

entrance, is not clear, unless it was also in some way related to the doorway. However, in the absence of stratigraphic links, it might equally well have pre-dated or post-dated the building.

- 3 3 32 No other features were recorded within the interior of the roundhouse, though a pair of circular postholes, set 2.4m apart (14459, 14461) were found on the west side of the structure, between the inner and outer gullies. Both were c 0.25m in diameter, but whilst the northernmost (14461) was 0.25m deep, that to the south (14459) was very shallow, at only 60mm. The function of neither could be determined, though it is possible they marked the position of structural features of some sort, such as props or supports for part of the roof.
- 3 3 33 Extending south-east from the southern terminal of outer gully 14719 was a vertical-sided, flat-bottomed ditch or trench (14022), c 0.8m wide and up to 0.65m deep (Fig 48). This feature, which appears to have been contemporary with 14719, was traced for c 8m before turning to a more nearly north to south direction for a further 13m or so. One of the fills of this feature (14577) contained three fragments of bog ore, weighing 1.385kg (Section 5.11.2). The north to south arm of 14022 had been largely destroyed by a probable recut (14023), up to 1.3m wide and 0.8m deep, which was on more or less the same line. One of the primary fills (14609) of this yielded a Romano-British white ware sherd of possible first-century AD date (Evans 2007), and a charred blackthorn-type (*Prunus* sp) stone from another primary fill (14533) in the same feature yielded a radiocarbon determination of 60 cal BC-cal AD 80 (2000±30 BP, SUERC-26258, Section 7.1). Whilst the purpose of this feature is not clear, its spatial relationship with the roundhouse suggests that it may have been a drainage trench or some such feature, perhaps serving to channel rainwater away from the vicinity of the building. This is significant, since 14023 was subsequently cut by the northern arm of ditch 14020, which defined the 'inner enclosure' that was seemingly constructed within the eastern part of Enclosure 7 during its second phase. These relationships therefore demonstrate that feature 14022/14023 (and presumably also roundhouse 14021 itself) was in existence before the 'inner enclosure' was built, which in turn suggests that the roundhouse probably pre-dated the second phase of Enclosure 7. However, the evidence does not preclude the possibility that the building continued in use into the later phase.
- 3 3 34 To the south, gully/trench 14023, associated with roundhouse 14021, terminated on the north side of a narrow east to west gully of uncertain significance (14028). This U-profiled feature was mostly 0.3-0.55m wide and up to 0.35m deep, and extended west from the intersection with 14023 for c 19m (Fig 48), terminating just short of the western arm of the 'inner enclosure' ditch (14020). Approximately halfway along its surviving length, it appears to have described a semi-circular arc, c 5.3m in diameter. The significance of this is not known, it could conceivably have marked the position of a small, poorly preserved roundhouse, but this is far from certain.
- 3 3 35 Elsewhere within the interior of Enclosure 7, only a few scattered features were recorded (Fig 48). These included a few isolated pits and postholes and a few short ditch segments, the significance of which was not determined. One of the most substantial was a ditch 8.7m in length (14825), situated within the

second phase 'inner enclosure', c 7m south of gully 14028 This steep-sided feature was up to 1.3m wide at the top and 0.2-0.4m deep, and curved somewhat from south-east to north-west, though it does not appear to have been the remains of a roundhouse gully or foundation trench. One of its fills (14823) yielded four sherds of oxidised Romano-British pottery (Evans 2007)

- 3.3.36 For the most part, the few features recorded within Enclosure 7 had no stratigraphic relationships with the enclosure ditches or with roundhouse 14021, though the north arm of 'inner enclosure' ditch 14020 was cut by a short north-west to south-east gully or trench (14027). The second phase ditch on the eastern side of the enclosure (14017) was cut (though only on its extreme western edge) by an amorphous and extremely irregular feature (or, possibly, a group of several intercutting features filled with the same material), up to 9 x 4m at its greatest extent and up to 0.38m deep (14024), filled with an organic, dark grey-brown/black sandy clay silt. This disturbance also removed the southern surviving end of the primary eastern enclosure ditch (14018), though the ditch did not reappear south of 14024, as might have been expected. It may be noteworthy that feature 14024 was located c 8m due east of the doorway to roundhouse 4021, though whether or not it received domestic refuse from the building cannot be known. Its fills yielded several sherds of pottery (Evans 2007), including six gritty sherds of possible late Iron Age-early Roman date and 13 Romano-British oxidised fragments, all from 14457, two oxidised and three gritty sherds from 14420, two more gritty fragments from 14447, and an undiagnostic Romano-British sherd from deposit 14448.
- 3.3.37 Immediately west of Enclosure 7 were several ditches (14689, 14691, 14692, 14715, 14736) roughly aligned north to south and east to west, and situated only a few metres apart (Fig 48). The precise significance of these is unknown, though not all were contemporary, so it seems that they may represent the remains of one or more small enclosures, attached to the west side of Enclosure 7, the boundaries of which were redefined on more than one occasion. One of the east to west features (14691) was seemingly cut by the secondary ditch defining the west side of the enclosure (14690), but another, located just to the south (14689), is said to have cut that feature. Neither had any stratigraphic link with the primary enclosure ditch (14686), though, spatially, they may have respected its position. Both were U-profiled, 0.9-1.05m wide and up to 0.4m deep. Cutting 14689 was a large, roughly circular pit (14742), approximately 2m in diameter but only 0.25m deep. Feature 14692 yielded a Dragendorff 31 samian bowl, datable to the second half of the second century AD, and the primary fill (14739) of ditch 14736 contained a 'native'-type gritty sherd of probable late Iron Age/early Roman date (Section 5.1.19). A primary fill (14745) in ditch 14689 also contained a small fragment of fired clay (Section 5.11), but the uppermost fill (14765) in ditch 14691 yielded an intrusive fragment from a post-medieval ceramic field drain.
- 3.3.38 Although both these ditches extended beyond the area of excavation, some 25m to the south-west, another ditch was recorded (14016, Fig 47) that appeared to continue the alignment of ditch 14689. This was 0.85-1m wide and up to 0.9m deep, and yielded two sherds of Romano-British reduced

pottery from one of its upper fills (14042, Evans 2007) Its western end intersected, but did not extend across, the easternmost of a pair of parallel north-north-west- to south-south-east-aligned ditches (14008 on the east and 14007 on the west) that appear to have defined the edge of a trackway (Trackway 3), c 3.5-4m wide (Fig 44, PI 21) The flanking ditches were, for the most part, c 1-1.2m wide and 0.35-0.5m deep, though in places ditch 14008 was up to 2m wide and 0.9m deep The alignment of the trackway suggested that it was broadly contemporary with Enclosure 7, which lay c 65m to the east, certainly, it did not share the very distinct alignment of the enclosure ditches in the western part of the site (Enclosures 4, 5 and 6, Sections 3.3.14, 3.3.21 and 3.3.40) It was traced north for c 20m across the site, but its flanking ditches were also recorded some 15m further north in an evaluation trench excavated by NAA in 2000 (trench S7/39, Fig 44; NAA 2000b)

3.3.39 In the area east of Trackway 3 and south of ditch 14016, only a sparse scatter of small features was recorded (Fig 47) These included three postholes (14031, 14049, 14170) and segments of two slightly curving gullies (14072, 14090), both of which were aligned roughly parallel to the track, and also to the western boundary of Enclosure 7 to the east Feature 14072 was 4.5m long, 0.35-0.65m wide and 50-70mm deep, with a shallow, U-shaped profile, and 14090 was also U-shaped, in excess of 9m long (it extended north of the excavated area), 0.55m wide and 0.15m deep Its northern end cut across a large but shallow hollow (14065) that was interpreted as a possible tree-throw The grey-brown silty fill of this (14064) yielded ten fragments of early Romano-British oxidised ware and a fragment of similarly dated reduced ware However, another oxidised sherd from the same deposit seemingly derived from a probable Severn Valley-ware jar, which is likely to date no earlier than the early third-century AD (Webster 1976) One of the fills (14045) of gully 14090, which cut this putative tree-throw, contained four early Romano-British oxidised sherds, and ten small fragments, possibly from a first- or second-century mortarium, came from a fill (14073) of feature 14072 (Hartley 2010)

3.3.40 Approximately 15m west of Trackway 3, a north- to -south-aligned ditch (14010) was recorded, the northern end of which turned east through almost 90° at the point where it continued beyond the limit of the excavation (Fig 44) This feature was up to 1m wide and 0.3m deep It cut across the south-eastern arm of ditch 14006, which formed the south-eastern boundary of Enclosure 4 in the western part of the site, and also seemingly cut ditch/gully 14011 (Section 3.3.12) One of the upper fills (14093) contained a sherd of Romano-British oxidised ware and a 'native'-type gritty sherd of Iron Age-Roman date (Evans 2007) The alignment of ditch 14010 was similar to (though not exactly the same as) the ditches and associated features of Enclosure 7 in the central part of the site, but was totally different from the alignment of the ditches of Enclosures 4, 5 and 6 to the west The fact that it cut ditch 14006 of Enclosure 4 might, therefore, provide an indication that the enclosures and related features in the western part of the site were earlier than the more nearly north-to-south and east-to-west-aligned features in the central area, of which Enclosure 7 was the principal element However, too much weight should not

be attached to a single stratigraphic relationship, particularly since it cannot be demonstrated conclusively that ditch 14010 was contemporary with Enclosure 7 and the other features to the east

- 3 3 41 Seemingly attached to the east side of ditch 14010 was a small, rectilinear enclosure or structure (14003), c 6 x 5m, defined on three sides by a narrow, vertical-sided and flat-bottomed slot, 0.25-0.3m wide and 0.15-0.25m deep, with ditch 14010 itself forming the west side (Fig 44). A poorly preserved ditch (14009), up to 1.5m wide and 0.7m deep, extended eastwards for at least 5m from the north-east corner of this feature, but had been destroyed beyond this
- 3 3 42 *The eastern area* that intensive activity occurred in the area east of Enclosure 7 was indicated by the presence of a large number of ditches and other features (Figs 47 and 51). With one possible exception (10370, Section 3 3 57), no definite roundhouses were located, though a possible rectilinear structure (14678, Section 3 3 53) was also recorded in this area
- 3 3 43 Extending east from the north-east corner of Enclosure 7 was a U-profiled ditch (14029, Fig 47), up to 2.7m wide and 0.7m deep, which was traced eastwards for c 16m before it continued beyond the limit of the investigation. Although it was recorded as having been cut by ditch 14017, the eastern boundary ditch of Enclosure 7, 14029 did not extend west beyond that feature, so it is possible that the two were in fact broadly contemporary. A secondary fill of this feature (14540) yielded a 'native'-type gritty sherd of Iron Age/Roman date (Evans 2007)
- 3 3 44 Feature 14029 may have formed part of a field or enclosure attached to the east side of Enclosure 7, though there was little evidence for occupation in its immediate vicinity. The most significant feature in this area was a possible heavily truncated hearth base (14463), located immediately north of the angle formed by the junction of ditches 14017 and 14029. This comprised a shallow, sub-oval, bowl-shaped cut, 1.15 x 0.85m and 60mm deep, filled with a deposit of heat-affected orange-red sandy clay and small, burnt sandstone fragments (14462)
- 3 3 45 Some 45m south of ditch 14029, and aligned broadly parallel to it, was a second east-to-west, V-profiled ditch (14683), 2m wide and 0.75-0.85m deep (Figs 47 and 51). The relationship between this feature and the eastern boundary ditch of Enclosure 7 (14017) had been destroyed by modern disturbance. However, it extended east for approximately 50m and formed a T-junction with a north-to-south ditch (14682), 1.8m wide and 0.6m deep, aligned perpendicular to it (Fig 51). This was located c 70m east of Enclosure 7, and may have represented the eastern boundary of the field/enclosure system attached to the east side of that enclosure
- 3 3 46 A secondary fill of feature 14683 (14886) contained charred plant fragments from which two radiocarbon determinations, taken from different levels within a monolith sample, were obtained (Section 7 1). The lower (stratigraphically earlier) sample, taken from the base of the deposit, yielded a date of 200 cal BC-cal AD 1 (2080±35 BP, SUERC-26438), whilst the stratigraphically later

sample, obtained from near the top of the material, was dated to 50 cal BC-cal AD 120 (1975±35 BP, SUERC-26439) These dates suggested that this charcoal-rich deposit did not comprise, as initially thought, a single dump of occupation material, but had accumulated gradually over a fairly prolonged period, from the late middle Iron Age or late Iron Age to (perhaps) the early Roman period However, the deposit appeared homogeneous throughout its depth, with no evidence for horizonation, which, together with the presence of much charcoal throughout, appeared consistent with the initial interpretation, rather than with the idea of a slow accumulation. It is therefore possible that the lower (and earlier) of the two dates relates to the period immediately pre-dating the deposition of deposit 14886, when primary silting of ditch 14683 had occurred, whilst the stratigraphically later sample from the upper part of 14886 dates the dumping of this charcoal-rich deposit itself into the partially filled ditch In addition to the scientific dating, a small amount of ceramic dating evidence was also recovered from ditch 14683 One of the latest fills (14884) of this feature yielded an Iron Age/Romano-British 'native'-type gritty sherd, whilst another upper fill (14883) contained three undiagnostic Romano-British sherds (Evans 2007)

- 3 3 47 The area enclosed by ditches 14029, 14682 and 14683 is estimated to have measured approximately 70m east to west by 45m north to south, though only the southern and western edges of this were available for investigation (Figs 47 and 51) Within the excavated area, the western half appears to have been totally devoid of archaeological features A few pits and a number of relatively substantial ditches were, however, recorded in the south-east corner, immediately north of ditch 14683 None of these had any stratigraphic link to the larger enclosure ditches, though the alignment of three of the ditches (14677, 14909, 14921, Fig 51) suggested that they may have been broadly contemporary with the larger features, perhaps representing the remains of small, rectangular fields or enclosures within the broader pattern of land division These features were all roughly U-profiled, c 0.5-0.85m wide and c 0.3-0.45m deep Three other ditches in this area (10314, 14974, 14975), together with a fourth (14684), located on the south side of ditch 14683, did not share the common alignment of the others (Fig 51), three of these extending north-east to south-west, whilst the fourth (10314) was aligned broadly perpendicular to them They may, therefore, all have been broadly contemporary, though it is not known if the activity they represent pre-dated the main phase of occupation or was later Feature 10314 had a broad (1.25m), but shallow (0.15m), U-shaped profile, whilst 14974 and 14975 were relatively narrow (0.51m and 0.46m respectively), but fairly deep (0.45m and 0.9m), with near-vertical sides and flat bases Ditch 14684 was considerably larger, at up to 2.5m wide and 0.9m deep, with steep sides and a rounded base One of the upper fills (14934) of feature 14975 contained two sherds of Romano-British oxidised pottery, and three sherds of Romano-British reduced ware came from 14935, a secondary fill (Evans 2007)
- 3 3 48 Other features in this area were few and far between (Fig 51) On the southern edge of ditch 14683 was a shallow, amorphous pit (14836), 2.4 x 2.3m and 0.12m deep, the base of which was filled with a deposit of seemingly deliberately laid, sub-rounded stones (14835) overlain by grey-brown clay-silt

(14834) Whilst it seems clear that this feature must once have had a direct stratigraphic relationship with the ditch, this had been completely destroyed by a modern field drain. A similar feature (14923), though without the stones at the base of the cut, was recorded at the intersection of ditches 14683 and 14682, where it appeared to have been cut by the latter.

- 3 3 49 The area immediately east of ditch 14682 was seemingly devoid of archaeological features, though this may have been due in large part to extensive modern disturbance. However, approximately 25m further east was a quite dense concentration of features, principally ditches, pits and possible postholes, that extended east from this point to the eastern end of SCA15, a distance of c 100m (Fig 51). Whilst these remains doubtless related to further systems of Iron Age/Romano-British ditched enclosures and fields, they were generally seen in too limited an area to be meaningfully interpreted.
- 3 3 50 Some 40m east of ditch 14682, and aligned roughly parallel with it, a possible trackway (Trackway 4) crossed the site from north-west to south-east (Fig 51). This was defined by a pair of parallel, steep-sided and flat-bottomed ditches (14680 on the west, 14679 on the east), set c 5m apart (Fig 52). The former was 1.35m wide and 0.7m deep, whilst the latter was somewhat less substantial, at 0.85 x 0.4m. A fill (14663) of 14680 yielded charred cereal grains, from which a radiocarbon determination of 110 cal BC-cal AD 60 (2020±30 BP, SUERC-27898, Section 7.1) was obtained. The same deposit also contained a fragment of a Dressel 2-4 'black sand' amphora, such vessels are thought to have been produced in the Bay of Naples area prior to the eruption of Vesuvius in AD 79 (Williams 2004). It also contained a sherd from an early/mid-first-century Romano-British beaker, and five gritty sherds of possible late Iron Age-early Roman date. Additionally, an upper fill (14665) of ditch 14679 contained a first- or second-century white-ware beaker (Evans 2007).
- 3 3 51 Between the flanking ditches of the trackway was an extensive spread of dark grey and reddish-brown silty soils (14924, 14925), 0.15m thick, that had accumulated within a shallow and quite irregular depression (14926), 3.95 x 1.72m (Fig 52, PI 22), with sloping edges and an undulating base. The earliest of these two deposits (14925) yielded a rim sherd from a white-ware butt beaker, datable to the first half of the first century AD (pre-Flavian), whilst the upper fill (14924) contained five amphora sherds (possibly from Dressel 2-4) and four 'native'-type gritty ware sherds of probable late Iron Age/early Roman date (Evans 2007). The precise significance of feature 14926 is unclear, but it could conceivably have formed through wear resulting from use of Trackway 4. A short distance to the west, immediately adjacent to (and seemingly cut into) the trackway's western boundary ditch (14680), was a putative hearth or kiln (14983, Fig 52). This comprised a roughly circular 'chamber' (14960), c 1.55m in diameter and 0.3m deep, the base of which had been crudely surfaced with large stones (14959, Fig 53, PI 23) overlain by an upper fill of dark grey clay-silt (14961). On the north-east side of this was a north-west- to south-east-aligned linear pit or trench (14963/14965), c 2.8 x 0.85m and up to 0.65m deep, that was interpreted as a flue or rake-out pit for the oven/hearth. This had seemingly been dug into, and on much the same line

as, 14680, the trackway's western ditch, and was filled principally with a dark grey/black, charcoal-rich clay silt (14964) containing burnt bone and several sherds of Romano-British pottery. The latter included a badly abraded but probably near-complete white-ware beaker of early-mid-first-century (pre-Flavian) date, and a sherd from a reduced-ware jar (Evans 2007). This deposit also yielded a small quantity of briquetage and a small fragment of ceramic building material (Section 5.7). Fill 14961 within the chamber yielded three sherds from a Dressel 2-4 'black sand' amphora (Section 5.3), whilst stone layer 14959 in the same feature contained three gritty sherds of possible late Iron Age-early Roman date and a sherd of Romano-British white ware (Evans 2007). Layer 14959 also yielded a few charred seeds, from which a radiocarbon determination of 100 cal BC-cal AD 70 (2010±30 BP, SUERC-26259) was obtained (Section 7.1).

- 3.3.52 In the area between Trackway 4 on the east and the zone of modern disturbance adjacent to ditch 14682 on the west (Fig 51), measuring approximately 20m east to west, quite a dense concentration of features was recorded. These included a number of short ditch/gully segments and a possible rectilinear timber structure (14678, Section 3.3.53). One of the ditches (14939) was aligned perpendicular to Trackway 4, and may well have respected its position, though the intersection of the two lay just north of the area excavated. This feature was 1m wide and 0.22m deep, with gently sloping sides and a slightly rounded base. The other ditch and gully segments in this area (14681, 14862, 14943, 14947, 14981, 14982, Fig 52) were not aligned either on the trackway or ditch 14682, and may not have been contemporary with them. Ditches 14947 and 14943 each yielded sherds of Romano-British reduced ware (one from fill 14955 in 14947 and two from uppermost fill 14912 in 14943), and 14947 also contained a single 'native'-type gritty sherd, probably of late Iron Age/early Roman date, again from fill 14955 (Evans 2007).
- 3.3.53 Approximately 15m west of Trackway 4 was a particularly dense concentration of certain and probable postholes that possibly represented the remains of a rectilinear structure (14678, Fig 51, Pl 24). The precise size and layout of this putative building remain unclear, but it may have been rectangular in plan, c 3m wide and in excess of 4m long (Fig 54), externally, aligned north-east to south-west, broadly perpendicular to the trackway. The walls survived as rows of shallow, circular or oval postholes (see Figure 52 for details), mostly 0.25-0.4m in diameter and 0.1-0.25m deep, though the north-eastern end of the building was poorly defined and its precise extent in that direction remains unclear. Within the structure was a circular pit (14920), 1.2m in diameter and 0.3m deep. This was filled with a mixed, orange-grey sandy clay (14919), the upper 0.2m of which was composed mainly of large, sub-rounded stones (Pl 25), possibly deliberately laid to form some kind of foundation or base for a vanished feature.
- 3.3.54 That structure 14678 was of Roman date was indicated by the small ceramic assemblage that was recovered from a number of its associated features (Evans 2007). Postholes 14838 and 14846 (Fig 54) contained, respectively, a reduced-ware fragment and three sherds from an oxidised flagon, and four

further oxidised sherds came from posthole 14844. A fourth posthole (14897) yielded a small fragment of fired clay (*Section 5 11*)

- 3 3 55 Immediately east of Trackway 4 was a north-east to south-west ditch (14946, Fig 52) that appears to have been aligned perpendicular to the track. This V-profiled feature was 0.8m wide and 0.65m deep, and terminated in a rounded butt-end c. 1.7m short of the eastern flanking ditch (14679) of the trackway, to the north-east, it extended beyond the area investigated. One of the primary fills of this feature (14971) yielded six fragments from an early-mid-first-century AD (pre-Flavian) beaker, and three sherds from a first- or second-century white-slipped flagon, together with a tiny fragment of ceramic building material (*Section 5 7*). With the exception of this single ditch, the features recorded east of Trackway 4 were concentrated in the easternmost 70m of the site, 10-80m east of the track (Fig 51). The principal excavated feature in this area was a V-shaped, north-east- to south-west-aligned ditch (10377, Fig 55), 1.5m wide and 0.62m deep, this was located c. 23m east of the trackway and was aligned broadly perpendicular to it (Fig 51). Extending to the south-east, at right-angles to ditch 10377 and clearly contemporary with it, was a ditch up to 4m wide and 0.7m deep (10376), only a small part of which lay within the site. These features were morphologically similar to many other ditches recorded elsewhere within the excavated area, and doubtless represented the eastwards continuation of the system of ditched enclosures and field systems recorded in greater detail in the central and western parts of the site.
- 3 3 56 With the exception of ditches 10376 and 10377, the features excavated at the eastern end of SCA15 largely comprised a seemingly randomly distributed collection of short ditch segments, shallow pits/hollows and possible postholes (Fig 55), the significance of which remains largely unknown. For the most part, the ditches did not share the alignment of ditches 10376 and 10377, or of Trackway 4 and the other enclosure features further west. Indeed, they exhibited a variety of orientations, suggesting, in the absence of direct stratigraphic links, that they may represent several sub-phases of activity. The only exception was a group of four gullies or ditches (10378, 10379, 15022 (Fig 51), 15023, 15024), located north of ditch 10377 and aligned perpendicular to it (Fig 55), that, like similar features recorded further west (*Section 3 3 55*), might possibly have been the remains of a rectilinear field system contemporary with the broader pattern of enclosure. These were mostly U-profiled, 0.4-0.5m wide and 0.15-0.2m deep, though 15024 was more substantial, at 0.8m wide and 0.4m deep. Feature 15022 (fill 14996) yielded a gritty sherd of possible late Iron Age-early Roman date, whilst 15023 contained a tiny sherd of Romano-British oxidised ware (from 15017). In ditch 15024, fill 15019 yielded an amphora fragment, possibly from a first-century AD Dressel 2-4 'blank sand' amphora (*Section 5 3*), and 17 gritty sherds of possible late Iron Age-early Roman date (Evans 2007). A few other features in this area also yielded small quantities of pottery. Pit 14989, located immediately west of ditch 15022 (Fig 52) contained a single oxidised sherd in its primary fill (14987), whilst the lower fill (14994) of pit 14995, which was cut by 15022, yielded a single gritty sherd of probable late Iron Age/early Roman date. A sherd of the same type, together with a small fragment of fired



clay, also came from the primary fill (14999) of another small pit (15000), situated a short distance east of ditch 15022

3 3 57 No definite remains of roundhouses were recorded in the eastern part of the site. However, close to the extreme eastern end of the excavated area, the northern part of a shallow, U-profiled curvilinear gully (10370, Fig 55), 0.3m wide and 0.1m deep, was excavated. The precise significance of this is not known, since the greater part of the feature seemingly lay south of the site, however, the possibility remains that it represented either the wall foundation trench or the 'eaves-drip' gully for a roundhouse, similar in form to those found in the central and western parts of the site. No other excavated features were associated with this putative structure.

---

## 4. THE POST-ROMAN PERIOD

---

### 4.1 INTRODUCTION

4 1 1 For the most part, evidence for post-Roman activity within the A66 road corridor (Fig 56) falls into three main categories, that associated with agricultural enclosure and rural settlement, evidence for the development and maintenance of the road itself, and the remains of quarrying activities. In all cases, the post-medieval period is overwhelmingly dominant, with very little evidence for earlier post-Roman occupation being recorded.

4 1 2 No direct evidence for early medieval (approximately the sixth-eleventh centuries) or later medieval (approximately the twelfth-sixteenth centuries) activity was found anywhere during the course of the A66 Project. However, scientific dating indicates that the upper part of the Scots Dyke ditch at SCA10 had filled completely sometime during the early medieval or medieval period, almost certainly by the first quarter of the fourteenth century at the latest, and possibly considerably earlier. Elsewhere, a small assemblage of medieval potsherds (*Section 5 6*), recovered either as unstratified material or from features of certain or probable post-medieval date, attests to medieval occupation in the vicinity of the road corridor. It seems likely that many of the sherds were incorporated into domestic refuse that was transported from nearby farmsteads and settlements for use as manure on the fields.

### 4.2 THE SCOTS DYKE (SCA10)

4 2 1 Within the Scots Dyke ditch (*12035*) at SCA10 (Fig 57), scientific dating of the lower fills (*Section 7 4*) demonstrated conclusively that the origins of this part of the monument, at any rate, lay in prehistory, almost certainly in the pre-Roman Iron Age (*Section 2 3 15*), and not in the early medieval period, as had previously been thought (NAA 1997, 4, English Heritage 2007). Filling of the lower part of the ditch probably commenced sometime prior to c 100 BC (*Section 7 4*). By the early Roman period, the lower half of feature may have been completely filled (deposits *12094*, *12095*, *12096*, *Section 2 3 17*), and more material (*12097*) seems to have accumulated gradually from the late Iron Age/early Roman period into the early medieval period.

4 2 2 Above deposit *12097*, a layer of very fine, dark brown sandy loam (*12098*), 0.1m thick, had accumulated (Fig 58), this had entered the feature principally from the north-west. The upper part of the ditch (PI 26) was filled with 0.2m of dark yellowish-brown, sandy loam (*12099*), overlain by a similar depth of dark grey sandy material (*12100*), containing a few angular and sub-angular sandstone fragments. Integrated analysis of the scientific dating from these levels (*Section 7 4*) shows that they were accumulating during the post-Roman period. The ditch appears to have been completely filled by the mid-fourteenth century at the latest, though filling could have been completed considerably earlier than this, potentially as early as the sixth century AD. No evidence for any cleaning, modification or refurbishment of the Scots Dyke during the early medieval period was noted within the area investigated. However, in its better-

preserved sections, the Dyke survives to this day as a prominent landscape feature (NAA 1997, 4, English Heritage 2007), and it is reasonable to suppose that much more of the Dyke would have been visible (and in a much better state of preservation), during the early post-Roman period than is the case some 1300-1400 years later. Certainly, the dating evidence from the ditch at SCA10 leaves open the possibility that the section of the monument investigated continued to be visible as late as the sixth-seventh century AD, and it is therefore conceivable that the Dyke could have been utilised, in whole or in part, as a territorial boundary marker at this time.

- 4.2.3 As was the case with earlier ditch fills, none of the later deposits within the Scots Dyke ditch yielded finds, charred plant remains, or other palaeoenvironmental evidence. However, a soil monolith taken through the sequence of fills did contain pollen (*Section 6.3.6*)

#### 4.3 AGRICULTURAL ENCLOSURE AND RURAL SETTLEMENT

- 4.3.1 The stratigraphic evidence pertaining to the post-Roman rural landscape of the road corridor is either demonstrably of post-medieval date or undated. No certainly dated medieval features were recorded, and it therefore seems likely that all the excavated features are post-medieval. With the exception of field drains, virtually all the features recorded comprised the vestigial remains of certain or probable field boundaries.

- 4.3.2 ***Greta Bridge to Stephen Bank*** the photographic and topographic surveys undertaken of visible earthworks in two modern fields situated immediately north of the current A66 at GBA12 (Fig 56) revealed the remains of relict field boundaries and areas of surviving ridge and furrow relating to the post-medieval agricultural landscape adjacent to Smallways Beck (Fig 59). Generally speaking, the site sloped gradually northwards from the A66, though a steeper break of slope occurred at the point where the land flattened out onto a wide floodplain. The modern post and wire fence separating the two fields had been erected on a north to south bank (Pl 27), the line of which is shown on the First Edition OS map (1857b). On the west side of the bank, a shallow ditch appeared to extend down the slope to the floodplain and Smallways Beck. Further inspection revealed a second, relict, north to south field boundary approximately 120m to the west (Fig 59), characterised by a low mound, perhaps caused by the spreading of a boundary bank, since a field boundary in this position is depicted on the First Edition OS map (1857b). Several other possible boundary features, some of which correspond to field boundaries shown on the 1857 map, were also recorded as low, poorly-preserved earthworks elsewhere on the site (Fig 59).

- 4.3.3 Very slight traces of ridge and furrow were recorded in four areas within the western field (Fig 59), all of which appeared to run down the natural slope. Two indistinct ridges, less than 0.1m in height and situated approximately 16m apart, lay in the far west of the field. To the east were three further areas of ridge and furrow, the ridges of which were approximately 5m apart. Most of these were indistinct, being less than 0.1m high, but they appeared to end where the natural slope became steeper, immediately before it levelled out.

onto the floodplain. All the surviving areas of ridge and furrow were straight, rather than aratral ('S-shaped'), suggesting they were formed as a result of horse ploughing. In so far as it was possible to tell, they also respected the position of the relict field boundaries, and may therefore have been broadly contemporary with those features.

- 4 3 4 ***Carlin Moor to Scotch Corner SCA8*** the principal evidence for post-Roman activity at SCA8 (Fig 56) was provided by field boundary ditches, land drains and quarries of post-medieval date (for the latter, *Section 4 4 3*). In the western part of the site, two boundary ditches were recorded, *11364*, situated 150m from the western end of the excavated area, and *11292*, located approximately 130m further to the south-east (Fig 60). Both were aligned north-east to south-west, and crossed the full width of the excavated area. Ditch *11364* was 0 3-0 4m wide and up to 0 15m deep, whilst *11292* was 0 4m wide and up to 0 27m deep. Neither yielded any finds, but their character and alignment suggests that they formed part of the post-medieval enclosure system in this area.
- 4 3 5 Towards the eastern end of the site was a north-west- to south-east-aligned ditch (*11142*), in excess of 0 5m wide and up to 0 5m deep, which was traced along the southern edge of the site (Fig 61). Despite yielding no datable artefacts, *11142* is thought likely to be of post-medieval date, because of its similarity to the other post-medieval ditches excavated on the site, and the fact that it was aligned parallel to the A66. Indeed, it appeared to be aligned on a linear depression just to the south of the site boundary, which was adjacent to an extant hedgerow.
- 4 3 6 Many late post-medieval field drains were exposed in the central part of the site, where the sandstone bedrock was overlain by poorly-drained deposits of boulder clay. These seemingly represented several phases of drainage works, presumably intended to improve the land for farming. Drains were conspicuously absent in the western and eastern parts of the site, where the sandstone was not covered by clay.
- 4 3 7 ***SCA13 (including SCA14 and SCA14a)*** evidence for post-Roman activity at SCA 13 (Fig 56) was restricted to a number of post-medieval agricultural features. However, a metal-detector survey undertaken in the field to the north of the site recovered several metal objects suggestive of medieval and post-medieval activity in the vicinity of the site (*Section 5 8*). In summary, these comprised a lead spindle whorl of probable medieval date, two others that could not be closely dated, and part of a post-medieval silver christening spoon.
- 4 3 8 In the north-western part of the site, two field boundary ditches (*13038* and *13041*, Fig 34) were recorded, crossing the site from north-east to south-west. The former clearly followed the line of an extant field boundary, defined by a bank and a line of trees. Feature *13041* could not be dated, but its character and alignment suggested a post-medieval origin. The fact that it closely followed the line of a probable Iron Age/Romano-British ditch (*13077*, *Section 2 3 22*) is considered fortuitous, particularly since *13041* extended further to the south-east than the earlier feature. Four post-medieval field

drains, sharing the alignment of the ditches, were also recorded on this part of the site

- 4 3 9 *SCA15*. with the exception of several nineteenth-century land drains and other obviously modern features, such as service trenches, the only feature that certainly post-dated the extensive Iron Age/Romano-British settlement activity at *SCA15* (*Section 3 3 10*) was a field boundary ditch (*14015*) that crossed the western part of the site on a south-east/north-west alignment (Fig 62) This did not yield any datable material, but its humic fill appeared more recent than the other excavated features on the site, and it followed the line of an extant field boundary that was removed during the course of the excavation However, it also followed precisely the alignment of a much earlier (late Iron Age/early Roman) trackway (Trackway 2, *Section 3 3 8*), being located immediately adjacent to the ditch (*14006*) that defined the north-east side of the track Unless this concordance was entirely fortuitous, it implies either that elements of the Iron Age/Romano-British enclosure system were still visible in the post-medieval period, and exerted some influence upon the pattern of land division at that time, or that certain features and alignments within this early landscape retained their significance for many centuries, and were redefined throughout the post-Roman and medieval periods

#### 4.4 EVIDENCE FOR QUARRYING

- 4 4 1 Several stone quarries were recorded during the course of the A66 Project, at several of the sites investigated Most were small and long disused, some even appearing as 'old' or 'disused' quarries on mid-nineteenth-century maps (eg OS 1857b, 1857c) However, there was no evidence that any pre-dated the later post-medieval period (approximately the nineteenth-twentieth centuries)
- 4 4 2 *GBA21* *GBA21* (Fig 56) was a small, disused limestone quarry on the south side of the existing A66 (*Section 1 5 6*) A photographic survey was undertaken in order to compile a record of the workings, since they lay within the footprint of the new carriageway The site was overgrown (PI 28), which made access difficult, but it comprised a hollow 15m long and approximately 2m deep This contained some limestone chippings, in addition to modern refuse Although the quarry cannot be precisely dated, it had clearly gone out of use before the First Edition OS map was published (OS 1857b), since it is labelled as 'Old Quarry (limestone)' on that map
- 4 4 3 *SCA8* small quarry pits were located within the excavated area at a number of points where the bedrock outcropped, most notably on the plateau in the central-western part of *SCA8* (Fig 60), where the most intensive Iron Age activity seems to have occurred (*Section 2 3 4*), and at the eastern end Although none could be independently dated, there is no reason to suppose that they were not post-medieval On the west, c 200-250m south-east of the western end of the site, three small quarry pits (*11387*, *11390* and *11389*) were recorded The largest (*11387*) measured 7.5 x 11.5m within the excavation, but extended beyond the site to the south-west Many other small, shallow surface workings pocked the top of the plateau in this area

- 4 4 4 At the eastern end of the site (Fig 61), two larger quarries (11126 and 11132) were recorded. Feature 11126 measured 20 x 20m at its greatest excavated extent, but extended beyond the site to the south. The excavated portion of quarry 11132 measured 26 x 26m, but it too extended beyond the site to the south and east. Trenches were excavated through both quarries, demonstrating that they had been cut to depths in excess of 2m into the bedrock. A buried deposit of charcoal and burnt clay in 11126 suggested that a large fire had been set there. Both 11126 and 11132 appear to have been outliers of the large quarry complex at Gatherley Moor to the east and north (Section 4 5 6), which is still active today.
- 4 4 5 **SCA9 (Gatherley Moor Quarry)**. an earthwork and photographic survey was undertaken on a disused part of Gatherley Moor Quarry (SCA9), which lay immediately adjacent to the south-eastern end of SCA8 (Fig 56), in order to compile a record prior to the workings being largely destroyed by the road scheme. Although the quarry complex extended on both sides of the road, the survey area was restricted to an area west of Moor Road and south of the working quarry (Fig 63).
- 4 4 6 The disused quarry workings are depicted on the First Edition OS map (1857c), and appeared to have changed little since that date. The quarry-pit itself was irregular in plan, though broadly sub-rectangular, measuring c 40m north-west to south-east by c 25m at its greatest extent (Fig 63). South of the quarry were two main areas of probable spoil heaps, one on the south, another to the west. The former was elongated but broadly rectangular, measuring approximately 62 x 25m and approximately 2m high at its maximum extent. It was covered with well-established vegetation, indicating that it had lain undisturbed for many years. Fragments of pale yellow sandstone were visible, but appeared not to form the entirety of the mound, the composition of which is unknown. The western area was smaller (c 30 x 20m at its greatest extent) and lower, though it was raised above the level of the adjacent field to the north-west (within SCA8). A trackway ran north-east to south-west on the western edge of the complex, providing access from the A66 to the quarry workings.
- 4 4 7 **SCA10**. at the western end of SCA10 (Fig 56) were three irregularly shaped features (12006/12008, 12046, 12103, Fig 64), all probably small stone quarries, and a fourth feature of similar type (12032) was located in the central part of the site. These were from 5m to 13m in length, in excess of 2.5-4m wide (all extended south of the excavated area), and 0.23-0.6m deep. South-east of 12032 was a very irregular linear feature (12036), which proved on excavation to be a series of intercutting quarry pits, forming an irregular trench. This was considerably larger than the small quarry-pits to its west, measuring in excess of 25m north to south by 9.5m at its greatest extent. Chronologically, the quarries could date to almost any period, since they yielded no dating evidence, but are perhaps most likely to be post-medieval in date.
- 4 4 8 **SCA14/14a** towards the south-eastern end of SCA13 (Fig 56), a small, disused post-medieval quarry (SCA14a, 13042) was subjected to a photographic and topographic survey, together with a smaller quarry-pit

(SCA14) located a little over 20m further south (Fig 65) Feature 13042 was, like all the other small quarries excavated during the A66 Project, irregular in shape, though it was broadly rectangular in plan, measuring in excess of 20m north-east to south-west (it extended south of the site) by 10m. A 4m-wide trench was excavated from east to west across the feature, revealing a thin layer of soil over the sandstone bedrock. A step around the top of the quarry could represent a working platform. The smaller quarry-pit measured c 25m north-west to south-east and in excess of 12m wide, but was so densely covered by vegetation that it could not be surveyed topographically, though a photographic survey was undertaken.

#### 4.5 EVIDENCE FOR THE DEVELOPMENT OF THE A66 TRUNK ROAD

- 4 5 1 Two modern bridges and/or culverts carrying the A66 trunk road over small watercourses were surveyed and recorded as part of the project. On the western (Carkin Moor to Stephen Bank) section of the road corridor, the bridge carrying the road over Smallways Beck was recorded at GBA12 (Fig 56), whilst further east, in the Carkin Moor to Scotch Corner section of the route, a photographic survey was undertaken at SCA2 of a bridge/culvert for a drainage channel beneath the road.
- 4 5 2 *Smallways New Bridge*: the bridge that carried the existing A66 over Smallways Beck was situated at the south-east corner of GBA12, approximately halfway between Grove Farm and the A66 Motel (Fig 56). It comprised a central concrete culvert, aligned at an oblique angle to the carriageway, and two walls with slightly splayed ends, which projected above ground level (Pl 29). The walls were almost identical, approximately 23.7m long, 1.1m high and 0.45m thick. They were composed of three separate sections, each wall having a central section 12m long, the western part of the north wall was 7.2m long and the eastern part 4.5m long. The western part of the south wall was 4.6m long and the eastern part 7.1m long. Vertical butt joints were visible at the junctions of each part.
- 4 5 3 Both walls were constructed from random roughly coursed rubble (sandstone and limestone), which varied in size, with cement mortar joints. The western part of the north wall appeared to have been rebuilt using slightly different mortar. Both walls had semi-circular sandstone copings, which exhibited pickmark tooling. Each wall rested upon a sandstone plinth, which had similar pickmark tooling to the copings. A sandstone date-stone bearing the inscription 'SMALLWAYS NEW BRIDGE 1947' had been placed in the centre of the south face of the north wall. Each wall had the identification number '128 30' painted in black numerals on a white background.
- 4 5 4 Below each plinth was the central concrete culvert, only visible from below the road level. This was approximately 12m wide and occupied the space below the central part of each wall. Flanking this were areas of random rubble, similar in appearance to the main body of the walls. The concrete culvert comprised a 0.92m-thick lintel resting upon 1.82m-thick uprights. The aperture measured approximately 8.36m wide by 2.4m high. Each side of the bank was lined with a retaining wall of similar construction to the rest of the bridge.

- 4 5 5 *SCA2* a photographic survey was undertaken of a modern bridge/culvert situated approximately 95m south-east of the putative Roman fort at Carkn Moor (*Section 3 2 2*), at the point where a drainage channel passed beneath the A66 (Fig 56). A stone trough, probably once used to water livestock, and seemingly carved from a single stone block, was also photographed *in situ* at the junction of Warrener Lane and the A66 (Pl 30), c 120m south-east of the bridge.
- 4 5 6 The bridge (Pl 31) comprised two central concrete culverts, which lay perpendicular to the carriageway of the A66, as well as two walls, which were parallel to the road and projected above ground. Both walls were identical, measuring 6.9m long, 1.35m high and 0.3m thick. The top of each wall was approximately 4.9m above the bed of the drainage channel.
- 4 5 7 The walls were constructed from random sandstone and limestone rubble of various sizes, and cement mortar. Each wall had, at either end, a sandstone post which exhibited pickmark tooling, together with a moulded top and a recessed band. Two of these posts were painted white and, adjacent to these, the bridge identification number '13440 QQI' was painted in black on a white background. Each wall was topped with semi-circular copings, which also exhibited pickmark tooling.
- 4 5 8 Located below the walls were two concrete culverts (1.67 x 1.47m), which extended for approximately 4m below the bridge. Beyond these, in the centre of the bridge, a stone arch was visible (Pl 32), which probably represents the original width of the bridge before the existing road was widened and constructed over it. Although no internal inspection could be made, this arch was seen to be at an oblique angle to the present line of the A66. On either side of the concrete culverts, the walls continued down to the level of the bank.
- 4 5 9 The bridge was in the same location as Cloven Hill Bridge, which is depicted on the First Edition OS map (1857c), and it may well have incorporated elements of the earlier structure, extensively altered when the road was widened in the 1960s. Modifications made at this time probably included adding the concrete culverts to either end of the original arched bridge and repositioning and rebuilding the walls to accommodate the greater width of the carriageway.



---

## 5 THE FINDS

---

### 5.1 THE PREHISTORIC POTTERY

- 5 1 1 *The early Bronze Age pottery* parts of two prehistoric pottery vessels (designated Vessels 1 and 2 (Vyner 2010)) were recovered from pit 13049 at SCA13 (Section 2 2 6) Vessel 1 is represented by a portion of the upper part of a jar with applied decoration (Fig 66), which is not readily paralleled in ceramic assemblages from Yorkshire and the north of England Vessel 2 comprises a few sherds from another jar, bearing a fragment of decoration
- 5 1 2 The remains of Vessel 1 (PI 33) comprise 22 fragments (weighing 600g) from a large barrel-shaped jar, 12 of these join together, and probably formed part of a single piece that was deposited unbroken Perhaps only 4-5% of the entire vessel was present in the pit, with c 16-20% of the rim The fabric is dark grey (the exterior surface is brown-grey, the interior surface dark brown-mid-grey), with occasional small angular quartz grit inclusions, the wall thickness is typically 14mm The vertical rim has a bevelled interior bearing a series of diagonal impressions, these are indistinct, but were probably made with a spatula of bone or wood The exterior bears a series of applied cordons, semi-circular in profile, 7-10mm wide and 3-4mm deep, perfunctorily decorated with spatula impressions, the design being reminiscent of a Greek key pattern The upper part of the vessel has an extensive covering of carbonised accretion, but where this is not present, there are a few traces of indistinct impressions, though it is unclear whether these were intended as decoration or accidentally made during manufacture
- 5 1 3 The carbonised residue yielded a radiocarbon determination of 2290-2030 cal BC (3755±30 BP, SUERC-26250, Section 7 1) It may be noteworthy that the calibrated date range for this material is identical to that obtained from oak charcoal recovered from posthole 12075 at SCA10 (Section 2 2 4), which was located over 1km to the north-east
- 5 1 4 Vessel 2 consists of six small body sherds (weighing 35g) from a large jar The exterior surface is grey-brown, and the interior and fabric are dark grey The wall thickness is typically 13mm The fabric is soft, with numerous small angular cavities from which calcareous grits have leached, and there is quartz dust in the clay matrix One sherd bears a short length of applied cordon, triangular in section with sides of 3mm
- 5 1 5 Close parallels for Vessel 1 are hard to find although the decorative trait of rounded applied strips pendant to a cordon is a feature of Grooved ware in Durrington Walls style in Yorkshire and northern England (Manby 2006, 67), the neat interlocking and nested style seen on the vessel from SCA13 is so far unique Comparison may be drawn with pottery from North Carraby Temple Field 3, on the Yorkshire Wolds, which is decorated variously with cordons and applied strips, in particular vessel 64 (Manby 1974, fig 21), and with a bucket-shaped urn from Willington, Derbyshire, which has a bevelled rim with finger-nail impressions, as well as a similarly decorated applied cordon and

pendant strips (Manby 2006, fig 6 4 2) The small triangular-section ridge seen on Vessel 2 might also be consistent with Durrington Walls-style Grooved Ware (*op cit*, 67)

- 5 1 6 Further consideration of the possible affiliations of this pottery is prompted by the radiocarbon date in the late third millennium BC obtained from the carbonised accretion on Vessel 1 (*Section 7 1*) This contrasts with dates obtained from carbonised hazelnut shells associated with Durrington Walls-style Grooved Ware from Scorton (Wk-14319, and Wk-14320), which yielded near-identical ranges of 2700-2460 cal BC and 2760-2470 cal BC (Manby forthcoming), broadly similar to the 3200-2800 cal BC date range for Woodlands-style pottery from Marton-le-Moor (Manby 2006, 68-9) The date from Vessel 1 suggests that it cannot be late neolithic Grooved ware, but may instead be tentatively identified as a Food Vessel urn of the Early Bronze Age
- 5 1 7 There has been little discussion of this pottery type in northern England further to Cowie's conspectus (1978), doubtless partly because there have been no recently excavated assemblages Similarities between the decorative traits seen on Grooved ware and those on Food Vessel urns have long been noted (Fox 1927) Among these are raised cordons, although the key design on Vessel 1 has not previously been recorded Some similarities are found in northern England, however, where a number of vessels have raised horizontal mouldings spanned by stops arranged so that those in one row are midway between those in the next, as seen on vessels from Netherhall, Maryport, Cumbria (Cuin3B, Cowie 1978, 84 and fig 5), and High Busten, Ahimouth, Northumberland (Nor11, *op cit*, 94 and fig 9) Although not precisely a key design, the symmetry is not dissimilar The diagonal indentations on the rim's upper surface on Vessel 1, and on the uppermost raised rib, are also echoed in vertical impressed notches on the ridges of the Maryport vessel Comparison may also be made with a vessel from Goatscrag, Ford, Northumberland (Nor8a, *op cit*, 98 and fig 10), which has relief arcading between the neck and the shoulder, infilled with twisted cord impressions The form of Vessel 1 is also slightly at variance with that of the usual Food Vessel Urn in that it has a very short rim It is not clear how far down the vessel wall the raised relief decoration extends, decoration on the lower part of the vessel being relatively uncommon, although it is noted as a feature of vessels in the north-west of England (*op cit*, 129) Food Vessel urns have a sparse distribution across northern England and southern Scotland (*ibid*), extending into Wales (Savory 1980, 80-1), and are found in burial mounds as well as in flat graves The style appears to be related to the Irish Encrusted Urn tradition (Fox 1927), which may date to c 2000-1900 cal BC (Brindley 2007, 270)
- 5 1 8 **The Iron Age pottery** pottery assemblages with a clear pre-Roman Iron Age, or at least 'native' Romano-British, ceramic component were recovered from SCA8 and SCA15 At the former site, 23 sherds, with a total weight of 440g, were recovered from eight contexts (Table 3) Excluding a few minute fragments of undiagnostic material, 38 sherds, weighing 695g, came from 20 contexts at SCA15 (Table 4)

Context No	Feature/Group No	Fabric 1	Fabric 2	Fabric 3	Fabric 4
11036	Ditch 11120			1 (55g)	
11084	Structure 11119		6 (150g)		
11110	Structure 11119	6 (30g)	2 (70g)		
11195	Ditch 11122	1 (50g)			
11197	Ditch 11120	3 (40g)			
11199	Pit 11200			1 (25g)	
11239	Pit/posthole 11240				1 (10g)
11367	Posthole 11368	2 (10g)			
<b>Totals</b>		<b>12 (130g)</b>	<b>8 (220g)</b>	<b>2 (80g)</b>	<b>1 (10g)</b>

Table 3 The 'native'-type pottery from SCA8, quantified by fabric type

Context No	Feature/ Group No	Fabric 1	Fabric 2	Fabric 3	Fabric 4
14043	Ditch 14016	2 (120g)			
14105	Gully 14011	1 (10g)			
14110	Ditch 14006				6 (185g)
14172	Gully 14011	2 (25g)			
14311	Ditch 14014				1 (10g)
14420	Pit-group 14024				3 (40g)
14447	Pit-group 14024				1 (15g)
14533	Ditch 14023				1 (10g)
14540	Ditch 14029	1 (5g)			
14457	Pit-group 14024	3 (45g)			1 (5g)
14623	Ring gully 14001	1 (55g)			
14663	Ditch 14680	2 (10g)	2 (5g)		3 (60g)
14732	Ditch 14011				1 (15g)
14739	Ditch 14736	1 (10g)			
14781	Ditch 14017		2 (50g)		
14805	Ditch 14683	2 (10g)			
14884	Ditch 14683	1 (5g)			
14964	Hearth/kiln 14983				
14994	Pit 14995				
14996	Ditch 15022				1 (5g)
<b>Totals</b>		<b>16 (295g)</b>	<b>4 (55g)</b>	<b>0 (0g)</b>	<b>18 (345g)</b>

Table 4 The 'native'-type pottery from SCA15, quantified by fabric type

- 5 1 9 The chronology of the pottery is difficult to confirm because the styles were produced over a long period, from at least the middle Iron Age, probably the fourth century BC, until well into the Roman period (Swain 1987, 65). One vessel has traces of indented fingerprint decoration along the rim, but this is not a chronologically diagnostic feature. The assemblage from SCA8 is comparable to that recovered through limited excavation of the cropmark site at Rock Castle, immediately adjacent to the southern side of the A66 near this point (Willis 1994), although the 'native' component from this excavation was very limited, the site is clearly pre-Roman Iron Age in origin. The pottery from SCA15 is comparable to that from excavations at the nearby Scotch Corner Hotel, which also produced briquetage (Willis 1995).
- 5 1 10 The presence of ditched enclosures at both sites, and of a palisaded phase at the Rock Castle site, immediately adjacent to SCA8 (Fitts *et al* 1994, 39-40), confirms that there is pre-Roman Iron Age occupation at both locations. The extension of occupation into the Roman period is commonly found on enclosure sites in the lower Tees valley and the Vale of Mowbray, the

briquettage from SCA15 (*Section 5 1 20*) confirms activity on that site at a period towards the end of the Iron Age. While vessel form and characteristics are not helpful in confirming any narrower chronology, radiocarbon dating is only slightly more helpful. Carbonised accretions on a sherd from ditch 11120 (fill 11036) at SCA8 yielded a date of 60 cal BC–cal AD 80 (2000±30 BP, SUERC-27047), whilst dating of other contexts from both sites confirms occupation activity in the excavated areas as extending probably from the beginning of the second century cal BC (and possibly considerably earlier at SCA8) and lasting through the first century AD.

- 5 1 11 *Vessel types* all the vessels present are medium-sized or large jars (Fig 67), although whether bucket- or barrel-shaped is sometimes unclear because of the limited representation of sherds. At least four are confirmed as barrel-shaped, perhaps the commonest form of Iron Age vessel in the region (Evans 1995a, 50). Decoration on Iron Age vessels from the region is not common, and usually takes the form of finger impressions or moulding (Swain 1987, 63). One vessel (2, Fig 67, *Section 5 1 18*), from SCA8 11084, the fill of a posthole (11085) associated with structure 11119 (*Section 2 3 11*), has traces of indented fingerprint decoration along the rim, but this is not a chronologically diagnostic feature, whilst at SCA15, 14110, a fill in ditch 14006 (*Section 3 3 8*), contained a rim sherd (12, *Section 5 1 19*), bearing the scar of a detached applied cordon below the rim, an unusual feature in the region.
- 5 1 12 Sherds from SCA15 14105 (11, *Section 5 1 19*) and 14172 (14), both fills of gully 14011, contained pieces of an applied handle similar to examples seen on vessels from Rounton in the Vale of Mowbray (Vyner 2001b) and Kuklevington near Yarm (Vyner 2005), but relatively unusual in this area. It is likely that these features were lugs rather than handles, perhaps used for tying down a cover or for holding the vessel over a fire.
- 5 1 13 *Fabrics* four distinct fabrics (Fabrics 1-4) were identified by macroscopic examination. However, thin-section petrographic analysis of 12 sherds, selected from all four fabrics (*Appendix 1*), classified only three broad groupings, which did not, for the most part, correspond directly to the macroscopic classifications. In common with other assemblages of pre-Roman Iron Age date from the area, the pottery is dominated by sherds containing quartz or quartz-derived grits. In the fabric descriptions, hyphenated colours indicate the variation in colour expected from poorly controlled firing conditions, the first colour being that most in evidence. Grit sizes are expressed as small (less than 3mm), medium (3-6mm), large (6-9mm), and very large (10mm plus). Distinctive particles smaller than 0.02mm are described as dust. As a general guide, grit quantities have been described in relation to the estimated average number of pieces visible per 100mm square: sparse (fewer than one), occasional (one), few (two), many (three to four), and numerous (five or more). Macroscopic identification was undertaken using a x10 and a x25 microscope. Quantification excludes fragments with a total surface area of less than around 100mm<sup>2</sup>.
- 5 1 14 Fabric 1 sedimentary quartz exterior surfaces vary from terracotta through brown to dark grey, the interior surface is normally dark grey, the fabric dark grey. Numerous small- and medium-sized angular sedimentary quartz chunks,

occasionally large chunks, are present Quartz dust is visible in the clay matrix

- 5 1 15 Fabric 2 quartz sandy exterior surfaces vary from dark brown to dark grey, the fabric core is dark grey, containing numerous small rounded quartz sands
- 5 1 16 Fabric 3 (variation on Fabric 1) light sedimentary quartz exterior surfaces are dark brown, interior surfaces dark brown, the fabric is grey-brown, with occasional small- and medium-sized sedimentary quartz grits, and quartz dust in the clay matrix, but few grits are visible on the vessel surfaces
- 5 1 17 Fabric 4 calcite exterior surfaces are mid-brown, the interior surfaces and fabric dark grey, with occasional small- and medium-sized angular cavities from which calcitic grits have leached, and occasional quartz dust in the clay matrix The identity of the calcitic grits is not clear, but they may have been gypsum Calcite grits are much less commonly found locally, partly, no doubt, because of the ubiquity of quartz-based fillers allied with the absence of calcitic grits
- 5 1 18 *Catalogue of pottery from SCA8*

1. Jar (Fig 67), globular form, exterior surface dark brown, interior surface dark brown, fabric grey-brown, typical wall thickness 8mm, occasional small- and medium-sized sedimentary quartz grits, quartz dust in the clay matrix Short, slightly everted rim Carbonised accretions on the shoulder Fabric 3  
*11036, fill of ditch 11120*
2. Jar (Fig 67), barrel-shaped, exterior surface brown-grey, interior surface mid-brown, fabric dark grey, typical wall thickness 13mm, numerous small, clear and milky quartz grits, quartz dust in the clay matrix Plain vertical rim, upper surface of the rim decorated with indentations made by a bone or wooden spatula Fabric 2  
*11084, fill of posthole 11085, structure 11119*
3. Jar, body sherds, exterior surface orange-brown, interior surface and fabric dark grey, wall thickness 7mm, numerous angular medium-sized and large chunks of sedimentary quartz, quartz dust in the clay matrix Carbonised accretions on vessel interior Fabric 1  
*11110, fill of gully 11111, structure 11119*
4. Jar, rim and body sherd, as 2, and probably part of the same vessel Fabric 2  
*11110, fill of gully 11111, structure 11119*
5. Jar, exterior surface dark grey-brown, interior surface and fabric dark grey, wall thickness typically 11mm, numerous angular medium-sized and large chunks of sedimentary quartz, quartz dust in the clay matrix Carbonised accretions on the interior Fabric 1  
*11195, fill of ditch 11122*

6. Body sherds, exterior surface brown-terracotta, interior surface and fabric dark grey, wall thickness 10mm, numerous angular medium-sized and large chunks of sedimentary quartz, quartz dust in the clay matrix Fabric 1  
*11197, fill of ditch 11120*
7. Body sherd Fabric 3  
*11199, fill of pit 11200*
8. Body sherd, exterior surface mid-brown, interior surface and fabric dark grey, wall thickness 11mm, occasional small- and medium-sized angular cavities, from which calcific grits have leached, occasional quartz dust in the clay matrix Fabric 4  
*11239, fill of pit/posthole 11240*
9. Jar, exterior surface orange-brown, interior surface and fabric dark grey, wall thickness 8mm, numerous small- and medium-sized angular sedimentary quartz grits, quartz dust in the clay matrix Fabric 1  
*11367, fill of posthole 11368*

5 1 19 *Catalogue of pottery from SCA15*

10. Body sherds from a thick-walled barrel-shaped jar, wall thickness typically 11mm, carbonised accretions on the exterior Fabric 1  
*14043, fill of ditch 14016*
11. Fragment from a handle or pierced lug, same vessel as 14 Fabric 1  
*14105, fill of gully 14011*
12. Run and body fragments from a large jar, wall thickness 9mm The run had an external cordon that has broken off where it had been luted on, carbonized accretions on the external shoulder Fabric 2  
*14110, fill of ditch 14006*
13. Sherds from a large jar, probably from the same vessel as 12, carbonised accretions on the exterior Fabric 2  
*14110, fill of ditch 14006*
14. Fragments from a handle or pierced lug (probably horizontal), same vessel as 11 Fabric 1  
*14172, fill of gully 14011*
15. Body sherd, probably from the same vessel as 12 Fabric 2  
*14311, fill of ditch 14014*
16. Body sherds, Fabric 4  
*14420, fill of pit-group 14024*

17. Body sherd, sunilar to 15 and 25, but from a thin-walled vessel, wall thickness 7mm, traces of carbonised accretion on the exterror  
*14447, fill of pit-group 14024*
18. Two sherds Fabrics 1 and 4  
*14447, fill of pit-group 14024*
19. Fragments only, Fabric 1, Fabric 4 and undiagnostic ceramic scrap  
*14457, fill of pit-group 14024*
20. Body sherd Fabric 1  
*14457, fill of pit-group 14024*
21. Body sherds Fabric 1  
*14463, fill of ditch 14680*
22. Body sherd and fragment Fabric 2  
*14463, fill of ditch 14680*
23. Body sherds and base fragment Fabric 4  
*14463, fill of ditch 14680*
24. Undiagnostic fragments  
*14463, fill of ditch 14680*
25. Body sherd (Fig 67), sunilar to 12, and possibly from the same vessel  
Fabric 2  
*14533, fill of ditch 14023*
26. Sherd with milky quartz chunks Fabric 1  
*14540, fill of ditch 14029*
27. Run sherd from a barrel-shaped medium-sized jar (Fig 67), wall thickness 6mm, expanded rim with flat upper surface, extensive carbonized accretion on outer surface Fabric 1  
*14623, fill of roundhouse gully 14001*
28. Fragments from a barrel-shaped jar with everted, thickened run (Fig 67) Fabric 4  
*14732, fill of ditch 14011*
29. Sherd, Fabric 1  
*14739, fill of ditch 14736*
30. Run and body sherd from a medium-sized barrel-shaped jar (Fig 67), wall thickness 6mm The run has a slight intenal bead, flat upper surface and an external rounded cordon Fabric 2  
*14781, fill of ditch 14017*
31. Body sherd from a medium-sized jar, wall thickness 10mm Fabric 1

14805, fill of ditch 14683

32. Sherd Fabric 1  
14884, fill of ditch 14683

33. Undiagnostic fragments  
14994, fill of pit 14995

34. Sherd Fabric 4  
14996, fill of ditch 15022

5 1 20 **Briquetage** a few fragments of briquetage, derived from salt containers, were recovered from two contexts at SCA15 This type of material has been found in previous excavations at Scotch Corner (Wilhs 1995, 15-16) and at Rock Castle (Fitts *et al* 1994, 23-6), adjacent to SCA15 and SCA8 respectively, and has also been noted from several other late Iron Age sites in the wider region (Wilhs 1995, 15-16) These vessels are usually dmm-shaped, and are commonly made of a fabric that contains vegetation, but are not specific as to origin A local source of salt was present on the coast of north-east Yorkshire, and evidence of Iron Age salt manufacture has recently been found there (Sherlock and Vyner forthcoming)

#### 5 1 21 **Catalogue**

35. Small fragments of briquetage from a salt container, exterior surface buff-orange, fabric and interior dark grey, vegetation unpressions in the fabric and exterior surface, interior surface spalled or otherwise removed, surviving wall thickness 17mm Curved profile suggests a cylindrical vessel

14420, fill of pit-group 14024

36. Small fragments of briquetage from a salt container, exterior surface buff-orange, fabric and mterior dark grey, vegetation impressions in the external surface and in the fabric, the inner surface apparently removed by lamination or attrition from salt, surviving wall thickness 121mm Slightly curved profile suggests this was a cylindrical vessel

14964, fill of hearth/kiln 14983

5 1 22 **Possible 'native'-type pottery, from SCA1** two small, irregularly-shaped ceranic fragments were recovered from the fill (10310) of a possible enclosure ditch (10312) at SCA1 The balance of probability suggests that the smallest, hard-fired, piece, weighing only 1 5g, is a pottery fabric, whilst the larger, soft-fired fragment, weighing 5g, is from a hearth lining

5 1 23 If the small piece is indeed part of a pottery vessel, then the ceramic type is perhaps closer to Iron Age or 'native' Romano-British types than to anything else, although a post-Roman Anglian origin cannot be mled out The eroded nature of the fragments suggests that they could well have been residual in the ditch fill, and, indeed, the precise date of this feature is equivocal (*Section 3 3 1*)



## 5.2 THE SAMIAN WARE

5.2.1 A small assemblage of 14 sherds of samian ware, weighing 117g and representing 13 individual vessels (Table 5), was recovered during the course of the A66 investigations. All the material came from SCA15.

Form	South Gaulish	Central Gaulish	Total
15/17 or 18	1		1
18 or 18R	1		1
18/31 or 31		1	1
33		2	2
29	1		1
30 or 37	1		1
37		1	1
Indeterminate	5		5
<b>Total</b>	<b>9</b>	<b>4</b>	<b>13</b>

Table 5 Samian forms

5.2.2 Each sherd was catalogued on an *Access* database, all the vessels being listed in the catalogue. The abbreviations SG, CG and EG denote vessels which were produced in South Gaulish, Central Gaulish and East Gaulish workshops, respectively. Vessel types are Dragendorff's form numbers (Dragendorff 1895), for other terminology used, see Buhner (1980) and Webster (1996). Where date-ranges, such as *c* AD 70-100 or *c* AD 120-60, have been used rather than the more traditional 'epochs', such as Flavian or Hadrianic-early Antonine, they should not be thought more precise, as they are used primarily to facilitate their entry into the database.

### 5.2.3 Catalogue

1. SG dish, wall fragment, form 18 or 18R, probably Flavian. Weight 7g. 14205, fill of ditch 14012.
2. SG, wall fragment, form indeterminate, *c* AD 70-110, probably Flavian. Weight 2g. 14280, fill of pit 14281.
3. CG moulded bowl, form 37. An indistinct wreath lay above panels with a double festoon left of a plant (Rogers 1974, type G8), above an acanthus (Rogers K11), suggesting perhaps a connection with Potter X-13, X-14, or perhaps an associate in the Sacer group, working at Lezoux in the period *c* AD 125-45/50. Weight 16g, abraded. 14371, fill of ditch 14019.
4. SG, badly abraded, plain sherd in friable, yellowish buff fabric with little surface remaining. Form indeterminate, but probably Montans ware. Not closely datable, but possibly pre-Flavian, *c* AD 45/50-70, rather than second century, *c* AD 120-45. Weight 3g. 14542, fill of ditch 14018.
5. CG cup, rimsherd, form 33, *c* AD 120-60. Weight 5g. 14690, fill of ditch 14690.

6. CG dish, form 18/31 or 31, *c* AD 120/40-60 the footring appears to have been worn from use Weight 33g  
14708, fill of ditch 14692
7. SG moulded bowl, form 30 or 37 Fragment only of an ovolo with a large, rosette-tipped tongue, probably *c* AD 75-90 Weight 2g  
14710, fill of ditch 14686
8. SG moulded bowl, form 29 Two fragments, including the rim and a badly abraded winding-scroll composition in the upper zone of the decoration The bowl was *c* AD 65-80/5, judging by its general appearance Weight 9g  
14731, fill of ditch 14011
9. SG, form indeterminate Probably a slightly burnt sherd of *c* AD 70-110, rather than a Trajanic product of Les Martres-de-Veyre Weight 5g  
14781, fill of ditch 14017
10. SG, form indeterminate, *c* AD 70-110, probably Flavian Battered fragment, lacking all surfaces Weight 2g  
14843, fill of posthole 14844, possible structure 14678
11. SG dish, battered footring, form 15/17 or 18, *c* AD 60-100, probably Flavian Weight 14g  
14924, fill of hollow 14926
12. CG cup, battered rimsherd, form 33, *c* AD 120/40-200 Weight 17g  
Unstratified
13. SG, battered fragment, form indeterminate, though probably a dish, *c* AD 70-100/10 Weight 2g  
Unstratified

5 2 4 Statistical analysis of such a small sample would be invalid, though some useful points can be made Of the nine South Gaulish vessels present, most are probably of Flavian date However, at least one sherd may be earlier, namely the fragment of Montans ware (4, *Section 5 2 3*), in the upper fill of ditch 14018 This was a mere scrap that cannot be dated precisely, but in this particular assemblage it may well be a pre-Flavian vessel rather than an early second-century form Prior to this discovery, Willis (2005, 6 6 2) had noted the presence of pre-Flavian vessels from Montans at only three sites in Britain, namely Exeter, London and Stanwick, the latter being only 5km north-west of SCA15 To these may now be added a vessel from Middlewich (Ward 2008a), in addition to this probable fragment from SCA15

5 2 5 For Montans ware in general, Dickinson (2000, 204) suggests that Chester may have been a distribution centre for the North West (see also Fulford 2007, 68) Montans products are rare on Hadrian's Wall, though occasional finds have been recorded (for example, at South Shields (Hartley and Dickinson 1994, 206), and at Birdoswald and Stanwick (Willis 2005, 6 6 3)) Willis (*op cit*, table 12) lists Montans wares at 21 military sites, mostly in the west of Britain and particularly in north-west England, but also as far north as Antonine Scotland (*cf* Hartley 1972, 42ff), they are, however, less frequent in

the North East, though two possible vessels are known from Castleford, and one or two from the extramural settlement at Piercebridge, Co Durham (Ward 2008b) The SCA15 fragment is the only Montans product known to the writer that has not been found at a Roman military (or military-related) site

- 5 2 6 It is striking that there are twice as many South Gaulish as Central Gaulish vessels in the SCA15 assemblage, reflecting a high level of local activity in the first century AD. The four Central Gaulish vessels were probably all produced at Lezoux workshops that were operational in the Hadrianic-Antonine period, of these, one dates to *c* AD 125-50, two are probably within the range *c* AD 120/40-60, of which one (5, *Section 5 2 3*) appeared well worn from use, whilst the fourth can only be assigned a broad Hadrianic-Antonine date. There are no East Gaulish vessels present, and nothing in the assemblage need necessarily be later than the mid-second century.
- 5 2 7 There are five plain vessels, two Central Gaulish cups and three dishes, and three moulded bowls in the assemblage, together with five indeterminate forms (Table 6). There are no potters' stamps, which is unsurprising in such a small sample. The moulded bowls comprise two South Gaulish examples (6, 7, *Section 5 2 3*) of probable early Flavian date and a Central Gaulish bowl (3) attributable to the style of a Lezoux potter such as X-13 or X-14, or an associate in the Sacer group, working in the period *c* AD 125-50.

Type	South Gaulish	Central Gaulish	Total
Moulded bowl	2	1	3
Cup		2	2
Dish	2	1	3
Indeterminate	5		5
<b>Total</b>	<b>9</b>	<b>4</b>	<b>13</b>

Table 6 Types of samian vessels

- 5 2 8 The condition of the assemblage, with most sherds being small (Table 7), badly abraded and lacking surfaces, is fairly typical of samian ware found on rural sites. The average sherd weight is only 3g, with only one fragment (6, *Section 5 2 3*) weighing more than 20g. One sherd (9) had been burnt.

Fabric	No of vessels	Weight (g)
South Gaulish	9	46
Central Gaulish	4	71
<b>Total</b>	<b>13</b>	<b>117</b>

Table 7 Weights of samian by fabric

### 5.3 THE AMPHORAE

- 5 3 1 A small group of 17 amphorae sherds, probably representing a minimum of five vessels, was recovered from the site. With the exception of two fragments from SCA2 (Carkin Moor Roman fort, *Section 3 2 3*), all were recovered from SCA15. At approximately 8% of the total pottery assemblage, the fragment count from SCA15 is high for a Romano-British rural site (Evans 2001), being more indicative of military sites in the region.

- 5 3 2 Included in the assemblage are two broken pieces of bifid handles that belong to the Dressel 2-4 form, the most important western Mediterranean wine amphora of the early Empire. The Italian varieties, particularly those from Campania, occur widely throughout the Roman Empire, including Britain (*cf* Williams and Keay 2006). One of the handles and six of the bodysherds, which together may represent a single vessel, or possibly two, are in an especially distinctive fabric. These appear to contain much 'black sand' - actually dark green augite crystals (Peacock 1977a; Arthur and Williams 1992). This particular fabric has been sourced to the area around the Bay of Naples, and is especially associated with the towns of Herculaneum and Pompeii (Peacock 1977a, Williams 2004). The other Dressel 2-4 handle, which also contains volcanic inclusions, may also be from Italy, though from a different region. Five small bodysherds from 14924, the fill of hollow 14926 (*Section 3 3 51*), and a single bodysherd from deposit 15019, the fill of ditch 15024 (*Section 3 3 56*), may also belong to the Dressel 2-4 form, though it is difficult to be sure with such small sherds or, indeed, to have any clear idea of possible origins. The fabric of the remaining three sherds, one from 10104, a colluvial deposit overlying ditch 10106, a possible defensive feature associated with the putative Roman fort at Carmin Moor (SCA2 (*Section 3 2 3*)), and two from ditch 14690 at SCA15 (*Section 3 3 24*), are all fairly rough in texture and contain visible inclusions of lava and volcanic glass, suggestive of Richborough form 527 (Peacock and Williams 1986, Class 13). This form originated in Lipari in the Aeolian Islands and normally carried specialist locally-derived materials such as alum, which Pliny describes as being used in dyeing and medicine (Williams and Keay 2006).
- 5 3 3 The latest date for the production of 'black sand' Dressel 2-4 amphorae was almost certainly AD 79, since the whole Bay of Naples region must have been devastated by the eruption of Vesuvius in that year, and would have subsequently taken some years to recover (Williams 2004). Richborough 527 amphorae appeared in Britain during the first century AD and continued to be imported into the early second century (Peacock 1977b, Peacock and Williams 1986). It therefore seems highly likely that the assemblage of amphorae from the A66 Project can be dated to the period prior to the early AD 80s.
- 5 3 4 Amphorae are another introduction from the classical world, reflecting the bulk movement of luxury goods such as, in this case, wine. Its proportion, at 20% by weight, would be less exceptional for military sites, but is high for any other sort of site, and certainly for a rural one. Even more exceptional is the composition of the assemblage, as most of the sherds appear to come from Dressel 2-4 type vessels, Campanian 'black sand' imports, which almost certainly went out of production in AD 79. These are all likely to date to the pre-Flavian period, again making it clear that Roman luxury imports were reaching the site at an early date. It might, however, be borne in mind that, as extremely robust vessels, empty and broken amphorae were often put to other uses (Booth 2004, 49).

5 3 5 *Catalogue*

1. Two pale buff, thickish, fauly coarse bodysherds, one with evidence of ribbing. In the hand-specimen, the inclusions are frequent and poorly sorted, and include volcanic glass, lava, feldspar, pyroxene and a few mica grains. Weight 42g  
SCA2, 10104, layer
2. Small light red bodysherd of 'black sand' fabric. Weight 10g  
SCA15, 14413, fill of gully 14719, roundhouse 14021
3. Two small light red bodysherds of 'black sand' fabric. Weight 16g  
SCA15, 14663, fill of ditch 14680
4. A large, thick, bodysherd, similar in colour and fabric to 1. Weight 128g  
SCA15, 14690, fill of ditch 14690
5. Two light red joining rods, which make up the top section of a bifid-handle. Some scoriaceous inclusions were noted in the hand-specimen, which suggest the possibility of an Italian origin. Weight 88g  
SCA15, 14752, fill of ditch 14690
6. Small section of light red bifid-handle of 'black sand' fabric. Weight 50g  
SCA15, 14781, fill of ditch 14017
7. Five small abraded light red sherds with no obvious fabric characteristics. Weight 58g  
SCA15, 14924, fill of hollow 14926
8. Three small light red bodysherds of 'black sand' fabric. Weight 22g  
SCA15, 14961, fill of hearth/kiln 14983
9. Thin, light red bodysherd. Weight 28g  
SCA15, 15019, fill of ditch 15024

## 5.4 THE STAMPED MORTARIUM

- 5 4 1 A single stamped mortarium sherd (weight 110g, diameter 290mm, representing approximately 13% of the circumference of the rim) was recovered from ditch 14690 at SCA15 (*Section 3 3 24*). The sherd is in a hard, fairly fine-textured, red-brown fabric with a grey core in the flange, the surface is slightly abrasive as a result of inclusions, and there are slight traces of a cream slip. Inclusions comprise moderate to fairly frequent quartz and some black and red-brown material, mostly tiny, but also a few larger inclusions of both kinds. Trituration grits comprise one flint fragment, one transparent quartz fragment and one black grit.
- 5 4 2 The stamp, which is incompletely impressed, is by an unrecorded potter, and therefore of some importance. There is just enough alteration in bead and flange to show that it is a right-facing stamp. A possible reading is ]NL IVC[, with N reversed and *lambda* L. This cannot be regarded as certain, however, but if further examples are discovered in the future, a more confident

interpretation will doubtless be possible. The stamp has a fairly uncommon double border with vertical divisions at the bottom, which is likely to be duplicated at the top.

- 5.4.3 The run-profile, in conjunction with the fabric type, points to a source somewhere in the North Yorkshire/Durham/Humberside area, the most likely perhaps being in the vicinity of Catterick (Wilson 2002, fabric MB16). The run-profile and fabric best fit a production date around AD 120-40, or possibly slightly earlier.

## 5.5 THE OTHER ROMAN POTTERY

- 5.5.1 The amount of Romano-British pottery recovered is fairly small, comprising some 299 sherds weighing 2.576kg, of which 274 sherds (92%) came from stratified contexts. Only three sites produced Romano-British pottery, the great majority (280 sherds) came from SCA15, with small amounts from SCA2 (seven sherds) and SCA13 (12 sherds).

- 5.5.2 An outline fabric series has been compiled (*Appendix 2*), with more detailed descriptions in the archive. In the main, the material from SCA15 is pre-Flavian or early Flavian in date, this site also yielded an assemblage of probable late Iron Age pottery (*Section 5.1.8*), which, together with the series of radiocarbon dates (*Section 7.1*), suggests that the most intensive phase of occupation occurred during the late Iron Age and the early Roman period. That some activity persisted well into the second century AD at least is, however, indicated by a small assemblage of second-century sherds, including samian ware (*Section 5.2*), and probable second-century material was also recovered from SCA2 (*Section 3.2.3*) and SCA13 (*Section 2.3.26*).

- 5.5.3 *SCA2 and SCA13* in total, SCA2 yielded seven abraded sherds, including two amphorae (*Section 5.3.1*), four relatively undiagnostic sherds of reduced ware, and one small fragment from a colour-coated beaker, probably a Nene Valley product dating to c AD 160 or later (Tyers 1999). The material from SCA13 comprised 12 small fragments from a single everted-rim jar in a reduced ware. There is little to date this vessel, although it can probably be assigned to the second century AD.

- 5.5.4 *SCA15* only the assemblage from SCA15 is large enough to sustain even superficial analysis. Its small size is not unusual for a rural site in the north of England, although the reasons for the paucity of pottery from such sites are not yet well understood (Willis 2004, 12). There was a range of fabrics present (Table 8). The extremely fragmented nature of the material can be seen in the average sherd weight (8.43g), which is reduced even further (to 7.3g) if amphora sherds are omitted.

Ware	No of sherds	Weight	Rims
Samian	5%	5%	11%
Amphora	7.5%	20%	5%
Black-burnished ware	3.3%	7.5%	5%
Gritty ware	24.9%	32.7%	32%
Mortaria	3.9%	5.8%	10%
Oxidised ware	33.3%	15%	21%
Reduced Greyware	7.9%	6%	5%
Whiteware	14.2%	8%	11%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Table 8 Occurrence of major fabric classes in the SCA15 assemblage by sherd count, weight, and numbers of rims, as a percentage of the total assemblage

- 5.5.5 The coarseware assemblage is not large, with probably no more than 19 vessels represented (samian ware adds another 13 vessels). It is characterised, with only two exceptions, by small, heavily abraded sherds. The exceptions are a substantial part of a butt beaker from 14964, a fill in hearth/kiln 14983 (Section 3.3.51), and most of a Black-burnished ware Fabric 1 dish from a prunary fill (14371) of ditch 14019 (Section 3.3.27).
- 5.5.6 It is clear that oxidised wares (O Appendix 2) comprise the commonest group of fabrics, making up some 33% of the assemblage by fragment count, although considerably less (15%) by weight, perhaps emphasising the more delicate or brittle nature of these generally very clean, fine, and powdery fabrics. Five sub-fabrics were defined, of which four (O01-03, O05, Appendix 2) can be placed in the first-second century AD, whilst the fifth (O04, Appendix 2), a Severn Valley-type ware, seems likely to date to the third century (Webster 1976). It is probable that most of the less diagnostic body fragments derive from flagons, though it must be noted that no runs were present to confirm this supposition. There were, in addition, butt beakers in fabrics O01 and O05 (both probably datable to the period c AD 1-60/5), a first-century jar in fabric O01, and a flanged-rim bowl in fabric O03.
- 5.5.7 The second largest pottery class is the whitewares (W Appendix 2), representing 14% of the assemblage by fragment count, and unusually strongly represented within the assemblage. Again, the fabrics are generally clean and powdery, and most, probably all, of the sherds are from butt beakers, a distinctive first-century AD type (Rigby 1980), that had probably fallen out of production by the time the Roman army reached the region in the early AD 70s.
- 5.5.8 Wheel-made reduced greywares (R. Appendix 2) are very poorly represented, at only 8% of the assemblage by fragment count, and even less by weight (Table 8), indeed, of the 22 fragments in this group, ten are from a single vessel. There seem to be two sources, R01 and R02 are early fabrics, probably reduced versions of one of the oxidised wares (O02), whilst R03 is, perhaps, of late first- to second-century AD date. Fragments of a single rusticated jar in fabric R01 can probably be placed in the period c AD 80-130 (Dickinson *et al* 2000, 190). Black-burnished ware Fabric 1 (B, Appendix 2) is very weakly represented, at only c 3% by fragment count, with the sherds all deriving from

a single second-century bowl. This again reflects the early date of the SCA15 assemblage, since Black-burnished wares did not reach the North in any quantity until the second quarter of the second century AD (Tyers 1999), however, the presence of even a single vessel provides a clear indication that activity continued on the site well into the second century AD.

- 5.5.9 *Form and function* only 27 rimsherds were present in the SCA15 coarseware assemblage, representing a limited number of forms (Table 9). To these can be added a single mortarium (Section 5.5.4), at least five amphorae (Section 5.3.5), and 13 samian vessels (Section 5.2.2).

	Beaker	Bowl	Cup	Jar	Total
No sherds	5 (19%)	11 (41%)	2 (7%)	9 (33%)	27 (100%)
Weight (g)	4 (1%)	214 (46%)	21 (5%)	222 (48%)	461 (100%)
Minimum No Rims	3 (18%)	3 (18%)	2 (12%)	9 (52%)	17 (100%)

Table 9 Functional analysis of the SCA15 assemblage by minimum numbers of rims

- 5.5.10 Jars are well-represented, as might be expected, as they serve a number of purposes, including the storage of both liquids and dry goods, as well as being cooking vessels. In total, nine vessels are represented, representing 53% of the coarseware vessels from the site. They are present in hand-made, oxidised and reduced fabrics, including a rusticated vessel from 14280, the fill of a large pit (14281) cut through roundhouse 14000. A narrow-necked jar in oxidised fabric O04 (Appendix 2) is amongst the latest vessels from the site, found in the fill (14064) of a feature interpreted as a tree-throw (14065), its form and fabric (probably Severn Valley ware) suggest a third-century date, as it is increasingly accepted (Leary 2009) that, in the North, such jars gradually superseded flagons as serving vessels for liquids during the third century.
- 5.5.11 Considered together, drinking vessels form the next largest group, with three beakers (one a butt beaker of Carnulodunum type 113 (Ashworth 1990), from hearth/kiln 14983 (fill 14964)), and two form 33 samian cups (4, 12; Section 5.2.3), together representing 30% of the vessels recorded. In addition, although no diagnostic sherds were present in the assemblage, it is likely that many of the oxidised and white-slipped body fragments derived from flagons. This, together with the presence of 'exotic' imported amphorae (Section 5.3.4), seems to indicate a significant emphasis on the consumption of liquids at the site, including wine. The samian vessels both date to around the second quarter of the second century AD or later and may, perhaps, represent a change in fashion, favouring considerably smaller drinking vessels than the earlier beakers.
- 5.5.12 Coarseware bowls and samian-ware dish forms represent the serving and consumption of food rather than its preparation. Samian vessels represent some 18% of the complete assemblage by vessel numbers, and two flanged-run bowls, one in an oxidised fabric, the other in Black-burnished ware Fabric 1, were present amongst the coarsewares. The former, dating broadly to the first-second century AD (Tyers 1999), was from the fill (14731) of feature 14011, associated with roundhouse 14001, the latter, of Hadrianic-mid-



Antonine date (*ibid*), was found in a primary fill (14371) of ditch 14019, together with a samian form 37 bowl (7, Section 5 2 3) datable to the period c AD 125-45/50

- 5 5 13 *Context and status* much work has been done in recent years (see, for example, Booth 1991, 2004) on developing a systematic approach to the assessment of the status of a site from the ceramic and other assemblages. There seems little doubt that, by the early first century AD, SCA15 was a relatively well-established rural settlement, with its origins earlier in the Iron Age. It is clear, even from such a small pottery assemblage, that not only was it using locally- and regionally-made 'native'-type gritted wares by that time (Section 5 1 19), but that a significant amount of imported pottery was also reaching the site. Although few in number, amphora sherds from the site are pre-Flavian or early Flavian in date, and must presumably reflect a significant interest in their contents, in this case wine from Italy (Fitzpatrick 2003, 14), although it is possible that the vessels had already been recycled by the time they reached the site (Booth 2004, 49). Early amphorae are generally rare in north-east England, except on military sites (Willis 1999, 20). The Tees lowlands, however, have proved an exception, with early vessels from Stanwick and Melsonby (*ibid*), Scotch Corner (Abramson 1995), and further afield at Ingleby Barwick (Heslop 1984), to which the present site can now be added.
- 5 5 14 The presence of broadly contemporary samian ware also suggests early first-century access to imports, and perhaps an interest in novel and possibly prestigious forms. It has been suggested (Hartley 2005, 112) that this kind of pottery was always a relatively expensive commodity, and it is quite possible that the appearance of new, different, and above all, costly, vessels could well reflect an element of exchange and conspicuous display. At Stanwick, a few kilometres to the north-west, the fragmentary nature of the samian assemblage has raised the possibility that it was regarded there as somehow special, and perhaps deliberately smashed (Willis 1999, 19). Indeed, at approximately 5% of the total assemblage, samian is unusually well-represented at SCA15, the expected level from a rural site being around 3% (Evans 1995b). When this is compared with exceptional sites such as Stanwick, within the hinterland of which SCA15 lies, however, it seems comparatively low (Willis 1996), although it is the same as that seen at Melsonby (Willis 1999, table 4), a site physically closer to Stanwick than SCA15.
- 5 5 15 A relatively high proportion of jars is seen as an indication of a relatively 'low-status' rural site (Evans 2001). This seems to be the case at SCA15, but with jars representing 53% by vessel count, it is at the low end of the jar range for such sites (*ibid*). The proportion of drinking vessels is, however, exceptional, as these are usually very rare on rural sites, yet they comprise 30% of the assemblage at SCA15, suggesting an unusual status. In this, SCA15 again compares closely with material from the nearby excavations at Scotch Corner (Abramson 1995), and Melsonby (Fitts *et al* 1999), but has only a generic similarity with other late Iron Age/Romano-British settlements in the Tees Valley, for instance Catcote, near Hartlepool (Long 1988) or Thorpe

Thewles (Heslop 1987), from which it stands out in having unusual amounts of samian and early drinking vessels

5.5.16 *Supply* the pottery on the site strongly indicates contact with the Roman world in the first half of the first century AD, prior to the military conquest of this part of the North in the early AD 70s (Bidwell and Hodgson 2009, 8-11), although it would seem reasonable to suggest that rural sites such as SCA15 were not, in actuality, looking further than Stanwick for unusual or luxury goods such as wine. At a later date, when Stanwick's influence was probably in decline (Haselgrove *et al* 1990a), it is clear that a trickle of common Romano-British fabrics and vessel-types, including imported samian, continued to reach the site well into the second century AD

## 5.6 THE MEDIEVAL AND POST-MEDIEVAL POTTERY

5.6.1 Only 14 sherds of medieval and post-medieval pottery were recovered during the course of the project. Of these, four came from probable post-medieval agricultural soils, nine were recovered from modern topsoils, and one was unstratified. Ten sherds came from GBA2 (*Section 1.5.28*), one from SCA15 (*Section 1.5.23*), and three from Thorpe Farm (*Section 1.5.32*)

5.6.2 Six of the fragments, including part of an upright clubbed rim, are medieval, but all are small and extremely abraded. Because of their condition, the sherds cannot be dated precisely, though a green-glazed fragment from Thorpe Farm could date as late as the sixteenth century. The rest of the assemblage (eight sherds) comprises a range of nineteenth- and twentieth-century kitchenwares and tablewares

## 5.7 CERAMIC BUILDING MATERIALS

5.7.1 In total, 28 fragments of ceramic building material were recovered, 14 from GBA2 (*Section 1.5.28*), 13 from SCA3 (*Section 1.5.43*), and a single sherd from SCA2 (*Section 1.5.7*). In addition, six tiny fragments of possible burnt daub came from GBA2. Apart from a single fragment of possible daub from a buried agricultural soil of probable post-medieval date, all the material from GBA2 came from modern topsoils, whilst that from SCA3 was unstratified, the sherd from SCA2 derived from a buried agricultural soil of uncertain date. With the exception of two joining fragments of possibly medieval floor tile from GBA2, the material is small, abraded and undiagnostic, and is unlikely to be of any great antiquity

## 5.8 METALWORK

5.8.1 Seven iron and five lead objects were recovered by hand excavation during the project, from several sites (Table 10). In addition to the excavated material, ten metal objects were also recovered by metal detecting within a field immediately north-west of SCA13 (Table 11)

Site	Material	Quantity	Context Nos
GBA2	Iron	1	10001 (topsoil)
GBA9	Iron	1	10026 (post-medieval buried soil)
SCA3	Iron	1	Unstratified
SCA15	Iron	4	14726 (fill of ring-gully 14720), 14765 (fill of ditch 14691), unstratified
SCA15	Lead	5	14367 (fill of ditch 14012), unstratified

Table 10 Distribution of metal objects recovered by hand excavation

Find No	Material	Description
1	Copper alloy	Probable Romano-British steelyard weight
2	Copper alloy	Romano-British dress fastener Not closely dated, but probably late first-second century AD
3	Silver	<i>Denarius</i> (fragmentary), Vespasian ( <i>RIC II</i> (Vespasian), 30 (Mattingly and Sydenham 1926)), AD 70-2 Moderately worn (Pl 34)
4	Silver	Christening spoon (not necessarily of English make), sub-oval bowl and ornate cast handle (Pl 35), damaged at junction with bowl and possibly missing post and handle No obvious marks Late seventeenth-early eighteenth century
5	Silver	Half-Crown, George V, 1924 Worn
6	Lead	Beehive-shaped cast weight with (originally) iron suspension loop Not closely dated
7	Lead	Spindle whorl, cast, one side decorated with seven raised pellets Probably medieval, c thirteenth century or later
8	Lead	Centre spindle whorl Not closely dated
9	Lead	Centre spindle whorl Not closely dated
10	Copper alloy	Cast animal foot (?lion), elongating to form a leg or support, but now broken Clearly from a large copper-alloy vessel or (possibly) a tripod Probably Roman

Table 11 Metal objects recovered by metal detecting in a field immediately north of SCA13

5 8 2 The work comprises fragmentary nails and horseshoes; the former cannot be dated with any precision, whilst the latter all appear to be of recent date. However, two of the nails recovered from SCA15 came from deposits of late Iron Age/Roman date (14726, the fill of the innermost ring-gully (14720) of roundhouse 14021 (Section 3 3 31), and 14765, the fill of ditch 14691 (Section 3 3 29)), and are likely to be contemporary with those features. The lead, all of which came from SCA15, comprises small, largely amorphous fragments, mainly deformed cast sheet. With the exception of a single unstratified piece, these came from 14367, a secondary fill in ditch 14012 (Section 3 3 8), and are therefore likely to be of late Iron Age-early Roman date.

## 5.9 VESSEL GLASS

5 9 1 Ten fragments of post-medieval vessel glass were recovered, of which one had been melted beyond recognition. With the exception of a single, clearly distinctive fragment from late Iron Age/early Romano-British roundhouse 14021 at SCA15 (Section 3 3 29), all the material came from modern topsoils or buried agricultural soils of probable post-medieval date, from GBA9

(Section 1 5 39, five fragments), Thorpe Farm (Section 1 5 32, two fragments) and SCA15 (Section 1 5 23, one fragment, in addition to the massive sherd from roundhouse 14021) The assemblage dates to the early-mid-eighteenth century or later. Four fragments derive from dark olive-green wine bottles, a form appearing in the later seventeenth, but at its most common during the eighteenth, century (Charleston 1975, 215). Two of the three bases are likely to be of early- to mid-eighteenth-century date, whilst the third can be placed at the end of the same century, if not marginally later. The remainder of the identifiable glass is of twentieth-century date, deriving from machine-made bottles, in one case advertising a Wetherby business.

### 5.10 PREHISTORIC FLINT AND OTHER STONE OBJECTS

5 10 1 In total, eight pieces of worked flint were recovered during the course of the project (Table 12). Also included in the lithic assemblage are two quartzite pebbles, showing some signs of use-wear, and several fragments of a possible lava quernstone were also recovered. The lithics were collected from a total of four different sites and, although six pieces were unstratified and one was retrieved from topsoil, four were excavated from sealed archaeological contexts.

Find No	Site	Context No	Context type	Artefact type	Comments	Date
1	SCA15	Unstratified	-	Possible rubbing stone	Large quartzite pebble, smoothed almost to a polish on each of the two larger faces	?Prehistoric
11	SCA15	14198	Fill of pit 14197	Broken flint blade	Long distal fragment	Late mesolithic-early neolithic
159	SCA15	Unstratified	-	Possible rubbing stone	Small, flattish, circular-shaped quartzite pebble, smoothed almost to a polish on flat surfaces	?Prehistoric
1104	SCA10	Unstratified	-	Broken retouched crested flint blade	Distal fragment, crude retouch on both lateral edges and distal end	Late mesolithic-early neolithic
1105	SCA10	Unstratified	-	Retouched crested flint blade	Hard-hammer struck, feather termination	Late mesolithic-early neolithic
1110	SCA2	10104	Colluvium filling top of ditch 10106	Possible lava/quern stone fragments	Ten fragments of volcanic stone, possibly pumice, probably derived naturally from glacial erratic stone but possibly fragmented lava quernstone	?Roman
1111	SCA15	Unstratified	-	Flint blade	Soft-hammer struck, feather termination	Late mesolithic-early neolithic
1118	SCA8	11028	Fill of ditch 11120	Flint flake	Hinge fractured, short and thick, with multi-directional scars on dorsal face	Neolithic-early Bronze Age

Find No	Site	Context No	Context type	Artefact type	Comments	Date
1119	SCA8	11000	Moderu topsoil	Flint end and side scraper	Poor-quality raw material, abrupt retouch on distal end and both lateral sides, cortex remaining on platform	Neolithic-early Bronze Age
1131	SCA15	Unstratified	-	Flint end and side scraper	Poor-quality raw material, abrupt blunting retouch on one lateral edge and distal end, large negative scar on distal face to facilitate handling, abraded working edge	Neolithic-early Bronze Age
1133	SCA8	11202	Fill of posthole 11201	Flint blade	Feather termination, crushing at proximal end suggests careful platform preparation	Late mesolithic-early neolithic

Table 12 The worked flint and other stone objects

- 5 10 2 Three different types of raw material are represented in the flint assemblage, in addition to one completely patinated piece. Of the seven unpatinated pieces, three are of good-quality, brownish-grey material, one of a good-quality light brown flint, and three of a lesser-quality mottled, light grey stone with white intraclasts. The former types are unlikely to have come from local drift and were probably either imported from chalk-rich, flint-bearing primary deposits in the south of England, or were sourced from the secondary coastal deposits of East Yorkshire. The poorer-quality light grey mottled flint is probably from secondary sources in East Yorkshire, where it is known to occur in the local boulder clays (Brooks 2001). All of the flint derives from the later stages of the reduction sequence, comprising no primary, but five secondary and three tertiary, pieces. This could suggest that the initial stages of flint working took place elsewhere, which may be supported by the general lack of debitage in the assemblage.
- 5 10 3 The quantity of artefacts recovered is very small, with only four being from sealed contexts and most being residual finds from unstratified deposits. This makes detailed understanding and accurate dating extremely difficult. The flint assemblage consists of two flakes, four blades, two of which are retouched, and two scrapers. The artefacts are largely undiagnostic of any precise date: the scrapers and flake could feasibly date anywhere from the early Neolithic period to the early Bronze Age, and the blades from the late Mesolithic to the early Neolithic period. Potentially, therefore, the entire assemblage could date to the Neolithic period, although it is also possible the artefacts were produced over a much broader length of time.
- 5 10 4 The two quartzite pebbles from SCA15 (1, 159, Table 12) appear to have been smoothed almost to a polish by repeated grinding on their larger, flatter faces. Though both are unstratified, they might possibly represent burnishing or rubbing stones, and may perhaps be of prehistoric date.
- 5 10 5 The pumice-like material from SCA2 (1110, Table 12) came from a deposit of colluvium (10104), which formed the upper fill of a ditch (10106), that was probably part of the southern defences of the putative Roman fort at Carkin Moor (Section 3 2 3). It is not clear whether it is simply fragmented glacial

erratic stone of volcanic origin or the remains of a quernstone of Roman date. Lava hand-millstones were known to be used by the Romans, usually, but not exclusively, in a military context (Buckley and Major 1990)

### 5.11 BURNT RESIDUES AND OTHER MATERIAL

5 11 1 In total, 34 fragments of coke, possible fuel ash, and other materials were recovered by the project, mainly from SCA15 (Table 13). Most samples were residues from the partial burning of coal. Such materials, in which the combustion of the fuel is incomplete, may be termed coke, but this is not to suggest that they have been necessarily deliberately coked. Partially burnt residues such as these are common in domestic hearths. The lack of any accompanying clinker (in which the organic component of the coal has been partially or entirely melted) would favour such a relatively low-temperature source. Three large fragments of iron-mottled material, from fill 14576, of late Iron Age/Romano-British ditch 14022, could either be iron pan or bog iron ore.

Site	Context No	Quantity	Weight (g)	Description
GBA2	10007 (topsoil), 10017 (topsoil)	3	20	?fuel ash
SCA3	Unstratified	3	25	?fuel ash
SCA8	Unstratified	3	58	Coke/shale
SCA15	Unstratified	8	44	Coke
SCA15	14781 (fill of ditch 14017)	2	44	Probable fired clay
SCA15	Unstratified	4	38	Coke
SCA15	Unstratified	1	2	Coke
SCA15	Unstratified	1	14	Coke
SCA15	Unstratified	1	6	Coke
SCA15	Unstratified	1	24	Coke
SCA15	Unstratified	1	12	Coke
SCA15	Unstratified	1	50	Coke
SCA15	14576 (fill of ditch 14022)	3	1385	?bog ore
SCA15	14487 (fill of pit 14222)	1	12	Coke
SCA15	14542 (fill of ditch 14018)	1	2	Coke
<b>Total</b>		<b>34</b>	<b>1736</b>	

Table 13 Distribution of burnt residues and other material, by site and context

5 11 2 Most of the material was unstratified, or from modern topsoils, and there was no indication that any of it derived from on-site metalworking or other industrial processes. Apart from the possible bog ore from ditch 14022, the only material to come from deposits of certain or likely late Iron Age/Roman date were two tiny fragments of coke (from fill 14487 of pit 14222, and fill 14542 of ditch 14018), and two small pieces of probable fired clay (from fill 14781 of ditch 14017).

---

## 6 THE ENVIRONMENTAL EVIDENCE

---

### 6.1 THE ANIMAL BONE

- 6 1 1 In total, 625 animal bone fragments, or number of individual specimens (NISP), were recovered from SCA15, where the most intensive activity occurred during the late Iron Age and the early Roman period (*Section 3 3 4*, mid-first century BC to the later first century AD) The vast majority of the material was recovered by hand collection, although some animal bone was also recovered from soil samples The material is in a very poor state of preservation Only 86 NISP were identified to a species level, of which 80% were loose teeth fragments Excluding tooth fragments, 42% of the bone had been calcined (burnt) Teeth and calcined bone are both mineral in composition, and as such are resistant to attack from acid soils Of the remaining bone fragments, 74% were described as in a poor or very poor condition
- 6 1 2 *Methodology.* the material was identified using the reference collection held by the author All parts of the skeleton were identified where possible, including long-bone shafts, skull fragments, all teeth, and fairly complete vertebrae In the identification of species, reference was made to Halstead and Collins (1995) All but one fragment was collected by hand, with a single astragalus from a roe deer recovered from a soil sample
- 6 1 3 Records were entered onto computer using a Microsoft Access application developed at OA North, material being recorded to an analysis level For each bone, the following information was recorded, where appropriate Context Number, Object Number, Sample Number, species or species group, element, number of bones, side; diagnostic zones - as either more than or less than half present, fusion state, preservation (eg burning or gnawing), butchery, measurements, tooth-wear development, pathology and other developmental or congenital anomalies The condition and fragmentation of the bone (as represented by surface erosion, how robust the bone was, dulled or sharp edges, the percentage of the original bone present, and the overall fragment size) was recorded as ranked data of increasingly better preservation or less fragmentation
- 6 1 4 The recording of diagnostic zones for mammals followed Serjeantson (1996) Measurements followed those set out in von den Driesch (1976) Tooth wear development for sheep/goat mandibular teeth was recorded following Payne (1973, 1987)
- 6 1 5 *Quantification* the total number of bone fragments has been quantified by species (Table 14) The quantity of cattle NISP has most probably been exaggerated by a number of highly fragmented teeth that could not be pieced back together, but which are quite likely to be of the same mandible or maxilla The numbers of bone fragments identified to a species are not thought to be representative of the proportions of species husbanded and consumed at the site, or inclusive of the range of species consumed The majority of the

animal bone was collected from ditches, but no significant concentrations of material were noted (Table 15)

Species	Hand Collected	Sieved	Total
Horse	8		8
Cattle	61		61 (2)
Pig	1	1	2 (1)
Sheep/Goat	12	1	13 (1)
Dog	1		1
Roe Deer		1	1
Cattle/Red Deer	7		7
Sheep/Goat/Roe Deer	26	1	27
Medium Mammal	34	7	41
Large Mammal	120		120
Unidentified Mammal	187	155	342
<b>Total</b>	<b>457</b>	<b>166</b>	<b>623</b>
<b>Total identified to a species level</b>	<b>83</b>	<b>2</b>	<b>85</b>

Table 14 Number of Individual Specimens (NISP) for each species For the principal stock animals, the minimum number of individual animals are given in brackets

Species	Ditches	Layers	Pits
Horse	8		
Cattle	52	7	2
Pig	1		1
Sheep/Goat	9	3	1
Dog	1		
Roe Deer	1		

Table 15 NISP of bone identified to a species level by feature type

6 1 6 **Principal stock animals** only two loose teeth from a single sheep/goat mandible were complete enough to estimate the age at death of the animal, in this case between three and four years old Epiphysial fusion data were similarly too scarce to be useful Two butchery marks were recorded, both on sheep/goat bones A mandible had evidently been separated from the skull by cutting though the masseter muscle, and a knife mark on an astragalus would have resulted from the disarticulation of the ankle

6 1 7 **Pathology on specimens** a fourth premolar had been lost, ante-mortem, from a dog mandible The alveolus had nearly healed over, with signs of periostitis (inflammation of the periosteum) along the alveolus border of the fourth, third and second premolars This may have resulted from an abscess within the mandible alveolus, or alternatively from an external injury (Baker and Brothwell 1980, 155)

## 6.2 SOIL MICROMORPHOLOGY

6 2 1 Soil micromorphological analysis was undertaken on two soil monolith samples, one through part of the sequence of deposits filling the Scots Dyke ditch (12035) at SCA10 (monolith sample 201), the other (monolith sample 299) through the fills within ditch 14683 (segment 14882) at SCA15, and also the fill (14979) of another feature (14978) that may have represented a localised recutting of part of ditch 14683 Integrated analysis of Optically



Stimulated Luminescence (OSL) and archaeomagneto dating of the Scots Dyke sediments (*Section 7 2*) suggest that filling of the ditch started in the first millennium BC, probably during the Iron Age, with the final filling occurring in the medieval period, probably sometime in the period between the sixth-seventh century AD and the early-mid-fourteenth century. In ditch 14683, radiocarbon dating of material from the secondary fill (14886) provided dates in the later Iron Age and early Roman period (*Section 7 1*). The settlement at SCA15 was situated approximately 2km east of the Scots Dyke, at a slightly lower elevation (147-161m aOD, as opposed to 180-186m aOD).

- 6 2 2 The monoliths were sub-sampled for nine bulk analyses (see *Appendix 3* for full report), following which they were sub-sampled for five thin-section analyses. Sub-sampling yielded 150-160mm-long samples that were impregnated with a clear polyester resin-acetone mixture, and then topped up with resin. The cured samples were then sectioned, and sub-samples chosen for 75 x 50mm thin-section study, ahead of manufacture (Goldberg and Macphail 2006, Murphy 1986). Full methodological details can be found in *Appendix 3*.
- 6 2 3 *Chemistry and magnetic susceptibility* the analytical results, with the key anthropogenic features of individual contexts highlighted, are presented in *Appendix 3*. A broad overview of the individual soil properties is given below.
- 6 2 4 *Organic matter (estimated by Loss on Ignition (LOI))* despite the evidence of waterlogging/gleying in both monoliths, none of the contexts analysed was particularly organic-rich (maximum LOI, 4.36%). Monolith 201 appeared less gleyed, but the contexts analysed had a generally higher and less variable LOI (range, 3.79-4.36%) than those from monolith 299 from SCA15 (0.456-4.10%). This suggests that the fills in monolith 201 were originally more organic-rich, presumably as a result of the mowwash of more organic (topsoil-derived?) sediments and/or inputs of organic deposits from decaying vegetation within the Scots Dyke ditch as the sediments accumulated. In contrast, the fills of monolith 299 would appear to be much more variable in character, with two fills (14885 and 14884) having very low LOI values (0.801% and 0.456%, respectively). Interestingly, these two fills appeared to be more sandy than the other fills, and it may be that these represent inputs of more minerogenic (subsoil-derived?) sediments.
- 6 2 5 *Phosphate (phosphate-P<sub>v</sub>, P<sub>o</sub>, P, P<sub>i</sub>, P and P<sub>o</sub> P)* the fills displayed quite marked variability in phosphate-P concentration (range, 0.184-1.74mg g<sup>-1</sup>), though none of the values recorded is especially high. The two more sandy fills from monolith 299 have the lowest values (both 0.184mg g<sup>-1</sup>), which, to a large extent, is likely to reflect the naturally low phosphate-retention capacity of sands. The phosphate-P concentrations are generally higher in monolith 201, and two fills (12095 and 12096) showed likely phosphate enrichment (1.61mg g<sup>-1</sup> and 1.74mg g<sup>-1</sup>, respectively). However, it should be noted that the somewhat elevated values recorded in monolith 201 are largely attributable to higher concentrations of organic phosphate (range, 0.432-0.651mg g<sup>-1</sup>, cf 0.034-0.161mg g<sup>-1</sup> in monolith 299). Indeed, the proportions of organic phosphate recorded in monolith 201 (phosphate-P<sub>o</sub> P, 31.7-49.1%) are higher than are normally encountered, and this suggests that there has been only

limited post-depositional decomposition/mineralisation of organic matter within these fills. The differences in phosphate-P between the two monoliths are therefore at least partly attributable to contrasting amounts of organic matter present.

- 6.2.6 *Magnetic susceptibility ( $\chi$ ,  $\chi_{\max}$  and  $\chi_{\text{conv}}$ )* the most notable feature of the magnetic susceptibility data was the consistently higher  $\chi_{\max}$  values recorded in monolith 201 (range, 2610–3180  $\times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$ ) than 299 (range, 438–1880  $\times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$ ). This contrast could simply be due to differences in the iron (Fe) content of the materials washed into the two ditches, which would seem to be reflected, for example, in the much lower values recorded in the two sandy fills from monolith 299. In addition, however,  $\chi_{\max}$  may well have been affected by post-depositional mobilisation and leaching of iron under gleyed conditions. The lower  $\chi_{\max}$  values in monolith 299 could therefore equally be attributable to a loss of iron from these more heavily gleyed fills. Because of this, magnetic susceptibility data for gleyed sediments such as these need to be interpreted with caution (Crowther 2003).
- 6.2.7 Under UK conditions, contexts with  $\chi_{\text{conv}}$  values greater than or equal to 5.00% are often taken as being indicative of enhancement through burning. On this basis, fill 14886, at the base of monolith 299, stands out as the only fill showing likely signs of enhancement ( $\chi_{\text{conv}}$ , 11.3%), a fact that is supported by its notably much higher  $\chi$  (129  $\times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$ , cf. maximum of 43.0  $\times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$  in other contexts). This suggests that 14886, or at least some mineralogenic components within this fill, had been subject to heating/burning. Such susceptibility-enhanced material could have washed into the ditch (along with the charcoal that was observed in the sample). However, in view of the magnitude of enhancement recorded, it seems more likely that the burnt soil material and charcoal were dumped in the ditch from a nearby hearth or fire.
- 6.2.8 *Summary of chemical and magnetic susceptibility findings* the analytical results revealed some interesting differences between and within the two ditch-fill sequences.
- Monolith 201 (SCA10, the Scots Dyke ditch 12035) was more uniform in character (reflecting in part its likely derivation from a consistent parent material), and generally more organic-rich. There were likely signs of phosphate enrichment in fills 12095 and 12096 (though this may largely reflect the higher organic matter content), and no evidence of magnetic susceptibility enhancement.
  - Monolith 299 (SCA15, ditch 14683) was much more variable in character (probably associated with different parent materials, perhaps topsoil- or subsoil-derived). There was no evidence of phosphate enrichment, but strong evidence of burnt soil materials having been dumped into the ditch in fill 14886.
- 6.2.9 *Soil micromorphology* the five thin sections analysed contained a total of ten discrete contexts. Soil micromorphology counts and descriptions of 18

identified characteristics and micro-inclusions are given and illustrated in *Appendix 3*

- 6 2 10 *Monolith 201 (SCA10, the Scots Dyke ditch 12035): fills 12096 and 12095* the primary fill of ditch 12035 (12094) could not be sampled, as its very stony character meant that a monolith tin could not be properly inserted. The secondary and tertiary fills (12095 and 12096 respectively) were very clayey micaceous, and very fine silty, sediments with variable quantities of included fine sand and/or coarse silt, and occasional very fine charcoal. Deposit 12095 included two gravel-size fine sandstone clasts (*Appendix 3, Section A3 3 8*). There were very abundant matrix intercalations and associated closed vughs throughout, with very fine impure clay micro-panning and channel infills. Medium and coarse silty panning and sandy inclusions were more common in 12096, while broad burrows and broad mammilated excrements (showing some structural collapse (*Appendix 3, Section A3 3 8*)) were more common in 12095. Both fills showed phosphate enrichment, with 12096 showing a higher organic content (*Appendix 3, Section A3 3 10*).
- 6 2 11 Fill 12095 probably resulted from rapid silting of the ditch under wet conditions (standing water and slurry inwash), with the inclusion of two gravel-size fine sandstone clasts and unweathered coarse mica. The gravel clasts were anomalous in this clayey sediment. Presumably burrowing by earthworms took place at a dry time of the year before renewed wet and muddy conditions resumed (and earthworm excrements started to collapse). The ditch probably contained standing water at times, hence micro-panning, and amorphous iron staining (mottling), which may be associated with phosphate enrichment (see *Appendix 3, Section A3 3 9*).
- 6 2 12 Fill 12096 was very much like 12095, but sedimentation included more fine sand and coarse silt, and wet depositional conditions apparently persisted longer because much less biological activity is recorded. The sediment was similarly enriched in phosphate and was a little more humic. It is possible that the sedimentation of 12095 and 12096 occurred during just a few years.
- 6 2 13 *Fill 12097* this thin section was taken across a boundary between clayey, and upwards, medium and coarse silty clay sediments, which included a small proportion of fine sand. Occasional very fine charred organic matter and rare fine charcoal occurred throughout. As in deposits 12096 and 12095, textural intercalations dominated, with additional fine limpid but poorly birefringent clay also being deposited as infills. Iron staining was very abundant (with rare iron-manganese impregnations), often picking out root channels and broad burrows (*Appendix 3, Section A3 3 11*). The fill showed a relatively high organic content and  $\chi_{\max}$  – the last reflecting iron staining.
- 6 2 14 The analysis revealed two variations in the muddy sedimentation of this ditch: a very fine, silty micaceous clay with, overlying it, medium and coarse silty clay and clayey sediments containing fine sand. The sediments were slightly finer and charcoal-rich than those below. Fine rooting and broad burrowing affected the sediments, as shown by secondary iron and iron-manganese staining.

- 6 2 15 *Fill 12098* this fill was composed of a series of bedded deposits, with very fine silty clay micaceous sediments between medium and coarse silty clayey deposits. The middle clayey layers were very broadly burrowed into the underlying silty sediments (*Appendix 3, Section A3 3 13*). Silty sediment layers showed silty fine laminations and sorting, with fine clay washing down-profile. Both burrowing and fine rooting were present, with root traces being sometimes strongly ferruginised. Occasional very fine charcoal occurred throughout, with the uppermost part containing abundant fine charcoal.
- 6 2 16 The bedded sediment layers in deposit *12098* probably formed through muddy silting that was either a fine silty clay in character or contained varying proportions of medium and coarse silt and sometimes fine sand, with phases of burrowing and rooting between sedimentation episodes. It is possible that these variations in grain size reflected seasonal weather patterns. The two uppermost fills of the Scots Dyke ditch (*12099, 12100*) were not sampled for micromorphological analysis.
- 6 2 17 *Monolith 299 (SCA15, ditch 14683, cut by possible localised recut 14978) fill 14977* the primary fill of ditch *14683* was a generally bedded and well-sorted sediment, composed of clean fine quartz sand and coarse silts, with burrow fills and mixing from deposit *14886* above (*Appendix 3, Section A3 3 15*). Minor clay and iron void coatings were noted. The deposit developed through fine and coarse 'silting' of leached sands and coarse silts, but was affected by some post-depositional burrow mixing and inwash from above.
- 6 2 18 *Fill 14886* this secondary fill comprised a very heterogeneous mixture of very fine charcoal-rich clayey and sandy soils. It contained blackened fragments of humic sands (Ah horizon soil?), sand and clay clasts with much fine and medium charcoal (2-3mm, with a maximum of 8mm), occasional fine mbedded mineral material, two examples of iron fragments (which stained the surrounding fine soil), and traces of fine leached bone (one very small concentration, *Appendix 3, Section A3 3 16*). Much burrowing and occasional rooting was observed, and one burrow was infilled with clean coarse silt.
- 6 2 19 Compared to fill *14977* below it, deposit *14886* was a markedly anthropogenic and relatively humic fill that had been strongly burrowed. There was an enigmatic mixture of ditch(?), gleyed Bg horizon(?) and humic topsoil (Ah) clasts that showed many indications of burning, and burning was also indicated by the presence of charcoal and mbedded mineral grains, and by the strongly enhanced magnetic susceptibility of this deposit. However, the presence of two small iron fragments may also have contributed to the latter. In addition to suggesting that *14886* was composed largely of anthropogenic 'occupation' material, the amount of charred soil inclusions present may indicate the burning of humic sods to produce peat ash.
- 6 2 20 *Fill 14885* this deposit could be separated on morphological grounds into two separate horizons, a lower (*14885b*) and an upper level (*14885a*). Deposit *14885b* was an upward fining sequence of coarse silty and fine sandy laminae, developing over clayey and fine, charcoal-rich material (possibly a laminated variant of underlying fill *14886*). It became less charcoal-rich upwards, with the clay becoming iron-stained. Deposit *14885a* comprised finely (0.5-1.0mm)

- and moderately (1-6mm) laminated coarse silt and fine sands, with weakly humic clayey laminae, some with much fine charcoal (*Appendix 3, Section A3 3 18, %LOI*) Laminae showed upward fining into clayey laminae, with infilling of some voids with dusty clay associated with intercalations. Upper clayey laminae were un-stained, and fine rooting was noted.
- 6 2 21 *Fill 14884* the uppermost fill of ditch *14683* was formed from a series of finely laminated upward-finng (clean) coarse silts and fine sands, with un-stained (clayey) and charcoal-rich uppermost layers. Broad burrowing introduced material from above (*Appendix 3, Section A3 3 20*)
- 6 2 22 *14979, the fill of possible localised ditch recut 14978*: this deposit was composed of laminated clean coarse silt and fine sands, with burrowed fine layers of fine charcoal-rich clayey sediment. Examples of burrowed-in coarse (7mm) charcoal and 16mm-size burned fine sandstone fragments occurred, but, towards the top, fine, charcoal-rich sediment dominated (see *Appendix 3, Section A3 3 21, %LOI*) There was much broad burrow mixing.
- 6 2 23 *Fill 14979* was similar to *14884*, the uppermost fill of ditch *14683*, with variations in wash of coarse silt and fine sands, and more fine charcoal and clay material, with fine charcoal-rich sediment becoming dominant upwards, alongside examples of coarse charcoal and burned sandstone (*Appendix 3, Section A3 3 22*)
- 6 2 24 *Local soils* the local soils are grouped into the Brickfield 2 soil association, mainly Cambic stagnogley soils that formed on drift from Mesozoic sandstone, and finer-grained rocks (Jarvis *et al* 1983). It is clear, however, that the two ditch fills analysed were quite different in terms of their grain size, monolith 201 (the Scots Dyke ditch *12035*) sampled a fine clayey fill, whereas monolith 299 (ditch *14683* and possible localised recut *14978*) mainly comprised coarse silty to fine sandy fills. This strong contrast can perhaps be explained by suggesting that sample 299 reflects immediate on-site activity, whereas sample 201 does not.
- 6 2 25 *The Scots Dyke sediments (monolith 201)* this was composed of many muddy clayey silting episodes, with rare inwash of gravel (two pieces) and occasional coarse silt and fine sand. It can be suggested that these coarser elements reflect the local geology and soils through which the dyke was cut, but that the dominantly clayey fill derives from more heavy textured soils.
- 6 2 26 Presumably, clayey soil mobilised by rainstorms further upslope was washed downslope into the Scots Dyke ditch. It seemingly often arrived as a muddy slurry, infilling coarse channels and voids, and sometimes partially slaking earlier-formed earthworm excrements. There seems to have been infill cycles, with periods of biological working between. These may broadly represent 'seasonal' episodes, with 'dry' summer periods of biological activity and 'wetter' winter periods of clayey silting. The deposits were also relatively humic and enriched in phosphate, which may imply anthropogenic inputs, possibly from stock, since the proportion of organic phosphate was noticeably high. Hypothetically, some of the muddy fills could have formed through animal trampling, though no dung fragments were found in any of the ditch.

fills Organic and phosphate enrichment were noted in a ditch at Battlesbury, Wiltshire, where it was tentatively identified as resulting from cess inputs (Macphail and Crowther 2008) However, no evidence of cess was found in monolith 201

- 6 2 27 *The fills of ditch 14683 (monolith 299)* in this sequence of sedimentation, laminated (waterlain) fine sandy and coarse silty fills (eg primary fill 14977) seem to have alternated with major and minor charcoal-rich fills (eg 14886) that were either finely laminated or biologically worked (*Appendix 3, Section A3 4 4*) These fills probably reflect the use of the site, which again may have seasonal characteristics The laminated deposits were probably formed after rainstorms eroded the coarse silt and fine sand from the exposed soils in the sides of the ditch, and when standing water existed for a while, examples of fine sandstone clasts are present at the site These deposits were in stark contrast to anthropogenic fill 14886 This was humic, very charcoal-rich, and included rare examples of leached bone, metal (iron?) fragments, burned humic topsoil, and fine unburned mineral inclusions This humic and 'burned' character was also suggested by the chemistry and a strongly enhanced magnetic susceptibility (4 10% LOI, 11 3%  $\chi_{\text{conv}}$ ) The deposit was biologically worked, suggesting deposition under aerobic 'dry' conditions, before the next episode of rainstorm(s) generated coarse silty and fine sandy laminated sedimentation
- 6 2 28 The burnt nature of fill 14886 can probably be best described as resulting from the deposition of fuel ash, where both wood and peaty turf were employed as fuel The use of mineralogical turf/peat as fuel is well recorded in Scotland from fuel ash-rich middens, and its occurrence in manured soils (Adderley *et al* 2006, Carter 1998a, 1998b, Simpson 1997) The apparent alternation between charcoal-rich deposits, that are biologically worked, and laminated coarse silts and fine sands may again suggest seasonal use of the site However, as only one location was studied, this suggestion must remain tentative
- 6 2 29 *Conclusions* the study of these five thin sections and nine bulk samples from two monolith samples suggested that the anomalous clayey fill of the Scots Dyke ditch at SCA10 (feature 12035, monolith 201), in an area of coarse silt and fine sands, resulted from muddy slurries washing along the dyke downslope from an assumed area of more clayey soil The fill was relatively enriched in organic matter and phosphate, although no exact phosphate source(s) was/were identified In contrast, sample 299, from ditch 14683 at SCA15, but also sampling the fill of the possible localised recut (14978), of ditch 14683, more likely reflected local inwash of coarse silty and fine sandy soil, which was often deposited under ephemeral standing-water conditions Inwash of these 'clean' sediments seems to have alternated with charcoal, burned turf and soil deposits, which are of probable turf-based, fuel-ash origin, and which were biologically worked These cycles of deposition may possibly reflect seasonal occupation/activity, but this hypothesis remains tentative

### 6.3 POLLEN ANALYSIS

- 6 3 1 Following an initial assessment of pollen from the fills of the Scots Dyke ditch (12035) at SCA10 (monolith 200), and selected fills of ditch 14683 (segment 14882) at SCA15 (monolith 300), full analysis was undertaken on the pollen from both features. Integrated analysis of Optically Stimulated Luminescence (OSL) and archaeomagnetic dating of the Scots Dyke sediments suggests that filling of the ditch started in the first millennium BC (Section 7.4.9), most probably in the Iron Age, with the final filling occurring in the medieval period, probably sometime between the sixth-seventh century AD and the early-mid-fourteenth century. In ditch 14683, radiocarbon dating of material from the secondary fill (14886) provided dates in the later Iron Age and early Roman periods (Section 7.1). SCA15 was situated roughly 2km east of the Scots Dyke, at a slightly lower elevation (147-161m aOD as opposed to 180-186m aOD).
- 6 3 2 The interpretation of the pollen data from archaeological features such as ditches, rather than natural deposits, has to be treated with caution, given the variety of ways in which pollen may arrive at the site. As well as receiving pollen from the surrounding vegetation, it is also possible that sediments carrying both contemporary and residual pollen may be washed in and, especially in the case of ditch 14683, had arrived in the feature along with 'dumped' settlement waste.
- 6 3 3 **Preparation and analysis of samples.** sub-samples of a standard size (1ml in volume) were prepared for pollen analysis using the standard technique of heating with hydrochloric acid, sodium or potassium hydroxide, sieving, hot hydrofluoric acid, and Erdtman's acetolysis to remove carbonates, humic acids, large particles, silicates, and cellulose, respectively. The samples were then stained with safranin, dehydrated with tertiary butyl alcohol and mounted in 2000cs silicone oil (Method B of Berglund and Ralska-Jasiewiczowa 1986). Tablets containing a known number of *Lycopodium* spores were added to the known volume of sediment at the beginning of the preparation, so that pollen and spore concentrations could be calculated (Stockmarr 1972). Pollen was counted from equally spaced traverses across whole slides at a magnification of x400 (x1000 for critical examinations) until a minimum sum of 300 terrestrial pollen and spores was reached, if possible. Identifications were aided by a pollen key (Moore *et al* 1991) and a small modern reference collection held by Oxford Archaeology North. Cereal-type grains were defined using the criteria of Andersen (1979). Indeterminate grains were recorded using groups based on those of Birks (1973) as an indication of the state of pollen preservation. Other identifiable inclusions on the pollen slides, such as fungal and algae spores, were also registered. Plant nomenclature follows Stace (1997). The relative abundance of microscopic charcoal fragments was not calculated, due to its extreme abundance at all levels.
- 6 3 4 The pollen diagrams are expressed as metres (m) depth and as percentages of the total land pollen and spore sum (TLPsum). Aquatic taxa and other palynomorphs are presented as percentages of TLPsum + sum of the category to which they belong. Calculations, including concentration levels, and diagrams were made using the programs TILIA and TGVview (Grunn 1990).

Pollen and spore concentrations included the counts for indeterminate grains to reduce the possible biases caused by differential preservation/visibility. Pollen assemblage zones were placed through visual examination of the data.

- 6.3.5 A single, 1.5m-long monolith (200) was taken through the sediments of the Scots Dyke ditch (12035) and a monolith 0.3m in length (300) was taken from ditch 14683. Each monolith was cleaned and sub-sampled in the laboratory. The uppermost c. 0.45m of monolith 200 consisted of packing material (the depths in the following are from the surface of the sampled sediment rather than the top of the monolith). Sediment descriptions (including a brief summary of the micromorphological interpretation) were made, and associated context numbers, and depths of the pollen samples were noted (Tables 16 and 17). In total, 23 pollen sub-samples were taken from monolith 200, and 11 were taken from sample 300. In each case, the sampling intervals respected the stratigraphic boundaries. No samples were taken from deposit 12100 in monolith 200, as this was interpreted as a late post-medieval or modern agricultural soil.

Depth from surface (m)		Context	Description	Depth of pollen sub-samples (m)
Top	Base			
0.00	0.30	12100	fine sand	
0.30	0.40	12099		0.31, 0.35, 0.39
0.40	0.58	12098	finely laminated	0.43, 0.47, 0.51, 0.55
0.58	0.70	12097	silty clay - seasonal flooding?	0.59, 0.62, 0.64, 0.67, 0.69
0.70	0.78	12096	clayey/sandy silt -	0.71, 0.735, 0.76
0.78	1.05	12095	very rapid ditch siltmg with standing water and m/wash	0.80, 0.84, 0.88, 0.96, 0.92, 0.98, 1.00, 1.02

Table 16 Stratigraphic depths, contexts and pollen sampling depths from the Scots Dyke ditch (SCA10 12035) (monolith 200)

Depth from surface (m)		Context	Description	Depth of pollen sub-samples (m)
Top	Base			
0.00	0.16	14884	fine sand	0.02, 0.06, 0.10, 0.12, 0.14, 0.16
0.16	0.25	14885	fine loamy sand, occasional charcoal	0.20, 0.22, 0.25
0.25	0.28	14886	fine clayey sand with charcoal	0.27
0.28	0.30	14997	sand	0.30

Table 17 Stratigraphic depths, contexts and pollen sampling depths from SCA15 ditch 14683 (monolith 300)

- 6.3.6 **The Scots Dyke ditch (SCA10 12035)** pollen preservation in the Scots Dyke deposits was highly variable, with many of the samples containing very abundant indeterminate grains. The large number of corroded grains in the samples suggests that conditions were not always ideal for preservation. The relatively high number of corroded grains, especially in the two uppermost deposits, may indicate an increase in sedimentation of reworked material into the ditch. The large numbers of corroded grains in fill 12098 meant that the



samples taken from this context (at depths of 0.43m, 0.47m, 0.51m, and 0.55m) were uncountable. The very abundant microscopic charcoal fragments in the samples also concealed many of the pollen grains, and this was particularly prevalent in the sample taken at a depth of 0.735m (deposit 12096).

- 6.3.7 Two pollen assemblage zones (PAZs) have been defined (Fig 68), the boundary being placed at a depth of 0.74m. The position of the boundary was based primarily on the changes shown by the four dominant taxa: alder (*Alnus glutinosa*), hazel (*Corylus avellana*), grass (Poaceae), and ribwort plantain (*Plantago lanceolata*).
- 6.3.8 PAZ 1, 0.74-1.02m (12095 and lower 40mm of 12096) arboreal pollen does not exceed more than 40% Total Land Pollen (TLP) in this zone. Alder, hazel and heather (*Calluna*) dominate the arboreal assemblage, but other tree and shrub species recorded in low numbers include birch (*Betula*), ash (*Fraxinus excelsior*), rose family (Rosaceae undifferentiated), oak (*Quercus*) and lime (*Tilia*).
- 6.3.9 The herbaceous assemblage in PAZ 1 is fairly diverse and, as well as the dominant grass, and the key disturbance indicator, ribwort plantain, other taxa include daisy-type (*Aster*-type), dandelion-type (*Taraxacum*-type), cabbage family (Brassicaceae), the pink family (Caryophyllaceae), bean-family (Fabaceae) including clover (*Trifolium*-type), St John's wort (*Hypericum elodes*-type), great/hoary plantain (*Plantago major/media*), buttercup-type (*Ranunculus*-type), and small scabious (*Scabiosa columbaria*). Nearly all of the taxa are typical of meadows/pastures and/or disturbed ground. The presence of St John's wort and small scabious suggests that some areas were relatively dry. Occasional grains of chamomile-type (*Anthemis*-type), mustard-type (*Sinapis*-type), meadowsweet (*Filipendula*), bittersweet (*Solanum dulcamara*) and nettle (*Urtica*) were also recorded in this zone. Both mustard-type taxa and chamomile are frequently associated with arable/waste ground (Stace 1997, 276, 733). Meadowsweet and bittersweet may have been growing in the damp conditions of the ditch itself.
- 6.3.10 Small numbers of cereal-type (Cerealia-type) pollen were recorded at depths of 0.92m and 0.96m, plus barley-type (*Hordeum*-type) pollen grains at 0.80m. This may indicate small-scale cereal cultivation nearby, although this interpretation is tentative, given that cereal/barley-type pollen include some wild varieties of grass, such as wild barley (eg *Hordeum murinum*) and sweetgrass (*Glyceria* sp, Andersen 1979).
- 6.3.11 Undifferentiated fern spores, including positively identified polypody (*Polypodium vulgare*), are fairly well represented, and peak slightly at a depth of 0.80m. Polypody, along with royal fern (*Osmunda*) and adder's tongue (*Ophioglossum vulgatum*), are likely to have been growing in the ditch, which suggests that it was not kept free of vegetation. This is also suggested by the presence of aquatics, such as pondweed (*Potamogeton*) and duckweed (*Lemna*), and of *Sphagnum* moss spores. These taxa, along with the presence of the green algae *Botryococcus*, indicate that conditions in the ditch were periodically wet.

- 6 3 12 Pollen and spore concentrations are generally fairly low and fluctuate between c 2000 and 2500 per millilitre of sediment. This would suggest that sedimentation in the ditch was relatively fast, which restricted the pollen being received at the site prior to its burial. One very marked increase in pollen concentration was recorded at 0.92m, although the only taxa demonstrating any appreciable change at this level is grass pollen, which shows a temporary rise from c 10% to 25%. There were no obvious clumps of pollen at this depth, but this slight peak could be due to a grass floret being blown or washed into the ditch. This evidence is in agreement with the soil micromorphology (Section 6.2), which suggests that these lower deposits represent rapid silting and that the ditch periodically contained standing water.
- 6 3 13 PAZ 2, 0.35-0.74m (upper 40mm of 12096, 12097, 12098, and 12099) the upper zone (PAZ 2) is characterised by a slight decrease in both arboreal pollen and fern spores. Alder and hazel values fall slightly (from c 15-20% to c 10% TLP and c 10% to c 5% TLP, respectively). This is mirrored by a very slight increase in heather pollen, from c 3% to 5-7% TLP. The diversity of the arboreal pollen assemblage also decreases, the only other arboreal taxa recorded in PAZ 2 being very low values of ash, rose family and lime.
- 6 3 14 An increase in herbaceous pollen in PAZ 2 is, in most part, attributable to an increase in grass and ribwort plantain. The suite of herbaceous taxa is similar to that in PAZ 1, although additional taxa, also indicative of open grassland conditions, include lady's-mantle (*Alchemilla*-type), knapweed (*Centaurea nigra*-type), knotgrass (*Polygonum aviculare*) and sorrel (*Rumex acetosa*-type). Occasional grains of cereal-type pollen, including barley-type, and, in the uppermost sample, oat/wheat (*Avena/Triticum*-type) were also recorded in this zone. There is a slight but obvious decline in both fern spores and aquatic pollen in this zone, which may indicate increased ditch clearance during its later period of filling.
- 6 3 15 *Interpretation of results* the Scots Dyke pollen data suggest that the surrounding landscape during the filling of the ditch was primarily pastureland. The ditch itself is likely to have supported damp-loving species, such as meadowsweet, bittersweet, and ferns, and aquatic plants, such as pondweed and duckweed, also grew at times of flooding. The evidence suggests that the ditch was not kept free of vegetation during its earlier periods of filling.
- 6 3 16 Some woodland was present, although this was largely made up of alder and hazel scrub/woodland growing near to, or even alongside, the ditch itself. These conditions appear to have been in place from its earliest phase of filling during the Iron Age, and changed very little up to the final stages, which are believed to have taken place during the early medieval period. The data suggest that the surrounding landscape was more or less devoid of mature woodland by the Iron Age and consisted primarily of open grassland, with pasture and areas of heath. Possible cereal cultivation may have also taken place nearby during most phases of filling.
- 6 3 17 *Ditch 14683 (SCA15, ditch segment 14882)* like the material from the Scots Dyke, pollen preservation in the fills of ditch 14683 in the settlement at