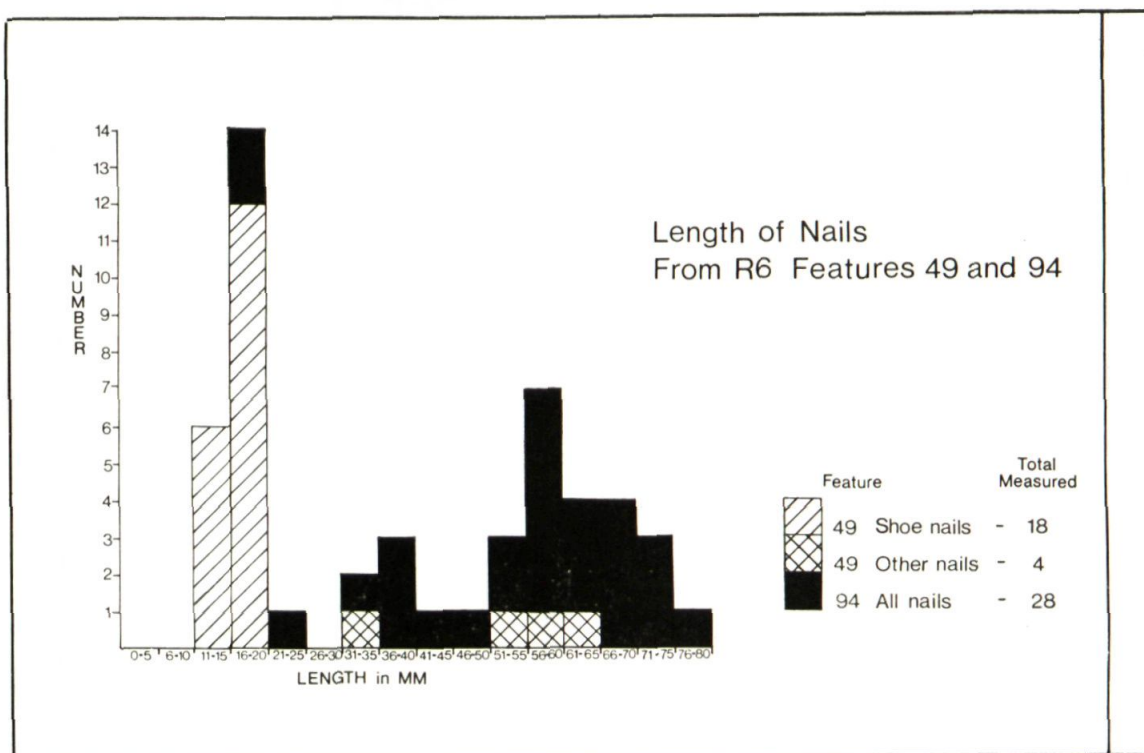


Fig. 23. Burntwood Farm, Site R6. Histogram of the length of complete shoe nails from Grave 49, and complete coffin nails from Graves 49 to 94.

probably come from the larger group. The small group, probably tacks, may have been used for internal fittings and the other two groups in the coffin joinery. The eighteen measurable shoe nails in Grave 49 are between 11 mm and 20 mm long. The shoe nails appear to have rounded heads. A selection of the nails is shown in Fig. 22.

138 nails had traces of iron-replaced wood. These were submitted to Carole Keepax of the Ancient Monuments Laboratory.

Nails with iron-replaced wood traces by Carole Keepax

The nails with wood replaced by iron corrosion products were examined at low-power magnification to obtain identifications and details of grain directions. Results of this analysis are summarised in Table 2; full details are in the archive. The classifications of grain directions are shown in Fig. 24. The

preponderance of grain type 'A' would seem to indicate that most of the boards were flat-sawn rather than being from radially split timbers.

In examples with grains of adjacent pieces of wood visible, it was possible to determine the thickness of the upper portion. Only a limited number of nails showed this, as many had broken at what appeared to be the boundary between adjacent timbers. The thickness of the planks seemed usually to be about 15–30 mm.

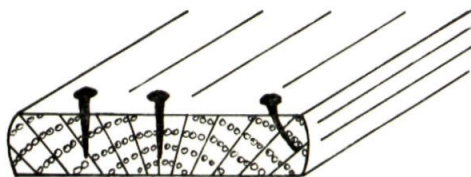
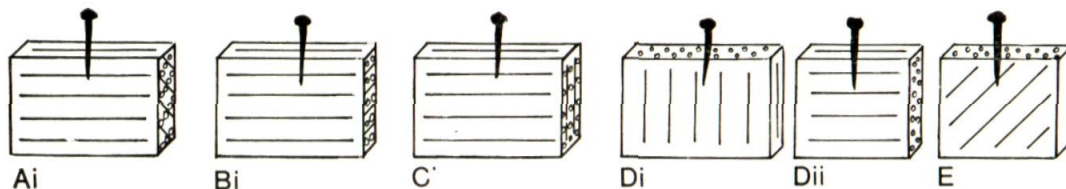
Most of the identifiable wood was oak (*Quercus* sp.). Graves 55 and 94 produced evidence for another type of wood in association with oak. It was a diffuse porous timber with fairly narrow rays, and vessels mainly in twos and threes. A common wood with a comparable appearance is birch (*Betula* sp.), but this must not be regarded as an identification.

Classification of grain directions

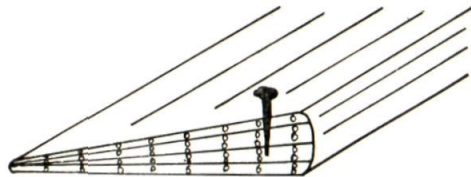
Grains of upper pieces of wood



Grains of lower pieces of wood



Flat-sawn plank



Radially split plank



Cross section
Direction of annual rings
Direction of rays



Longitudinal sections (TLS and RLS)

Fig. 24. Burntwood Farm, Site R6. Diagram illustrating the classification of iron-replaced wood traces on coffin nails.

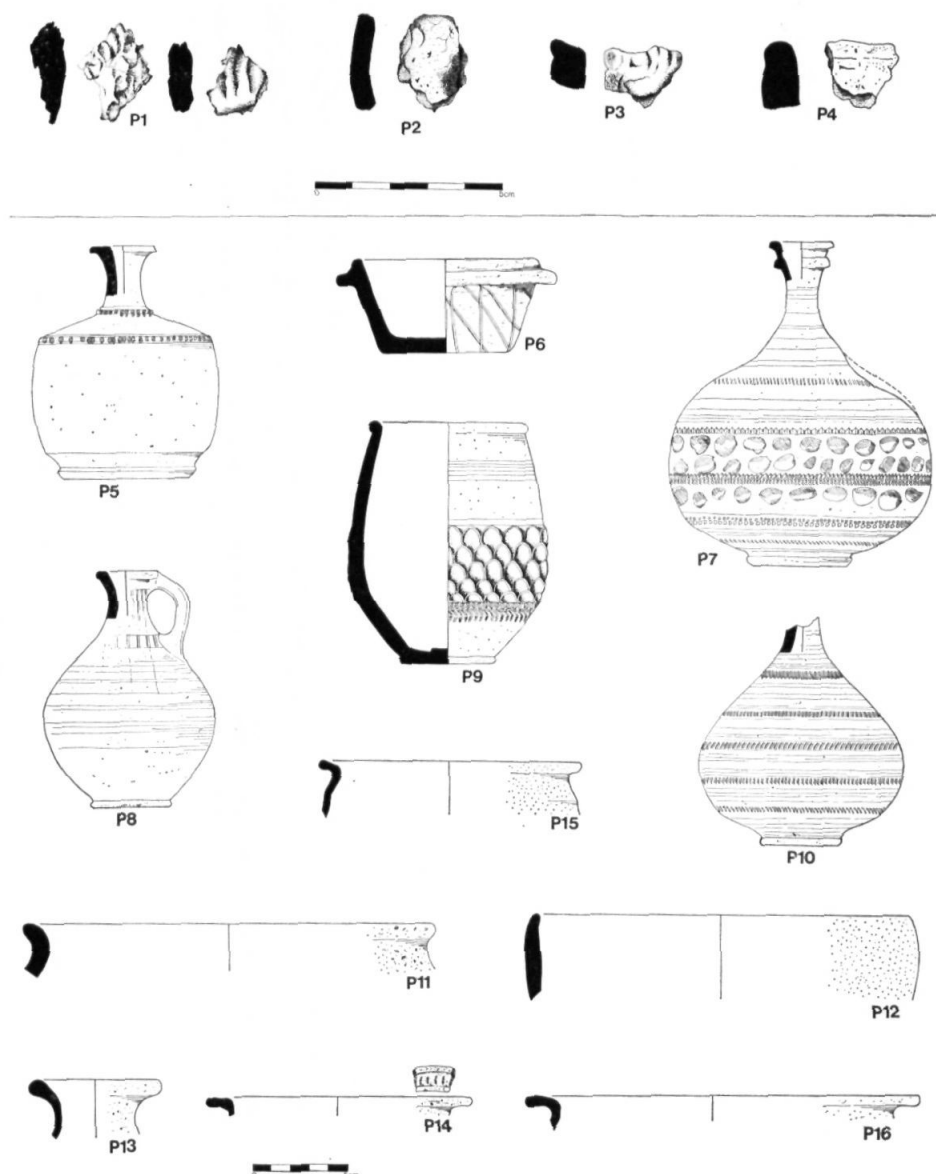


Fig. 25. Pottery. Neolithic: P1 and 2; Iron Age: P3 and 4; Roman: P5-16. P13 and 15 from Bridget's Farm, Site R5, and the remainder from Burntwood Farm, Site R6.

TABLE 2. Summary of coffin nails with iron-replaced wood. The totals will not necessarily tally, because there may be more than one identification when a nail has evidence of a join. In all columns the numbers after the + sign indicate possible or probable examples.

Grave	Nails with iron-replaced wood traces	Oak	Other	Unidentified	Grain directions										Joins
					— A	Upper B	C	— D	— Ai	Bi	Lower Ci	Di	Dii	E	
11	19	13+6	—	4	3+3?			3+1?	3	2	1?		5?		{ A A A D D (2) Ai Ci Dii Ai Dii C D
49	7	3+3	—	1	2+1?		1+1?	2				1?	1?		{ Dii Di A A D
50	13	6+9	—	1	6+1?	1	1+1?	3	1?	1?	1+1?	1			{ Di Dii Bi
51	11	3+1	—	7	1			3	1			2	1		{ D D Dii E D
52	3	0+3	—	—	2							1			
54	11	2+2	—	9	1			3	1			1	1	1	{ Di A B C D D (2) Di Di C Di Dii
55	22	2+2	3	16	4 + (2: A-B)			8+1?				1+1?	2		
94	32	4+2	7	23	3	3+1?	3+1?	15				4+1?	1		

There were not enough identifications of joins to assist in the reconstruction of the coffins, below p. 82.

POTTERY, FIG. 25

Excluding the Roman grave goods, 262 sherds weighing 1,120 grams were recovered from R6 and forty-four sherds weighing 193 grams from R5. All sherds are small and heavily abraded.

The fabric numbers are those utilized by the M3 Archaeological Rescue Committee in its overall study of the ceramics from the 1974-8 excavations on the line of the M3 extension.

The following fabric groups occurred most frequently:

- Fairly hard, rough textured, hackly in fracture, tempered with abundant, ill-assorted, angular crushed flint of 1-4 mm in size.
- Fairly hard, smooth textured, smooth hackly in fracture, tempered with common, well-sorted, angular crushed flint of 0-2 mm in size.
- Fairly hard, sandy textured, smooth sandy in fracture, tempered with occasional mica and moderate, well-sorted quartz grains, 0.4-0.6 mm, and sparse-moderate crushed flint.

in fracture, tempered with occasional mica and moderate, well-sorted quartz grains, 0.4-0.6 mm, and sparse-moderate crushed flint.

- Hard-very hard, sandy textured, smooth in fracture, tempered with well-sorted, sub-angular quartz grains, 0.4-0.6 mm.
- Soft-medium hard, soapy-smooth textured, smooth in fracture, tempered with moderate, subangular quartz grains and rounded grog, 0.5-2 mm in size.
- Hard, sandy textured, smooth-hackly in fracture, tempered with angular crushed flint, 0.5-2 mm in size and sparse quartz grains.
- Hard, smooth textured, hackly in fracture, tempered with ill-assorted, moderate crushed flint, 2-4 mm in size, with sparse quartz and grog inclusions.
- Samian.
- Fairly hard, smooth sandy textured, very smooth in fracture, tempered with sparse grog, quartz and very occasional charcoal inclusions in smooth sandy paste.
- Fairly hard, rough sandy textured, sandy in fracture. Moderate well-sorted, sub-

rounded quartz grains in coarse sandy paste.

A few fragments of Iron Age and Roman pottery from R5 and R6 belong to Fabric Groups 5, 14, 15, 18, 23, 30 and 31. Details in archive.

NEOLITHIC

There are two definite Neolithic sherds:

P1: sherd of Mortlake type pottery with stabbed decoration. R6, Feature 76. Fabric 2.

P2: rim of a Neolithic bowl. R6, Feature 85D. Fabric 3.

There are also several very small sherds in R6, Feature 76 which would not be out of place in a Neolithic context—Fabric 2.

BRONZE AGE

A possible Beaker body sherd, Fabric 7, came from R6, Feature 76. In that feature there were also ten small sherds of Fabric 2 which, in this instance, are reminiscent of Bucket Urn found elsewhere in the region. None illustrated.

IRON AGE

Iron Age pottery of Fabrics 2, 3, 4, 7, 8, 10 and 27 was found in many contexts, especially on R6. It includes, from R6:

P3: slashed Early Iron Age rim found as a residual piece in Grave 51. Fabric 4.

P4: undecorated rim of a saucepan pot. Feature 3E. Fabric 3.

None of the Iron Age pottery from R5 is illustrated.

ROMAN

Grave Goods

P5: New Forest flask with narrow spout; the rim is surrounded by a flange. Decoration is simple and consists of white-painted dots at the junction of spout and body, and on the shoulder. This is a variant of Fulford's (1975) Fine Ware Type 2, 300–30 A.D. Grave 50. Fabric 24.

P6: Black Burnished I flanged dish with irregular incised decoration on side and base. Fourth-century type. Grave 50. Fabric 27.

P7: New Forest flask waster with globular body, narrow spout, everted rim with flange

below. Decorated with five horizontal bands of rouletting; three attempts were made on the middle band, and the rouletting disc has clearly slipped. The lowest band but one has been rouletted twice. Two horizontal lines of white-painted blobs occur between the second and third lines of rouletting, and a third line of blobs occurs immediately beneath the middle rouletted line. Fulford's (1975) Fine Ware Type 8, c. 300–30 A.D. Grave 52. Fabric 24.

P8: small grey-ware jug with collared rim; the upper half is coated with black slip which has been burnished horizontally on the body and vertically on the spout. It is probably a New Forest product, and if so, is of Fulford's (1975) Grey Ware Type 20, c. 275–350 A.D. Grave 54. Fabric 6.

P9: colour-coated New Forest bag-bodied Beaker with beaded rim and applied scale decoration; Fulford's (1975) Fine Ware Type 47, c. 260–330 A.D. Grave 55. Fabric 24.

P10: globular-bodied flask with narrow spout. The spout and the rim were broken and are missing. It is probably a product of the Oxfordshire kilns, almost certainly the Churchill kilns, and could be comparable to Young's (1977) Oxidised Ware Type 01. It is decorated with five horizontal bands of rouletting. The distribution of Oxidised wares produced at the Oxfordshire kilns is limited, and the possibility that this vessel might be a New Forest product should not be dismissed. If from Oxfordshire it dates to 240–300 A.D. Grave 94. Fabric 24.

Other Roman Pottery

The other Roman pottery was recovered from the flanking ditches of the road and the land boundaries on both sites. It was usually small and abraded. Chronologically it covers the entire Roman period. Among the sherds not illustrated are a heavily abraded Samian sherd, ?Drag. 33 from South Gaul (V. Jones, pers. comm.) from R6, Fabric 21; part of the base and footring of an Oxfordshire colour-coated bowl (C. Young, pers. comm.) from R5, Fabric 23; and part of the base and footring of an imitation Terra Nigra platter from R6, Fabric 6.

P11: flint-gritted sherd from a bowl which

appears to be a late Iron Age native form. Similar sherds have been found, probably as residual material, in first-century deposits in Winchester. R6, Feature 2. Fabric 2.

P12: early form of grey ware dog dish, the fabric of which is not immediately paralleled in Winchester. R6, Feature 122. Fabric 6.

P13: narrow-mouthed grey ware jar. R5, Feature 1D. Fabric 6.

P14: flanged rim decorated on its upper surface with slash marks between a pair of lines. R6, Feature 1F. Fabric 6.

P15 and P16: rims of bowls and jars which are found in Winchester. R5, Feature 1S and R6, Feature 11, respectively. Both Fabric 6.

There are three points of interest relating to the Roman pottery: P8, the small grey ware jug, may have been originally produced as a burial good; if P10 is an Oxfordshire product, it has occurred well outside the known distribution for that particular form and fabric (Young 1977, Fig. 70); the fabrics of several of the base sherds do not seem to be matched by fabrics occurring within Winchester.

STONE

FLINT, FIG. 26

544 pieces of worked flint were recovered from both sites. Their type and distribution are shown in Table 3.

The flints are widely distributed both spatially and chronologically, and, as a consequence, metrical analysis would be of no value. The worked flints discovered among the cobbling in the Roman hollow-way, in the side ditches of the road and in the Roman graves are probably all residual.

Three scrapers are illustrated. F1 is from the east road ditch on R5, F2 from Feature 75 on R6 and F3 from one of the east road ditches on R6.

There are also two fragments of a sandy limestone; one is quite certainly Middle Purbeck from Dorset, or less likely, the Vale of Wardour, and the second is possibly from Purbeck and seems to be a roofing tile (F. W. Anderson, pers. comm.).

Although there were numerous burnt and broken fragments of sarsen, none had been worked into artefacts.

TABLE 3. Table showing the distribution of different classes of worked flint against different contexts for both Burntwood Farm (Site R6) and Bridget's Farm (Site R5).

	Flakes	Chips	Burnt	Re- touched Flakes	Core Frag- ments	Cores	Scrapers	Hammers	Borers	Other	Total
R6											
Features of											
Uncertain Origin	3	—	—	—	—	2	—	—	—	—	5
'Neolithic' Pits	61	2	—	2	4	2	—	1	—	—	72
Iron Age Features	84	4	8	—	—	2	1	1	1	1	102
Roman Hollow-way	98	4	12	4	2	2	2	2	—	—	126
Roman Road Ditches	99	3	3	—	—	—	—	1	—	—	106
Roman Land											
Boundaries	3	—	—	—	—	—	—	—	—	—	3
Roman Graves	50	2	12	—	—	—	1	—	—	1	66
Post-holes	2	—	1	—	—	—	—	—	—	—	3
Topsoil/Disturbance	2	—	—	—	—	—	1	—	—	—	3
TOTALS R6	402	15	36	6	6	8	5	5	1	2	486
R5											
Pits	22	—	—	—	—	1	—	—	—	—	23
Roman Hollow-way	—	—	—	—	—	—	—	—	—	—	—
Roman Road Ditches	12	—	1	—	—	—	1	—	—	—	14
Roman Land											
Boundaries	16	—	—	—	—	4	—	—	—	—	20
Topsoil	—	—	—	—	—	1	—	—	—	—	1
TOTALS R5	50	—	1	—	—	6	1	—	—	—	58
TOTALS R5 and R6	452	15	37	6	6	14	6	5	1	2	544

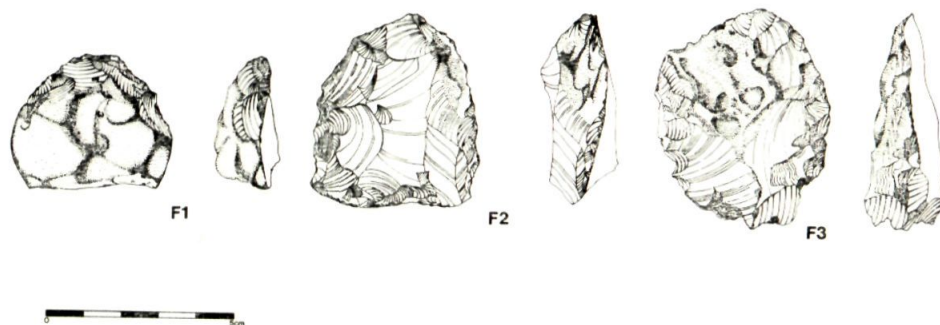


Fig. 26. Scrapers. F1 and F2 from Bridget's Farm, Site R5, and F3 from Burntwood Farm, Site R6.

LAND SNAILS by Carol Mason

INTRODUCTION

Extensive sampling for land molluscs was done on both sites. The samples weighed one kilogram, air-dried, except sample 144, 800 gm, and sample 148, 850 gm, both from Feature 2K on Burntwood Farm. The method of extraction, identification and analysis followed that of Evans (1972). Samples have been analysed from features in all the broad phase groups, except the Roman cemetery, Table 4; the location of the sample column is shown in the relevant section drawing—for the location of the features, see Figs. 4 and 8.

The results of the analysis have been tabulated; the tables, complete with a more detailed report in both typescript and microfiche form, are in the archive, which is deposited with the Hampshire County Museum Service. (The tables show species found in the whole analysis on the vertical axis and the number of any single species from any layer or feature on the horizontal axis. Feature, layer and sample numbers at the top of the tables provide information necessary to locate the sample. At the bottom of each column the number of snails has been totalled, the total excludes *Cecilioides acicula*, which burrows to a depth of 2 m and therefore can be either modern or sub-fossil. *Cecilioides acicula* is listed for the zoological record.)

The relative abundance of a species in a

column can be compared by calculating the percentage occurrence, from which data a histogram can be constructed; the results from several features are so illustrated. Usually the minimum number of shells used for a percentage histogram is 100. Where fewer shells are found in all or some of the samples of a column, a histogram of absolute numbers is plotted. Absolute numbers can be used to reflect a massive increase in snails which would not be apparent from a percentage histogram. All calculations are based on a standard weight for each sample, and snail numbers in light samples have been proportionately upgraded.

The histogram displays an idealised version of the stratigraphy, against which is plotted the relative (or absolute) abundance of a

TABLE 4. Location of samples analysed for land snails.

Phase	Site	Feature
1a Features of uncertain origin and date	R6	77
1b Pre-Iron Age features	R5	10, 22, 26 & 28
	R6	76 & 104
2 Iron Age features	R6	6 & 65
3 Roman		
(a) Road ditches	R5	1E, 2C & 7LM
	R6	84E, 85B & 87B
		3ZA, 2ZA, 2K, 2H & 10AA
(b) Land boundaries	R5	1A, 1AY, 7A & 7FG
	R6	8B, 8H & 8L
4 Roman cemetery	R6	None
5 Post-holes of uncertain date	R6	39, 43 & 62

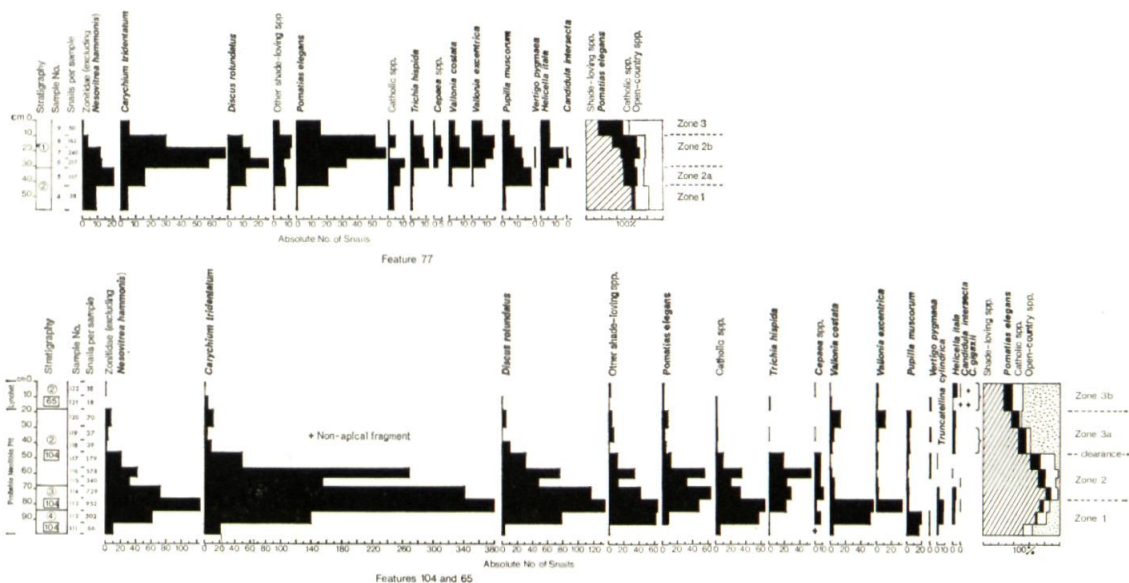


Fig. 27. Burntwood Farm, Site R6. Histograms of snails through Feature 77 of uncertain origin and date and through probable Neolithic pit, 104 and later lynchet, 65.

species or a group of species. At the right of the histogram the species are collected into broad groups, showing open-country species, shade-loving species and catholic species. (The catholic or indeterminate species are not particularly diagnostic of either shaded or open habitats.) Further details about the ecological groups are in Evans (1972, 194–203). The histogram is also divided, where relevant, into faunal zones.

The term 'faunal zone' is used throughout to denote a period of time represented by a faunal assemblage which is, or comes close to being, a reflection of a living population and during which time the fauna remains unchanged. Its relation to the stratigraphy of a soil need not be, and often is not, exact. The faunal zone may coincide with stratigraphical changes or may be dictated by them as in the recutting of a ditch. Faunal zones are not always present in any one feature.

INTERPRETATION OF THE RESULTS

Phase 1.a. Features of Uncertain Origin and Date

Site R6, Feature 77, had three faunal zones,

Fig. 27. Zone 1, Sample 4, characterized by a low number of snails, is very similar to Zone 1 of Feature 76. The primary fill of both features was cemented chalk silt with tubular accretions and this habitat appears to have been hostile to molluscan life.

Zone 2a, Sample 5, is characterized by a relatively high percentage of *Pupilla muscorum*, which likes an open habitat with a broken and unstable ground surface. There is a high proportion of shade-loving species, 52%, but some open ground is suggested by the 25% open-country species which have colonised the habitat. A small clearing is perhaps indicated.

Zone 2b, Samples 6–8. The bottom of this zone is marked by a high percentage of *Carychium tridentatum* which thrives in a habitat directly opposed to that of *Pupilla muscorum*, i.e. moist, shaded, stable conditions. This zone also coincides with a change in the stratigraphy to a humus – richer and more water-retentive brown loam. The increase in snail numbers also suggests more stability and slower filling of the pit. The decrease in *Carychium tridentatum* towards the top of

this zone is matched by an increase, to 32%, of *Pomatias elegans*, which requires a loose crumbly surface for burrowing; an increase in its abundance is often symptomatic of forest clearance.

Zone 3, Sample 9. The number of snails drops sharply, probably because of increased disturbance of the habitat. Shade-loving species have declined to 15% of the fauna, and a relatively open environment is indicated.

Phase 1.b. Pre-Iron Age Features

Site R6, Features 104 and 65, had three faunal zones, the third having two phases on the basis of stratigraphical break between the pit and the lynchet, Fig. 27. Zone 1, Samples 111 to 113, saw the pit becoming shaded, implying some forest clearance prior to the digging of the pit. Sample 111 has few snails, indicative of the disturbance created by the digging of the pit, but the high number of snails in the next sample shows that the fill stabilised quickly. Open-country species are present, but decline towards the top of the zone, and the impression is of a shaded environment. An interesting feature of this zone is the occurrence, at up to 1.6% of a rich fauna, of the xerophile species *Truncatellina cylindrica*, which has always been recorded from open, dry habitats like sandhills and downlands rather than from the increasingly wooded context of this zone.

Zone 2, Samples 114 to 117, is one of total shade with open-country species virtually absent and woodland species increasing to 78% of the fauna. *Pomatias elegans* reaches its peak of abundance, 13%, in Sample 117.

There is a break in the faunal sequence between Samples 117 and 118. The number of snails falls and does not recover throughout the rest of the column.

Zone 3a, Samples 118 to 120, sees a change in the faunal complement with a fall in shade-loving species and an increase in open-country species. The change is sudden and is an indication of forest clearance on a wide scale. The three samples from this zone produced a total of 146 individuals; shade-loving and open-country species form 42% of the

fauna compared with 62% and 4% respectively at the top of Zone 2. The *Pomatias elegans* colony is noticeably reduced by the drying out of the habitat caused by clearance.

Zone 3b, Samples 121 and 122, is in the material of the lynchet, and the number of snails again falls, to eighteen per sample, implying that continued activity by man produced a habitat too unstable to support molluscan life.

Pomatias elegans is well represented and of apparently stable occurrence through the sample column. The shell of *P. elegans* is particularly resistant to decay, especially the apex which may survive for long periods and be moved through the soil. To determine whether the *P. elegans* curve in the histogram, Fig. 27, was a true reflection of the extant population, the shells were divided into two groups: (a) adult and juvenile; (b) broken and battered apices. Fig. 28 shows that the adult and juvenile specimens occur up to Sample 117, above which all the specimens are apices. This reflects the environmental implications already outlined. The peak of *P. elegans* occurs in Sample 117, immediately prior to forest clearance, possibly indicating that activity had already started and the soil surface was devoid of ground vegetation. In the same sample *Carychium tridentatum*, which is intolerant of disturbance, falls by 19% from Sample 116. The samples above 117 contain relic apices of the previous *P. elegans* colony.

A sequence of events can therefore be postulated for the area around Pit 104.

1. Forest clearance on a small scale prior to the excavation of the pit.
2. Re-forestation.
3. Total shade and stability with secondary forest well established.
4. Clearance on a wide scale.
5. Activity by man in the form of cultivation or grazing, causing a hostile environment for molluscs.

Site R6, Feature 76, had three faunal zones. Zone 1, Samples 41 and 42, is very similar to Zone 1 in Feature 77. In Zone 2a, Sample 43, some open-country species are present and a small clearing is indicated, as with Zone 2a in Feature 77. Zone 2b, Samples 44 and 45, is one

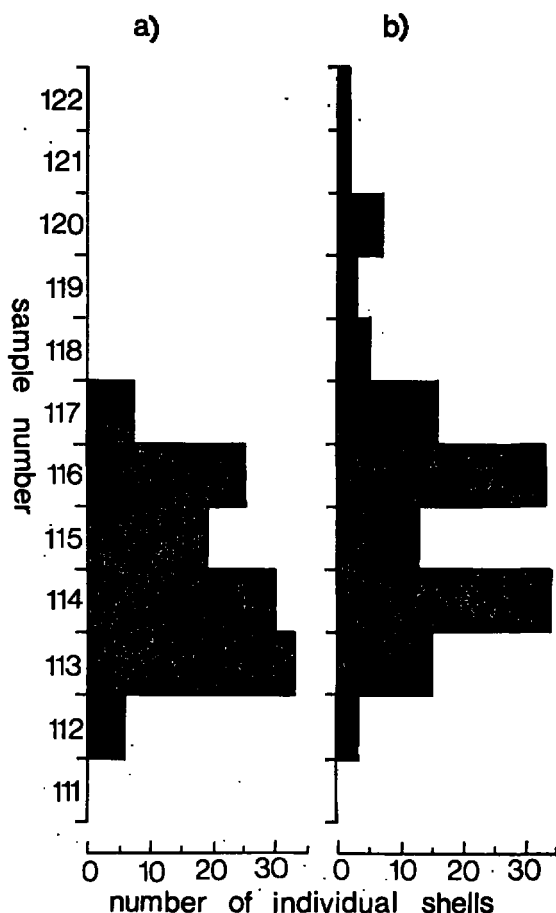


Fig. 28. Burntwood Farm, Site R6. Features 104 and 65. Histograms of *Pomatias elegans* for (a) adult and juvenile shells, (b) broken and battered apices.

of total shade where the cleared woodland has regenerated, and a period of stability is indicated by the rich woodland fauna and high numbers of snails.

Zone 3, Samples 46 and 47, shows a drop in the numbers of *Carychium tridentatum* and a rise in the numbers of *Pomatias elegans* (cf. the top of Zone 2b in Feature 77). In the top sample of this zone, open-country species are beginning to recolonize the habitat and form 20% of the fauna. A clearance phase is indicated.

The environmental sequence outlined for the area around Pit 104 on Burntwood Farm

is apparent, but less dramatic, in Pits 76 and 77, where the zones overlap and there is no obvious point of clearance. The pits appear to be broadly contemporary.

Site R5, Pits 22, 26 and 28 had very similar faunas divided into three zones. They are discussed together (Fig. 29).

Zone 1. A relatively low occurrence of *Carychium tridentatum* and high abundance of catholic species are the only indications of disturbance, suggesting that these pits, like Pit 10, were excavated in a woodland environment without any clearance.

Zone 2 is one of overall shade. The immediate area of the pits becomes more stable as indicated by the decrease in catholic species. *Pomatias elegans* increases, suggesting that the surface of the pit-fill is unstable.

Zone 3 sees the stabilisation of the pit floors, providing a less suitable habitat for *P. elegans* and a more suitable one for *Carychium tridentatum*, and indicating a dense growth of vegetation over the now stable fill, similar to that present before the pits were dug, and complete regeneration of the undergrowth.

Site R5, Feature 10 provided two samples, both of which exhibit a rich woodland fauna, although with a slight increase of open-country species in the top sample. The pit was dug in woodland, which lasted during the silting-up period.

All four pits on Bridget's Farm exhibit a rich woodland fauna with high numbers of snails in all samples. The digging of the pits caused minimal disturbance of the surrounding woodland. The similar faunas suggest the pits are broadly contemporary despite the disparity of the radio-carbon dates.

Phase 2. Iron Age Features

R6, Feature 6, the Iron Age ditch, has two faunal zones, Fig. 30. Zone 1, Samples 10 to 12, at the bottom of the ditch, has almost equal proportions of shade-loving (40%) and open-country (44%) species, with *Pomatias elegans* forming 9%. This suggests a general open environment with localised shade. A hedge in the immediate vicinity would fulfil the environmental requirements. The open-country species become part of the death

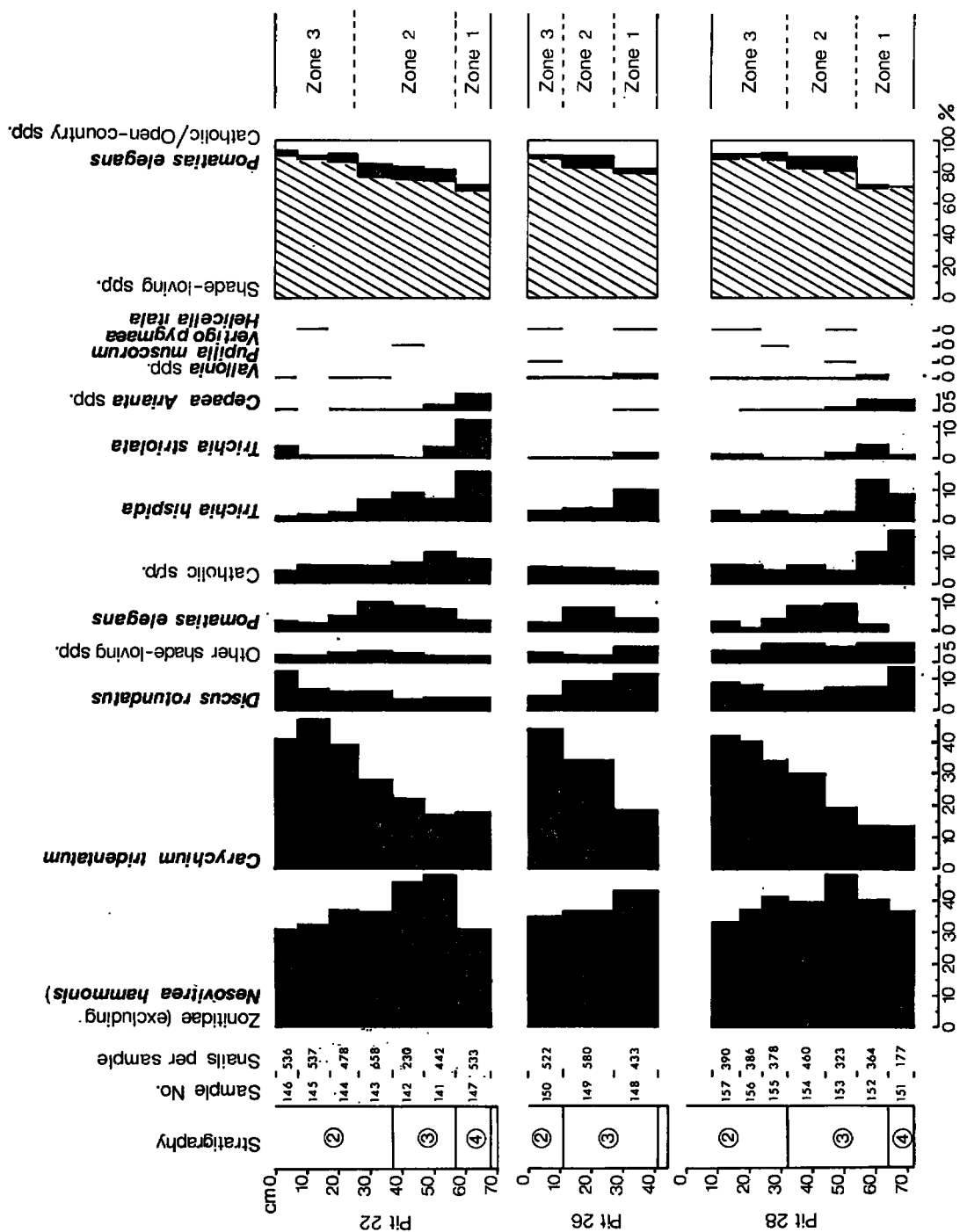


Fig. 29. Bridget's Farm, Site R5. Histograms of snails from prehistoric pits, 22, 26 and 28.

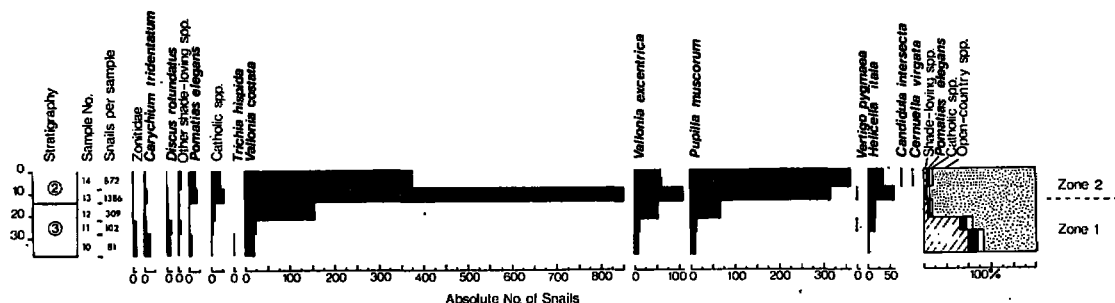


Fig. 30. Burntwood Farm, Site R6. Histogram of snails in Feature 6. The apparently stabilized soil is clearly shown between Samples 12 and 13.

assemblage as the ditch silts. *P. elegans* has an ideal habitat in these conditions: moist, shaded and within the loose earth of the ditch.

Zone 2, Samples 13 and 14, corresponds with the stratigraphical break in the fill and is characterized by a massive increase in the numbers of snails (1,386 in Sample 13), indicating a long period of stability. There may have been a buried soil. 61.5% of the population are *Vallonia costata*, suggesting open, dry grassland, perhaps with grazing animals. Shade-loving species and *P. elegans* together form only 2% of fauna, leaving no doubt that the hedge has been cleared.

Phase 3. Roman Track and Land Boundaries

Site R5. Of the five columns from the road ditches only that from Ditch 1A produced a large number of snails. There is an increase in numbers at the bottom of a recut (Sample 4), especially of *Pupilla muscorum*, which likes a broken ground surface. Open-country species dominate the assemblage. 1A was directly comparable stratigraphically with 1E, but the latter produced very few snails.

The impoverished assemblages, which can only reflect conditions hostile for molluscs, generally indicate an open environment. Different local conditions are indicated at 1A and 1E, but the low numbers of snails would make interpretation of these faunas of dubious accuracy.

Site R6, the road ditches. Ditches 2H and 2K had two faunal zones. Layers 2 and 4 of

these ditch segments are directly comparable. Two columns were analysed from 2K and a single histogram constructed, Fig. 31. This involved the omission of Sample 147, which was duplicated by Samples 143 and 144.

Zone 1, Layer 4 in 2H and Layers 4, 6 and 3 in 2K, is characterized by having comparatively fewer snails than Zone 2, even though the absolute numbers in 2K are quite high. Both ditches exhibit high *Pupilla muscorum* percentages, but differ in that *Helicella itala* is more abundant in 2H, and 2K has a relatively high proportion of *Vallonia* species. This localised difference may be indicative of ploughing at 2H and grassland at 2K.

Zone 2, Layer 2 of 2K and 2H, sees an increase in snails in both columns. In 2H the abundance of *H. itala* falls below that of *Vallonia excentrica*, and this is perhaps indicative of changed land-use. Ditch 2K has the same species percentages as in Zone 1 (see Fig. 31), but the increased numbers indicate greater stability. Both columns exhibit an exclusively open fauna.

Features 84E and 85B, north of the spoil-heap, are on the west side of the road. Even though they cannot be contemporary, they produced similar faunas with two zones. Zone 1 at the bottom of both columns produced very few snails, all open-country species, except two *Carychium tridentatum* in Sample 192 of Feature 84E.

Zone 2 shows a marked increase in snail numbers, and shade-loving species are totally

absent. The top samples of each column both contain 6% catholic species, 44% *Pupilla muscorum* and 28% *Vallonia excentrica*. The high numbers of snails present suggest more stable conditions than in Zone 1, with a general grassland habitat indicated by the abundance of the two species of *Vallonia*.

Feature 87B, east of the hollow-way, has the same fauna as 84E and 85B, except that there is no 'hostile period', all samples having a high number of snails. This may reflect a chronological factor or an environmental one.

Ditches 2ZA and especially 3ZA produced few snails. The former, with all samples added together, has an open-country fauna with a relatively high percentage of Helicellids (*Helicella itala* and *Candidula gigaxii*) which may indicate some arable use. The occurrence of *C. gigaxii* could be caused by later disturbance by ploughing, as the species is a post-Roman introduction.

Feature 10AA/1AA is the road ditch 10AA overlain by the fill of the hollow-way 1AA. There are two zones determined by this stratigraphy, Fig. 32.

Zone 1, Samples 56 to 58 from Feature 10AA, has low numbers of snails, combined total for the three samples being 104. *Helicella*

itala forms 25% of the population, suggesting an arable context. Today this species tends to avoid habitats affected by man, but there is evidence to suggest that it was a regular colonizer of arable until the introduction of *Candidula gigaxii* (Evans 1972, 182). The relatively low abundance of *Vallonia*, which prefer short grassland, is also an indication of arable land-use.

Zone 2, Samples 59 and 60 from Feature 1AA, is characterized by a high abundance of *Candidula gigaxii* and a fall in *Helicella itala*. This is a verification of the conjectural ploughing in Zone 1; the competition between the two species can be seen. The upper fill of the hollow-way may, therefore, be a post-Roman plough-wash.

R6, The Hollow-way

Segment 1AA is described above. Segment 1M has a large percentage of *Vallonia excentrica* and a low percentage of the Helicellids at the top of the fill. *Pupilla muscorum* decreases towards the top, suggesting that vegetation is stabilising the soil surface, perhaps in the form of grassland.

Segment 47E produced too few snails for interpretation, except to say that open-country species predominate.

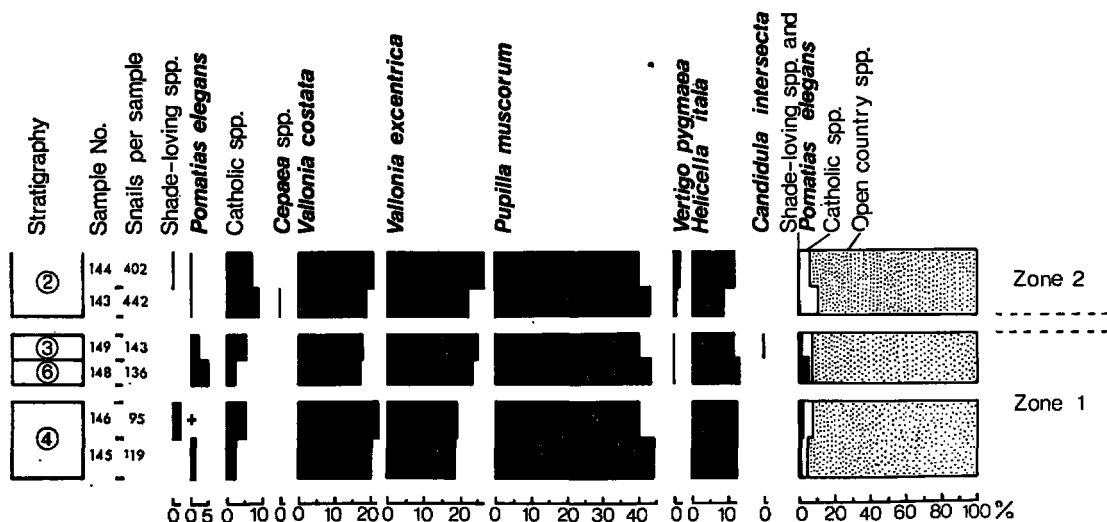


Fig. 31. Burntwood Farm, Site R6. Composite histogram of snails from two columns of samples in road ditch 2K.

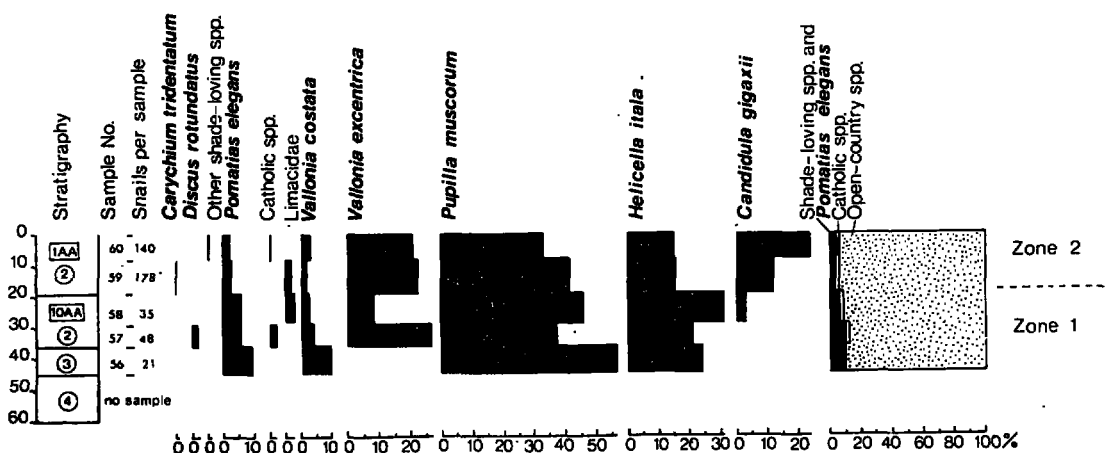


Fig. 32. Burntwood Farm, Site R6. Snail histogram through road ditch, 10AA, and upper fill of hollow-way, 1AA, at south of site.

The hostile habitats in Segments 2H, 2ZA and 3ZA and in Zone 1 of 84E and 85B were probably created either by the primary digging of the ditch or by continuous cleaning. In all the columns analysed from the hollow-way and road ditches, an open-country environment was indicated with no hedges alongside the road. The numbers of *Helicella itala* at 2H, 2ZA and 10AA may indicate arable land-use adjacent to the road, while grassland may be suggested at 2K by the high percentages of both species of *Vallonia*. The upper fill of the hollow-way is probably wash, and the snails at 10AA and 1M suggest differing land-use.

Sites R5 and R6, the Land Boundaries

The land boundaries on both sites exhibit almost exclusively open-country faunas; all but section 1AY on R5 have too few snails for interpretive purposes.

R5, Feature 1AY, has two faunal zones. Zone 1, Sample 73, has a high abundance of *Pupilla muscorum*, 45%, and the two *Vallonia* species also occur in relatively high numbers. For Zone 2, Samples 74 and 75 were combined to produce a working total. *Pupilla muscorum* falls, and *Helicella itala* increases, both to 21%. This is a faunal change often associated with conversion of land to arable.

Phase 4. The Roman Cemetery

No samples were analysed.

Phase 5. Post-holes of Probable Late or Post-Roman Date

R6, Features 39 and 43 produced too few snails.

Feature 62, Samples 520 and 521: the two samples combined produced only eighty-three snails, of which 29% are *Vallonia excentrica*. A high proportion of *Pomatias elegans*, 19%, may indicate some shade, but equally could be a relic of a former colony. An open environment is indicated by the other species present.

GENERAL ENVIRONMENTAL IMPLICATIONS

Five broad faunal zones can be implied from the local environmental interpretations. They are correlated with the general archaeological sequence in Fig. 33. The faunal zones were as follows:

Zone 1. This zone is characterized by high abundance of Zonitidae, *Carychium tridentatum* and *Discus rotundatus*, all shade-loving species. The fauna was rich, with high numbers of snails usual. The few open-country species present can be seen as earthworm deposits, and there is no evidence for any

forest clearance. This zone is manifest only in the R5 pits, which must be regarded as being excavated in primary woodland with the minimum amount of disturbance to the habitat.

Zone 2. Some open-country species established themselves in the fauna (*V. excentrica*, *V. costata*, and *P. muscorum*), up to 15% in Feature 77, Site R6. The abundance of shade-loving species is still high, but not as exclusive as in Zone 1. Features 76, 77 and 104 on Site R6 exhibit this in their lower fills and can be seen as being excavated in a woodland clearing. These features, which are possibly datable, suggest that faunal Zone 2 is chronologically earlier than faunal Zone 1.

Zone 3. Regeneration of the woodland is indicated by the almost total exclusion of open-country species, in Pits 76, 77 and 104, Site R6. The Zonitidae, *C. tridentatum* and *D. rotundatus*, dominate the fauna of the pits, indicating the re-establishment of dense vegetation.

Zone 4. This is a zone of clearance, seen most obviously in the upper fill of Pit 104, Site R6. The numbers of snails declined sharply, particularly shade-loving species, with a corresponding increase in open-country species. This can be seen less dramatically in Pits 76 and 77 on the same site.

Zone 5. This zone is characterized by open country and is divided chronologically into two sub-zones.

Zone 5a. Feature 6 on R6 provided the data for this zone. At the bottom of the ditch, shade-loving and open-country species occurred in equal proportions, suggesting the presence of a hedge or scrubby vegetation, but not an area of intensive shade. As the ditch silted up, a long period of stable, open environment is indicated, and the high abundance of *Vallonia costata* is suggestive of short grassland.

Zone 5b. This zone covers the Roman and later features, and has an impoverished, open-country fauna, perhaps reflecting continuous disturbance by traffic along the road and by

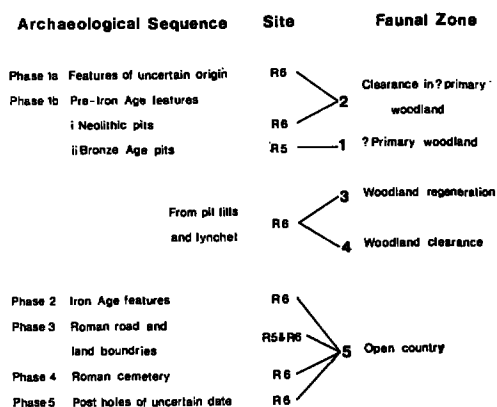


Fig. 33. Correlation diagram of the archaeological sequence with the faunal zones on both Bridget's and Burntwood Farms.

cleaning and recutting of the ditches. The almost total lack of shade-loving species negates the possibility of a hedge-lined trackway. The occurrence of *Helicella itala* in the south of R6 may indicate arable land-use, with grassland to the north. Arable may also be suggested by the high percentage of *H. itala* from the land boundary 1AY on Site R5.

CONCLUSIONS: ENVIRONMENTAL SEQUENCE

- 1a. Primary forest with activity by man on Site R5.
- 1b. Some local clearance of the primary forest on Site R6.
2. Regeneration of the cleared areas to total cover of secondary woodland after abandonment by man.
3. Clearance of woodland on a wide scale.
4. Total open-country environment. Hedge or scrub shown in the early deposits of the Iron Age ditch has disappeared by Roman times. Arable and grazing use of land along the hollow-way.
5. Open country up to the present day.

DISCUSSION

The features will be considered in the broad chronological divisions previously defined. For a general view of the excavations, see Fig. 34.

Phase 1.a. Features of Uncertain Origin and Date

These features on Burntwood Farm exhibit a certain comparability of fill, a general absence of finds, and an element of linearity; indeed, they form two almost parallel lines with some outliers.

A common interpretation for over thirty years of features whose function and date are not obvious has been that they are tree-holes (Bersu 1940, Stone 1941 and Bradley and Ellison 1975). A woodland landscape should leave some impression on the surface of the chalk, and undoubtedly some of these irregular features found on sites across central southern England are tree-holes.

All of the features on Burntwood Farm, especially the deeper ones, had a substantial volume of cemented chalk silt containing tubular chalk accretions. The interface of this deposit with both the layer above and the edge of the pit was often indistinct. The tubular accretions could indicate rootlets through which water has soaked, suggesting that the silt was a product of solution around a tree (Sperling *et al.* 1977, 217). It was suggested that especially cold climatic conditions produced an apparently similar deposit at Rams Hill (Bradley and Ellison 1975), but this is not necessarily the case, as the same material has been found in a series of deposits from a variety of contexts on the M3 extension, ranging in date from early Neolithic to middle Bronze Age. The presence of this chalk cement in man-made contexts suggests that it is not derived from solution around a tree. One process which would create the chalk cement is the continuous breaking down and compaction of material weathered from the sides of the features.

If these features were tree-holes the linearity could best be explained by trees being planted as windbreaks at the edge of a field (P. Rey-

nolds, pers. comm.). However, at least one feature was sealed by the fill of the negative lynchet 65. The nature of the fill, the stratigraphic relationship with the negative lynchet and the linear nature of these features make it unlikely that they were tree-holes.

A geological explanation can almost certainly be ruled out, as the alignment cuts across the natural strike of the chalk. It appears that these features were man-made and probably represent clearance holes. It has been argued that they are not tree-holes and therefore an alternative hypothesis must be proposed.

Numerous small pieces of a white quartzite sandstone (F. W. Anderson and D. P. S. Peacock, pers. comm.), sometimes friable, sometimes not, occurred in the upper fill of a number of these features, in the large Neolithic pits and in the modern ploughsoil. Comparison of these fist-sized lumps with chips taken from two sarsens, now on the surface and only 150 m and 750 m away, leaves no doubt about the identification of the lumps as sarsen. The closer of the two surface sarsens, dug out of the field within the last fifteen years, had a hard surface, but, when a 1 cm thick chip was removed, it was friable to a depth of c. 2 mm before becoming hard again. This may indicate the toughening of the stone's skin by oxidisation, once removed from the ground (Bowen and Smith 1977, 189); equally, it demonstrates the friable nature of the local sarsen. Petrologically, there is no reason why one of these highly sandy sarsens, if repeatedly heated and watered to break it down, should not lose its internal structure and become friable. Some of the less friable lumps had been burnt. The existence of a putative sarsen 'quarry' (Bowen and Smith 1977, 191) 1,500 m to the north in Shroner Wood, where forty fragmented sarsens lie in a pit, testifies to the availability of the stone in the area.

The local availability of sizeable sarsens, the presence in the features and the modern ploughsoil of broken sarsen and the likelihood that these features are neither tree-holes nor of geological origin, suggest that a reasonable interpretation of these features is that they

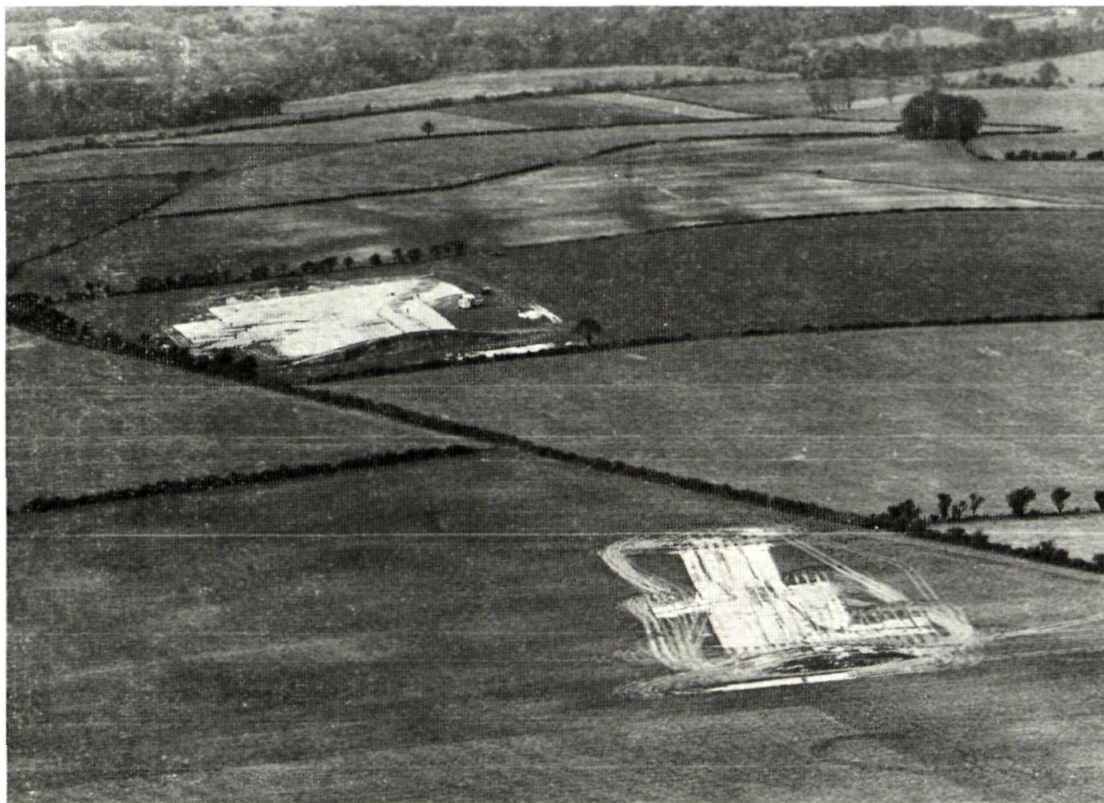


Fig. 34. Aerial view of both excavations from the north-east. Bridget's Farm, Site R5, is in the foreground. The line of the road is well-defined, running down R5 and on the west side of R6. It is represented by the dark mark running across the next field from the trees in the hedge immediately south of Site R6. The large settlement lies mainly in the next field between the isolated tree and the clump to the west. Lynchet 65 is just visible on the east side of Site R6. Photo: Army Air Corps.

were originally stone holes containing sarsens, and that the sarsens were subsequently broken up and cleared away. The possible stone holes are indicated on Fig. 5 which reveals two short, slightly converging alignments of irregularly spaced holes with some outliers. The northern alignment of nine holes was spread over 100 m and the seven holes of the southern line over 50 m. Features 115, 116, 117 and 139 appear to have been isolated and free-standing. The snail evidence from Feature 77 suggests that the holes were created in an openish environment—a clearing in the wood—and this concurs with the pollen data from the excavation of the stone alignment at Cholwichtown, which had been constructed 'in an

open clearing among woodland and scrub' (Eogan 1964, 37).

The site is just over 4 km south-east of the group of four long barrows centred on South Wonston (RCHM 1979) and a similar distance north of the Neolithic ring-ditch discovered in 1976 on Winnall Down (Fasham 1978). Apart from the latter site, there is an almost complete absence of Neolithic-Early Bronze Age 'ritual' sites in Hampshire (RCHM 1979, vii). Schadla-Hall has pointed out that the absence of causewayed camps or henges, and by implication other 'ritual' sites, in Hampshire may be deceptive (Schadla-Hall 1977, 17). The sites may well have been destroyed by subsequent demand for arable land, as is postulated here,

instead of being preserved for complex socio-cultural reasons as Bowen (1975a, 45-7) has suggested for the Stonehenge area, and which might also be the case in the Avebury region. Most megalithic monuments in Britain are located in the uplands of the South-West, Wales and Scotland, and their preservation is occasioned by their being sited on what has subsequently become marginal land.

The interpretation of the holes of uncertain date and origin on Burntwood Farm as the remains of a megalithic monument is speculative. It serves, however, as a reminder that megalithic monuments could have been erected in Hampshire, and elsewhere in southern England, and have disappeared without leaving any evidence on the surface.

Phase 1.b. Other Features of Pre-Iron Age Origin

There are two groups of these features: the large, relatively shallow pits on Burntwood Farm, and the smaller, vertical-sided pits on Bridget's Farm.

The four large, bowl-shaped pits on R6, although on the same alignment as the features discussed above, are different in character. The similarity of shape and fill of the four suggests a broad contemporaneity, and a date towards the end of the later Neolithic, as defined by Smith (1974), does not seem unreasonable. These features are not typical of other pits known from the British Neolithic which tend to be smaller, as at Puddlehill (Field, Matthews and Smith 1964, Matthews 1976, 3-8), and to have sides which are more vertical (Parrington 1978, 31). At Bishopstone there was a variety of pits ranging from small and fairly regular to large and irregular with both steeply and gently sloping sides (Bell 1977, 7-15). A roughly rectangular depression c. 3.6 m by 4.4 m by 20 cm deep at Ecton, Northamptonshire, was interpreted, on the basis of an associated hearth and the distribution of finds as a possible hut (Moore, Williams and Boddington 1975). If the only evidence for the Trevisker houses had been the worn areas of the floors, they would resemble some of these features (ApSimon and

Greenfield 1972). Obviously the Burntwood Farm features are not grain storage pits, nor can they realistically be interpreted as huts. They are, however, indicative of some form of later Neolithic activity—perhaps related to the postulated stone holes. They were dug in the same environment of a small clearing in woodland.

The pits on Bridget's Farm were all dug, as far as the snails show, in dense woodland. They were smaller than their Burntwood Farm counterparts, and were more regular with straight, almost vertical sides.

Suitable material for radiocarbon determinations was found in only two of the R5 pits: hazel nuts in Feature 10 produced a date of 3790 ± 100 bp (HAR 1695), and a cattle skull in Feature 27 provided a date of 2800 ± 80 bp (HAR 2745). The discrepancy in these dates means that the vegetational history deduced from the snail analyses for these pits is tentative. Either there was dense woodland in this small area for 1,000 years, or there was a sequence, purely hypothetical, of dense woodland, clearance and woodland, or one or both of the radio-carbon dates may be, statistically, invalid. These dates (a clear indication of the need to have three samples), although 800-1,200 years apart, do suggest a broadly Bronze Age horizon for these pits. However, none of the excavated Bronze Age chalkland settlement sites has such intensive concentrations of pits, neither the big sites such as Rams Hill (Bradley and Ellison 1975) nor the smaller ones like Plumpton Plain (Holleyman and Curwen 1935). This is a factor which is not affected by chronology. The late Bronze Age settlements at Eldon's Seat (Cunliffe and Phillipson 1968) or Park Brow (Wolseley, Smith and Hawley 1927) have very few pits. It must be assumed that these basically artefact-devoid pits, which were originally excavated in dense woodland, are associated with a settlement, as yet unidentified, somewhere in the neighbourhood.

Phase 2. Iron Age Features

The two lynchets on R6, Features 65 and 66, sealed at least two of the pits discussed above. Part of the same field system was cut

elsewhere by the Roman lane. These axial fields must have been in use sometime during either the Bronze Age or the Iron Age. The staggered relationship of the two fields must indicate a corner and possibly an access through the fields (Bowen 1961). Feature 65 ran along the eastern row of postulated stone-holes. It can be suggested that orientation of the fields was determined, at least partly, by the 'stone alignment', implying that it was still a substantial feature in the landscape, and furthermore, that it was simultaneously pulled out, and the stones broken down, because it formed a major obstacle to arable farming. This expansion of arable farming may be related to the late Bronze Age need for more land which is evidenced by the colonization of the New Forest.

Feature 6 on R6 lay to the west of the Roman lane, and probably supported a hedge. The shallowness of the east end can probably be accounted for by erosion of the chalk caused by digging the road ditches and by road use. This short length of ditch was cut by the road ditches where the latter change in character on both sides of the lane, suggesting that Feature 6 was a still recognisable and significant feature in the landscape—a feature that needed to be avoided, but which also was used as a marker by the ditch diggers, who seem to change at that point; such a feature could well have been a property boundary. The ownership in the later Iron Age or early Roman period of the land north of Feature 6 and west of the lane could well account for the deviation of the road alignment.

Phase 3. The Roman Road and Side Ditches

The Roman road with its side ditches was laid out with no regard for the earlier field system represented by Features 65 and 66 on R6. It is possible that the fields were no longer in use when the road was laid out, but even if they were, the different land management practices of the Roman period soon made them obsolete. The road consisted of a track, in places hollowed, rutted and repaired with flint nodules and enclosed by flanking ditches 7–8 m apart. The excavations could

not determine whether the road was planned with the side ditches laid out first, or whether the ditches formalized a casual route across the landscape. The lane became a major element in the Roman countryside, and this is all the more surprising, as the Winchester–Silchester Roman road runs parallel, 700 m to the west, under the modern A33. The lane was heavily used, as is demonstrated by the hollowing and ruts through the deviation near Feature 6 on R6. On R5 it was slightly hollowed, and it can be suggested that the route continued north on to the top of the Clay-with-flints ridge prior to the extension of the west side flanking ditch. At the extreme north of R6 the road had been realigned at one stage; whether this was a major or minor alteration cannot be ascertained.

Few hollow-ways have been excavated, except at the entrances to large sites, such as Danebury (Cunliffe 1971b), or Maiden Castle (Wheeler 1943). The late Iron Age/Romano-British hollow-way at Owslebury had been cobbled with several layers of flints, after being worn almost a metre into the chalk (Collis 1968). Excavations at Blackheath Down revealed a hollow-way worn 15 cm into the chalk (Bowen 1975b, 109). Another late Iron Age/Early Roman hollow-way, up to 40 cm deep, has recently been discovered approaching the north gate of Winchester (P. Ottaway and K. Qualmann, pers. comm.).

At the deviation by Feature 6 on R6 it was quite obvious from the profile of the hollow-way and the pairing of the ruts that there was room for only a single carriage width of traffic; whether the necessary one-way directions were imposed or left to the goodwill of the Roman drivers is, of course, speculation. This seems an unnecessary impediment to two-way traffic, and there were, presumably, urgent reasons, no longer apparent, for the deviation. The ruts, which were visible on the sides as well as in the bottom of the hollow-way, were up to 60 cm wide, but only about 4 cm deep. In the bottom of the hollow-way it was possible to establish a pair of ruts, but, because of their width, only minimum and maximum figures of, respectively, 1.2 m and 2 m can be calcu-

lated for vehicle gauge, with a mean perhaps in the order of 1.5 m to 1.75 m. An equally broad range of possible axle-width, 1.75 to 2.3 m, has been recorded at Tarraby Lane, Carlisle (Smith 1978). The measurements from both Burntwood Farm and Tarraby Lane are typical of the range, 1.05 to 2.3 m, of paired wheel ruts found in Roman Europe (D.E. Johnston, pers. comm.).

In order to comprehend how the landscape developed, and how trade and exchange were possible at the practical level, it is necessary to find the lanes that formed the means of communication in rural Roman Britain. The dark linear soil mark, the principal object of the excavation, is now understood. The track was ditched, but probably not hedged. The ditches were cleaned out from time to time, the roadway was hollowed by use and repaired with cobbles.

The shallow ditches of the Roman land boundaries—on R5 a continuation of the road ditches and on R6 an entirely separate entity—were just visible on aerial photographs. Care should be taken, therefore, not to confuse parts of this Roman system with Bowen's (1978) Wessex linear ditch system of the Bronze Age.

There is a variety of ditch patterns known in the Roman period, and paddocks adjacent to tracks have been excavated on both river gravels, as at Northfield Farm (Gray 1977), and on the chalk at Winnall Down (Fasham 1978). However, the division of the Roman landscape into large fields defined by ditches as on Burntwood and Bridget's Farms is unusual. These fields may have been subdivided by hedges, fences or even small baulks, none of which leaves easily detectable surface evidence after intensive agricultural activities (Fasham forthcoming, b). On Bridget's Farm the road ditches became land boundaries and turned sharply away from the alignment of the road at a point just south and below the Clay-with-flints deposit, which capped the ridge ending the valley. This may have been an area of common land. The alignment of the road may have been preserved across this area as a track, for on the north of the ridge the road

appears again flanked by ditches, and on Bridget's Farm the western road ditch is extended northwards.

Phase 4. The Roman Cemetery

The linear Roman cemetery was, almost certainly, completely excavated. Seven of the graves lay head-to-toe along the north side of the land boundary, Feature 8. The eighth grave, Feature 54, was at the junction of Feature 8 with the road. Apart from Feature 11, all heads were at the west end of the grave. Four, possibly five, females over 17 years of age were buried along with two males over the age of 25, and one child of 2.5–3 years of age. Grave goods accompanied five of the burials: a single pot in each of four, and, with the child burial, Feature 50, a flagon and a pie-dish. Two skeletons, both female, were buried with shoes; there were over eighty-seven shoe nails in Feature 54 and 102 in Feature 49. At Hardknott over seventy hobnails were represented on shoe No. 1 and over eighty on shoe No. 2 (Charlesworth and Thornton 1973). The number of shoe nails in Features 54 and 102 suggests that the stud design on the sole of the shoe was rather more complex than a simple three-row pattern (Ambrose 1975, 260).

All eight inhumations were in coffins which included oak in their construction, and two, in Features 55 and 94, showed evidence of a second wood which cannot be positively identified. Attempted reconstructions from the data provided principally by the nails show that the coffins in Features 11, 51 and 55 may have had headrests, and in Features 50, 51 and 55 the profusion of nails at the corners must indicate handles or some form of corner brace, as with skeleton No. 40 at Trentholme Drive, York (Wenham 1968). It proved possible to reconstruct on paper the coffin in Feature 51 (Clatworthy 1975 and archive). The reconstruction suggested a coffin of simple oak-plank construction measuring about 2 m by 1 m and at least 0.5 m deep. The planks were probably 15–25 mm thick. It has already been noted that this coffin probably had handles and a headrest.

The graves were large; the smallest was 1.98

m by 0.8 m, and the largest 3.42 m by 1.4 m. The latter was twice as long as the man buried in it. There was no evidence for mausolea structures, and the size of the graves seems irrelevant to the straightforward functional aspects of burial. The cemetery has another unusual aspect which is the linear arrangement along a land boundary ditch. If the arrangement is regarded as the first stage in an ordered cemetery, but one which was never completely used, it need occasion no surprise. The cemetery at Lynch Farm was in the corner of a field or paddock (Jones 1975). Cemeteries are also to be found within specially designated areas, such as the late Iron Age/Romano-British Cemetery 1 at Owslebury (Collis 1968 and 1977).

The Burntwood Farm cemetery lies 700 m north of the major settlement in the area, Fig. 2, in which there were Roman burials (A. French, pers. comm.). It is a similar distance south-west of an area of probable Romano-British occupation on Bridget's Farm. It is not obviously related to either of these two settlements, unless the land boundary was the territorial division between the two sites. Burials have been discovered in the body of lynchets at Asham, Sussex (Curwen and Curwen 1930). There are probably valid social reasons—and/or perhaps even reasons of hygiene—for these eight inhumations being isolated. However, this cemetery, lying along a land boundary, may anticipate a practice recognized as current in Saxon England (Bonney 1972).

The Post-hole Alignments

The only dating evidence for the two lines and one group of post-holes comes from the possible cutting of post-holes in Line 2 into the fill of the graves. It is fair to assume that Lines 1 and 2 belong to a late- or sub-Roman context, when the land boundary, Feature 8, was still visible on the surface, and when the road formed a major barrier in the landscape, even if it may no longer have been used. The post-holes of Line 2 do seem to follow Feature 8 and respect the road. The dating of the group of post-holes must be doubtful.

General Observations

The excavations on Burntwood and Bridget's Farm attempted, successfully, to examine important aspects of the landscape, which it is not normally possible to examine in great detail by excavation. Although the cause of the deviation of the road is not satisfactorily resolved, it is now possible to sketch, in outline, the development of a small piece of countryside over a period of perhaps 2,500 years.

In the late Neolithic there was a period of small-scale woodland clearance with human activity evidenced by pottery sherds and animal bones in one of the pits on R6. Possibly at more or less the same time—certainly in a similar environment—sarsens might have been erected to form two stone rows. After this initial clearance (whether there was organised agricultural activity is pure speculation) woodland regeneration occurred. On Bridget's Farm some pits were dug in dense woodland, and the radiocarbon dates suggest that there was woodland during the Bronze Age. The precise vegetational succession is not clear, but a variegated landscape should probably be envisaged, in which case the woodland on Bridget's Farm may be localised. During the Iron Age the area of R6 was farmed, in 'Celtic' fields, and lynchets developed; there was a dramatic change in the snail fauna at this period. Another massive change in the appearance and management of the landscape occurred in the Roman period with the road being extensively used, large fields being laid out, and an isolated cemetery coming into being. After this some post-built fences were constructed.

The major alterations to the landscape in the late Neolithic, the Late Bronze Age or Early Iron Age and during the Roman period reflect social and economic changes, which should be detectable in the study of settlements.

APPENDIX

GEOPHYSICAL SURVEY ON BURNTWOOD FARM
by A. D. H. Bartlett

SURVEY METHOD

The survey was conducted using the Plessey Fluxgate Gradiometer with the automatic plotting system, from 2 until 11 September 1974.

RESULTS, FIG. 4

The results indicated that the extreme southern end of the site appeared to be empty of occupation, or nearly so, and that most of the features present were confined to the centre of the site, where there seemed to be an enclosure, with possible evidence for occupation at the northern end. The west boundary ditch, flanked on the outside by a broad linear feature—possibly a ditch—seemed to run out of the survey area in a northerly direction, and the south boundary ditch was very indistinct in places.

External to the enclosure to the north was a somewhat confused area. On a line with the east boundary a group of anomalies was found, which could perhaps have been a system of disturbed ditches, or part of an occupation area. Between this and the extended west boundary were several features which looked more promising as occupation areas.

In the extreme north-easterly corner of the survey area a linear anomaly was detected, corresponding well with a slight surface feature running out of the area in both directions.

The survey also showed a broken series of weak anomalies which could possibly have constituted the remains of a ditch.

COMPARISON OF SURVEY AND EXCAVATION

The excavation produced some evidence of human activity but no intensive occupation of the kind that would cause significant magnetic enhancement of the soil. Strong magnetic anomalies were, therefore, lacking, but there was still a very good correspondence between the survey and the excavation.

The road, ditch and lynchet were all detected in the survey, although the interpretation of the junction of the hollow-way with the ditch as marked on the survey plan, and the assumption that all three formed an enclosure were both incorrect. The continuation of the hollow-way to the south-west would probably have been detected if the survey had extended further in that direction.

The larger pits or hollows containing artefacts or burnt clay were all located, and so were some of the smaller possible stone-holes. The post-holes and smaller pits were not detected. They fall below the limit of resolution in a magnetic survey, and anomalies they produce would not exceed the general noise level.

The magnetic response to the lynchet across the south side of the site was well-defined, if irregular. It is notable that there were other anomalies visible in the survey plot (e.g. anomaly in north-east corner of survey) which might plausibly have formed part of the same cultivation or enclosure pattern. They were as clear as those caused by the lynchet or ditch and yet did not correspond to excavated features. This suggests the possibility that the survey recorded features which had been eroded completely from the subsoil but survived as detectable variations in the magnetic susceptibility of the topsoil, if in no other way.

Graves such as those excavated near the ditch at the south of the site are not usually detectable in a magnetic survey, because of lack of contrast in the fill. In this case the individual graves were indistinct, but there was a group of anomalies in the area where they were found. This could represent a partial response to an irregularly mixed fill of earth and chalk.

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