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Clarendon to Cockey Down Water Main, Salisbury

Archaeological Excavations,
May–June 1996

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Wessex Archaeology

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CLARENDON TO COCKEY DOWN WATER MAIN,
SALISBURY, WILTSHIRE

Archaeological Excavations - May to June 1996

Report No. 41923

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SUMMARY

Wessex Archaeology was commissioned by Wessex Water Engineering Services to undertake a programme of archaeological monitoring and excavation works during the insertion of a new water main between the Cockey Down reservoir (SU 1700 3140) and the Clarendon pumping station, near Salisbury, Wiltshire. A total length of c. 200m of the northern end of the pipeline easement was subject to detailed archaeological excavation. Previous work carried out in 1989 indicated that this area was close to an enclosed settlement of Iron Age and Roman date. A total of 66 archaeological features were excavated and recorded, 47 of which contained no dateable material. Of the 19 features which did contain dating evidence, ten are provisionally dated to the Late Bronze Age/Early Iron Age (c. 1100-400 BC), four are Late Iron Age/early Romano-British (c. 100 BC-AD 150), three late Romano-British (3rd-4th century AD), and two post-medieval (i.e. post-AD 1500).

ACKNOWLEDGEMENTS

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The excavation was directed by Kit Watson and supervised by Julie Lovell, assisted by Dominic Barker, Rod Brook, Phil Harding and Joe Whelan. This report was prepared by Julie Lovell with comments on the animal bone by Sheila Hamilton Dyer, artefacts by Emma Loader, human bones by Jacqueline I. McKinley and on the environmental aspects by Michael J. Allen. The illustrations were prepared by Karen Nichols. The project was managed in the field on behalf of Wessex Archaeology by Mick Rawlings and in post-excavation by Julie Gardiner.

**CLARENDON TO COCKEY DOWN WATER MAIN,
SALISBURY, WILTSHIRE
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Figure 2 All features plan

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CLARENDON TO COCKEY DOWN WATER MAIN, SALISBURY, WILTSHIRE

Archaeological Excavations - May to June 1996

1 PROJECT BACKGROUND

- 1.1. Wessex Water Engineering Services commissioned Wessex Archaeology to undertake a programme of archaeological monitoring and excavation works during the insertion of a new water main between the Cockey Down reservoir and the Clarendon pumping station, near Salisbury, Wiltshire (Fig. 1).
- 1.2. The pipeline route was aligned immediately adjacent to the western edge of a known Iron Age and Romano-British enclosed settlement. A report on previous excavations at this site has been published (Trott 1991).

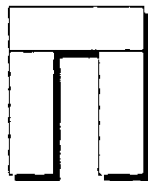
2 TOPOGRAPHY AND GEOLOGY

- 2.1. Cockey Down reservoir is located at the southern end of a north-east-south-west aligned ridge, and is at an absolute height of c.146 m aOD. To the north-east is a steep escarpment leading down into the valley of the River Bourne. The pipeline runs down a more gentle south-east facing slope to the Clarendon pumping station, which lies to the south-west of the medieval enclosure of Clarendon Palace at a height of c. 65 m aOD.
- 2.2. The basal geology mainly comprises Cretaceous Upper Chalk, although a limited area of Palaeocene Reading Beds is preserved on the southern end of the Cockey Down ridge, immediately to the west of the reservoir (Geological Survey of Great Britain, 1:50,000 Drift Series Sheet 298).

3 METHODS

- 3.1. In the area adjacent to the known enclosed settlement and associated features (south-east from the reservoir fence for a total distance of 200 m), topsoil was removed from the 12 m wide easement and stacked along the south-western edge of the easement. All machine-stripping (topsoil and subsoil) within the 200 m length defined above was carried out under close archaeological supervision.
- 3.2. Features located within or across the central part of the strip were then subject to hand-excavation. In the case of linear features, a 1 m wide slot was excavated perpendicular to the alignment of the feature. In the case of discrete features or other deposits, a sufficient amount of each was excavated in order to minimise potential damage caused by pipe-laying operations and to identify the nature and date of the feature. In the case of suspected burials or other features whose interpretation necessitated further investigation, excavation was carried out across the entire width of the stripped easement.

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- 3.3 When human remains were encountered during excavation, a Home Office Licence for the removal of such remains was obtained by Wessex Archaeology.
- 3.4 In the remaining section of the pipeline route to the south-east of the area defined for excavation purposes, the pipe-laying operations were subject to a watching brief.
- 3.5 The stripping of topsoil and the cutting of the pipe trench, both carried out by means of a tracked excavator, were observed by a suitably qualified and experienced archaeologist.

4 RESULTS

4.1 *Introduction*

- 4.1.1 A total of 66 features (Fig. 2) were excavated and recorded, many of which did not contain dateable material. Of the 19 features which did contain dating evidence, 10 were provisionally dated to the Late Bronze Age/Early Iron Age (1100 - 400 BC), four are Late Iron Age/early Romano-British (c. 100 BC-AD 150), three late Romano-British (3rd-4th century AD), and two post-medieval (i.e. post-AD 1500). A further feature could not be dated any closer than 1st-3rd century AD. Two features are of post-medieval date (post 1500 AD) and another one is almost certainly modern.

4.2 *Variations in natural geology, disturbance and depth of topsoil*

- 4.2.1 Although the basal geology along the whole of the pipeline route comprised Upper Chalk, there were minor localised variations. These included two patches of naturally occurring clay across which it proved difficult to follow known features. It is therefore possible that recognition of features wholly within these areas may have been poor.
- 4.2.2 Some evidence of periglacial disturbance of the natural chalk was noted in various places. Large frost cracks may be the cause of some of the linear cropmarks noted on aerial photographs of the area.
- 4.2.3 The area of the excavation has obviously been eroded by ploughing over many years. Modern plough marks were visible cutting into the natural chalk in various places and many of the post holes were very shallow. It is possible that other features have been lost entirely.
- 4.2.4 Disturbance by root action and tree bowls was also recorded. One probable tree throw hole produced a sherd of Late Bronze Age/Early Iron Age pottery. This may attest to a phase of deforestation on the site during that period.
- 4.2.5 The topsoil removed from the easement was a modern arable ploughsoil and had a constant depth of 350-400 mm.

4.3 *Enclosure 002 and associated posthole structure 004*

4.3.1 A shallow gully forming a small sub-rectangular enclosure (002) was identified in the central part of the site. This gully was found to overlie six postholes which formed a sub-rectangular structure (004) of the same basic dimensions and orientation as the gully. Eight sherds of pottery were recovered from the enclosure gully 002, the four larger of which are Late Bronze Age/Early Iron Age in date. The other sherds are smaller and two were from a very shallow section of the feature; these are of Late Iron Age/early Romano-British date. Two of the postholes from structure 004 each contained a single sherd of Late Bronze Age/Early Iron Age pottery.

4.3.2 A second angled gully was also recorded (199), in the north-eastern part of the site closer to the reservoir. No dating evidence was found in the gully but a posthole (197) at one of the gully terminals contained a considerable quantity of post-medieval pottery. Investigation of the topsoil in this part of the pipeline easement suggested the nearby presence of a 19th century gun flint production site, and it is possible that some of the post-medieval remains were associated with this industry. However, the possibility remains that some of these features in this part of the site may relate to the known Iron Age enclosure examined during the 1989 investigations, the boundary ditch of which passes close by.

4.4 *Human Burials*

4.4.1 Seven features produced human bone. Five graves (001, 023, 061, 108, 185) were found to contain flexed inhumation burials, and in two cases (001 and 061) contained double burials, one on top of the other. Grave 108 also contained the scattered bones of a second (infant) individual in addition to the primary adult inhumation. Two sherds of Late Bronze Age/Early Iron Age pottery were recovered from the fill of grave 001, but this was the only dateable material found with this group of burials.

4.4.2 Some fragments of weathered human bone were found associated with large fragments of a single bipartite urn in feature 083, this vessel is also of Late Bronze Age/Early Iron Age date. Human bone was also found in feature 112, and may be the remains of another badly disturbed burial. Nine sherds of Late Bronze Age/Early Iron Age pottery and a fragment of a fired clay object, possibly a loomweight, were found in the fill of feature 112. The similarities in grave size and shape, and in skeleton posture and orientation suggest that the inhumation burials represented a small coherent group or part of a cemetery. A single burial excavated during the laying of the previous water main (Wessex Archaeology 1989; Trott 1991) also shares the characteristics of grave shape and arrangement of the skeleton. The burials may well form part of a larger cemetery, possibly contemporary with enclosure 002 and structure 004.

4.4.3 The ceramic material from these inhumation burials suggested a Late Bronze Age/Early Iron Age date, although the occurrence of even nearly complete inhumation burials would be very unusual at this date (Brück 1995).

Consequently, leg bones from three of the burials were submitted for radiocarbon dating and proved to be of Late Iron Age date (see below, Section)

4.5 *Postholes*

4.5.1 A total of 48 postholes was excavated, of which 37 remain undated. Of the postholes that produced pottery, six are of Late Bronze Age/Early Iron Age date, two are early Romano-British, one is of undiagnostic Romano-British date, one post-medieval and one modern.

4.4.2 The layout of some of the excavated postholes suggests the presence of square 4-post and some 2-post structures. Although the dating evidence is relatively poor, it is likely, on comparative evidence from many sites in southern England that the majority of these structures are broadly contemporary with the enclosed settlement to the east.

4.6 *Ditches*

4.6.1 Four ditches were partially excavated. Three of these (*020*, *029*, *051*) produced dating evidence suggesting they were filled in during the 3rd/4th centuries AD. The remaining ditch (*182*) lies parallel to ditch *029*, and although it is very different in nature (*182* being narrower and shallower) it is possible that these two ditches represent the line of a trackway. Ditch *020* appears to be the continuation of a ditch (Fig. 2) recorded during the 1989 excavations as producing pottery dating to the 3rd/4th centuries AD (Wessex Archaeology 1989). It also corresponds in location and alignment to a boundary ditch recorded as a cropmark on aerial photographs (Figs 1 and 2)

5 **FINDS** (Table 1)

5.1 *Pottery*

5.1.1 The pottery assemblage comprises 296 sherds (2424g). Most is of Romano British date (1323g), with pottery of later prehistoric date also present (727g). A total of 24 sherds (374g) of post-medieval pottery was recovered but these are not considered further.

5.1.2 The pottery has been analysed in accordance with the standard Wessex Archaeology recording system for pottery (Morris 1992). It was divided into four broad fabric groups on the basis of dominant inclusion types: flint tempered fabrics (Group F), sandy fabrics (Group Q), grog tempered fabrics (Group G) and shell tempered fabrics (Group S). These groups were then sub-divided into eight separate fabric types based on the range and coarseness of the inclusions present.

5.1.3 The pottery has been quantified by fabric type within each context, and details of vessel form, surface treatment and decoration have also been recorded. This information can be found in the archive.

5.2 Prehistoric Pottery

5.2.1 The prehistoric pottery has a potential date range from the Late Bronze Age to the Late Iron Age, although positive dating is difficult due to the lack of diagnostic sherds. Six fabric types were identified:

F1 Hard fabric; sparse, moderately sorted crushed angular flint <2.0 mm; sparse to moderate fairly well sorted sub rounded quartz <1.00 mm. Predominantly oxidised, but interior surface, margin and core may be unoxidised.

F2 Soft fabric; sparse to moderate poorly sorted coarse crushed angular flint <3.0 mm; may be oxidised or unoxidised.

G1 Soft fabric, sparse to moderate fairly well sorted rounded grog <2.0 mm, rare crushed angular flint <2.0 mm; rare quartz grains <0.5 mm. May be unoxidised or oxidised.

S1 Soft fabric, sparse to moderate poorly sorted shell <3.0 mm; rare iron oxides <0.5 mm. Predominantly unoxidised though some sherds oxidised.

Q1 Soft fabric, moderated well sorted quartz grains <1.5 mm. Oxidised.

Q2 Soft fabric, abundant well sorted quartz grains <2.0 mm, moderate glauconite <2.0 mm. Oxidised.

Q3 Soft fabric, sparse moderately sorted quartz grains <2.0 mm, sparse shell <2.0 mm, rare crushed flint <2.0 mm; rare glauconite <1.5 mm; sparse to moderate iron oxides <1.5 mm. Oxidised, with interior surface and margin unoxidised.

5.2.2 The majority of the fabric types are represented by very small numbers of sherds, with very little diagnostic material, making close dating impossible.

5.2.3 Sixty-two sherds of fabric S1 derive from a single bipartite jar with fingernail impressions on the carination and on the edge of the rim found in pit 083. The vessel is dateable as Late Bronze Age or Early Iron Age (Fig. 3). This vessel is unusual in that its rim is severely distorted, and it would appear to have been either overfired during manufacture or burnt prior to deposition. The latter is more likely, as it is rare to find wasters of this date.

5.2.4 The distribution of prehistoric pottery across the site was concentrated around gully 002, and the majority of sherds were recovered from features located nearby. Several sherds were recovered from Romano-British ditches 020 and 029 and must be considered residual.

5.2.5 The sources for the prehistoric pottery are likely to be fairly local in origin. Flint is the commonest inclusion for pottery of this period and area, although

grog and shell are also found in pottery from Wiltshire (Cleal and Raymond 1990).

5.3 Romano-British Pottery

5.3.1 Three coarseware fabric types were identified, including two of known source, as well as one established fineware.

E100 Black burnished ware, (BB1 unspecified); for fabric descriptions see Williams (1977)

E160 New Forest Parchment ware, for fabric description see Fulford (1975, 26 fabric number 2a)

E162 New Forest Colour Coated ware (stoneware) for fabric description see Fulford (1975, fabric 1a or 1b)

Q100 Hard fabric, moderate to common; well sorted quartz <1.5 mm, rare iron oxides <1.5 mm. Oxidised and unoxidised. A 'catch all' group for all coarse sandy greywares.

5.3.2 Three fabrics can be positively attributed to known sources, the Black Burnished ware from the Wareham/Poole Harbour region of Dorset, the Parchment ware and Colour coated ware from the New Forest. The "catch all" fabric group derives from a number of different sources and probably spans a wide date range. Within Wiltshire production of sandy greywares is known at kiln sites to the west of Swindon, producing sandy greywares from the early 2nd century AD until the end of the 4th century (Anderson 1978), and Westbury where greyware wasters and kiln furniture has been found. Other sources include the New Forest (Rogers and Roddham 1991).

5.3.3 The vessel forms recognised cover the period of the 1st century AD to the 4th century. One vessel form; from ditch *051* can be positively attributed to a known source, the Black Burnished ware jar with a widely flaring everted rim flaring from the body of 3rd/4th century type (Seager Smith and Davies 1993, type 3). Two body sherds with obtuse burnished lattice decoration and two Black Burnished ware body sherds from a slim jar were also recovered from the same context, which would support a date range in the later Romano-British period. The other more fragmentary coarse greyware everted rim jars from this context can also be dated to this period.

5.3.4 Other later Roman material amongst the assemblage includes a vertical neck from the New Forest Colour Coated vessel with a date of AD 260-400 and the flaring rim of a Black Burnished ware jar also of 3rd/4th century date (Seager Smith and Davis 1993 type 2).

5.3.5 Most of the Romano-British pottery dating to the 3rd and 4th centuries was recovered from three ditches *020*, *021* and *051*, with several sherds from postholes *203* and *154* which are possibly earlier Romano-British.

5.4 *Ceramic Building Material*

- 5.4.1 The ceramic building material assemblage comprises just four fragments (351g), three Romano-British and one post-medieval.
- 5.4.2 One large fragment of later Romano-British floor tile was recovered from ditch 051. The remaining fragments are too small to identify the brick or tile type from which they derived, although they were recovered from features also dating to the later Romano-British period. All fragments were recovered from ditches.

5.5 *Fired Clay*

- 5.5.1 Five undateable fragments of fired clay were recovered from several features. One fragment, from grave 112, might represent part of a loomweight or spindle-whorl but the remaining fragments are too small to identify their original form or use.

5.6 *Worked and burnt flint*

- 5.6.1 One hundred and twelve pieces of struck flint (2951 g) were recovered from a variety of contexts including ditch and gully fills, postholes, and grave fills, in which many are probably residual. All the flint is locally derived 'surface' chalk flint with a thick, buff cortex and milky blue to white patina. Many show clear signs of plough damage and eight large, irregular unstratified pieces are distinctive in being very lightly patinated and apparent struck with a very hard, possibly metal, implement. These are probably not of prehistoric origin.
- 5.6.2 Excluding the unstratified pieces, the assemblage consists of two crudely worked cores, a possible core trimming flake, 99 flakes and two pieces of irregular waste. The cores are multi-platform and unsystematically worked while the possible trimming flake is long bladelike piece that may have been produced more by luck than judgement. In general the flakes are broad, squat, thick and hard-hammer struck, many with pronounced bulbs of percussion, incipient cones and hinge fractures. A broadly later Bronze Age date seems most appropriate for the whole assemblage although only 34 flakes and one core were directly associated with the probably later Bronze Age gully 002.
- 5.6.3 Burnt, unworked flint was recovered in some quantity (c. 3.6 kg). This material type is intrinsically undateable, but is frequently associated with prehistoric activity. Here it occurs in features dated by pottery to the later prehistoric, Romano-British and undated periods.

5.7 *Metalwork*

- 5.7.1 Five fragments of iron were found, one of which (a strip fragment) was unstratified and is probably of post-medieval date. The remaining four: a

small perforated square plate, a latch lifter, a rod fragment and a ring were from the upper fill of ditch *029* and are most certainly of late Romano-British date.

5.8 *Stone*

- 5.8.1 Three fragments of Romano-British worked stone were recovered from ditch *029*. Two are quernstone fragments, one of greenstone and one a quartz conglomerate. The third fragment is a fine grain micaceous sandstone and may be architectural.

6 HUMAN BONE

6.1 *Introduction*

- 6.1.1 Bone from 15 contexts (10 features) was received for examination. Seven of the contexts represented inhumation burials excavated from five graves, two of the graves containing skeletal material from two apparently separate acts of burial, one made directly above the other. The graves were all situated within the confines of a 10 m length of the trench, though it is not improbable that further graves remain undiscovered to either side of the excavated area. Radiocarbon dates obtained from three of the burials indicate a Late Iron Age date for the cemetery, probably spread over several generations.

6.2 *Methods*

- 6.2.2 Age was assessed from the stage of tooth development and eruption (van Beek 1983), the stage of ossification and epiphyseal bone fusion (Grey 1977; McMinn and Hutchings 1985; Webb and Suchey 1985), age-related changes to the pubic symphyses (Bass 1987), tooth wear patterns (Brothwell 1972), and the general degree of cranial suture fusion and degenerative changes to the bone. Sex was assessed from the sexually dimorphic traits of the skeleton (Bass 1987; Schutkowski 1993). Cranial, platymeric and platycnemic indices were calculated (Brothwell 1972; Bass 1987), and stature was estimated using Trotter and Gleser's regression equations (1952; 1957). Pathological lesions and morphological variations/non-metric traits were recorded, and diagnoses suggested where appropriate.

6.3 *Results*

- 6.3.1 A summary of the results is presented in Table 2. Full details of the osteological analyses are held in the archive.
- 6.3.2 The graves contained seven *in situ* burials. Redeposited bone from two immature individuals was recovered from the backfill of grave *108* (109) above inhumation burial 505, fragments from both individuals also being found amongst the remains of 505. Redeposited bone from another immature individual was collected from various parts of grave *061*. The fragment of

human bone from pit fill 111 may have been redeposited from one of a possible two of the graves excavated. A single fragment of cremated human bone was recovered from the upper fill of grave 061 and in the sample taken from around skeleton 501. Bone from five of the contexts proved to be animal not human; ditch fills 33 and 53, posthole fill 57, and pit fills 84 and 110.

6.4 *Disturbance and condition of the bone*

6.4.1 Most of the graves were shallow, with depths of between 0.07-0.52 m. Consequently, much of the bone was badly fragmented, primarily as a result of plough damage. At least some of the bone from all of the burials except 505 appeared worn, some was also root marked. There was no pattern in the level of bone preservation to suggest the effects of any single, specific taphonomic process. There was some dark brown staining to the left lower limb bones in burial 502, probably indicative of the proximity of some organic material (?skin or leather) laid below the body or wrapped around the legs. The fragment of cremated bone from grave 061 also appeared worn, probably as a result of general weathering.

6.5 *Skeletal Indices*

6.5.1 Cranial index could be calculated in only one instance, adult female 504 mesocranial. The platymeric index (degree of anterior-posterior flattening of the proximal femur) was calculated for four individuals, three males and one female. All were platymeric except one male (505) with eurymeric index; range 58.9-88.1. The platycnemic index (meso-lateral flattening of the tibia) was calculated for three individuals, two males and one female. All except one male (505) was platycnemic, 505 being eurycnemic; range 55.8-70.7.

6.5.2 Stature was estimated for four individuals, three males and one female. The range for the males was 163.5-172.8m (5' 4¼" - 5' 8"), the estimate for the female was 155.64m (5' 1¼").

6.6 *Demography*

6.6.1 A minimum of ten individuals was identified from the unburnt bone, including 5 immature individuals, one subadult/young adult and four adults. The age ranges cover neonatal to older mature adult. Only one female was identified amongst the adults, the other three were male.

6.6.2 The small size of the cemetery group and the potential for further burials existing outside the excavated area precludes much demographic comment. However, the presence of a full range of ages and both sexes would suggest that this represents a normal domestic cemetery, probably associated with a small, isolated settlement. According to Whimster (1981, 18) such small grave groups are not uncommon in non-settlement locations within the Iron Age.

6.7 Pathology

- 6.7.1 Dental disease: a total of 65 fully erupted permanent teeth was recovered and 64 permanent tooth positions counted. Four permanent dentitions showed some form and degree of dental disease. No *ante mortem* tooth loss was noted. Some level of calculus (tartar) deposits were noted in three adult dentitions and periodontal disease (lesions associated with gum infection) in two, both conditions may be instrumental in the development of dental caries and abscesses. Carious lesions were noted in only one dentition, that of the adult female (7% of female, 3% of overall total). The same individual showed the only abscess lesions in the adult dentitions (6% female, 3% overall total), although a lesion was noted in the deciduous dentition of 501. Dental hypoplasia, a developmental defect in the tooth enamel formed in response to growth arrest in the immature individual (Hillson 1979), was noted in two dentitions. The rates of dental disease are generally low though the small size of the group precludes drawing too many conclusions from this observation.
- 6.7.2 Cribra orbitalia: manifest as pitting in the roof or one or both orbits, is believed to result from a metabolic disorder connected with childhood iron deficiency anaemia, or possibly vitamin C deficiency and intestinal parasites (Molleson 1993). Of the four orbital vaults available for examination, only one, the adult male 505, had any lesions, which were extensive and pronounced in both orbits.
- 6.7.3 Infection: Secondary sinusitis may develop following an upward spread of infection from a maxillary dental abscess, transmitted via a fistula in the floor of the antrum (Wells 1977). Such a fistula was noted in the left antrum of 504, but no lesions were noted in the antrum indicative of infection.
- 6.7.3.1 Infection of the periosteal membrane covering bone may lead to the formation of periosteal new bone. Infection may be introduced directly to the bone as a result of trauma, develop in response to some adjacent soft tissue infection, or spread via the blood stream from foci elsewhere in the body. Four individuals (40%) had lesions in one or more bones. In 504 (adult female) there is a c. 20 x 15 mm area of periosteal new bone over the anterior-lateral surface of the left acromion of the scapula where the spine joins the body at the neck. This may be traumatic in origin, linked to the non-fusion (?fracture) of the acromion/spine at the neck to the body of the scapula, the adjoining 23.7 x 9.8mm surfaces showing fine pitting. Such a fracture would result from a direct blow to the acromion (Adams 1987).
- 6.7.3.2 In two individuals, the neonate 504a and the adult male 505, the latter of which had fine new bone over much of the right tibia and fibula shafts, parts of the right femur shaft and most of the left fibula shaft, there was also endosteal new bone over areas of the skull vault. In 505 patchy endosteal new bone was observed on the left lateral frontal from lateral extreme of coronal junction, crossing the coronal suture onto the left lateral parietal. The precise location of the lesions in 504a was difficult to assess due to incomplete skeletal recovery and fragmentation but at minimum they were

within the parietal vault. Such lesions are indicative of some form of infection in the meningeal membrane (dura mater) and probably contributed to the death of the individuals.

- 6.7.4 Degenerative joint disease: Osteophytes are irregular growths of new bone that may develop along joint margins, including the vertebral body surface margins. They may occur alone or in association with other lesions such as eburnation and pitting in the joint surface. The prevalence of the lesion increases with age and in the absence of other associated lesions osteophytes may not be 'pathological'. In association with other lesions osteophytes may be indicative of disease such as osteoarthritis or degenerative disc disease (Rogers and Waldron 1995). Lesions indicative of degenerative disc disease were noted in 12% of vertebrae, 17% of the female and 10% of the male, predominately in the lower thoracic or lumbar spine.
- 6.7.5 Schmorl's nodes: a destructive lesion resulting from a rupture in the intervertebral disc allowing the nucleus pulposus to protrude into the vertebral body (Manchester 1983), were noted in 10% of vertebrae, 16% female, 8% male. The lower thoracic and upper lumbar was predominantly affected. Lesions indicative of osteoarthritis, a disease affecting the synovial joints (Rogers *et al.* 1987; Rogers and Waldron 1995), were noted in one male spine (2% overall, 4% male) and extra-spinal joints of two males and the one female, a maximum of three joints being affected per individual.
- 6.7.6 Miscellaneous conditions/lesions: Exostoses are bony growths which may develop at tendon and ligament insertions on the bone. Causative factors include advancing age, traumatic stress, or various diseases such as diffuse idiopathic skeletal hyperostosis (DISH). It is not always possible to be conclusive with respect to the aetiology of particular lesions. Pitting and other destructive lesions may develop in response to a number of conditions and it is not always possible to ascertain the specific cause of individual lesions. The vast majority of these lesions were seen in joint surfaces, with others peri- or juxta-articular and are probably related to some form of joint disease.
- 6.7.7 Coxa Vara: refers to a condition where the neck-shaft angle of the femur is reduced by the mechanical stress of the body weight acting on a defective or abnormally soft femur (Adams 1986). The causes may include congenital predisposition, slipped epiphysis, fracture and softening of the bone as a result of various diseases. Noted in burial 505.
- 6.7.8 Spondylolysis: a condition in which there is separation of the inferior articular processes and the spine from the rest of the vertebra, usually occurring in the fifth, or more rarely the fourth lumbar vertebra, spondylolysis is believed to result from injury or stress fracture in the immature individual (Adams 1986). The condition was noted in the fourth lumbar vertebra of 504.

6.8 *Morphological variations*

Morphological variations are 'normal' variations in the skeletal morphology and may, with other predisposing factors, indicate genetic relationships within a 'population' (Berry and Berry 1967; Finnegan 1978). Overall figures of incidence are not available for most of the variations. The significance which may be attached to many of these variations is limited, and in some cases their status as 'natural' variations is open to question e.g. wormian bones and 'squatting' facets'. The aetiology of *os acromiale* (non-fusion of the acromion epiphyses of the scapula) has also been subject to debate, some favouring it as a developmental defect, others as being of traumatic origin (Stirland 1984). Two individuals, 501 and 502 recovered from one of the dual graves, both showed an uncommon variation, that of secondary transverse foramen in the cervical vertebrae.

6.9 *Discussion*

6.9.1 Graves *001* and *061*, although they appear similar, both having one individual buried directly over another, are different in one significant respect; in grave *001* the burials were undertaken separately with a gap of several years, in grave *061* the burial of the two individuals appears to have comprised a single act. The skull and right lower legs bones from burial 502 were missing; the loss was post-depositional and probably occurred during re-opening of the grave to bury the juvenile 501, indicating that the corpse from the former burial was skeletalised prior to the insertion of the second individual.

6.9.2 Only two small fragments of bone from 501 were recovered among those from 502, none of the latter being found among the former. In excavation, although the fill was indistinguishable, there was a clear gap between the two skeletons. In contrast, it was very difficult in excavation to distinguish between 503 and 504 in grave *061*, the former directly overlaying the latter skeleton. Any bone 'missing' from 504 was as a result of poor survival rather than removal. There was much mixing of the bone from above with that below. The radiocarbon dates obtained from these two skeletons are virtually indistinguishable.

6.9.3 The dual graves must argue for some form of close relationship between the two individuals buried within each of them. That grave *001* was re-opened some years after the first interment to allow insertion of the second, without any apparent recutting of the grave, demonstrates it must have been clearly marked and presumably maintained. The large flint nodules forming the upper fills of most of the graves presumably served as such markers.

6.9.4 Whimster (1981, 21) observed that there were no recorded examples of multiple adult burials from the Iron Age. Nor does he note dual burials of any combination of individuals which take the form seen at Cockey Down of one individual placed above the other. The inclusion of large flint nodules in the upper fill of Iron Age graves within this general location on the chalk has been observed elsewhere e.g. Downsway, Salisbury (Wessex Archaeology 1996).

- 6.9.5 Most of the bones of the neonatal individual denoted 504b were recovered from among bones ('miscellaneous' bone and 'right leg') and samples (pelvic and abdominal) from burial 504 in the samples it was mixed with bone from 503. Further fragments of this individual were recovered with the bones of 503 and from the upper fill of grave *061*. This suggests that in cutting the grave an earlier burial was disturbed. The few fragments of immature bone recovered from grave 108 also indicate the presence of other disturbed graves in the vicinity. These graves were presumably not marked; this may have been because they did not pertain to the same group of people or due to the young age of the individuals buried within them.
- 6.10 Radiocarbon dating
- 6.10.1 Leg bones from burial 502 from Grave *001* and burials 503 and 504 from grave *061* were submitted to the Scottish Universities Research and Reactor centre for radiocarbon dating. Although the calibrated date for burial 502 (390-110 cal BC at 2 sigma; 2190±50 BP, GU-4959) overlaps with those from grave *061*, the probability distribution showed that it probably occurred 150-250 years earlier. The two dates from grave *061* (GU-4969, 2070±60 BP, 350 cal BC-cal AD 60; GU-4961, 2070±50 BP, 340 cal BC-cal AD 20) are statistically indistinguishable and confirm that the two individual burials in this grave occurred within a short timespan.

7 THE ENVIRONMENTAL EVIDENCE

7.1 *Animal Bone*

- 7.1.1 Animal bones from the fill of ditch *028* include three sheep/goat foot bones and two loose teeth together with a cattle astragalus, a fragment of scapula and two cattle sized fragments. A total of 55 bones is recorded for the fill of ditch *051*, unfortunately most of these are poorly preserved fragments of cattle size which could not be further identified. The seven cattle bones include five jaws and two horse jaws are also present, none of which were recovered with teeth in place. Sheep/goat is represented by two loose teeth.
- 7.1.2 Material from undated contexts numbers just nine bones. Of these two were identified to species, a dog tooth and a much fragmented horse femur, both from gully *203*.
- 7.1.3 The attrition of sheep-sized limb bone shaft fragments, particularly in the Late Bronze Age/Early Iron Age contexts, has produced fragments which mimic the surface texture of red deer antler; these were noted as possible deer remains in the initial assessment and may also have contributed to the judgment that bones in the Romano-British contexts were more eroded. In reality these fragments are not dissimilar and all the material is in poor condition.
- 7.1.4 The eroded and fragmentary nature of the bone is not uncommon in assemblages from shallow features on chalk. The representation of bone in these features, such as ditches and gullies, results from a combination of

preservation bias and disposal practices (Maltby 1985a: 1985b; Maltby 1995). The anatomical distribution is strongly biased in favour of the most robust elements; the dense early maturing bones such as the metapodia are frequent, teeth are even more resistant to attrition and often survive preferentially where most of the bones have been destroyed. The presence of cattle and horse jaws without teeth in ditch 051 may indicate that these had been exposed for some time before final burial, or have been redeposited from elsewhere. The small size of the assemblage and the undoubted taphonomic bias prevent detailed interpretation of the material, but the species represented and the deposition of head and foot bones (carcass waste) in ditches is not untypical.

7.2 *Charred plant remains*

- 7.2.1 A series of nine bulk samples of approximately 10 litres (or whole earth samples if less) was taken from a range of dated features of Late Bronze Age/Early Iron Age to later Romano-British date, including ditches and postholes.
- 7.2.2 The samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh and the residues fractionated into 4 mm, 2 mm and 1 mm fractions and dried. The coarse fractions (<4 mm) were sorted, weighed and discarded.
- 7.2.3 The flots were scanned under a x10-x30 stereo-binocular microscope and presence of charred remains was quantified (Table 3) in order to present information about preservation and to determine the potential of the charcoals and charred plant remains.
- 7.2.4 Although the flots were moderate in size (60 ml is average for 10 litre samples), they largely comprised of uncharred material (snails and modern rootlets). Due to the paucity of charred remains, the entire assessment will be discussed together rather than by period.
- 7.2.5 The scarcity of charred remains, particularly charcoal, is noteworthy. Charred grain was only recorded in three samples, and in each case no more than two caryopses were noted in the assessment. No chaff and very few charred weed seeds were noted. The presence of the high proportion of rootlets and non-charred rooty material also indicates the possibility of mixing and accounts for the inclusion of the few non-charred (modern) weed seeds.
- 7.2.6 The low concentrations of charred material in most of the sampled contexts (graves, postholes and ditches), reflects the nature of those features, and suggests that this area is away from the foci of domestic activity.

8. DISCUSSION

- 8.1 The results of this excavation can be broadly compared with the 1989 investigations, in terms of the periods of activity represented, and this discussion incorporates the results of both episodes of work.
- 8.2 It is possible that settlement on Cocky Down originated in the later Bronze Age but the first significant phase is represented by a large ditched, sub-circular enclosure, probably constructed during the Early/Middle Iron Age. Limited investigations in 1989 within the enclosure revealed a number of interior features including two 'beehive' pits. To the south-west of the enclosure a pit and a small sub-rectangular feature of unknown function were identified. Several post-holes possibly representing the remains of post-built structures were also excavated. These features appear to represent a small Early/Middle Iron Age rural agricultural settlement.
- 8.3 During the Late Iron Age/early Romano-British period the enclosure ditch was infilled and a roundhouse and a small sub-rectangular enclosure were constructed to the south. Burials were also taking place at this time. The remains of at least 12 individuals were recovered from a series of graves and the upper fills of several pits. Radiocarbon dating carried out on three of the skeletons provided Late Iron Age dates and it is likely that all the burials belong to the same general phase of occupation, which may have taken place, continuously or intermittently, over a period of at least 150-250 years. Ten of the skeletons have been examined in detail and the remains of five immature individuals, one sub-adult/young adult, and four adults were identified. The age ranges cover neonatal to older mature adult. Only one female was identified amongst the adults, and three were identified as male. Pathological information included indications of gum disease, osteoarthritis, sinus infections and the possible infection of the meningeal membrane which may have contributed to the death of one adult male. At least one incidence of a possible traumatic break to the scapula of the adult female was noted, which could have been the result of a blow. With the possible exception of the meningeal infection, none of the pathological data are unusual in a population of this type and date.
- 8.4 The small size of the cemetery group and the potential for further burials existing outside the excavated area precludes much demographic comment. However, the presence of a full range of ages and both sexes suggests that represent a normal domestic cemetery of the period, associated with a small, farmstead settlement and its field system.
- 8.5 Burials continued to take place on Cockey Down into the early Romano-British period when at least two infants were interred. A group of irregular intercutting pits appears to suggest some fairly intensive and/or long-term settlement activity at this time. The site continued to be used for farming purposes during the late Romano-British period when a corn drier was constructed and two ditches were dug. A possible trackway also crossed the site.

- 8.6 Although it is unclear whether the three phases identified above represent continuous settlement activity on Cockey Down, it is certain that they indicate persistent occupation of the area by a small community engaged in both arable and pastoral farming. The 1996 excavations seem to have been positioned towards the edge of the main focus of settlement activity, in an area possibly predominantly used for burial.
- 8.7 A similar pattern of small, mixed farming communities has been identified at other sites in the Salisbury Plain area such as Figheldean, near Netheravon (Graham and Newman 1993; McKinley 1997), where excavations have revealed evidence of continuous occupation dating from the Bronze Age through to the later Romano-British period. Once again, the focus of the Iron Age activity was a sub-circular ditched enclosure. The settlement appears to have shrunk during the later part of the Romano-British period and the vacant land used as a burial site.
- 8.8 Excavations near Durrington Walls (Wainwright et al. 1971) revealed a small Iron Age kite-shaped enclosure and several storage pits in with an unenclosed late Romano-British settlement nearby which included a number of small ovens or kilns. At Butterfield Down (Rawlings and Fitzpatrick 1996) evidence of settlement dating from the Late Neolithic through to the Romano-British period is represented, the final phase comprising a late Romano-British village covering at least 6 ha which included a corn drier, timber framed buildings, and a possible rural shrine, based on a mixed farming economy.
- 8.9 Other sites which suggest continuity of occupation on the chalk downs in this area from the later Iron Age well into the Romano-British period include Coombe Down, Enford and Bishopdown Farm/Pond Field. Investigations at Maddington Farm (McKinley and Heaton 1996), Shrewton, also encountered what appeared to be the fringes of a small Romano-British farmstead which included at least one circular post-hole structure, hearths, pits, field boundaries and a sequence of peripheral inhumation burials.
- 8.10 The results from Cockey Down add further to the evidence for the presence of numerous small farmsteads scattered across Salisbury Plain which had their origins in the Iron Age, or possibly earlier in some cases, and continued in occupation through the Romano-British period. Whether occupation of each was actually continuous or not has been difficult to ascertain in most cases and fortunes may have varied. Butterfield Down, for instance, seems to have flourished in the later Romano-British period while sites such as those at Figheldean and Boscombe Down West (Richardson 1951) may have declined at this time.

Table 1: All finds by context

Quantities are presented by number/weight in g

Feature	Context	Human Bone	Burnt Flint	CBM	Fired Clay	Worked Flint	Glass	POTTERY				
								Prehist	RB	PMed	Stone	Iron
Grave 001	32					6/22		2/6				
"	501	*										
"	502	*										
Ditch 002	?									1/15		
"	26		2/8			5/74						
"	59		2/28			6/26		3/22	2/8			
"	66		4/206			3/24		1/6				
"	67					3/4			2/3			
"	68					1/7						
Ditch 020	19		17/1074			31/1020		3/30	3/14			
Grave 023	500	*										
Ditch 029	28		1/55		1/1			2/5	92/5 40		2/962	1/16
"	33		2/152					2/34				
PH 038	40		2/78			1/4		1/6				
Ditch 051	52		3/320	1/414	1/2	13/262			62/6 23			
"	53								3/44			
Grave 061	503	*										
"	504	*				1/3						
Gully 076	58		7/350			8/84		1/2				
PH 071	57							1/4				
"	60		3/34			10/189		1/2				
Gully 082	81		3/122									
PH 083	84		19/216					65/578				
PH 083	110		9/122			3/2						
PH 0104	103					1/18		1/2				
Grave 108	109		1/10			3/8						
"	505	*										
Pit 112	111		4/87		1/42	1/10		9/36				
Tree throw 117	118		7/223			1/37		1/3				
PH 120	119		3/43		1/1			1/2				
PH 122	121					1/2		1/4				
PH 128	127		1/5									
PH 130	129		1/9									
PH 137	138		4/24									
PH 154	153		3/101						1/5			
PH 158	157		1/5			1/80						
PH 162	161		4/73	1/2								
PH 172	173					1/21			2/19			
PH 179	178		4/184					2/4				
Ditch 182	181		4/35		1/13	4/200						
Grave 185	506	*										
Pit 194	195		2/50	1/18								
PH 197	196								24/374			
PH 200	201								1/4			
	U/S					8/954	1/5		6/70			1/8
	Total	(7)	113/1614	3/434	5/59	112/2951	1/5	97/727	175/ 1323	24/374	1/386	2/24

Table 2. Summary of results from human bone analysis

context	type	% rec.	age	sex	pathology	comment
62	r. - u/b & c	1) s. 2) a.u. 3) u.	1) = 503 2) = 504b 3) adult			upper fill grave 61 (503/504)
109	r.	<1% 2) a.	1) 1 yr. - 18 mth. 2) older infant/young juvenile			Backfill grave 108 (505)
111	r.	<1% l.	older subadult/ adult			animal
500	inh.	c. 1% s.u.	subadult/young adult			
501	inh.	c. 99%	older juvenile	??male	hypoplasia; calculus; dental abscess; d.l. - axis; pnb - l.femur; m.v. - C6 extra foramen, lambdoid wormians, impacted r.man.II, rotated man. r.II, 3rd centre ossification 1st metatarsal	animal; above 502; cremated bone
502	inh.	c. 70%	older mature adult	male	o.a. - T3-4, 2 costo-vertebral joints each side; ddd - T7, T10-11; Sch. - T5-7, T10; o.p. - C1, l.prox.femur, l.auricular surface; exo. - l.tibial tuberosity; pitting - T1 costo-vertebral, r.medial clavicle, l.ulna head, sesamoid; calcification - sternum; hypervascularity - r.patella; cysts - l. 1st metatarsal, l. 2nd middle foot phalanx; d.l. - C4, foot sesamoid, l.acetabulum, r.auricular surface, l.4th distal finger phalanx; new bone - l.iliac crest, r.distal ulna; m.v. - secondary lateral foramen C4-5 & C7, squatting facet	below 501; animal
503	inh.	c. 30%	mature adult	male	calculus; o.p. - prox. femurs, auricular surfaces; exo. - iliac crest; pitting - cervical articular process; cyst - 1st metatarsal; m.v. - shovelled maxillary I2	above 504; some from 504b
504	inh.	c. 90%	older mature adult	female	calculus; p.d.; hypoplasia; dental abscess; caries; antrum fistula; Sch. - T10, T12, L1, L2; ddd. - L1, L5; o.a. - auricular surfaces, r.hip; o.p. - auricular surface, L1 articular process, l.talus; d.l. - l.talus, r.1st metacarpal, r.radial head; pnb - l.scapula; sinus - r.clavicle; exo. - calcanea, femur shafts, tibia soleal lines, patellae, olecranon, r.iliac tuberosity; pitting - humerus tuberosities, sterno-manubrial joint; calcification - 1st rib; non-fusion - L4 l.inferior articular process, l.scapula spine; hypervascularity - patellae; m.v. - man.M3 small 5-cusp, absence maxillary M3, sacralisation L5, anterior bowing r.femur shaft, squatting facets	below 503, some mixing of bone - mostly 503 to 504; 504b redeposited
504b	r.	c. 3%	neonate		pnb - man., orbital vault; endocranial new bone - parietal	spread in backfill grave 61 (503/504)
505	inh.	c. 94%	younger mature adult	male	calculus; p.d.; <i>cribra orbitalia</i> ; endosteal new bone - l.frontal & parietal; o.a. - hips, 11th costo-vertebral; pnb - r.femur, r.tibia & fibula, l.fibula; ddd - C3, C4; Sch. - L2; o.p. - atlas, axis, r.2nd, 4th & 5th ribs, l.rib, prox. ulnae; pitting - l.11th rib, 2 l.ribs, prox. humeri; new bone - C7, l.rib, l.medial clavicle; <i>coxa vara</i> ; m.v. - atlas groove, <i>os acromiale</i> , lambdoid wormian bones, man. M2 & M3 cusps variation, maxillary M2 & M3 width variation, maxillary I.M3 absent	young infant & infant bone = 109
506	inh.	c. 21%	neonate			

Key to table 2:

Type: r redeposited; inh. inhumation burial; c cremated bone; u/b unburnt bone

% rec: percentage skeleton recovered in inhumation burial; skeletal elements where not all were represented

(s - skull, a - axial, u - upper limb, l - lower limb)

pathology: p.d. periodontal disease C cervical neonatal 0-6 months
ddd degenerative disc disease T thoracic infant 6 months-5 years
o.a. osteoarthritis L lumbar juvenile 5-12 years
d.l. destructive lesions S sacral subadult 12-18 years
p. osteophytes prox. proximal young adult 18-25 years
exo. exostoses l. left younger mature adult 25-30 years
Sch. Schmorl's nodes r right older mature adult 30-45 years
pnb periosteal new bone man. mandibular
m.v. morphological variation

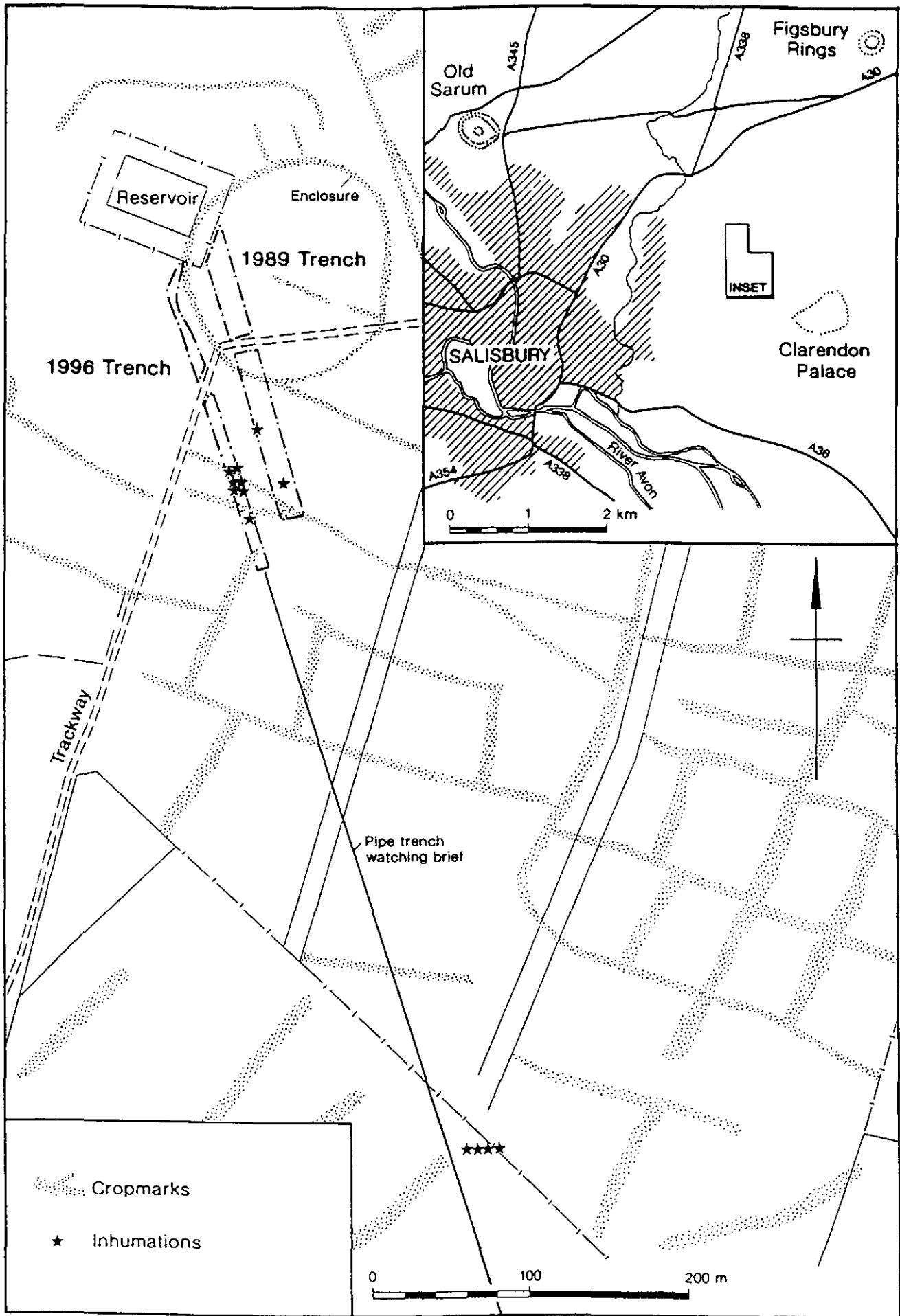
Table 3. Animal bone; species distribution summary

Phase/context	horse	cattle	sheep/goat	red deer	cattle size	sheep size	mammal	dog	total
LBA/EIA									
Grave 9, context 32	-	-	1	-	-	-	-	-	1
Gully 2, context 58	-	3	-	-	-	-	12	-	22
Gully 35, context 59	-	1	-	-	7	1	-	-	2
Gully 77, Context 60	-	1	1	-	-	-	-	-	2
Total	0	5	2	0	7	1	12	0	27
Percentage	0	18.5	7.4	0	25.9	3.7	44.4	0	
Late RB									
Ditch 20, context 19	-	-	3	1 (26)	1	3	-	1	9
Ditch 29, context 28	-	2	5	-	2	-	-	-	9
Ditch 51, context 52	2	7	2	-	44	-	-	-	55
Total	2	9	10	1	47	3	0	1	73
Percentage	2.7	12.3	13.7	1.4	64.4	4.1	0	1.4	
Undated									
Treehole 113, context 114	-	-	-	-	1	-	5	-	6
Treehole 117, context 118	-	-	-	-	-	-	1	-	1
Gully 203, context 202	1	-	-	-	-	-	-	1	2
Total	1	0	0	0	1	0	6	1	9
Percentage	11.1	0	0	0	11.1	0	66.7	11.1	
Grand total	3	14	12	1	55	4	18	2	109

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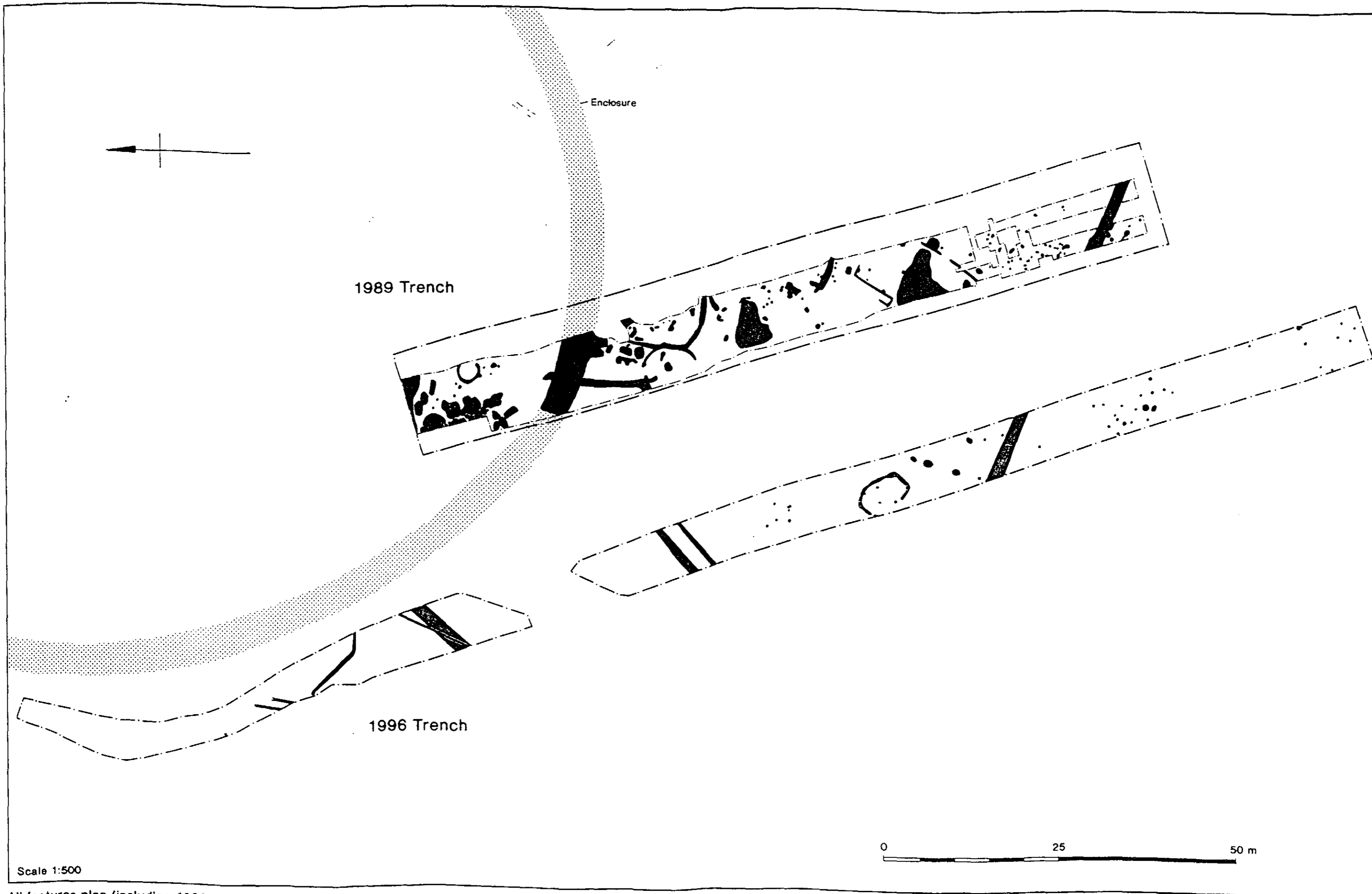
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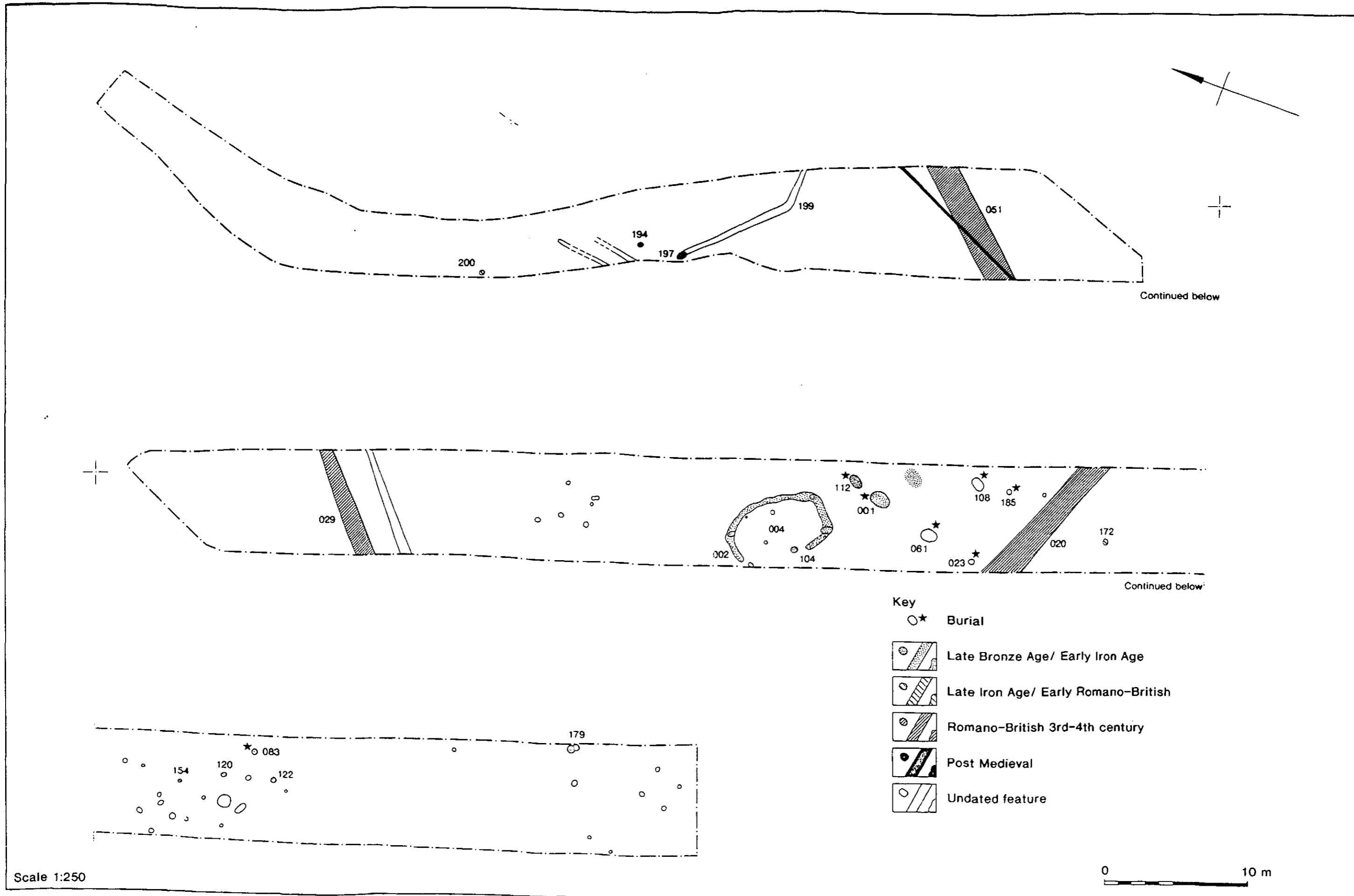
Site location

Figure 1



All features plan (including 1989 investigation)

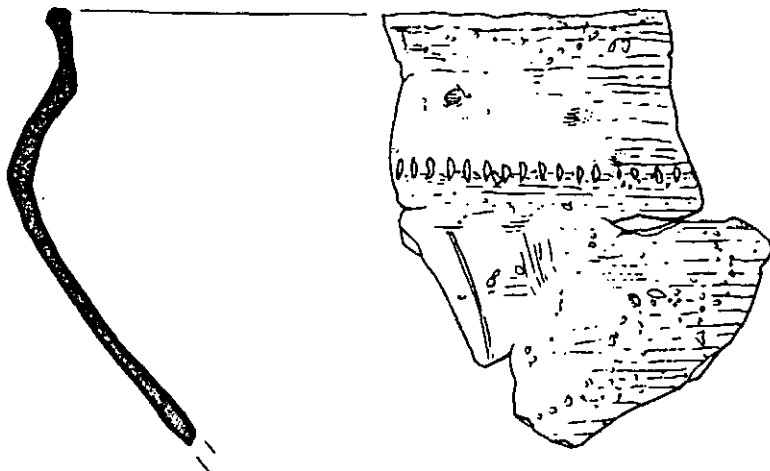
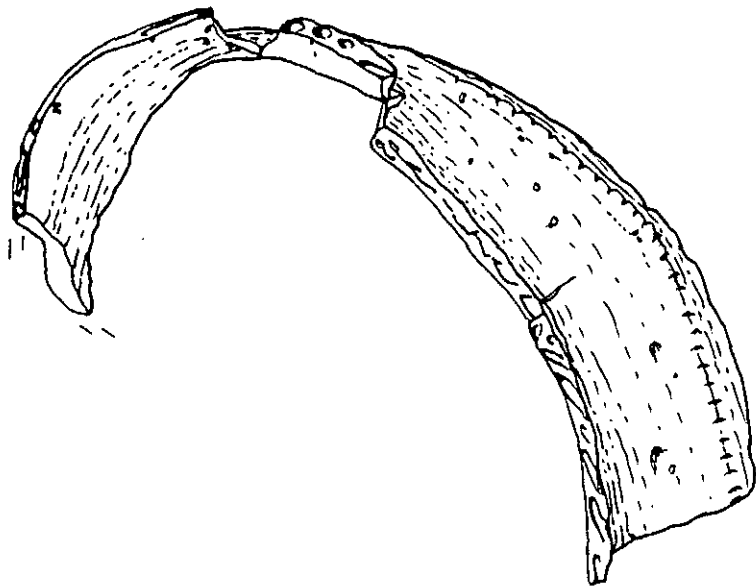
Figure 2



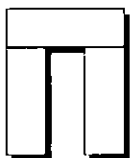
Scale 1:250

Phase plan

Figure 3



0 100 mm



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