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The Wiltshire Archaeological and Natural History Magazine

Volume 100

2007

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The Wiltshire Archaeological and Natural History Society

The Society was founded in 1853. Its activities include the promotion of the study of archaeology (including industrial archaeology), history, natural history and architecture within the county; the issue of a Magazine, and other publications, and the maintenance of a Museum, Library, and Art Gallery. There is a programme of lectures and excursions to places of archaeological, historical and scientific interest.

The Society's Museum contains important collections relating to the history of man in Wiltshire from earliest times to the present day, as well as the geology and natural history of the county. It is particularly well known for its prehistoric collections. The Library houses a comprehensive collection of books, articles, pictures, prints, drawings and photographs relating to Wiltshire. The Society welcomes the gift of local objects, printed material, paintings and photographs to add to the collections.

The Wiltshire Archaeological and Natural History Magazine is the annual journal of the Society and is issued free to its members. For information about the availability of back numbers and other publications of the Society, enquiry should be made to the Curator.

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Contributions for the *Magazine* should be on subjects related to the archaeology, history or natural history of Wiltshire. While there is no fixed length, papers should ideally be under 7,000 words, though longer papers will be considered if of sufficient importance. Shorter, note length, contributions are also welcome. All contributions should be typed/ word processed, with text on one side of a page only, with good margins and double spacing. Language should be clear and comprehensible. Contributions of article length should be accompanied by a summary of about 100 words. Please submit two copies of the text (with computer disk if possible) and clear photocopies of any illustrations to the editors at the Museum, 41 Long Street, Devizes, Wiltshire, SN10 1NS. A further copy should be retained by the author. The editors will be pleased to advise and discuss with intending contributors at any stage during the preparation of their work. When submitting text or graphics on disk, Word or Rich Text Format files are preferred for text, jpeg or tiff format for graphics. Contributors are encouraged

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(Note that in citations *Wiltshire Archaeological and Natural History Magazine* is abbreviated to *WANHM*)

For a book or monograph:

SMITH, I.F. 1965, *Windmill Hill and Avebury: Excavations by Alexander Keiller, 1925-39*. Oxford: Clarendon Press

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FITZPATRICK, A., 1984, 'The deposition of La Tène metalwork in watery contexts in Southern England', in B. Cunliffe and D. Miles (eds), *Aspects of the Iron Age in Central Southern Britain, 178-90*. Oxford: University Committee for Archaeology

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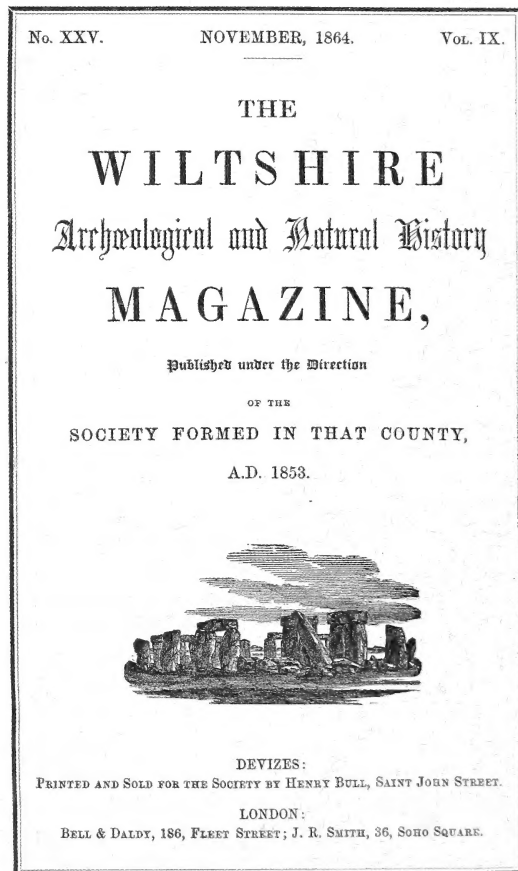
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Foreword to Volume 100

by *W. A. Perry, Chairman of the Society*

Volume 100 is a milestone in any publication's history and an occasion for celebration. It has actually taken *WANHM* 152 years to get there, as in the early years the journal was published twice a year and a volume covered three or four issues. World events too affected the frequency of publication and there were gaps and delays during the two world wars.

Today's magazine is very different from the early issues of the 19th century. Those readers fortunate enough to possess a complete run or with access to a library holding such will have noticed that many of the early contributors – and indeed the members of the Society – were clergymen. Their articles have a distinct antiquarian flavour: transcripts of manuscripts, pedigrees and descriptions of churches and monuments, with little by way of discussion. But we must remember that few historical records were easily accessible in those days before Record Offices; they were locked up in church vestries and vicarages or the muniment rooms of large houses; travel difficulties added to the difficulty of inspecting them and readers may well have welcomed their dissemination in this way. Another feature of the magazine at this time was the large number of obituaries included in every issue, many of them for people with only tenuous if any connection at all with the Society. Perhaps in similar vein in the early years of the 20th century the editor took to including long lists of 'Wiltshire Portraits', most of them newspaper or magazine photographs of members of the leading families in the county, though as time went on a wider cross-section of people was included. The magazine thus became for a while something of a social calendar. We should, however, be grateful to whoever it was who took cuttings of the over 6,000 people involved as these later found their way into the Society's extensive art collection, and are now



frequently consulted by family and local history researchers.

The first major change to the format of the journal came in 1958 with a larger page size not very different from today's, and a green and white cover representing the county colours. The then

editor explained in his Introduction that the decision to go for a larger page size was taken on the advice of prominent archaeologists in order to achieve a higher standard of illustration. It was also decided to publish a single volume once a year at a price to non-members of 25 shillings instead of the previous two issues a year at half a guinea each (members, as now, receiving their copy free). A novel development was the inclusion of advertising at the front and back, no doubt in order to offset some of the production cost, though this experiment only seems to have lasted for about three issues – perhaps it is something we could think about again? *The Times Literary Supplement* had some reservations about the new look, commenting ‘the rejuvenation of this centenarian...is accompanied by certain growing pains. The layout is in places awkward, there are too many misprints, the blocks are often poor ...the editor, however, is to be congratulated on having struck a good balance of space between the historians, the archaeologists and the topographers... Perhaps in the next volume the manner will, in quality, match the matter.’ Further criticism – this time from members - followed the next major change of design – the move in 2000 to a brown cover and ‘modern’ trilithon logo in line with the Society’s new house style. But with the passage of time, and further minor design changes, the new brighter look magazine came to be accepted and indeed welcomed by the majority of our members. The introduction of a full-page illustrated cover in 2006 proved particularly popular. Other recent innovations are the chronological ordering of contents, the reintroduction of book reviews (made possible again by the appointment of our new Hon. Reviews editor, Bob Clarke BA (Hons), Cert Ed, MifL and annual reports on the activities of the Society’s Archaeology Field Group and the Portable Antiquities Scheme in Wiltshire. The regular round-up of Fieldwork in Wiltshire also has a new look from this volume. A map has been added showing the location of the excavations listed. We have been – and indeed continue to be – most fortunate in the calibre of our contributors and the

magazine has always enjoyed a good reputation in academic circles. The well known, and some less well known authors whose work has appeared include: Ken Annable, Paul Ashbee, R. J. C. Atkinson, June Badeni, J. H. Bettey, Aubrey Burl, Humphrey Case, John Chandler, Christopher Chippindale, Juliet Clutton-Brock, Pamela Colman, Ros Cleal, Mark Corney, O. G. S. Crawford, Elizabeth Crowfoot, D. A. Crowley, several members of the Cunnington family (William Cunnington III, his nephew Ben, curator of the Museum, and Ben’s wife Maud, one of the first women archaeologists and for many years president of the Society, and their cousin R. H. Cunnington), Bruce Eagles, John Evans, David Field, Andrew Fitzpatrick, M Flinders-Petrie, Peter Fowler, Christopher Gingell, Leslie Grinsell, Margaret (Peggy) Guido, Phil Harding, Richard Hatchwell, Lorna Haycock, Martin Henig, Ian Hodder, W. G. Hoskins, E. M. Jope, Eric Kerridge, Sir John Lubbock, Jacqui McKinley, J. V. S. Megaw, Sam Moorhead, John Musty, A. D. Passmore, Stuart Piggott, Augustus Pitt-Rivers, Mike Pitts, Josh Pollard, R. B. Pugh, Andrew Reynolds, Julian Richards, Paul Robinson, R. E. Sandell, A. Shaw-Mellor, Hugh Shortt, D. D. A. Simpson, Isobel Smith, Robin Tanner, Tim Tatton-Brown, Joan Taylor, James Thomas, Nicholas Thomas, John Thurnam, Alasdair Whittle, (with apologies to others too many to name).

Much of the credit for the continuing success of *WANHM* however must go to the successive editors (about whom an article follows later in this volume) who have selected the articles and maintained the high standard on which the journal’s, and indeed the Society’s, reputation rests. I believe that in our present editorial team at UCL, the magazine is in good hands. It currently enjoys a print run of 1,100 copies and is taken by 132 libraries, museums and societies worldwide, and we can look forward with confidence to the next 100 volumes, though it is less easy to predict whether these will continue to appear in print or will follow the present trend to ‘e-publishing’.

A preliminary interpretation of Upper Jurassic silicified plant fossils from the Portland Stone Formation of Chicksgrove Quarry, Wiltshire

by *John E. Needham*

A stratigraphically significant exposure of the Portland Stone Formation at Chicksgrove Quarry in south west Wiltshire has yielded important fossils deriving from both marine and terrestrial environments. The latter includes the bones and teeth of a range of reptiles and mammals, along with carbonised and silicified plant remains that occur in a horizon overlying the Main Building Stones, now known as the Tisbury Member. The silicified specimens offer a rare insight into the Portlandian vegetation of southern England, opening up a field of comparative studies with the Purbeck flora of Dorset, the Morrison Formation flora of the western U.S.A. and the Cerro Cuadrado flora of Patagonia, while also providing examples of previously undescribed forms.

INTRODUCTION

Chicksgrove Quarry (NGR ST 962296), sometimes referred to as Upper Chicksgrove Quarry, is a working building stone quarry situated by the hamlet of Upper Chicksgrove about one mile to the east of Tisbury in the Vale of Wardour, the most southerly of Wiltshire's vales. The site includes an almost complete exposure of the Portland Stone Formation and of the lowest beds of the overlying Purbeck Limestone Group. These rocks are of Tithonian age, more specifically belonging to the local Portlandian sub-stage, laid down towards the very end of the Jurassic Period which drew to a close around 145.5 ± 4 million years ago (Gradstein and Ogg 2004). The stratigraphy of Chicksgrove Quarry was described in detail by Wimbleton (1976), whose bed numbers are adopted here. However, some general revisions have since been made (see, for example, Bristow *et al.* 1999), and for the purposes of this work Wimbleton's Tisbury Member and overlying Wockley Member are taken as belonging to the Portland Stone Formation and the horizon

separating them is taken to be that originally described.

In 2002 quarrying operations exposed a very localised series of small yellowish brown, highly fossiliferous silt lenses, forming a discontinuous layer with a maximum thickness of about 150 mm and extending horizontally for some 5m. In terms of lithology, stratigraphy and palaeontology these lenses appear to correspond to a 'plant and reptile bed' of localised distribution discovered and excavated in the early 1980s (Benton, Cook and Hooker 2005). In common with that bed the newly exposed lenses lay on an irregular erosion surface at the top of Bed 24, a glauconitic sandy limestone forming the uppermost unit of the Tisbury Member. They form a basal component of Bed 25, the lowest unit of the overlying Wockley Member, which otherwise consists of micritic limestone.

An anonymous, unpublished report dated 1983 on the excavations of the early 1980s was produced for the Nature Conservancy Council. Reported fossils included carbonised and silicified plant material, the latter including wood, conifer seeds

and spores (Benton, Cook and Hooker 2005). In 1987 Chicks Grove Quarry was notified as a Site of Special Scientific Interest under Section 28 of the Wildlife and Countryside Act 1981, with reasons for notification including a vertebrate fauna of dinosaurs, pterosaurs, crocodylians, fish, and newly discovered multituberculate and pantothere mammals. Plant material was not included in this notification. In that same year a study of the petrology of chert from the 'plant and reptile bed', in which the bed was referred to as the 'Chicks Grove Plant Bed', was published. Illustrated thin sections showed spore grains and wood fragments with cell walls intact (Astin 1987, Fig.4). Reference was made to the preparation of a multidisciplinary study of the bed. When the JNCC, successor to the Nature Conservancy Council, published a Geological Conservation Review (GCR) volume on Mesozoic and Tertiary palaeobotany (Cleal, Thomas, Batten and Collinson 2001) they neither included Chicks Grove Quarry as a GCR site nor made reference to it, indicating that no significant assemblage of plant finds had been reported. The GCR volume on Mesozoic and Tertiary mammals and birds, however, did include Chicks Grove Quarry as a GCR Mesozoic mammal site, although the mammal finds notified in 1987 were reported as not yet having been studied (Benton, Cook and Hooker 2005). Viewed overall, the limited available evidence indicates that the plant fossils to be discussed in this work are from a horizon of palaeontological importance on which only one detailed paper, i.e. Astin 1987, has been published.

Within the silt lenses exposed in 2002, small pockets up to about 100mm in thickness contained high concentrations of small gastropods along with fish teeth, crocodile teeth, one pterosaur tooth, and petrified plant remains. The fragmentary and disarticulated plant remains had become petrified through silicification, and included wood, shoots, cone scales, seeds, lignotubers and indeterminate material. Initially some damaged specimens projecting from the face or lying in disturbed matrix were removed and repaired with superglue, but as the unusual nature of the finds became apparent silt was carefully removed from the quarry face before the often delicate plant petrifications were separated from the surrounding matrix and reversibly consolidated where necessary with PVA. Two petrified plant specimens were also found in 2004 partially embedded in a limestone off-cut from the quarry's sawing shed, and one of these is illustrated in Plate 2, Figure 23 following removal from the stone.

Fossil plants are uncommon within the Portlandian strata of Great Britain, silicified examples including wood fragments from Helmsdale, Sutherland (Thomas and Batten 2001) and conifer and cycadeoid remains from the 'Fossil Forest' horizon in the Basal Beds of the Purbeck Limestone Group of south Dorset (see for example Cleal, Thomas and Batten 2001) and south west Wiltshire (see for example Reid 1903).

Petrified floras are globally rare from the Jurassic Period as a whole (Thomas and Batten 2001), with Upper Jurassic examples including assemblages from the Morrison Formation of the western USA and from the Cerro Cuadrado 'Petrified Forest' of Patagonia. In this introduction to the petrified plants of Chicks Grove Quarry the links with the Purbeck 'Fossil Forest', with the Morrison Formation of the western USA and with the Cerro Cuadrado 'Petrified Forest' will be explored, and a brief look will also be taken at a range of as yet unidentified material.

Described and illustrated specimens from Chicks Grove Quarry, along with a single specimen from Dorset, were collected by the author and now belong to the Palaeontology Department of the Natural History Museum (NHM) in London. References to these fossils give the NHM specimen numbers, which are prefixed with the letter 'V'. Two specimens from the Morrison Formation of Utah (author's collection, collected and presented by Richard Dayvault) are illustrated for comparative purposes.

Most of the photographs used in the plates have been aligned so as to conform to illumination conventions and do not indicate any suggested direction of growth. Due to the plate editing a small number of illustrations, specifically Figures 46, 49 and 50, are viewed with the light source to the right.

SEEDS AND SEED-LIKE STRUCTURES

At least ten named and unnamed species of seed and seed-like forms are found within the Chicks Grove Quarry flora along with some worn and indeterminate material.

The word 'seed' is used loosely as some specimens could be ovules dispersed prior to fertilisation, and further study through sectioning may well shed light on the presence or otherwise of embryos. Seed descriptions are based for the most

part on the conventions employed by Brown and Bugg (1975), with the first dimension, 'length', measured along a longitudinal axis extending from the micropyle to the centre of the hilar end. The second dimension, 'width', is measured along a major transverse axis, running at right angles to the longitudinal axis across the broadest point on the seed. The third dimension, 'depth', is measured along a minor transverse axis, at right angles to both of the previous axes. Where planes of symmetry are described they are defined according to the two axes which lie along them. It should be noted that the words 'plane' and 'symmetry' are used in a notional sense for the practical description of underlying structures, and that geometrical perfection is not inferred. Measurements are given to the nearest 0.5mm.

Carpolithes westi and *Carpolithes* cf. *westi* Brown and Bugg

Forty three silicified specimens from Chicks Grove Quarry bear a number of features in common, the clarity of which varies due to probable abrasion. Morphological variations grade into each other across a range of examples. They are all wedge-shaped with a pointed end and a broadened end, and most have bilateral symmetry and between two and four longitudinal ridges. Examples are illustrated in Plate 1, Figure 1 (V.65175) and Figure 2 (V.65173). For measurements see Table 1.

Identification to the species *Carpolithes westi* on the basis of morphological evidence can be made for V.65175 through comparison with the Type Specimen (V.44914) (Brown and Bugg 1975, Plate 58, Fig. 1) from the 'Fossil Forest' horizon of the Basal Purbeck Beds of Portesham Quarry, Dorset. The less abundant form represented by V.65173 is referred to here as *Carpolithes* cf. *westi* and is similar to specimens from the Morrison Formation of Utah, one of which is illustrated in Plate 1, Figure 3 and was collected by Richard Dayvaut from the slopes of Mount Ellen in 2005. The broad, squared off end is often indented into a V-shape in the Morrison Formation specimens, several of which have been illustrated by Dayvaut and Hatch (2003, Fig. 31). A number of similar examples in the NHM's Morrison Formation collection are labelled *Araucaria* and *Araucaria* sp. It is of note that the Morrison Formation specimens are interpreted as 'cone scales' in the USA, with a cavity sometimes exposed by separation of the uneven 'halves' interpreted as a seed compartment (Dayvaut and Hatch 2003, 243). Brown and Bugg,

who worked with several sectioned specimens of *C. westi*, considered it possible that the 'seeds' were in fact the basal seed-bearing parts of cone scales of the co-occurring Araucarian cone *Araucarites sizerae*. Although there were reasons for doubting this specific possibility, it remains likely that the Chicks Grove Quarry specimens described above are in fact cone scales. Brown and Bugg (1975, 434) also referred to similar specimens from the English Inferior Oolite as having been illustrated by Seward in 1904 as '*Araucarites*'.

Table 1: Measurements of specimens of *Carpolithes westi* and associated material

	Length	Width	Depth
Chicks Grove V.65175	9mm	5mm	3mm
Chicks Grove V.65173	8mm	5mm	4mm
Portesham General range	4-8mm	2-5mm	2mm (in typical example)
Morrison Pl.1, Fig.3	8mm	6mm	4mm

Carpolithes rubeola Brown and Bugg

The seed illustrated in Plate 1, Figure 4 (V.65155) is one of ten similar specimens from Chicks Grove Quarry with micropylar point, rounded hilar end, lumpy surface texture and two planes of symmetry. Some specimens have several surface ridges radiating from the micropylar point.

Comparison with the Type Specimen of *Carpolithes rubeola* (V.44908) (Brown and Bugg 1975, Plate 58, Fig. 14) from the Basal Purbeck Beds of Portesham Quarry permits a clear identification of V.65155 to that species on morphological evidence. There is one discrepancy with the Portesham Quarry diagnosis, which refers to three strong, irregularly spaced ridges. Chicks Grove Quarry specimens have two strong ridges in opposite or near opposite alignment, sometimes beginning to split, as can be seen in the SEM image in Plate 6, Figure 66 (V.65154). Although direct observation of the Type Specimen (V.44908) at the NHM does indeed confirm the existence of three strong ridges, two of these are in almost opposite alignment and apparently lie along one of the notional planes of symmetry identified in the Chicks Grove Quarry specimens. Under these circumstances the third ridge can be seen as unlikely to have any key

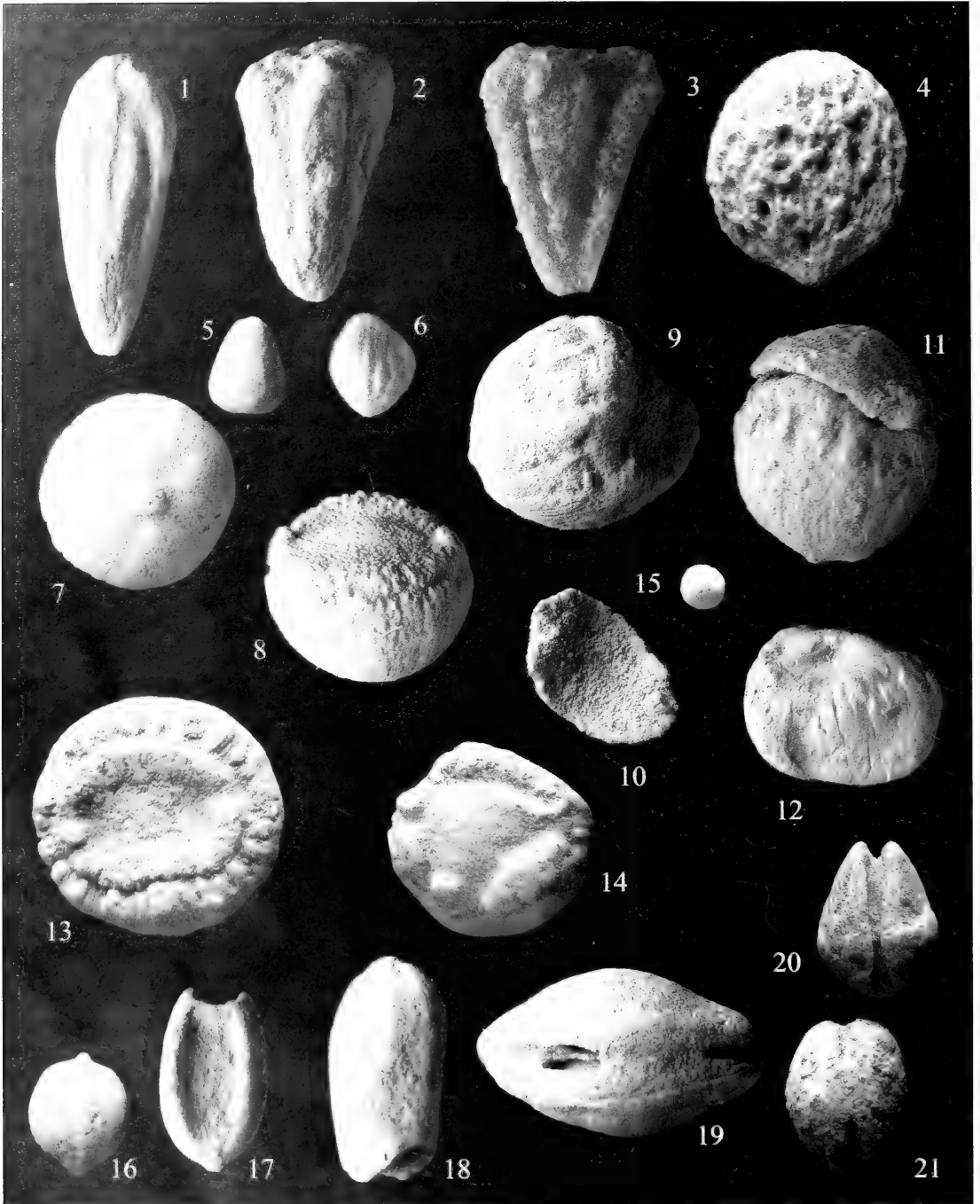


Plate 1

structural significance, and in fact the difference between 'strong' and 'weak' ridges is not at all clear on some of the Chicks Grove Quarry specimens. A further four seeds from Chicks Grove Quarry fall within a smaller size range and probably belong to the species *Carpolithes rubeola* (see Table 2).

Table 2: Measurement ranges of *Carpolithes rubeola*, *C. gibbus* and *C. acinus*

	Length	Width	Depth
<i>C. rubeola</i> Chicks Grove	6-9mm	5.5-7mm	4-6mm
<i>C. rubeola</i> Portesham	6mm	6mm	5mm
cf. <i>C. rubeola</i> Chicks Grove (small seeds)	4-5mm	3.5-4.5mm	2-3mm
<i>C. gibbus</i> Chicks Grove	2.5-3mm	2mm	1mm
<i>C. gibbus</i> Portesham	3mm	1.5mm	1mm
<i>C. acinus</i> Chicks Grove (V.65168)	3.5mm	3mm	1mm
<i>C. acinus</i> Portesham (V.44919)	3mm	2mm	0.4mm

Carpolithes gibbus Brown and Bugg

One of five small seeds from Chicks Grove Quarry with a markedly convex, keeled surface is illustrated in Plate 1, Figure 5 (V.65166). The opposite surface ranges from slightly concave to slightly convex and the seed has a micropylar point and shouldered hilar end.

Identification to the species *Carpolithes gibbus* can be made through comparison with two specimens from the Basal Purbeck Beds of Portesham Quarry. These are the Type Specimen (V.44924) and a second sectioned specimen (V.44923) (Brown and Bugg 1975, 433).

It is proposed that on the basis of size (see Table 2) and morphology this seed and the four specimens similar to it sufficiently match the diagnosis for *Carpolithes gibbus* to be attributable to that species.

Carpolithes acinus Brown and Bugg

The seed illustrated in Plate 1, Figure 6 (V.65168) is one of twelve similar specimens from Chicks Grove Quarry. The photographed surface is convex with fine longitudinal striations running between a probable micropylar point and rounded hilar end. The latter is typically flatter in other specimens. The opposite surface of the seed is almost flat.

On key features the Chicks Grove Quarry specimens match the diagnosis for *Carpolithes acinus* made on the basis of two specimens from Portesham Quarry (V.44918 and V.44919) (Brown

and Bugg 1975, 433). Although they are generally larger (see Table 2) it is proposed that they be attributed provisionally to *C. acinus* on the basis of the compelling morphological similarity.

Carpolithes glans Brown and Bugg

The six seeds from Chicks Grove Quarry illustrated in Plate 1, Figure 7 (V.65162), Figure 8 (V.65158), Figures 9-11 (V.65165), Figure 12 (V.65159), Figure 13 (V.65163) and Figure 14 (V.65164) have been selected from a group of twelve seeds representing what is interpreted as one species in varying stages of development. A number of distinctive diagnostic features are present in all specimens, although not all the seeds exhibit all these features.

From a micropylar point (Figures 7, 9 and 11) longitudinal ridges (Figures 7, 8, 9, 11 and 12) extend outwards towards an irregular, lumpy basal ridge (Figures 8, 9, 11, 12, 13 and 14). The ridge surrounds a flattened area that is typically slightly convex (Figures 8, 9, 12 and 14) but that in one specimen is concave (Figure 13). Two scars or small projections are typically present at opposite points on the boundary between the basal ridge and the flattened area within (Figures 8 and 13), although in one possibly malformed specimen three scars are present (Figure 14) and in one specimen (Figure 12) no scars are present. One specimen (Figure 9) has a cover (Figure 10) which was attached at the two scar points and became detached during collecting. Seed and cover are seen reversibly reassembled with PVA in Figure 11. In transverse section the seeds range from rounded (Figures 7 and 13) to elliptic (Figure 8). In most specimens a structural plane of symmetry incorporating the longitudinal and major transverse axes passes through the micropylar point and the basal scars. Along this plane a ridge or split extends outward from the micropylar point in several specimens (not illustrated), although in one specimen (Figure 7) this feature is represented by a depression.

A possible developmental sequence for these seeds begins with Figure 12 in which the cover appears still to be fused to the seed, followed by Figure 11 in which the cover is only held by two attachment points. In the next stage (Figure 8) the cover is shed and in the final stage (Figure 13) the seed opens out from elliptic to rounded in cross section, length reduces and the flattened basal area becomes concave. Whether the cover originated from the integument or from partial fusion of a cupule onto the seed is not yet clear. A possible function was to maintain the seed in

a state of physical dormancy until the arrival of environmental conditions favourable for germination. Separation could have been triggered by heat from a forest fire or by moisture. In the case of moisture the cover could have functioned in a comparable manner to the operculum or chalazal cap found in some present-day seeds (see Baskin and Baskin 1998, 39).

Table 3: Measurements of *Carpolithes glans*

	Length	Width	Depth
Portesham V.44911	5mm	4mm	4mm
Chicks Grove V.65162 Pl.1, Fig.7	6mm	7mm	7mm
Chicks Grove V.65165 Pl.1, Fig.9	7mm	6.5mm	5.5mm
Chicks Grove V.65159 Pl.1, Fig.12	6mm	7mm	4mm
Chicks Grove V.65163 Pl.1, Fig.13	4mm	8mm	8mm

Two seeds from Portesham Quarry from which the species *C. glans* was described (Brown and Bugg 1975, 431-432) possess key diagnostic features found in the Chicks Grove Quarry specimens. These include the protruding micropylar point, longitudinal ridges, lumpy basal ridge and flattened area within. The diagnosis does not refer to the scars or projections, but examination of the Type Specimen at the NHM (V.44911) reveals one very distinct such projection and a scar marking the apparent position of a second one. The morphological similarities thus lead to a clear interpretation of the Chicks Grove Quarry seeds as *Carpolithes glans*. Measurements of the Type Specimen and some of the Chicks Grove Quarry specimens are given in Table 3.

Undescribed forms attributable to the genus

Carpolithes Schlotheim

One round, saucer-shaped seed from Chicks Grove Quarry (V.65169) measures only 1mm across and is illustrated in Plate 1, Figure 15. It is referred to here as *Carpolithes* sp. and could well merit comparison with round to oblate seeds measuring between 0.5mm and 2.0mm in diameter from the Morrison Formation at Mount Ellen, Utah. The latter seeds are found in association with cone scales comparable to the *Carpolithes westi* and *Carpolithes* cf. *westi* specimens from Chicks Grove Quarry, and have been described as probably originating from

these scales (Dayvault and Hatch 2003, 243).

Three other seed and seed-like forms from Chicks Grove Quarry are to the author's knowledge undescribed and, in line with the taxonomic approach adopted by Brown and Bugg (1975), can be placed provisionally in the form genus *Carpolithes*. Each form is represented by two specimens and, as none has been sectioned, they are not formally described at this stage but are referred to as Form A, Form B and Form C. A number of other specimens from Chicks Grove Quarry of a worn or indeterminate nature can be classed as *Carpolithes* sp..

Form A is represented by two seed-like structures measuring 3.5mm in length between what are provisionally interpreted as a micropylar point and a hilar point, 3mm in width and 1.5mm in depth. One of these specimens (V.65157) is illustrated in Plate 1, Figure 16. They are rounded between the micropyle and the hilar end and symmetrical on two planes.

Form B is represented by two specimens measuring 5.5mm in length between what are provisionally interpreted as a micropylar point and a concave hilar end, 3mm in width and 1mm in depth. One of these specimens (V.65156) is illustrated in Plate 1, Figure 17. Symmetry is as with Form A above, and when viewed parallel to the major transverse axis the structure can be seen as boat-like with thickened outer rims running between the micropylar point and the outer edges of the double-pointed hilar end.

Form C is represented by two damaged specimens, both of which were possibly partially eaten prior to fossilisation. The more complete of these specimens (V.65177) is illustrated in Plate 1, Figure 18. The intact end is provisionally interpreted as a micropylar point, and the missing end of the seed as the hilar end. The length of what survives of the seed is 6mm, width is 4mm and depth 3mm. A key defining characteristic of this seed is four raised longitudinal ridges arranged in two almost symmetrical opposite pairs

cf. *Jensensispermum* Chandler

The three seeds from Chicks Grove Quarry illustrated in Plate 1, Figures 19-21, share the common features of a broad groove on each side running from between two projections at one end to a more rounded opposite end. Shape ranges from sub-elliptic to sub-globular. The largest seed with the best preserved surface detail (Figure 19, V.65170) is 10mm long and has a cavity on each side

in the groove towards the rounded end. Two small longitudinal ridges with nascent splits run from each of the two projections. The seed illustrated in Figure 20 (V.65171) is flattened, possibly due to compression along the plane of the photograph. With a length of 6.5mm it is provisionally interpreted as an abraded seed of the same species as V.65170, as is the more rounded seed illustrated in Figure 21 (V.65172) and one other similar specimen not illustrated.

Seed casts from the Morrison Formation of Utah with some similar diagnostic features were described by Chandler (1966) as *Jensensispermum redmondi* and considered as possibly belonging to an unknown Cycadophyte family. One specimen, described as 'apparently referable to this species ... with most of the integument preserved' (Chandler 1966, Plate 5, Figure 47) had projections similar to those on the Chicks Grove Quarry specimens. These were referred to as 'upper' and 'lower' jaws and seen as marking the micropylar end, with the opposite end the hilar end. The grooves were described as lying on a plane of weakness and cavities towards the hilar end were noted. More rounded Morrison Formation specimens of *J. redmondi* also possess the plane of weakness and are similar to but not identical to V.65172 (Figure 21). Some features described by Chandler, such as a differentiation between endosperm on one side and chalazal region on the other side of the plane of weakness, are not identifiable in the Chicks Grove Quarry specimens.

The similarities in shape and structure between the Chicks Grove Quarry specimens illustrated in Plate 1, Figures 19-21 and certain specimens from the Morrison Formation provisionally or definitely attributed to *Jensensispermum redmondi* require further research. Comparative size ranges (see Table 4), with width measured parallel to the plane of illustration in the Chicks Grove Quarry specimens, reveal similarities in length and width but a discrepancy in terms of depth. Evidence suggests a close relationship but not a species match. Under these circumstances it is proposed that the Chicks Grove Quarry specimens be provisionally referred to as cf. *Jensensispermum*.

Table 4: Measurement ranges of *Jensensispermum redmondi* and cf. *Jensensispermum*

	Length	Width	Depth
Morrison (Chandler 1966)	6-10mm	5-9mm	5-9mm
Chicks Grove Quarry	5-10mm	5-6mm	4-4.5mm

SHOOTS

Petrified shoots from Chicks Grove Quarry display considerable variation in size and morphology and ten specimens are examined here. Several other specimens have been collected, although many of these are incomplete, damaged or badly abraded. None appears to match previously described material from the Jurassic strata of Great Britain.

Behuninia provoensis (Chandler) Tidwell and Medlyn

Four shoots illustrated in Plate 2, Figures 22-23 and 25-26, all taper to pointed or rounded apices and each has an attachment or foot. In Figure 22 (V.65128), in which the apex is missing from the photograph, the attachment is incomplete and abraded and the shoot, 25mm long and 10mm in diameter, has an irregular surface with occasional longitudinal furrows. Transverse sectioning of V.65128 reveals an internal structure of pith surrounded by radiating secondary xylem tracheids with weak concentric rings, illustrated in Plate 6, Figure 67 (V.65128\$1). A longitudinal section illustrated in Plate 6, Figure 68 (V.65128\$2), shows the central pith and secondary xylem, and a longitudinal detail of the pith is illustrated in Plate 6, Figure 69. The shoot illustrated in Figure 23 (V.65108), 31mm in length, has a better preserved attachment although there is some damage to the shoot, which occurred prior to collecting. Longitudinal grooves are clearly discernible. A shoot 18mm in length (V.65180) is illustrated in Figure 25, with a swelling towards the tapered apex. The specimen illustrated in Figure 26 (V.65101) is 60mm long and also has a swelling towards the tapered apex. Direction of growth appears to have changed at the first of a series of three small knot-like scars. In contrast to the three previously described specimens V.65101 is not rounded in transverse section but essentially three-sided. Fine longitudinal striations mark the surface.

The Holotype of a rounded-obconical 'seed' from the Morrison Formation of Utah described by Chandler (1966) as *Carpolithus provoensis* shares key diagnostic features with V.65128 (Figure 22), having a length of 26mm, a diameter of 9-11mm, a tapered apex and longitudinal furrows. The attachment is absent. *C. provoensis* was later emended to a short shoot species, *Behuninia provoensis*, probably of a conifer (Tidwell and Medlyn 1992), following the discovery in Utah of specimens with

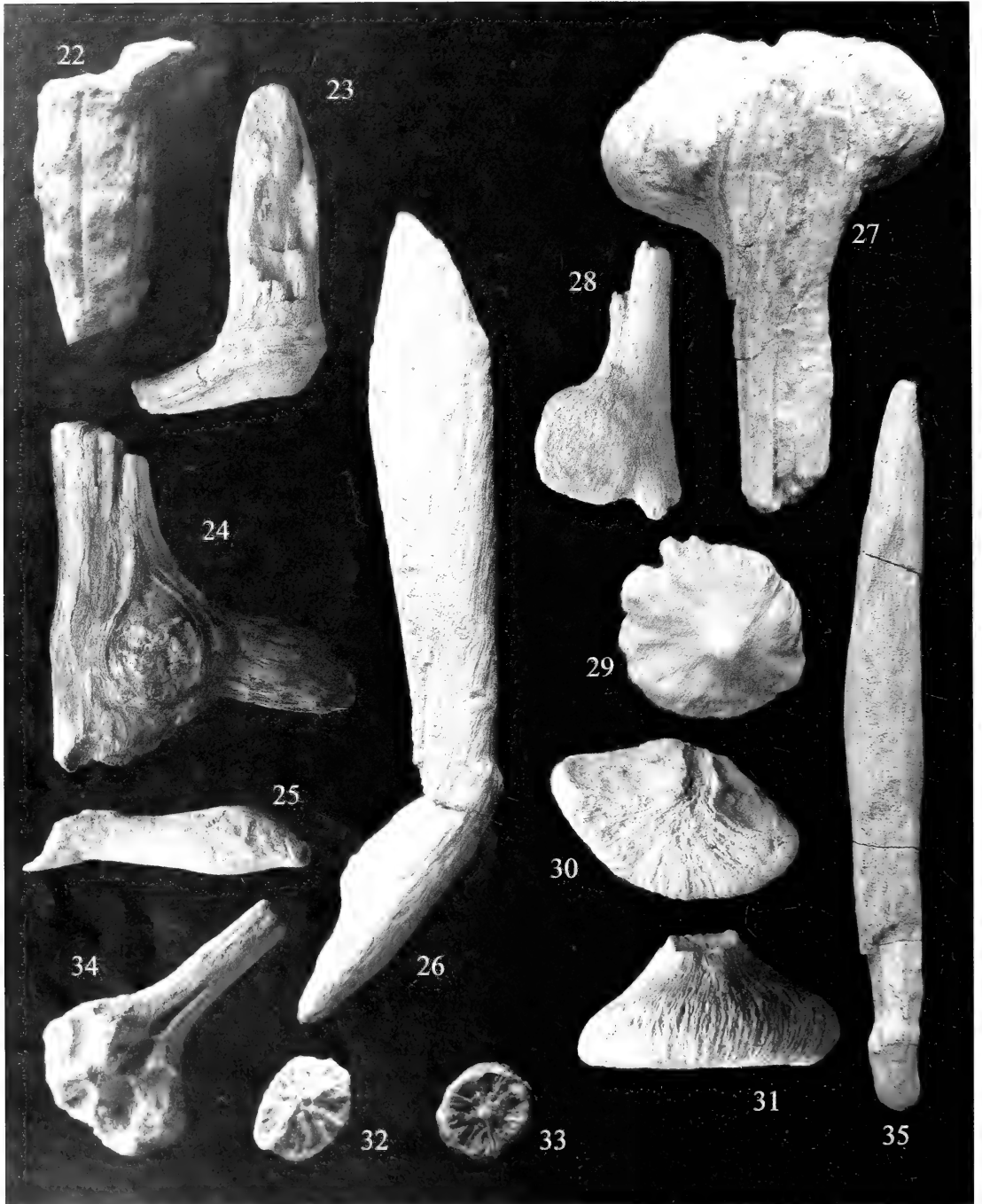


Plate 2

internal preservation. The shoots were usually decorticated and composed of central pith with radiating secondary xylem tracheids (Tidwell and Medlyn 1992, Plate 2, Fig. 3), as is the case with V.65128\$1 (Figure 67). The weak ring structure in a Utah specimen, once again comparable to that in V.65128\$1, was interpreted as pseudo rings in the secondary xylem (Tidwell and Medlyn 1992, Plate 2, Fig. 2).

More recent collecting from Utah has produced large quantities of *B. provoensis* shoots, several of the more spectacular specimens having been illustrated by Dayvault and Hatch (2003) and Daniels and Dayvault (2006). A specimen from the Henry Mountains of Utah is illustrated in Plate 2, Figure 24, with a 17mm long shoot attached to a stalk. The comparison with Figure 23 (V.65108) demonstrates the way in which the Chicks Grove Quarry specimens would have looked prior to becoming detached.

A specimen of *B. provoensis* with attachment and swelling towards the tapered end (Tidwell and Medlyn 1992, Plate 1, Fig. 14) compares closely with V.65180 (Figure 25). Similar specimens from Utah in varying stages of development are illustrated by Dayvault and Hatch (2003, Fig. 8).

It is proposed that the three Chicks Grove Quarry specimens illustrated in Plate 2, Figures 22, 23 and 25 are attributable to the species *B. provoensis* on the basis of morphology and internal structure. V.65101 (Figure 26) is more enigmatic. The fine striations could be what were interpreted as needle scars by Tidwell and Medlyn (1992) on Utah specimens, but this is not clear and in view of the different outline in cross section it is here referred to as *Behuninia* cf. *provoensis*.

Behuninia cf. *joannei* (Chandler)

Two examples of bulbous and rounded shoots from Chicks Grove Quarry are illustrated in Plate 2, Figures 27 and 28. Figure 27 (V.65111) is provisionally interpreted as a pair of shoots on a longitudinally split section of stalk, with the stalk truncated at both ends. Length is 31mm and maximum width 22mm. Seen from the opposite side to that illustrated, however, the two lobes are not separately distinguishable and the appearance is of a single large swelling. The specimen appears to have undergone considerable abrasion. Figure 28 (V.65141) is interpreted as a single shoot on a stalk. The stalk is 15mm long, the shoot has a maximum width of 6mm, and the specimen is flattened and was probably compressed prior to silicification.

Casts from the Morrison Formation of Utah with similar morphologies were described by Chandler (1966) as seeds of the family Cycadales under the name *Behuninia joannei*. A specimen illustrated by Chandler (1966, Plate 4, Fig. 37) with a maximum width of 21mm exhibits a number of similar characteristics to V.65111 (Figure 27), including two lobes with a stalk that swells as it passes between them. This specimen remained allocated to the species *B. joannei* when Tidwell and Medlyn (1992) emended *Behuninia* to a short shoot genus, probably coniferous.

A specimen similar in many respects to V.65141 (Figure 28) with a shoot width of 8mm was also illustrated by Chandler (1966, Plate 1, Fig. 7) as *B. joannei*. Common features include direction of growth at the top of the stalk angling away from the direction of growth of the shoot. This latter specimen was reallocated by Tidwell and Medlyn (1992) to the new species *Behuninia scottii*. The species diagnosis for *B. scottii* described the shoots as 'detached or oppositely attached' (Tidwell and Medlyn 1992, 230), neither of which applies to the Chicks Grove Quarry specimen. The emended diagnosis for *B. joannei* specified opposite to sub-opposite attachment, but in the light of an illustration of a single and opposite pair of shoots on a single stalk (Dayvault and Hatch 2003, Fig. 21 bottom left) and of other illustrations of newly discovered material the comparison with *B. joannei* is seen as more valid.

With an insufficient range of specimens from Chicks Grove Quarry for formal identification of the species *B. joannei*, it is proposed that the specimens described above with some matching diagnostic features be referred to as *Behuninia* cf. *joannei*.

Steineroaulis radiatus (Chandler) Tidwell and Medlyn

Two peltate specimens from Chicks Grove Quarry with short stalks and a diameter of approximately 8mm are illustrated in Plate 2, Figure 29 (V.65143) and Figures 30-31 (V. 65150). The surface of the former is marked by radiating ridges and furrows leading to a rim that on one section is heavily indented. The latter is a broken half which exposes a central canal and exhibits fine surface detail in the form of small striations extending from the stalk to the flattened top and down into the canal. Of four specimens similar in basic morphology collected from Chicks Grove Quarry one is now in the Dayvault collection and has been illustrated by Daniels and Dayvault (2006, 290)

Similar specimens from the Morrison Formation of Utah were described by Chandler (1966) as seeds and named *Carpolithus radiatus*. A specimen similar to V.65143 (Figure 29) with a 'sharply angled circumference (abraded)' was illustrated by Chandler (1966, Plate 9, Fig. 96). Illustrated Utah specimens all appear to be more abraded than V.65150 (Figures 30 and 31), but in general morphology the specimen matches a Syntype described by Chandler (1966, Plate 9, Figures 93-95). Most *C. radiatus* specimens described by Chandler were later reallocated to a probable short shoot species *Steineroaulis radiatus* (Tidwell and Medlyn 1992).

Steineroaulis radiatus is one of the more readily identifiable of the Chicks Grove Quarry species, although larger specimens and fig-shaped or bulbous specimens attributed to the species in the western U.S.A. (Chandler 1966, Dayvault and Hatch 2003, Daniels and Dayvault 2006) appear to be absent at Chicks Grove Quarry.

Unidentified shoots

An unidentified fragment from Chicks Grove Quarry (V.65183) that is probably part of a short shoot is illustrated in Plate 2, Figure 32. With a diameter of 3mm to 4mm it shows a strong radial structure that is typical of short shoots, lignotubers and associated stalks. This structure is more pronounced in smaller specimens (Daniels and Dayvault 1996, 289), as is the case here. The specimen illustrated in Plate 2, Figure 33 (V.65187) has a diameter of 3mm and demonstrates a similar structure, with the central canal particularly prominent. This fragment was collected from the Cherty Freshwater Member of the Lulworth Formation, Middle Purbeck, at Durlston Bay, Dorset, and is thus of Berriasian age and from the Lower Cretaceous. There is thus some evidence that plants producing the types of shoots found at Chicks Grove Quarry were present across the Jurassic-Cretaceous transition and well into Purbeck times.

The unidentified short shoot from Chicks Grove Quarry (V.65139) illustrated in Plate 2, Figure 34, measures 13mm in length and a maximum of 8mm across the bulbous terminal swelling. In many respects it is similar to the specimen illustrated in Plate 2, Figure 26, interpreted as *Behuninia* cf. *joannei*. Both have relatively slender and slightly flattened stalks terminating in swollen shoots and both, on the side not illustrated, are distinctly bulbous. The unidentified specimen is much smaller and shows no evidence of division

into a pair of shoots. Its most distinctive feature is the socket-like indentations, so unlike the tiny indentations on some Morrison Formation specimens interpreted by Tidwell and Medlyn (1992) as the scars of conifer needles. Whether this particular short shoot has been the subject of disease or predation, or is leaf or seed bearing, is at present unclear.

The long, slender, pointed shoot (V.65106) from Chicks Grove Quarry illustrated in Plate 2, Figure 35, is 50mm long and 5mm across at its broadest point. Although resembling in some respects a fully elongated *B. provoensis* shoot as illustrated from the Morrison Formation by Dayvault and Hatch (2003, Fig. 8), this specimen cannot be assigned to that species. The base is unlike the typical attachments on *B. provoensis*, consisting of a short rounded section some 5mm long beneath a swelling, at which point there is a slight change in the direction of growth. Towards the tip or apex the shoot bears a resemblance to an unopened bud, and the cross-section is three-sided rather than rounded as in most *B. provoensis* specimens.

LIGNOTUBERS, CORM-LIKE SPECIMENS AND SEEDLINGS

The fig-like specimen from Chicks Grove Quarry illustrated in Plate 3, Figure 36 (V.65123) has a diameter of 14mm and a truncated stalk with a diameter of 3.5mm. The top, not illustrated, is slightly concave. A specimen with two swellings (V.65120), possibly compressed prior to silicification, is illustrated in Plate 3, Figure 37. Total length is 24mm and the diameter of the truncated stalk 5mm. A similar swelling attached laterally to a stalk 25mm long with a diameter at the base of 6mm is illustrated in Plate 3, Figure 38 (V.65112).

The above three specimens are interpreted as lignotubers on the basis of comparison with Cerro Cuadrado specimens. V.65123 (Figure 36) is directly comparable with a much larger but morphologically all but identical specimen interpreted as an aerial lignotuber by Stockey (2002, Fig. 1). V.65120 (Figure 37) is similar to a much larger Cerro Cuadrado specimen interpreted as a lignotuber with two swellings (Stockey 2002, Fig. 4), but differs in that the swellings appear to be at a more advanced stage

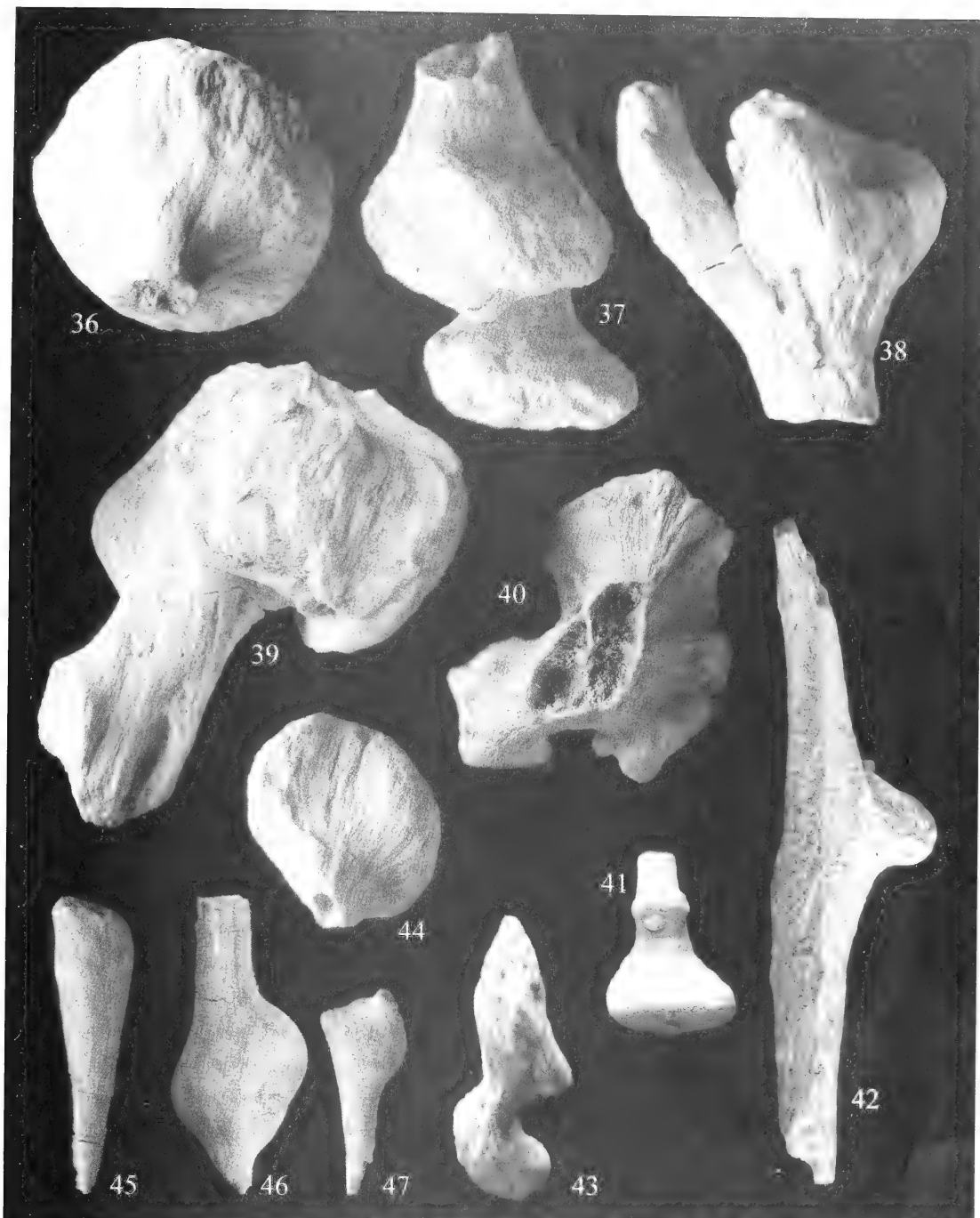


Plate 3

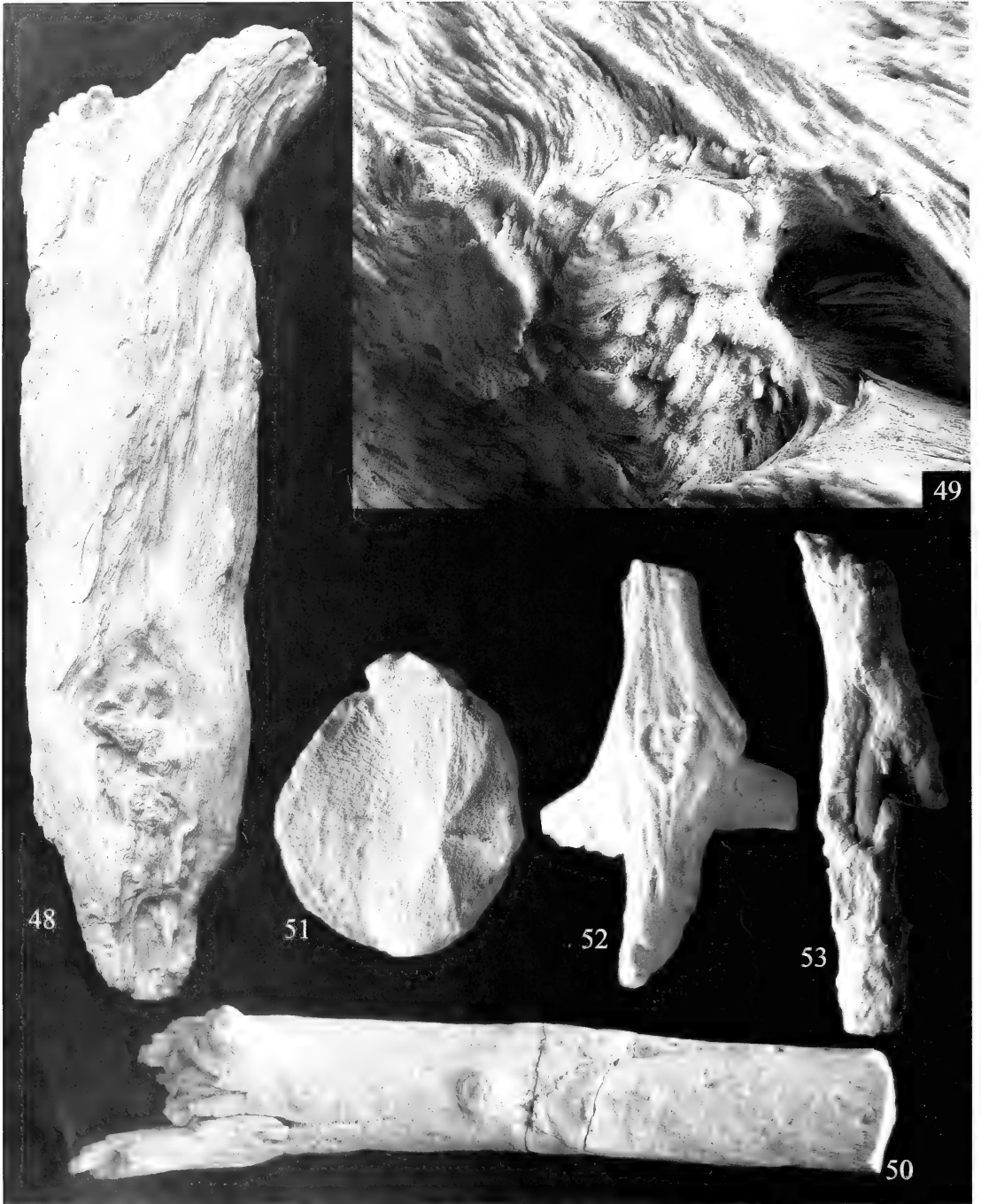


Plate 4

of separation. The swelling on V.65112 (Figure 38) is similar to those described above, other than in details of the attachment to the stalk.

The Chicks Grove Quarry specimen illustrated in Plate 3, Figures 39 and 40 (V.65113) measures 26mm along the truncated axis or stalk. A large double swelling wraps around two sides of the stalk (see Figure 40, right and top of truncated axis), which also has two small swellings (see Figure 39, left, and Figure 40, left). The specimen could be a lignotuber and buds, but is atypical and can be compared with 'unusual siliceous wood structures' from the Morrison Formation of Utah illustrated by Daniels and Dayvault (2006, 303).

Specimens from Chicks Grove Quarry illustrated in Plate 3, Figure 41 (V.65126, length 18mm), Figure 42 (V.65134, length 35mm) and Figure 43 (V.65133, length of bud 5mm) are swellings and buds that are provisionally interpreted as early stage lignotubers. Small projections, probably the apices of developing lignotubers, are visible in Figure 41 and, at the junction between the bud and the stalk, in Figure 42. Figure 43 is a view looking along a stalk to a developing bud.

Of five small corm-like specimens from Chicks Grove Quarry by far the best preserved (V.65148) is illustrated in Plate 3, Figure 44. Measuring a maximum of 8mm across, it has many similarities with a much larger corm-like specimen from the Cerro Cuadrado illustrated by Calder (1953) under the heading 'Seedlings (cf. *Araucaria mirabilis*)'. It also resembles a larger specimen from the Morrison Formation illustrated by Tidwell and Medlyn (1992, Plate VI, Figs. 7-11) and compared by Stockey (2002) with lignotubers and specimens of *Steineroaulis*. In the case of Chicks Grove Quarry specimens a clear differentiation between small corm-like structures and specimens of *S. radiatus* can be made.

A specimen that in many ways resembles a *Behuninia provoensis* short shoot is illustrated in Plate 3, Figure 45 (V.65144), but it lacks the typical attachment and is more rounded at the broader end. It could be a swollen hypocotyl comparable with elongated carrot-like structures from the Cerro Cuadrado (Stockey 2002).

The specimen (V.65145) illustrated in Plate 3, Figure 46, is more enigmatic. With a total length of 19mm, it could be a small corm-like structure or lignotuber that has begun to root. The scarred area at the bottom right of the illustration could be a contact area with the ground. The small 12mm long specimen (V.65184) illustrated in Plate 3, Figure 47,

may represent an earlier stage of development.

A more detailed interpretation of many of these specimens is needed. What is very noticeable about several Chicks Grove Quarry specimens is the considerable resemblance to Cerro Cuadrado and Morrison Formation specimens but in miniature form. The plants from which they came were either juveniles or dwarf species, or the material had been sorted by size during transport and deposition.

WOOD

The largest single plant petrification from Chicks Grove Quarry collected by the author is a piece of wood (V.65098) measuring some 300mm in length with a diameter ranging from 50mm to 72mm. It is illustrated in Plate 4, Figure 48. The preservation of surface detail along the left hand side of the illustration is good, with fine lines that might represent cracks or insect traces. A detail is illustrated in Plate 4, Figure 49, centred on the small knot visible along the right hand edge of the previous illustration some two thirds of the way up. Within the depression to the right of the knot bundles of fibres can be seen, and it appears that the process of silicification was only partially complete at this point. A transverse thin section of the specimen (V.65098\$1) illustrated in Plate 6, Figure 70, reveals a clear ring structure with irregular spacing comparable to that illustrated by Francis (1984, Figs. 5b and 5c) for *Protocupressinoxylon purbeckensis* from the Purbeck 'Fossil Forest' horizon.

The smaller piece of wood (V.65100) illustrated in Plate 4, Figure 50, measures 85mm in length and is flattened in cross section, with the diameter ranging from 8mm to 14mm. The broken end was found exposed in the quarry face following quarrying operations and an unknown amount of the specimen had been lost. The view on to this truncated end illustrated in Plate 4, Figure 51, shows both radiating secondary xylem tracheids and fine concentric rings.

The twig with lateral branching twigs or shoots (V.65122) illustrated in Plate 4, Figure 52, measuring 25mm in length, is probably an abraded piece from a short shoot/long shoot system. It can be compared to the centre part of a *Behuninia* sp. stalk from the Morrison Formation illustrated by Dayvault and Hatch (2003, Fig. 18) and to *B. provoensis* specimens illustrated by Daniels and

Dayvault (2006, 286). The two truncated branches are in the typical positions of a pair of opposite shoots.

The small twig (V.65182) illustrated in Plate 4, Figure 53, is 15mm long and has a truncated branching twig about half way along its length. It is unusual in the apparent preservation of a layer of bark around a thin core, exposed at the centre, measuring about 1mm in diameter.

MISCELLANEOUS MATERIAL

A range of unidentified material from Chicks Grove Quarry is introduced here with only a brief examination of some of the more distinctive specimens. Once again only sectioning and examination under the microscope will reveal the possible significance of much of this material, which includes a number of forms that are so far represented by a single specimen.

A possible example of a complete cone (V.65186) is illustrated in Plate 5, Figure 54. Measuring 15mm in length, the specimen is very abraded but in overall morphology can be compared with a cone of *Pararaucaria patagonica* with pedicel illustrated by Calder (1953, Plate 6, Fig. 62).

A specimen 13mm in length with traces of a scale pattern (V.65135) is illustrated in Plate 5, Figure 55, the pointed end interpreted as marking the point of attachment to the parent plant. The opposite end appears degraded and is characterised by lumps and recesses, with a possible seed exposed. The smaller specimen (V.65136) illustrated in Plate 5, Figure 56, is 9mm long and, although similar to the previous specimen in general shape, is different in surface texture with a few small lumpy projections. The pointed end is interpreted as the point of attachment and at the opposite end the sides slope upwards to a distinct apex.

The underside of a detached scale (V.65132) measuring 14mm from base to apex is illustrated in Plate 5, Figure 58. The upper surface, not illustrated, is fairly flat with a slight ridge running off-centre from the base to the apex. A smaller, narrower scale (V.65146), 12mm in length and with a distinct groove, is illustrated in Plate 5, Figure 57. It is more worn than the previously illustrated specimen and is bilaterally symmetrical.

Another possible yet very different type of scale (V.65114), measuring 21mm from base to

apex, is illustrated in Plate 5, Figures 59 and 60. Figure 59 is of the outer surface, clearly showing the asymmetrical structure. Viewed in conjunction with Figure 60 the apparent manner in which the scale could interlock through overlapping and underlapping with adjacent scales in a whorl or spiral arrangement can be seen.

The specimen (V.65130) illustrated in Plate 5, Figure 61, is 33mm long and is distinguished by its prominent rounded projections. A similarity between these and the robust rhizomes of the Morrison Formation fern *Solenosteleopteris* has been pointed out by Dayvault (2004, pers. comm.). These protrusions arise from the side of the specimen illustrated but not from the opposite side.

The small, hollow, slightly flask-like specimen (V.65179) illustrated in Plate 5, Figure 62, is 6mm long.

The specimen (V.65147) illustrated in Plate 5, Figure 63, has a maximum length of 16mm and at first sight resembles a gall or fungal growth on the end of a worn stalk. Two round holes with a diameter of 1mm, one of which is visible in the illustration, are typical of larval borings.

The specimen (V.65115) illustrated in Plate 5, Figures 64 and 65, resembles a cluster of shoots growing on the end of a stalk. An apparent single shoot is growing from near the base of the stalk, a pair on either side of the stalk at the centre, and a single terminal shoot that appears to be in an early stage of dividing into two at the apex. The possibility that the 'shoots' are developing lignotuber-like structures has also to be considered.

Many of the forms described in this section are represented by a single specimen, demonstrating the potential for more new finds should quarrying operations at Chicks Grove Quarry expose further beds yielding plant petrifications.

THE CHICKSGROVE FLORA IN CONTEXT

The relationship between the Chicks Grove Quarry flora and the 'Fossil Forest' horizon of the Basal Purbeck Beds, which includes the lagoonal clay at Portesham Quarry (Cleal, Thomas and Batten 2001) with fossils possibly originating from a marginal coastal flora, deserves much further study. Some 8m of limestone is all that separates the plant-yielding Bed 25 at Chicks Grove Quarry from the base of the Purbeck Limestone Group

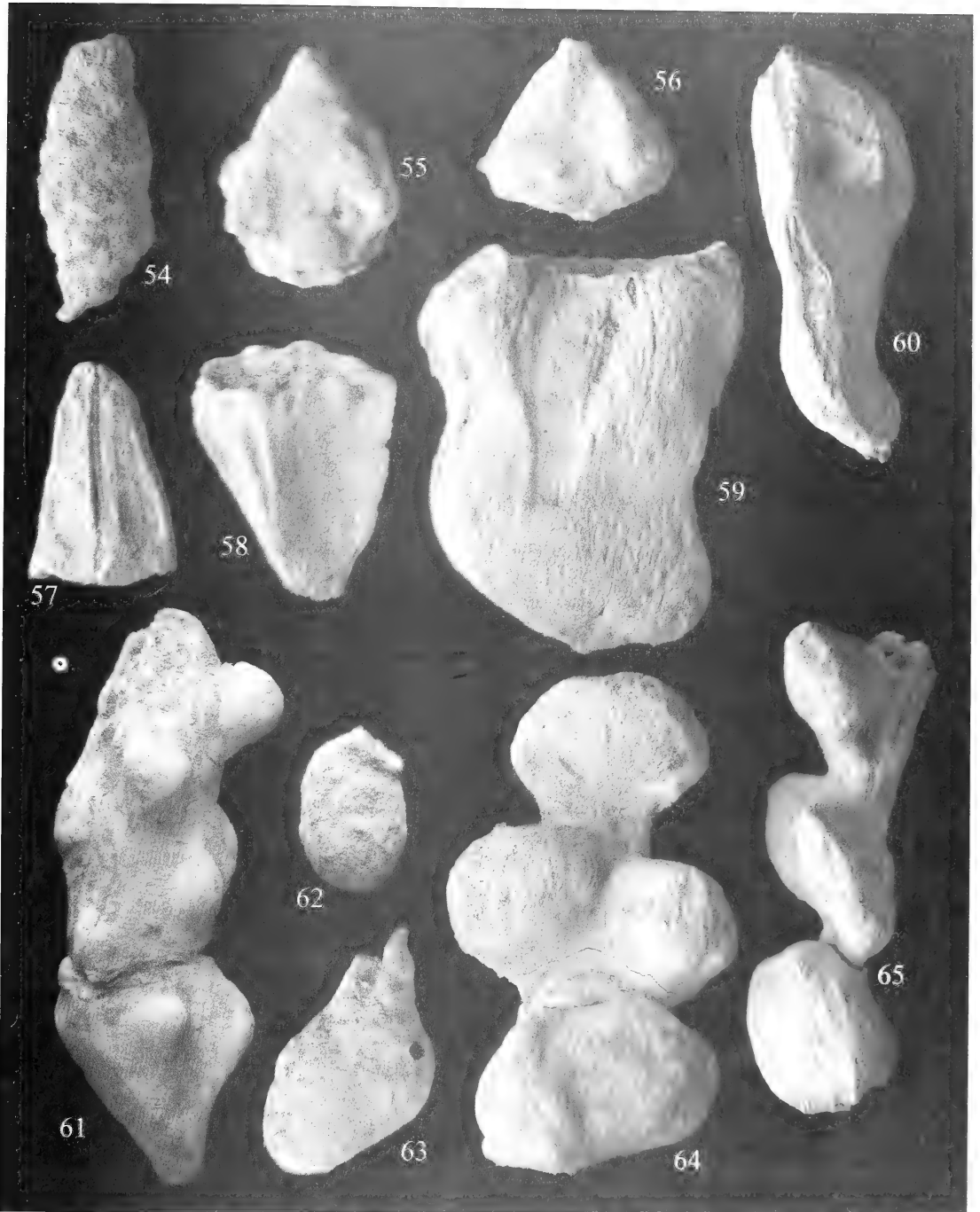


Plate 5

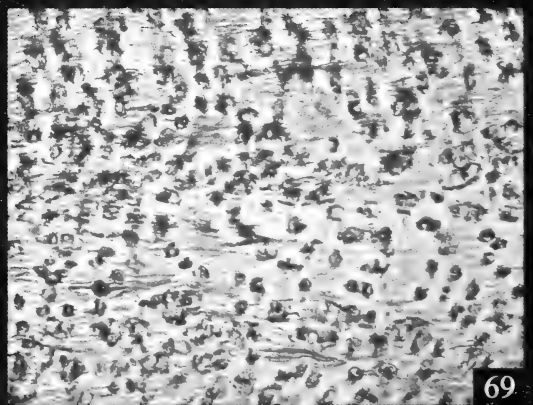
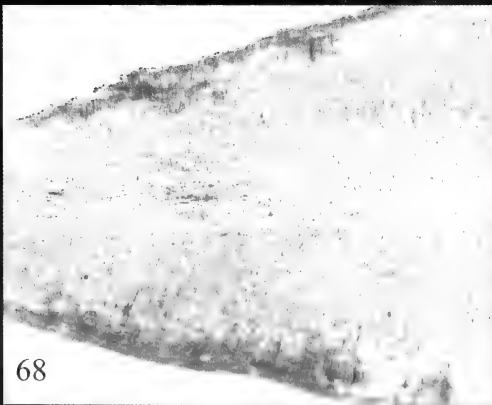
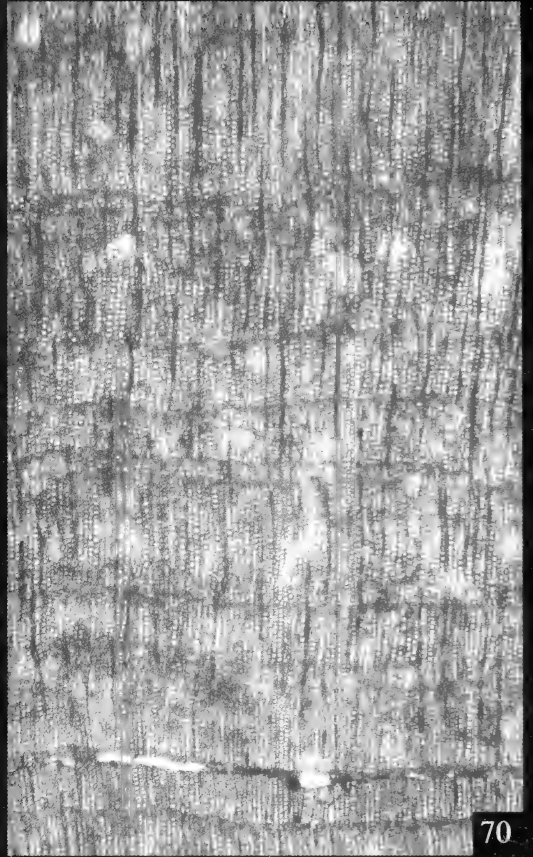
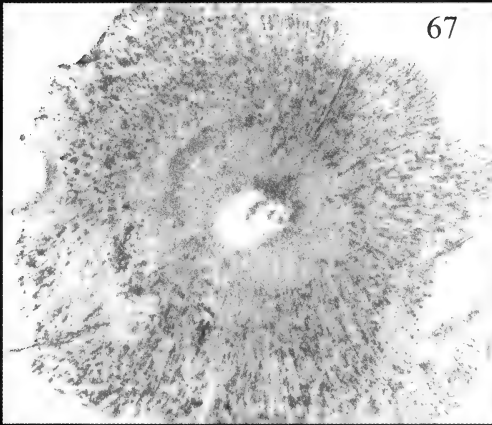
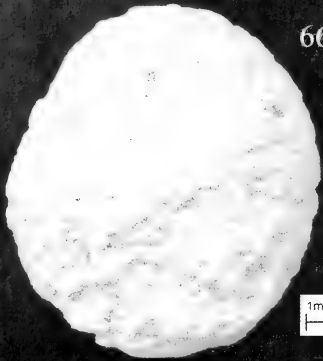


Plate 6

at Bed 34 (Wimbledon 1976), and the similarity of the seed assemblages at Chicks Grove Quarry and Portesham Quarry indicates some common environmental conditions. The presence of *Carpolithes glans* with its specialised if not explained developmental mechanism particularly reinforces this interpretation, as does the similarity of ring structures in wood from Chicks Grove Quarry and the Basal Purbeck Beds. When set against the Purbeck plant macrofossil record, described as 'rather poor' apart from the stumps and trunks of the 'Fossil Forest' (Batten 2002, 13), the potential importance of the Chicks Grove Quarry flora can be fully appreciated. Tentative evidence presented here suggests that short shoot bearing plants could have continued through to Berriasian times within the Purbeck Limestone Group. The accumulated understanding of the complex and changing Purbeck ecosystem, with its abundant vertebrate fauna including 28 mammal species (Milner and Batten 2002), can only be reinforced by findings from the marginally earlier Portland Stone Formation of south west Wiltshire.

In view of the similarities between the seed assemblages of Chicks Grove Quarry and Portesham Quarry it is perhaps unexpected to find short shoots from the former that belong to genera and species previously only definitively identified from the western U.S.A. Shoots have been recorded from the Purbeck 'Fossil Forest' horizon, but they are mostly of the species *Cupressinocladus valdensis* interpreted as the foliage of *Protocupressinoxylon purbeckensis* (Francis 1983). There are, however, other common elements between the Morrison Formation and English Portlandian floras, examples being twigs of the form-genus *Brachyphyllum* from the Basal Purbeck Beds (Brown and Bugg 1975) and Morrison Formation (Tidwell 1990) and seeds or cone scales of or similar to *Carpolithes westi* described above.

The links between the Chicks Grove Quarry flora and the Cerro Cuadrado 'Petrified Forest' are limited but significant. The lignotuber illustrated in Plate 3, Figure 36 (V.65123) and the corn-like specimen in Plate 3, Figure 44 (V.65148) are the clearest examples of a shared floral element. Comparisons made between specimens of *Behuninia* from the Morrison Formation and shoot like specimens from the Cerro Cuadrado (Tidwell and Medlyn 1992, Stockey 2002) introduce a potentially significant further link with *Behuninia* from Chicks Grove Quarry. With further work likely to take place in the future on reconstruction of the Cerro Cuadrado conifers as whole plants, incorporating the study of

shoots, lignotubers and seedlings (Stockey 2002), further light should be cast on similar specimens from the quantitatively far more limited Chicks Grove Quarry material.

In interpreting the climate during the time of the Chicks Grove Quarry flora a considerable body of evidence points to semi-arid conditions with seasonal and year on year variations. Irregularly spaced rings on the Chicks Grove Quarry wood (Plate 6, Figure 70, V.65098\$1) indicate similar conditions to those from the Purbeck 'Fossil Forest' interpreted by Francis (1984) as indicating a seasonal, Mediterranean-style lowland climate with erratic rainfall and droughts. This interpretation largely supports a proposal that the Upper Jurassic climate underwent dramatic aridisation along a broad belt that includes southern England (Vakhrameev 1991). Short shoots from the Morrison Formation have been interpreted as growing on probable conifers in a large forest on a flood plain (Tidwell and Medlyn 1992). The climate on this flood plain has been proposed as close to arid with long dry periods and short wet periods (Peterson and Turner-Peterson, 1987). Hot, dry summers with fires characterise the environments in which lignotuber producing species most commonly grow (del Tredici 1998, cited in Stockey 2002).

Some evidence points to the alternative interpretation of a moist climate. Lack of or faintness of growth rings in short shoots, as seen in the Chicks Grove Quarry specimen illustrated in Plate 6, Figure 67 (V.65128\$1), has been interpreted by Tidwell and Medlyn (1992) from Morrison Formation specimens as indicating a moist climate without any substantial yearly changes. Daniels and Dayvault (2006) refer to the need for the Morrison Formation forests to have supported the associated dinosaur fauna, and suggest that such a forest would have been unlikely to grow in an arid environment. The Chicks Grove Quarry fauna includes a range of dinosaurs (Benton, Cook and Hooker 2005). The Purbeck 'Fossil Forest' has been described as occupying a thickly forested luxuriant coastal swamp (Barker, Brown, Bugg and Costin 1975) and as a 'Jurassic Jungle' in which luxuriant cycads and ferns flourished (Brunsdon (ed.) 2003). It is possible that the answer lies somewhere in between these two interpretations and that some species such as the short shoots grew on plants with a broader climatic range than other plants represented by seeds such as *Carpolithes glans*.

The discovery of an Upper Jurassic petrified flora such as that at Chicks Grove Quarry is a rare

occurrence, offering a tantalising glimpse into a plant world that still holds many secrets. The material that links the Upper Jurassic forests of southern England with those of the western U.S.A. and Patagonia is remarkable enough in itself, and there remains to be studied material that could produce further discoveries. When Chandler first described in detail in 1966 specimens from the Morrison Formation of Utah, she did so on the basis of the misleading resemblance of some of the fossils to angiosperms, her key area of expertise. No angiosperms were found, but the period is one in which their early ancestors were almost certainly present somewhere. What is possibly the earliest known angiosperm leaf was found in Middle Jurassic deposits in southern England, at Stonesfield in Oxfordshire (Cleal, Thomas and Batten 2001), having probably grown along a coastal fringe. Among suggestions for preangiosperm growth habits discussed by Stewart and Rothwell (1993) are semi-arid and seasonally dry environments. These are proposed characteristics of the Purbeck coastal environment, possibly similar to or the same as the environment represented by the Chicks Grove Quarry flora. This is a potentially significant area for future study.

ACKNOWLEDGEMENTS

The support, help and advice of a number of individuals have been essential for the collection of the Chicks Grove Quarry material and for the preparation of this paper. Thanks are due to quarry proprietress Sally Collins for permission to collect from the site on numerous occasions and to manager Bill Maynard for help and assistance. To fellow collector Dr Vivian Stevens FGS thanks are due for his enthusiastic encouragement, for his input into discussions on the sedimentology at the site, and for his detailed comments on the first draft of the manuscript. The librarians at Tisbury Library and Wiltshire Inter-Library Lending never failed to supply requested books and papers essential to the research work. Professor William D. Tidwell of Brigham Young University, Provo, Utah, identified photographs of Chicks Grove Quarry lignotubers and pointed me towards Stockey's (2002) work on Cerro Cuadrado material. A special thanks is due to geoscientist Richard Dayvault of Grand Junction, Colorado, whose collecting expertise and knowledge of Morrison Formation material has been invaluable and who has sent over for comparison a number

of specimens of short shoots from Utah. Dr Paul Kenrick at the NHM offered access to the Morrison Formation and Cerro Cuadrado collections and to the Portesham Quarry material to help with the identification of some of the Chicks Grove Quarry seeds. Dr Kenrick also photographed the thin sections, which were prepared by Tony Wighton of the NHM Mineralogy Department, and read through and commented on the manuscript prior to preparation of the final draft. Dr Peta Hayes at the NHM provided specimen numbers for Chicks Grove Quarry material included in this work and produced the SEM micrograph reproduced in Plate 6, Figure 66. John Morley of Stalbridge, Dorset, deserves a special thanks for producing the high quality digital photographs reproduced in Plates 1 to 5 and for assembling the plates.

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FIGURES

PLATE 1

All specimens are from Chicks Grove Quarry except Fig.3. Scales vary.

- Fig. 1 *Carpolithes westi*. Actual length 9mm. V.65175.
 Fig. 2 *Carpolithes* cf. *westi*. Actual length 8mm. V.65173.
 Fig. 3 Cone scale. Actual length 8mm. Morrison Formation, Henry Mountains, Utah. Author's collection, collected Dayvault.
 Fig. 4 *Carpolithes rubeola*. Actual length 7.5mm. V.65155.
 Fig. 5 *Carpolithes gibbus*. Actual length 3mm. V.65166.
 Fig. 6 *Carpolithes acinus*. Actual length 3.5mm. V.65168.
 Fig. 7 *Carpolithes glans*. Actual diameter (width and depth) 7mm. V.65162.
 Fig. 8 *Carpolithes glans*. Actual width 6mm. V.65158.
 Fig. 9 *Carpolithes glans*. Actual length 7mm. V.65165.
 Fig. 10 *Carpolithes glans*. Cover of Fig.9 above. V.65165.
 Fig. 11 *Carpolithes glans*. Figs.9 and 10 above as re-

attached. V.65165.

- Fig. 12 *Carpolithes glans*. Actual length 6mm. V.65159.
 Fig. 13 *Carpolithes glans*. Actual diameter (width and depth) 8mm. V.65163.
 Fig. 14 *Carpolithes glans*. Actual diameter 6-6.5mm. V.65164.
 Fig. 15 *Carpolithes* sp.. Actual diameter 1mm. V.65169.
 Fig. 16 *Carpolithes*. Form A. Actual length 3.5mm. V.65157.
 Fig. 17 *Carpolithes*. Form B. Actual length 5.5mm. V.65156.
 Fig. 18 *Carpolithes*. Form C. Actual length 6mm. V.65177.
 Fig. 19 cf. *Jensensispermum*. Actual length 10mm. V.65170.
 Fig. 20 cf. *Jensensispermum*. Actual length 6.5mm. V.65171.
 Fig. 21 cf. *Jensensispermum*. Actual length 6mm. V.65172.

PLATE 2

All specimens are from Chicks Grove Quarry except Figs. 24 and 33. Scales vary.

Fig. 22 *Behuninia provoensis*. Actual length 25mm. V.65128.

Fig. 23 *Behuninia provoensis*. Actual length 31mm. V.65108.

Fig. 24 *Behuninia provoensis*. Actual length of shoot 17mm. Morrison Formation, Henry Mountains, Utah. Author's Collection, collected Dayvault.

Fig. 25 *Behuninia provoensis*. Actual length 18mm. V.65180.

Fig. 26 *Behuninia cf. provoensis*. Actual length 60mm. V.65101.

Fig. 27 *Behuninia cf. joannei*. Actual length 31mm. V.65111.

Fig. 28 *Behuninia cf. joannei*. Actual length of stalk 15mm. V.65141.

Fig. 29 *Steineroaulis radiatus*. Actual diameter 8mm. V.65143.

Fig. 30 *Steineroaulis radiatus*. Actual diameter 8mm. V.65150.

Fig. 31 *Steineroaulis radiatus*. As Fig.30, side view.

Fig. 32 Unidentified fragment. Actual diameter 3mm. V.65183.

Fig. 33 Unidentified fragment. Actual diameter 3mm. Cherty Freshwater Member, Lulworth Formation, Purbeck Beds, Durlston Bay, Dorset. V.65187.

Fig. 34 Unidentified shoot. Actual length 13mm. V.65139.

Fig. 35 Unidentified shoot. Actual length 50mm. V.65106.

PLATE 3

All specimens are from Chicks Grove Quarry. Scales vary.

Fig. 36 Lignotuber. Actual diameter 14mm. V.65123.

Fig. 37 Possible double lignotuber. Actual length 24mm. V.65120.

Fig. 38 Lignotuber branching from stalk. Actual length 23mm. V.65112.

Fig. 39 Stalk with possible lignotuber and swellings. Actual length 26mm. V.65113.

Fig. 40 As Fig.39 above, view onto truncated base. Actual maximum width 16mm.

Fig. 41 Bud and possible lignotuber on stalk. Actual length 18mm. V.65126.

Fig. 42 Possible lignotuber bud on stalk. Actual length 35mm. V.65134.

Fig. 43 Stalk with bud. Length of bud 5mm. V.65133.

Fig. 44 Corm-like specimen. Actual diameter 8mm. V.65148.

Fig. 45 Possible seedling. Actual length 18mm. V.65144.

Fig. 46 Unidentified. Actual length 19mm. V.65145.

Fig. 47 Unidentified. Actual length 12mm. V.65184.

PLATE 4

All specimens are from Chicks Grove Quarry. Scales vary.

Fig. 48 Wood. Actual length approx. 300mm. V.65098.

Fig. 49 As Fig.48 above, detail.

Fig. 50 Small truncated branch. Actual length 85mm. V.65100.

Fig. 51 As Fig.50 above, truncated end. Actual diameter 8mm to 14mm.

Fig. 52 Branching wood from shoot system. Actual length 25mm. V.65122.

Fig. 53 Twig with bark. Actual length 15mm. V.65182.

PLATE 5

All specimens are from Chicks Grove Quarry. Scales vary.

Fig. 54 Possible abraded cone. Length 15mm. V.65186.

Fig. 55 Unidentified. Length 13mm. V.65135.

Fig. 56 Unidentified. Length 9mm. V.65136.

Fig. 57 Scale. Length 12mm. V.65146.

Fig. 58 Scale. Length 14mm. V.65132.

Fig. 59 Possible scale. Length 21mm. V.65114.

Fig. 60 As Fig.59 above, side view.

Fig. 61 Possible fern fragment. Length 33mm. V.65130.

Fig. 62 Unidentified. Length 6mm. V.65179.

Fig. 63 Unidentified. Length 16mm. V.65147.

Fig. 64 Group of possible shoots. Length 29mm. V.65115.

Fig. 65 As Fig.64 above, side view.

PLATE 6

All specimens are from Chicks Grove Quarry and photographs reproduced courtesy of the Natural History Museum. Scales vary.

Fig. 66 *Carpolithes rubeola*. V.65154. Vacuum SEM micrograph by Dr. Peta Hayes.

Fig. 67 *Behuninia provoensis*. V.65128\$1. Transverse thin section, diameter 10mm approx.. Section Tony Wighton, photograph Dr. Paul Kenrick.

Fig. 68 *Behuninia provoensis*. V.65128\$2. Longitudinal thin section. Section Tony Wighton, photograph Dr. Paul Kenrick.

Fig. 69 *Behuninia provoensis*. V.65128\$2. Longitudinal thin section, detail of pith. Section Tony Wightman, photograph Dr. Paul Kenrick.

Fig. 70 Conifer wood. V.65098\$1. Part of thin section with ring structure. Section Tony Wightman, photograph Dr. Paul Kenrick.

Early Tertiary turtles in Wiltshire

by *Justin Delair*

Except for an hitherto unnoticed bony fragment of a chelonian carapace collected during the late 1870s from a now overgrown brickpit (NGR SU 000 000) north-east of Hamptworth Lodge in south-eastern Wiltshire, fossil remains of chelonians (turtles and tortoises) have not been recorded from the county's early Tertiary deposits. The recent acquisition of additional early Tertiary chelonian material (22 fragmentary bones) originally obtained during or before the 1920s from a long disused brickyard (NGR SU 000 000) at Redlynch, therefore constitutes a palaeontological development meriting the present correction.

Wiltshire's early Tertiary strata

Deposited between 50 and 55 million years ago, subsurface sands, clays and pebble beds representing (in ascending order) the Reading Beds, the London Clay, and the Bagshot Sands, comprise Wiltshire's early Tertiary strata. Of these, the Reading Beds and the lowest horizon (or Basement Bed) of the London Clay are classed as Palaeocene sediments. The overlying remainder of the London Clay is, together with the Bagshot Sands, classed as Eocene sediments. Collectively forming the northernmost limit of the much more extensive Hampshire Basin deposits, these are confined to Wiltshire's extreme south-eastern region (Figure 1).

This strata succession - in particular the London Clay - reflects ancient cycles of sedimentation. These were associated with the presence of shallow inshore seas, and the successive formation and removal at various coastal localities of littoral features such as deltas, lagoons, and estuaries. On the evidence of changes in the facies of the observable deposits, these cycles were often rapid and sometimes affected wide areas.¹ Each cycle produced different types of sedimentation associated with coeval forms of life, chelonians included.

Though not now much exposed or exploited, early Tertiary clays and sands were formerly dug for the production of bricks, tiles and earthenware pipes at several Wiltshire localities south-east of Salisbury, were penetrated at many others by well sinkings and, during the 1850s, bisected at Clarendon and Alderbury by the then new Southampton-Salisbury railway line.

The literature contains disappointingly few records of Wiltshire's early Tertiary exposures, and those that do exist exclude the Hamptworth and Redlynch brickyards, despite both pits being active when the region's first geological memoir was published² and clearly delineated on several contemporary editions of the relevant Ordnance Survey (O.S.) maps.³

Very fortunately measured vertical sections (Figures 2 and 3) at both brickpits were made when they were operational during the last quarter of the 19th century by Ernest Westlake (1855-1922) of Fordingbridge.⁴ Previously unpublished, these occur in two of Westlake's 16 surviving field-notebooks held until recently by the Geology Department of Southampton University; they are now preserved at Oxford.

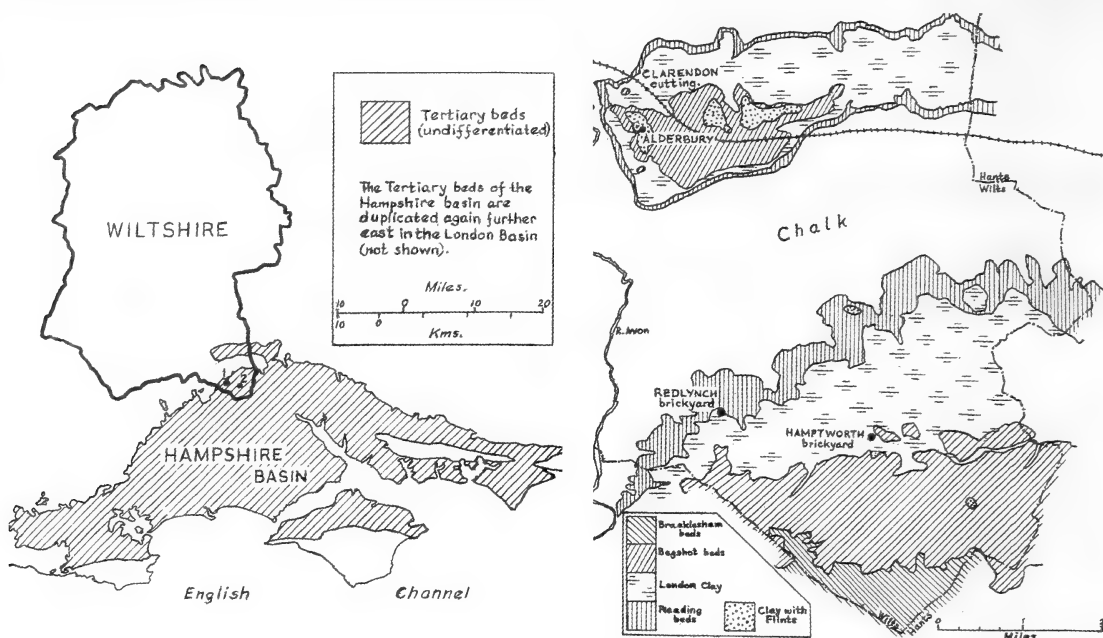


Fig. 1 (left) The geographical extent of the Hampshire Basin, and the limit of the Lower Tertiary strata in Wiltshire. 1. Redlynch brickyard, 2. Hamptworth brickyard. (right) The distribution of Wiltshire's Palaeocene and Lower Eocene deposits ('Clay with flints' included)

The brickyard sections

Five deposits, A - E (Figure 2),⁵ were recorded as being visible at Hamptworth in November 1879. Bed A, composed of post-Eocene gravel, is outside the ambit of this essay. Beds B - E, since they conform in character to the officially mapped geographical extent of the London Clay deposits in the Hamptworth area, are thus almost certainly of London Clay age. Westlake's notes do not indicate the age of these deposits other than that they are 'Eocene'. It is uncertain when this brickyard closed, but the 1927 revision of the 6" to 1 mile O.S. map of south-east Wiltshire shows the pit in outline only suggesting that brickmaking had ceased there before that year but after 1911 - the date of the map's preceding edition which shows the brickyard apparently still active.

Westlake measured the Redlynch section (Figure 3) in April or May 1883, noting that a Mr. Plashett or Plaskett owned or worked the brickpit then. Judging from the gradient of the present degraded slope of what was originally the deepest sector of the pit (now very much derelict), Westlake's section was apparently that of the pit's then southern face. The section records 24 separate beds, A - X, with A

again being a post-Eocene deposit. It is immediately noticeable that beds I-L seemingly correspond to beds B-E at Hamptworth, although an exact contemporaneity between the two stratal suites is not necessarily implied. If, however, beds B-E and I-L do broadly correspond, and because, as just noted, the Hamptworth beds are almost certainly

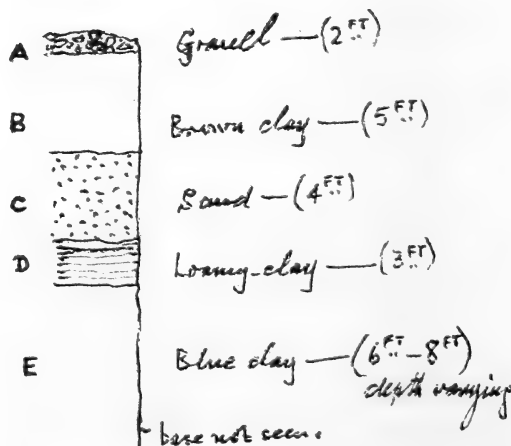


Fig. 2 Vertical section (Nov. 1879) Hamptworth brickpit. Copied from E. Westlake's Field Notebook 10

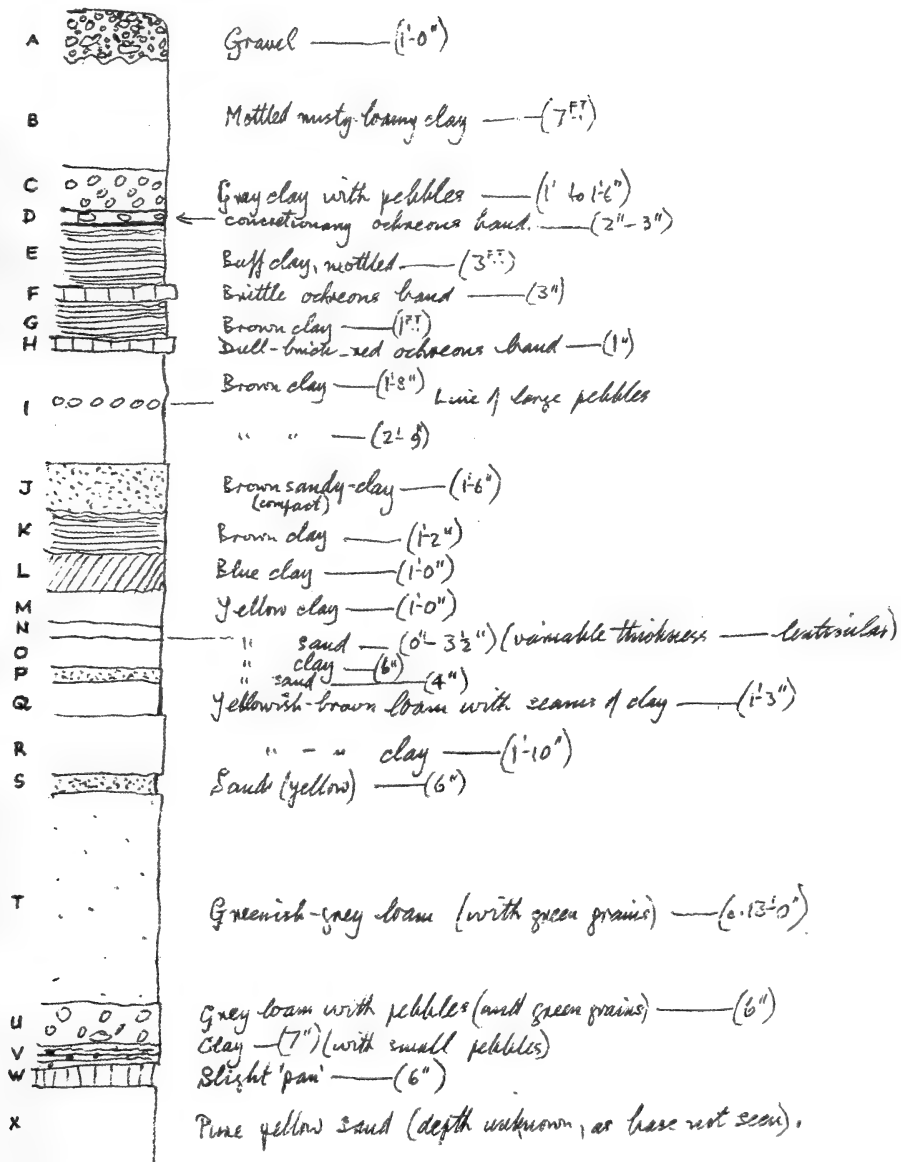


Fig. 3 Vertical section (April or May 1883) Plashett's or Plaskett's brickyard, Redlynch.
Copied from E. Westlake's Field Notebook 14

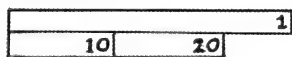
of London Clay age, the Redlynch deposits, at least from bed B down to the base of L, can likewise be reasonably accorded a similar antiquity.

Whether all the Redlynch beds below L are also of London Clay age is unknown; indeed, it is credible that some may belong to the Reading Beds series, particularly as beds U - X show the wide lithic variability generally characteristic of the Reading Beds as a whole.⁶ In that respect, it is significant

that geological maps of the Redlynch area show the natural junction of the Reading Beds and the London Clay as literally underlying Plashett's brickyard. It is again uncertain when the brickyard ceased production. Marked as an apparently active yard on the 1925 edition of the 6" to 1 mile O.S. map of the Redlynch area, its eventual closure evidently post-dated that year.

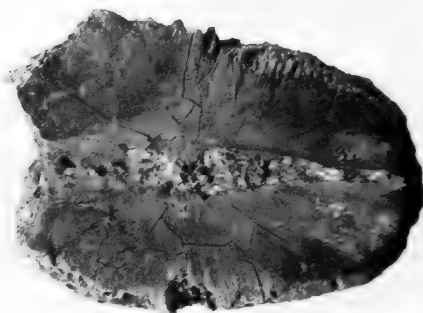


Inches

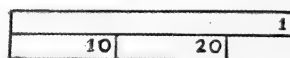


Mm

Fig. 4 SSWM 6147. External aspect of costal plate from old brickpit at Hamptworth. Ex. E. Westlake collection.



Inches



Mm

Fig. 5 SSWM 6147. Internal aspect of costal plate from old brickpit at Hamptworth. Ex. E. Westlake collection.

Brief history of the Hamptworth specimen

Collected by Westlake in or around 1879, this specimen became part of a small but interesting assemblage of local Cretaceous and Tertiary fossils lodged in the Salisbury and South Wilts Museum during the early 1890s, when Westlake served there as an honorary curator.⁷ Westlake unfortunately omitted to indicate the horizon which had yielded it. The specimen is now registered in the Salisbury geological collection as SSWM 6147.

Brief history of the Redlynch material

The existence of the Redlynch chelonian remains was first made known to this writer in 1997 by the botanist Brenda Chadwick (now deceased) of Laverstock. She had previously viewed them at the Wellow residence of Mrs Amelia Webb (a widow), in whose care they had reposed since the demise in 1963 of Mrs Webb's elder brother, Joseph Fullard. A pencil note preserved with the remains states that Mr Fullard had 'obtained' them as long ago as March 16th, 1921. The horizon which had hosted

the remains is not indicated.

The precise circumstances of acquisition are regrettably vague: it is impossible to establish if Mr Fullard had personally discovered the remains *in situ* or had, perhaps, purchased them from, or been given them by, some member of the brickyard's personnel. Nor is it clear whether the remains were disinterred in 1921 or on some undocumented earlier date.

An occasion to acquire the material at Wellow did not arise until February 2001, mere weeks before Mrs Webb's relocation to Surrey, when Mrs Webb still hoped that a safe permanent home could be found for them. Considering the extreme rarity of such remains in Wiltshire, little doubt existed that a suitable repository would be quickly found. This shortly proved to be the Salisbury and South Wiltshire Museum, where the remains are now registered as SSWM 7051/1-22.

General description

SSWM 6147 from Hamptworth is an incomplete costal plate (Figure 4), perhaps no: 6 or 7 in the usual chelonian carapace. Its outer surface is very faintly ridged and its inner one distinguished by the remnants of an anchylosed rib (Figure 5).

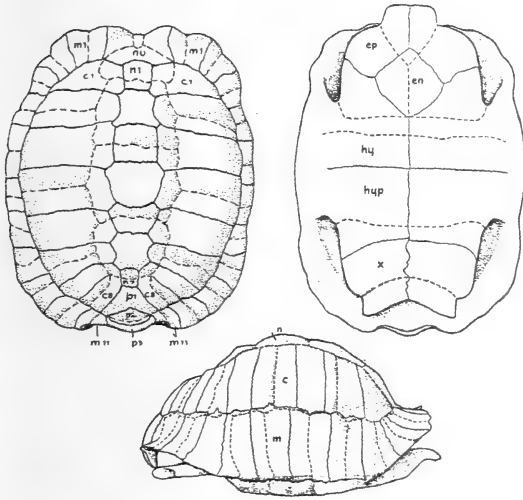


Fig. 6 Key to arrangement of bony elements in a typical chelonian 'shell.' Carapace (upper left) plastron (upper right), and lateral view, to show shell structure of chelonians. Structures in solid line; outline of overlying horny scutes in dashed lines. Carapace, bony elements: c, costal plates; m, marginal plates; n, neural plates; nu, nuchal; p, pygal. Plastron: en, entoplastron; ep, epiplastra; hu, hyoplastra; hup, hypoplastra; x, xiphiplastra. Original about 39 inches long.
After C.W. Andrews

The plate is comparatively thick with a cancelous internal structure (visible in a line of fracture). A rather small turtle is represented.

The Redlynch remains consist of twenty-

two apparently associated carapace and plastron fragments (SSWM 7051/1-22) belonging to a much larger turtle than SSWM 6147. None of the fragments are apparently contiguous, although one (SSWM 7051/21a-b) is broken into two almost equally-sized portions. Fragments SSWM 7051/1-4 are apparently plastral bones: probably hypoplastron (SSWM 7051/1-2), epiplastron (SSWM 7051/3), and xiphiplastron (SSWM 7051/4). The remaining fragments seem to be carapacic marginal and costal elements (Figure 6), four or which (SSWM 7051/6-9) exhibit evidence of thick anchylosed ribs on their ventral surfaces. Bone thicknesses, which naturally vary relative to their position in the original chelonian shell, range from comparatively thin to robustly thick. As in the Hamptworth turtle, the cancelous internal bone structure is clearly visible along lines of post-mortem fracture in several carapacic fragments.

All these fragments possess smooth outer surfaces devoid of ornamentation, in contrast to their inner surfaces which, where not abraded (as in SSWM 7051/13 and 7051/20), often feature fine lateral striations.

Possible bite marks

Of more than passing interest is the presence of small shallow circular depressions, arranged as arcs (or parts thereof), on fragments SSWM 7051/2 and

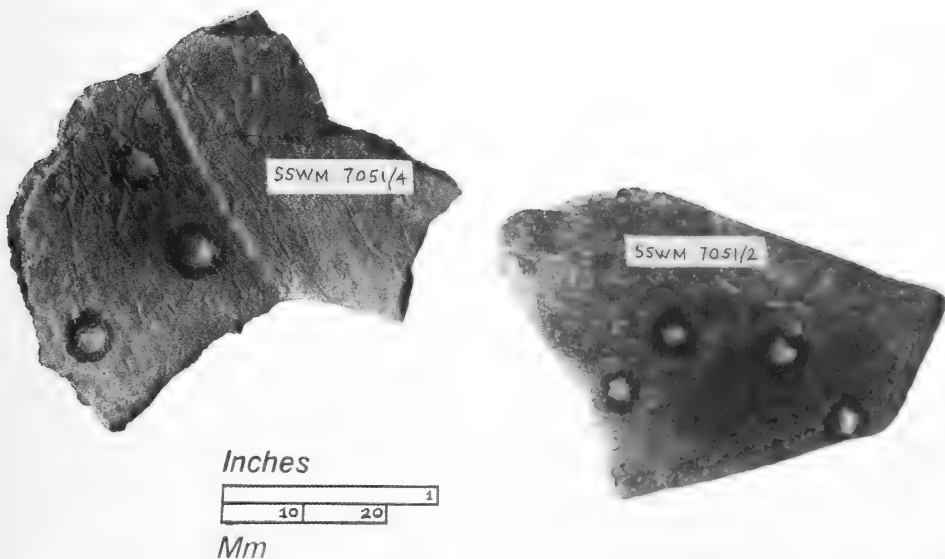


Fig. 7 SSWM 7051/2 and 7051/4. External aspects of two associated carapacic plates exhibiting possible marks of predation from a disused brickpit at Redlynch. Ex. J. Fullard collection.

7051/4. Four occur on the former and three, slightly smaller, on the latter (Figure 7, a-b). While the precise origin of these depressions is conjectural, their consistently circular configuration and arc-like disposition suggests that they represent punctuating tooth marks. If so, the bite was that of a moderately large carnivore only. Likely candidates include crocodiles⁸ and primitive whales,⁹ contemporary aquatic predators well known from London Clay deposits beyond Wiltshire's confines. Furthermore, it is not possible to determine whether these depressions, if actual bite marks, were sustained while the turtle was alive, whether they contributed to its demise, or if they resulted from post-mortem scavenger activity. If indeed genuine evidence of predation, these marks are not only unique in the annals of Wiltshire geology, but are also exceedingly rare in those of the London Clay generally.

Discussion

Various kinds of small and large marine and marsh turtles (some with smooth shells) are now on record from the Palaeocene and lower Eocene deposits of western Europe¹⁰ and North Africa,¹¹ so it is unsurprising to encounter similar turtles at those horizons in Wiltshire. While it is highly likely that the present chelonians are of London Clay age (inferentially at Hamptworth and very probably so at Redlynch), it is also clear that both were smooth-shelled forms too. The absence of critical skull elements in the present material, however, renders generic identification hazardous. The Hamptworth fragment (SSWM 6147) is in fact too meagre for positive identification.

Regarding the Redlynch remains, however, a general review of more complete coeval chelonid material from elsewhere in southern England suggests possible affiliation with one or other of at least two named London Clay pelomedusid turtles (*Eosphargis* and *Puppigerus*) and, conceivably, with another (*Podocnemis*) more loosely recorded from the 'Lower Eocene'. Features suggesting such affiliation concern apparent overall size and shell and rib thicknesses. Although size alone is not a safe criterion, two of the larger London Clay turtles, *Eosphargis* and *Podocnemis*, like the smaller *Puppigerus*, possessed thick carapacic plates and ribs reminiscent of those characteristics in the Redlynch turtle. Closer comparison, however, is not

possible. The Redlynch remains, therefore, cannot presently be identified beyond having belonged to a typical pelomedusid turtle.

Acknowledgements

The writer wishes to acknowledge the help accorded him over several years by the following individuals: the late Brenda Chadwick, Amelia Webb, the late Dr Aubrey Westlake for temporary loan of Ernest Westlake's unpublished geological field-notebooks, the late Professor Michael House for helpful discussions about Hampshire Basin stratigraphy, Peter Saunders for access to the Hamptworth carapace fragment in the Salisbury and South Wilts Museum and John Cresswell for his excellent photography.

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- ¹¹ Morocco, Tunisia, and Libya.

Recent recording of Wiltshire's flora

by *John Presland*

After an initial presentation of evidence for the importance of Wiltshire's botanical heritage, the history of botanical recording in the County is briefly described. Methods used for drawing up lists of records of plant species to publish in Wiltshire Botanical Society's scientific journal are described and illustrated. Attention is drawn to both a recent and a forthcoming issue of the journal in which the results of recording selected species from 1992 to 2003 inclusive (i.e. since recording for the 1993 Wiltshire Flora was completed) are summarised and analysed. 'Portraits' of a number of plants with a special association with Wiltshire are presented, and include data from the summarised results. The plants include examples of nationally rare and nationally scarce plants, plants of some of the more interesting habitats found in Wiltshire, and plants thought to be extinct but refound. Readers are invited to join in the continuation of the recording work described.

The importance of Wiltshire's botany

Wiltshire's botanical heritage is of great significance and interest. In particular, the county is home to a number of plants of national importance. The first British record for the nationally rare Tuberous Thistle (*Cirsium tuberosum*) was in Wiltshire and, of the fourteen 10km squares in Britain in which the plant has been recorded since 1987, nine are entirely within Wiltshire. There are also several nationally scarce plants particularly well represented in the county. For instance, Wiltshire holds around 80% of the total native British population of Fritillary (*Fritillaria meleagris*), and North Meadow at Cricklade may have several million in flower in a good year. Summer Snowflake or Loddon Lily (*Leucojum aestivum*) has its finest British site in damp willow carr at Woodford Green on the Avon north of Salisbury, with something like 2000 plants considered to be native. At Parsonage Down in Wiltshire, it has been estimated that more than 30,000 flowering Burnt Orchids (*Orchis ustulata*) sometimes appear, perhaps the most important

surviving single population in Northwest Europe. The uncommon Juniper (*Juniperus communis*) has its largest population in England at Wiltshire's Porton Down, where more than 14,000 bushes have been reported growing amongst heather.

However, Wiltshire's botanical importance extends well beyond individual plant species. Gillam and Woodruffe (1993) describe the range of plant habitats found in the county - woodland, unimproved grassland (including chalk downland, limestone downland and neutral lowland meadows), water-meadows, rivers and wetlands, cultivated land (including arable farming, livestock farming, organic farming, market gardening and horticultural nurseries), and man-made habitats (including urban development, rubbish tips, walls, road verges, ponds, quarries and chalk pits). All these have their own characteristic communities, providing a wide variety of plant life. Some habitats are particularly rich. West Woods near Marlborough are among the best bluebell woods in Great Britain. The military training areas on Salisbury Plain have been protected from much of the agricultural developments which have reduced wild plant life and are particularly

rewarding. Areas of ancient chalk downland elsewhere are also of special interest.

Recording plants in Wiltshire

Clearly the plant life of such a rich county needs to be recorded as thoroughly as possible. This has been going on for over 200 years in some form or another (Presland *et al.* 2002). However, the first modern flora of Wiltshire was that of Donald Grose (1957). Records after Grose's flora were published annually and eventually gathered together into a supplement (Stearn 1975). The most recent flora is *The Wiltshire Flora* (Gillam, Green and Hutchison 1993). This covered the two botanical vice-counties into which Wiltshire is divided - Vice-county 7 in the North and Vice-county 8 in the South, with the Kennet and Avon Canal as the boundary between the two. It was written on the basis of the Wiltshire Flora Mapping Project, begun in 1983. The project was run by a steering group in which the two vice-county recorders worked with other interested bodies. There was a huge number of recorders and data handlers were able to make use of computers through the involvement of the Wiltshire Biological Records Centre, formerly at the Wiltshire Heritage Museum, and then at the Wiltshire Wildlife Trust headquarters in Devizes, where the Flora Mapping data are still held.

During the Flora Mapping, plants were recorded for their occurrence in each tetrad (group of four 1km squares of the National Grid), with progressively more precise locations for less common species. The records were entered into a database and distribution maps were made from it. The Flora was prepared from these data.

Though the Flora was completed, members of the newly formed Wiltshire Botanical Society continued to record plants, and a database of these records was set up and maintained. Indeed, that was one of the purposes for which the society was formed. Eventually, the Flora Mapping records at the Biological Records Centre were transferred to the Botanical Society's database. There is now a process of communication between the two bodies which enables sharing of records through a common database.

Publishing records

From early on, the most interesting of these records were published - at first in the Society's newsletter

and, from 1995 onwards, in its scientific journal *Wiltshire Botany*. Gradually a process emerged for selecting records for publication to maximise the usefulness and interest of this feedback. Two criteria were established for publication of a record. They are framed in terms of the *taxon* (plural *taxa*), a general concept encompassing the *genus* (plural *genera*), *species*, *subspecies* and *variety*. They were:

- The taxon was recorded in 3% or less of the 1km squares in the County in the Wiltshire Flora Mapping Project and as noted in the 1993 Flora;
- The taxon had not previously been recorded either during the Flora Mapping or subsequently for the tetrad in which the record was made.

To facilitate the process, a list was eventually drawn up of what were termed *eligible taxa*, which were taxa to which the 3% criterion applied at the time of publication of the 1993 Flora. Taxa which had not been included in the Flora at all but recorded since were added. Then, each year, any further "new taxa" were added, so that the list was continually being enlarged. Tetrads newly noted for each taxon since the Flora were enumerated in the list, and then, each year, the new ones were inserted. Subsequent records in those tetrads could then be omitted at publication. The form of the list, henceforward referred to as the *Record List*, was gradually improved to increase its usefulness. Its state at the beginning of 2004 was published in *Wiltshire Botany* (Wiltshire Botanical Society 2006), along with analyses of the data, covering the period up to the end of 2003. These will be supplemented by further analyses of the same set of data in the next issue (Wiltshire Botanical Society 2007).

The Record List

The taxa are listed in alphabetical order by their scientific names. Common names can be found in the 1993 *Wiltshire Flora*, in any of the floras by Stace (1993, 1997 or 1999) or, for alien species, in Clement and Foster (1994). The data are presented as tetrad labels, each tetrad being identified by its southwest component 1km square. The form of the Record List is shown in the illustrative sample in the box. The following key shows what the various entries mean:

- * - the taxon is not native to Wiltshire, though it may be native to Britain;

- **A page number on its own** - there is a distribution map by tetrads in the 1993 Flora on the page given;
- **slo followed by a page number** - the Flora mentions some specific localities on that page, but without identifying the tetrads;
- **nrif followed by a page number** - the Flora refers to the taxon, but mentions no specific localities;
- **nif** - the taxon is not in the 1993 Flora, nor in Grose's 1957 Flora, nor in Stearn's 1975 supplement;
- **nifg** - the taxon is not in the 1993 Flora, but included in Grose's 1957 Flora;
- **nifs** - the taxon is not in the 1993 Flora, nor in Grose's 1957 Flora, but included in Stearn's 1975 supplement.
- [] - there is no distribution map in the Flora, but the taxon was recorded in the tetrads in the brackets during the Wiltshire Flora Mapping Project for the 1993 Flora;
- **Tetrad references not in brackets** - these are new tetrads in which the taxon has been recorded since the Flora Mapping and up to the end of 2003 inclusive;
- **vc followed by 7, 8 or 78** - these are the vice-counties in which there is a record for a taxon either during or after the Flora Mapping for the 1993 Flora or both.

To use the list for a particular taxon, it is first necessary to look at either the distribution map in the 1993 Flora or the list of tetrads in square brackets. These show the tetrads in which the taxon was recorded during the Flora Mapping. Then look at the unbracketed tetrads to see which tetrads have been added since the Flora Mapping. The tetrad records also allow identification of 1st 10km square records, and the vc items tells us the vice-counties in which the tetrad has been recorded since the Flora Mapping began, so that recent 1st county and vice-county records (i.e. since the Flora Mapping began) can be identified. The nifg and nifs items indicate that earlier records can be found in the publications quoted, so that they can be compared with records during and after the Flora Mapping. This enables identification of records which are the first in the county or vice-county for all time.

Illustrative sample from the Record List

Abies cephalonica * nif SU 0638, vc8
Abutilon theophrasti * nrif [ST 8068, SU 3880], vc7
Acer platanoides * p226, vc78
Aceras anthropophorum slo p362 [SU 0418] ST 9052, vc8
Aconitum napellus ssp. *napellus* p136 SU 0478, 9434, vc78
Acorus calamus * slo p307 [ST 97, 9860] ST 8042, vc78
Adiantum capillus-veneris slo p124 [SU 0858], vc78
Adonis annua * p139 SU 1422, 1434, vc78
Aesculus carnea * nrif [SU 1670, 1680] SU 2662, vc78

Agrimonia procera slo p195 [ST 8868, 9054, 9426, 9426, SU 1222, 1266, 1454, 1456, 1458, 1462, 1464, 1652, 1844, 1846, 1848, 1852, 1856, 2026, 2030, 2044, 2046, 2060, 2068, 2226, 2228, 2286, 2420, 2422, 2428, 2458, 2466, 2622, 2664, 2664, 2818] SU 1022, 1222, 2066, 2238, 2264, 2266, 2420, 2470, 2618, 2862, vc78
Agrostemma githago * slo p156 [ST 8650] ST 8260, 8656, SU 1284, vc78
Allium triquetrum * nifs SU 2428, vc8
*Ambrosia artemisiifolia** nifg ST 8650, SU 0638, 1430, 2872, vc78

Analysing the data

The data in the *Record List* can be analysed in many different ways, some of which are described in the special issue of *Wiltshire Botany* and some which are awaiting further articles in the following issue. Here, we look at what they can tell us about some of Wiltshire's most interesting plants. Their scope is limited by the facts that the information represents only *recorded additions* to the distribution of each taxon covered; and that it is based on individual interests and targeted surveys, rather than on a systematic study of the flora as a whole. Sometimes, the data are meaningful only when taken in conjunction with information from other sources. General sources used for this purpose are Stewart, Pearman and Preston (1994), Marren (1999), Mabey (1996), Preston, Pearman and Dines (2002) and the BSBI Atlas Update Project provided on-line by the Botanical Society of the British Isles. One consistent feature of the analyses is that issues are constantly raised which are in need of further thought or investigation.

Nationally rare plants

A nationally rare plant is one that is found in 15 or fewer of the 2,800+ 10km squares into which the British Isles can be divided. There are 13 such taxa which have been recorded in Wiltshire since 1983, and there are additional tetrads since the Flora for 6 of these. Indeed, for Cornflower (*Centaurea cyanus*) there are 4 such tetrads (though at least one came from deliberate sowing of wild flower seed). For Corncockle (*Agrostemma githago*) there are 3, and there are two for Pheasant's-eye (*Adonis annua*). The locally famous Tuberous Thistle (*Cirsium tuberosum*) is explored more fully below as an example.

Tuberous Thistle (*Cirsium tuberosum*) has been



Fig. 1 Colony of Tuberous Thistle (Photo by Valerie Headland)

recorded in Wiltshire in 9 of the fourteen 10km squares in Britain in which the plant has been recorded since 1987. It is a knapweed-like perennial of old chalk and limestone grassland with softly spiny leaves, and can be 2 feet tall. It was recorded in 16 tetrads during the Flora Mapping, most of them in the Salisbury Plain Training Area, with an additional one in North Wiltshire and a few others in the South. It has been noted in two more since. One of these was in a tetrad adjacent to one that had been recorded in the Flora Mapping, but the other was in a completely new part of the Ministry of Defence Salisbury Plain Training Area. Are these new sites or just new records of plants formerly not noticed? The question is complicated by the readiness of Tuberous Thistle to hybridise with the more common Dwarf Thistle (*Cirsium acaule*) the hybrid being known as *C. x medium*. This was in 14 tetrads in the Flora Mapping, but in no new ones since. Everett (1993) states that, in the Flora Mapping, the hybrid was found in 6 Tuberous Thistle sites, and was also found in nine other sites on its own, raising the possibility that hybridisation caused the extinction of originally "pure" colonies. This may be because the Dwarf Thistle has been able to invade areas where the long grass formerly prevented it but Tuberous Thistle

survived. Ironically, this could be because nature conservation measures have increased grazing, though it could also be because of an increase in the stemmed form of Dwarf Thistle, which is better than the normal form at growing in long grass (Marren 1999). However, Everett also reported variations in what is seen at the same site on different visits, depending partly on grazing intensity, and thought it possible that the pure species might persist unseen on some of the hybrid sites. So perhaps the new tetrads do not mean new sites. The main message here, apart from being encouraged that we can still find it in new places, is that we need to keep looking. Tuberous Thistle is most easily distinguished from Dwarf Thistle by the flower head being broad and rounded in the former and elongated and cylindrical in the latter. The hybrid shows a range of conditions in between.

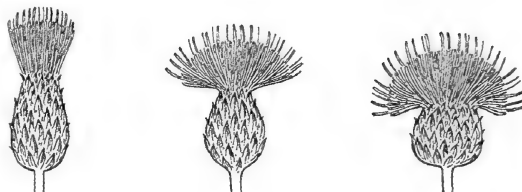


Fig. 2 Shape of flower head in (left to right) Dwarf Thistle, hybrid and Tuberous Thistle (Drawings by Valerie Headland)

Nationally scarce plants

A nationally scarce plant is one which occurs in 16-100 of the 10km squares in the British Isles. There are 57 such taxa which have been recorded in Wiltshire since 1983, and 28 of them have additional tetrads since the Flora. Early Gentian (*Gentianella anglica*) has eight additional tetrads, Stinking Hellebore (*Helleborus foetidus*) six, Blue Pimpernel (*Anagallis arvensis* ssp. *foemina*), Green-flowered Helleborine (*Epipactis phyllanthos*), Burnt Orchid (*Orchis ustulata*) and Round-headed Rampion (*Phyteuma orbiculare*) have five each, Dwarf Sedge (*Carex humilis*) and Fine-leaved Fumitory (*Fumaria parviflora*) have three each, and Monkshood (*Aconitum napellus* ssp. *napellus*), Summer Snowflake or Loddon Lily (*Leucojum aestivum*), Spiked Star-of-Bethlehem or Bath Asparagus (*Ornithogalum pyrenaicum*), Field Fleawort (*Tephrosia integrifolia*), Bastard Toadflax (*Thesium humifusum*), and Spreading Hedge-parsley (*Torilis arvensis*) two each. A number of these are dealt with more fully below.

Nationally scarce plants of chalk downs

Some of our most interesting nationally scarce plants are on the chalk downs with which Wiltshire is so well blessed. The following are examples which are plants with a special association with Wiltshire.



Fig. 3 Early Gentian

Early Gentian (*Gentianella anglica*) is restricted to chalk and limestone soils in South and Southwest England and occurs on a number of chalk downs in Wiltshire, which is one of its strongholds. Of the 72 x 10km squares in which it has been recorded in Britain since 1987, twenty are wholly or partly in Wiltshire. It does best where the soil is shallow and the grass closely grazed. It is so rare being a British endemic, never having been found as a native outside Britain. In appearance, it is like a miniature Felwort (*Gentianella amarella*), with its purple tubular flowers dividing into four or five lobes at the top, but the two are rarely seen together because Early Gentian has usually finished flowering well before the

earliest Felwort plants in mid-July. This difference is often enough for an identification, but the two species can occasionally flower together and even hybridise. Early Gentian can, when necessary, be distinguished by the number of internodes varying from 0-4 (as opposed to 4-11), and by the terminal internode constituting 40-100% of the stem (as opposed to 1-35ish%) (Rich *et al.* 1997). Some experts think that Early Gentian is just an early flowering form of Felwort, and recent DNA studies appear to confirm this. In the Flora Mapping, it was recorded in 19 tetrads, 16 of them in the South. It is easily overlooked, since, as an annual or biennial, it is not consistent in its appearance, and can grow from nothing obvious, flower, fruit and disappear within a few weeks. Marren (1999) suggests that its unpredictability is due to the setting of a large amount of seed, which germinates only when the right conditions occur, namely disturbance and a wet winter followed by a warm, wet spring. Yet it has been found in eight new tetrads, perhaps partly because it has been much looked for. None of them are very far from its Flora Mapping tetrads, and the possibility that it has spread cannot be dismissed.



Fig. 4 Early Gentian

Burnt Orchid (*Orchis ustulata*) has been recorded in 370 10km squares in Britain from 1987 onwards, and 23 of these are wholly or partly in Wiltshire.



Fig. 5 *Burnt Orchid*

However, this does not reflect its abundance on chalk downland in Wiltshire, which is its main stronghold. At Parsonage Down, for instance, it has been estimated that more than 30,000 flowering plants sometimes appear over an area approaching 95 hectares, perhaps the most important surviving single population in Northwest Europe. It was recorded in



Fig. 6 *Burnt Orchid*

31 tetrads in the Wiltshire Flora Mapping, mostly in the South of the county. Since then it has been found in a new tetrad adjacent to a Flora Mapping tetrad at Pewsey Down and at two adjacent tetrads at Porton Down, where it had not been seen previously. Porton Down, however, is a vast area where it could have been overlooked, perhaps because of the young plant's not infrequent habit of remaining below ground as a tuber for ten or more years feeding on its associated fungus before appearing above ground. We cannot assume that these records indicate an extension of range. It seems most likely that it occurs only in its earlier sites or very near them. Nationally, it is a declining species due to such agricultural practices as ploughing, herbicides and artificial fertilisers - or even cessation of grazing. It is not known how far this decline applies to Wiltshire (Foley 1990). The situation is not helped by the plant's being poor at competing with other plants. However, a positive feature is that it can reproduce by short rhizomes to form clusters of plants as well as from seed. Its appearance is typically orchid-like, but distinguishable by the dark maroon colour of the hoods of the young flowers, most noticeable in the unopened flowers at the tip of the spike. Look out for a change of name to *Neotinea*, following recent DNA studies.

Round-headed Rampion (*Phyteuma orbiculare*) is a perennial of chalk grassland and scrub found only from Dorset to Kent, including a few sites in Wiltshire, mainly in the North, though colonies of something like 5,000 plants have been found in both Wiltshire vice-counties. Of the 42 10km squares in which it has been recorded in Britain from 1987 onwards, 10 are wholly or partly in Wiltshire. It



Fig. 7 *Round-headed Rampion*



Fig. 8 Round-headed Rampion

has blue scabious-like flower heads on a stem up to perhaps a foot high, but the flower heads are borne singly at the top of the stem, whereas the Devil's-bit Scabious with which it is most likely to be confused has several heads, and is typically a much taller plant anyway (Gillam and Green 1993). In the Flora Mapping, it was recorded in 20 tetrads, of which 17 were in the North in the vicinity of Calne, Devizes and Pewsey and areas between. Outlying sites were on the downs north of Tidworth, near the Winterslows and on the downs near Martin in what is geographically Hampshire but in Wiltshire's Vice-county 8. Since then there has been a new tetrad far from any others in the middle of Salisbury Plain, another near Pewsey, two in the Porton Down area and, very surprisingly, one in the New Forest, where chalk downland is unlikely. Plainly we have added significantly to its known range, but we do not know how far this is because it was overlooked earlier.

Bastard Toadflax (*Thesium humifusum*) is restricted to chalk and limestone soil in the North and



Fig. 9 Bastard Toadflax

South Downs, Hampshire, Dorset, Wiltshire, Gloucestershire, East Anglia and Lincolnshire. Wiltshire has more unimproved chalk grassland than any other county and probably supports the largest number of colonies. The taxon has been recorded in around a hundred 10km squares in Britain from 1987 onwards, and 30 of these are wholly or partly in Wiltshire. Walker and Pywell (2000) found it in 71 sites on the Salisbury Plain Training Area alone in 1996-7. The plants are rather hidden in the turf, where the prostrate stems from the woody rootstock have many wiry branches, and, with the linear leaves, form yellow or olive-green mats. The white flowers are tiny and star-like. It is a perennial hemiparasite attached to the roots of grasses and other herbs by food-absorbing structures called haustoria. It prefers grazed areas, and can die out if scrub is allowed to develop. It is tolerant of drought - by the autumn of 1990, it was almost the only species not to have wilted on steep, south-facing slopes after a summer of almost tropical heat (Gillam 1993). In the Flora Mapping it was recorded for 77 tetrads, but there is only one new tetrad since, not far from one of the



Fig. 10 *Bastard Toadflax*

Flora Mapping Tetrads. Though it is not hard to overlook, the indications are that it has not increased its range.

Nationally rare and scarce plants in other habitats

Our nationally rare and scarce plants well illustrate some of the other habitats which combine to make Wiltshire's flora of so much interest. Woodland, wetland and arable plants all feature. A selection is discussed below.

Spiked Star-of-Bethlehem or Bath Asparagus (*Ornithogalum pyrenaicum*) is typically a bulbous perennial of Ash and Elm woods, but is also found in fields, hedges and by roadsides. Though nationally scarce, it has by far its largest number of plants within an area around Bath. The taxon has been recorded in 41 10km squares in Britain from 1987 onwards, and 12 of these are wholly or partly in Wiltshire. It is not easily overlooked when in flower, because of its crowded spikes of creamy flowers on stems up to

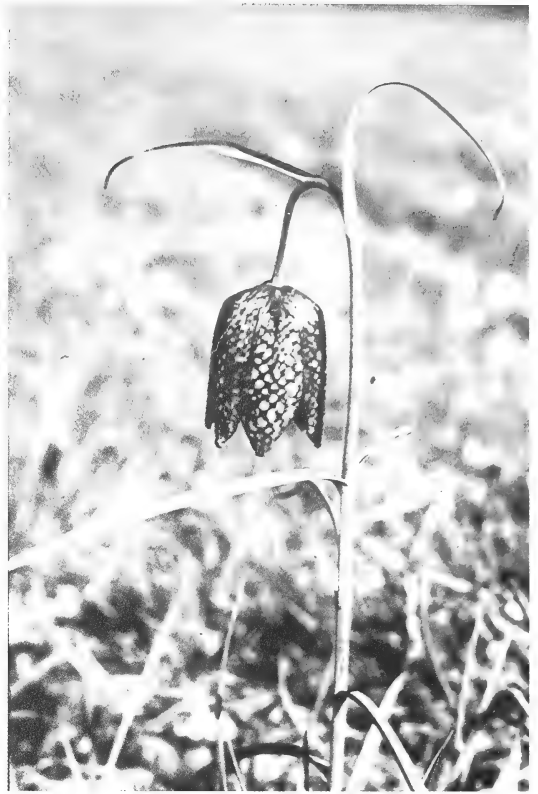
a metre high. In dark woods, it flowers reluctantly, but, in the early part of the year, its narrow whitish green basal leaves, much longer than Snowdrop, are also distinctive - though withered (as in the photo) or absent at flowering time. The Flora map showed it as present in 29 tetrads, with 20 of them in West Wiltshire within about 10 kilometres of the border with Somerset. Other populations were noted near Devizes, southwest of Swindon, near Marlborough and at Farley in the Southeast. Most locations were in ancient woods but also along lane verges. Only one new tetrad has been noted since - in a tetrad bordering on the one at Farley. This suggests that it has hardly spread at all beyond its range at the time of the Flora Mapping. This may be associated with having large seeds, which do not easily move around. There does also seem to be an association with habitats that have been undisturbed for many years, which are in increasingly short supply so that suitable locations for spread are not available. Where it does occur, however, it can be remarkably



Fig. 11 *Spiked Star-of-Bethlehem*



Fig. 12 Spiked Star-of-Bethlehem



Figs. 13 and 14 Fritillary

abundant, because the germination rate of seeds is high and there is also vegetative reproduction from lateral buds of the bulbs, and it is a common plant in some areas. In the parish of Winsley alone, for instance, over 2,500 flowering spikes were found along roadsides and easily accessible footpaths in 2002, whilst in 2003 less accessible woodlands not visited in 2002 yielded several thousand leaf clusters (Presland 2005). A visitor looking for it alongside roads in the locality in late June or early July would encounter it very frequently and often in large colonies. In woods, however, too much shade can prevent it from flowering, so that only leaves are observable (Aisbitt 2004, 2005).

Fritillary (*Fritillaria meleagris*) is a nationally scarce plant which typically grows in periodically wet, unimproved hay meadows where haymaking is followed by grazing. The taxon has been recorded in approaching 150 10km squares in Britain from 1987 onwards, and only 11 of these are wholly or partly in Wiltshire. However, many of the nationally recorded



sites are of introductions, with not many more than 30 regarded as native - though there are some doubts even about this for a plant which has been cultivated in Britain since the 16th Century. Wiltshire holds around 80% of the total native British population and 30% of the 20 or so sites in Great Britain with more than 100 plants. North Meadow at Cricklade may have several million in flower in a good year. It is a perennial plant well-known from its narrow leaves and large drooping flowers, either chequered pink to purple or uniformly white. It reproduces by seed and division of bulbs. It was recorded in 13 tetrads during the Flora Mapping, of which 11 were in the Thames Valley area in the North of the county. The other two were in West Wiltshire, one of them in an overgrown garden and probably an introduction. The single tetrad since (in Southwest Wiltshire) almost certainly was. Its typical habitat is disappearing, so that there is little opportunity to colonise new sites (King and Wells 1993).

Summer Snowflake or Loddon Lily (*Leucojum aestivum*) is a nationally scarce plant which grows best on seasonally flooded ground containing much silt and with some shade. It has long linear dark green leaves and a stem up to about two feet high bearing clusters of three to six snowdrop-like flowers drooping from the base of a leaflike spathe. The native taxon is ssp. *aestivum*, which has been recorded in only eleven 10km squares in Britain from 1987 onwards, one of which is in Wiltshire. It has its finest British site in damp willow carr at Woodford Green on the Avon north of Salisbury, where something like 2000 plants considered to be native have been reported and where it is still abundant. It was recorded in nine tetrads in the Flora Mapping, largely in damp situations, but also in one or two other places where it could well be a garden

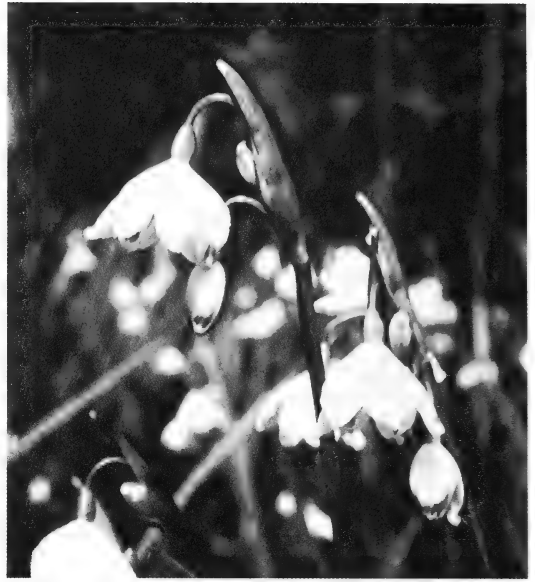


Fig. 16 Summer Snowflake

throwout. It was possibly also planted at one time in at least one of the damp places. Since then, it has been recorded in college grounds at Marlborough, where it is probably a garden throwout, and somewhere unspecified south of Salisbury. There is little evidence of spread from its Flora Mapping locations. With modern reclamation and drainage techniques, its survival is potentially threatened, and its presence needs to be clearly signalled to prevent this. In the process, it is important to distinguish between ssp. *aestivum*, which is thought to be native and the escaped garden subspecies *pulchellum*. Ssp. *aestivum* has translucent scarios teeth along the edges of the spathe, whereas ssp. *pulchellum* has a perfectly entire edge. A lens may be needed to see this, but the subspecies can usually be distinguished by flower size - 25-27 mm long in ssp. *aestivum* and 14-15 mm in ssp. *pulchellum* (Fitzgerald 1993).

Arable weeds

It is hard to identify arable weeds with any special association with Wiltshire, though they are an important part of the flora. Nationally rare arable weeds like Pheasant's-eye (*Adonis annua*), Cornflower (*Centaurea cyanus*) and Shepherd's Needle (*Scandix pecten-veneris*) are particularly important species because they are considered to be in danger of extinction, but they are so infrequent



Fig. 15 Summer Snowflake

and unpredictable in their appearance that it is hard work to take an active interest in them - though they have appeared in new tetrads since the Flora. There is perhaps more hope of seeing Corn Marigold (*Chrysanthemum segetum*), another nationally rare species which has occurred in rather more new tetrads. However there is probably more appeal in fuller detail of a species which was regarded as nationally scarce a few years ago but has now recovered sufficiently to have the label removed - Rough Poppy (*Papaver hybridum*).

Rough Poppy (*Papaver hybridum*) is one of the many annual agricultural weeds that used to flourish in land that was cultivated, because cultivation produced soil where they could grow with little competition from vigorous perennials and because the seeds were often inadvertently harvested with the crop and consequently sown with it. With the advent of herbicides and seed cleaning techniques, they became less common. Rough Poppy survived in scattered locations, mainly in South and East

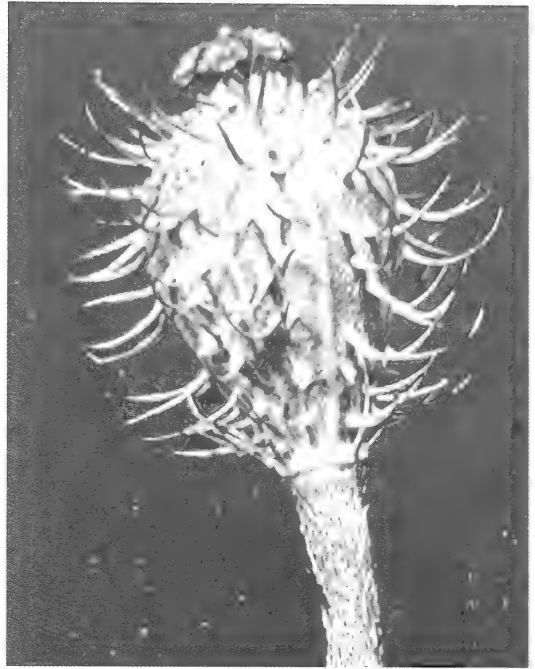


Fig. 18 Rough Poppy



Fig. 17 Rough Poppy

England. The rise of conservation has given it new opportunities. Strips at field edges are sometime left unsprayed to allow growth of weeds and some farmers now deliberately sow them. Rough Poppy is well-equipped to take advantage of such opportunities. It is normally self-pollinated, so a single plant is all that is needed for a new generation. The seeds remain viable in the soil for at least 80 years, so it is very likely that some will be there ready to germinate when conditions become right. The taxon has been recorded in 160+ 10km squares in Britain from 1987 onwards, 17 of them wholly or partly in Wiltshire. There is evidence that it is becoming more common in at least some localities. A study in Oxfordshire found that it occurred in two out of 156 fields in 1962, but was in 12 of the original 104 fields that remained in 1997 (Stevenson et al 1999). In Wiltshire, Rough Poppy was recorded in 41 1km squares in the Flora Mapping, which is roughly 2% of all such squares in the County, but they were virtually all in the south-west quarter. In this area, it was sometimes locally common. A 1999 survey concluded that it was "possibly increasing" in Wiltshire, mainly on the basis of new sites (Banks 2002). There were an encouraging 14 new tetrads added to the Flora Mapping count of 41 during the subsequent period up to 2003 - 34% of that original

number. The species can be distinguished from other poppies by a fruit about as long as broad covered in bristly hairs and a smallish, distinctively crimson flower. The fruits of other species are either not bristly or much longer than wide.

Plants of man-made habitats

Most plants growing in man-made habitats in Wiltshire are just as likely to be found in many other counties. The dry stone walls of the West and Northeast provide environments for such interesting plants as Rue-leaved Saxifrage (*Saxifraga tridactylites*) and occasionally Round-leaved Cranesbill (*Geranium rotundifolium*), which are otherwise uncommon in the County. Danish Scurvy-grass (*Cochlearia danica*) is a native coastal plant which had not been recorded in Wiltshire at all at the time of the Flora, but has since spread in hundreds along a number of our dual carriageways, particular the central reservation - but this is a national phenomenon associated with heavy salting of main roads. Keeled-fruited Cornsalad (*Valerianella carinata*) is a species formerly thought of as rare, but which has increased dramatically nationally since around 1960, and is now cropping up in wall-pavement angles in many places in Wiltshire. It is, however, on the side of a single lane at Redlynch that we find a Wiltshire speciality - Asarabacca (*Asarum europaeum*).

Asarabacca (*Asarum europaeum*) is almost certainly an introduction, despite claims to the contrary. It is a scarce and declining medicinal perennial herb of shady places, originally introduced from the European mainland in 1640 and naturalised in a few places. It is easily recognised from its shiny cyclamen-shaped leaves and hidden purplish or



Fig. 19 *Asarabacca*



Fig. 20 *Asarabacca*

greenish brown flowers with the sepals joined to form a three-lobed tube and no petals. The taxon has been recorded in only ten 10km squares in Britain from 1987 onwards, one of them in Wiltshire, where Redlynch is one of its more notable sites, known since 1820. Another site in South Wiltshire was noted in the Flora, but there have been no new tetrads since. This is not surprising, since its flowers lurk in semi-darkness beneath the leaves where they are pollinated by woodlice and other invertebrates. Production of seeds and seedlings is unusual, though the Redlynch colony does have them (Marren 1999), reproduction being mainly by rhizomes which give rise to dense masses of plants. It is interesting that there were fifty-nine 10km squares recorded for this plant in Britain before 1970. It has, since ancient times, been used for a staggering number of medical conditions, though apparently validated for none. Nowadays it is sold rarely, either for herbal use with a health warning about its poisonous nature or as a ground cover plant for shady parts of gardens.

There may be fewer sources for garden escapes than formerly.

Refound plants

A refund taxon is one that was in Grose's (1957) flora or Stearn's (1975) supplement, but not in the 1993 Flora. Such taxa were thought of as possibly extinct in the County, so it is a particular delight when one is found. Such plants are of most interest because of their tenuous relationship with Wiltshire. One such is Chiltern Gentian (*Gentianella germanica*).

Chiltern Gentian (*Gentianella germanica*) was thought to have become extinct in Wiltshire, but caused some excitement when it was refound in 2001. It is an annual or biennial chalk grassland species reproducing by seed whose distribution centres on the Chilterns, where most plants occur, with outliers in a number of other counties. Since 1987, it has been recorded in only twenty-five 10km squares



Fig. 21 Chiltern Gentian



Fig. 22 Chiltern Gentian (photo by Nigel Kendall)

in the British Isles, which places it at the rare end of nationally scarce plants. An obvious question to ask about a refund taxon is whether or not it was refound in one of its pre-Flora Mapping locations or not. Most of them were not. However, Grose's flora gave a record for Chiltern Gentian at Mere Down in 1898, and the 2001 record's grid reference was so close to the original as to make it clear that it was a refind of the original population. *G. x pamplinii*, its hybrid with *G. amarella* (Felwort), was found at the same place in 2001. It was amongst *G. amarella* plants, which were widespread. This was a remote spot. *G. germanica* is not obviously different from *G. amarella*, which was reported as common in the district generally by Grose and recorded in both tetrads concerned in the Flora Mapping, and the

abundant hybrids could have masked the existence of two separate species. It therefore seems likely that *G. germanica* has been there all the time and simply overlooked. The hybrid was not recorded here in Grose's time, but among populations of the two very similar parents it could have been missed. Grose's only record of the hybrid was miles away. Rich and McVeigh (2002) suggest that it may also be worth looking for Chiltern Gentian in the part of Wiltshire which borders on Berkshire, particularly Ham Hill near Shalbourne, since there are other old sites in that area. They provide detailed distinctions between these two similar and overlapping species and the hybrid. Briefly, however, *G. germanica* is usually 15-40 cm tall, is often branched only above, usually has 7-12 internodes, has middle stem leaves 1-3 times as long as wide, and corollas 22-30 cm long, 1.9-2.7 times as long as the calyx and with a funnel-shaped tube. *G. amarella* is usually 7-20 cm tall, is often branched above and below, usually has 6-10 internodes, has middle stem leaves 2.5-5 as long as wide, and corollas 14-19 cm long, 1.25-2.3 times as long as the calyx and with a cylindrical tube.

Conclusions

The emphasis in this article has been on plants with a special relationship with Wiltshire. However, the recording and publishing processes concern themselves with all plants growing in the county or in parts of neighbouring counties which are in vice-counties 7 and 8. The information assembled could, along with the original Flora Mapping data, be regarded as a kind of "flora" of the county's less common plants over the period 1983-2003. Analyses of the results for many of this wider range of plants and "portraits" of plants not covered here can be found in the two issues of *Wiltshire Botany* referred to earlier. The journal is free to members, but otherwise available from Rosemary Duckett, 50A The Butts, Westbury, Wiltshire BA13 3EX (Tel 01373 858296; email; rosemary.duckett@virgin.net). The cost is £5.00 post free and cheques should be made out to 'Wiltshire Botanical Society.' Earlier issues are also available.

Members of Wiltshire Botanical Society will continue to add to the information assembled so far and, indeed, already have in their recording since the end of 2003, which has included a number of exciting finds. Anyone can join in, but membership of the Society provides the support and guidance

of knowledgeable botanists distributed throughout the county. Details of events are available from Pat Woodruffe, Tel: 01794 884436, and membership information from Rosemary Duckett (as above). The objectives of the Society and information on events and on the contents of both the journal and the newsletter can be found on our website at <http://www.communitate.co.uk/wilts/wiltshirebotanicalsociety/> - or search for 'Wiltshire Botanical Society'.

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Large and special trees in the eastern part of Kennet District

by *Joan Davies¹ and Jack Oliver²*

Wiltshire is often thought of as a county of wide-open chalk downland, but there are wooded areas which add a different kind of beauty to the landscape. Trees are our largest living things, and some have been growing on the same spot for centuries, becoming part of our living heritage. The county contains a number of trees of record size and others of special or historic interest, many of which are recent finds or have up-dated measurements. This paper focuses on those in Marlborough and its surrounding area, which includes the Kennet Valley, Marlborough Downs, the Savernake Plateau and the eastern part of the Pewsey Vale. The large and special trees are to be found in wooded areas, fields and hedgerows, gardens of notable places and even in the centre of Marlborough. We include native and introduced trees, some of which might be future champions. Our records may be patchy or partisan, so we welcome information on superior or significant trees from any part of the county.

INTRODUCTION

Trees progress through three phases of growth, a formative period, a mature state and finally old age. Planted trees and natural seedlings may take a season or two to become established and then growth increases year by year as leaf area increases with the expansion of the crown. Each year a fresh layer of new wood is formed over the entire surface of the tree trunk under the bark. During this period of tree growth, tree rings of more or less constant width are formed in the trunk and the girth of the trunk increases. In a tree with rings of equal width there would have been a constant yearly increase in girth. Fluctuations in the rate of growth can occur due to extremes in weather conditions, particularly lack of water, defoliation of leaves by caterpillars or attacks by fungal or insect pests. This will reduce the width of the tree ring formed in that year.

Once optimum crown size is reached, usually after forty to a hundred years, the tree enters its

mature state. During this period, annual production of plant food from the foliage stabilises and the annual increment of new wood will remain nearly constant in term of volume, and hence the tree rings progressively decline in width. In old age the crown of the tree often sustains damage, branches begin to fall or die back, leaf area decreases and the tree ring width declines further. Once the width is reduced to 20 rings to a centimetre many species of tree can barely survive. This would give an increase in girth of 1cm in 20 years.

Trees such as oaks and chestnuts keep to this growing pattern of three phases, whereas poplars, willows and alders frequently have a short but very productive formative growing phase and then go straight into old age. Birches tend to have a brief mature period. On the other hand, yews, which can be extremely long lived, can return to the formative phase of growth at any age of their lives.

Coppicing, pollarding and branch layering will stimulate growth and the tree will return to

¹ Ballard's Piece, Forest Hill, Marlborough, SN8 3HN ² High View, Rhyls Lane, Lockeridge, Marlborough, SN8 4ED

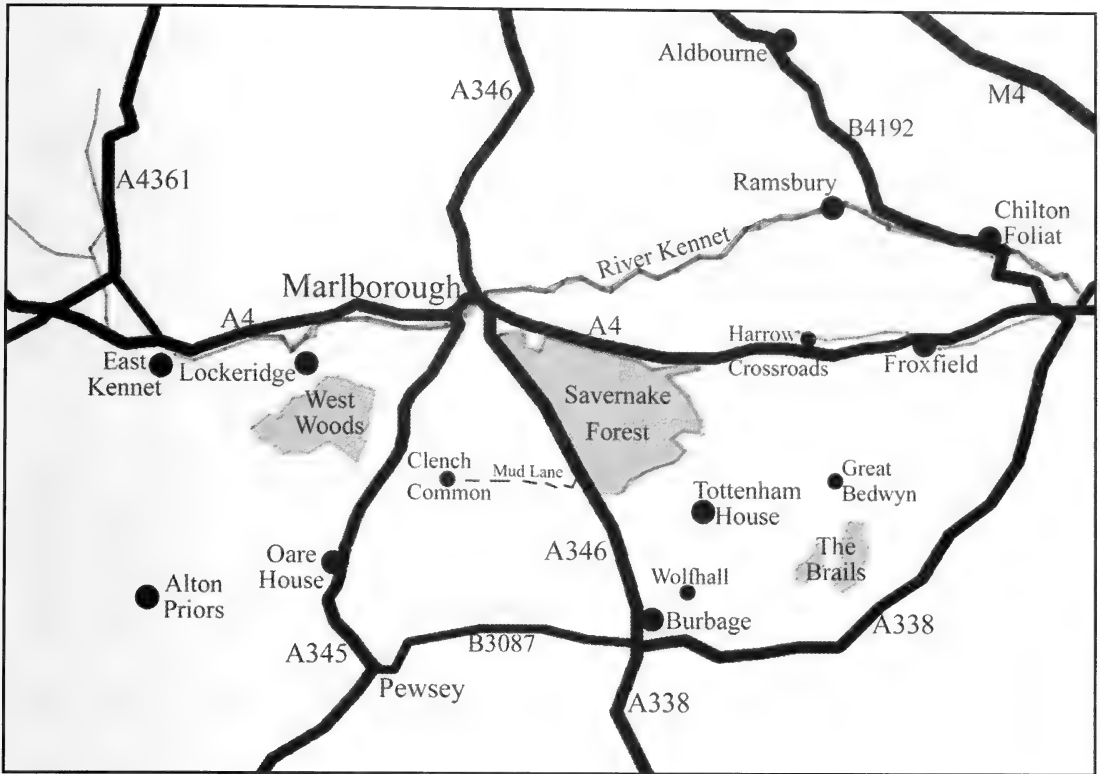


Fig. 1 Map of the area showing the localities mentioned in the text

a new formative state and consequently may live for very much longer. If a tree is grown in an open position, its girth will be greater than if it was closely surrounded by other trees which will prevent the crown from fully developing. Soil suitability, mycorrhizal associations and complex interactions between physical factors (e.g. drought or flooding) and potential pathogens (e.g. *Phytophthora*) will all make a difference to the rate of growth and how long the tree is likely to live.

A rough average of the increase in girth of a deciduous tree during its formative years is 2.5cm (1in) per year decreasing to 1.2cm (½in) per year when it is mature. Fast growing trees such as willows and poplars are likely to have an increase of girth of about 5cm (2in) per year in their formative years.

MEASURING TREES

Trees are measured for both scientific study and for the possible thrill of finding a tree which is the largest of its species in the county, or possibly in the

whole of the British Isles. The measurement of the girth of the trunk, which is easy to obtain, is used in deciding the largest tree and its height for finding the tallest champion. Measurements of the girth of a tree can give a rough estimate of its age and a series of measurements of the same tree over time indicates how well the tree is growing.

The standard height for measuring the girth of a tree is at 1.5metres (5ft) from the ground on the upper side of any slope. All of the girth measurements given below are at this preferred height, unless this has been impossible, when a different height is stated. Foresters, who are normally measuring timber with a straight trunk and a circular cross section, use the term Diameter at Breast Height (DBH). DBH used to be measured with callipers, but electronic devices are now used. The conversion from diameter to girth is simply a matter of multiplying by π (approximately 3.14), but is only meaningful if the cross section is reasonably circular.

Heights of trees are also measured for record purposes, confirmation of national champions usually requiring specialist equipment. If a tree appears to be

very tall we have given an estimated measurement by making calculations from measurements of angles and distances. The spread is also a worthwhile measurement.

RECORDS OF TREE MEASUREMENTS ON DATABASES

Jack Oliver has identified and measured girths of hundreds of trees in Wiltshire. Essential details include the type of tree, its number if it has a tag, location (including National Grid Reference), measurements and date. Typed lists of measurements of trees for Savernake Forest and Tottenham Park are in the WSRO (3781 and 3255). Records are held electronically by the Wiltshire Botanical Society, which is in the process of adding details of records of Wiltshire trees to their computerised data base. The official organisation for holding tree measurements of large trees is the Tree Register of the British Isles, (TROBI). Although TROBI keeps lists for each county as well as for the champion trees in the UK, there is no formal transfer of tree records from County Biological Record Centres to TROBI, or vice versa. All our records of large and significant trees have been passed directly to TROBI. Since its formation TROBI has been presented with the difficult task of entering existing written records into a computerised database as well as keeping up with the continuing influx of new data. A book recently published by TROBI, *Champion Trees of Britain and Ireland* (Johnson 2003), omitted some fourteen or so of the greatest Wiltshire trees in favour of inferior ones from other counties.

One of the problems in identifying champions is how to compare irregular shaped trees. TROBI has recently tried to overcome this problem by putting trees into the following three categories:

Category A

Trees growing with a clearly defined single clean stem measured at 1.5m. Unless stated otherwise, all girths in this paper were measured at this height from the ground.

Category B

Trees growing with a clearly defined single stem, but with natural features that increase the measurement at 1.5m (e.g. burrs, bulges, forking of trunk just

above 1.5m), or are measured at a height other than 1.5m.

Category C

Trees growing without a clearly defined single stem at ground level, as multiple stems or coppice. Where possible the largest individual stem is also recorded at 1.5m for comparison with an individual tree, and basal circumference at 30cm is measured.

LOCATIONS AND TYPES OF LANDSCAPE

As large trees form part of the landscape, in this paper they are grouped by location, rather than species. For comparative purposes, champion and special trees are presented in Table 3 below by species. The locations are grouped under four types of landscape: the Kennet and Froxfield Valleys, the Marlborough Downs, the Savernake Plateau, and the Pewsey Vale (the eastern part).

These groupings are based on geological and physical characteristics of the areas in question. With the exception of the Pewsey Vale, the whole of the region under study is underlain with Chalk. The River Kennet and its tributaries have dissected the Chalk to form valleys which run from west to east across the area. To the north of the main Kennet Valley are the Marlborough Downs, an area of high chalk plateau forming a landscape of open downland, mostly arable farming, with remnants of chalk grassland on the steeper slopes. Over the higher ground to the south of the Kennet Valley, described as the Savernake Plateau, Clay-with-flints has been deposited on top of the chalk, creating heavy water retaining soils on the otherwise freely draining chalk. To the east of this area, around Bedwyn, the chalk has been overlaid by Reading Beds, topped with London Clay, which has produced a variable soil supporting areas of woodland and is included in the area of the Savernake Plateau. The Vale of Pewsey is a low-lying area between the ridges of the Savernake Plateau to the north and Salisbury Plain to the south formed by the erosion of an anticline in the Chalk. The exposure of the Upper Greensand in the Vale had produced a sandy soil which, combined with areas of river alluvium, has resulted in a fertile agricultural landscape.

LAND OWNERSHIP, MANAGEMENT AND HISTORICAL ASSOCIATIONS

Some of the trees considered here are associated with important local families or have historic associations. Ownership of land has influenced the type and number of trees planted, as well as the clearance of trees for agriculture or other uses. The ancestors of the present Marquess of Ailesbury have owned large amounts of land in the area for several centuries. The Earl of Cardigan, son of the present Marquess, is the 31st Hereditary Warden of Savernake Forest. Savernake became a Royal Forest soon after the Norman Conquest and Richard Esturmy was appointed as the first Warden. During the middle ages the Forest covered a much larger area, including La Verme (the present Savernake Forest), the West Bailiwick, which stretched as far as East Kennett, and Le Broyle, an area east of Bedwyn. The Esturmy family lived at Wolfhall east of Burbage and in the 15th century the Wardenship passed by marriage to the Seymour family. It was Jane Seymour who married Henry VIII and was the mother of Edward VI. Jane's brother Edward became Duke of Somerset, Lord Protector and owner of the Forest. In 1551 Edward was charged with treason and felony, executed in 1552 and his lands confiscated. Le Broyle was given to the Earl of Pembroke. A short time afterwards, Edward's son was given back the La Verme and West Bailiwick lands and the title of Earl of Hertford. In the late 16th century he converted land west of the Marlborough to Burbage road into two deer parks, known as the 'Great Park' and south of this 'Brimslade Park'. About the same time Tottenham Lodge superseded the Manor House at Wolfhall as one of his principal houses. In the 17th and early 18th centuries the Great Park and Brimslade Park were converted into farmland.

About 1720, Charles Bruce, who married a descendant of the Earl of Hertford, invited the Earl of Burlington to design and build a new house on the site of Tottenham Lodge and to enlarge and redesign the Park. In 1741, Charles became the 3rd Earl of Ailesbury and he, followed in 1747 by his nephew Thomas Brudenell Bruce, were the landowners who laid out the Rides in Savernake Forest as we know them today and planted many trees. In c.1823 Tottenham House was rebuilt by Thomas Cundy for the Marquess of Ailesbury and during the Victorian

Period many ornamental trees were planted in its grounds.

Changes in agricultural and silvicultural practices, the redesigning of Parks and gardens, the felling and planting of trees have made continuous changes to the landscape. While certain trees have been left to grow old, others have been planted and are now in their prime. In addition to the Ailesbury family, other people have planted trees, some of which have grown large or are of special interest. These trees and others resulting from natural regeneration are described in their locations under the four main groupings referred to above.

THE KENNET AND FROXFIELD VALLEYS

The Kennet Valley is characterised by smooth valley sides which roll gently down to a narrow, flat floodplain of alluvium and valley gravels overlying the chalk. It is a pastoral landscape in which the distinctive silver grey leaves of White Willows, *Salix alba*, can be seen in the water meadows and along the side of the river. At East Kennett there is a magnificent tall, shapely White Willow tree, probably about 30m in height, with a vertical trunk, which has a girth of 525cm. White Willows vary greatly in size and shape; the largest girthed one in the British Isles is at Amberley Wild Brooks in West Sussex with a girth of 748cm and a height of only 10m, whereas the tallest one known is at Harlow, Essex with a height of 34m, but a girth of only 440cm. The Willow at East Kennett has one massive, partly fractured lower horizontal limb. This fracture was probably caused by wind; all along the Kennet valley from Avebury to Marlborough the prevailing southwest winds have felled a number of White Willows. Many of the willows along the riverbank are old pollards and at Clatford there is a living, but fallen, ancient pollard White Willow with a girth of 690cm at 0.3m (Oliver 2003a; 2004a).

Floating water meadows along the Kennet valley were formed in the 17th century to help the local sheep and corn system of agriculture, by providing early grass to feed the sheep. Signs of earthworks and irrigation channels are still visible and during winter months these meadows are normally wet. On a water meadow west of Marlborough College at NGR SU 178 686 is a huge, fallen, living female White Willow with a trunk girth of 550cm at 1.5m from the primary root (Figure 2). The original trunk



Fig. 2 Fallen White Willow in a water meadow at Marlborough



Fig. 3 Part of the Mound, Marlborough College

is hollow and horizontal because, many years ago this tree became fractured on the southwest aspect, fell over and re-rooted on the marshy ground about 2.5m northeast of the original bole. A main secondary layered trunk has formed at this point and has a girth of 660m at 1m. This complicated tree now has numerous verticals plus a large epiphytic Ash and is described in Oliver 2002a and 2004a. To date this is the third biggest White Willow in Wiltshire.

An ancient senescent pollard Crack Willow, *Salix fragilis*, which overhangs the north bank of the river, just west of Marlborough College remains alive in 2006. Along with a much finer tree at Malmesbury, this dying shell had, in 2002, been given champion status by TROBI, as the greatest girth Crack Willow in the British Isles. However, much of the girth of 480cm was accounted for by gaps and dead wood, illustrating that impressiveness may not be conveyed by a single measurement alone. Most Crack Willows have been stunted and blighted by disease (Oliver 2004b)

Marlborough College

North of the Bath Road, in a hedgerow east of Littlefield House, built in 1871 as an out-boarding

house for Marlborough College, are two large Norway Maples, *Acer platanoides*. These trees show bright yellow-green bunches of flowers in early spring before the leaves appear. The Norway Maple, tag No. JP 1491 at NGR SU 181688 had a girth of 355cm in August 2006. In default of other records, this is a Wiltshire champion with another Norway Maple, in the same hedge east of the preceding, being second with a girth of 320cm.

The Mound in the central part of Marlborough College is nearly half the height of Silbury Hill and possibly as old, although recent survey and excavation indicates a Norman origin (Field *et al.* 2001; Heaton and Moffat 2002)(Figure 3). By 1600 the Castle was in ruins and one of the Seymours built a mansion house in its grounds. The Mound was turned into a garden by cutting a spiral terrace around it (Field *et al.* 2001). A report of 1665 notes that 'the paths were bordered with little hedges with a summerhouse on top' (Kempson, 1979). Trees still grow on the Mound, although some, including yews, have been felled on safety grounds. There are now more than seventeen different tree taxa growing on the Mound with yew still the dominant species. Natural seedlings occur, but many of the oldest yews are considered to date back to the miniature hedges; kept small for the first hundred years or

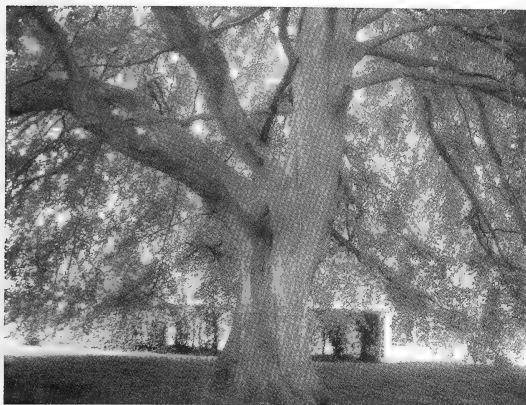


Fig. 4 Under the 'Tennyson Beech'

more, the biggest Yew had a girth of 385cm in 2002. There are also many other large Yews in the College grounds including those densely arranged around the Duelling Lawn.

In 1702-15 a new mansion house was built for the Duke of Somerset, and for some years it was the home of the Earl and Countess of Hertford. In 1751 it became *The Castle Inn*, used as a stopping place for stagecoaches on the London to Bath Road. With the building of the railways, the inn's trade declined and in 1843 it was sold and became 'C' House of Marlborough College. The Master's Lodge was built in 1845 and in its garden are some fine ornamental trees. One such tree, which can be seen from the Pewsey to Marlborough road, on the descent down Granham Hill and on the final approach to the town, is a beautiful copper beech, *Fagus sylvatica purpurea*, known as the 'Tennyson Beech' (Figure 4). It is believed that Tennyson composed some of his poems sitting under this tree whilst visiting his son, Hallam, at the College in the period 1865-70. The 'Tennyson Beech', tag JP 1790, at NGR SU 186 686, is now a fine copper beech, with a remarkable spread of 33.1m in the NE-SW direction. Its girth in August 2006 was 386cm at the standard height and 545cm at a height of 0.3m. The girth in 2001 was 373cm (Oliver 2004b), giving a recent increase of 2.6cm per year and hence an estimated planting date of approximately 1850. The tree was probably planted soon after the Master's Lodge was built in 1845.

In the same grounds, but closer to the river at NGR SU 186 685, is a tree of more recent introduction, a Coliseum or Cappadocian Maple, *Acer cappadocicum*; a Wiltshire champion and probably the ninth largest on a single bole in Britain.

This type of tree, which is native from the Caucasus to Asia Minor, was introduced into this country in 1838 (Thomas 1983) and, according to Stace (1997), can become semi-naturalised in Britain. There is a line of these trees here, surrounded by extensive and wide-spreading masses of dense red root suckers, and in August 2006 the largest easternmost tree had a girth of 290cm. This tree is still enlarging rapidly as during the last four years its girth has increased by 5cm or more per year (Oliver 2004b). Within the main part of the College grounds is another large girthed *Acer cappadocicum* at NGR SU 184 686. In August 2006 it measured 310cm at the standard height of 1.5m, but the tree forks at 1.6m so this makes the standard measurement less reliable. At 0.3m (1ft) the girth is 315cm.

Other large trees in the College grounds measured in August 2006 include a Swamp Cypress, *Taxodium distichum*, at NGR SU 186685, with a girth of 335cm, and a False Acacia, *Robinia pseudoacacia*, near the College Gate at NGR SU 184687, with a girth of 230cm

Marlborough Town

Within the town of Marlborough there are many fine trees, the tallest of which is probably a female poplar growing on the south side of the river Kennet in the back garden of a house on the north side of George Lane. The tree was planted by one of the Maurice family. There have been six generations of Maurices as doctors in Marlborough; a unique record according to the *British Medical Journal* (Maurice 1982) The first of the doctors was Thelwall Blisset Maurice who joined Dr Pinckney in his practice in Marlborough in the early 1790s. From 1829 until recently the home of the doctors has been Lloran House on the south side of the High Street. This house was first rented by Thelwall's son Dr David, and in 1881 Lloran House and all of the land behind it down to the river, with a strip of water meadow on the far side of the river, was purchased by David's son, Dr James Blake Maurice, (Maurice 1994). It was Dr James and his son Walter who planted the trees in their garden which are significant trees today. On the death of Walter in 1956 the strip of land on the south side of the river was sold for housing. A line of houses was built, but the poplar remains; a variety of Poplar *Populus x canadensis* 'Regenerata' (Figure 5). The tallest, quickest growing deciduous trees in the country are the hybrid poplars, *Populus x canadensis* cultivars. Not only is the tree in George Lane very tall (over 40m), it also has a girth of 680cm and as



Fig. 5 The Railway Poplar



Fig. 6 Base of the 'Poplar' Oak, Marlborough

such is a champion for Wiltshire. According to the TROBI Registrar, it is one of only six broadleaf trees in the country which are both 40m plus in height and over 6m in girth. As shown in Figure 5 the tree is presently covered in ivy.

A new house was built behind Lloran House for Walter's widow and in the mid 1970s the rest of the garden of the house was used as part of the River Park housing development. Three fine trees planted by the Maurice family have remained. One is an interesting oak with upright twisting, corkscrew like branches, which can be seen over the wall from Figgins' Lane. This oak at NGR SU 187 688 is a *Quercus robur f. fastigiata*. From a distance this variant has a regular conical outline, hence the name 'Poplar' Oak. In 2006 it had a girth of 281cm measured at the standard height of 1.5m, but above the origin of seven big low branches (Figure 6). Because of its low branches this is a difficult tree to measure, but the measurement compares well with one made in 2002 (Oliver 2004b). It is a Wiltshire champion.

The other two remaining trees behind Lloran House are both (Red) Indian Bean Trees, *Catalpa bignonioides*. The Indian Bean tree was introduced from the Eastern USA into Britain in 1726; it is a wide spreading tree with large leaves and has panicles of Horse Chestnut like flowers in late summer. The larger one (Figure 7) is no longer wide spreading as its lower branches have been cut back or reduced because of an adjacent brick building. It is a tall tree for the species, about 20m high and in 2006 had a girth of 325cm at the standard height (below the scars of the felled branches) and 360cm around the base at 0.3m from the ground, making it the greatest girth for a *Catalpa bignonioides* in Wiltshire and in the top ten nationally. The other Indian Bean tree has not been pruned and remains wide spreading and is about 12m in height. The trunk forks at 1.3m and the girth of the trunk at a height of 1m is 225cm.

On the northeast side of Figgins' Lane are Priory Gardens which were given to the town by a Mrs Clay in memory of her husband John. Within the gardens is a False Acacia, *Robinia pseudoacacia* at NGR SU 186689, which is bigger than the one in Marlborough College; in 2003 it had a girth of 290cm.

A fine Copper Beech, *Fagus sylvatica* 'Atropurpurea', can be seen when coming down Herd Street on the approach to Marlborough. It is in the grounds of Wye House, at NGR SU 190691. The tree has a spread of 22m, which is far less than the Tennyson Beech, although its girth is larger, being 447cm in 2006. The TROBI Register has recorded this Wye House Copper Beech as the third largest in Wiltshire and in the top 80 for Britain.



Fig. 7 Large girthed Indian Bean Tree

Ramsbury

About 9km further down the Kennet valley from Marlborough is the village of Ramsbury, formerly a Domesday borough and the centre of an episcopal see in the 10th century (Haslam 1984). On the south side of the river a track leads to the West Lodge of Littlecote Manor. In 1996, Ronald Price of Ramsbury reported a large English oak *Quercus robur*, close to West Lodge at NGR SU 289 711. In order to clear the buttress he gave the girth measurements of 24½ft (747cm) at 4ft 6in and 22½ft (686cm) at 6ft 6in. The *Q. robur* at this locality is a tall, spreading, maiden tree with its lower trunk strongly buttressed; in 2006 it had a girth of 727cm at 1.5m and 960cm at 0.3m. This oak is not a record holder, but it is as large as many of the ancient oaks in Savernake Forest.

Close by at NGR SU 289 710 is a hollow Ash, *Fraxinus excelsior*. It is a healthy tree which had been pollarded at 4m and has a girth of 460cm at the standard height. This is nowhere near a record

size, but although there are many Ash trees in the eastern part of the Kennet area no healthy larger ones have been found.

Chilton Foliat

Chilton Foliat is the eastern most Wiltshire village in the Kennet Valley. On the north side of the B1492, which passes through the village, is a very large and magnificent Plane tree east of the Church, outside the Old Rectory at NGR SU 319704. It is a hybrid or London Plane, *Platanus x acerifolia*, also known as *Platanus x hispanica*. Its leaves have slightly narrower lobes and are more deeply indented than some London Planes but not as much as those on the Oriental Plane, *Platanus orientalis*. In September 2006 the girth of the trunk was 880cm at the standard height measured from the soil level of the flowerbed in which it is growing, which is 0.5m above the level of the pavement. The trunk is very knobbly and above 3m it is in two halves with the boughs above showing the familiar pale patchy scales.

Froxfield Stream Valley

From Marlborough the A4 road to London climbs up to Savernake Forest and at the eastern end of the Forest drops down into the valley of the Froxfield Stream, a tributary of the river Kennet. About 3km (2 miles) before Froxfield on the north side of the road at SU 269679 is a tall, wide spreading Hornbeam, *Carpinus betulus*. In 2002 this tree had a girth of 350cm and at the base of the trunk, 0.3m above the ground, a circumference of 840cm. This is the fourth biggest girthed Hornbeam at the standard height in Wiltshire and is included because of the large base. The Hornbeam with the greatest girth in Wiltshire is at Lacock Abbey with a girth of 377cm.

A short distance further eastwards along the A4, just north of the Harrow Crossroads at SU 274679 there is a large, tall wild pear tree, *Pyrus communis*, visible from the main road. Every winter the Froxfield Stream, which flows on the north side of the A4, rises just west of the crossroads. In the 18th century the crossroads was known as Cross Ford. The north-south roads at this junction are ancient, being Monk's Lane and the Great Bedwyn to Ramsbury Road, via Chisbury. In the early 19th century, a farm, a few houses and an inn, known as the Harrow, were built at this junction, hence the renaming of the place. The wild pear tree is 100m north of the crossroads, just west of the Ramsbury Road, on the



Fig. 8 Wild Pear Tree, Harrow Crossroads

Harrow Farm of the Crown Estates (Figure 8). It is a tall well-shaped tree, about 25m in height, standing in a field close to a hedge, which is along the edge of the water meadow. It is unusual for a pear as the flowers are strongly deep pink for ten days or so in the spring before they become fully open. As shown in the Figure 8 the tree then develops beautiful white blossom. The fruit is hard and apple-like in shape. The girth of the tree trunk is 315cm, and according to TROBI it is a Wiltshire champion and may be the second biggest recorded for a *Pyrus communis* on a single stem in the British Isles.

Further down the Froxfield stream is an upright Crack Willow, *Salix fragilis*, standing in a water meadow at NGR SU 282 679. This tree has a full crown and is in a far better state than the dying Crack Willow in Marlborough. It has a gap in its trunk, which may splay open, as the tree has not been pollarded for many years. In October 2004 this female Crack Willow had a girth of 465cm and 450cm at 0.6m, some 15cm smaller than the dying Crack Willow in Marlborough.

Froxfield

In the Churchyard of All Saints Church is a



Fig. 9 Sycamore, Froxfield Churchyard

Sycamore, *Acer pseudoplatanus*, at NGR SU 295 680, with a huge coppice base engulfing two graves. The tree is covered very heavily in ivy and in 2004 had a girth of 460cm and was 830cm around its base at 0.3m from the ground. According to the elderly local gardener, it was a substantial tree when he was a boy. This is possibly the largest basal circumference of a Sycamore in Wiltshire.

Also in the Churchyard is a pair of large Cherry Plums, *Prunus cerasifera pissardii*. These trees have pale pink flowers early in the Spring and purplish leaves. The southern tree has the larger girth and at 163cm at a height of 1.5m it is a Wiltshire record. The TROBI Recorder notes that it is unusual to find this variety of tree on a good 1.5m bole and it is in the top ten for all '*pissardii*' varieties in England.

Marlborough Downs

Record size trees are very scarce on the high ground north of the river Kennet. The area has a chalky soil and without a Clay-with-flints covering it is well drained and suitable for agriculture. West of Aldbourne, on High Clear Down, at NGR SU 233766, on a public right of way which runs along the edge of a wood, is a line of three ancient Hornbeams, *Carpinus betulus*. Peter Andrews and Joy Newton measured these trees in 2005 and as they had been pollarded at about 1.3m from the ground the measurements were made at 0.6m. The tree with the largest girth of 470cm had some bracket fungi. The second largest was a fine tree with a good shape and a girth of 410cm at 0.6m. These are not record trees, but are of possible interest as a line of old pollards, close to two deserted medieval villages.

Savernake Plateau

In many places across this area the soils are not suitable for intensive agriculture as they consist of a thick layer of Clay-with-flints, making them heavy and wet in winter. This characteristic has resulted in areas of woodlands and trees of record size.

Savernake Forest

Savernake Forest is on high ground south east of Marlborough. Since becoming a royal forest in Norman times the majority of the land has never been cultivated although areas have been used for grazing. Until the end of the 17th century it consisted of open scrub with scattered trees and areas of coppice. In the 18th century the Forest was laid out as we know it today with drives radiating out from Eight Walks. Trees were planted along the avenues and this planting continued into the 19th century. Since 1939, when the Savernake Estate leased the silvicultural rights to the Forestry Commission, many more trees have been planted and the Forest is now densely wooded. There are still about 400 veteran trees in the Forest, some growing within the young plantations. Since we last described the oaks (Oliver and Davies 2001), a few more very large examples have been found. Table 1 lists all of the known oaks in the Forest 7m or more in girth. Most have been pollarded or coppiced or both in the past, influencing their shape and enabling them to live longer.

The Eighteen Native Oaks having the Largest Girths in Savernake Forest

The Wiltshire champion Pedunculate or English Oak, *Quercus robur* is an ancient pollard in Spye Park at NGR ST 954670, with a girth of 1075cm. The largest one in the Forest is the Cathedral Oak at 995cm. This is a healthy tree that could in years to come become the champion.

In Table 1 a large coppice measurement indicates

Table 1 Oaks having the Largest Girths in Savernake Forest

Name or Situation	Tag No.	Octant	Map ref. SU	Taxa	Girth cm	Coppice base, cm
** Big Belly Oak	F 06924	VI	2132 6578	QS	1080	1400
King of Limbs	J 09246	III	2428 6601	QS(P)	1030	
Cathedral Oak	J 09500	VII	2061 6798	QR	995	
Duke's Vaunt	J 08990	III	2389 6646	QS(R)	890	
S.W. of Marie Louise Drive	J 09300	VI	2134 6604	QS(P)	840	
N.E. of Marie Louise Drive	J 09299	VI	2136 6607	QS(P)	840	
S.W. of Marie Louise Drive	JP 1022	VI	2121 6606	QS	760	1030
N of Gt Lodge Drive	J 08977	VII	2122 6680	QS	760	980
E of Ashlade Firs Road	JP 1027	I	2264 6777	QR	750	
E of Ashlade Firs Road	JP 1026	I	2264 6775	QR	740	
Surveyed Oak	J 08947	VIII	2173 6765	QS	740	
Near Church Walk	J 09070	VII	2093 6766	QS(P)	735	
N.E. of Marie Louise Drive Very hollow, 1 branch alive	East of J 09299	VI	2142 6608	Q	735	
Braydon Oak	J 08958	VII	2177 6702	QS(R)	710	
Slingsby Oak	J 08830	V	2248 6543	QS(P)	710	
*Old Paunchy	J 09057	VII	2085 6764	QP	700	1050
Sinewed Oak	F 08063 J 09117	VII	2133 6739	QS(P)	700	
West of A346 in the Park Farm Area	F 06920	VI	2131 6571	QS(P)	700	

QP – *Quercus petraea*, the Sessile or Durmast Oak

QR – *Quercus robur*, the Pedunculate or English Oak

QS – *Quercus x rosacea*, a hybrid of the other two oaks

QS(P) – a hybrid closer to QP than QR

QS(R) – a hybrid closer to QR than QP

Tag numbers

F – Forestry Commission numbers, galvanized zinc tags fixed at about 0.6m (2ft) from the ground.

J – Jack Oliver's numbers, galvanized zinc tags fixed at about 1.5m (5 ft) from the ground.

JP – Jack Oliver's numbers, bi-laminate plastic tags fixed at about 1.5m (5 ft) from the ground.

* – A Wiltshire Champion.

** – A National Champion

The Octants start from Eight Walks and go clockwise from Twelve O'clock Ride north of Eight Walks (i.e. Octant I being between Twelve O'clock Ride and Sawpit Drive). Eight-figure map references were obtained by using a GPS Navigator. Girths were measured at or close to a height of 1.5m and coppice base circumference measured at 0.3m (1ft) between 2000 and 2005.

the tree is very old and these trees possibly date back to Norman or even Anglo-Saxon times. The largest-girth Oaks are not necessarily the tallest or the most impressive in the locality. The tallest is the Braydon Oak, the one with the largest spread is the King of Limbs and the Duke's Vaunt is a living shell, whereas the Cathedral Oak gives the



Fig. 10 'Big Belly Oak', 2005

impression of being a massive tree. Probably the best-proportioned English Oak is just outside the Forest at St Katharine's School at NGR SU 251649. This is a tall maiden oak, *Quercus robur*, with a full crown and a girth of 650cm in 2000. Old Paunchy, the Wiltshire champion Sessile Oak, is an odd looking tree with an angled trunk rising out of a large lopsided coppice base, whereas the Crockmere Oak, the second largest Sessile Oak, *Quercus petraea*, in the Forest, is a fine upright tree with a straight trunk of 685cm girth and is situated on the edge of a drive at NGR SU 2383 6608.

It can be seen from Table 1 that the majority of the greatest Savernake oaks are hybrids, with the Big Belly Oak as a national champion (Figure 10). This hybrid oak has well-balanced features of both of its antecedent species, *Quercus robur* and *Quercus petraea*, (Oliver 2000a; Oliver and Davies, 2001). In June 2002, in recognition of its place in the national heritage, The Tree Council designated the Big Belly Oak as one of fifty great British Trees to celebrate the Golden Jubilee of Her Majesty Queen Elizabeth II. With a girth of nearly 11m they said the tree could be as much as a thousand years old. In 2003 the Oak was showing signs of splitting at the top of its trunk. To try to prevent the tree from splitting further apart



Fig 11 Leaves of the original Cluster Oak

the Forestry Commission carried out remedial work by putting a steel band round the trunk and cutting back its branches. In 2003, at the request of Rob Guest of the Forestry Commission, we displayed photographs of the Big Belly Oak and other ancient Savernake Forest Oaks at the Fourth International Oak Conference, (Oliver and Davies 2004).

Other oaks of special interest in the Forest are the tall Turkey Oak on Twelve O'Clock Drive at NGR SU 224654 and the Cluster Oak on Column ride at NGR SU 216653. The Turkey Oak, *Quercus cerris*, is the only one in the main part of the Forest; it towers above the surrounding tree canopy and is supported by large buttresses at the base, especially on its western side. It has an estimated height of 30m and had a girth of 530cm in 2000. Turkey Oaks are faster growing trees than the English Oaks but do not live as long. The 'Savernake Cluster Oak', *Quercus robur* L. var 'Cristata', Tag No. J08866, was first reported in 1916 (Henry 1917), when its girth was given as 132cm at 5ft. In 1999 the girth was 190cm giving an increase of 58cm in 82 years, which at only 0.7cm per year is a very slow growing rate. It was very difficult to fix the tag, indicating that the wood is extremely hard. It has overlapping clustered leaves which are wholly glabrous (Figure 11). Its acorns, which are dimpled, were used to grow the Replacement King Oak and the Burbage Cluster Oak.

Another champion tree in Savernake Forest is a hollow Field Maple, *Acer campestre*, tag No. J09457 (Figure 12). With a girth, in 2000, of 375cm at the standard height and 400cm at 1.8m, it is the largest



Fig. 12 Hollow Field Maple

girthed with a single trunk in Wiltshire and one of the largest in the British Isles. It is situated on the northeast side of a narrow path at NGR SU 2274 6605.



Fig. 13 Warren Farm Great Beech

Savernake Forest is famous for its avenues of beech trees, *Fagus sylvatica*. There are many fine beeches in the main part of the Forest, especially along Grand Avenue, Charcoal Burners Road, the northern end of Long Harry, and many areas of the Forest with naturally arisen beech seedlings and saplings. However the champion Wiltshire Beech lies at the edge of the Forest at Holt Pound, Warren Farm, in an avenue of trees on the southwest side of the avenue closest to the road. Holt Pound is so named as it was the place where cattle were impounded when they should not have been grazing in the Forest. The Beech avenues in the Forest were planted in the mid- to late- 18th century, although all of the trees seen today are replacements, as the original trees have blown down or been felled for safety reasons. Warren Farm was not built until the early 19th century so the avenue at Holt Pound was probably planted later than the Avenues in the Forest. The champion Beech, known as the 'Warren Farm Great Beech' is growing on Mr Liddiard's Crown Estates Farm (Figure 13), at NGR SU 249656, tag No J09231 with a girth of 705cm in 2004. The tree is so well proportioned that it does not appear to have such a massive trunk, but it is one of the finest very large-girth Beeches retaining its full canopy in the British Isles.

There is a special Beech, *Fagus sylvatica*, near the centre of the Forest, south of Eight Walks on Twelve O'Clock Drive at NGR SU 2254 6625, with a tag No. J08786. It looks like a common Beech, but instead of the normal smooth trunk it has a rough bark (Figure 14). It was first reported by John Wildash in 1951 who noted that 'The bark of this remarkable tree is rough and furrowed as an oak' (Grose 1957). Recently we have obtained a photograph of this tree taken by John Wildash in 1951 and the bark appears as it does today. The girth of the rough-barked Beech in 2001 was 383cm. It is a healthy upright tree with leaves of the same colour as the common Beech. The trunk of this rough-barked variant is quite distinctive and richer in epiphytic bryophytes and lichens than that of normal Beeches (Oliver 2000b). Dick van Hoey Smith describes a *Fagus sylvatica* 'Quercooides,' which is a very rare form of the common beech with an oak like bark, the habit and form of the whole tree being oak-like (van Hoey Smith 2005). Every characteristic of the Savernake rough-barked Beech is the same as the common beech except for the roughness of its bark and from a distance this tree looks the same as the next beech in the line.

Another unusual tree in the Forest is a suckering Rowan, *Sorbus aucuparia*, tag No. J08849, about 1km



Fig. 14 Rough-barked Beech

south of the rough-barked Beech on the west side of a track north of Charcoal Burners Road at NGR SU 2215 6545. This tree forks at 1.2m and with a girth of 182cm at 0.3m it is big for a Rowan. It had a spread of 13m, a height of 20m and was still growing upwards, in 2006. Its outstanding feature is that it has formed extensive root suckers in all directions. The main line of suckers follows the root lines in a north-westerly direction 5-7m from the trunk. In places, in 2000, it had become a Rowan turf, cropped by deer or other herbivores, but oaks, beeches and a rapidly growing Sweet Chestnut are shading it out and by 2006 it had diminished in area. Rowan is not normally known to sucker (McAllister 2005), but recently other Rowans with suckers have been found in different parts of the Forest. Rowan is not a Forest tree in any other parts of the world.

Within the Forest there are a number of large Sweet Chestnuts, *Castanea sativa*. There is a particularly fine avenue of these in the eastern part of the Forest along Amity Drive in the section east of Birch Copse. These attractive trees with their bold toothed leaves and straight spirally fissured trunks have girths of 500 to 600cm, with some having re-grown from coppice bases which are up to 900cm in girth. In the northwestern part of the Forest there is the 'Great Grey Ride Chestnut'. This is an awkward shape to compare for size with other chestnuts. It is at NGR SU 2078 6729, tag No F08144, with the trunk dividing into three huge boughs between 2m and 3m. The girth is 850cm at 1m, but 975cm at 0.3m and the smallest of the boughs has a girth of 445cm at 2.5m from the ground. It is the most massive Sweet Chestnut within the Forest, but there is a larger one southwest of the Forest in Brimslade Park.



Fig. 15 *Tilia platyphyllos ssp cordifolia*.

The common (hybrid) limes, *Tilia x europea*, usually have their trunks largely hidden by impenetrable dense masses of vigorous basal sprouts. This makes the trunks difficult or impossible to measure and the only semi-reliable measurements have been at 0.3m (1ft). Within the Forest there are a number of Common Limes with girths of about 600cm at 0.3m. The largest found in the Savernake Forest area is one of the Limes in the avenue of trees along the edge of the road at Cobham Frith at NGR SU 260 677, numbered J01498. In 2001 it had a circumference of 840cm at 0.3m. The record Lime for Wiltshire, also measured by Jack Oliver, is at Stourhead Gardens at NGR ST 774341; with a girth of 1030cm at 1.5m it is said to have the largest trunk of any Common Lime in Britain.

Within the Forest, but visible in winter from the A346 road, stands a Monterey Pine, *Pinus radiata*, perhaps 30m high. It is number J09436 at NGR SU 217650 with a girth of 420cm. Even if it is not a county record for girth it is an exceptionally tall and fine example of this species for England.

Tottenham House Park

Tottenham Park is southeast of the Forest. The Ailesbury family moved out of Tottenham House

during the Second World War when it was occupied by American troops looking after ammunition stored in the Forest. Subsequently Tottenham House has been leased by the Savernake Estate to Hawtrey's School, the Amber Foundation, and now for development into a Five Star Hotel and golf course. Behind the house, about 40m south of the ha-ha there is a line of three well spaced out champion deciduous trees. On the planning application now approved they are marked as being retained on the edge of the 18th fairway.

The northern one at SU 252640 is a Broad-leaved Lime, of the small-leaved subspecies, *Tilia platyphyllos* ssp *cordifolia* (Figure 15). Professor Pigott (pers. comm. 2000) has authenticated the identification and with a girth of 605cm it is a Wiltshire champion and a strong contender as a National one.

The next tree, at NGR SU 252639, is a large, nearly evergreen oak, the Lucombe Oak, *Quercus x crenata hispanica* 'Lucombeana' (Figure 16). It is an ancient graft and in 2000 had a girth of 618cm. The original Lucombe Oak was raised by Mr Lucombe in his nursery in Exeter in about 1762. It is a cross between the Turkey Oak (*Q.cerris*) and a Cork Oak (*Q.suber*). The largest known Lucombe Oak is growing in Phear Park, Devon and has a girth of 790cm. According to TROBI records, in 1984 the Lucombe Oak in the field east of Tottenham House was 23m high and had a girth of 550cm. The description of the place puts the tree at the same location as the Tottenham Park Lucombe Oak. From these measurements it has increased its girth by 68cm in 16 years, which is a very fast growing rate of 4.25cm (nearly 2ins) per year. This gives an estimated planting date of the mid 19th century. If



Fig. 16 Lucombe Oak, Tottenham House Park

the tree is re-measured in about twenty years time, an improved estimate of age could be obtained. The Tottenham Park Lucombe Oak is a Wiltshire champion and according to TROBI in 2002 it was in the top 10 nationally.

The third tree at NGR SU 251638 is a large wide spreading Horse Chestnut, *Aesculus hippocastanum*, with a girth in 2001 of 605cm and of 880cm around its base. Unfortunately this tree has not been included in the TROBI book (Johnson 2003), but comparisons with the TROBI print-outs make it the largest Horse Chestnut in Wiltshire and perhaps it has the second greatest girth in the British Isles. When the trees in Tottenham House Park and Gardens were measured in 2000 the Gardens were very overgrown. Table 2 is a list of some of the largest Conifers and Ginkgo.

Table 2 Some Large and Special Conifers and Ginkgo in Tottenham Park and Gardens in 2000

	Name	Common name	Grid Ref SU	Girth in cm at 1.5m
	<i>Abies cephalonica</i>	Grecian Silver Fir JP 1958	251 640	415 530 at 0.3m
	<i>Araucaria araucana</i>	Monkey-Puzzle JP 1950	251 638	300 500 at 0.3m
	<i>Cedrus atlantica</i> 'Glauca'	Blue Atlantic Cedar (untagged)	246 642	451
	<i>Cedrus libani</i>	Cedar of Lebanon (untagged)	247 642	678
	<i>Cedrus deodara</i>	Deodar Cedar JP 1987	250 640	425
*	<i>Chamaecyparis lawsoniana</i> 'Fletcheri'	Lawson Cypress cultivar SD 0839	249 639	83
	<i>Ginkgo biloba</i>	Maidenhair tree JP 1978	249 640	280
	<i>Picea sitchensis</i>	Sitka Spruce JP 1965	251 642	395
*	<i>Pseudotsuga menziesii</i>	Douglas Fir JP 1982	250 641	525 at 2m
	<i>Sequoia sempervirens</i>	Coast Redwood JP 1936	248 637	630
*	<i>Sequoiadendron giganteum</i>	Wellingtonia SD 0831	250 639	870
	<i>Thuja plicata</i>	Western Red-cedar SD 0847	250 640	403

* Wiltshire Champions. The other trees are in the top five for the county

JP - Jack Oliver's numbers, bi-laminate plastic tags fixed at about 1.5m (5 ft) from the ground.

SD - Aluminium disc from a previous survey.

In front of Tottenham House there is a pair of Holm Oaks, *Quercus ilex*, the larger having a girth of 313cm. In the garden northeast of the House there is a wide avenue of large tall Lime trees, *Tilia x europea*, the largest with a basal circumference of 715cm. This avenue continues across Bedwyn Common where the trees growing between the two rows of Limes have recently been felled. This avenue is part of the London Ride, which goes from the A4 London Road to Tottenham House and continues south westwards towards Wolfhall.

The Brails

South East of Tottenham Park on the far side of the Kennet and Avon Canal, which follows the line of Bedwyn Brook, are Bedwyn and Wilton Brails. They consist of two separate steep sided tree covered ridges. This land was once part of the Broyle Bailiwick and following the execution of the Duke of Somerset in the mid-16th century, the then new owner, the Earl of Pembroke used timber from the Brails to build a house at Ramsbury. By the early 17th century, most of the woodland except a few small coppices had been cleared and the land used



Fig. 17 Fallen and re-growing Sweet Chestnut

for animal grazing. In 1783 the Earl of Pembroke sold Wilton and Bedwyn Brail to Thomas Brudenell-Bruce, Earl of Ailesbury, who planted over 200,000 trees on the Brails in 1791-2 including avenues of trees around the top of Wilton Brail and the Broad Walk across Bedwyn Brail with a view over Wilton Brail to Tottenham House. The total area planted was 227 acres, enclosed by a ditch nearly four miles long, planted with quick thorn, all at a cost of under £400, (WRO 1300/2617). In 1929 the Marquess of Ailesbury sold the Brails and surrounding land, including Folly Farm to Sir William Rootes, and subsequently the land has been re-sold a number of times. The present owner of the Brails, Richard Charles, has taken an interest in the older trees as well as planting new ones.

On Wilton Brail some of the Beech trees possibly date from the 1791-2 planting, the largest *Fagus sylvatica*, in 2003, being at NGR SU 271629 with a girth of 695cm. Although this tree has a full canopy it is senescent. There is a fine Beech with a full canopy not showing signs of old age at NGR SU 275626 with a girth of 590cm.

Bedwyn Brail is private woodland and the trees described are not visible from any of the public rights of way which cross the Brail. One tree growing in an unusual way is a very large partly fallen Sweet Chestnut, *Castanea sativa*, at NGR SU 282623 (Figure 17). It is just west of the Conduit, made in 1549 to supply water to the Duke of Somerset's mansion. The position of this house is not conclusively known and although letters exist about the foundations the building was never completed (Bathe, 2006). The Sweet Chestnut is an ancient coppice in which three of the once vertical trunks on falling to the ground have managed to retain sufficient rooting to remain viable and vigorous. Of the remaining vertical trunks the largest divides at 1.5m, and at 0.7m has a girth of 460cm. The three fully grounded horizontal trunks, lengths 29, 28, and 22m, (in 2004) have produced three lines of new verticals. In all there are twenty-three verticals from this one ancestral tree, seven of which are over 15m high, so as the whole enlarges it will become an increasingly impressive tree, a likely record holder if considered according to total bulk of living timber. Already it has a larger spread than the record breaking Sweet Chestnut at Kateshill, Worcestershire (Johnson 2003, 23).

On top of the ridge of Bedwyn Brail is the site of a Roman Villa (Hostetter and Howe 1997). Close by at NGR SU 285630 grows an old Field Maple, *Acer campestre*. At 0.3m the solid trunk has a girth of 385cm. In 2004 the tree trunk at 1.5m was a



Fig. 18 Native Black Poplar, Bedwyn Brail

compound of closely parallel and nearly coalesced limbs measuring 465cm. The way the tree is growing it looks as if it will soon be quite solid on one trunk to 2m, in which case it will become a champion.

About three quarters of the way down the steep slope on the east side of Bedwyn Brail at SU 287630 grows a male Native Black Poplar, *Populus nigra*, first recorded by Hurst in 1921, (Grose 1957)(Figure 18). This tree on Bedwyn Brail is unusual as it is growing on the side of a hill instead of in a river valley. Black Poplars normally grow on damp soils in river valleys, but because of drainage schemes and fashions in planting they have become scarce in many areas and there is now a National Register for Black Poplars. On Bedwyn Brail the soils found in the London Clay and Reading Beds were formed from geological deposits at the extreme edge of the London Basin and as a result are very variable with layers of gravel, sand and clay. This has caused a perched water table with springs at various places on the sides of the Brail. The location of the Native Black Poplar is where the ground is kept damp from a diffused spring. The tree has red catkins in Spring, a dark knobbly trunk and like most Black Poplars

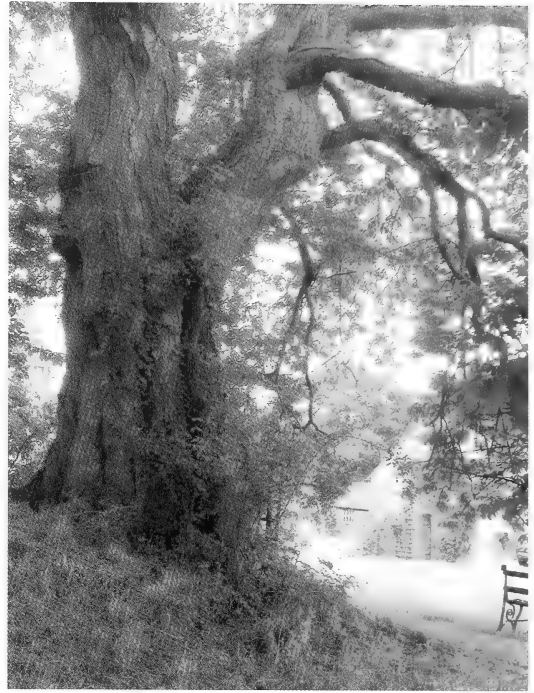


Fig. 19 Wild Cherry, Folly Farm

this tall thin tree leans away from the prevailing wind. In the Middle Ages this natural bending of poplar trunks was useful for the cruck timbers of longhouses and barns.

Folly Farm, now a private residence, ½km east of Bedwyn Brail, has a champion Wild Cherry, *Prunus avium* growing on the west side of the farmhouse at NGR SU 273624, close to a public right of way and visible from the Great Bedwyn to Shalbourne Road. This tree was first noted as an exceptionally large Wild Cherry by Ted Green of the Ancient Tree Forum and Jill Butler of the Woodland Trust. The tree is growing on a wall between a bank and an area of grass, which according to a 19th century map was the track to a nearby brickworks. In 2006 the trunk girth was 430cm: the TROBI Recorder notes that it is the largest *Prunus avium* in Wiltshire and in the top four in the British Isles.

Savernake Forest to Clench Common via Mud Lane

Mud Lane is an ancient trackway running east-west along the southern edge of Savernake Parish which was the boundary of the Great Park. The track is

lined with a mixture of old native woody shrubs and trees. There are Hollies, Crab Apples, Blackthorns, Spindles and Dogwoods of notable size. One tall but low forking Dogwood, *Cornus sanguinea*, with six trunk-like branches, the largest of which is 40cm at the standard height, had an unprecedented basal bole of 200cm circumference at 0.3m above ground level. A Spindle, *Euonymus europeae*, is over 6m high and has an exceptional girth of more than 60cm (Oliver 2006).

Clench Common

The area southwest of Marlborough, between the A346 and A345 roads, is farmland formed from the 'Great Park'. The land remained in the ownership of the Ailesbury family until 1950 when it was sold to the Crown Estate. The 800ha of farmland is divided up into a number of farms, one of which is Culley's Farm. At the entrance to this farm, which is on the Clench Common to Martinsell road, there are two farm cottages built in the 1950s and one much older cottage which was part of Batts Farm (also at one time known as Compton Farm). The painting by Rupert Butler, c.1930 is of Batts Farm before it was demolished (Figure 20). Behind the farmhouse is a tall, spreading tree; still there, it is a champion Sycamore, *Acer pseudoplatanus*. In 2004 it had a girth of 555cm and at 0.3m its basal circumference was 770cm. This is the largest girth *Acer pseudoplatanus* in Wiltshire and compares well with the largest English trees, although some Scottish Sycamores have girths over 700cm (Johnson 2003).



Fig. 20 Batts Farm, Clench Common, Painting by R Butler, c.1930

West Woods area

Further west, but still on the same type of soil as the Forest, is West Woods, which now belongs to the Forestry Commission. West Woods is famous for its masses of bluebells, which flower in the Spring just as the Beech trees are coming into leaf. On a right-of-way leading from Lockeridge to West Woods at NGR SU 150675 is a mutant *Acer pseudoplatanus* which has developed a range of unusual leaves. It is a 'Chestnut-leaved' European Sycamore, which has about one third of its leaves ovate and irregularly serrate, approaching the shape of the leaves of the sweet chestnut, *Castanea sativa*, (Oliver 2003a). It is a young tree with a girth of 93cm and a height of 22m.

On another right-of-way, east of Lockeridge, leading to West Woods at SU 155675 there is a big Whitebeam, *Sorbus aria* on the east side of this old north-south track marked on Andrews' and Dury's map of 1773 (Figure 20). Whitebeams grow on chalk and are usually small trees. This is a big low forking tree, with six healthy main limbs. The girth of the trunk at 0.3m is 400cm. At about 0.5m the tree forks and the girth of each limb at 1.5m, in July 2005, was 80, 80, 85, 115, 115 and 120cm. It is a Category C Wiltshire champion.



Fig. 21 Whitebeam, Lockeridge

PEWSEY VALE

Wolfhall

Wolfhall Farm is owned by the Crown Estates, which purchased the land from the Ailesbury Family in 1950, and is now farmed by Peter Blanchard. It

Burbage

In the corner of Burbage Churchyard at NGR SU 233 614 there is a Cluster Oak, *Quercus robur* 'Cristata' (Figure 22) grown by John Wildash from an acorn of the Original Cluster Oak in Savernake Forest. This tree was planted about 1950, and in 2002 it was over 15m in height, with a girth of 191cm. It is very much faster growing than its parent and by 2006 it had grown larger and taller. Like its parent, its short shoots have caused distinct clustering of its glabrous leaves, but they are less markedly sandwiched. Full details of the differences between the Burbage Cluster Oak and its parent are given in Oliver *et al.* 2003.

Brimslade Park

Brimslade Park is the home of the 'Giant Sweet Chestnut', *Castanea sativa* on Bruce Gauntlett's Crown Estate Farm at NGR SU 209632 (Figure 23). It is a massive, gnarled tree, with a staghorn head and half the bark on one side dead, but it is alive and in 2005 had a girth of 1055cm at the standard height of 1.5m and 1130cm at 0.3m from the ground. The TROBI Registrar records it as one of the biggest



Fig. 22 'Cluster Oak' in Burbage Churchyard

is close to the site of the Seymour family home, Wolfhall, visited by King Henry VIII to court Jane Seymour. At NGR SU 242 621 there is an avenue of mixed trees including Common Hybrid Limes, Horse Chestnuts, recent hybrid Back Poplars and one much older Small-leaved Lime, *Tilia cordata* (Pigott pers. comm. 2004). It is not as tall as the adjacent Common Limes, but has a larger girth of 530cm. The Small-leaved Lime is a slower growing tree than the Common Lime, so it pre-dates the rest of the avenue. A report in the IDS Yearbook claims a *Tilia cordata* in Lancashire with a girth of 510cm to be some 400 years old (Andrews 2005). There is a possibility that the Wolfhall Small-leaved Lime might date back to the days of the Seymours. It is a tree of great spread and beauty, a Wiltshire champion on a single bole and in the top five nationally.

Another Wiltshire champion at Wolfhall Farm is a White Willow, *Salix alba*, in an enclosure by the pond at NGR SU 243622. The tree is hollow, has fallen, re-rooted and formed a new trunk. In 2004 the girth of the secondary trunk at 1.5m from the new rooting is 730cm.



Fig. 23 Giant Sweet Chestnut, Brimslade Park



Fig. 24 Holly, Long Copse, Brimslade

single boled Sweet Chestnuts in Britain. Andrews' and Dury's map of 1773 shows an avenue of trees south of Brimslade House which was built in the early 17th century. The Giant Sweet Chestnut is part of this avenue along with a second very large Chestnut, some huge dead stumps and replacements of younger Chestnuts and Oaks. In 1999, this second Chestnut, which carried an epiphytic Holly tree, had a girth of 960cm at 0.3m. One cut dead stump had lost two-thirds of its centre but even so showed 200 annual rings in the outer third. Of the other ancient living trees one Oak had a girth of nearly 600cm and three other Chestnuts had girths ranging from 605 to 705cm.

North of the Canal there is an area of woodland known as Long Copse. When, in 1950, the Savernake Estate sold its farmland surrounding the Forest to the Crown Estate it retained many of the woods growing on these farms. Long Copse is one of these and is leased to the Forestry Commission. At the west end of Long Copse at NGR SU 214639 is a very large Holly, *Ilex aquifolium*, only c. 5m shorter than

a Norway Spruce on the east side (Figure 23). It is a huge spreading tree with about four coalesced trunks forming a straight bole for 2.5m and above this some main branches. The coalesced trunks form a recess which is gradually closing, so the tree is doing the reverse of hollowing as it is solidifying into the centre. Its girth in 2004 was 315cm at 1.5m, 410cm at 0.3m and 460cm close to the ground. TROBI records note that other Hollies have only been measured at 0.3m and currently the Holly at Long Copse is the largest recorded in England.

Oare House

Oare House is on the A345 road 3.3km (2miles) north of Pewsey, near the bottom of Oare Hill on the edge of the Pewsey Vale. The House, now owned by Henry Keswick, is a mellow red and grey brick house built in 1740 for Henry Deacon, a London wine merchant. In the 1920s the house was extended by Clough Williams-Ellis for Sir Geoffrey Fry, a descendant of the 'Fry chocolate' family. Sir Geoffrey Fry was Private Secretary to Bonar Law 1919-21 and Stanley Baldwin 1923-39, including times when they were Prime Ministers respectively. During the Second World War, Winston Churchill and his War Cabinet occasionally held meetings at the House.

Between 1920 and 1960 Sir Geoffrey Fry created the formal gardens and arboreta. These are on a gentle south facing slope of almost lime free soil. There are more than 250 taxa of trees including many rare varieties and some rare hybrids and species. It would take a researcher several months to survey the site, measure the trees and identify the variants. TROBI hold records of Oare House for 1981, 1984 and 1994, but many of these require updating.

TROBI lists three Crimean Hybrid Limes, *Tilia x euchlora* in Pine Walk, as the three largest in Wiltshire. The farmland and woodlands extend for a considerable distance from the house, and in Park Copse at NGR SU 149627 there is a still larger Crimean Hybrid Lime, No 110, Arboretum 3. This tree is grafted on to a *Tilia x europea* base, producing basal and stem sprouts, and extensive layering of branch-tips in rings around the trunk of the tree, making it very difficult to measure the girth. The trunk in July 2006 measured 450cm at the standard height and 380cm at 0.3m making it the Wiltshire champion and one of the biggest trees of its kind in the British Isles.

Of the trees measured in July 2006, those of special merit include: No 223, Arboretum 1, *Sorbus commixta* 'Marchants Form' at NGR SU 150627,

with a girth of 219cm; No 130, Arboretum 2, *Prunus* 'Shirofugen' at NGR SU 149627, with a girth of 167cm at the standard height and 230cm at 0.3m; No 156, Arboretum 2, Paper-bark Birch, *Betula papyrifera*, (hollow base) at NGR SU 149627, with a girth of 225cm (according to TROBI a Wiltshire champion); and, No 107, Arboretum 4, Japanese Hornbeam, *Carpinus japonica*, at NGR SU 148627, with a girth 107cm (according to TROBI a British champion).

The largest American Scarlet Oak, *Quercus coccinea*, along Pine Walk at NGR SU 154630, has a girth of 235cm and this is larger than the existing Wiltshire champion at Pinkney Park which had a girth of 229cm in 2002.

A huge healthy Holly, *Ilex aquifolium f heterophylla*, at SU 153631 is of complex shape with a trunk-like branch emerging at ground level and progressing horizontally before ascending. It has a basal girth of 350cm and the girth of the main trunk is 182cm at 1.5m. This is the largest Holly of this variety in Wiltshire and probably the second most massive Holly of any type in Wiltshire.

On the southeast margin of Oare pond at NGR SU 154629 in the main Estate there is a White Willow, *Salix alba*, with a full spread and a vertical trunk without avulsions. In July 2006 this fine tree had a girth of 580cm at 1.5m and 560cm at 0.3m. It is one of the biggest White Willows in Britain with a vertical trunk, measured at 1.5m, as most of the existing record holders are fallen or partly fallen trees with measurements not being able to be made at the standard height.

Probably the oldest tree on the estate is an English Oak, *Quercus robur*, south east of the gate on the western fringe of North Copse, at NGR SU 148632. It is an ancient base, with part of the old rim intact from which six trunks arise. In 2006, the basal circumference of this complex tree was 900cm at 0.3m, the largest of the six large trunks having a girth of 248cm at the standard height.

One tree, at NGR SU 152629, has a plaque bearing the inscription 'The Stanley Baldwin Oak, 1930'. It is an English Oak, *Quercus robur*, which he planted whilst staying at the house and in July 2006 it had a girth of 225cm.

Of the great variety of trees within the four arboreta and Pine Avenue area, at least ten trees are impressive by virtue of their size or age. There are far more than this number of smaller, rare, hybrids, variants, cultivars and more recently introduced species, which may also be Wiltshire champions, unsurpassed elsewhere in the county.



Fig. 25 Yew, Alton Priors Churchyard

Oare Estate probably holds five or more trees of national importance, with this number likely to rise significantly in future.

Alton Priors

Alton Priors is west of Pewsey, on the ancient Ridgeway at the foot of Walkers Hill and Knap Hill. In the churchyard of All Saints Church there is a Yew tree with a massive trunk on the south side of the church at NGR SU109621 (Figure 25). Yews can live for thousands of years. While some have claimed Yews as the oldest living thing on earth, other contenders are the Bristlecone Pine, Creosote Bush rings and, from the last ice age, a Tasmanian Podocarp. Pigott has made a claim for *Tilia cordata* rings in the Lake District being 1,600 years old (Pigott 2005). Chetan and Brueton (1994) have compiled a gazetteer of Ancient Yews in mainland Britain aged over 1,000 years. All are given with pre-1990 measurements, and the list includes that at Alton Priors, a female Yew with a girth of 28ft (845cm) and an estimated age of 1,700 years. The hollow tree trunk is now in two separate halves, both of which are healthy and of similar heights. It is an attractive tree with much greenery. In May 2006 the measurement around the whole base at 0.3m was 850cm and at the standard height the circumference around both halves was 873cm (28ft 8ins). The height of the tree is about 16m with the top above this height having been removed by tree surgery. The east-west spread is 17.3m and the north-south 13m, which is limited by the wall of the church. Of the original Norman Church only the chancel arch remains. The rest of the church is of 13th century and later date and the building is now cared for by

the Churches Conservation Trust. At the site there is a certificate, signed by Robert Cantuar (Robert Runcie, Archbishop of Canterbury) and three Yew

specialists certifying the Alton Priors tree as not less than 1,700 years old.

TABLE OF SPECIES

Table 3 Species of champion, near champions and special trees in the East Kennet District (This table does not include all of the trees mentioned in the article)

	Species	Name	Area	Location	GR at SU	Girth in cm	Year Measured
**	<i>Acer campestre</i>	Field Maple J 09457	3	Savernake Forest	2274 6605	375 400 at 1.8m	2000
*	<i>Acer cappadocicum</i>	Cappadocian Maple JP 1778	1	Marlborough College	186 685	290	2006
*	<i>Acer platanoides</i>	Norway Maple	1	Marlborough College	181 688	355	2006
*	<i>Acer pseudoplatanus</i>	Sycamore	3	Clench Common	181 649	555	2004
	<i>Acer pseudoplatanus</i>	Sycamore	1	Froxfield Churchyard	295 680	480 Base 830	2004
S	<i>Acer pseudoplatanus Mutant</i>	Sycamore, mutant	3	Lockeridge	150 675	93	2003
**	<i>Aesculus hippocastanum</i>	Horse Chestnut	3	Tottenham House Park	251 638	605 Base 880	2002
*	<i>Betula papyrifera</i>	Paper-bark Birch	4	Oare House	149 627	225	2006
	<i>Carpinus betulus</i>	Hornbeam	2	High Clear Down	233 766	470 at 0.6m	2000
	<i>Carpinus betulus</i>	Hornbeam	1	West of Froxfield	269 679	350 Base 840	2002
**	<i>Carpinus japonica</i>	Japanese Hornbeam	4	Oare House	148 627	107	2006
*	<i>Castanea sativa</i>	Great Grey Ride Chestnut J08144	3	Savernake Forest	2078 6729 Octant VII	850 975 at 0.3m	2001
**	<i>Castanea sativa</i>	Sweet Chestnut	4	Brimslade Park	209 632	1055 1130 at 0.3m	2005
S	<i>Castanea sativa</i>	Sweet Chestnut	3	Bedwyn Brail	282 623	Multiple	2005
*	<i>Catalpa bignonioides</i>	Catalpa	1	Marlborough	187 688	325	2006
**	<i>Fagus sylvatica</i>	Warren Farm Beech J 09231	3	Savernake Forest Fringe	249 656	705	2004
S	<i>Fagus sylvatica</i>	Beech with a rough bark J 08786	3	Savernake Forest	2254 6625	383	2001
H	<i>Fagus sylvatica purpurea</i>	Copper Beech, J 1790 'Tennyson Beech'	1	Marlborough College	186 686	386	2006
	<i>Fagus sylvatica purpurea</i>	Copper Beech	1	Marlborough	190 691	447	2006
**	<i>Ilex aquifolium</i>	Holly	4	Long Copse Brimslade	214 639	315 Base 460	2002
*	<i>Ilex aquifolium f heterophylla</i>	Holly variant	4	Oare House	153 631	182 Base 350	2006
*	<i>Platanus x acerifolia</i>	London Plane	1	Chilton Foliat	319 704	880	2006
**	<i>Populus x canadensis 'Regenerata'</i>	Railway Poplar, Female tree	1	Marlborough	187 683	680	2003
**	<i>Prunus avium</i>	Wild Cherry	3	Folly Farm, Bedwyn	430	273 624	2006
**	<i>Prunus cerasifera pissardii 'Nigra'</i>	Cherry Plum	1	Froxfield Churchyard	295 680	163	2004
*	<i>Pseudotsuga menziesii</i>	Douglas Fir JP 1982	3	Tottenham House	250 641	525 at 2m 575 at 1m	2000
**	<i>Pyrus communis</i>	Wild Pear	1	Harrow Cross Roads Froxfield	274 679	315	2004
*	<i>Quercus coccinea</i>	American Scarlet Oak	4	Oare House	154 630	235	2006

**	<i>Quercus crenata x Lucombeana</i>	Lucombe Oak	3	Tottenham House Park	252 639	618	2002
*	<i>Quercus petraea</i>	Old Paunchy J 09057	3	Savernake Forest	2085 6764	700 Base 1050	2001
	<i>Quercus robur</i>	Cathedral Oak J 09500	3	Savernake Forest	2061 6798	995	2002
H	<i>Quercus robur</i>	Stanley Baldwin Oak	4	Oare House	152 629	225	2006
S	<i>Quercus robur 'Cristata'</i>	Original Cluster Oak	3	Savernake Forest	217 653	190	1999
*	<i>Quercus robur 'Cristata'</i>	Cluster Oak	4	Burbage Churchyard	233 614	191	2002
S	<i>Quercus robur f. fastigiata</i>	Cypress or Poplar Oak	1	Marlborough	187 688	281	2006
**H	<i>Quercus x rosacea</i>	Big Belly Oak	3	Savernake Forest	2132 6578	1080 Base 1400	2002
*	<i>Salix alba</i>	White Willow	4	Oare House	154 629	580	2006
*	<i>Salix alba</i>	White Willow	4	Wolfhall	243 622	2nd trunk 730	2004
*	<i>Salix fragilis</i>	Crack Willow	1	Marlborough	182 685	480	2003
*	<i>Sequoiadendron giganteum</i>	Wellingtonia SD 0831	3	Tottenham House	250 639	870	2000
S	<i>Sorbus aucuparia</i>	Suckering Rowan J08849	3	Savernake Forest	2215 6545	182 at 0.3m	2004
*	<i>Taxus baccata</i>	Yew	4	Alton Priors	108 621	875	2006
	<i>Tilia x europea</i>	Common Lime J01498	3	Cobham Frith	260 677	840 at 0.3m	2001
**	<i>Tilia cordata</i>	Small-leaved Lime	4	Wolfhall	242 621	530	2004
**	<i>Tilia x euchlora</i>	Caucasian Lime	4	Oare House	149 627	450	2006
**	<i>Tilia platyphyllos ssp cordifolia</i>	Broad leaved lime, small-leaved subspecies	3	Tottenham House Park	252 639	605	2004

* Wiltshire Champion

** In the top 10 Nationally

Base measurements at 0.3m (1ft) above the ground level.

S Of special interest

H Of Historic interest

AREA

1. The Kennet and Froxfield valleys
2. Marlborough Downs
3. Savernake Plateau
4. Pewsey Vale

UNRECOGNISED CONTENDERS

A number of large gardens and estates are home to impressive conifers such as Silver Firs or Wellingtonias. Such trees tend to be the most measured, but local specimens may not compare with greater ones in other parts of the County or elsewhere in the British Isles. Veteran Oaks and Yews tend to be well known. Nevertheless it would be rash of us to claim that our account encompasses all great or special trees, even in the eastern part of Kennet District.

Readers are encouraged to provide the authors with details of the following:

In the Eastern part of Kennet District:

1. Other trees of special or historic interest
2. Larger trees of discussed or listed types that we may have missed.
3. Exceptional trees of species or types unmentioned.

In the rest of Wiltshire:

4. Great trees
5. Trees exceptional in size for their species or type.

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Palaeolithic Hand Axes from Warminster, Pewsey and Dinton: their place in the early re-colonisation of the upper Salisbury Avon Valley

by *Phil Harding*

The Lower and Middle Palaeolithic periods in Britain lasted for over 600,000 years during which time occupation ebbed and flowed across the landscape. In recent years it has been possible to produce increasingly precise dates for phases of occupation. One of the best defined episodes of re-colonisation recommenced approximately 50,000 years ago following a period of abandonment, which lasted for 100,000 years. This re-colonisation has been documented in Wiltshire by the discovery of a distinctive form of hand axe that was found in a brick pit at Fisherton in 1874. Using finds of hand axes found since 2002 at Warminster and Pewsey with other previously unpublished implements from former brickworks at Dinton, this article argues that it may be possible to identify this re-emergence of human occupation elsewhere in the Salisbury Avon Valley and to link it with human presence to the west in the Mendips.

INTRODUCTION

It is now generally accepted that the Lower and Middle Palaeolithic (700,000-40,000BP) occupation of the British Isles was not continuous but alternated between periods of colonisation and abandonment. The archaeological record is incomplete; however the period for which human absence is best documented in Britain spanned 100,000 years from the extreme cold of Oxygen Isotope Stage 6 (OIS 6), a period that equates with the Saalian Glaciation in Europe, and ended during Oxygen Isotope Stage (OIS) 3, a warmer interlude within the Devensian Cold Stage and dated between 59,000-26,000 years ago (White and Jacobi 2002). The subsequent re-colonisation is most frequently associated with Neanderthal groups linked to the production of small cordate (heart shaped) hand axes and distinctive 'flat butted' hand axes (*bout coupé*). Cordate hand axes occur throughout the Lower and Middle Palaeolithic period but the *bout coupé* form, which has itself

been the subject of considerable debate (Shackley 1977; Coulson 1986; White and Jacobi 2002), is generally accepted to be a diagnostic indicator of the reoccupation of Britain in the Middle Palaeolithic (White and Jacobi 2002). Roe (1981, Fig 6.6) noted that one of the greatest concentrations of this type of hand axe was located at the west end of the Solent around Christchurch Bay, where the Rivers Stour and Avon now flow into the sea. Similar hand axes have also been documented from West Country cave sites (White and Jacobi 2002).

Of particular significance to the study of the Palaeolithic of Wiltshire was the discovery of a *bout coupé* hand axe in a brick pit at Fisherton in 1874 (Evans 1897, 630). The deposits at Fisherton are of international significance in that they contain exceptionally well preserved remains of contemporary animal species, including mammoth, wolf, fox, hyaena, horse, red deer, bison and musk ox (Delair and Shackley 1978).

This paper records the recent discoveries of

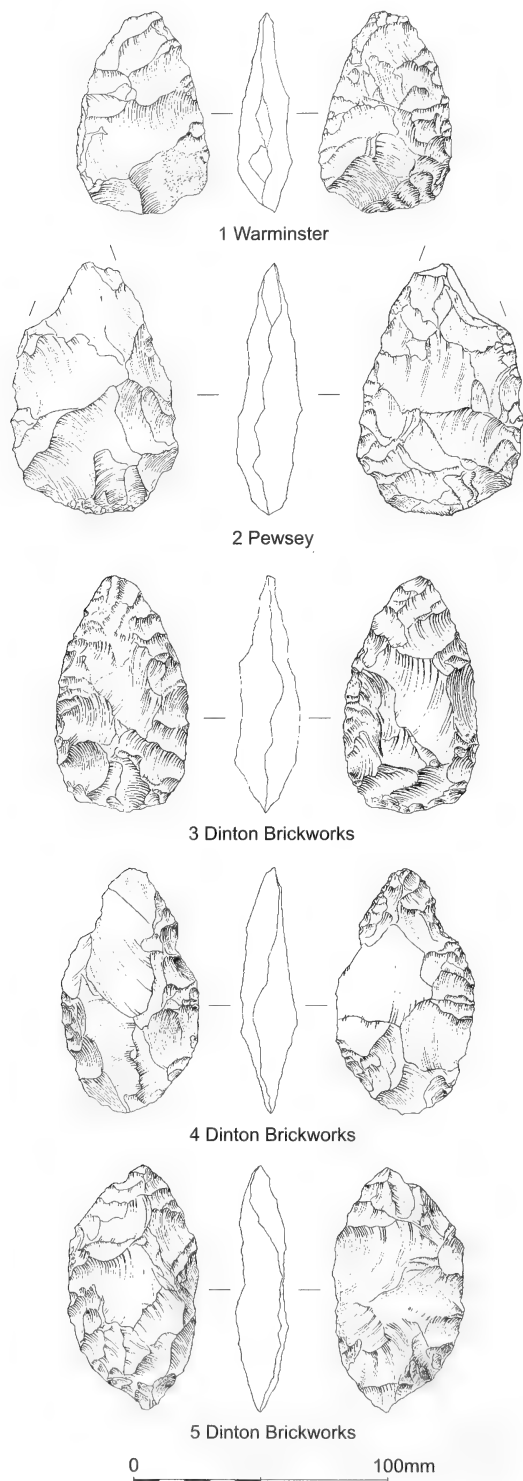


Fig. 1 The hand axes

hand axes from Warminster and Pewsey, reported to the Wiltshire Heritage Museum in Devizes, and re-evaluates three other specimens from former brickworks at Dinton, held in the Salisbury and South Wilts Museum. It argues that these implements may also be of a similar date and indicate that the Salisbury Avon played an important role as an artery for human movement in the re-colonisation of Britain during OIS 3.

The Warminster hand axe

The story began in 2002 when a small, finely made Lower Palaeolithic hand axe made from Greensand chert was discovered by Mr Bert Green while he was metal detecting on land owned by Mr Brian Hocken of Bugley Barton Farm, Warminster. The implement lay on the surface of a ploughed field (ST 84804457) on land overlooking the headwaters of the River Wylye, a tributary at the western extremity of the Salisbury Avon.

The implement (Figure 1.1) is a cordate hand axe of Wymer's (1968, 56) type J and is in a sharp/slightly rolled condition. It measures 80mm long, 54mm wide, 18mm thick and the chert has weathered to a rich red-tinted butterscotch colour. Both sides of the hand axe are covered with well-struck invasive flake scars although there is a small residual patch of cortex in one corner of the butt, which has otherwise been trimmed all round the edge. The tip is rounded with a tranchet edge, where two unretouched flake scars intersect, although this may not have been a deliberate feature of manufacture. The edges are straight but the profile is slightly asymmetrical.

The location (Figure 2), about 1 km south east of Cley Hill, at approximately 145m aOD, forms the south-facing slope of a spring-head of The Were, itself a tributary of the River Wylye. The local geology at Warminster (BGS Sheet 281 1965) indicates that The Were follows the course of the Warminster Fault, a major geological structure where the Lower Chalk has been brought alongside Upper Greensand. This is also the most westerly edge of natural outcrops of Chalk and here virtually flint-free. Patches of 'chert beds', which form the upper parts of the Greensand, are exposed on the slopes above the spring-head and include chert nodules, some of which may have been large enough to produce a hand axe of equivalent size. A limited number of test flakings showed that it is grey when freshly knapped, although there is some doubt as to whether it is of sufficient quality for hand axe manufacture.

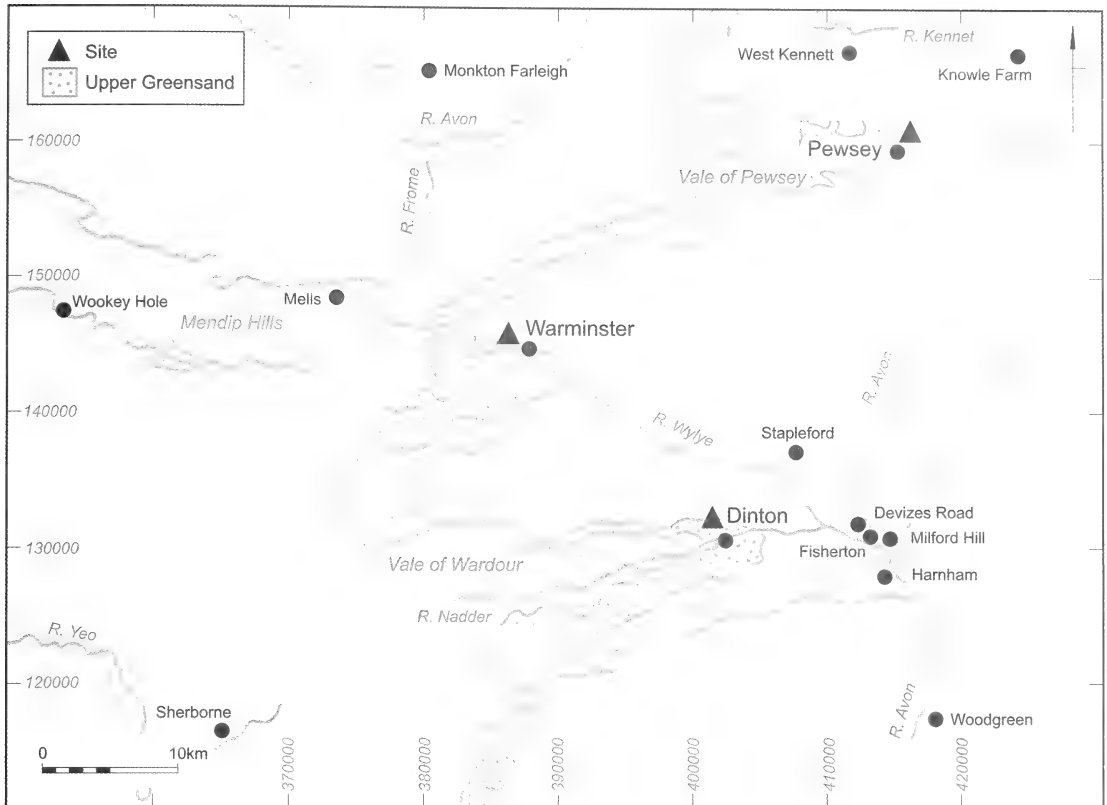


Fig. 2 Site locations, drainage and principal related sites mentioned in the text

Chert also occurs locally 15 to 20 km to the south in the Vale of Wardour and 70 km westwards in the Blackdown Hills, which provided Greensand chert to the gravel deposits of the River Axe valley, where chert hand axes are known (Roe 1968, 47) from the Broom pits at Thorncombe, Dorset. Unfortunately there is currently no way of scientifically determining whether the raw material was obtained from a local source or was introduced following a hunting trip from the west.

The Pewsey hand axe

Coincidentally a second implement, made of flint but of similar form, was found in 2004 near the source of the Salisbury Avon itself, east of Pewsey (Figure 2). This implement was spotted by Mr Beverley Heath when he was cleaning a leat in The Vera Jeans Nature Reserve at Jones's Mill, Pewsey (SU 17076137), a designated Nature Reserve administered by the Wiltshire Wildlife Trust (Heath 2004).

The Pewsey implement (Figure 1.2) is also a cordate hand axe and is in a similar condition to the implement from Warminster. It is 98mm long, 65mm wide and 23mm thick. Relatively modern damage, which has removed the tip, indicates that the underlying flint is dark grey with lighter coloured inclusions; however the surface of the hand axe has acquired a light orange stain from the surrounding gravel. One side of the implement appears to have been made first and is formed by five well-executed blows, while the other side has less economical flaking and comprises a complex of much smaller flake scars. The edges were originally straight but are now slightly irregular, a result of post-depositional edge damage. They are trimmed all round the implement although less detail has been paid to the butt.

The hand axe was found at the northern edge of the valley floor, which is here 75 m wide at approximately 117m aOD, where the river meanders through a valley with gently sloping sides. The detailed geology (BGS Sheet 282) maps the location as alluvium, although exposures in the sides of the

leat indicate that heavily frost-shattered flint gravel, which is frequently stained orange by a dark brown silt matrix, exists in this part of the Avon valley. Deposits of river and valley gravel are mapped at Pewsey, although whether this is similar to that at Jones's Mill is uncertain. None of the flint in the gravel appears to be suitable for tool production. The flint for the hand axe is therefore likely to have come from the Chalk at the edge of the Vale of Pewsey, which lies between 2 to 3 km north and south of the site.

The Dinton hand axes

The three hand axes from Dinton include a cordate hand axe and two ovate implements. They are all in a mint/sharp condition and form part of the collection of the Salisbury and South Wilts Museum (Accessions 53/1948). 'Old clay pits' shown on the 2nd Edition Ordnance Survey (1901) indicate that clay had been dug at Dinton from at least the 19th century. The site (SU 01753124), which lay between 70-75m aOD, at the north edge of the River Nadder floodplain, flourished and by 1918 the brickworks, originally owned by Lord Pembroke (Haines 2003), boasted 3 brick kilns (VCH 1965, 25-34), tile and pottery works. The brick kilns were present on the 1925 Ordnance Survey but do not appear on any subsequent surveys.

The implements were not marked by the finder, Ronald Lever, a local undertaker, historian and fervent collector from Teffont Magna, who found or acquired this material between 1904 and 1920, when brick production was at its height at Dinton. The hand axes were accessioned in 1948 when they were described as 'Mousterian' and 'said to have been found in the brick earth at Dinton' (Salisbury Museum Accession Card); Lever is considered to be a reliable source and there is nothing apparently to doubt their provenance (David Algar *pers. comm.*).

The cordate (Figure 1.3) measures 90mm long, 54mm wide and is 22mm thick. The base is flat. Although surfaces are stained light brown, the tip is of unstained fine quality black flint, suggesting that the implement may have been partly exposed or differentially buried in the geological deposits. Fortunately the implement has never been cleaned and traces of calcium carbonate concretions are preserved in some of the deeper flake scars, particularly near the tip, suggesting that at least part of the hand axe had originally been buried in a calcareous deposit.

The other two implements (Figure 1.4 and 1.5) are both ovate hand axes, one of which has markedly pointed tips. They are both 95mm long and are respectively 52 and 54 mm wide and 18 and 23 mm thick. Surfaces are lightly stained with traces of an orange brown coating, which may represent residual 'brickearth'. The edges of both implements are irregular and somewhat eccentric in profile. It is possible that this eccentricity is a feature of manufacture whereby the mid-line of the implement is deliberately thrown to one side prior to removing invasive flakes that will thin the implement more efficiently. If this is so it suggests that these two implements may represent unfinished hand axes.

The British Geological Survey (1976 Sheet 298) places the brickworks at Dinton on the southern edge of an outcrop of Gault Clay, although these implements are more likely to have come from reworked material, either soliflucted or alluvial clay at the edge of the valley.

DISCUSSION

Both of the recent find spots (Fig. 2) lie at the perimeter of the Salisbury Avon drainage system. The Warminster hand axe was found close to the watershed with the Rodden Brook, 2.5 km to the west, which drains via the River Frome into the Bristol Avon basin. The Wylye is the only river draining the vast area of Chalk that forms the west part of Salisbury Plain and extends south to the River Nadder, itself a route through the Vale of Wardour. As such these tributaries of the Salisbury Avon would have formed, and still form, important corridors to the west.

The find spot of the hand axe from Pewsey was located 2 km south of the Chalk escarpment, which marks the watershed between the River Avon and the headwaters of the River Kennet. Access would also have been possible to the west and east through the Vale of Pewsey. Wymer (1999, 109) commented on the undeniable value of river systems as routes to and from the coast. Watersheds in particular are likely to have provided convenient bridges between individual river basins. A small ovate hand axe was found near West Kennett in 1983 (Holgate and Tyldesley 1985) while, further afield, another was found at the watershed of the Rivers Bristol Avon and Thames at Hankerton, Wiltshire (Wessex Archaeology 1994, 97). Locations near spring-heads were also valuable sources of fresh clean water for both hunting bands and game.

A few flint hand axes are known from the River Wylve valley, most locally one (Grinsell 1952, 436) found in 1932 by Alfred Selley at Heytesbury, 8 km downstream from Warminster. Three more were found in a small, elevated gravel remnant on the side of the valley at Stapleford (Harding 1995). Further downstream a flint hand axe was found in gravel at South Newton (Stevens 1870, 47).

There are slightly larger numbers of hand axes from the Avon valley itself although few survive in museum collections to confirm their authenticity (Wessex Archaeology 1993, 98). Individual implements have been recorded from the Clay-with-flints capping on the crest of the Vale of Pewsey at Milk Hill, one of the highest locations of a Palaeolithic implement yet recorded from Britain, Golden Ball Hill and Martinsell Hill. Another implement, now in Devizes Museum, was found in the Vale of Pewsey between Woodborough Hill and Picked Hill, Woodborough. Yet more implements have been retrieved from river gravel deposits of the River Avon at Wilcot, Pewsey Station and Manningford with others nearer Salisbury from Figheldean, Amesbury and Lake.

At Salisbury there is the *bout coupé* hand axe of flint from the 'brick earth' deposits at Fisherton, on the north bank of the River Nadder near its confluence with the Salisbury Avon. Large numbers of implements have also been recorded from the high terraces of the Avon, from Devizes Road and Milford Hill, Salisbury (Roe 1969, 14). Down stream from Salisbury there are hand axes found recently in a sharp condition associated with deposits at Harnham (Whittaker *et al.* 2004). Large numbers of hand axes are also known from Woodgreen, Hampshire (Roe 1968, 117).

Previous records of hand axes from the Nadder Valley include two rolled and stained implements that were found by navvies in river valley gravel during construction of the railway at Dinton in 1894 (Salisbury Museum Green Books). Elsewhere hand axes, which appear to have been found as surface finds, were recorded at Fovant, Compton Chamberlayne and Barford St. Martin (Wessex Archaeology 1993, 100).

Greensand chert hand axes are known, but relatively rarely, from Palaeolithic sites in Wiltshire. Devizes Museum holds four implements that were found in gravel at Knowle Farm, Little Bedwyn, one of the most productive sites in Britain, where at least 1,600 hand axes (Roe 1968, 311) were recovered. Artefacts from this site became objects of exchange amongst early collectors and museums

so it is possible that others survive in collections outside the county. The site is undated but is thought to date within the range of 423,000-245,000 BP (Wymer's (1999, 173) Period 2). The four implements at Devizes include two in a sharp/slightly rolled condition and two others that are heavily rolled and may be considerably older.

At least three Greensand chert hand axes were found among the 318 implements from Milford Hill, Salisbury (Roe 1968, 310) and are now in Salisbury Museum, although artefacts from this site were also widely exchanged. One is a plano-convex implement, made on a flake of fine-grained chert (Read 1885, Pl VII). It is in a sharp condition, while a rolled pointed hand axe, which may also have been made on a large flake, was found in a gravel pit in 'Colonel Pepper's Ground' (No. 1 The Avenue). The third is a large pointed implement, approximately 220 mm long that was found by men digging for road material in the Cricket Ground, Milford Hill, near the site of the present Godolphin School. It is also in a sharp condition. These implements all contrast in size and technique of manufacture with the chert hand axe from Warminster. The scarcity of Greensand chert implements from both Knowle Farm and Milford Hill is probably due to the presence of limitless supplies of flint; however the gravel at Milford Hill includes pebbles of Greensand chert. They account for approximately 5% of the deposit (Harding and Bridgland 1998, Table 1) and are derived from the east end of the Vale of Wardour, 12 km west of Salisbury.

Hand axes have been found in gravel deposits of the River Yeo at Sherborne and Yeovil, 35 km southwest of Warminster (Wessex Archaeology 1994, 93), although these gravels have produced nowhere near the numbers of implements known from the Salisbury Avon. The gravel terraces of the Bristol Avon above Bradford on Avon are less well preserved than those in the Salisbury Avon and have produced a few isolated hand axes (Wessex Archaeology 1994, 97), including a small sub-triangular flint hand axe from the surface of a field in the Bristol Avon valley at Monkton Farleigh, 20 km north of Warminster (Gardner 1987, 163). Other similar small cordiform and sub-triangular hand axes of flint and chert are known from surface locations and cave/fissure deposits on the Mendip Hills. Precisely located examples include a small cordiform hand axe of what is probably Carboniferous chert from a fissure in the Carboniferous Limestone at Lime Kiln Hill Quarry, Mells (Vranch 1981, 70, R. Jacobi *pers. comm.*) only 15 km west of Warminster. Others are known from

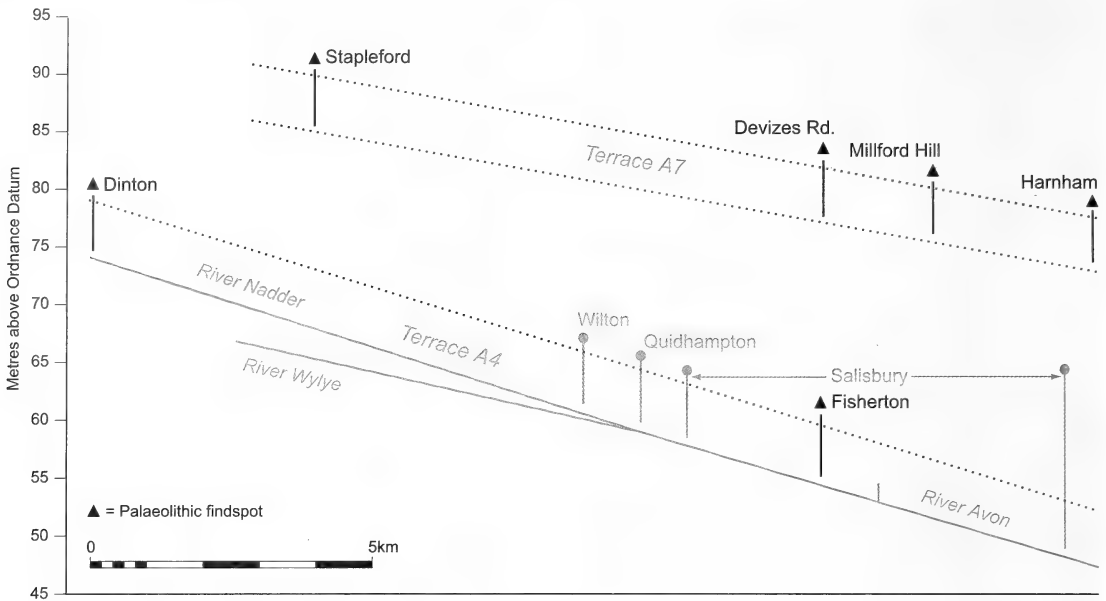


Fig. 3 Longitudinal profiles of the Rivers Nadder and Wylye to the River Avon at Britford. (Terrace correlation by Clarke and Green (1987))

Hyaena Den and Rhinoceros Hole at Wookey Hole (White and Jacobi 2002) and Uphill Quarry at the west end of the Mendips (Roe 1981, 245). Examples with an imprecise provenance include one of Greensand chert, known only as from Hazel Farm, one of several farms on Mendip with this name (R. Jacobi *pers. comm.*).

It is difficult to be sure precisely when the implements from Warminster, Pewsey and Dinton were made or whether they are contemporary; however it is possible using provenance, stratigraphy and form to speculate that they may be of similar age and therefore related to a specific phase in the Palaeolithic settlement of Britain with links from the Salisbury Avon to contemporary occupation in the west. Some of the better dated Palaeolithic assemblages have been found in the Thames valley, where river terrace stratigraphy has been correlated with the climatic record preserved in deep-sea cores and with diagnostic flint tools (Bridgland 1998). Terrace stratigraphy acknowledges that, through time, rivers cut down and leave fragments of earlier flood plains preserved high on the valley sides as terrace features; the higher up the terrace is the earlier it is. Down cutting has traditionally been associated with the need of a river to keep pace with falling sea level during successive glacial periods; however it is now accepted that uplifting of land masses is as important, if not more so towards the

formation of these terrace staircases (Bridgland 1994). Terraces are rarely preserved in the headwaters of a river, as at Warminster or Pewsey, where the rivers are smaller and undertake little or no sediment deposition that is necessary for terrace formation.

Deposits, mapped as valley gravels, have been plotted throughout the Wylye valley, at the edges of the present flood plain (BGS Sheet 298- Salisbury). They are located at a much lower level and therefore likely to be later than other gravels in the valley, which, at Stapleford, are preserved in a terrace remnant and are known to contain implements (Harding 1995). These higher gravels of the River Wylye (Figure 3) coincide most closely with terraces of the Salisbury Avon at Salisbury, including the important gravel deposits at Millford Hill, which have consistently been associated with others mapped as Terraces A8 and, more particularly, A7, at about 30 m above the present course of the Avon (Clarke and Green 1987). Recent research (Westaway *et al.* in press) has linked the terrace systems of the Salisbury Avon with those of the Thames enabling the terraces of these two major rivers and their archaeological contents to be correlated much more precisely. In addition a sample of material from recent work at Harnham (Whittaker *et al.* 2004) dated by optically stimulated luminescence (OSL) to c. 255,000 BP (Wenban-Smith *et al.* 2005) marks an important advance in scientifically dating the Avon

deposits. The site was found at 74 m aOD, 30 m above the present floodplain and suggests a 'possible' age for other terrace deposits at this approximate height above the Avon including Milford Hill.

The field surface at Warminster has no terrace gravel from which the hand axe may have been eroded and the site lies over 30 m above the present valley of the Wylye. The condition of the implement suggests that it was dropped near to where it was found although this could reflect activity on land overlooking the valley at virtually any stage of the Palaeolithic.

The suggested date of this hand axe therefore rests with its similar form and raw material to those found in the Mendips and the implement found at Monkton Farleigh. These implements were frequently associated with bones of Currant and Jacobi's (1997, 2001) Pin Hole Mammal Assemblage Zone, a collection with species that are mostly extinct or no longer native in Britain, including woolly mammoth, woolly rhino, giant deer, brown bear, wolf, spotted hyaena but also containing horse and fox. A number of other caves in the Mendips, including Hyaena Den and Rhinoceros Hole in Wookey Hole, have similar faunal assemblages. The chert hand axe from Lime Kiln Hill Quarry, Mells, also appears to have been found in a fissure that produced a similar faunal assemblage, although this has not been confirmed (Jacobi *pers. comm.*). The stone tool assemblages often include small sub-triangular and cordiform hand axes with the distinctive *bout coupé* hand axe type (*ibid*), such as was found at Fisherton, where the associated fauna was also of Pin Hole type (A. Currant *pers. comm.*). Interestingly the faunal assemblage at Fisherton also contained an example of musk ox (*Ovibos moschatus*), a species that is not represented in the type species list for the Pin Hole mammal fauna (Currant and Jacobi 2001, Table 5). This species has, however, been identified and dated by radio carbon determinations at Clifford Hill, Northamptonshire to OIS Stage 2 (26,000-12,000 BP), suggesting that deposition of the 'brickearth' at Fisherton may have continued after 26,000 years ago (Jacobi *pers. com.*).

While the form, material, condition and location make a strong case for the Warminster hand axe to be considered as of Devensian age, the Pewsey hand axe shows similarities in form and condition. This implement was recovered from floodplain deposits of the river which are also likely to have been laid down in the Last (Devensian) Cold Stage. Its condition contrasts starkly with that of the surrounding gravel, derived from the Chalk, suggesting that the hand axe

is unlikely to have been moved far, reworked from an earlier gravel deposit or incorporated from the valley slopes via solifluction. There is therefore an equally strong case for suggesting that this implement also dates from the Last Glacial. It is arguable that similar floodplain implements may lie buried downstream, where deposits of alluvium are more prevalent. The small ovate hand axe found in a field at West Kennett was considered (Holgate and Tyldesley 1985) to be of possible Middle Palaeolithic date. If this could be confirmed it would provide additional evidence for human presence in the area at this time.

The Dinton hand axes, which also include a cordate implement, were all in a sharp condition and were also found in or 5-8 m above the present flood plain of the River Nadder (Figure 3). This is a similar vertical height to the Fisherton 'brick earth' deposits above the River Avon, which have been dated by the fauna to OIS 3 (59,000-26,000 BP) (White and Jacobi 2002). Gravel at Fisherton, which underlies the 'brick earth' has also been correlated to the broader terrace stratigraphy of the River Avon with terrace A4 (Clarke and Green 1987), considered to be of OIS 4 date (Westaway *et al* in press). Regrettably the terrace sequence of the River Avon cannot be traced upstream beyond Fisherton although it is possible that the deposits at Dinton provide some hint of continuity up the River Nadder valley.

CONCLUSION

The re-colonisation of Britain during OIS 3 is now a well accepted land mark in the story of occupation in the British Isles. Additional discoveries of hand axes with reappraisal of old collections as undertaken here, the study of well documented faunal assemblages and improvements in radiocarbon dating will make it possible to refine this broad picture. Pettitt (n.d.) has suggested that sites on the western Mendips at Wookey Hole and Uphill Quarry formed part of a late Neanderthal 'local operational area' based on the Axe Valley; Jacobi (n.d.) drawing attention to the isolated hand axe from Lime Kiln Hill questioned whether there might not be a strong case for the existence of a similar 'operational' area based on the eastern Mendips. If this is the case there seems to be no reason why this should not be linked to the Salisbury Avon with its connections to the Solent.

The hand axes from Wiltshire that have been described here, including the well known specimen from Fisherton, were all isolated finds with no associated evidence for occupation or hand axe

manufacture. Only that from Fisherton is closely dated. It is impossible to be sure how these tools came to be where they were found. What is apparent is that hand axes such as those from Warminster and Pewsey, both surface finds, can provide valuable links with better stratified and dated material. They represent implements made of material that is not necessarily native to the immediate area, indicating the ebb and flow of these mobile human populations from region to region.

Acknowledgements

This article is dedicated to the memory of John Wymer, a great Palaeolithic scholar who sadly passed away as the text was completed. He inspired me to remove administrative boundaries and appreciate the landscape through natural divisions, especially drainage basins.

The hand axe from Bugley Barton Farm, Warminster has been retained by the land owner. The implement from the Vera Jeans Nature Reserve is held at the offices of the Wiltshire Wildlife Trust.

Grateful thanks are due to Bert Green and Beverley Heath, the finders, for reporting the discovery of these hand axes to Dr Paul Robinson at Devizes Museum. Thanks are also extended to Roger Jacobi for his encyclopaedic knowledge of the period, especially comparative sites from the Mendips and for sharing unpublished data on the Limekiln Hill hand axe. Additional thanks are also due to David Bridgland for correcting my inadequate knowledge of geology. The artefacts were illustrated by Phil Harding with Figures 2 and 3 prepared by Rob Goller of Wessex Archaeology.

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The Bronze Age barrow cemetery at Snail Down: a celebration and consideration

by Paul Ashbee

This paper reviews the publication by the Society in 2005 of the Snail Down barrow cemetery excavations undertaken by Nicholas Thomas in the 1950s: Snail Down, Wiltshire, the Bronze Age Barrow Cemetery and Related Earthworks, in the parishes of Collingbourne Ducis and Collingbourne Kingston. Excavations, 1953, 1955 and 1957. Devizes: WANHS Monograph 3 (Thomas 2005). Consideration is given to the circumstances of the excavations, the nature of barrow digging in Wiltshire since the age of antiquarian enquiry, and to the wider context of the results.

Until the dangerous days of World War II, Snail Down's spectacular chevron of barrows, some eight miles north-east of Stonehenge and just over a mile north of Sidbury Hill, was one of the more spectacular groups of Bronze Age barrows in Wiltshire. An aerial photograph, taken in 1939 by Major G. W. G. Allen was selected by Grahame Clark as illustrative of round barrows in his *Prehistoric England* (1940, 2nd ed, 1941), an attractive Batsford book which, with its many pictures, did much to alleviate the tedium, and even lift the morale, of many, such as myself, ensnared in the military machine. When located upon a map they could be seen as the cardinal feature of the barrows that skirt Sidbury Hill, an eminence crowned by a not unsubstantial earthwork enclave, which may have had cult significance. With war imminent, Snail Down was, at some point between 1937 and 1939, taken over to extend the Salisbury Plain military training areas. On Major Allen's aerial photograph close examination reveals, besides the burrowing of the myriad of rabbits abroad in those distant days, that light armoured (panzer) vehicles had begun to drive over the south-western string of barrows. Already, in 1939, B. H. St. J. O'Neil, shortly after he became Chief Inspector of Ancient Monuments in, what was then the Office of Works, noticed damage,

but because of the pressing demands for emergency excavations, it was a situation impossible to police. When, after the war, L.V. Grinsell was able to obtain access to Snail Down he was aghast at the damage inflicted by the heavy armoured vehicles of the later war years, and lost no time in alerting O'Neil and R.B. Pugh, then President of the Wiltshire Archaeological and Natural History Society, as to what had come to pass, and that it was still continuing.

Bryan O'Neil, then Chief Inspector of Ancient Monuments, in what had become the Ministry of Works, considered that an extensive programme of excavation to salvage what remained of the sorely damaged, near razed, mounds, was necessary, were an appropriate person able to direct such a considerable undertaking available. It is now a part of archaeological history that Nicholas Thomas, who had, in 1952, become Curator of the Devizes Museum, subsequent to his sojourn at the University of London's Institute of Archaeology, then in Regent's Park, with Charles Thomas, also from the same stable, were able to undertake, with subsidised student assistance, programmes of excavation in 1953, 1955 and 1957. Of the order of 40 volunteers, as they were termed at the time, staffed the forays which were about five weeks in duration. Temporary huts, with catering, accommodated all in 1953, while

later in 1955 and 1957, there was a tented camp at Everleigh. The newly established RCHME presence in Salisbury supported the enterprise by deploying its skills, notably to the survey of the barrows and other earthworks on Snail Down. All in all, the undertaking looked back to R. E. M. Wheeler's (he became Sir Mortimer in 1952) endeavours at Maiden Castle during the 1930s (Wheeler 1943; Hawkes 1982, 162-77 *passim*) and in many ways mirrored the scale and approach to the excavation, by R.L.S. Bruce Mitford and the present writer, of the sand-shrouded early building remains at Mawgan Porth in Cornwall in 1951 and 1952 (Bruce Mitford *et al.* 1997). When the present writer came to excavate agriculturally damaged round barrows at Amesbury in 1956 (Ashbee 1984) he was supported by, among others, some who had found their archaeological feet on Snail Down during 1953 and 1955. An interim account of the work on Snail Down during 1953 and 1955 was published by Nicholas and Charles Thomas (1956) while that of 1957 had notice in the *Excavation and Fieldwork* section of *WANHM* (Annable 1958).

Now, in 2005, like the report regarding Mawgan Porth which was so long in gestation because of circumstances, largely historical, involving among other things, institutional demands, broader issues and the nature of English life (Ashbee 1998-9), the definitive report upon all that came to pass on Snail Down, during the 1950s, has appeared. It has, appropriately, glossy, basic, brown-earth coloured covers, with upon the front, a reproduction of a dramatic oil-painting, *Snail Down under Excavation, August 1953*, by I. P. Bewsher, and, upon the rear, a reproduction of the map from Colt Hoare's *Ancient Wiltshire* (facing p. 180, I, 1812). Its typeface is clear, easy to read and not difficult to use. There has already been comment regarding its influence; had Snail Down been promptly published and, if any of today's generation write reviews (see Reviews in this volume of *WANHM*), they may be tempted to employ some of Sir Mortimer Wheeler's (1954, 182-199) *dicta* regarding archaeological reports. Whatever may emerge from the archaeological media regarding Snail Down, it is the view of the present writer that this volume, put before us now, in 2005, is far in advance of anything that could have been propounded in, say 1960, and like wine of quality it is now a vintage of stature. Indeed, its appearance is a red-letter day for Wiltshire's prehistory, marked in great part by its many surviving, and one hopes adequately protected, barrows, and is, in many ways, their apotheosis, for its stature cannot begin to be

appreciated without an excursion into the evolution of barrow study within its bounds.

Within Wiltshire round barrows cluster upon Stonehenge (Cleal, Walker and Montague 1995), while across its terrain significant groups, often associated with earlier long barrows, are to be seen, sadly and rarely, in an undamaged form. In 1913 they were systematically listed by Canon E. H. Goddard (1913) and later, for the *Victoria County History* (1, pt. 1, 1957). L. V. Grinsell further enumerated and examined their nature and siting, discussed in his many publications (1934, 1936, 1941, 1953, 1958, 1974). Barrow excavation began in the early 18th century, when William Stukeley dug into, and effectively described, the structure of the twin bell-barrow of the *Cursus* line of barrows, north of Stonehenge. He drew an effective section (Ashbee 1960, pl. 1; Piggott 1985, pl. 18), saying, among other things (Ashbee 1960, 19) that at 'About three feet below the surface a layer of flints, humoured the convexity of the barrow... This being about a foot thick, rested on a layer of soft mould another foot; in which was inclos'd an urn full of bones' (Stukeley 1740, 44).

Wiltshire's barrows, positive, recognisable, field monuments which, at the end of the 18th century, in places, dominated the space of Salisbury Plain, were investigated by Sir Richard Colt Hoare of Stourhead and his collaborator William Cunnington, from Heytesbury, and were dug into, in a planned progress, between 1803 and 1818. Writing in 1960, the present writer enumerated 379 barrows dug into, a total which Thurnam (1871, 235) raised to 465, and included many of the Snail Down mounds. Their method of investigation was a pit into the crown of the barrow, and the removal of such grave furniture as might be encountered. Bones and cremations were reinterred. The total excavation of many of the barrows 'opened' by this method, as for example the beaker barrow, Amesbury 51 (Ashbee, 1978), has often led to a not incomplete narrative. Here the remains of a timber mortuary structure had been little damaged, satellite and secondary beaker burials were encountered, while the beaker from the primary burial was in Devizes Museum. Colt Hoare was adamant that he spoke from facts not theory and his persistence (he and William Cunnington worked upon a seasonal basis for fifteen years) was notable. Presumably his hope was that something might link the barrows to the early past of his day. One is inevitably reminded of Col. William Hawley at Stonehenge (Atkinson 1956, *passim*; Cleal *et al.*, 1995, 12-15) who stripped most of its interior in the

hope that something conclusive might emerge. As is well known, the Colt Hoare-Cunnington excavations were published in the two elegant folios of *Ancient Wiltshire* and *Snail Down* is a notable descendant.

During the later 19th century others followed Colt Hoare's example and dug into Wiltshire's barrows, although, mercifully, not upon the same scale. Dean John Merewether (1851) in 1849 dug into some forty barrows, mostly in north Wiltshire and is distinguished for having, with workmen, burrowed into Silbury Hill. The barrows were investigated over twenty-six days between 18th July and 14th August. Dr John Thurnam was rather more interested in long barrows but, notwithstanding, he dug into some ninety round barrows (Thurnam, 1871). His work was of great value and of use well into the 20th century and beyond. The Rev. W. C. Lukis (1867) dug into the barrows of Collingbourne Ducis and reported upon the seventeen mounds that he investigated and Canon William Greenwell, the author of *British Barrows* (1877), was also active in the county, and Wiltshire's round barrows were published in the *Archaeologia* (1890, 45-59). He was long-lived (1820-1918) and an encounter with him in Durham Cathedral in 1916 was one of the many vivid memories of Christopher Hawkes (Daniel and Chippindale 1989, 47; Bonakis Webster 1991, 57-8). Thus in the 19th century some 600 of Wiltshire's round barrows were dug into.

Barrow investigations within and without Wiltshire were undertaken during the earlier decades of the 20th century. The remarkable Manton Barrow, near Marlborough, was Maud Cunnington's first excavation (1908) and it had beneath it an elderly female contracted inhumation burial, the furnishings of which comprised one of the more remarkable Wessex assemblages (Piggott 1938, 105; Grinsell 1957, 187-8). This grave furniture, which came to Deves Museum in 1953, had for long been in the hands of Dr Walter Byron Maurice of Marlborough. A vivid memory of the present writer is a visit, made in 1951, with Prof. V. G. Childe who wanted to scrutinise the gold-bound amber discs. The house was pleasant and the afternoon tea correct in every detail. A bell-barrow on Amesbury's Boscombe Down, because of its threatened destruction, was excavated by R. L. S. Newall (1932). It had within it a cremation burial with two daggers of Bush Barrow form (Ap Simon 1954, 54), two whetstones and antler implements. There was also a plank coffin, in a satellite grave, which contained a contracted burial furnished with a flat dagger. This may, because of the character of the dagger, have been a burial beneath

a modest Beaker barrow subsequently incorporated into a larger entity. Beyond Wiltshire there were also barrow excavations of note on the eve of, and during, World War II. On Crichel and Launceston Downs, in Dorset, lands were acquired, by the then Office of Works, for military use, and upon them were 34 barrows. The excavations (Piggott and Piggott 1944), during the summer of 1938, examined 18 of small size and elevation. The more massive mounds, unlike their counterparts on Snail Down, largely survived the storm. During the war, 15 barrows on the acid soils of the New Forest were excavated (Piggott 1943). It can be said, therefore, that by the end of World War II appropriate exemplars had developed within Wessex to allow barrow investigation to proceed upon recognised procedures which involve care and observation.

Although here and there a measure of provincialism may have lingered in the pursuit of prehistory, it had by World War II, except in certain fastnesses, long since been dissipated. At the same time one should be aware that work undertaken in a specific area, and appropriately published, is almost always of wide interest, as indeed, has been prehistory in Wiltshire. During the 1920s, the 1930s and into the years of World War II, Cyril Fox undertook 16 round barrow excavations which, in terms of attention to detail and interpretation, were to mould the minds of many regarding the place of these monuments within the prehistory of the earlier Bronze Age (Fox, 1959, is a summary). Of especial significance within the series are the reports upon the Simondston and Pond Cairns (Fox 1938), the examination of stake-circles within turf barrows (Fox 1941) and the Sutton 268' Llandow barrow in Glamorgan (Fox 1943). A factor of the Cyril Fox contribution to barrow studies was his endeavours to reconstruct the rituals and procedures of burial (Ashbee 1960, 22). Cyril Fox (Scott-Fox 2002, *passim*) joined the National Museum of Wales in 1925 where he worked in close association with R. E. M. Wheeler until he returned to the London Museum at Lancaster House and brought the Institute of Archaeology into being (Hawkes 1972, *passim*). Cyril Fox and Wheeler became close friends, indeed, they corresponded during the difficult war years, and it can be seen by the discerning how aspects of Wheeler's disciplined modes of excavation, at Caerleon, St Alban's and Maiden Castle, were skilfully applied to complex barrow and cairn excavations. Sir Cyril, as he became in 1935, remained in Cardiff until his retirement in 1948. Sir Mortimer, after leading an AA Brigade, reorganised the Archaeological Survey of

India (Wheeler 1976) and then, after independence, returned to the Institute of Archaeology. Here, the directors of the Snail Down enterprise sat at his feet, as did the present writer and many others, and were enthralled by his exploits in India and stimulated by his vision of the nature of excavation (Wheeler 1954) and its applications.

This summary of the development of barrow excavation in Wiltshire and beyond allows a generalisation. The opening of barrows by Colt Hoare and Cunnington can be seen from our backward-looking vantage point as the poor excavation of good barrows. That is, apart from the effects of weathering and denudation, they were field monuments untouched since the Bronze Age. On the other hand, much of the barrow excavation of the 20th century has seen the application of good, that is, modern, developed, order and techniques to the excavation of barrows at best agriculturally plough-reduced or damaged by other processes. Indeed, as upon the Oxford gravels (Atkinson *et al.* 1951; Whittle *et al.* 1992), enlightened excavation has recovered much from razed monuments. On the other hand, it has from time to time been possible to examine un- and minimally-damaged mounds prior to their permitted destruction, as, for example, Tregulland Burrow in Cornwall (Ashbee 1958), the Milton Lilbourne barrows (Ashbee 1986) and the Moor Green barrow in Hampshire (Ashbee and Dimpleby 1976). Matters came to a head early in 1954 after the National Trust, in whose charge the Stonehenge landscape and its barrows rested, allowed arable farming. The results of this misguided action were detected early in 1954 when the destruction of the smaller barrows of the Normanton Group was witnessed and there was a spirited correspondence in the *London Times* (23rd April to 1st May 1954). The Ministry of Works acted but the proceedings collapsed as P. K. Baillie-Reynolds, then a Principal Inspector of Ancient Monuments, averred that barrows were numerous and that the loss of a few would make little difference to the order of things. By the end of the 20th century there was not a single undamaged major barrow group in the vicinity of Stonehenge. Snail Down is a dramatic illustration of the destructive power of military vehicles (pl. 2, 127) only surpassed by deep (sometimes almost 1m) ploughing. Thus, in 1953, Snail Down set the scene for much that was to follow.

As an archaeological report of substance, it must be appreciated that it has been subjected to the operation of the *zeitgeist* and is a different creature what might have emerged in, say, 1960. This is shown

by the character of the volume's contents. Following upon the notes, abstracts and acknowledgements, an introduction looks at the nature of the undertaking, a concordance of barrow and earthwork numbers and a survey of Snail Down's earthworks. Thereafter (pp. 15-144) are fundamental accounts of the barrows, or rather the mutilated remains thereof, examined in 1953, 1955 and 1957. One is led by Collin Bowen's (1957) concise plan (fig. 2A) of barrow types and the barrows, boldly headed as *Sites* (I - XXII), are illustrated by plans, sections and further diagrams when necessary. This is followed by the section (pp. 145-271) treating human remains, artifacts, animal bones and the environment. Besides material from the 1953-7 excavations, that recovered by Colt Hoare and Cunnington in 1805-6 has been considered. In contrast to the numbered excavation sites, this section is ordered alphabetically (A-V). The author made signal contributions to this section and for its furtherance the endeavours of some twenty people were enlisted. Notable among this muster are Ian Cornwall, from London's Institute of Archaeology, with Peter and Juliet Jewell, who went from Mawgan Porth. The present writer was pleased to support Nicholas Thomas in a consideration of the radiocarbon dates. The work at Snail Down was during the early days of the technique's development, but, however, appropriate material was prudently gathered. Sadly the results cannot be statistically separated. The nature of the Snail Down Barrow Cemetery and the issues that emerged therefrom are examined (by Nicholas Thomas). In the third and final sections eighteen especial aspects of all that came to pass are enumerated and various insights, rarely recorded, are examined. A bibliography including much recent literature pertaining to Britain's round barrows, and a necessary index, rounds off the 300 page volume.

Unlike many written contributions to present-day prehistory, Snail Down is, as are the publications of its distinguished excavator and author, eminently readable. For the greater part the contributions to Part 2(A - V), especially those with which Nicholas Thomas was involved, are equally readable, although here and there care and extra-concentration must be brought into play. Of these, B, the cranial disc, with Ian Cornwall's wise words, M, the 1805 grave-groups and Q, the remains of wild and domestic animals, are particularly effective. Infelicities are near non-existent, although the use of the American term *artefact(s)*, beloved by those who would be with Binford and his *New Archaeology* (Courbin, 1988), is, frankly, an irritant.

The plates (pp. 127-44; 263-80) are well selected and reproduced and are appropriately geared to the text. Figs. 1 with 2 and 3 are dramatic before and after depiction, while 9, despite the stripping of the ancient soil, conveys, almost dramatically, the nature of differential weathering (Ashbee 1960, 48, fig 19). In such matters, the use of selected human figures (pls 3, 4, 8a, 9, 13, 24, 35, 43), well positioned, have been more effective than the clinical ranging-rods so fashionable at the time. The sliver of rabbit-ridden baulk topping the postholes of site XV, beside site XVIII, is a salutary reminder of the incidence of the creatures prior to the importation of myxomatosis. Pl 1, the dramatic 1939 aerial photograph of the near-undamaged barrows shows certain mounds as rabbit warrens. Here and there later generations, unaware of the rabbits in their millions, and barrow infestation, have seen silted burrows in sections as evidence of tip-construction! The plans depicting the excavated barrows are concise and to the point and their features are clearly labelled (e.g. Site II). However, it is felt that several sections, drawn carefully to a common convention, have been over-reduced to a point where layer depiction becomes difficult to unravel and see proportionally. The ditch sections (Site V, fig. 17, p. 40) are, however, happier and not unpleasant to use. Site III, the sections of a sorely damaged mound with a dark, loamy core, depicted in stygian detail, is something of a shock. With the best will in the world, one feels that certain published sections are not conveying all that was intended. On the other hand many depictions of detail (e.g. Site III, fig. 12, p. 36) are clear and innovative. Plans, sections and detail diagrams are clear, and bar scales, imperial and metric, are a clear corrective in this age that assiduously embraces alien modes. The site location map (fig. 1, p. 5) and the RCHME plan of the barrow cemetery (fig. 2, p. 6), together with the analysis of barrow types (fig 2a, p.11) are all highly functional and not unpleasant to use. Nonetheless, RCHME should have set an imperial bar-scale beside its 1km (fig. 1) and 300m (fig. 2) bar-scales.

There are probably good reasons why Part 2, the human remains, artifacts, bones and environmental materials, were set down in alphabetical order, A-U. Indeed, by reference to the list of volume contents the appropriate contributions are not too difficult to find. Nevertheless, it is not easy to divine why the distinguished author of Snail Down has deviated, almost dramatically, from what has for long been the accepted norm. Artifacts are customarily dealt with in a more or less chronological order. Thus a major

section would have begun with the material recovered by Colt Hoare and Cunnington and the categories could have proceeded therefrom (M - L, K, D, E, E, H, G, J, N, F, P, U). The last item could have been the 1805 excavation mementos. Human remains (A, B) normally follow, with, thereafter, animal bones and molluscs (Q, R) and vegetation considerations, past and present (S, V). The radiocarbon dates (T), a race apart (the excavator is to be congratulated for his sampling prudence), could have been accorded an especial section. After this reviewer's comments upon presentational arrangement, the line drawings which present the pottery and other artifacts recovered from Snail Down (figs, 38-59), it is a pleasure to say that these line drawings are concise, informative and, particularly the urns, characterful. There are five full pages of later Neolithic and Beaker sherds and the well-presented salient features upon each allows one conversant with these vessels to envisage the erstwhile entity immediately. The collared urns are well-drawn and the nature of the fabric is subtly conveyed in a pleasing mode. The two pages of worked flints are supported by an apparatus of tables preceded by an analysis of the barrows from which the various pieces came. This is new ground and one thinks of incidental uses during the raising of specific mounds. By and large there seems to be less flint waste than might have been anticipated. One or two pieces have suffered from over-reduction and the blackening of the usage-edges could be disconcerting. The well-finished Wessex arrowheads (fig. 58) are particularly well-depicted and the intricate processes of their production can be intimately appreciated. This fine apparatus of depiction, has bar-scales which aid sizing, yet it should not be forgotten that, until recently, all archaeological material was shown and sized by imperial systems and that comparison with earlier publications is a vital research dimension. The metric system is one that is, apart from the formalities, not used to the extent that many here in England may think. There are systems, based in cardinal cities, which are immediate to many mainland European minds, and thus our imperial system, particularly its archaeological usages, should not be summarily abandoned.

This consideration of the Snail Down barrow excavations is concluded by Part 3 (pp. 281-311), the anatomy of a Bronze Age barrow cemetery and its people. Eighteen specific issues emerged from the excavations and their evaluation, taken together, is a significant contribution to the study of the nuances of round barrow ritual and construction.

Indeed, besides bringing together much fairly long-standing endeavour, the sources and the detail that has emerged in recent times, in many instances from rescue archaeology, is impressive. When writing in 1960, carefully excavated, informative, round barrows were few in number, a factor remarked upon by one reviewer (Isobel Smith, *Antiquaries Journal* 41 (1961), 243-4). This part of *Snail Down* is appropriately prefaced by Sir Cyril Fox's (1959, XXVII) reference to R. G. Collingwood's (1944, 75), contention that archaeology is the record of what men did in long past time at a particular spot: and therefore since thought governs action, what were they thinking?

Snail Down's barrow-group siting is examined in detail (1) as is its relationship with the others of its locality and something of a series of sites that were established but which never developed beyond a particular level seems likely. As noted at the outset of this article the possibility of Sidbury Hill having had a significance along the lines of Croagh Patrick, in Ireland, prior to its Christianisation (Killanin and Duignan 1962, 456), seems likely. Earlier settlement beneath barrows (2) may be difficult to establish because more than spreads of sherds should be involved. A convincing site was beneath the principal barrow at Sutton Hoo where, besides unworn sherds, ditches and quadrangular stake-settings were found. Whether or not the remains of substantial fires found beneath certain barrows (8) were pyres is a not unreasonable contention but unproven. During the excavation of Amesbury Barrows 61 and 39, and again at Milton Lilbourne, the present writer searched the burned areas in the hope that pieces, or even a piece, of burned bone, which could have been related to cremation burials might remain. Similarly, pits, sometimes soil-infilled, but with traces of burned wood were also searched. The consideration of the burial process (10) is a valuable contribution, as is the list of evidence for the breakage of objects furnishing various burials. Many were sceptical regarding this practice, alleged from various sites, as was the present writer until he examined the broken dagger pommel in the cremation grave beneath the Amesbury 58 bell-barrow in 1956. A table (40) which analyses the furnishings of the interments beneath the Snail Down barrows aids appreciation in that, to some extent, routine and exceptional depositions within the group can be seen, while so-called cenotaph barrows are accorded examination and listing (11) and, again, the cloud of disbelief has been penetrated. The bold title (13) 'Barrow building, Location and

Planning' brings to the fore the likely responsibilities of certain members of Bronze Age society as does the listing of markers and procedures, and construction, is discussed (14). Initially, white chalkland barrows would have been both spectacular and visible, as singular raisings or additions to groups such as Snail Down were undertaken. It has emerged from the Overton Down Experimental Earthwork (Ashbee and Jewell 1998) that a round barrow is likely to have assumed much of its form, as seen today, within three decades. It seems unlikely that, initially, all round barrows were mounds. A drum-like form, retained by larger pieces of chalk from the ditch, or in some places turf, would have weathered into a symmetrical mound. Some stake- and post-circles in barrows could have retained such a drum-like construction. Nicholas Thomas has brought together some two dozen examples of stake- and post-circles, which have been found since the present writer published his list in 1958. Many of these are upon the chalk and other formations which could have provided adequate materials for revetment to a form which could have been mounded by natural weathering processes. Thus these stake- and post-circles, single and concentric, may remain from fences or palisades, perhaps as has been suggested, carved and painted, which shielded the especial and arcane rites which certain burials demanded. Barrow maintenance (15) is difficult to detect. A possibility is ditch-scouring and, perhaps, the removal of vegetation. Here and there, undamaged barrows, albeit grassed, are steep-sided and are far beyond the normal angle of rest for chalk rubble. Under the title of subsequent use (16) the possibility, brought forward by Stuart Piggott (1971, 54), of early barrow-grave robbing has been examined. From time to time one has been puzzled by the paucity of the grave-furniture of burials beneath considerable barrows. A central pit could have allowed the removal, for example, of gold objects while central cuttings, the Colt Hoare-Cunnington mode of excavation, would have obliterated such evidence. Indeed, were the traces observed, they would be considered as an early excavation attempt.

To conclude his consideration of all that came to pass on Snail Down, Nicholas Thomas gives the barrow group a chronology (17) and avows that it was a place of burial for a specific community (18). Fig. 61 sets out the seven earliest phases, and it is said that the initial five phases, there depicted, could, in terms of radiocarbon determinations (Part 2, T, tpls 35, 36), have taken place within 150-600 years. Despite the difficulty, indeed, impossibility,

of statistical separation there is, notwithstanding, a sequence which sets the bell-barrows apart as the later constructions. Thus argument adroitly proceeds upon archaeological grounds, although the radiocarbon dating for site XV, a small group of inhumation burials, is commented upon. To the seven phases, three more, Romano-British times, the area's later fortunes and the war-damage are added. The Roman coins (Part 2, P) might be more than casual losses and could be thought of, as elsewhere (Piggott 1961, 55-6), as evidence of an interest in this prominent assemblage of ancient barrows. The notion of the Snail Down barrows as those of a specific community is developed (18) and illustrated by an ingenious diagram illustrating common traits and it is a contention supported by phased observation. It is, however, far from easy to separate the Snail Down grave furniture, or for that matter the nuances of the barrows, from those of the chalklands elsewhere in the wider Stonehenge supportive landscape. Nonetheless, the arguments are cogent and their context and direction are matters for further consideration and observation. In his final paragraph the writer remarks upon 'The relatively small number of people buried at Snail Down is in marked contrast with the size of many of the barrows and the majesty of their arrangement.' It was a group which, in later Bronze Age times, was accorded a pond-barrow (Ashbee *et al.* 1989) and was the major group of the Sidbury Hill barrow surround. Whatever the qualities inherent in that eminence, the barrow group appears likely as having had a leading role.

The bibliography is formidable and informative in that the some 350 entries embody much of which has been explorative of significant aspects of Wessex prehistory since the excavations upon Snail Down during the earlier 1950s. Of note are the excavations of barrows; their intricacies by Patricia Christie, the difficult barrows investigated by Faith de M Vatcher, Ernest Greenfield's patient undertakings, written up by Isobel Smith, the present writer's barrow excavations and the incisive studies of beakers and other aspects of Wessex prehistory by Humphrey Case. There are also signal papers by Juliet Clutton-Brock and Peter Jewell. Here and there name spellings might lead to the bibliographic detail difficulties of the computer age. Nonetheless, it is relevant to all round barrows, and earlier Bronze Age studies, by virtue of all that it embodies. Moreover, in the text, page and illustration numbers are clearly given and one is led unfailingly to the evidence for particular observations.

A question that will undoubtedly be asked is why a series of barrows from a particular group, excavated during 1953, 1955 and 1957 have allowed the production in 2005 of an outstandingly comprehensive excavation report, buttressed by environmental insights, replete with radiocarbon dates, which is rounded by an acute, affirmative evaluation of the evidence marshalled therefrom. An answer might lie in the execution of the excavations. The University of London's Institute of Archaeology, *via* Frederick E. Zeuner and Ian Cornwall had disseminated notions of the substance and potential of environmental archaeological evidence that modulated the thinking of the discerning at that time. Thus, while, during the earlier 1950s, much was still in a developing future, the appropriate samples would have been taken and, unlike the materials assembled by many of us, were safely stored, and could be brought forward at an appropriate juncture. Sadly the materials from various subsequent barrow excavations were neglected, lost or disposed of by those who were unable to appreciate their ultimate value. A further factor which made for discerning excavation can be seen in various plates within the Snail Down volume, namely the employment of undergraduates and senior schoolboys, some of whom were to make a career in archaeology. A number who had worked on Snail Down, joined me at Amesbury in 1956, worked at Fussell's Lodge in 1957, Milton Lilbourne in 1958 and on the Horslip long barrow at Avebury in 1959. Many detailed observations looked back to Snail Down and the nature of the enterprise, enshrined in the interim report (Thomas and Thomas, 1956). In conclusion it must be said that Snail Down is a *sine qua non* for all approaching and concerned with Wessex during the earlier Bronze Age.

By way of a footnote to this appreciation of Snail Down, it should not be forgotten that Canon Goddard's list of Wiltshire round barrows (1913) is, today, an historical document and that Leslie Grinsell's listing (1957) is now a half-century in the past. Landscape is not static and the totalitarian agriculture of the 1950s and 1960s, not to mention the attrition down the years, has wrought fundamental changes to our barrows and other earthworks. This means intensive fieldwork, with Ordnance Survey map sheets, which should check every known barrow or its site, besides all those which have been the subject of excavation. Work such as this is continuing with the sites and records of Wessex Archaeology, the archaeological trust for the area. Some three decades ago Stuart Piggott

(1971, 48, 54) urged the formulation of a programme of radiocarbon dating for round barrows and the Wessex Culture. Today the methodologies are even more sophisticated and accelerator dates from small samples are current. There should be many things from early endeavours, in our museum collections and there are human remains, recovered from excavations such as Amesbury 51 (Ashbee 1978), all of which could be a beginning for new research. Only when such sources have been collated and appreciated can we move towards the re-excavation of particular barrows. Another aspect of barrows is that, while the chalk lands are particularly prone to processes of weathering, solution and erosion, tracts of ancient soil, considerable in their totality, are preserved beneath them. As on Snail Down (pp. 15, 42, 46, 71, 117) buried soils have, for some time, excited attention (Cornwall 1958, *passim*; Evans 1975, *passim*; Simmons and Tooley (eds.), 1981, *passim*). However, the plough reduction of numerous barrows has changed the nature of (particularly) chemical weathering, and thus the character of many barrow-buried soils may only partially depict their erstwhile nature.

Because of the manifold issues pertaining to barrows at large, and other field monuments raised by Snail Down, its excavation and the issues therefrom, it is not easy to bring a not unappreciative review article to what should be a resounding conclusion. It is a significant contribution to Wiltshire's prehistory and moreover to that of Wessex at large. At the same time there is much in this volume, for Nicholas Thomas has taken a broad view, that is relevant to the earlier Bronze Age of Britain. Like Mawgan Porth, in Cornwall, there are involved reasons why publication has occurred a half-century after the excavations but, notwithstanding, a remarkable volume has been put before us.

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Two possible Iron Age ‘banjo’ enclosures and a Romano-British villa and settlement at Beach’s Barn, Fittleton, Salisbury Plain

by *Phil Harding*

Limited excavation for Channel 4’s Time Team, at Beach’s Barn, Netheravon, aimed to relocate and re-investigate a Romano-British building excavated in 1894 by William Cunnington III and assess its relationship with a probable corn-drying oven excavated in 1993. The excavation confirmed the presence of a complex site of Iron Age and Romano-British date. Occupation commenced sometime in the Middle–Late Iron Age prior to construction of at least one, possibly two, banjo enclosures, which were also associated with settlement. Following a possible hiatus in occupation between the Late Iron Age and early Romano-British period, settlement continued throughout the Romano-British period, culminating in the construction of a substantial Roman building, considered to be a villa, adjacent to the site of the Iron Age enclosures. The status and function of the settlement through time and its relation with other settlements in and around the Avon valley are discussed.

In 2000 Channel 4’s *Time Team* undertook an archaeological evaluation at Beach’s Barn, Fittleton (more commonly known as Beach’s Barn, Netheravon) in order to relocate and re-investigate a Romano-British building excavated in 1894 by William Cunnington (1896, 172–3).

The site, centred on NGR 418400 151000, lies to the north of the Netheravon to Everleigh public road (Figure 1), within Salisbury Plain Training Area (SPTA) East. It is situated on a south-east facing slope at approximately 135m above OD, protected from the north-west by ground rising to 150m above OD. It commands views down a coombe towards the River Avon valley 4km to the west. The land to the south-east falls gently to Bourne Bottom, a dry valley tributary of Nine Mile River. Sidbury Hill, an eminence of Upper Chalk to the east, stands at 223m above OD, and is capped by an impressive Iron Age hillfort.

At the time of *Time Team*’s evaluation, Beach’s Barn included an area of modern coniferous plantation to the east and a strip of arable land,

approximately 150m wide, to the west, with permanent grassland to the north and south.

ARCHAEOLOGICAL BACKGROUND

Beach’s Barn is situated in an area rich in archaeological monuments of all periods but especially settlements of Iron Age and Romano-British date. Each settlement is surrounded by extensive blocks of ‘celtic’ fields systems, which frequently still survive as earthworks.

The Wiltshire Sites and Monuments Record (SMR No SU15SE311) refers to excavations undertaken by William Cunnington at Beach’s Barn in 1894, which discovered substantial amounts of Romano-British roof tiles, brick tiles, and paving stones (Cunnington 1896, 172–3; Cunnington 1930, 189; Grinsell 1957, 71). In the early 1990s Reading University attempted to relocate the site, confirm

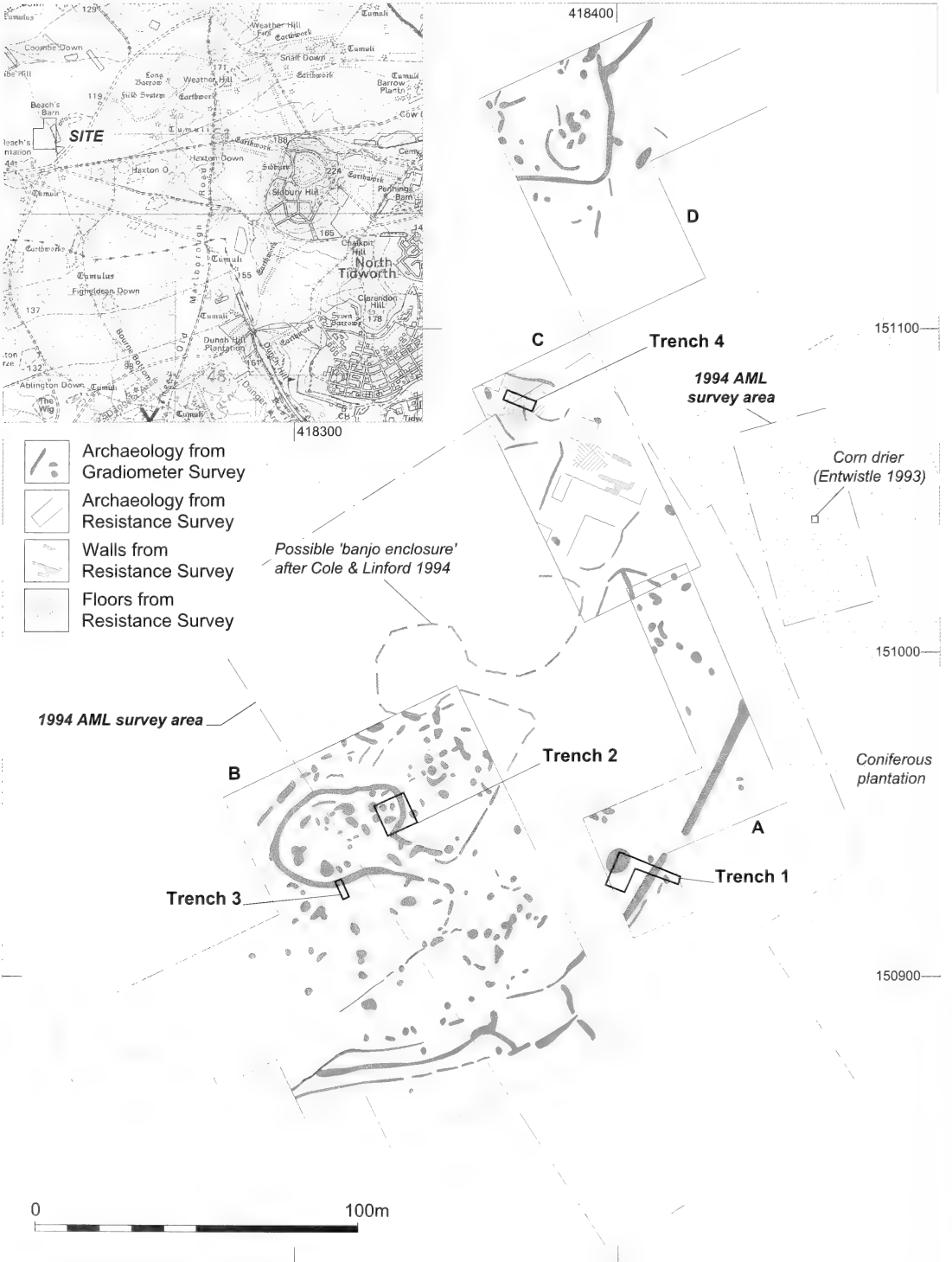


Fig. 1 Beach's Barn. Site location and plan of all features.

its date, and re-interpret its status and function as part of a major project to investigate Iron Age and Romano-British settlement across a broad transect of Salisbury Plain from the River Avon to the Bourne (Entwistle *et al.* 1993; 1994, Fulford *et al.* in press). A structure with flint and cob walls, interpreted as a corn drier and dated by ceramics to the 4th century AD, was found in a test pit in the coniferous plantation. A field walking survey on ploughed land to the west (Entwistle *et al.* 1994) recovered significant concentrations of 1st to 4th century AD pottery.

A magnetic survey was undertaken by the Ancient Monuments Laboratory (AML) of this ploughed area (Cole and Linford 1994). The survey revealed pits, and small circular and rectangular enclosures apparently contained within a wide 'perimeter' ditch but failed to establish the full extent of the settlement.

In 1995 Wessex Archaeology (1995) undertook field evaluation at Beach's Barn in advance of construction of new military roads. The results reinforced the evidence for prehistoric occupation in the immediate area, producing 67 ditches, pits, and miscellaneous features primarily of Romano-British date that were distributed to the north and north-west of the known settlement area. However, features of Early Bronze Age date were also found, testifying to earlier occupation of the environs.

Methods

Time Team's project set out to extend the area of the existing AML geophysical survey to relocate the Roman building excavated by Cunnington, to evaluate its condition, establish its date, status, function, and relationship to the corn drier excavated by Entwistle in 1993. It also aimed to establish the full extent of settlement bordered by the 'perimeter' ditch and to consider its date, economy, and relationship to the Roman buildings.

A geophysical survey using resistivity and gradiometry was therefore undertaken (Figure 1, Areas A–D) (GSB 2000). Four machine-excavated trenches (Figure 1, 1–4) were positioned on the basis of the geophysical survey results to resolve whether the settlement was of a single Romano-British phase, or represented multi-phase activity with Iron Age foundations. It also aimed to section the 'perimeter' ditch to assess its date of construction, duration of use, and relationship to the settlement and to evaluate the circular and rectangular enclosures.

This report summarises the results and

conclusions of the project. A more detailed account is presented in an assessment report (Wessex Archaeology 2006), which has been deposited with the SMR along with a copy of the geophysical survey report. The primary site archive is currently retained by Defence Estates and will be deposited with the Devizes Museum in due course.

Geophysical survey results

The survey results confirmed that settlement probably continued into the coniferous plantation where the corn drying kiln was discovered in 1993. The 'perimeter' ditch detected by the AML survey (Cole and Linford 1994) was relocated in Area A, where there were also numerous pits. A discrete anomaly c. 10m in diameter in the south-west corner of the survey area was selected for excavation, along with a section of the 'perimeter' ditch, in Trench 1. Survey to the west of the AML grid in Area B traced a continuation of the 'perimeter' ditch while reduced levels of response to the south and west indicated the probable limit of the core settlement. A sub-circular Iron Age banjo enclosure to the north with antennae ditches was recorded with concentrations of pits and ditches. A possible second banjo enclosure was detected in the 1994 survey, some 25m to the north-east. In Area C linear and sub-angular anomalies, consistent with the plan of a Roman villa aligned north-west to south-east, were detected by magnetic survey. A subsequent resistance survey across this area confirmed the presence of wall lines. Ditches and pits were also present.

In Area D, north of the villa, the survey confirmed the results of the Wessex Archaeology evaluation of 1995 with the presence of a ditched enclosure and pits.

EXCAVATION RESULTS

Trench 1 was positioned across the 'perimeter' ditch (Figure 1). The trench was widened in the west to investigate a large discrete geophysical anomaly. The trench demonstrated that the 'perimeter' ditch comprised three elements: a ditch, 0.9m wide and 0.46m deep, with steep sides and narrow flat base; a narrow slot, 0.4m wide, with steep sides and a rounded base, possibly a foundation trench for a palisade, and a steep-sided ditch, 2.24m deep, with a narrow flat base 0.6m across. The primary silts of the massive steep-sided ditch contained no datable material but were overlain by chalky silt and large

flint nodules containing 20 sherds of 1st–4th century AD pottery. Overlying chalk rubble, 0.7m thick, with a sherd of redeposited Late Iron Age pottery, appeared to represent a backfilled former bank, west of the ditch. The smaller ditch and the narrow slot also contained Romano-British material.

A section through a pit, 1.1m west of the lip of this massive ditch, measured approximately 2m across and 1.2m deep and probably represented a collapsed beehive storage pit. Chalk rubble suggested that the pit had been deliberately backfilled and levelled at the completion of its use. The primary fill was undated but the secondary and tertiary fills contained 156 sherds of Romano-British pottery, primarily of 1st–2nd century AD date.

The dates of pottery from the ditch and pit prevented a firm chronological relationship between the two features. However, the fact that pottery of the 1st and 2nd century AD was more frequent in the pit may indicate that this feature had been backfilled, levelled, and sealed by the bank of the ‘perimeter’ ditch.

The large geophysical anomaly was revealed as a circular shaft or well, 8m in diameter, with steeply sloping, near vertical sides. A slot, 0.7m wide and 1.5m deep, was cut through the upper parts of the feature from the centre to the outside edge on its north side, but it was not possible to locate the base. The lowest excavated layer contained seven sherds of Roman pottery, with 80 sherds of undifferentiated Roman pottery, including material of 3rd and 4th century AD date, and a fragment of quern stone made from imported continental lava, from the tertiary fill.

Trench 2 revealed part of the banjo enclosure ditch and a sample of pits in the interior (Figure 1). The enclosure ditch was sectioned at a point where it intersected a large complex of interconnecting pits. The excavation demonstrated that two pits lay adjacent to the banjo enclosure ditch. One was approximately 2m in diameter and 0.3m deep with steep sides and a rounded base. It was cut by a circular pit approximately 3m in diameter with steep sides and a slightly rounded base although this feature was not completely excavated. Both pits contained pottery dating from the Middle/Late Iron Age to the 3rd and 4th centuries AD. The second pit was, in turn, cut by the ditch of the banjo enclosure. The ditch measured 1.9m wide and 0.8m deep, with sloping sides and a flat base 0.34m across. It was filled with grey brown chalky silt with large quantities of charcoal in the top of the ditch. The tertiary fill contained Middle–Late Iron Age pottery that

extended into the Romano-British period.

Two pits within the interior of the enclosure were also sampled; one measured approximately 3m in diameter, with steep sides that, in places, were almost vertical. The pit was at least 1.14m deep, the base not being reached. A complete rotary quern stone was recovered from this pit along with other domestic refuse, including animal bone, burnt flint, charcoal and 10 sherds of Middle–Late Iron Age pottery. Two post- or stake-holes were recorded between these two pits.

Trench 3 was cut across the banjo enclosure ditch, which measured 3.5m across and 1.4m deep. However, it proved difficult to identify the edge and base of the feature. It was filled with yellow-brown silty clay with charcoal, animal bone, and 16 sherds of Middle–Late Iron Age pottery. The ditch was recut to dimensions and form similar to those recorded in the ditch in Trench 2 and was filled with brown clay, a dump of ‘midden’ type material including animal bones and 184 sherds of Middle–Late Iron Age pottery. Similar pottery, a chalk spindle whorl, animal bone, and a decorated weaving comb were found in additional overlying charcoal rich ‘midden’ deposits.

Trench 4 confirmed that the parallel bands of high resistance recorded on the geophysical survey represented wall lines of a Roman villa, although no complete or partial building plan can be inferred. The area of the building was marked by a low mound within permanent pasture around the trench. Patches of creamy white mortar and plaster were interpreted as a degraded floor surface, bordered to the north by a robbed wall. A test pit 1.2m long and 1m wide was dug against the south edge of the trench at the most easterly extent of the chalk/mortar floor. The section indicated that the floor, 0.06m deep, rested on demolition rubble possibly derived from an earlier building used to make up the ground level for the floor. The rubble deposit contained a fragment of quernstone and a *nummus* of Valens (AD 367–375) and rested on a flat regular hard chalk surface. The test pit was too small to establish whether this surface represented a lower, earlier floor surface or chalk bedrock. Pottery recovered from these deposits spanned the Romano-British period from the 2nd–4th century AD.

A second test pit, 2m long and 1.8m wide in the west of the trench confirmed the presence of a partially robbed wall line in a robber trench. The wall was constructed of flint nodules of which the core survived to a height of 0.54 m. It lay in a foundation trench approximately 1.25m wide that

had been severely truncated when the flints of the wall had been robbed. Traces of creamy white plaster, 0.06m thick, were noted adhering to the interior face of the wall and a fragment of painted wall plaster was found in the topsoil. The pottery assemblage contained material dating from the 1st–4th centuries AD.

One other coin, a *nummus* of Magnentius/Decentius (AD 351–353) was found in the ploughsoil, together with two unstratified armlet fragments (one of twisted cable and one strip with bead-imitative grooved decoration, both well known forms, probably 3rd/4th century).

FINDS

A total of 294 sherds (3757g) of Middle/Late Iron Age pottery was recovered mostly from Trench 3, with a smaller group from Trench 2, where they were mostly residual in Romano-British contexts. For the most part the assemblage finds parallels in Middle Iron Age assemblages from Wiltshire and north Hampshire, most notably from Danebury, where comparable groups were dated *c.* 400–100/50 BC (Cunliffe 1984). The Beach's Barn group is most likely to fall at the very end of this date range, overlapping with the Late Iron Age traditions of the 1st century BC.

A large assemblage of Roman pottery was recovered (1520 sherds/21,157g) and included Savernake ware, coarse sandy greywares probably from north Wiltshire and the New Forest, and Dorset Black Burnished ware (BB1). Finewares were composed almost exclusively of British products of the late Romano-British period mostly from the Oxfordshire or New Forest kilns. Earlier finewares, particularly samian, were extremely scarce. The presence of glazed ware, possibly from the small town of Wanborough in north Wiltshire or the Savernake industry in the 1st century AD, is significant as these products have rarely been recognised on other sites (*ibid.*, Hopkins 1999).

Overall, the Romano-British assemblage conforms to the pattern seen on sites across Salisbury Plain, for example, Butterfield Down and Boscombe Down, Amesbury (Millard 1996), Shrewton (Seager Smith 1996), and Durrington (Swan 1971), demonstrating occupation through the Romano-British period, but with an emphasis on the later period (3rd/4th century AD). Little can be inferred regarding any change in wealth/

status of the Beach's Barn settlement through the Romano-British period – the higher proportion of finewares in the later part reflects a rise in popularity of the Oxfordshire finewares seen elsewhere across southern England at this time, and may be, but is not necessarily, connected to any increased prosperity. The assemblage typifies a small rural farmstead of some pretension, with access to higher quality finewares *via* the local market.

Other finds included one complete greensand rotary quernstone, fragments from at least four others, including one of imported continental lava, hexagonal stone roof tiles, ceramic building material, wall plaster, a spindle whorl, a whetstone, cattle, horse, sheep/goat, and dog bones and one fragment of human bone from an infant.

DISCUSSION

The small scale evaluation at Beach's Barn has confirmed the presence of a complex site of Iron Age and Romano-British date that makes a significant contribution to the debate concerning settlement on Salisbury Plain and the wider regional landscape beyond. Occupation commenced sometime in the Middle–Late Iron Age prior to construction of at least one, possibly two, banjo enclosures, which were also associated with settlement. Few banjo type enclosures, a monument type known from, and possibly suggesting links with, the Hampshire chalk (Barrett *et al.* 1991), have been recorded on Salisbury Plain; one, also possibly of a pair, is thought to pre-date the construction of Casterley Camp (McOmish *et al.* 2002, 84), which also lies at the head of a coombe overlooking the River Avon valley. Other enclosures, lacking antennae ditches, overlook the Avon from the east, frequently at the head of a coombe (Fulford *et al.* in press). The distribution of pits as detected by geophysics established the likely extent of settlement to the south, delimited by a large 'perimeter' ditch, but indicated that the settlement continued beyond the north of the evaluated area, confirming the conclusions of fieldwork undertaken by Wessex Archaeology in 1995.

The banjo enclosures seem likely to have functioned in a landscape characterised by 'celtic' field systems incorporating mixed farming, where cereal production, apparent from Greensand quern stones probably imported locally from the Vale of Pewsey, co-existed with animal husbandry based on cattle and sheep/goat, accompanied by horse and

dog. Weaving combs made from antlers either shed or removed from wild deer imply the production of woollen products produced from spun yarn on warp-weighted looms.

The pottery assemblage suggests that there may have been a hiatus in occupation at the site between the Late Iron Age and early Romano-British period. This may coincide with widespread abandonment of small enclosures elsewhere on Salisbury Plain, the suggested nucleation of remaining settlement, as at Coombe Down and Chisenbury Warren, and relocation of other communities to the valleys (Fulford *et al.* in press); however, apart from the possible hiatus, occupation at Beach's Barn appears to have continued into and throughout the Romano-British period. Occupation may initially have continued the settlement and economy of the Iron Age, but it culminated in the construction of a substantial Roman building, considered to be a villa, adjacent to the site of the Iron Age enclosures.

This building is almost certainly the same structure that was discovered by Cunnington in 1894, and one that was linked to the corn drier excavated by Entwistle in 1993. It was not possible to reconstruct the ground plan of the villa, although sufficient wall lines were traced as high resistance bands by geophysics to indicate that one wing, up to 45m long, was aligned north-west to south-east. Additional building material was also detected to the north-east of the villa, suggesting that it may have extended in that direction.

Excavation confirmed that considerable depths of stratified deposits were also preserved, with traces of plaster applied to walls built on flint foundations. Other architectural features included fragments of painted wall plaster, traces of mortar floors, imported limestone and sandstone roof tiles, with ceramic roof tiles, box flue tiles, and miscellaneous floor and roof tiles. Most of this building debris is likely to relate directly to the villa structure; additional building materials found in the upper parts of features to the south having moved down-slope in ploughsoil.

No well stratified material was found that could be used to date securely the initial construction of the villa, although it is likely to have been altered subsequently. Two coins from the make-up layer beneath the plaster floor were also of 4th century AD date, a period when a number of villas were constructed elsewhere in the Avon Valley with others to the east around Andover and East Anton in the River Test valley (Fulford *et al.* in press).

The detailed relationship and the nature of the transition from a widespread and complex later Iron

Age settlement into a Romano-British settlement that culminated in the construction and development of a villa complex is beyond the scope of this project. It represents an important avenue of future research; however the villa may be placed in its local context by reference to work that has taken place elsewhere on this part of Salisbury Plain (Fulford *et al.* in press). The villa undoubtedly represents a small but relatively well-to-do rural farmstead of an affluent landowner who was able to adopt the trappings, including personal metal adornments, of the Roman Empire and afford a high status residence to accompany it. The level of wealth at Beach's Barn is reinforced by other artefacts including stone roof tiles, painted wall plaster, late Roman colour coated pottery, and a relative increased frequency of cattle bones over sheep/goat. A fragment of infant femur from the ploughsoil in the area of the villa may also indicate the adoption of Roman religious and ritual practices by the owners – infant burials are fairly commonplace in such contexts. The position of this 'high status' structure on the uplands is arguably anomalous in that all other villa sites appear to occupy river valley locations. In contrast 'village' (McOmish *et al.* 2002, 88–100) or low status settlement sites on Salisbury Plain, at Coombe Down and Chisenbury Warren, are notable in that they have virtually no durable building materials, particularly stone roof tiles (Fulford *et al.* in press). However variations in the finds assemblages at these two sites, notably cattle remains and colour coated pottery, were sufficiently distinctive to allow Fulford to argue that it was possible to identify a hierarchy of wealth from settlement at Chisenbury Warren through Coombe Down to the relative opulence of Beach's Barn. He speculated that both Beach's Barn and Coombe Down may represent settlement by individual, possibly extended, families, with their staff, while settlement at Chisenbury Warren was more communal.

The villa's orientation reflects that of an extensive, well preserved 'celtic' field system up to 1.5km to the north-east on Coombe Down, where there are additional enclosures, hollow-ways, and traces of settlement. There is a similar trend in a heavily ploughed field system which lies to the south-west of Beach's Barn. The economy was based primarily on agriculture. A quern stone fragment made from imported continental lava indicates the geographical range from which grain-processing equipment was reaching Salisbury Plain. This element of trade may have resulted directly from cereal production and export, including 4th century shipments to Germany

for famine relief (Fulford 1989). Animal husbandry continued, based on species maintained from the Iron Age, while reflecting trends seen elsewhere in late Roman Britain of increased production of cattle (Fulford *et al.* in press). Foodstuffs were also imported, especially oysters from the coast, which are likely to have provided a luxury component to the diet.

On a broader scale, the confirmation of a Roman villa at Beach's Barn marks a significant addition to the distribution of Roman villas in Wiltshire and to Salisbury Plain in particular (McOmish *et al.* 2002, 104). Roman villas are scarce on Salisbury Plain and it has been considered that the area may have constituted part of a large imperial estate. However, a villa, first discovered in 1907, has been re-examined at Netheravon (Rawlings 2001), while a number of previously unknown villas have been plotted for the first time in or around the Avon valley. These include a winged corridor villa at Figheldean (Gaffney *et al.* 1998), others at Charlton (Corney *et al.* 1994) and Compton with possible villa type structures at Enford, Fifield Folly, and Littlecott, all within 4km of Netheravon (Rawlings 2001; Fulford *et al.* in press).

Apart from the villa at Netheravon, none of these sites has been excavated. However, surface material suggests that villa construction was undertaken during the 3rd and 4th centuries, a period at which it is likely that redevelopment, if not initial construction, also took place at Beach's Barn.

The villa at Beach's Barn lies further east than any of the other villas in the Avon valley. It occupies land towards the heart of the eastern block of chalk forming Salisbury Plain; however it retains links with the Avon valley as it lies at the head of a large dry coombe that descends to the river. The combination of factors of a Roman villa located high on the chalk downland, unparalleled by other villa locations on Salisbury Plain, in a location preceded by significant later Iron Age enclosures and settlement may suggest a site of particular significance and importance, particularly in the transition from the Iron Age to Romano-British periods.

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A Romano-British Villa at Stanton Fitzwarren (SU 1731 9004)

by *Bernard Phillips*

An investigative excavation in 1969 by members of the Swindon Archaeological Society on a known Romano-British occupation site revealed part of a substantial stone building that incorporated a bath-suite. This structure was demolished in the early- to mid-fourth century, but occupation clearly continued with traces of a timber structure built over the debris, followed by a build up of dark grey loam containing later fourth century pottery. The end of activity at the site is marked by a build-up of colluvial material as the Roman drainage systems apparently ceased functioning and an accompanying lack of artefactual material

INTRODUCTION

The site of an old building known to local inhabitants lay at the centre of the shallow valley in northeast Wiltshire, of which the present village of Stanton Fitzwarren occupies the upper eastern slope (Figure 1). The site had been used as a stone quarry for many years prior to major discoveries made during the construction of the Swindon to Highworth railway in 1879, when walling and several plain stone tessellated floors were revealed. A further tessellated pavement was also noted in the same field close to the lake formed by damming the Bydemill Brook in the grounds of Stanton House (Goddard 1913, 322). A.D. Passmore recorded patches of rough tessellated flooring and traces of rough foundations over a distance of two hundred yards; the former where a cattle track passed under the railway line (Passmore 1921, 394).

Stanton Fitzwarren is first recorded in the Domesday Survey of A.D. 1086 as *Stantone*; a name interpreted by Canon E. H. Goddard as 'stone farm enclosure' and which plausibly conjures up a picture of a walled villa complex, still discernible or in existence when the settlement received its name.

An alternative translation is 'farm by the stone' a reference to a large standing stone that is suggested to have stood nearby (Gover *et al.* 1939, 30).

Probing in 1967 indicated that a stone structure had stood at a point immediately east of the now disused railway embankment (Figure 1), in a grassed field owned by Sir Geoffrey E. Tritton and around 20m south of Passmore's rough tessellated flooring (Passmore 1921, 394). The landowner readily gave permission for an excavation to take place and in 1969 Swindon Archaeological Society members, under the direction of the author, carried out a small-scale excavation to determine the nature of the site and its state of preservation. Following the 1969 excavation, the site was scheduled (Nat. Mon. No. 28983). Further evidence for the site's layout was provided in 1981 when ploughing on the east side of the Bydemill stream revealed Coral Ragstone blocks, sandstone roofing tile, and 3rd to 4th century pottery fragments spread over a large area (Figure 6). Following Sir Geoffrey's death, the park in which the site lies was purchased in 1990 by Swindon Borough Council and developed as a public amenity with countryside and woodland walks.

In 1997, geophysical survey carried out on the

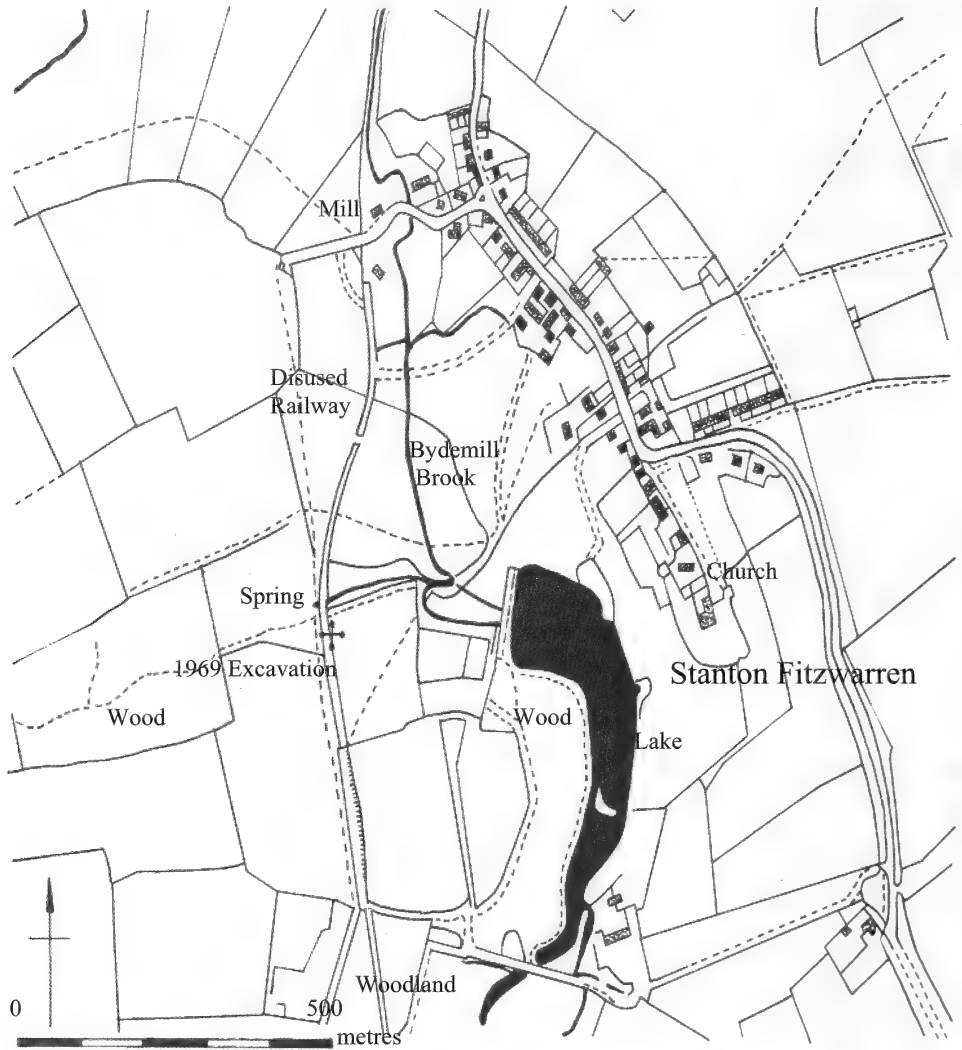


Fig. 1 1969 Excavation Location

site for Swindon Borough Council Leisure Services indicated significant remains across much of the field in which the 1969 excavation had taken place. These comprised areas of occupation debris subdivided by potential roads, enclosures containing remains of a number of buildings, and linear features, possibly wall footings (Bartlett 1997).

Further Roman remains, including ditches, gullies, drains, surfaces, a metalled road and destruction deposits, were revealed immediately west of the railway embankment when archaeological hand excavation of a 100m long trench took place prior to the laying of a water transfer pipeline

between Kingsdown and Stanton Fitzwarren in 1998 (King 1998).

Discoveries have also indicated that the site was accessed in the Roman period from at least two directions (Figure 6). To the north a green lane known as 'Great Rose Lane' extends from Ermin Street at Seven Bridges to Highworth. Excavation at SU138 927 has revealed this to be a ditched and metalled road (Excavation and Fieldwork in Wiltshire 2001, *WANHM* 96, 233). From it a further paved and ditched road, following in part a second green lane, was observed during trenching at Oxlease Farm heading towards the site. The second route

provided a more direct access to Ermin Street and is evidenced by the paved road recorded in the 1998 excavation.

Topography and Geology

Lying at 105m above OD, the 1969 excavation site lies within a grassed field that gently slopes from south to north bounded to the west by the embankment of the former railway and to the north by the track that extended under the railway *via* a now partially demolished bridge. To the south, separated by a hedge, is a further grassed field and to the east woodland and the artificial lake noted above (Figure 1).

Geologically the valley floor comprises a thin stream of Oxford Clay banded by sand and silt, whilst the valley edges are formed of Coral Ragstone. Immediately south of the site the land rises due to a tongue of Coral Ragstone protruding into the valley. A spring rising a little to the northwest of the site flows into the Bydemill Brook. Fragments of tufa noted near to the spring head in 1969 may be a natural deposit or structural remains.

Further to the north, at the foot of the Corallian Limestone escarpment that forms the southern edge of the Thames Valley, are the flat Oxford Claylands that stretch towards the River Thames and its gravel beds. To the south, Coral Ragstone gives way to Kimmeridge Clay then Gault before climbing the Chalk escarpment of the Marlborough Downs.

Surrounding Archaeology

Although no trace of Iron Age activity has been found on the site, a number of farms of the period have been evidenced in the locale in recent years (Figure 2). At Groundwell Farm (NGR SU 157 889), excavation prior to the building of an industrial estate revealed part of an extensive Middle Iron Age banjo enclosure with a sequence of four roundhouses (Gingell 1982). Further Iron Age huts, enclosures and pits were recorded prior to construction work at Groundwell West (NGR SU 148 894) (Walker 2001). Cutting of a pipe trench at Little Rose Lane (NGR SU 142 921) in 1967 revealed further extensive occupation below the Corallian escarpment, whilst on top of the ridge, at Castle Hill (NGR SU 157

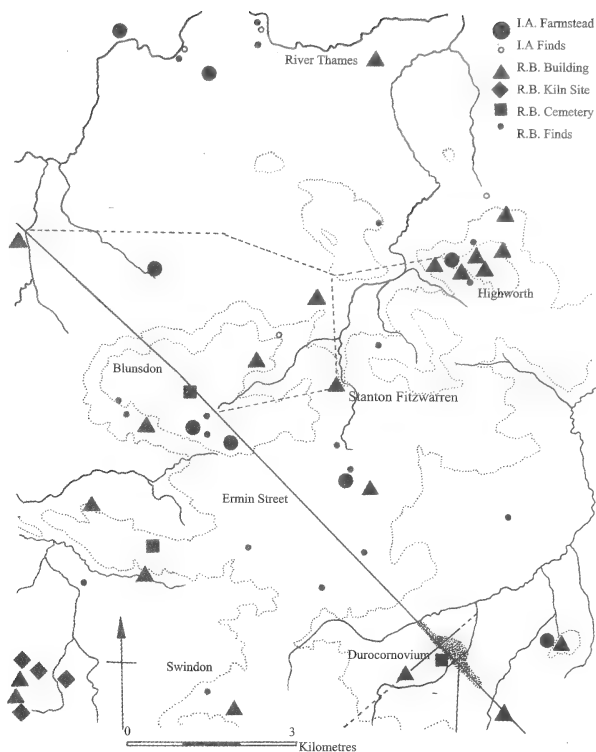


Fig. 2 Surrounding Iron Age and Romano-British sites

912), is a large univallate Iron Age hillfort. Recent geophysical survey within the interior has revealed numerous features comparable to those evidenced inside the hillforts of Barbury and Liddington that lie to the south at the edge of the chalk escarpment. A ditch of the period has been recently identified by the Cotswold Archaeological Trust to the southeast of the fort (NGR SU 164 909). In 2005 at 'The Triangle', Kingsdown (NGR SU 175 884) archaeological evaluation by Cotswold Archaeological Trust revealed ditches, pits, and postholes associated with early to middle Iron Age pottery, and animal bones of a further settlement (Excavation and Fieldwork in Wiltshire 2004, *WANHM* 99, 269). To the east, at Highworth, an extensive early Iron Age settlement (NGR SU 194 923) has also been identified. A circular enclosure, noted on an aerial photograph, and the finding of several Iron Age coins hint at a farmstead to the southeast at Mount Pleasant Farm (NGR SU 213 853).

Ermin Street, a major Roman road between the Roman towns of Silchester (*Calleva*) and Cirencester (*Corinium*), lies 1.8km to the southwest of the



Fig. 3 1969 excavation plan, showing locations of sections: Figure 4 A-B, D-C, B-E, and G-F

Stanton villa. A small Roman town identified as *Durocornovium* by the Antonine Itinerary (a road map of 2nd century date) straddles Ermin Street 5km to the south. Here a Roman road from Winchester (*Venta*) joins Ermin Street and discoveries include a *mansio*, bath house, shops, houses and side streets (Anderson, Wachter and Fitzpatrick 2001).

To the north of Stanton the site of a Roman building has been identified near Stanton Water Bridge (NGR SU 171 915) and another at Stubb's Hill (NGR SU 159 905). Extensive Romano-British occupation has been revealed beneath much of Highworth. At Wrde Hill construction work in 1958 revealed a concentration of fired clay and abundant oxidised pottery within an area of late Iron Age and Romano-British settlement (NGR SU 197 923). Nearby, at the sports ground, excavation prior to

construction revealed a substantial stone building (NGR SU 198 921). Four small buildings and track ways are also evidenced at Priory Green (NGR SU 205 925), and on the golf course south of Highworth (NGR SU 195 919) a farmstead has been revealed by excavation.

Roman sites to the west of Ermin Street include a cremation cemetery at the Cold Harbour (NGR SU 147 899)(Chris Chandler, *pers. comm.*) and a possible healing sanctuary or villa at Abbey Meads (NGR SU 145 893)(Phillips and Walters 1997).

Excavation methods

Four initial trenches were opened by hand and divided by narrow baulks. These cuttings revealed

walling of a substantial building and an associated exterior ground surface. Following drawing of the baulk sections, they were removed creating an open area 5.8m by 5.8m. A trench 0.8m by 4.6m dug into the lower slope of the railway embankment revealed a continuation of the structure (Figure 3).

EXCAVATION RESULTS

Numerous small holes (63) were found cut into the natural clay, some containing wood fragments, either the remains of foundation stakes or tree roots. These holes were sealed by layers of clay (27), (30) and (32), inter-disposed by layers of white ash (28), (31) and (33). Foundation trenches (62) for the principal stone building were cut through these layers (Figure 4, sections A-B, B-E).

Built of locally quarried Coral Ragstone blocks, the mortared walls were largely 0.62m thick and survived to a height of 0.57m above an internal sub-floor. The outer wall (53) of continuous build incorporated the southeast corner of the structure. Internally, to the north and abutting the outer wall at right angles was a 1.22m thick wall (43/44), 2.06m long which incorporated a tile lined flue channel (45). At the west end of this wall a further stretch (50) formed a third side of a furnace room that lay to the north of the flue. This room, which was only partially uncovered, contained a 10 to 20mm thick layer of charcoal flecked grey ash (19) which lay on the heavily burnt natural clay (20) that had served as the room's floor (Figure 4, section A-B).

To the south of the flue stood the hypocaust of a room measuring 2.06m by 3.28m internally. Within the hypocaust, a thin yellow mortar sub-floor (35) overlay a packed Coral Ragstone foundation (37). The sub-floor supported *pilae* stacks (46) composed of mortared terracotta tiles (*bessalis*) and a few Coral Ragstone blocks. Ash (19) accumulated around these was 25 to 75mm thick and was stratigraphically linked to the ash (17) in the furnace room. Beneath the floor, a drainage channel (58) with traces of a wooden plank lining had been cut after the construction of the room's walls. It exited through the south wall of the room *via* three terracotta box tiles (55) that lay end to end. From these, a channel (56), lined and capped with Coral Ragstone slabs (54), extended to the southeast (Figure 4, section B-E). It is feasible that this feature facilitated land drainage, although it may well have served an internal feature, such as a water tank or hot bath. Silting (25) of the

external part of the drain (56) resulted in it being re-cut as a shallow, dished gully (65). Silt (24) and (64) accumulated within the gully necessitating further re-cutting (68). More silting (23) followed before it was sealed with green clay mixed with ash (22). After this event a thick layer of brown loam (21) was deposited around the outer walls of the building. Cutting of a further gully (69) then took place along the line of the original drain.

To the west of the first room, a further hypocaust, similarly floored, occupied a room measuring 1.98m by 3.28m internally. A continuation (48) of the furnace's western wall (50) abutted the external wall (53), separating the two rooms, and was adjoined by the room's northern wall (51). Three narrow channels extended through it to facilitate the passage of heat. Surviving *pilae* stacks (47) within the second room were constructed with Coral Ragstone blocks and a few terracotta tiles. Ash (18) within this room lay 15mm to 25mm deep and extended from the first room through the channelling. The room's western wall (49) abutted the outer wall (53) and should link with the northern wall (51), although its junction lay in unexcavated ground. Two possibilities are presented: either wall (49) formed a corner, or the wall continued northwards. Within the corner formed by the west wall of the furnace room and the north wall of the second room, small, pitched Coral Ragstone blocks (29) are most likely floor packing. These overlay a deposit of brown loam (67).

Adjoining the west side of the room was a cold plunge bath measuring 1.94m by about 1.83m internally and 0.46m deep (Figure 4, section G-F). Its floor (39) was constructed of rectangular terracotta tiles (*lydion*) and survived largely intact over a layer of *opus signinum* (40). Beneath was a thin layer of mortar (41) which overlay a packed Coral Ragstone foundation (42). White painted plaster (66) adhered to the walls with quarter round fillets at the base. The fillet against the south wall was in part damaged by a hole evidently created by the removal of a lead outlet pipe that had extended through the wall into a stone packed (59) drainage channel (60), presumably during demolition of the building. On top of the north wall, a mortared layer of terracotta tile fragments seemingly formed the base for a step that enabled access into the bath. External to this, a Coral Ragstone cobbled surface (34) most likely formed the foundation for a floor.

Pottery fragments reveal that demolition of the building occurred in the first half of the 4th century. The resulting debris comprised mortar, *opus signinum*, wall plaster, tesserae, and terracotta tile fragments.

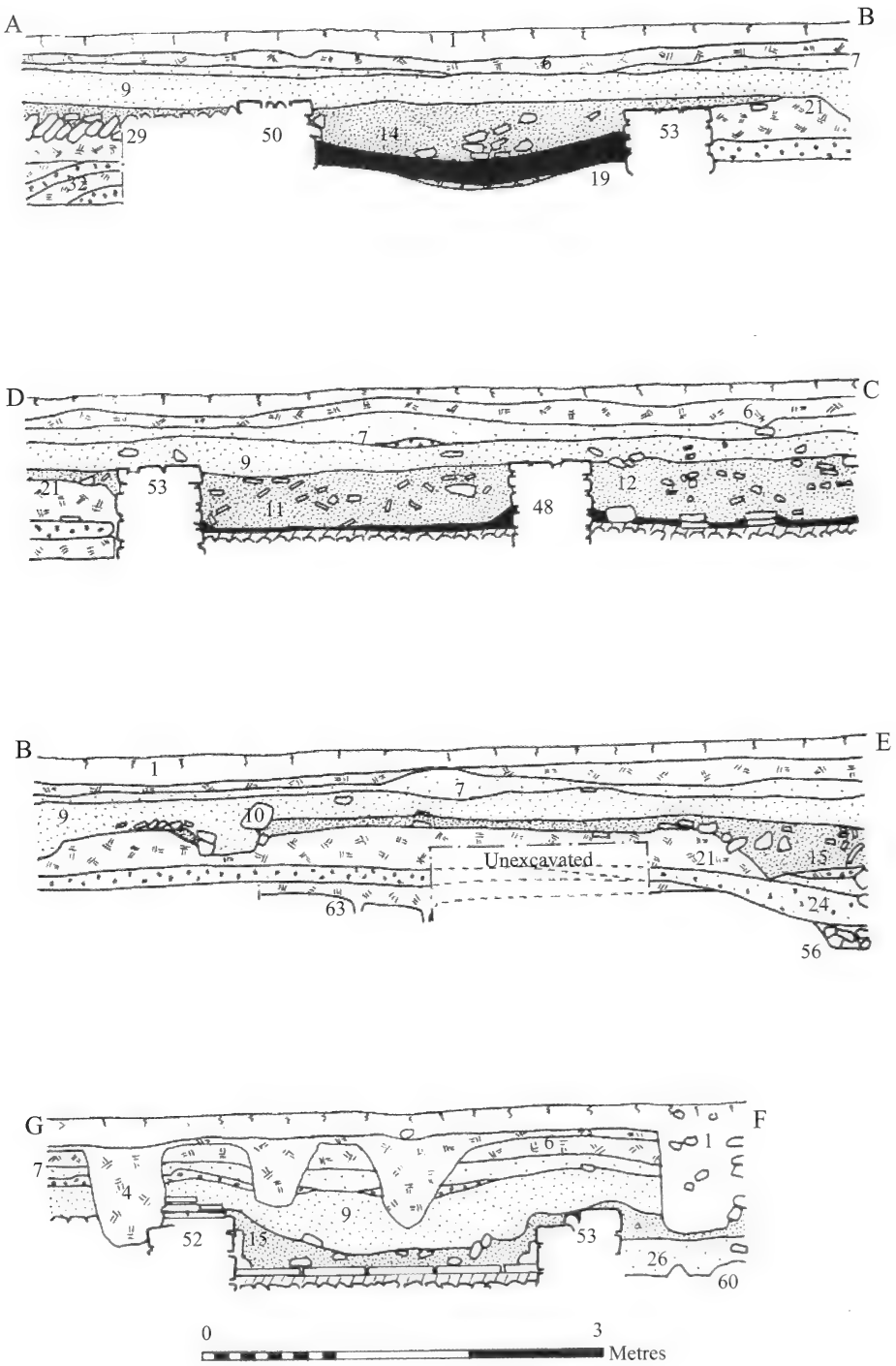


Fig. 4 1969 excavation sections (see Figure 3 for locations).

These along with a small amount of building stone filled the hypocausts (11, 12), cold plunge (13), and furnace room (14), and overlay the surrounding ground surface (15, 16). The lack of good stone and whole tiles clearly shows that building material had been removed for use elsewhere.

Cutting through the debris on the eastern edge of the excavated area, two fairly large but shallow pits (10a/b), one still retaining stone packing, had evidently held posts for a timber structure. There followed a build-up of thick, dark grey loam (9) filling the post pits and sealing the building debris (Figure 4, section B-E). From this layer came numerous pottery sherds of late 4th century date. The much abraded nature of these sherds suggests that they were subjected to disturbance, perhaps cultivation. Lumps of iron slag, two mid 4th-century bronze coins and a few domestic items were also recovered. Two shallow, white ash-filled hollows (8a/b) cut into the top of the layer were sealed by a thick colluvial deposit of grey silty loam (7) from which came a few Romano-British pottery sherds and an iron horse shoe. An accumulation of sterile greyish brown humus followed (6). Three large, deep post pits (5a/b/c), apparently part of a boundary to the railway line, cut through the loam into the Roman levels. Removal of the posts and infilling with loam (4) occurred before construction of the present fence line (3) on the same alignment (Figure 4, section G-F).

THE FINDS

Pottery

Ten fabric types are identifiable, mostly products of kiln sites whose wares are commonly represented in the area. While only rims and diagnostic body sherds were retained following the excavation, 78 Romano-British sherds weighing 969.8g represent an estimated 62 vessels (Table 1).

Fabric Types (all are wheel thrown apart from F3)

F1 West Swindon Coarse Ware

The commonest fabric from the West Swindon kiln sites is oxidised or reduced, mainly the latter, with a hard to very hard matrix, fairly fine on fracture, tempered with sand generally only visible using a hand lens but occasionally < 0.25mm. Two distinct variations are discernible by feel, very smooth or sandy. The two definitions are not absolute as

Table 1: Estimated Vessel Totals

Fabric Type	Count	Percentage	Weight (grams)	Percentage
F1	26	41.9	564.6	59.1
F2	1	1.6	5.7	0.6
F3	9	14.5	107.3	11.1
F4	3	4.8	111.7	11.5
F5	15	24.2	111.2	11.5
F6	2	3.2	13.5	1.4
F7	1	1.6	9.1	0.9
F8	1	1.6	5.9	0.6
F9	3	4.8	31.2	3.2
F10	1	1.6	1.6	0.2
Total	62		961.8 g	

vessels fall between. Naturally occurring inclusions are rare to sparse red, brown, orange, reddish-brown and black ferrous grits, generally < 1mm, and occasional white chalk or limestone fragments chiefly < 0.5mm; grog pellets < 3mm are rare. All vessel forms were produced in this fabric with smoothed exteriors and frequently a light to heavy burnish on rim tops and shoulders.

West Swindon-type products first appear in deposits dated by coins and imported pottery to A.D. 100-20. They became increasingly important from the mid-3rd century, and manufacture possibly continued into the early years of the 5th century A.D. To date, 28 kilns have been evidenced at six locations; Whitehill Farm, Toothill Farm, Westlea Down, East Leaze Farm, Upper Shaw Farm and Dogridge, Purton (Swan, 1984). Further kilns are evidenced by wasters and kiln debris at Shaw Ridge, Freshbrook and Old's Close. Vessels produced are largely wide- and narrow-mouthed jars, tankards, lids, flagons and bowls, with beakers, cooking pots, strainers, mortaria, dishes, unguent jars, candlesticks, lamp fillers, bottles, cheese presses, cups, pepper pots and platters in small numbers

F2 Bromham White Coated

Kilns, perhaps situated near the town of *Verlucio*, commenced production in the 2nd century and continued to supply the local population until the end of the 4th century mainly with storage jars, beakers, bowls and flagons. Several fabric types are represented and are hard, slightly coarse on fracture, sandy or slightly sandy and chiefly oxidised reddish yellow. Some flagons and beakers are white coated.

F3 Black Burnished Ware (category one)

This well-known ware comprises handmade vessels, partly or entirely heavily burnished, in a reduced, hard, fairly coarse, sandy matrix that contains quartz particles generally < 0.5mm, but occasionally < 1.5mm, rare < 3mm black shale and rare < 2mm chalk inclusions. The ware originates amongst the potting traditions of the Iron Age (Durotrigian) peoples of Dorset. Production of this reduced, gritty handmade ware with heavily burnished facets expanded probably due to a Roman military contract not long after the invasion of AD 43. Kilns situated in southeast Dorset mainly supplied Dorset and South Wiltshire until around AD 120 when a further contract was apparently made to supply the army on Hadrian's Wall and its environs that seems to have lasted until after A.D. 367. Elsewhere, from the early 2nd century till the end of the 4th century, the ware was common within the Roman province apart from East Anglia and the southeast. The main products were cooking pots, bowls and dishes, the former decorated by burnished lattice bands (Swan 1975), but beakers and flagons were also made.

F4 Oxfordshire White Ware Mortarium

Normally a hard white or pale cream sandy matrix, fairly fine on fracture and containing rare red and black ferrous inclusions. Exterior surfaces are smoothed. Internal trituration grits are invariably rounded and translucent, being black, grey, white, pink or red in colour.

Mortarium production in white ware began in Oxfordshire around A.D. 100 and continued into the 5th century. Distribution in the early period was largely confined to the upper Thames valley but by the mid-3rd century it covered much of southern Britain (Young 1977).

F5 Oxfordshire Red/Brown Colour Coat

Pottery of this type is normally buff orange through red to reddish brown in colour, often with a grey core, regularly micaceous, hard and fairly fine on fracture. A slightly sandy matrix often contains occasional < 1.0 mm black and red ferrous, and white chalk inclusions, with overall reddish orange to dark brown coating.

Production of vessels in this fabric commenced in the mid- 3rd century following the demise of *terra sigillata* producing potteries in Gaul which had supplied the Province of Britannia with this high quality, glossy tableware. Initially, vessels largely imitated samian forms and decoration comprised rouletting, impressed rosettes or demi-rosettes and white painted scrolls. Production continued into the 5th century.

F6 Oxfordshire Parchment Ware

This fabric has a white or off-white sandy matrix, frequently with a pink core. It is hard, slightly coarse on fracture, and sometimes contains infrequent < 1mm black and red ferrous inclusions. The surface is smoothed and decorated with lines and scrolls in red paint. This ware did not form a large proportion of Oxfordshire potteries' output. The most prolific vessel type was the bowl which attained a fairly wide distribution across central southern England and into Wales. Production began around A.D. 240 and continued into the 5th century.

F7 Alice Holt Ware

This fabric is hard, fairly sandy, coarse on fracture and with a grey matrix containing occasional grog and rare black ferrous inclusions. Surfaces are normally dark grey, often with bands of fine combed decoration and white paint.

Alice Holt ware was produced in Hampshire, 8km southwest of Farnham. Production commenced around A.D. 60 and continued until the 5th century. Initially, kilns supplied the local populace but a wider market was reached in the mid- 4th century.

F8 Terra Sigillata (Samian Ware)

This well-known fabric is very hard with a light red matrix, conchoidal fracture, no visible inclusions and is coated with

Table 2: Vessel Types Represented

Vessel type	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	Tot	%
Wide-mouth jar	19										18	29
Narrow-mouth jar	5										5	8.1
Jar			1				1		3		5	8.1
Cooking pot			4								4	6.4
Mortarium				3	1						4	6.5
Bowl			2		11	1					14	22.6
Dish	1		2					1			4	6.4
Flagon	1	1									2	3.2
Beaker					3	1				1	5	8.1
Total	27	1	9	3	15	2	3	1	3	1	62	

an overall glossy red slip. Samian ware was imported into Britain mainly from workshops in Central and South Gaul from the mid 1st century to the industry's collapse in the early 3rd century.

F9 Shell Tempered Ware

This fabric is hard, fairly coarse on fracture, with a black to dark grey matrix, sometimes with a brown or reddish grey core, tempered with much poorly sorted crushed < 4mm shell and rare < 0.5mm red and brown ferrous inclusions. Exterior surfaces are wiped, often with horizontal rilling. The ware was manufactured in the South Midlands and distributed in a broad belt across southern/central Britain.

F10 Pink Fabric

A fairly soft, pink, sandy matrix: a footed vase in this fabric, 80mm high, and of late 4th century date, was found just less than 1km to the southwest of the 1969 excavation beneath Stanton Park lodge (Passmore 1921).

Dating of contexts based on ceramic evidence

Brown loam (21) external to building

This layer contained a terra sigillata sherd from a dish (Dragendorf 31/31R) dating to A.D. 100-150 and probably a Central Gaulish product (F8) along with a single BB1 cooking pot body fragment. The material from this context is insufficient to provide dating evidence for this deposit following construction of the bath-house. The presence of *terra sigillata*, however, does show that occupation had commenced on the site prior to the mid- 2nd century.

Hypocaust, debris fill (12)

Fig.5.1 Oxfordshire (F5) globular beaker (Young type C27) with scroll decoration in slip on exterior.

Fig.5.2 BB1 (F3) straight sided dish.

Fig.5.3 A probable Bromham ware (F2) funnel mouthed, single handled flagon.

The Oxfordshire beaker sherd can only be dated to between A.D. 270-400+ (Young 1977) and the BB1 dish (having a pronounced upright bead) is of a similar period, indicating a late 3rd or more likely 4th century date for demolition of the bath-house.

Very dark grey loam layer (9), overlying the demolished building

The majority of recovered pottery sherds are from

this context. They are generally small and much abraded.

Fig.5.4 Oxfordshire (F5) bead-rimmed, wall-sided, carinated bowl (Young type C84), with rosette impressed and rouletted decoration on the exterior.

Fig.5.5 Oxfordshire (F5) bead-rimmed, swell-walled bowl (Young type C68), with roulette decoration on the exterior in two bands.

Fig.5.6 Oxfordshire (F6) parchment ware bowl (Young type P24), with slight traces of light red paint on the rim top.

Fig.5.7 Oxfordshire (F5) undercut bead-rimmed beaker (Young type 37).

Fig.5.8 Shell tempered (F9), everted rim and wide-mouthed jar.

Fig.5.9 Shell tempered (F9), everted rim and high-necked, wide-mouthed jar.

Fig.5.10 Shell tempered (F9), everted rim, and wide-mouthed jar.

Fig.5.11 BB1 (F3) flanged bowl with an upright rim.

Fig.5.12 BB1 (F3) upright bead-rimmed bowl.

Fig.5.13 BB1 (F3) everted rim jar.

Fig.5.14 West Swindon (F1) hooked everted rim and wide-mouthed jar.

Fig.5.15 West Swindon (F1) straight-sided dish.

Fig.5.16 West Swindon (F1) high-necked, rolled rim and wide-mouthed jar.

Fig.5.17 West Swindon (F1) everted rim and single-handled flagon.

Fig.5.18 West Swindon (F1) high-necked and rolled rim, narrow-mouthed jar.

Fig.5.19 West Swindon (F1) high-necked and rolled rim, wide-mouthed jar.

Fig.5.20 West Swindon (F1) high-necked, hooked and rolled rim, narrow-mouthed jar.

Fig.5.21 West Swindon (F1) high-necked and folded rim, wide-mouthed jar.

Fig.5.22 West Swindon (F1) high-necked and folded rim, wide-mouthed jar.

Fig.5.23 West Swindon (F1) everted rim and high-necked, wide-mouthed jar.

Fig.5.24 West Swindon (F1) high-necked and rolled rim, wide-mouthed jar sherd.

Fig.5.25 West Swindon (F1) folded rim and wide-mouthed jar.

A post- mid-4th century date for this context is attested by the Oxfordshire colour-coat bowl type C84 datable to A.D. 350-400+ (Young 1977), supported by the West Swindon rolled and folded rim jars and the later BB1 vessel types, and the presence of an Alice Holt jar. Vessels of the latter did not reach this area until after the industry's expansion around A.D. 350 and likewise late shelly wares. A mid- 4th century coin from this context also helps to confirm the ceramic dating (see below)

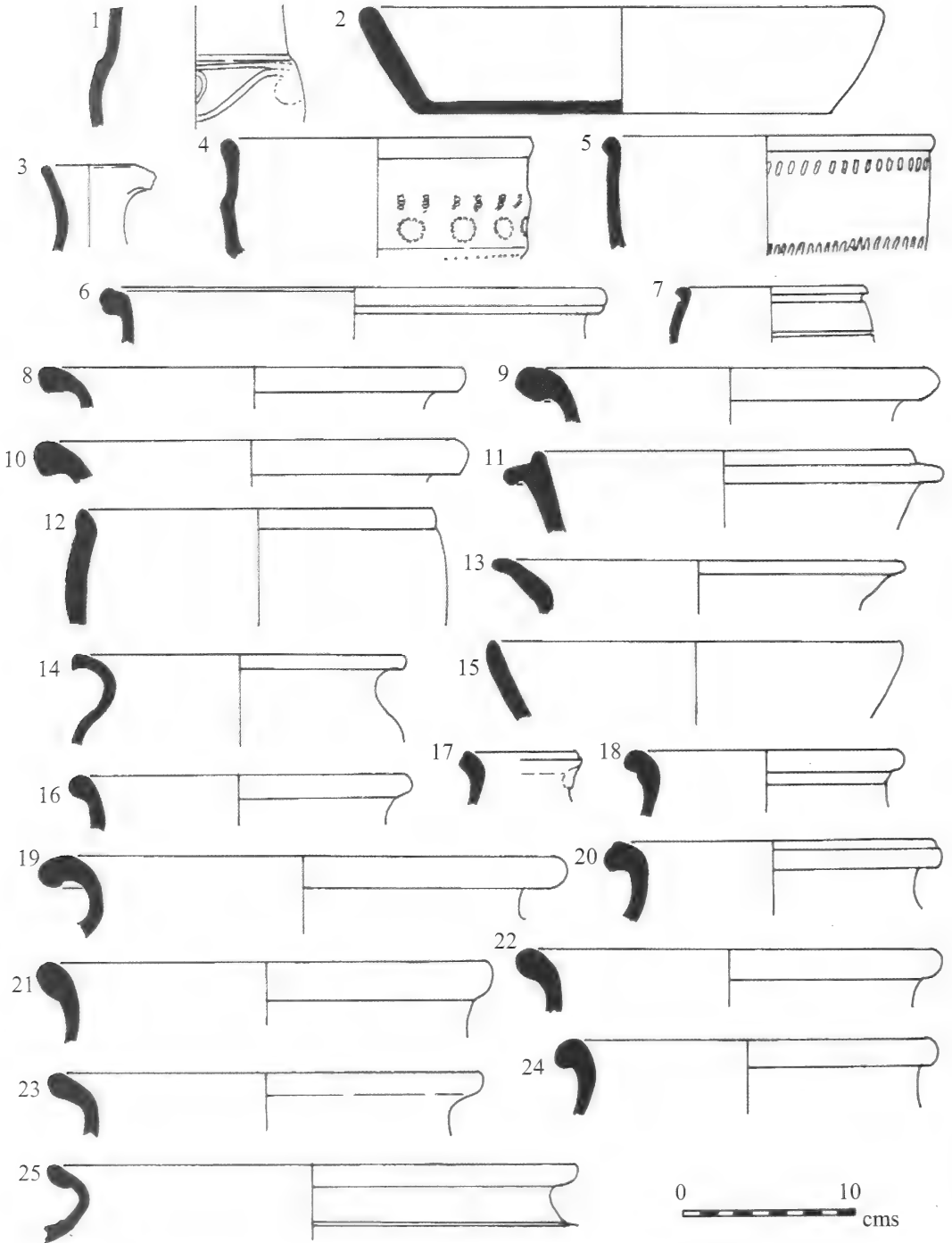


Fig. 5 Romano-British pottery

Overall, sherds from this context represent kiln groups whose wares were common in the area during the later 4th and early 5th centuries. West Swindon products dominate the local coarse ware market at this time. Black-burnished hand-made cooking pots and dishes maintained a good proportion of the trade, while shell-tempered wares and Alice Holt products had a more minor role. Table ware; dishes, bowls, beakers and flacons are largely represented by products from the Oxfordshire kilns.

Small Finds (not drawn)

Grey Silty Loam (7)

- 1 Badly corroded iron horse shoe with turned up ends and with nails *in situ*.

Dark Grey Loam (9)

- 2 AE4 bronze coin, obverse - head facing right, [] AVG, reverse - two victories facing holding wreaths [], exergue []. This reverse design was first produced on coins in the period A.D. 341 to 348 during the joint reigns of Constantius II (337-361) and Constans (337-350) with the inscription VICTORIAE DD AVGG QNN and re-appeared late in the 4th century with the reverse inscription VICTORIAE AVGG.
- 3 Illegible AE4 bronze coin.
- 4 Two joining fragments from a bronze spoon, totalling 85mm in length, with a swan-neck joint between the bowl and a handle with a pointed end.
- 5 Cylindrical green glass bead 6mm long and 3mm diameter.
- 6 Cylindrical blue glass bead 3mm long and 3mm diameter.
- 7 Three small body fragments from a thin clear glass vessel, 1mm thick.
- 8 Iron knife tang with two rivet holes, 61mm in length, 3mm wide,
- 9 Iron knife tang, with three rivet holes and part of the blade, 75mm long and 1mm thick.
- 10 Iron boot plate 48mm long.
- 11 Fragment of a whetstone 62mm long, 18mm wide and 10 to 16mm thick. Three of the long sides are worn smooth with the two widest having a single deep central groove lengthwise.
- 12 A sawn fragment of red deer antler 90mm in length.

Building Debris (15)

- 13 A large fragment of pale green window glass, 3mm thick, with *opus signinum* adhering to one edge.
- 14 Nine joining fragments of pale green window glass with a rounded edge 3mm thick.
- 15 Part of a terracotta ridge tile stamped TPFC (see below). The stamp's lettering is 16mm high and overall the mark is 65mm long.

Brown Loam (21)

- 15 Fragment of lead sheeting, pierced by an iron nail and with deep incised linear and curvilinear decoration on one side, measuring 58mm by 18mm and 3mm thick.

Terracotta Tile

Many fragments of terracotta tile came from the building demolition debris (11, 12, 13, 14, 15, 16). These comprised voussoir, box flue, pila tile (*bessalis*), sub-floor (*pedalis* and *sesquipedalis*), roofing tiles (*tegula* and *imbrex*), floor tiles (*lydion*), and ridge tiles. Whole *lydion* tiles forming the cold plunge floor measured 0.46m x 0.28m x 24mm. Complete tiles were also present in the hypocaust *pilae* stacks and the outlet of the drain through the building's wall where box flue tiles were used. The voussoir tiles point to the heated room having had vaulted ceilings.

As noted above, a ridge tile fragment from the demolition debris is stamped TPFC. Tiles with this mark have also been found at Cirencester and Easton Grey, both Roman town sites. Other variations of the mark, all commencing with TPF, have been recorded (TPFA, TPFB, and TPF). They are found distributed over an area covering North Wiltshire and South Gloucestershire. One tile, a waster fragment, stamped [T]PF was discovered from the extensive Romano-British tilerly at Oaksey Nursery near Minety in north Wiltshire (McWhirr and Viner 1978).

Wall Plaster

Found within demolition debris (11) filling the hypocaust adjacent to the furnace room, fragmentary pieces of wall plaster reveal aspects of the decor. On the basis of a single fillet fragment and a quantity of plain fragments, a dado appears to have been red. Above this, white panels were framed with bands of yellow, light green, dark green, brown, orange and black. A few fragments suggest small designs within the panels, possibly aquatic in nature. Only a few pieces of plain red and white wall plaster came from the debris fill of the other hypocaust (12), although fragments of white, water proofed plaster and plain red wall plaster came from the cold plunge bath. Pieces of red, green and black and part of a panel border came from the baths drain (60). The external gully (69) produced similar fragments.

Tesserae

Numerous light brown sandstone and red terracotta tile tesserae, presumably from former fairly plain tessellated floors within the building, came from debris layer (11, 12, 13, 14, 15, 16). The tesserae measure 20mm to 26mm square and 12mm to 20mm thick. Terracotta tesserae were clearly manufactured from box tile and perhaps roofing tile (*tegulae*) by sawing partly through and then snapping. Tesserae found by Passmore are described as being of dark brown sandstone measuring roughly 26mm square (Passmore 1921, 394).

Iron Slag

Six small lumps of iron slag (141.4g) from the dark grey loam (9) demonstrate that iron working was undertaken on the site, probably during the later 4th century.

CONCLUSIONS

The excavated rooms are seemingly part of a well preserved bath-house or a suite of bath rooms within a larger structure, such as an aisled barn or domestic building. Less likely is the possibility that the two heated rooms are a reception/dining room, accessed by a corridor, located adjacent to a bath suite of which only the cold plunge has been uncovered.

As a bath-suite, the rooms revealed are identifiable as a furnace room (*praefurnium*) with a long flue that could have supported a tank or a hot bath, a hot room (*caldarium*), a warm room (*tepidarium*) and a large cold plunge bath. Other bath-suite rooms outside the excavated area are likely to include a cold room (*frigidarium*) and a dressing room (*apodyterium*).

That the building was much longer is implied by Passmore's discovery of patches of tessellated paving some 20m to the north (Passmore 1921, 394). Such a building may well have been the main house of the complex. Its alignment, facing east, would be typical for such structures.

Dating evidence for initial construction is slight and confined to two sherds from the brown loam (21) deposited against the exterior of the building during its use. These sherds are a fragment from

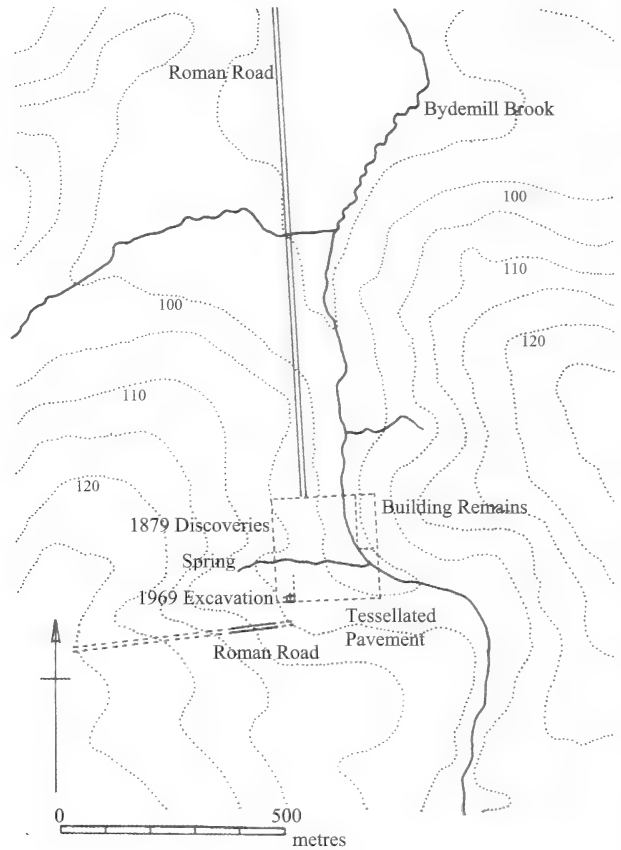


Fig. 6 Building complex layout

a BB1 cooking pot and a samian ware bowl sherd dating to A.D. 100-150 and may have been residual when deposited. An early to mid 4th century date for the demise of the building is hinted at by pottery sherds from the destruction debris (12) and overlying loam (9).

Occupation continued on the site with indications of a timber structure whose post pits cut into the demolition debris followed by a build up of dark grey loam (9). The latter contained many Romano-British pottery fragments, some post- A.D. 350 in date. Many of the wares represented continued to be manufactured without change into the 5th century and thus a precise date for cessation of occupation is unobtainable. Termination of activity at the site is demonstrated by a build-up of a colluvial silty loam (7), undoubtedly resulting from the silting and collapse of abandoned drainage systems.

In conclusion, it is evident from the discoveries that an extensive and substantial Romano-British occupation site dating from at least the early part of

the 2nd century until the end of the 4th century exists to the west of Stanton Fitzwarren. Buildings located during railway construction taken together with Passmore's records, evidence from later cultivation, the 1969 excavation and geophysical survey suggest buildings set around a courtyard (Figure 6.). Such a plan and the evidence for internal embellishments of the buildings imply a villa complex, probably the centre of a farming estate.

ACKNOWLEDGEMENTS

The author would like to thank members of the Swindon Archaeological Society and others who helped excavate the site and the Masters family, formerly of Stanton Fitzwarren. Thanks are due also to the late Sir Geoffrey Tritton for having allowed the excavation to take place and Lesley Freke of Wiltshire Libraries and Heritage Service who helped with archaeological records. The excavation illustrations are taken from site drawings drafted by Roger Phillips, my twin, in whose memory this report is dedicated.

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A Romano-British roadside settlement on Chapperton Down, Salisbury Plain Training Area

by *Caroline Malim and Anthony Martin*

with contributions by *M. Allen, J. Athersuch, J. N. Cooke, J. Ede, R. Emery, R. Gale, P. Harding, C. Ingram, M. Laidlaw and J. McKinley*

This paper presents the results of archaeological fieldwork within the Salisbury Plain Training Area (SPTA) at Chapperton Down. The investigation revealed evidence for extensive Roman-British settlement and the work has provided an important contribution to existing knowledge of upland settlement of the period.

Introduction

This report details the results of an archaeological excavation of the northern part of a Romano-British linear settlement situated on the highest part of Chapperton Down (Scheduled Monument W110105; Wilts SMR 168)(Figure 1). The excavation was undertaken by Anthony Martin of Gifford in September 1996 on behalf of the Defence Estates Organisation (South West) prior to the construction of a north-east to south-west metalled road for tanks.

The excavation was located north of Chitterne on a ridge of Chapperton Down (Figures 2 and 3) where tank tracks funnelled into the monument from an existing NW-SE track. This activity affected a triangular area (Site A) measuring 25m x 42m x 21m at the north-eastern end of the site (NGR ST 9967 4819)(Plate 1). A further 6m wide trench, requiring excavation and recording ran to the south-west along the line of the new tank track for a distance of 167m to NGR ST 99514801. This latter trench crossed a linear earthwork (Site B) c.120m from Site A.

Geological and Archaeological Background

The SPTA extends over c. 40,000 hectares of Upper Chalk plateau bisected from north to south by the River Avon running from Upavon to Salisbury. The Area is defined to the north by the Vale of Pewsey, to the east by the valley of the River Bourne, Tidworth and Ludgershall, to the south by the steep scarp of the Wylve valley overlooking Warminster, and to the west by the valley of the River Frome. The immediate topography of the excavation site exhibits steep-sided coombes within an upland plain, while the archaeological intervention itself ranged across chalk grassland towards a coombe between Chapperton Down and Berril Down. The principal modern land use is intermittently grazed grassland, interspersed with plantations. Further features are related to military use, in particular unadopted tracks and metalled roads.

The earliest remains of widespread settlement and agriculture on the SPTA belong to the period from c. 1500BC to AD43 (Middle Bronze Age to Late Iron Age). The earliest known settlements

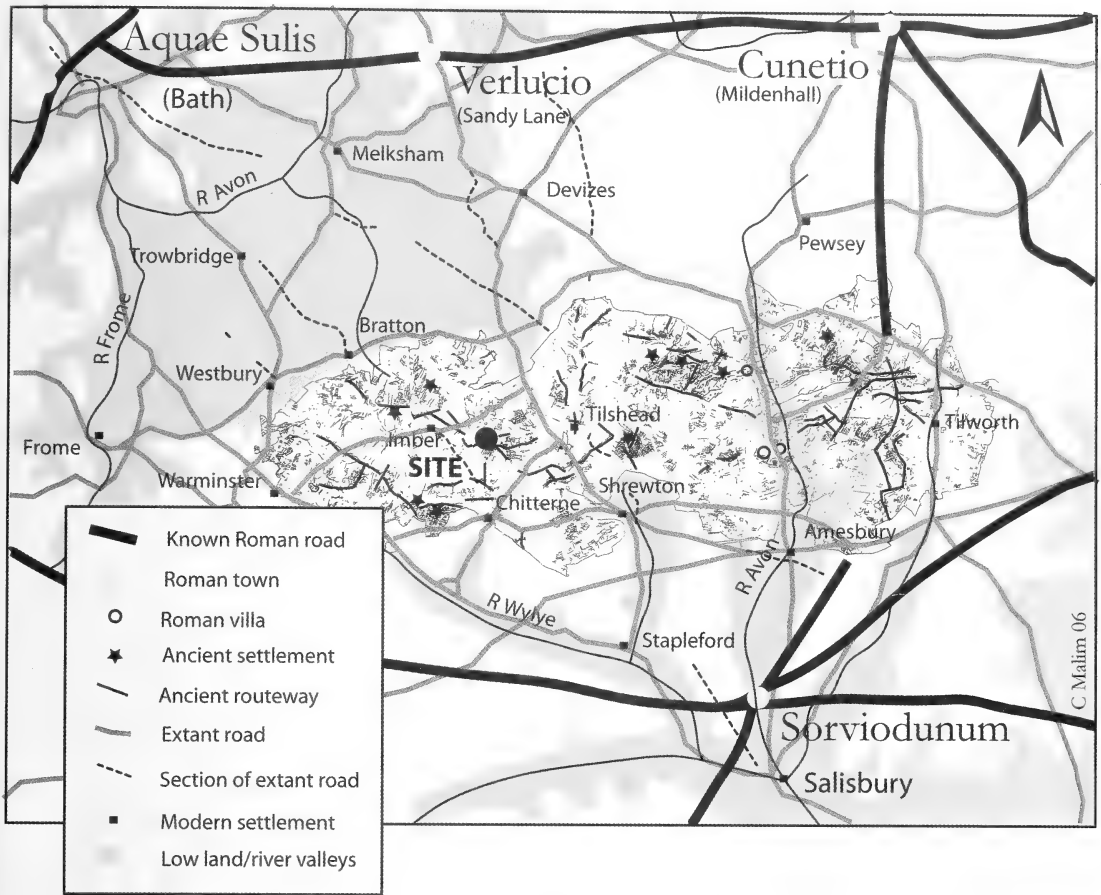


Fig. 1 Location showing archaeological features in the SPTA in relation to the surrounding area and road networks

comprised small enclosures or scatters of unenclosed huts, although with the expansion of farming over the area settlement types diversified.

Much of the area was enclosed by linear ditches and field boundaries during the Bronze Age and Iron Age and an increased population is indicated by a proliferation in the number of settlements, particularly in river valleys, on hill summits and ridges.

The most visible and widespread archaeological earthworks covering much of the SPTA comprise 'Celtic' field systems and the majority of Romano-British sites follow their orientation. The Chapperton Down settlement runs for over 1km and has developed along a holloway, suggested by McOmish *et al.* (2002 98) to be a re-used prehistoric boundary (Figure 2). Unusually for Romano-British sites on the SPTA, the Chapperton settlement is superimposed on the surrounding 'Celtic' fields ignoring their orientation.

The settlement may have developed as a roadside settlement situated midway between *Aquae Sulis* (Bath) and *Sorviodunum* (Old Sarum) (Figure 1). A further linear Romano-British settlement lies 5km to the north-west of Chapperton at Wadman's Coppice on what appears to be the same routeway.

An extensive east-west linear earthwork (Wilts SMR 690), thought to date to the Iron Age, is likely also to have functioned as a routeway (McOmish *et al.* 2002) and crosses the trackway upon which the Chapperton Roman settlement is situated. The resulting crossroads is characterised by a large sub-circular depression (Wilts SMR 196) (Figures 2 and 3) c. 100m diameter with an associated mound. The concentration of settlement along the southern route suggests the direction followed by most traffic.

Early settlement on Chapperton Down was first reported in the early 19th century. Sir Richard Colt Hoare observed earthworks and surface finds

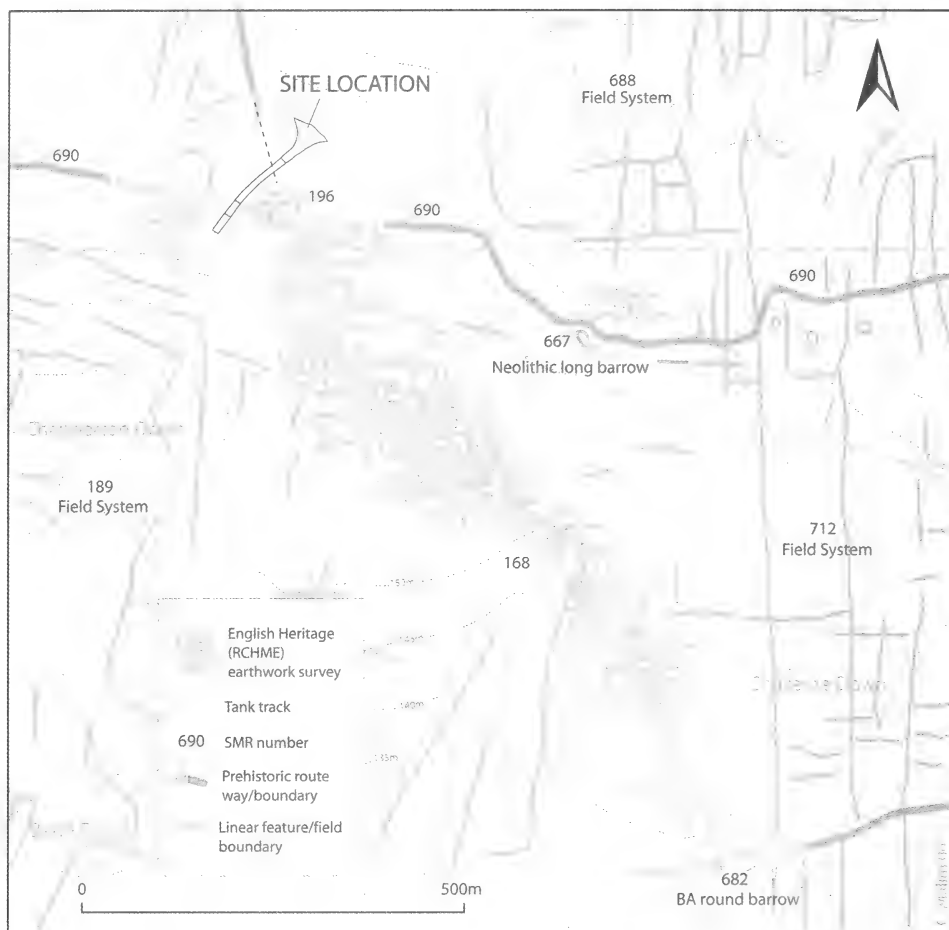


Fig. 2 Site location in relation to the Romano-British linear settlement and other archaeological features

of pottery at a track junction during investigations around Heytesbury noting that, '...the next milestone, viz xxi from Bath and xv from Salisbury, where the unnatural inequalities of the ground and the superior verdure of the soil announce the vicinity of a British settlement.' (Colt Hoare 1812, 89).

It was not until the 1920s that further observations were made when Maud Cunnington surveyed the evidence for Romano-British Wiltshire and Chapperton Down was listed as her Site 56 (Cunnington 1930). Cunnington reports, '...a considerable village with the usual irregularities of ground and much pottery on the surface; coins and a brooch were found. From personal observation this appears to be the site referred to by Hoare as at the intersection of two ancient trackways.' (*ibid.*).

Utilisation by the Romans of existing route ways over the SPTA was probably widespread as suggested

by I.D. Margary's Route 44 that passes north to south from *Sorviodunum* to *Cunetio* (Mildenhall) (Figure 1). It is tempting to view the Chapperton Down route as linking the Roman ports of *Abona* (Sea Mills) on the Severn Estuary and *Claesentum* (Southampton) on the south coast, with the Chapperton settlement broadly equidistant between the two (Figure 4).

Excavation results

Aims of the excavation

The aims were to establish the origin, form and sequence of the settlement and to determine the date and suggest reasons for its demise. It was also hoped to explore the extent of native and imperial

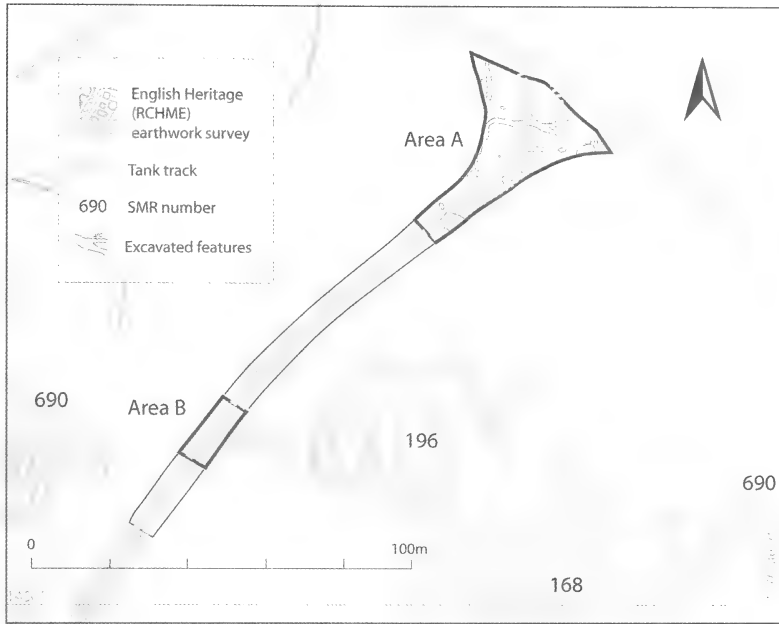


Fig. 3 Detailed site location plan in relation to the Romano-British settlement

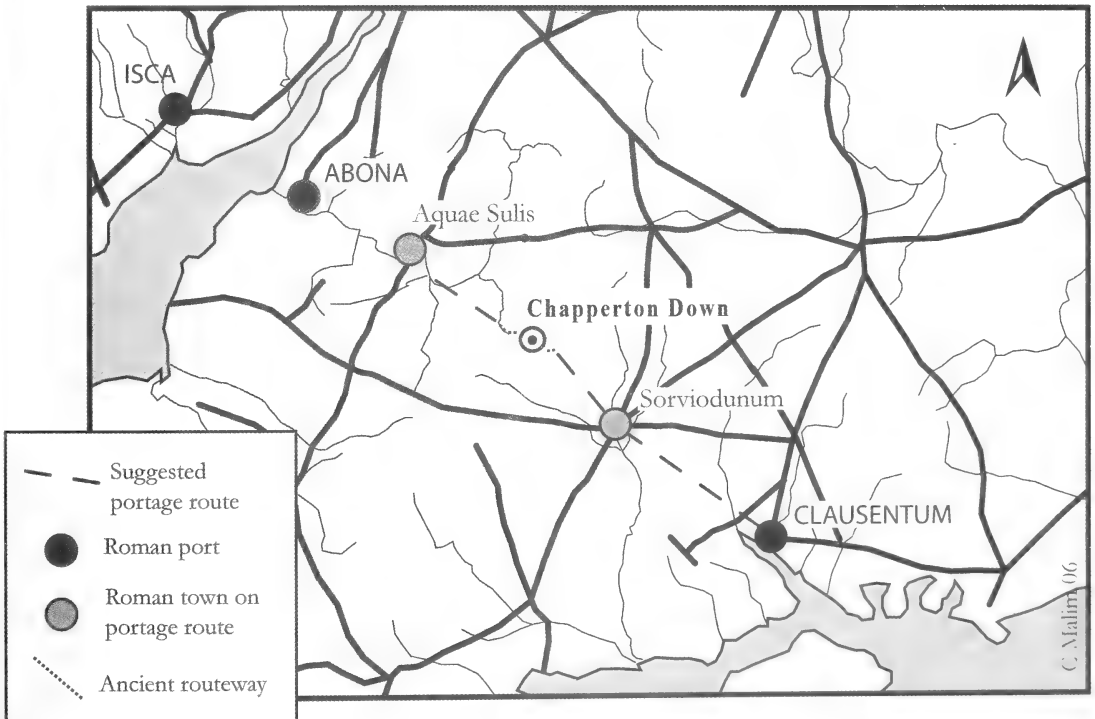


Fig. 4 Location of the Chapperton Down route way in relation to the Roman road network and suggested portage route

interaction and to use artefact and ecofact data to interpret function and economy including links with other settlements and regions.

Methodology

Topsoil had already been removed from parts of the site by vehicular use of the track. In areas where disturbed soil and topsoil were present, a mechanical excavator equipped with a toothless bucket removed the remaining overburden. Following preparatory work, the site was manually cleaned with all subsequent excavation undertaken by hand. Spreads of dark soil and other cultural remains were investigated by hand dug trenches. This latter technique revealed many features masked below later deposits, although it was not possible to fully investigate these deposits.

The site was planned by means of a closed-loop survey traverse, with control information and topographical reference points completed using a total station theodolite. At least one typical section of all chalk cut features such as foundations, ditches, pits and post-holes was recorded, with a minimum of 20% by volume of fills of cut linear features, such as gullies and ditches excavated (where they were not masked by later spreads of material). All clearly visible intersections and terminals were excavated. Non-linear features (such as postholes) were generally subject to at least 50% excavation. All artefacts of 18th century or earlier date were retained. Ten palaeo-environmental samples were retrieved from significant contexts.

The chronological and stratigraphic sequence and phase summary

Four major chronological periods of activity were identified during the excavation: Prehistoric, Roman, Medieval and Post-Medieval, and 20th century. Of these periods, however, only 13 sherds of middle/late Bronze Age and early Iron Age pottery were found as a residual element in Romano-British features indicating prehistoric activity, and only a few artefacts represented Medieval/Post-Medieval agriculture. The latest phase of activity was represented by recent military archaeology.

Occupation relating to the Roman period is divided into six phases, based on stratigraphic observation, spatial association and artefact dating.



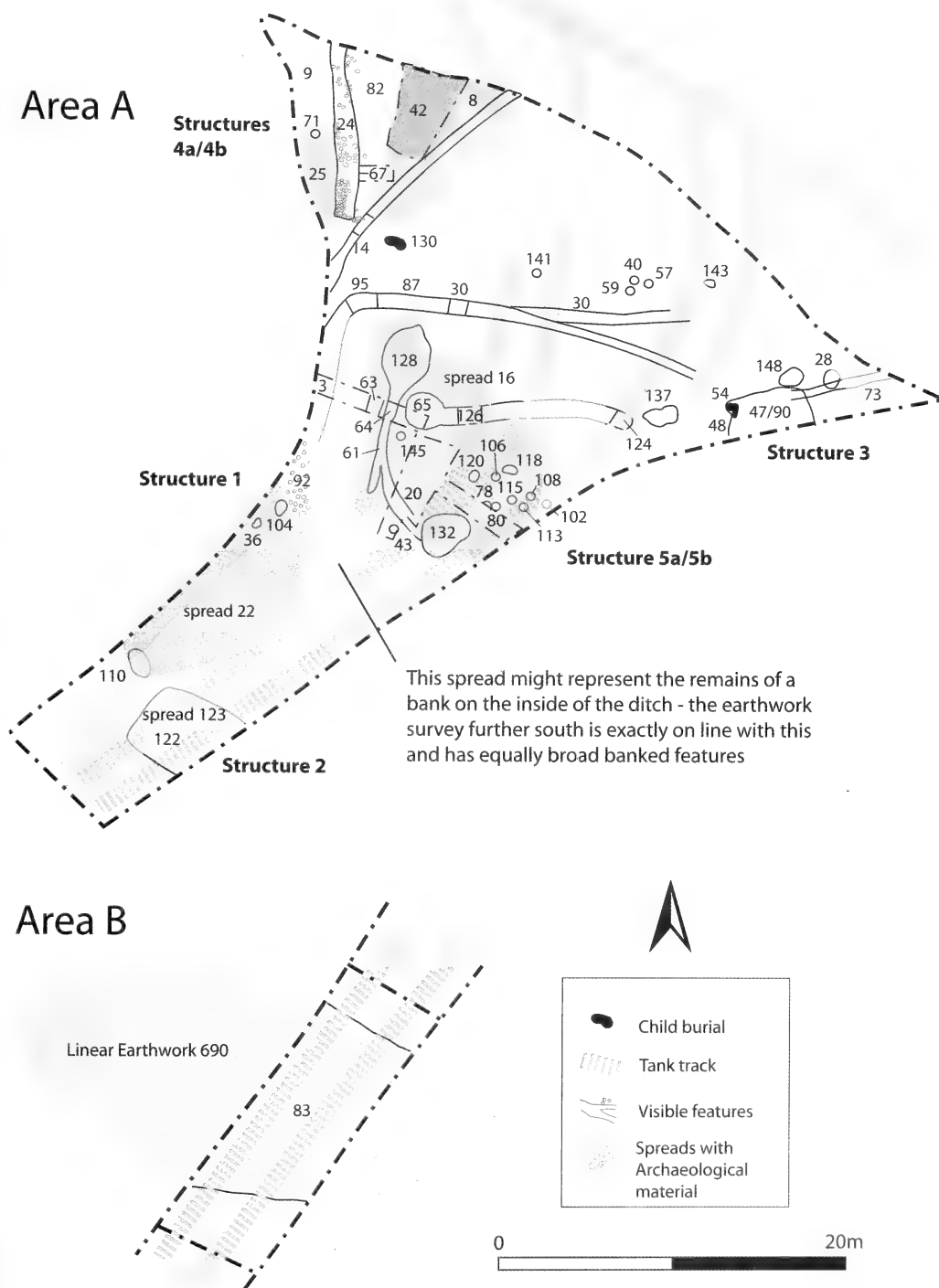
Plate 1: Aerial photograph of Area A

In chronological order, the phases are as follows:

1. Primary construction associated with enclosure ditches, pits and terracing for structures.
2. Primary occupation identified by occupation horizons.
3. Disuse of primary occupation with infilling of pits and gullies.
4. Secondary construction including foundation trench structure 4b.
5. Secondary occupation horizons and burials.
6. Site abandonment including silting up of features and robbing of walls.

Phase 1 - Primary construction

A total of 38 features was identified as representing the first phase of Romano-British activity (Figures 5 and 6). Area B was characterised by a ditch (83)(SMR 690) 6m wide and 0.8m deep (Figure 5 and 9). Area A contained a series of boundaries forming plots. An enclosure was formed by ditches (30), (87) and (95), while a double-line curvilinear feature comprising a series of gullies (61=63/64) and (20=61=128)(Figure 5 and Plate 2) drained southwards towards a possible cistern (pit (132)) 0.8m wide and 0.2m deep. A large



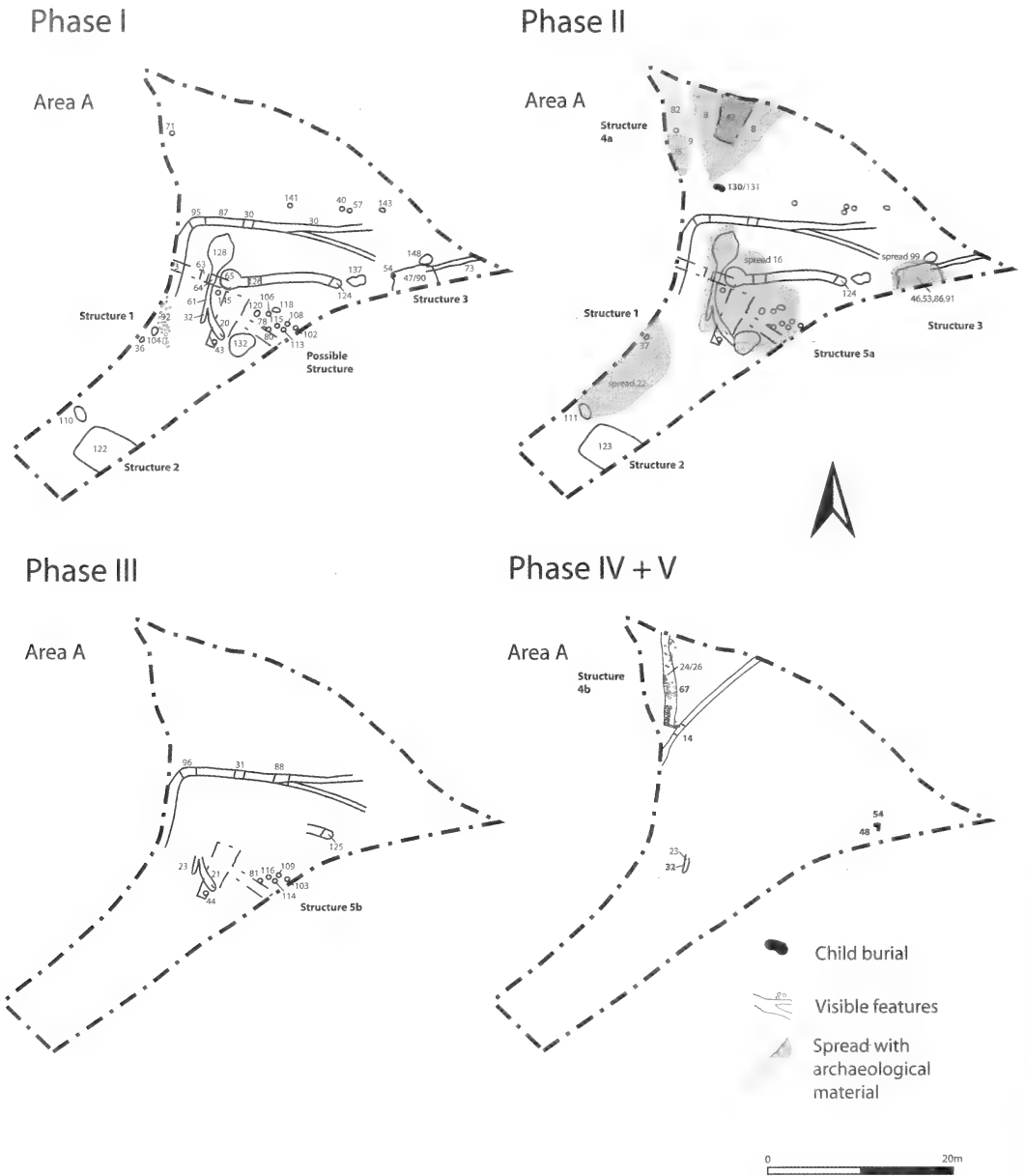


Fig. 6 Archaeological features Phases I-V

gully or palisade slot (contexts 124/126/65), 1m wide and 0.7m deep, cut around Structure 5a, possibly represents a continuation of the line of a small gully, 0.76m wide and 0.06m deep (context 73) observed in the eastern portion of the site. These features presumably relate to the formation of the Romano-British settlement on this part of the Down.

Several structures were built in association with the land divisions described above and evidenced

by foundation trenches for walls, flint walls and house platforms terraced into the hillside. Structure 1 comprised a surface 0.15m thick (94) and a 0.2m thick bedding layer (93) for a 1m wide flint wall (92)(Plate 3). Structure 2 is represented by a possible structural terrace 6m long, 4.5m wide and 0.16m deep (122). Structure 3 was indicated by a second terraced platform (47/90)(Plate 4) 5m wide, 0.3m deep and of unknown length as it extended



Plate 2: Contexts (61), (62), (63) and (64)



Plate 3: Structure 1 flint wall, context (92)



Plate 4: Structure 3 terraced platform, context (47)



Plate 5: Enclosure ditch, contexts (87) and (88)



Plate 6: Structure 4b basal course of wall foundation, context (24)

beyond the excavation area. A posthole within the platform (54) suggests a timber frame. Structure 4a comprised a series of occupation horizons in the north-west corner of the site and, possibly, a single posthole (71).

Post-holes (106), (108), (113), (115), (118) and (120) are interpreted as a further possible structure (5a). Two fragments of rotary quern had been used as packing in posthole (118), while a further posthole (137) revealed packing in the form of chalk blocks (139). Post-holes (36) and (104) may have been load bearing within Structure 1. Post-holes (40), (43), (57), (59), (102), (141), (143) and (145) did not form a recognisable pattern consistent with a structural interpretation, while circular features (110), (132), (148) are interpreted as pits ranging from 0.44m to 1.2m in diameter.

Phase II - Primary occupation

While traces of use for Phase I structures were observed, not every feature identified in Phase I had a corresponding period of use that could be linked to Phase II. Activity of this phase included infilling of pits (37), (47), (53) and (111) with a clay-silt matrix containing animal bone, pottery (predominantly

utilitarian forms such as jars and bowls dating from the 3rd to 4th centuries AD), and metalwork in the fill of pit (36). Pottery-rich occupation horizons (22) and (123) lay above infilled pits (110) and (36)(Structure 1) and within terrace (122)(Structure 2). Six further layers of occupation debris were also found (8), (9), (25), (42), (82) and (99). Fine-ware pottery concentrated in (22), with coarse ware in (25) and (42). Quern stones were found in various occupation layers, with a file and whetstone from (8). Apart from these materials, the remaining significant finds were a bone hair pin and a loop headed iron spike from (22). Pit (130) must be considered as a grave as the remains of a full-term foetus or neonate were recovered from its fill (131).

Phase III - Disuse of primary occupation

The robbing of walls mainly evidences disuse of Phase I features. The enclosure ditch (87) was filled during this period with loamy soil 0.5m deep with frequent flint rubble (88/96/31)(Plate 5). The fill of the Phase 1 gully or palisade trench (65) contained flint rubble, probably derived from the demolition of Structure 5a. Additional evidence for disuse, or perhaps a change of use associated with preparation

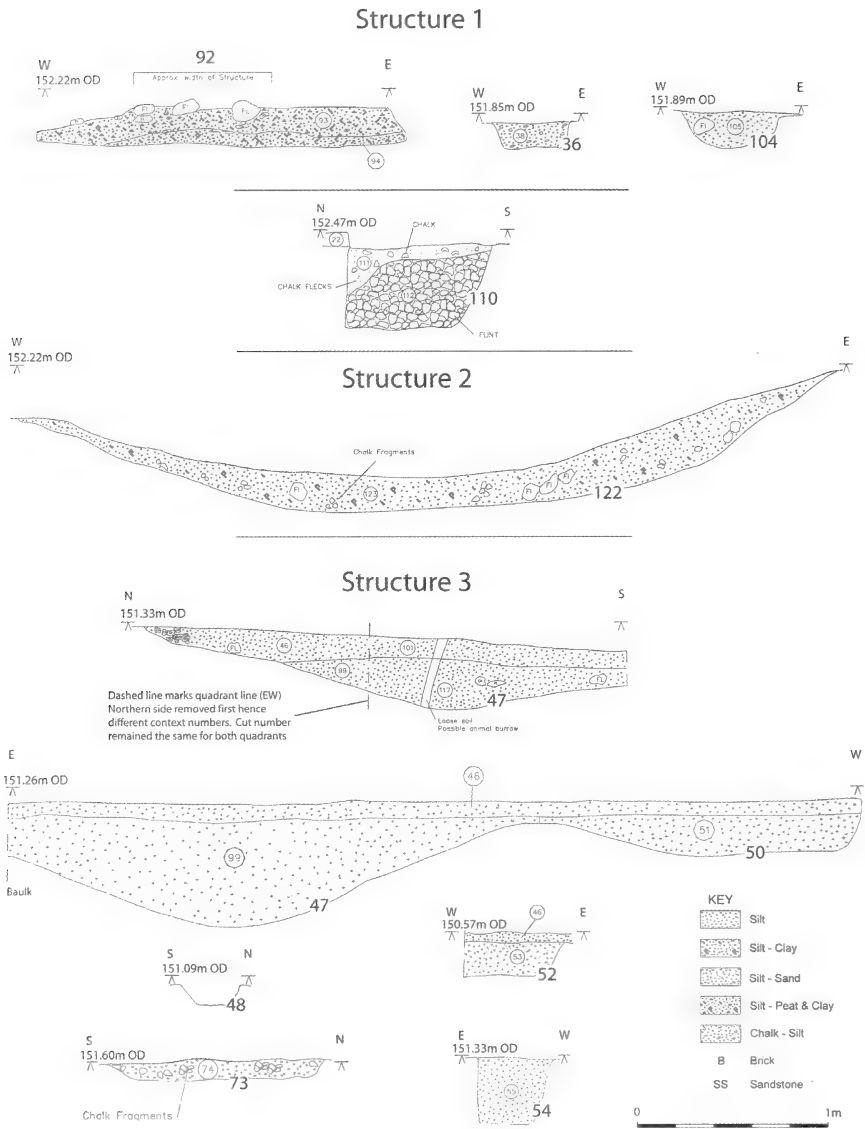


Fig. 7 Sections

for Phase IV activity, includes deliberate infilling of gullies (124) and (20) with a silt containing poorly-sorted chalk fragments, pottery and animal bone (125) and (21). Post-holes (43), (102), (108), (113) and (115) were also filled with silt (44), (103), (109), (114), (116), and flint rubble (81).

Phase IV - Secondary construction

As a corollary to the disuse of certain primary features, a degree of preparation activity was discernible as a discrete phase. A foundation trench 1m wide and 0.25m deep (67) for a fifth structure (4b)

was excavated into the occupation debris of Phase II (formed by contexts (9) and (82)). Within this trench, lay a structure 0.9m wide and 0.3m deep comprised of tightly packed angular flint nodules (24) and (26)(Plate 6) interpreted as the basal course of a wall, perhaps the base for a timber-framed building. This structure appears to represent remodelling of the domestic zone hitherto occupied by Structure 4a. Three new pits were dug (48), (50) and (54) and a new gully 0.53m wide and 0.11m deep (14). Structure 5b was defined by a trench (32) 0.68m wide and 0.19m deep containing occasional angular flint nodules

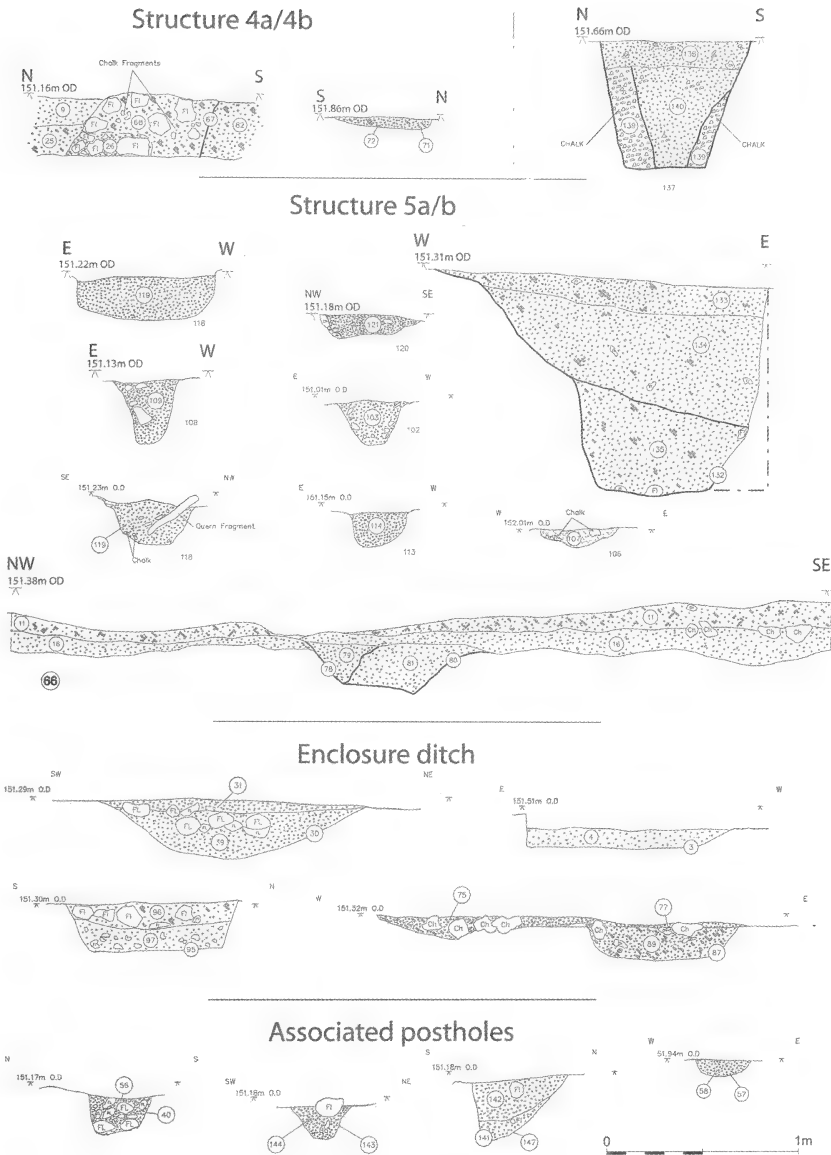


Fig. 8 Sections

(23), also interpreted as a foundation for a timber-framed building on a chalk platform (33).

Phase V - Secondary occupation

This phase is evidenced largely by occupation horizons (16), (77), (91) and (101) comprising chalky silts rich in pottery and animal bone fragments with a chisel and sandstone whetstone found in (16) and a padlock key, decorated copper-alloy mount, and a decorative stud with gold plating from (101). Context (16) also contained skeletal material from a

human neonate. Two pits dug during Phase IV had a relatively short life and were infilled with silty soils (51) and (55). A grave (48) contained a partially articulated full-term foetus or neonate (skeleton 601) in its fill (49), alongside which bones of a previous neonate burial were found. At the time of excavation the remains of these two individuals were recovered as a single burial.

Phase VI - Site abandonment

This phase exhibits considerable evidence for

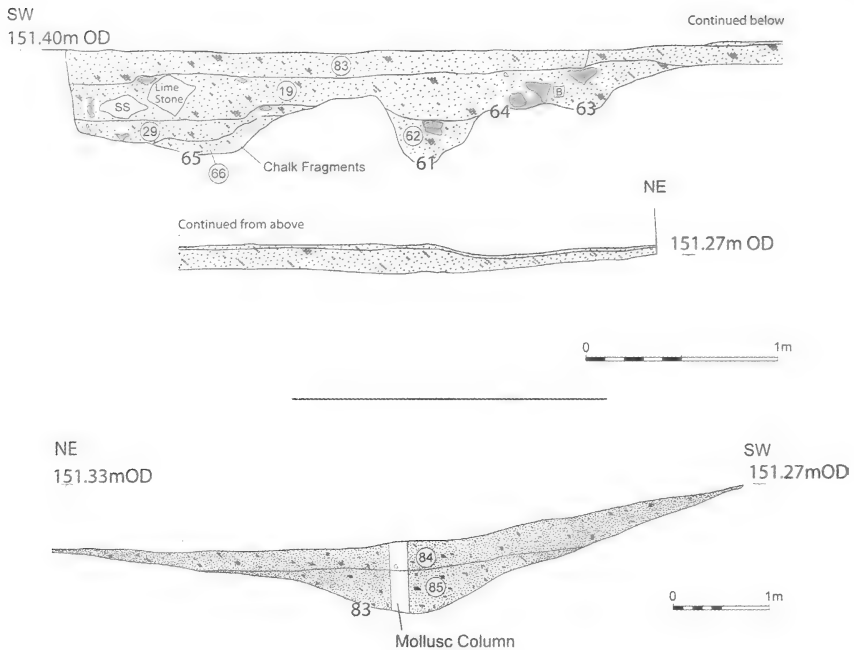


Fig. 9 Sections

abandonment heralded by the silting-up of the major ditch (83) in two episodes (84) and (85) (Figure 5 and 9). The primary fill (85) was a silty-clay with rounded chalk fragments 0.3m deep sealed by a secondary fill of silty-clay (84) 0.5m deep also with rounded chalk fragments. Within the occupation zone episodes characteristic of abandonment were recorded. Many post-holes from both the primary and secondary phases of construction went into disuse and became silted up by contexts (58), (60), (56), (72), (142), (147), (107), (119), (121), (144), (146), (138) and (140). This phase also witnessed the robbing of walls and foundations from Phase I buildings as evidenced by a 1m wide and 0.09m deep robber trench (3) and the remains of a robbed wall (4). Phase IV walls were also robbed during this phase as revealed by the backfill of robber trenches (68) and (79). Two gullies and two pits (contexts (15) and (74) and (105), (135), (134) and (133) respectively) also silted up. Five distinct layers of abandonment debris were recorded (contexts (5), (7), (86), (46) and (11)), one of which (5) was sealed by a localised fire horizon (13) comprising burnt clay-silt and ash. This latter deposit is interpreted as the final episode of Romano-British activity. Context (46) also contained re-deposited skeletal elements of the neonate burial from the fill (49) of the Phase V pit (48). The following phase of activity relates to the

use of the area by the military in the form of wheel ruts and pits dating to the 20th century.

Discussion of excavation data

Overall, 53 features were excavated but were not evenly distributed across the excavation area. Buildings with flint nodule wall footings were recorded and the recovery of household pottery from storage jars, flagons and bowls suggests that some of these were houses. Up to seven possible structures with associated features such as pits, gullies, ditches and open areas were identified.

On the basis of diagnostic pottery, occupation dated from the 3rd to 4th centuries AD and was concentrated at the north-eastern end of the site. No structural evidence for earlier occupation was found, although a quantity of residual Bronze Age, Iron Age and 1st and 2nd century AD pottery was recovered, indicating the presence of communities in the vicinity during these periods.

Material remains associated with occupation were dominated by fragments of pottery and animal bone, but included the skeletal remains of four neonates, burnt flint, ceramic building material, fired clay, worked flint, glass, shell, metalwork debris, stone,

worked bone, coins, copper-alloy and iron.

The sheep buried in a pit in Structure 1 is detailed below and can be compared with the human neonates or foetuses found in pits dug into the site of the abandoned Structure 3 and between Structures 4a/4b and 1. The burial of the juvenile sheep was deliberate and although the grave had been disturbed by recent activity it could be seen that the body was fully articulated in a flexed position on deposition.

Evidence of four human neonates was observed. The remains excavated in the abandoned Structure 3 proved on analysis to represent two individuals. A third neonate was recovered from a pit (130) 21m to the north-west of Structure 3 while disarticulated remains of a fourth neonate were recovered from an occupation horizon (16).

Of the poorly preserved remains of seven buildings, five (Structures 1 - 5) were constructed during Phase 1, whilst 4b and 5b relate a second phase of building activity. The buildings were elementary in construction with walls founded on a bed of flint nodules and chalk blocks, sometimes laid directly onto the chalk surface and in other instances set in a shallow foundation trench. Limited ground preparation was observed in the form of platforms dug into the chalk. Certain buildings may have benefited from the assistance of post supports as evidenced by postholes. The nature of wall and roof construction of the buildings is difficult to assess. No cob indicative of timber framing was recovered, such as that found at Butterfield Down (Rawlings and Fitzpatrick 1996, 1), although daub was found. Timber framing may nevertheless have been the predominant building method as evidence for flint wall bonding in the form of courses of tile or brick was not found and the frequency of iron nails (198) indicates the use of timber. Roof structures are indicated by flat sandstone and limestone fragments consistent with stone fashioned for use as roof tiles. At Chisenbury Warren, buildings were also founded on drystone walls and, as at Chapperton Down, the walls were in the region of 0.5m-0.6m wide (Entwhistle *et al.* 1994, 14). The excavators of Chisenbury Warren, however, considered that structures with such footings could not have supported a stone-tiled roof (*ibid.*, 14).

The intensity of structures within the excavated area (Figure 5) has resulted in little evidence for the creation and use of open areas. Gullies and isolated postholes indicate division of areas and/or drainage and possible tethering posts for animals. Pits indicate refuse disposal or small-scale extraction of chalk. All of the walls recorded are regarded as

parts of domestic buildings and not boundary walls defining open areas associated with residential compounds. This aspect contrasts with Chisenbury Warren where several boundary walls were identified (Entwhistle *et al.* 1994, 12).

Enclosure of the settlement is indicated by a ditch aligned east-west, truncated by ruts created by modern military wheeled vehicles. This feature was followed for a distance of 18m and survived to a depth of 0.35m with a width at the surface of 1m. The ditch was filled by a silty-clay matrix containing abundant undressed flint blocks and smaller chalk fragments. At the base of the deposit in the trench a number of stone roof tiles were recovered in association with a quantity of pottery fragments, animal bone (including dog) and a copper alloy ring. A site-wide layer of abandonment debris contained a high proportion of pottery fragments and animal bone above the internal area defined by the ditch.

Finds

Pottery, by M. Laidlaw

The pottery assemblage from Chapperton Down comprises 4,843 sherds weighing 45,890g. The bulk of the assemblage is Romano-British and dated broadly to the 3rd to 4th centuries AD. Very small quantities of Prehistoric, Medieval and post-Medieval pottery are also present.

Prehistoric

A small quantity of pottery is attributed to the Bronze Age and Iron Age periods on the basis of fabric type alone, as all sherds are plain undiagnostic body sherds. Two sherds of flint tempered fabric are attributed to a Middle/Late Bronze Age Deverel-Rimbury type urn, but the few other sherds were too featureless to date more closely than Middle Bronze Age to Early Iron Age. Sources for the prehistoric fabrics are uncertain, although a local origin is likely. Similarly dated flint-tempered fabrics are recorded from other sites in Wiltshire such as Maddington Farm, Shrewton (Seager-Smith 1996), Butterfield Down, Amesbury (Millard 1996) and from the Avon Valley, where a limestone-tempered fabric is also recorded (Mephram 1993). All Prehistoric sherds were found in Romano-British features and must be considered residual.

Romano-British

The Romano-British assemblage is divided

into finewares and coarsewares, of which sandy coarsewares dominate. A total of 20 fabric types were identified (Table 1).

Table 1: Pottery fabric totals

FABRIC	Nos	Weight (g)	Phase %	Total %
Prehistoric	13	155		0
Flint tempered				
F1	4	23		
F2	4	18		
F3	2	86		
Total	10	127		
Calcareous				
C1	1	2		
C2	1	20		
C3	1	6		
Total	3	28		
Romano-British	4780	45473		99
Grog tempered				
G100	68	702	2	
G101	15	747	2	
G102	19	990	2	
G103	15	464	1	
Total	117	2903	6	6
Sandy				
Q100	2156	18927	42	
Q102	358	2331	5	
Q103	231	1918	4	
Q104	682	5957	13	
Q105	248	1339	3	
Q106	132	5882	13	
Q107	1	6	0	
Q108	10	139	0	
Q110	3	20	0	
Q111	5	70	0	
E100	387	3021	7	
Total	4213	39610	87	86
Imports & Finewares				
Q109	142	823	2	
Q112	28	167	0	
E162	49	306	0	
E170	160	1183	3	
Mortaria	28	341	0	
Samian	43	140	0	
Total	450	2960	7	6
Medieval	4	23		
Post-Medieval	46	239		
OVERALL TOTAL	4843	45890		

Finewares

Imported pottery is represented by samian ware (43 sherds). On the basis of forms the samian is late 1st to 2nd centuries AD. Other finewares can be attributed to the Oxfordshire and New Forest production centres, and include C45 and C55 and flanged bowls C47 and C51 (Young 1977), Oxfordshire mortaria and New Forest red-slipped fabric (Fulford 1975, fabric 1b). The only recognisable forms are the characteristic indented beakers and one flagon neck.

Finewares occurred in small quantities within a number of features associated with coarsewares. Slightly larger concentrations were recovered from occupation layers (16) and (22). With the exception of the samian, the date range is 3rd-4th centuries AD.

Coarsewares

Coarsewares were subdivided into 15 fabric types including Black Burnished ware and sandy wares, particularly 'catch-all' greyware types, including products from the Oxfordshire, New Forest and Alice Holt industries (Table 2). Grog-tempered fabrics are likely to represent products from Savernake Forest and elsewhere in north Wiltshire. Due to the small size of the rim sherds and the lack of vessel profiles, a broadly defined vessel type series has been created to illustrate the occurrence of different rim types (Table 2). Recognisable vessel forms comprise jars with everted rims, bowls with drop-flanged rims, plan and bead-rimmed bowls and dishes. A moderate quantity of large, thick-walled storage jars with upright rims was also recorded. Sherds with multiple pre-firing perforations probably derive from strainers. With the possible exception of grog-tempered fabrics which may represent an earlier Romano-British element within the assemblage, most of the vessel forms identified may be dated broadly from the 2nd to 4th centuries AD.

Distribution and ceramic sequence

Due to the paucity of diagnostic vessel forms it was not possible to discern any internal ceramic sequence which could be related to the stratigraphic phasing. All recognisably earlier material (1st-2nd century AD), such as samian and some grog-tempered sherds, occurred as residual material in 3rd-4th century AD contexts. Significant quantities of pottery (185 sherds) were recovered from the Phase I enclosure ditch (87); Phase II occupation deposits (941 sherds), including layers (19), (22), (25) and (42) (of which (25) is associated with Structure 4a), occupation layers (16) - (915 sherds) and (101) - (209 sherds); Phase VI abandonment layers (5), (11) and (46) - (216,145 and 126 sherds respectively) and from the clearance spit (2) - (919 sherds).

List of illustrated vessels (Figure 10)

1. Storage jar with rounded rim, fabric G101. Pottery Record Number (PRN) 486, context (89), bedding surface for wall.
2. Storage jar with upright rim, fabric Q106. PRN 302, context (29), occupation layer.

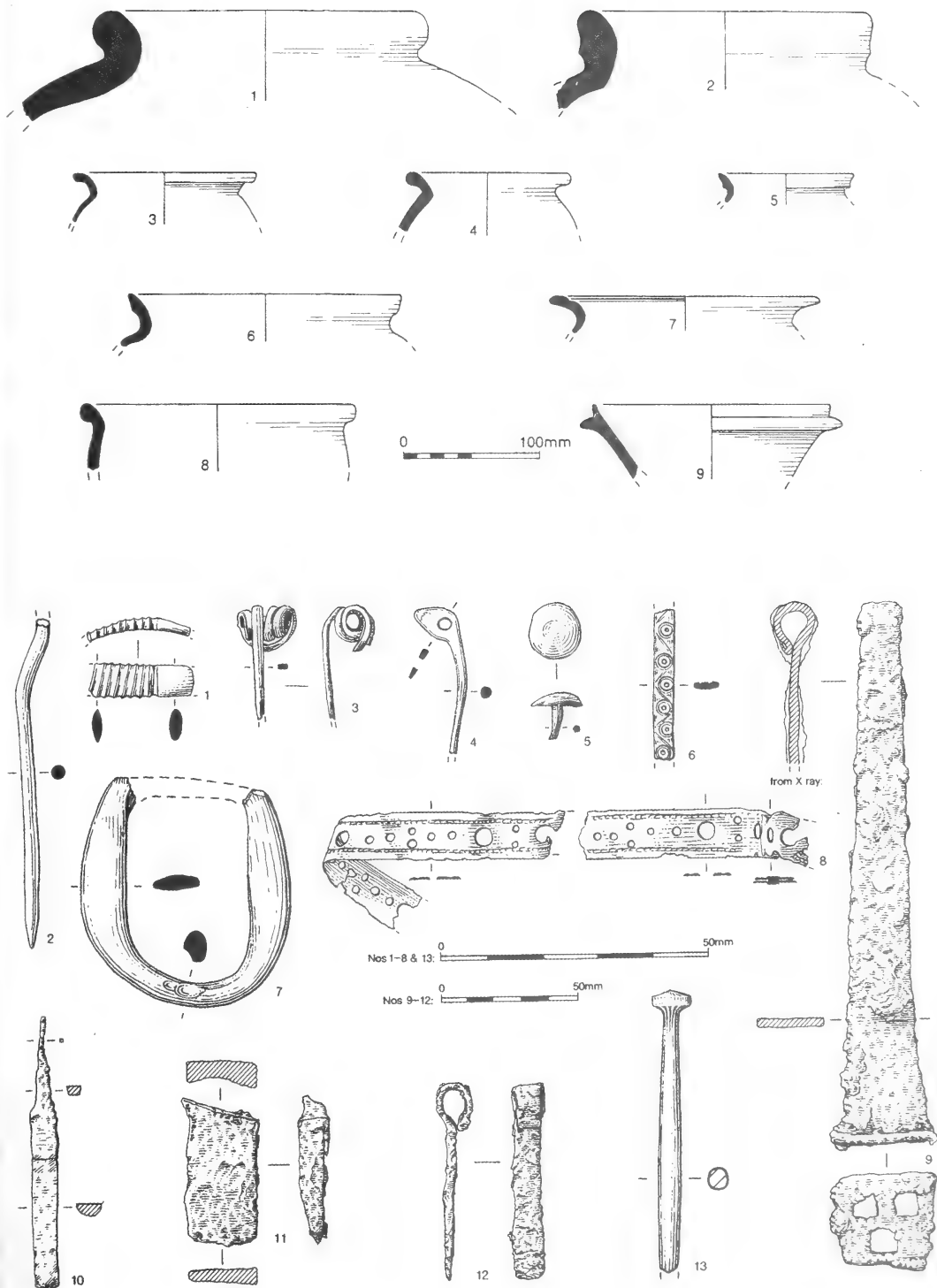


Fig. 10 Romano-British finds

Table 2: Pottery vessel forms by fabric

VESSEL FORM	Grog	BB1	Grey	Oxid	Fine	Oxon	Total
Large storage jars							
Rounded rim	4		3				7
Upright rim			6	13			19
Smaller jars/beakers							
Everted rim	3	30	99	19	1		152
Necked		2	19	4	3		28
Hooked rim			17	1	1		19
Flattened square rim			24	4			28
Plain inturned rim			4				4
Bead rim				1	2		3
Jar/Bowl							
Flat topped rim	1		14	1			16
Triangular rim		1	2				3
Bowls/Dishes							
?Strainer			1	2			3
Bead rim bowl			3	1			4
Bowl with beaded flange		4	7				11
Drop-flanged bowl		19	20	1	1	2	12
Flat-topped bowl			3				3
Carinated bowl			1	6			7
Straight-sided dish		7	10	2	1		20
Vessel form unspec.	7	24	60	18	6	37	152
TOTAL	15	87	293	73	15	39	522

- Everted rim jar, fabric Q100. PRN 405, context (68), fill of robbed wall.
- Jar with short everted rim, fabric Q100. PRN 531, context (101), occupation layer.
- Narrow necked jar/flagon, fabric Q100. PRN 789, context (2), clearance.
- Jar with triangular/squared end, fabric Q100. PRN 348, context (42), occupation surface.
- Wide mouthed jar/bowl with grooved rim, fabric Q100. PRN 113, context (16), occupation layer.
- Everted rim bowl, fabric Q100. PRN 228, Context (22), occupation layer.
- Drop-flanged bowl, fabric Q100. PRN 227, context (22), occupation layer.

Conclusions

The range of fabrics and vessel forms from this area of Chapperton Down indicate a lower status rural site. Utilitarian wares and vessel forms such as large storage jars dominate the assemblage with only a small percentage of finewares present. Although small quantities of earlier Roman pottery are present, the main occupation of the excavated area appears concentrated within the 3rd to 4th centuries AD rather than representing continuous occupation from the early Romano-British period as at nearby Figcheldean (Graham and Newman 1993), although it should be noted that the excavated area covers only a small part of the overall Chapperton Down settlement complex. The apparent chronology at Chapperton Down also contrasts with that at the Romano-British site at Chisenbury Warren (Entwhistle *et al.* 1993, 15) the investigation of which revealed a shift in the principal focus of settlement between the 1st and 4th centuries AD. Further comparable assemblages with an emphasis on the later Romano-British period have been recorded from Durrington Walls (Swan 1971), Butterfield Down, Amesbury (Millard 1996) and Maddington Farm, Shrewton (Seager Smith 1996).

Medieval and Post-Medieval pottery

Only four sherds of medieval pottery were identified from unstratified deposits consisting of three coarsewares, probably of relatively local manufacture and one sherd of finer glazed ware. These sherds are likely to be of 12th to 13th century date. A small quantity of Post-Medieval sherds comprises coarse earthenware of Verwood type and modern industrial white wares. The post-medieval sherds were recovered from the clearance layer (2) and the Phase VI abandonment layer (5).

Worked Flint, by P. Harding

Most of the material is unstratified from topsoil or hand clearance layers that contain the only scraper from the site. This material is technologically characteristic of Neolithic and Early Bronze Age industries and probably predates the earliest pottery on the site. It is typical of surface flintwork across most of Salisbury Plain. There is nothing to indicate whether this material is contemporary or has accumulated throughout prehistory, but it is unrelated to the Romano-British occupation of the site.

Building Material, by M. Laidlaw

The building material consists mainly of flattish fragments of ferruginous sandstone likely to represent roof tiles, two limestone fragments, also probably roof tiles, and three fragments of fine-grained sandstone that could also be architectural in origin. One small fragment has traces of incised hatched lines that may represent stone dressing. Small sandy-clay tile fragments were found in five contexts in addition to fragments of fired clay from walls or hearth linings found in 10 contexts.

Coins, by N. Cooke

Eight coins were recovered during the excavations at Chapperton Down (Table 6). All of these are Roman, and all date to the late 3rd or 4th centuries AD. The small number of coins recovered makes intra-site comparisons invalid. The date range of these coins (the earliest dates to AD 270-90, the latest to AD 364-

78) indicates that activity continued into the later 4th century. The absence of 1st or 2nd century coins or post-Valentinian coins need not be significant, as the coin assemblage is small, and coins of these dates are rarer as site finds.

Metalwork, by R. Emery

Objects of copper-alloy and iron

The metalwork assemblage comprises eight copper-alloy objects (Table 3; Figure 10) and 259 iron objects. Metal objects are summarised by phase in Table 4. Of the 259 iron objects, 30 objects from unstratified contexts are not considered. Nine fragments from pit 110 are from a single screw-threaded modern object. This leaves 220 objects of which a significant proportion consists of nails, and there are very few identifiable objects.

Other artefacts

Three sherds of Romano-British vessel glass of

Table 3: Description of illustrated finds

dwg. NO	Context	DESCRIPTION	DATE
		Cu Alloy	
1	Unstratified	Frag. of discontinuous grooved decorated ring	Roman
2	Occupation layer 22	Cylindrical hair pin	Roman
3	Clearance layer 2	Pin of a flat disc brooch	Roman Claudian (AD 60-100) Similar found in Colchester (Crummy 1983; Fig 14)
4	Abandonment layer 5	A four turn bilateral spring from a bow brooch	Similar example from Colchester dated to between the pre-Roman period and the pre-Flavian period (Crummy 1983; Fig 2:1)
5	Occupation layer 100	Decorative stud or tack with gold foil/plating on convex head. Used to decorate upholstery.	Romano-British
6	Unstratified	Frag. of decorated armlet with ring and dot pattern and thin scored lines	Roman third/fourth century. Similar found in Colchester (Crummy 1983; Fig 44)
7	Clearance layer 2	D-shaped buckle	Medieval – post Medieval
8	Occupation layer 16	Strip of copper alloy with large and small circular holes which may be for rivets or decorative strip mount.	Roman AD 75-125. Similar found in Colchester. (Crummy 1983; Fig 134)
		Iron	
9	Occupation layer 16	Padlock key. Tapering strip with a loop at the head and a base at right angles, pierced by three sub-square holes	Roman. Similar found at Brough Hill, Northamptonshire (Manning 1985)
10	Occupation layer 8	File. One flat face with regular teeth and one convex edge.	Roman Similar found Waltham Abbey Hoard, Essex and Dougate London (Manning 1985)
11	Occupation layer 16	Frag. of possible chisel. Two flat sides tapering to a pointed edge.	Roman Similar found in Colchester (1983; Fig 206)
12	Occupation layer 22	Frag. of loop-headed spike. Another one was found in clearance layer 2.	Mid-late first century AD. Similar found at Brough Hill, Northamptonshire (Manning 1985)
		Bone	
13	Occupation layer 16	Nail-headed pin	Third/fourth century

Table 4: Metalwork by phase

Feature/description	IRON			CU ALLOY	
	Identifiable objects	Nails	Misc. / unident.	Personal	Other
PHASE II					
Bedding surface (39/89)		12			
Sub-total phase II	-	12	-	-	-
PHASE III					
Occupation horizon (8/9/19/22/29/123)	file; loop-headed spike	24	6	?hairpin	
Surface 42		4			
Cut 126		3			
Sub-total phase III	2	31	6	1	-
PHASE IV					
Robbed wall (23/31/96)		4			
Posthole 102		1	1		
Gully 124		1			
Sub-total phase IV	-	6	1	-	-
PHASE VI					
Occupation horizon (16/77/101)	chisel; key	75			strip-mount; stud/tack
Wall 26		7			
Sub-total phase VI	2	82	-	-	2
PHASE VII					
Abandonment horizon (5/7/11/46)	loop-headed object	20	1	brooch frag.	
Robbed wall 68		4			
Linear 73		4			
Ditch 83		2			
Posthole 106		1			
Pit 132		1			
Posthole 137		3			
Sub-total phase VII	1	35	1	1	-
PHASE IX					
Clearance layer 2	bracket; loop-headed spike	32	7	brooch pin; buckle	
Unstrat.				ring; armlet	
Sub-total phase IX/Unstrat.	2	32	7	4	-
TOTAL	7	198	15	6	2

possible 4th-century date were found from cleaning layers and pit (130). A fired clay spindle whorl (35mm diameter) was recovered from occupation horizon (16). A 3rd/4th-century bone nail-headed pin also came from this layer (Table 3; Figure 10). Two sandstone whetstones were found in occupation layers (8) and (16). Twenty-eight fragments of quernstone were recovered including a saddle quern and parts of seven rotary querns. Most are of greensand although others are either sandstone or quartz conglomerate. The saddle quern was found in occupation horizon (25) and two fragments of rotary quern came from posthole (118). Other fragments came from surfaces (97) and (136) and layer (47).

Human bone, by J. McKinley

The four neonates identified from Chapperton Down (Table 5) join a growing number of Romano-British neonatal burials from this area of Salisbury Plain, four others having been recently excavated in association with structural remains at Chisenbury Warren (Entwhistle *et al.*, 1994). The only adult remains to have been found in the area were those of a woman recovered during military digging in the 1980s. As yet, no Romano-British cemetery has been found in the immediate vicinity though the latter may indicate the presence of one.

The burial of neonates in the Romano-British

Table 5: Human bone: summary of results

context	% skeletal recovery	age	pathology
16	r.dep.	neonate (1-2 months)	
46	r.dep. = 601	neonate	
601	1) c. 90% 2) c. 10%	1) neonate (<3 months) 2) neonate	1) endosteal new bone; periosteal new bone – rib shafts; fusion left ribs; morphological variation – 3rd distal centres ossification in all 1st metatarsals and metacarpals.

period outside the confines of formal cemeteries is well recorded. Infants less than forty days old were not considered 'human' and could, within this time, legally be subject to infanticide (E. Scott, 1997 TAG session 'The Archaeology of Infancy and Infanticide'). Their burial close to or within structures appears to place them within the confines of the living rather than amongst the dead. However, the practice was not exclusive. Of the excavated burials at Poundbury 33% were immature individuals and of these 5.8% were neonates (Molleson, 1993) and 4.1% of the 17.4% of immature individuals at Cirencester were neonates (Wells, 1982). However, in the Roman Empire human sacrifice was not permitted after 196 BC (Hutton 1991, 231), and the evidence for the practice in Britain is not convincing. Nevertheless, the four infant burials below a temple at Springhead in Kent suggest the survival of sacrificial traditions into the Romano-British period (Woodward 1992 80) and the human infants found under a barrack block at the fortress at Reculver (Hutton 1991, 231), and the infant burial beneath the public baths at *Viroconium* (Wroxeter), (Merrified 1987, 52) raise the possibility of ritual burial. However, the site at Chapperton Down is domestic whereas that at Springhead is ritual, that at Reculver is military and that at Wroxeter civic, and the infants in all these cases may have died naturally.

Animal Bone, by C. Ingram

The mammalian remains consisted of 2, 019 fragments recovered by hand collection, almost half of which were identifiable to species (Table 6). In addition, 174 bones were recovered from an immature sheep burial and these are dealt with

Table 6: Animal bone: number of identified species

SPECIES	n	%
Horse	104	7
Cattle	348	23
Sheep *	362	23
Pig	39	3
Dog	11	1
Red deer	15	1
Hare	2	0
Water vole	1	0
Small rodent	2	0
Mole	1	0
Cf. stoat	1	0
Domestic fowl	2	0
Duck	1	0
Large Mammal	500	32
Medium Mammal	144	9
Small mammal	7	0
Bird	4	0
Unidentified	475	
TOTAL	2019	100

separately. Of the six elements which allowed sheep and goat to be differentiated all were attributed to sheep; ovicaprid remains are hereafter referred to as sheep.

Table 7 shows the proportion of bone affected by burning, canid gnawing and butchery. There was little evidence of burning although a few bones had been charred. A larger proportion of the assemblage (approximately a sixth) had been gnawed by canids, probably dogs. There was some evidence of butchery: two thirds of the butchered bone had been chopped and the remainder displayed knife marks. The majority of butchery marks, both cut and chop marks, were observed on cattle bones proving that a proportion of the meat in the community's diet was provided by cattle. This is likely to be a reflection of their large size and hence the need to reduce their carcasses to manageable units.

Table 7: Animal bone: taphonomy

TYPE	n	%
Burnt	7	1
Butchered	33	3
Gnawed	149	16
Loose teeth	274	29

Discussion of the animal bone data

The animal bone assemblage from Chapperton Down is composed primarily of domestic species. These are represented by elements derived from all

parts of the body, indicating that whole carcasses were initially present, although it cannot be shown whether animals were slaughtered on site or brought in as whole carcasses. The rural nature of the site and the presence of a few neonatal lambs favour the former.

A considerable proportion of cattle and the majority of sheep were slaughtered prior to skeletal maturity. These may have been surplus animals slaughtered for meat although it is also possible that they were slaughtered through necessity rather than choice. A larger proportion of cattle survived well into adulthood which suggests that they were primarily kept for secondary products such as milk and traction. The absence of bones belonging to young calves usually associated with a dairy economy may be due to the biased survival of porous young bone; alternatively it may reflect their disposal *via* trade. A few older sheep survived; these may have been kept for milk and/or wool. Recovery of several bones belonging to neonatal animals indicates that sheep were being bred at the site. A few pigs were kept to provide additional meat and were probably slaughtered as sub-adults.

Loose teeth comprised more than a quarter of the identified assemblage. Almost half of the sheep and 15% of the cattle remains comprised loose teeth, which suggests that the fragmentary nature of the assemblage is largely the result of post-depositional processes such as trampling. The larger proportion of loose teeth in the sheep remains compared with those of cattle suggests that bones of the smaller species had suffered the greatest fragmentation. The presence of these loose teeth in addition to several bird and small mammal bones indicates good rates of recovery during excavation.

Cattle

The calculation of MNE suggests that the cattle remains represent at least seven individuals. All parts of the body are represented, indicating that whole carcasses were initially present on the site. Epiphyseal fusion data suggest that cattle under two years were not being slaughtered and only a small proportion were slaughtered before three years of age. However, a large proportion was slaughtered between three and four years and over half survived to skeletal maturity.

Sheep

Sheep remains represent a minimum of twelve individuals. All parts of the body are represented, although long bone elements dominate. There is

also a lower proportion of extremities; in the case of phalanges this could be due to retrieval and survival bias, but the paucity of metapodials is more likely to indicate real absence. No very young (below one year) animals were slaughtered and a large proportion died between one and three and a half years. The evidence suggests that the majority of animals died after their second year and the dental evidence suggests that few survived as older adults.

Pig

Thirty-nine fragments represented a minimum of two pigs. All parts of the carcass are represented. One animal was less than two years old when slaughtered.

Horse

The calculation of MNI suggests at least five individuals. All parts of the skeleton were present including heads and feet. The majority of horses were aged between eight and fifteen years; only one animal was immature.

Dog

Eleven canid bones were recovered, and measurement of a proximal radius and a maxillary fragment suggests that at least one animal was similar in size to a modern labrador. A notable observation is the presence of parallel cut marks on the mid shaft of a radius. It may be that these marks indicate skinning, as a number of other Romano-British sites have produced such evidence. The corpus of work now accumulating on fragmented dog remains suggest that the exploitation of dog for meat and skin may be visible at a higher level than has been assumed so far, and that such consumption may be more common in the Romano-British period than previously thought.

Red deer

The recovery of several red deer bones derived from all parts of the body suggests that whole animals were brought back to the site as the result of occasional hunting pursuits.

Comparisons with contemporary sites

In recent years, several rural sites have been excavated in the vicinity of Salisbury Plain which have produced quantities of animal bone from the Later Romano-British period. These include Beach's Barn, Coombe Down, Chisenbury Warren (Powell *et al.* 1995), Butterfield Down (Egerton 1996) and Figheldean (Egerton *et al.* 1993). At all

of these sites cattle and sheep/goat dominate the assemblages although their relative proportions vary. At Chisenbury Warren and Butterfield Down cattle were secondary to sheep/goat whilst at Beach's Barn and Figheldean the reverse was observed. The relative proportions of these two species are often used as an indication of the relative Romanisation and status of rural settlements. King (1991) states that throughout the Romano-British period there is an increase in the numbers of cattle and pigs kept and a decrease in the numbers of sheep. The increasing emphasis on older animals is seen as indicative of the growing importance of milk and wool. In this respect, the sites in Salisbury Plain appear to vary. At all the sites studied, all parts of the carcass were present, suggesting that it was common practice for the complete carcass to be present on rural sites in the region. In accordance with the pattern proposed by King (1991) a large proportion of adult cattle is in evidence at Chapperton Down and Chisenbury Warren suggesting the maintenance of herd animals for secondary products. In contrast, at Coombe Down and at Butterfield Down it appears that the majority of cattle were killed for meat.

According to Maltby (1981), the general pattern of sheep mortality during the Romano-British period suggests that they were primarily exploited for meat. Few are slaughtered during their first year with a high kill off of second and third year animals. At Chapperton Down this trend is evident; the majority of sheep were slaughtered between two and four years of age. A few older animals survived which may have been kept for meat and/or wool. By contrast, at Chisenbury Warren, although a significant number were slaughtered below two years, the majority were mature suggesting that these were kept for wool and other secondary products rather than meat.

Horse is poorly represented in the Romano-British period and the skeletal remains of studies assembled suggest that most horses from this period were less than 14 hands high (Maltby 1981). At Chapperton Down horse is relatively numerous and the majority of animals were mature as would be expected in animals kept primarily for traction and transport. Butchery marks were in evidence, which may suggest that horsemeat was occasionally eaten, perhaps when animals became too old to work. King (1978) states that horses were generally kept to an old age and if eaten this was probably only on a casual basis after a young animal had died. In the Fens, large assemblages of horse bones and the presence of droveways and stock enclosures have been interpreted by King and others as evidence

of ranching. Although this is not apparent on Salisbury Plain, the relatively high proportion of horse remains found on some sites, coupled with the butchery evidence suggests that horse played a significant role in the economy of the region.

Palaeo-environmental data

A selection of bulk soil and snail samples from Chapperton Down were processed to examine palaeo-environmental potential (Table 8).

Table 8: Palaeo-environmental evidence

Sample	512	513	514	515	516	517	518
Context	85	85	85	85	84	84	84
Wt (g)	1000	1000	1000	1000	1000	1000	1000
<i>Pomatias elegans</i> (Müller)	+	+	-	-	1	1	-
<i>Carychium tridentatum</i> (Risso)	-	-	1	-	-	-	-
<i>Cochlicopa lubrica</i> (Müller)	-	-	-	-	1	2	1
<i>Cochlicopa</i> spp.	-	-	-	-	-	2	3
<i>Vertigo pygmaea</i> (Draparnaud)	-	-	1	-	1	19	5
<i>Vertigo</i> spp.	-	-	-	-	-	-	2
<i>Pupilla muscorum</i> (Linnaeus)	2	5	2	-	10	27	31
<i>Vallonia costata</i> (Müller)	2	-	1	1	20	50	21
<i>Vallonia excentrica</i> Sterki	2	-	1	2	15	85	32
<i>Vallonia</i> spp.	-	-	-	-	2	4	2
<i>Punctum pygmaeum</i> (Draparnaud)	-	-	-	-	3	15	4
<i>Vitrina pellucida</i> (Müller)	-	-	-	-	1	1	1
<i>Vitrea contracta</i> (Westerlund)	-	-	-	-	-	3	-
<i>Nesovitrina hammonis</i> (Ström)	-	-	-	1	2	15	2
<i>Aegopinella pura</i> (Alder)	-	-	-	-	-	2	-
<i>Aegopinella nitidula</i> (Draparnaud)	1	-	-	-	-	8	-
<i>Limacidae</i>	1	-	-	1	2	20	12
<i>Clausiliidae</i>	-	-	-	-	-	-	1
<i>Helicella italica</i> (Linnaeus)	1	2	-	5	4	16	4
<i>Trichia striolata</i> (C.Pfeiffer)	-	-	-	-	-	2	-

Table 8: continued

Sample	512	513	514	515	516	517	518
Context	85	85	85	85	84	84	84
Wt (g)	1000	1000	1000	1000	1000	1000	1000
<i>Trichia hispida</i> (Linnaeus)	+	-	2	1	13	87	8
<i>Cepaea hortensis</i> (Müller)	-	-	-	-	-	1	-
<i>Cepaea/Arianta</i> spp.	+	1	-	+	+	4	1
OSTRACODS							
<i>Eucypris cf clavata</i>			+	+			
<i>Eucypris</i> sp			+	+			
indeterminate		+					
Mollusc Taxa	6	3	6	6	12	17	13
MOLLUSC TOTAL	9	8	8	11	75	363	130

% Shade-loving species	11		12	9	8	13	5
% Intermediate species	11	12	25	18	23	32	19
% Open country species	78	88	63	73	69	55	75

Charred Plant Remains and Charcoal, by *J Ede* (charred plant remains) and *R Gale* (charcoal)

Charred grain fragments were recorded in most samples and a low number of charred weed seeds were observed in all of them (Table 9). Grain is present and the lack of chaff from all samples suggests that the crops were present in a processed form. Environmental data recorded from three samples of charcoal from Romano-British contexts identified trees and shrubs in the local landscape including alder (*Alnus*) from occupation horizon (16), Oak (*Quercus*), holly (*Ilex*), and hazel (*Corylus*) from occupation horizon (29). While insufficient charcoal was available to assess either the origin of the charcoal (i.e. hearths) or preferences in species

Table 9: Charcoal from Romano-British contexts

Key: h = heartwood

Feature	Context	Sample	<i>Alnus</i>	<i>Corylus</i>	<i>Ilex</i>	<i>Quercus</i>	Other
Layer	13	506	-	-	-	-	7 ?herbaceous dicotyledon stems
Layer	16	507	1	-	-	-	-
Layer	29	510	-	1	1	2h	-

selection, the identification of these taxa recorded both their use and their availability for use. The identification of alder, which prefers damper soils than the above, indicates that wetter areas were probably not far distant from the site. It is unlikely that these taxa represent the complete range of trees and shrubs in the vicinity.

Mollusca, by *J Athersuch*

The assemblages in the primary fill (85) of ditch (83)(Area B), contained eight species dominated by open country species. Surprisingly, ostracod valves were also noticed, possibly suggesting locally wet habitats in the ditch. The snail species from the upper fill (84) suggest that generally open conditions prevailed, but that some regeneration of longer grasses, shrubs and more shady conditions had occurred and no ostracods were present (Table 8).

Discussion

With reference to the known extent of upstanding earthworks at Chapperton Down (McOmish *et al.* 2000) the current excavation represents a small-scale investigation at the north-eastern periphery of the known Romano-British roadside settlement. With such a small sample area, temporal patterns of occupation and abandonment that define the settlement as a whole cannot be convincingly discerned. Nevertheless, the project has produced results that add to our understanding of Romano-British settlement on the SPTA. The site was poorly preserved but the excavation allowed the recovery of certain structural details of buildings, human burials, animal remains, a large and varied artefact and ecofact assemblage and a comparison of the elements of other SPTA settlements is presented in (Table 10).

Chapperton appears to represent a linear development along a routeway, consistent with several other sites, but contrasting to the pattern of more compact settlements west of the River Avon (McOmish *et al.* 2000). Evidence from a number of settlements points to the importance of water management systems. Presumably a readily available water source was a necessity on the chalk downland, and Chapperton conforms with

Table 10: Comparison with SPTA settlements

Settlement	Compact	Linear	Size	Water man' & ponds	Terraces	Platform/size	Date	Coin/s	Status	Cemetery
Knock Down West	✓			✓		60m ²	2-4th			
Knock Down East	✓									
Chapperton Down		✓	1km long	✓		25x15m	3-4th	✓		
Cheverell Down		✓		✓		✓				
Wadman's Coppice		✓	300m long	✓		✓				✓
Orcheston Down		✓	350m long	✓		35-60m ²	1-4th			
Charlton Down	✓		25ha 200 houses	✓	✓	50x40m	3-4th	✓	✓	
Upavon Down	✓		13 ha 30 houses	✓					✓	
Compton Down	✓		Family settlement		✓					
Coombe Down		✓	2ha		✓	✓			High	
Chisenbury Warren		✓	5ha		✓	30-45m ²	3-4th			
Worden's Down		✓					Late Roman			

this pattern. The presence of house platforms, terraces and enclosures at Chapperton is largely consistent with the design of the majority of other local settlements, although Chapperton appears to be of a lesser scale. Few sites of this type have high status indicators, and all extend into the 4th century, although others appear to begin earlier in the Roman period than Chapperton.

Area A has revealed a number of ditches that divided land into discrete units. The orientation of these ditches, north-south and east-west is parallel to the pattern of earthworks further south, and demonstrates a continuation of the spatial organisation of the settlement. Wide banks would also have been evident, and perhaps the bases of these survive as spreads of material that obscured earlier features. The lack of clarity is due to considerable subsequent disturbance that has destroyed earthworks that would otherwise have survived.

Within the ditched enclosures lay a series of structures, some with platform terraces, others with flint walls, and several with clay floors and occupation horizons. These buildings seemingly had timber-framed superstructures and stone tiled roofs. There is also evidence to suggest buildings of earth-fast timber post construction. A small amount of pitting is evident, together with larger pond-like features, probably connected with water management, as recorded at nearly all SPTA

settlements (McOmish *et al.* 2000). Pits in general are not organised in a way that suggests structured rubbish disposal, and it is more likely that middens would have been used to provide fertiliser for the local chalky soils.

Activities on site include grinding of grain and woodworking of timber for buildings and artefacts as evidenced by a file, chisel and two whetstones. Probable dairy production is indicated by the recovery of sherds with multiple perforations, strainers used for cheese production, and jars with everted rims which could represent dairy equipment. Faunal evidence shows the use of horse and cattle, no doubt for transportation and traction. Animal bone evidence also shows that the site functioned as part of the normal rural peasant economy with mixed farming. The presence of complete carcasses with few feet bones suggest that skinning and hide production may have been an important activity. The suggested skinning of dogs may also support the evidence for this activity.

The status of the settlement was relatively low with occasional coin loss probably relating to proximity to a routeway rather than an immediately local monetary economy. Three sherds of vessel glass and limited finewares indicate moderate aspirations towards wealth, but the samian dates to an earlier period and must be interpreted as residual material dumped or spread about the site during 3rd-century construction activities or manuring. The presence of

coins and quernstone fragments in non-local stone, in addition to certain pottery finds, attest to wider connections.

The ditch in Area B to the south of the main excavation is part of an extensive E-W linear earthwork visible for 6km. This bank and ditch earthwork is thought to date to the Iron Age (McOmish *et al.* 2002) and is likely to have functioned as a route way as well as a land division. At the point at which this feature crosses the route along which the Roman settlement is situated, is a large sub-circular hollow. McOmish *et al.* note that intersections of linear ditches on the SPTA repeatedly overlay significant hollows, which might be interpreted as meeting places communally recognised as significant (McOmish *et al.* 2002, 62). The section of ditch excavated in Area B lies approximately 100m west of the hollow and 100m east of further earthworks associated with the settlement (Figure 2). Four sherds of pottery dating to the 1st-4th centuries AD were recovered from its secondary fill in association with animal bone and flint fragments.

The dangers of drawing conclusions regarding the entire settlement are noted above, but there appears to be no Iron Age precursor to Romano-British occupation over the part of the Chapperton Down settlement subject to excavation. The few residual prehistoric sherds found, with a potential date range of Middle/Late Bronze Age through to the Early Iron Age, were all recovered from securely dated Romano-British features. This aspect contrasts with evidence from Chisenbury Warren (Bowen and Fowler 1966, 50-52 and Entwistle *et al.* 1994, 15) and Figheledean (Graham and Newman, 1993) which have later prehistoric precursors. The nature and date of prehistoric activity on Chapperton Down should form part of the objectives of any future work at the site.

Comparison with Chisenbury Warren and Figheledean shows apparent variance with regard to the date of origin of Romano-British occupation at Chapperton Down. Material of the 1st and 2nd centuries was widespread over a relatively large area at Chisenbury Warren (Entwistle *et al.* 1994, 15) and at Figheledean (Graham and Newman, 1993). At Chapperton Down, however, where few chronologically diagnostic vessel forms were recovered, material assigned to the 1st and 2nd centuries AD was derived from contexts securely dated to the 3rd and 4th centuries AD and is interpreted as residual being derived from the core of the settlement to the south-east where there was

settlement of earlier Roman date.

The excavated part of the Chapperton Down settlement can be readily compared in chronological terms to the Romano-British farmstead at Maddington Farm, Shrewton (McKinley and Heaton 1996, 44), where occupation is predominantly of the 3rd and 4th centuries AD. Alternatively, it is possible there was some occupation and activity in the excavation area during the 1st and 2nd centuries AD, which was lost in the remodelling of the area in the 3rd and 4th centuries AD leaving only a handful of residual artefacts to be retrieved. Such activities as these were recorded at Chisenbury Warren where earlier Roman pits were truncated by 3rd and 4th century AD cultivation when that settlement was remodelled (Entwistle *et al.* 1994, 14). Overall, however, Chapperton Down and Maddington Farm apparently fall outside the norm of Romano-British settlement on Salisbury Plain, where the majority of sites seemingly originate in the Iron Age (Graham and Newman 1993, 52).

It is possible to discuss the burial customs of the Chapperton community with reference to the excavated infant burials (see also McKinley above). It is not uncommon for infants under twelve months old to be buried outside formal cemeteries in the Romano-British period (Philpott 1991) and burials such as these in late Roman rural communities are quite common (Struck, 1993). The infants from Chapperton Down, however, appear to be situated within a domestic environment and with no identifiable evidence for religious ritual. The burial of infants may also be considered in terms of a construction rite. There is a considerable body of anthropological evidence, for example, for a wide variety of foundation rites in central and eastern Europe (Larionescu, nd) undertaken to ensure life and durability of structures - in order to endure the structure needed to receive a life. Human skeletons under the ramparts of Iron Age hill forts and at shrines including Uley and Maiden Castle have been interpreted as sacrificial foundation burials (Woodward 1992, 79).

A decline in traffic along the routeway at the end of the Roman may have led to settlements such as Chapperton Down eventually becoming marginal and not viable. An end to the settlement in the late 4th or early 5th century is feasible as no material remains later than the 4th century were recovered. Problems of recognising continued occupation beyond the Roman period are well known, although no chaff-tempered hand-made pottery of early medieval type was recovered from the site.

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The former thirteenth-century vault paintings of Salisbury Cathedral: new evidence from Lambeth Palace MS 2215

by Matthew M. Reeve

This note brings to light a hitherto unknown description of 1789 of the former thirteenth-century vault paintings of Salisbury Cathedral. Written by Richard Gough as part of his program to record the paintings prior to their destruction by James Wyatt, the description now provides new evidence for the form and content of the original cycle.

James Wyatt's "restorations" to Salisbury Cathedral are as famous for historians of Salisbury and late eighteenth-century architectural practice as they are infamous to historians of medieval art. In 1789, at the request of Bishop Shute Barrington (1782-91) and some members of the cathedral chapter, James Wyatt began to modernize the interior of the cathedral in order to bring it into line with late eighteenth-century aesthetic taste and liturgical function. His work involved the removal of the Beauchamp and Hungerford chantry chapels on either side of the Lady Chapel; the opening of the Lady Chapel to the choir by removing a Perpendicular screen and placing it on the inner walls of the chapel; the removal of the thirteenth-century choir screen, (which was set into the north transept), and the erection of a monumental organ screen in its place; the destruction of much of the stained glass from the cathedral, and the whitewashing of the cathedral vaults.¹ Current art-historical criticism (and much eighteenth-century antiquarian scholarship) has considered Wyatt's work among the most lamentable acts of destruction suffered by a medieval building in England or abroad.²

Fortunately, our knowledge of the polychromy of

the cathedral, and in particular the vault paintings, has been supplemented by a number of antiquarian sources: the beautiful sketches (London, Society of Antiquaries, MS 263) and finished drawings (Oxford, Bodleian MS Gough Maps) composed by Jacob Schnebbelie, draughtsman of the Society of Antiquaries, and his letters pertaining to the commission (London, Society of Antiquaries MS 267), as well as a handful of Victorian tracings of the original figures in the cycle and the former painted reredos in the north-east transept.³ These references help significantly to reconstruct the imagery in the cathedral interior; they also confirm that, despite Salisbury's status as an austere and minimal building with a quasi-exemplary status, it is one of the most densely and beautifully painted interiors of medieval Europe. In light of this, any new evidence for the paintings must be considered exceptionally valuable for our understanding of the medieval and post-medieval history of the cathedral interior.

This paper brings to light a further and hitherto overlooked source for the paintings: a first-hand description of the cycle written in 1789 by Richard Gough, director of the Society of Antiquaries. The description and drawings are closely related: Gough

was not only responsible for hiring Jacob Schnebbelie to record the cycle but he also collated Schnebbelie's drawings with his own notes and assembled a dossier on the Salisbury paintings. For historians of medieval art, Gough's description is valuable for two reasons. First, it unerringly agrees with Schnebbelie's drawings, providing firm confirmation of the latter's accuracy as a draughtsman and thus of the appearance of the medieval paintings. Second, the description illuminates several important aspects of the paintings that were not found in the finished drawings. Schnebbelie produced sheets of drawings that are highly accurate stylistically but were arranged in a tidy grid pattern that bore no (or little) relation to the original arrangement of the imagery; his images were intended to be located within the cycle by an accompanying plan of the cycle with an alphabetical key. For example, Gough's notes indicate that the Erythraean Sybil is shown to point directly to the image of Christ in the eastern crossing vault. The source for this narrative lies in the early Prophet Plays (the so-called *Ordo Prophetarum*), in which a number of clerical actors impersonate prophets and each communicate messages of Christ's First Coming.⁴ In the plays, as in the ceiling, the narrative draws to a close with the Erythraean Sybil who gestures toward Christ, thus confirming that the cycle is based in part on the *Ordo Prophetarum*.

Jacob Schnebbelie and Richard Gough travelled to Salisbury in 1789 to record the painted cycle. Typical of contemporary efforts to preserve and record medieval art, Schnebbelie and Gough were driven by news of Wyatt's plans for the impending destruction of the monuments. As Maria Grazia Lolla has recently shown, antiquarian endeavour in the late eighteenth century was frequently driven by the impending destruction of medieval works of art, thus justifying her view that the mode of antiquarian recording of monuments amounted to a veritable "ritual of preservation".⁵ Schnebbelie worked in haste over a period of three weeks to record the paintings in the sketches in Society of Antiquaries MS 267, prior to Wyatt's whitewashing the interior. Gough's concerns with Salisbury that year resulted in a new ground plan of the cathedral, a series of vitriolic letters to *The Gentleman's Magazine* regarding Wyatt's work, and the description of the cycle.⁶

Gough's description was recorded on eight sides of paper in his notebook. They are clearly his on-site notes which have not been worked up into a neat description for publication (although this was probably intended). The cycle must have been in remarkably fine condition when he recorded it,

since he was able to provide a reliable account of much of the iconography and able to record many of the texts, which he could only have seen from the floor level before scaffolding was erected by Wyatt. As Schnebbelie and Gough were in frequent communication over the project (as the many letters in London, Society of Antiquaries MS 267 show) and must have worked on site together, it is hardly surprising that their accounts of the cycle in their pictorial or textual forms are remarkably consistent. Upon receipt of Schnebbelie's drawings, Gough annotated his description accordingly in a thicker pen in the margins, providing a key to Schnebbelie's drawings and his own descriptions. Indeed, it seems likely that Gough provided Schnebbelie with a copy of his notes (with particular reference to the texts) while he was at work on the drawings and finished sketches, the latter being finally presented to Gough 29 March 1790, once the painted cycle had been fully covered.⁷ Schnebbelie's final drawings were intended to be engraved and published—presumably as a contribution to *Vetusta Monumenta*—but unfortunately the engraving was never executed.⁸

Transcription of Lambeth Palace MS 2215

In what follows Gough's spelling and orthography have been followed as carefully as possible. Where Gough omitted to reconstruct the texts and/or provide a scriptural reference, this has been done so in square brackets. Gough's original reconstructions of the texts are erroneous in places and have been corrected here.

f. 132r

Description of the Paintings on the Ceiling of the Choir etc of Salisbury Cathedral

In the centre compartment toward the east in our Saviour man oval seated on a kind of pedestal, his right hand pointing upwards, his left on his left knee holds a book open inscribed α & ω , Alpha and Omega. Round him in smaller rondeaux are the Evangelists without their symbols but their names on scrolls over their heads: Mathus, Lucas, Marcus, Johes. They are seated in chairs with high backs & writing at desks on a pillar and claw on which are placed books from whence hangs a label. On St Luke's book is written

- - - - -
- - - - FVD

- ----- ao
- ----- n/h us

[Quoniam quidem multi conati sunt ordinare]

In St John's In Principio [erat verbum]. Below them in the same division are six saints.

f. 132r

The eastern branch of the cross is occupied by the 12 months in small rondeaux, characterised as follows:

Januarius is an elderly man sitting between two casks a larger and small one ----- : on the larger stands a cup and on the smaller a flagon & he lifts up another to his lips.

Februarius is sitting on a pedestal seat under a roof & before a large fire and chimney, pulling off his halfboots and warming his feet: on his head a pointed hood.

Marcus is digging in a vineyard or orchard in a like hood and halfboots: at his feet lie two pickaxes.

April sits in a gayer attitude his head crowned with flowers holding two branches in his extended hands ----- habited on a marble seat---

Maius is mounted on a spotted horse holding a hawk on his right fist and turning his face and body toward the spectator.

Junius is cutting down weeds with two tools, a fork and a hook, in halfboots & a cap or bat on his head as practiced at present in Wilts.

Julius bare legged in a short coat & hood is mowing with a scythe.

Augustus in half boots & hat stoops to reap corn with a sickle.

133r

Septēb is sowing seed out of a basket: a sack and sundry by him.

October is represented by a man in a short jacket, halfboots & hood gathering grapes & giving a basketful to an older man treading them in a vat, his garments hitched up above his knees.

Novēb by a man with an axe knocking down hogs which come to another man who is scattering acorns out of his apron.

Decēb is a man rather gaily drest sitting behind a well spread table & holding in his right hand a cup & in his left a drinking horn: on the table is a gilt salt cellar, a bowl, knives, pieces of bread etc etc.

The Western branch is occupied by the prophets & other Old Testament worthies in the following order in large rondeaux, all holding scrolls with inscriptions in capitals.

Elizabeth with an angel below: a female figure in a mantle & hood holding a scroll whose letters are gone.

[Daniel] a man (name gone) bareheaded holding a scroll inscribed

Cum venerit scs scor --- it unct

[Cum venerit sanctus sanctorum cesabit unctio]

[Ordo Prophetarum]

133v

Ezechiel holds and points to

Converti: me: ad: ...ort. am...t...

[Convertit me ad portam domus] [Ezekiel 47:1]

Sibil [Erythraean Sybil] A woman with a close headdress under her chin holding in her left a scroll inscribed

Celo rex adveniet and pointing with her right to Christ.

[Celo rex adveniet (per secula futurus)] [Ordo Prophetarum]

----- name gone [Solomon]

Que est ista que a...noi...virg...fuus [Songs of Songs 3:6]

[Quia creatavit dominus novum super terram: fermina circumdabit virtum] [Jeremiah 31:22]

Zacharias [Q] in a cap of pyramidal folds holds out a scroll inscribed

Erit fons domini David patens

[In die illa erit fons patens domui David] [Zacharias 13:1]

David (drawing H) A king crowned holding a harp in his left hand and in his right a scroll inscribed Descendit sicut pluvia in vellus (Psalms 71:6) his mantle faced with miniver.

----- name gone

Abacuc holds a scroll in right and points to it with left across his breast. The inscription very imperfect

Am dio ---- nima --- x n nocens

[In medio duum animalium cognosceris] [Habbakuk,
Ordo Prophetarum]

----- name gone
----- ditto

Jonas (K) holds a scroll in left & points to it with
right
Ad huc tres dies & minime su
Vulgate aoblive quadraginta dies & nimive
subventur
[Adhuc quadraginta dies, et Nineve subvertetur]
[Jonah 3:4]

Micah bare headed has on his scroll
R.....oius..n....e min.u---
Micah IV.1 Preparatus domus domini virtute
montiur
[Et regnabit Dominus super eos in monte Sion]
[Micah 4:7]

Moyses is a fine expressive figure with horns holding
and pointing to a scroll inscribed
Profetam vobis suscutabit de frib' uri' (Deut
XVIII.15)
[Prophetam suscitabit vobis Dominus Deus vester
de fratribus vestris] [Acts 3:22]

Zacharias and father of the Baptist holds and points
to the following scroll
Benedictus dns de[us] Israel
[Benedictus Dominus Deus Israel] [Luke 1:68]

Amos to one with
Qui edificavit aeolo ascensi[onem suam] [Amos
9:6]

Abdias (N) points upwards with his left and in his
right hand holds the scroll
Ecce in ...te...er...obertisttes
2 Vulg Ecce parvulum sidite un gentibus:
confertabilis? In per vales
[Ecce in monte Sion erit salvation, et erit sanctus]
[Obadiah 1:17]

Malachias holds up with left hand & points with
right to his scroll
Ipse: [ignis] conflans: I : quasi [h]erba fullonū
Mala III.2
[Ipse enim quasi ignis conflans, et quasi herba
fullonum] [Malachias 3:2]

134r

----- name gone

Ysias (P) holds in right & points with left to a scroll

inscribed
Ecce Virgo concipiet et pariet filium [Isaiah 7:14]

Aggeus (O) holds in right & points with left to this
Veniet desideratus conctus gentibus Agg II.7 [Haggai
2.8]

The scrolls held by the 6 figures whose names are
effaced or imperfect are thus

[Simeon] Lumen ad [re]v[e]lacio[ne]m: gentium
[Luke 2.32]
[Lumen ad revelationem gentium]

[Balaam] Orietur stella ex Jacob [Numbers 24.17]

[Zephaniah] In igne [ze]li decorabi[tus omnium]
terre [Zephaniah 1.18]

Osee (R) holds and points to
Erit quasi vo[s Is]rael [isge] succinimabit?? Hos
XIV.5
[Ero quasi ros; Israel germinabit sicut lilium] [Hosea
14:6]

Nahum (R) Sol ortus est et avolaver'nt Nahum
III.17
[Sol ortus est, et avolaverunt] [Nahum 3:17]

Jo[el] [Effund]am or:spre:med:sup:oem:carne:et
pphetab[unt] Joel II.28
[Effundam spiritum meum super omnem carnem;
et prophetabunt filii vestri] [Joel 2:28]

These 24 figures are of different sizes, builds
and attitudes, and are overall well designed and
animated.

135r

Drawing S

In the centre under the Saviour are the 12 Apostles
in pairs in rondeaux 2 in each.

- 1 St Paul: with his sword & point downwards, a
book in his left hand on his lap
St James: his right on a book in his lap his left
pointing upwards
- 2 St Andrew: his right on a book on his lap: his
left pointing upwards
St Peter: his right obscure: a double key in his
left
- 3 St Philip: his right hand lifted up: his left h olds
a book
St James: his right holds a book: his left points
downwards
- 4 St Thomas: his right on a book in his lap: his

left pointing upwards

St Matthew: his right on his breast: his left on a book

- 5 (drawing T) St Simon: lifts up a book in his right & points with his left across his breast
St Jude holds up his right & in his left hand a book

f. 135v

The South and North transepts are adorned with each 24 angels in rondeaux holding in their hands crowns, hosts, chalices, palm branches, crescents, books, phials, scrolls, & one of them playing with a violin

Such is the general plan of this curious ceiling; the figures of which are as fresh & well preserved as when first laid on: tho' if the opinion of some good judges be admitted they are as old as the reign of Henry III [1216-72]. This will bring them to a period between the grotesques and ceiling of the nave of Peterboro Cathedral so well illustrated by Gov. Pownall⁹ and the paintings referred to in the Ely records cited by him p. 151-155. Should they be brought down to the right of Henry III's son and successor they will not disgrace the invention & taste of Cavallini to whom we are indebted for the admirable crosses erected to the memory of Edward I's Queen. They will serve as actual vindications of painters of Henry's reign from rudeness having furnished the historical paintings in our palaces & those of saints in our royal chapel.

NOTES

¹ The fullest account is W. Dodsworth, *A Guide to the Cathedral Church of Salisbury With a Particular Account of the Late Great Improvements Made Therein Under the Directions of James Wyatt Esq.* (London, 1792).

² For a discussion of the restorations and the contemporary opinions on them, see M. Reeve, "Jacob Schnebbelie, Draughtsman of the Society of Antiquaries (1760-92)", *Transactions of the Ancient Monuments Society* 51, in press (2007); J. Frew, "James Wyatt's Choir Screen at Salisbury Cathedral Reconsidered", *Architectural History* 27 (1984), 481-7; Idem, "Richard Gough, James Wyatt and Late Eighteenth-Century Preservation",

Journal of the Society of Architectural Historians 38 (1979), 366-74.

³ For an account of the vault paintings and their sources (with the exception of Lambeth Palace MS 2215, see M. Reeve "Mapping Space, Mapping Time: the Thirteenth-century Vault Paintings at Salisbury Cathedral", *Antiquaries Journal* 85 (2005), 57-102. The evidence for the painted reredos at Salisbury will be discussed in a forthcoming publication by the present author and David Park. The vault paintings and painted reredosses are discussed in greater detail in the author's forthcoming study *The Thirteenth-Century Wall Painting of Salisbury Cathedral: Art, Liturgy, and Reform*. (Suffolk: Boydell & Brewer, 2007)

⁴ I have explored this question elsewhere: see M. Reeve, "Art, Prophecy, and Drama in the Choir at Salisbury Cathedral in the Thirteenth Century", *Religion and the Arts* 10:1-2 (2006), 161-90. The precise arrangement of the images on the choir vaults is still unclear due to the presence of three different versions of the arrangement, including Gough's. On this problem, see F.R. Horlbeck, "The Vault Paintings of Salisbury Cathedral", *Antiquaries Journal* CXVII (1960), 116-30, at 120-5.

⁵ M. Grazia Lolla, "Ceci n'est pas un monument': Vetusta Monumenta and antiquarian aesthetics", in M. Myrone and L. Peltz (eds), *Producing the Past: Aspects of Antiquarian Culture and Practice 1700-1850*, (Ashgate, 1999), 15-33, at 20.

⁶ The letters have been discussed in Reeve "Jacob Schnebbelie"; Frew 1979; 1984. The plan is now Oxford, Bold. MS Gough Maps, v. 32, fol. 63. It is reproduced in S. Brown, *Sumptuously and Richly Adorn'd: The Decoration of Salisbury Cathedral*, (London, 1999), fig. 15.

⁷ SAL MS 267 f. 113.

⁸ In a letter dated 31 October 1789, Schnebbelie told Gough that he had 'no objection to their [the drawings] being exhibited in their present state, but it would be better certainly if they were finished and arranged in the same manner as on the Ceiling—they are too imperfect too [sic] be engraved in their present state". SAL MS 267, f. 91.

⁹ The reference here is to Gov. Pownall, "Observations on Ancient Painting in England", *Archaeologia* 9 (1789), 141-56, 141. On the Peterborough ceiling, see now P. Binski, "The Painted Nave Ceiling of Peterborough Abbey", in J. Backhouse (ed), *The English Medieval Cathedral: Essays in Honour of Pamela Tudor Craig*, (Harlaxton, 2004), 41-62.

Faith, Hope and Charity: urban collectivism in late Georgian Devizes

by *Lorna Haycock*

During the late eighteenth century, the commercial and market centre of Devizes enjoyed great prosperity, which is reflected in its fine Georgian architecture. Yet in common with many other towns, poverty co-existed with wealth. This paper examines the religious and philanthropic bonds which held the community together and the collective actions of the élite to deal with urban problems.

‘This present age may be called an age of humanity.’¹

Although Georgian society was essentially hierarchical, there were horizontal as well as vertical bonds linking the different classes in a chain of connections. One way in which different social and economic groups mingled and bonded was through their church. Although no single place of worship brought the whole community together, religion was the back-cloth against which many activities took place in Devizes. For Nonconformists, especially, their faith gave meaning and direction to their lives, bringing social and economic contacts, emphasising duty and stewardship, thrift and sobriety and providing opportunities for exercising responsibility denied them in the political sphere. Membership of a church or chapel gave security and identity, providing proof of personal probity and a helping hand in times of trouble; for many women, attendance at church services was their only public appearance. Religion has been described as ‘a social glue’.² On the whole, the eighteenth century in Devizes was a time of consolidation rather than rapid expansion for Nonconformity, and the dividing lines

between Established Church and Dissent remained fluid, with many Nonconformist sympathisers attending Anglican worship occasionally for social and political reasons, since it was commercially prudent and socially beneficial to mingle with the town’s élite.

Despite religious diversity, the Anglican church retained its wealth and authority, and by the provision of charity and by identifying with the ruling élite it was able to influence social behaviour. The late-eighteenth century Evangelical movement had an invigorating effect, with the growth of Sunday schools and the establishment of such bodies as The Society for the Suppression of Vice. The eighteenth century rise in land values increased the value of tithes and the 1,050 livings in the Lord Chancellor’s gift were often very wealthy. The Rectory of Devizes comprised the parishes of St. John and St. Mary in the archdeaconry and diocese of Salisbury. The living, which had long been in the Crown’s patronage, with a net annual value of £518 in 1831,³ was one of the richest in Wiltshire, there being only four others worth over £500. Details are set out below:

Table 1. Wiltshire Church Incomes 1831

Town	£ p.a.
Bradford-on-Avon	596
Calne	769
Chippenham	240
Devizes	518
Marlborough	100
Melksham/Seend	915
Salisbury	482
Trowbridge	600
Warminster	324
Westbury	238

Source: *The Clerical Guide and Ecclesiastical Directory 1836*, passim.

Both Devizes churches owned considerable charity property. St. John's sixteen leases were worth £278 p.a. and St. Mary's forty-four properties £750.⁴ The two parishes, with a population of 4,500, afforded church room for 2,150. Services were held at St. John's twice on Sunday and on three weekdays, with communion on the first Sunday in every other month and on other festivals, with an average of 80-90 communicants.⁵ At St. Mary's, one Sunday service was held, with worship on two weekdays and communion six times a year, with an average attendance of sixty. St. John's was thus among the 40% of parishes in Wiltshire holding two Sunday services, while both parishes were numbered in the 73% of parishes celebrating communion more than four times a year. Formal religion conformed to the existing order and the Anglican church was closely connected with the ruling élite. St. John's and St. Mary's each contained a mayoral pew, and the Corporation attended in state at the mayoral inauguration and on other celebratory occasions. A pluralist like most contemporary clergy, including nearly half of those in Wiltshire, the Rev. Edward Innes, Rector from 1774 to 1788, and described on his memorial as 'diligent, pious and unaffectedly devout', was also Rector of Stockton in south-east Wiltshire, Canon of Netheravon six miles north of Amesbury, and domestic chaplain to the 4th Earl of Dunmore. Innes was well-connected, being a member of the Duke of Roxburghe's family, and had married the niece of the previous Rector, William Wells, whom he had served as curate. The Rev. James Lediard, Balliol graduate and son of a Bristol merchant, was Rector from 1789 to 1833. He was a prominent member of local societies, a freemason and a turnpike trustee, and mixed freely with the local élite, thus illustrating a contemporary view that the clergy aimed to

'frequent and shine in all public places'.⁶ Despite their affinities with Dissenting congregations, leading burgesses, such as James Sutton, William Salmon, Wadham Locke, James Gent and Samuel Tayler, acted as churchwardens and contributed to the repair of St. John's organ in 1790.⁷ On becoming Devizes M.P. in 1747, William Willy presented two of St. John's church bells, cast by local bell founder James Burroughs⁸ and monuments testifying to the piety and good works of local *prominenti* adorn the churches' interiors. Draper Thomas Thurman, as well as subscribing to the S.P.C.K.,⁹ financed a new altar piece and the embellishment of the chancel in St. John's.¹⁰ Several wealthy residents also subscribed to the improvement of Salisbury Cathedral,¹¹ so the diocesan link and the church hierarchy were clearly appreciated.

Local churchwardens were conscious of their responsibilities and jealous of their church's rights. They regularly reported the necessity for repairs to church windows, gates and roofs. In a letter to Mr Elderton of Salisbury they complained that a Visitation to bring in the new wardens was overdue – 'unless you appoint some very early Period for the Purpose ...we shall think it our Duty to make a serious Enquiry'.¹² The Church, however, was concerned with wider issues, emphasising its special position in the State and its concern with moral and ethical values. As part of the establishment, the Bishop of Salisbury considered it his duty to 'render the people good Subjects and good Men',¹³ particularly apposite during the Napoleonic Wars. The Rev. Charles Daubeney of North Bradley stressed the 'intimate connexion subsisting between religion and Government ... the good Christian and good Citizen are but two parts of that undivided character...the perfect man of God'.¹⁴ Although the clergy eschewed 'that most horrible of all vices called zeal',¹⁵ many sermons were published to disseminate the Anglican message against the nonconformist advance. Bishop Barrington advised his clergy to study the Scriptures rather than succumb to amusements and an expensive lifestyle.¹⁶ The incumbent should be 'spiritual director, adviser and friend'.¹⁷ But the role of the Established Church extended beyond the realms of morals and piety. The parish was not only the basis of local government and poor relief but also of social control; the church was guardian of the status quo and religion a stabilising factor. Robert Southey recognised this pseudo-political role, claiming that the Established religion had 'been divested both of its spirit and substance'.¹⁸

Doctrinal rectitude was less important than social conformity and Lediard admitted that 'some...who profess themselves of the Church go sometimes to the Independent meeting'.¹⁹

Dissenters formed significant groups in the central and west Wiltshire cloth-making towns. Nonconformists, legally excluded from universities, civil and military office, directed their attention to commerce and industry, where thrift and probity underpinned their trading concerns. Following the national pattern of increasing registration of Dissenting places of worship, certificates were registered between 1672 and 1809 for four Quaker, four Methodist, three Independent and two Presbyterian meeting houses in Devizes.²⁰ The Compton Census of 1676 listed 592 Conformists in the town and 84 Nonconformists,²¹ although in 1669, the Bishop of Salisbury reported to Archbishop Sheldon that there were between 230 and 250 Dissenters in Devizes, of whom 60 to 80 were Baptists. The following year he urged the Justices to suppress the 'great and outrageous meetings' in the town, although they assured him that they could find no evidence for such unruly assemblies.²² Worshipping since the Civil War in private houses, Baptists flourished in the late seventeenth century under the patronage of local gentry such as Sir John Eyles, who gave them the lease of a house in the Brittox, and wealthy traders such as the Ansties, Powells and Webbs. A return by minister Nathaniel Chauncey in 1717 claimed a congregation of 300, but this seems an artificially rounded figure.²³ Aristocratic and wealthy Baptist patrons became less numerous in the eighteenth century and there was some erosion of support, perhaps because of a reduced threat. A 1780 membership list named 36 men and 52 women; twelve years later, after some secessions to the Presbyterians, the numbers were down to 23 men and 21 women, and in 1816, pews were rented by 46 men and 7 women.²⁴ Many Baptist members do not figure in trade or local government records, so occupational classification is difficult, but a number of small shopkeepers and artisans, such as shoemakers, ironmongers, tailors and weavers, are known from casual references to have belonged to the church.

By contrast, the Presbyterians included a greater proportion of high status traders and gentry. The presence of ejected ministers in the town after the Restoration led to the establishment of a Presbyterian meeting house and congregation. Few records of the Devizes Presbyterian Church survive for the period 1690 to 1770, though many

leading families, such as the Suttons, Thurmans and Collinses were Presbyterian sympathisers. In the mid-eighteenth century, George Heathcote and John Eyles junior attended Anglican worship in the morning and the Presbyterian chapel in the evening,²⁵ thus combining a public career with occasional conformity. Presbyterianism was clearly respectable and associated with the Hanoverian régime, but it was affected by contemporary heresies. Later in the century the Unitarian controversy led to a group of Baptists, including educated and reputable traders such as the Hilliers, Knights and Ansties, seceding to unite with the Presbyterians in 1796, calling themselves 'The United Society'. They met together for worship, though holding separate communion until 1807. Their new minister James Biggs, before training at the Bristol Baptist Academy, had come to Trowbridge to study the cloth trade; it seems likely that he thus became known to clothier John Anstie, one of the signatories to the invitation to become their pastor. Biggs had also married the sister of Devizes upholsterer Richard Knight. Gradually, Presbyterianism became absorbed by these more progressive Baptists, and not by the Congregationalists as in other communities, such as Bradford-on-Avon, Malmesbury, Trowbridge and Warminster.

In the last quarter of the eighteenth century, the Congregational Church, which grew out of Evangelical Anglicanism, became established in the town after the preaching tours of Rowland Hill.²⁶ In 1773 ironmonger William Swan's house in New Park Street was licensed as a meeting house.²⁷ Three years later a chapel was opened for Calvinistic Methodist worship and enlarged in 1790 to provide a seating capacity of 450, a sign of the congregation's expansion. Members included prominent professionals and traders, such as the Filkeses, Leaches, Lockes, Slopers and Waylens. An indication of the large infusion of Anglicanism was the trust deed's stipulation that preachers should have freedom to wear the surplice. Dissent was also revitalised by the advent of Wesleyan Methodism. After initial fierce obstruction on the Wesleys' early visits to Devizes in the 1740s, when local mobs were incited to attack the visitors by High Church curate Edward Innes and wealthy clothier Prince Sutton, a small Wesleyan group began to meet in a room behind John Cheater's weaving shop in Sheep Street, numbering 37 in 1757, largely smaller traders and artisans,²⁸ and according to the Rector 'very few, if any, of better rank'.²⁹ But their numbers increased sufficiently to warrant the opening of a

new chapel in 1819.

Although less numerous than the 50-strong Melksham group, a Quaker community had existed in Devizes since the mid-seventeenth century, with their own burial ground at Hillworth on the town's outskirts. In 1647 they acquired two tenements on the Green as a meeting place,³⁰ replacing them with a High Street meeting house in 1702.³¹ A map drawn by John Fry in 1737 showed that eleven meetings were held a year³² but Quaker numbers waned in the early eighteenth century, reviving in the 1770s when increased use of the meeting house necessitated repairs costing £30 in 1778.³³ Prominent among new members were the Gilkes family of clockmakers and the farming Powells of Nursted. William Powell, who served as an elder, was the mainstay of the Devizes group, winter meetings even being held at his house in 1819 to save expense on heating the hall. As a member of the Gloucestershire and Wiltshire General Committee, he was responsible for property and finance, and his three wives were all ministers of the church. His dominant influence is illustrated by the fact that when the Powells left Devizes in 1824, meetings for worship were discontinued.

Numbering 33 members in 1790, some descended from seventeenth-century ancestors imprisoned for their beliefs, the Quaker community ranged right across the economic spectrum, including wealthy bankers and brewers the Tylees, surgeon Francis Riley, lawyer Francis Bayley, cabinet maker John Pinnock, brickmaker Robert West and baker Thomas Neaves. The Friends, recognisable by their sober dress and plain speech, were a close knit and mutually supportive group. Quaker visitors came to Devizes from London, Bath, Kent and Shropshire. On 28 January 1799 George Sloper noted 'A Quaker woman from North America spoke and preached up in the Town Hall in the evening'.³⁴ Friends normally married within their faith. The mother of yeoman Samuel Capper, a tenant of William Powell, was a niece of Joseph Fry of Bristol, who became one of the Trustees of the Devizes Meeting House, and Devizes baker Thomas Rose married Mary Fry of Bath.³⁵ As so often happened, however, when Quakers grew rich, the sons and daughters of John Tylee married out of the faith, despite visits from three ministers to dissuade them. Tylee, although a Trustee, did not play an active role in the church, concentrating instead on his business interests, which probably benefited from Quaker investment. Friends could not hold public or professional office or attend university, but most Quakers prospered

in trade, which offered them security and a sense of public service. Their emphasis on the prompt payment of debts gave them a high credit rating and their rejection of primogeniture meant that family fortunes could not be wasted by a spendthrift. Quaker industry and frugality ensured the steady accumulation of wealth while marriage links provided an efficient contact network. Charities set up in the early eighteenth century for the benefit of poor Friends in Devizes were no longer used by the end of the century, having a surplus of £55 11s. 8d.³⁶ 'Due care' was taken for the 'educating of their offspring in the Way of Truth'; eight guineas were allowed for Joseph Neaves' board at Ackworth School in Yorkshire.³⁷ Ethical principles remained constant. Quakers condemned gambling, drinking, hunting and shooting: 'let our leisure be employed in serving our neighbours and not in destroying the creatures of God for our amusement'.³⁸ Their pacifism led the Quakers to disown three members, including bankers Charles and Thomas Tylee, who joined the militia in 1803, and their distinctive trading ideals made them disavow one of their number, mealman and maltster John Neaves, who had run into debt through relying on paper credit.

At the other end of the religious spectrum, Roman Catholicism made little impact in Devizes. The Compton Census of 1676 listed 228 Papists in Wiltshire, the majority centred round Stourton and Wardour in the south of the county. In his Visitation replies in 1783, the Rector of Devizes reported no Papists in Devizes, though five were listed in St. Mary's parish in 1767 and four in 1780.³⁹ Of these, sixty-year old cabinet maker Gabriel Cruse, his wife and niece were connected with an old namesake Catholic family in Wootton Bassett, north Wiltshire. Gabriel was the son of Francis and Anne Cruse who appeared liable to Papist fines in the Anglican return of 1706.⁴⁰ There was considerable prejudice in Devizes against Catholics. In 1807 the Corporation addressed the King thanking him for resisting the removal of Catholic disabilities and his 'inflexible adherence to those sacred principles which established your Majesty's illustrious Family to the throne of this Kingdom'.⁴¹ Protestant Nonconformity was the greater challenge to the Established Church in the north and west Wiltshire clothing towns. Excluded from national politics, Dissenters became an increasingly vocal force, promoting the repeal of the Test and Corporation Acts and the anti-slavery campaign. Close relationships in trade and society and their support for the Government during the

French Revolution prevented a backlash against Devizes Dissenters. Leading individuals of mixed religions worked together on the Committee of the Wiltshire Auxiliary of the British and Foreign Bible Society, the Quaker Tylee brothers co-operating with Baptist Richard Knight, Congregationalists Robert Waylen and Wadham Locke and Anglicans William Salmon and William Hughes.⁴² A new pluralism and sense of communal responsibility overlaid past religious bitterness; religion now provided a network of links and contacts and a context in which philanthropy and Christian charity could flourish. There were, of course, many residents who did not attend any church. In the 1801 Census, it was found that only one tenth of the population took Easter communion. The Rev. Lediard admitted that 'it cannot be ascertained who commonly absent themselves from all public worship of God'.⁴³ But many of these would have contact with Christian principles through moral tracts and reading aloud from the Bible. Despite their lack of formal worship they lived within a framework of religious values. Apart from rowdy attacks on the Wesleyans in 1747, the picture is one of tolerant co-existence, though Anglican and Dissenting children were still segregated at the Coronation celebrations in 1821.⁴⁴

In a sermon preached at Abingdon in 1795, Baptist minister James Biggs declared that, 'Man's religion can never be true which does not make him a better member of Society'.⁴⁵ Late eighteenth-century sermons stressed the debt owed by the rich to the poor and Devizes was notable for its philanthropy and sense of social duty. Through the Overseers of the Poor, St John's and St. Mary's parishes were involved in administering the town's voluntary charities, including those of the Nonconformists. Devizes was extremely well-endowed with charities, as Table 2 shows, coming second after Salisbury and far exceeding other Wiltshire towns, a sign of the town's prosperity.

The benevolence of former residents or visitors had occasioned some sixty bequests from the sixteenth century onwards, providing the poor with shirts, coats, blankets, coal, bread and money payments. In 1774 Thomas Bancroft of Bristol bequeathed £500 to provide poor Presbyterian men with money in the Spring and blue cloth coats in the Autumn. For two centuries until 1802, the Corporation had paid 'Coventry's Dole', the legacy of a poor weaver befriended in Devizes who subsequently made a fortune in Coventry. Two men went round the town annually, distributing a penny

Table 2. Charities in Wiltshire Towns in the early nineteenth century.

Town	Population 1801	Number of Charities	% of county
Bradford-on-Avon*	7,302	13	4
Calne	3,767	14	4
Chippenham	3,366	15	5
Cricklade	1,333	9	3
Devizes	4,747	60	19
Highworth	1,493	18	6
Malmesbury	1,491	11	3
Marlborough	2,367	15	5
Melksham	4,030	4	1
Salisbury	7,668	90	28
Swindon	1,198	10	3
Trowbridge	5,799	20	6
Warminster	4,932	16	5
Westbury	1,837	8	3
Wilton	2,144	11	3
Wootton Bassett	1,244	5	2
Total	54,718	319	

* Includes South Wraxall, Atworth, Holt, Leigh and Winsley

Source: *Reports of the Commissioners...to enquire concerning Charities 1819-1837* (1839), passim

loaf to every townsman and a two-penny loaf to travellers. The great burden of poor relief, however, was borne by the parish ratepayers, who also had to act as unpaid poor law officers. P. Colquhoun calculated in 1806 that one third of all households paid the Poor Rate.⁴⁶ The more vulnerable members of society were at the mercy of the weather, trade slumps, bad harvests and economic changes. A writer in 1833 claimed that 'without poor laws, the great bulk of society must remain in a state of hopeless and irreclaimable misery'.⁴⁷ In Devizes, as in most other towns, poverty and squalor co-existed with affluence in the late eighteenth and early nineteenth centuries, and the responsibility of supporting the poor became increasingly arduous.

A Survey of the Poor of St. Mary's parish taken on 24 March 1802 found that over the preceding two years ordinary relief had been regularly granted to 160 households, ranging from 1 to 9 persons. In addition, seven bastards were supported by the parish. The poor included widows, orphans, the sick, the disabled, wage-earners with families and small craftsmen affected by economic difficulties, as Table 3 shows :

Table 3. St. Mary's Ordinary Relief 1800-1802

Households	160
Widows	24 (11 working)
Soldiers' families	11
Disabled	11
Deserted families	2
Orphans	2
Families	40
Aged	17
Single Women	36 (26 working)
Single Mothers	14
Unknown status	3

Source: WRO, 543/22, Survey of St Mary's Poor 1800-1802.

Although seventeen male heads of households were unemployed, few men retired until they were forced to do so by incapacity. The working class, with no opportunity to save, depended on poor relief in their old age and the seventeenth-century ballad 'Hang-care, the parish is bound to save us' reflects this attitude. Eleven men were still working over the age of 60 in St Mary's parish, including a scribbler and a tobacco cutter, both aged 75. The chief male recipients of relief were in the clothing trade, scribblers, spinners and weavers (ten) or labourers (six). Women's occupations were predominantly washing (thirteen) and the cloth trade, spinning, weaving, winding and warping (thirty six). Weekly earnings ranged from 1s. for a washerwoman to 18s. for a wheelwright and a broad weaver, with 7 and 4 children respectively to support. Children could supplement the family income by bird-scaring, child care or quilling, so helping to pay the rents, which varied between 4*d.* and 2s. 2½*d.*

Weekly ordinary payments ranged from 6*d.* for an eighteen-year old single woman to 7*s.* for a family of four orphans aged between four and fourteen. One third of the families relieved were involved in the cloth trade, a result of the collapse of John Anstie's business and the introduction of machinery. Sir Frederick Eden revealed the effect of mechanisation on the village of Seend, four miles from Devizes:

The labouring poor are very dependent on the neighbouring towns where the cloth manufacture is carried on; but unfortunately since the introduction of machinery hand spinning has fallen into disuse.⁴⁸

The basis of the town's economy was shifting. Whereas a writer after the 1739 Wiltshire weavers' riots had described the clothier as 'the Sun who

scatters Life and Support to every one around him',⁴⁹ now that guarantee of work was slipping away, and life in the clothing trade was becoming precarious. Travelling through the Hampshire Avon valley in 1826, Cobbett noted the decline of spinning and carding work for women and children: 'it is now wholly gone and this has made a vast change in the condition of the people'.⁵⁰ Whereas spinners used to receive 1s. to 1s. 2*d.* per pound, now they received 5*d.* Food absorbed 60 to 70% of their income, including some 33% spent on bread,⁵¹ while rent accounted for between 10 and 20%.⁵²

Although there were specific factors pertaining to Devizes, general economic forces also affected the working class who until 1795 had in varying degrees benefited from increased business growth, as evidenced by contemporary pamphleteers' criticism of their purchase of tea, sugar and wheaten bread. Britain had ceased to be self-sufficient in grain by the second half of the eighteenth century and imports increased in 1796. A series of bad harvests and the inflationary effects of the war led to rising wheat prices and a doubling of the cost of living between 1795 and 1800, so that fewer families could now afford to eat wheaten bread. Henry Hunt noted how 'the poor man, from the very first year of the war, began to feel the cruel effects of high prices'.⁵³ There were only three abundant harvests between 1793 and 1818. The average price of wheat per quarter almost doubled in thirty years, from 47*s.* in 1783 to 92*s.* in 1813; in 1812 it reached 126*s.* compared with 30*s.* in the 1750s.⁵⁴ With prices as high as this, half a working class budget might be spent on bread. Such was the local scarcity in 1800 that each Devizes person was restricted to one quarter loaf a week and the consumption of pastry was forbidden.⁵⁵ A year later Devizes Corporation took the unusual step of giving £50 to a poor relief fund because of 'the enormous price of provisions'.⁵⁶ Wages failed to keep pace with food prices, falling between 1799 and 1800 to their seventh lowest level in the period 1541-1871 and their fourth lowest between 1800 and 1801.⁵⁷ Sir Frederick Eden commented 'the present dear times are very severely felt by all families'.⁵⁸ A series of hard winters exacerbated the problem and the expenditure on poor relief in Devizes mirrored frequent food crises. In his diary in 1803, William Cunnington commented on the high price of cheese and the shortage of potatoes after the recent drought⁵⁹ and it was noted in 1795 that 'the severity of the winter has also necessarily advanced the price of butcher meat, butter and cheese'.⁶⁰ The Government advocated alternative

sources of nourishment and the 'greatest Economy and Frugality in the use of every Species of Grain', but working class dependence on bread as a complete food needing no preparation was hard to break.⁶¹

Other factors added to subsistence difficulties. People often experienced changes of condition in their lives and Defoe distinguished between the poverty of inheritance and the poverty of disaster.⁶² Although women and children's wages could boost family incomes, the decline of living-in apprenticeships strained family budgets, and childbirth, sickness and old age could cause disaster. Indirect taxes hit the poor hard so that many were living just above the bread line, and due to the high death rate there were many orphaned children. Expenditure on the poor in St. James's chapelry is shown below:

Table 4. Expenditure on the Poor, St. James's chapelry 1780-1805

Date	£	s.	d.
1780-1	286	7	2½
1784-5	453	0	2½
1788-9	352	7	5¾
1792-3	333	9	5
1793-4	549	2	7½
1795-6	1,144	4	4
1796-7	1,011	0	5¾
1799-1800	1,186	10	9
1801-2	1,026	11	11
1802-3	1,721	6	0
1803-4	948	7	0½
1804-5	466	12	4½

Source: WRO, 594/69, St. James's Overseers of the Poor accounts 1778-1806.

Poor relief peaked in the severe winter of 1784-5 and also in the years 1795-1800 when poor harvests were compounded by cold winters. Between 1801 and 1804 high wheat prices resulted from several seasons of drought, but there was a noticeable fall in expenditure in 1804-5 when there was a good harvest. The figures for Devizes over a period of twenty years mirror the national rise in poor law expenditure, from £2 million in 1786 to £4.2 million in 1803. In Wiltshire generally the sums expended on the poor increased almost nine-fold during the period 1759-1820, as Table 5 shows.

Only seven English counties had a higher total than Wiltshire in 1803 - Essex, Kent, Middlesex, Norfolk, Surrey, Sussex and the West Riding of Yorkshire.

Table 5. Poor Law expenditure in Wiltshire 1759-1820

Date	Amount
1759	£ 22, 938
1776	£ 52, 714
1803	£128, 635
1815	£137, 626
1820	£188, 808

Source: J.Wade, *History of the Middle and Working Classes* (1833), p. 561

In St. John's parish, Devizes, wartime poor law expenditure rose to unprecedented levels, with the rise in the price of bread and the burden of supporting militia men's families and illegitimate children, whose numbers rose to 32 in 1816, and who accounted for 10% of total payments in 1818. The St. John's Poor Rate in 1803 was 19s. 6d in the £, the highest in the whole of Wiltshire; in St. Mary's it was 15s. 6d in the £. The nearest comparable rate in the county was 16s. 6d in another cloth town, Trowbridge. St. John's poor law expenditure is tabulated below:

Table 6. St. John's Poor Law Expenditure 1800-1813

Date	£	s.	d.
1800	1,649	6	11½
1805	1,612	19	11
1811	1,905	19	6½
1813	1,952	17	8¾

Source: WRO, 632/111, St. John's Overseers of the Poor accounts 1805-1813.

In 1803 outdoor relief in Devizes amounted to £2,848 5s. 11d., the greatest sum in the county after Westbury. St. John's bore the largest burden, with a high number of elderly and juvenile poor, and greater expenditure on ordinary payments, shown in Table 7:

Table 7. Numbers of people in receipt of relief in the three Devizes areas 1803

	Occasional Relief	Regular Relief	Over 60	Under 14	Total
St. James's	135	55	29	155	374
St. John's	30	299	72	206	607
St Mary's	82	88	41	104	315
Total:	247	442	142	465	1,296

Source: *Abstract of Returns relative to the Expence and Maintenance of the Poor 1803*, p. 570.

Poor relief was interpreted in a liberal sense, extraordinary expenditure covering items such as a new well rope and 'restoring a woman's sight', as well as allowing '2s. to a stranger, a native of Russia' in 1779 and ten years later '2s.6d to an American family in distress'. In 1795, a carpenter was allowed £1 11s. 6d. to redeem his tools from the pawnbroker⁶³ and a horse and gig were provided to take a woman to Bath Hospital.⁶⁴

Funeral expenses, confinements, washing, nursing, bedding and inoculation against smallpox all feature in the Overseers of the Poor accounts, inoculation probably being a cheaper alternative to looking after the infected poor. Pauper orphans were apprenticed in Devizes or neighbouring towns, six-sevenths of them in the clothing trade, though some were sent further afield. One was apprenticed to a London tailor in 1778, another to a Berkshire cordwainer in 1814.⁶⁵ Conversely paupers were contracted out from other counties. Benjamin Webb Anstie was paid £1 10s. for employing E. Ellen of Portsmouth for thirty weeks at the beginning of 1798.⁶⁶ Payments were made to Devizes town school and also to dame schools, of which there were at least 10 in the period 1795-1797. While attendance varied from 6 weeks to half a year, as economic circumstances allowed, it is clear that the Overseers would not countenance fraud. St. Mary's sexton Mary Lewis was allowed 2s. a week to look after her infirm mother and her brother 'in all proper and necessary Victuals, Drink and clothing, sufficient for them in their condition of life', but the Overseers emphasised that if she harboured her two able-bodied brothers, she would incur 'the Displeasure of the Vestry'.⁶⁷

The Old Poor Law was, nevertheless, a generous and flexible system, providing employment as well as relief. St. John's and St. Mary's had always maintained separate poor houses, but in 1799, because of the rise in pauperism through repeated economic crises, it was decided to buy John Anstie's old factory to use as a joint workhouse⁶⁸ where 'the poor are provided with bread, lodging and clothing and have work supplied, for which they receive a limited allowance'.⁶⁹ Pending the sale of Anstie's property, the building afforded a large space, accommodating up to a hundred, in which to deal with the growing problem of the destitute able-bodied poor.⁷⁰ However, the experiment lasted only the three years minimum stipulated in the original agreement, possibly because the more affluent St. John's parish was bearing the brunt of the cost.⁷¹ In 1802 both parishes removed their poor, dividing

the goods and stock in the ratio of two thirds to St. John's and one third to St. Mary's. This change of policy contributed to the escalation of poor law expenditure in 1802-1803, by increasing the amount of outdoor relief. Land on the town's eastern outskirts, known as Newtown, was purchased by St. Mary's parish to build a poor house, and St. John's moved their paupers to the old Eyles almshouse in Short Street.

Besides official charities, there were instances of more informal benevolence. In his will in 1778, armigerous linen draper Thomas Thurman left £1,000 to the working people of Devizes who were not paupers. After the names of all journeymen and their dependants were listed, it was found that every man, woman and child would receive at least half a guinea; some families received £5 or £6, which, according to Thurman's executor James Sutton, caused 'cheerful faces among small tradesmen.'⁷² He also left 'a very large sum' to educate and clothe 15 poor children for three years for ever, one guinea to every person in the almshouse and £50 to the poor of Devizes 'to whom he had always been good'. In 1784 Mayor Samuel Adlam gave away faggots to the poor⁷³ and twelve years later Dr Spalding, snuffmaker Benjamin Webb Anstie, upholsterer Richard Knight and draper Robert Bruges, among others, loaned sums of up to £50 to equip the workhouse.⁷⁴ During the bad winter of 1784, it was reported that 'the sufferings of the poor have been greatly alleviated during the late inclement season by the benevolent assistance of many gentlemen and manufacturers'.⁷⁵ When one of his labourers fell off his horse, breaking his shoulder blade, clothier John Anstie, mindful of the man's sick wife and four children, took on the eldest boy as an apprentice in 1788.⁷⁶ Stephen Hillman had evidently given £10 to Mary Amor, perhaps a former servant, for which she expressed 'a thousand thanks ... Honoured Sir, you are a kind friend to me in my old age, you are the saving of my life'.⁷⁷

'The Poor' constituted the most serious problem of the eighteenth century, provoking growing debate about the potential threat to the stability of society. The multiplication of the lower orders through improved food supply and the lessening of major epidemics, as well as the increasing economic class gap, made 'the poor' an object of concern and fear for the élite. The contemporary view of the labouring class was that they did not contribute in any positive way to the country's wealth, though the need for a plentiful supply of cheap labour was recognised as necessary for a favourable balance of trade.

Contribution to poor relief was regarded as an unpleasant duty and dependence on it a disgrace. Thomas Malthus warned of population outstripping resources and figures such as Edmund Burke and Arthur Young examined the question of scarcity. Recognition of the growing problem of poverty and unemployment at the end of the century was symbolised by the foundation in 1796 of the Society for Bettering the Condition of the Poor and the production a year later of Sir Frederick Eden's three-volume survey of the poor. Although the tradition of passive almsgiving continued, the system came under increasing strain and the late eighteenth century witnessed a new trend towards practical assistance through apprenticeships, education and contributory organisations to encourage thrift, self-reliance and personal esteem. Contemporaries judged the poor law on cost rather than efficacy. The great output of pamphlets in the 1790s and the post-war years, when ratepayers were shouldering an increasing burden of poor relief as well as heavy taxation, stressed the necessity that the poor should be independent. A 1763 pamphlet published in Salisbury advocated that the poor 'instead of being wholly supported by the public, may contribute to the support, assistance and relief mutually of each other and be of some advantage to the community, to which they have only been hitherto a heavy and grievous burthen'.⁷⁸ The Rev John Skinner, Vicar of Camerton in Somerset, feared that the Poor Law checked that 'natural affection which ought to bind a human creature ... to his kindred' and that it provided 'an excuse to the ill-disposed and self-interested for not performing the duties which are required of them'.⁷⁹ William Cobbett criticised the 'comforting' system, which implied interference on one side and dependence on the other,⁸⁰ while the Reverend Joseph Townsend advocated the abolition of outdoor relief and the compulsory establishment of Friendly Societies.⁸¹ Asserting that 'a crisis seems to have appeared', Patrick Colquhoun thought the way to help the poor was to promote provident habits, 'to lead the poor, by gentle and practicable means, into the way of helping themselves'.⁸² Moralists fulminated against the corrupting effect on the poor of society's consumerism and extravagance. Arthur Young censured the poor for their idleness, acquisitiveness and their consumption of tea.⁸³ The poor copied the rich - 'their example is the fountain from whence the vulgar form their habits, actions and characters'.⁸⁴ The great problem was to distinguish between the deserving and undeserving poor, and it was hoped that by condemning idleness

and instilling a sense of financial responsibility, the mounting problem of supporting a seemingly permanent sub-class of paupers might be reduced.

Throughout the country this new approach of 'self-help' led to the formation of contributory benefit clubs. Faced with apothecaries' bills and loss of earnings through illness, the poor turned to this new source of support and by 1793 some 5,117 local clubs were registered nationally; in the 1803 Poor Law returns, some 9,672 societies were flourishing, with an average of 73 members. Devizes clubs were based at inns such as The Royal Oak, The King's Arms, and The Hare and Hounds, with a town total of 220 members in 1803.⁸⁵ There were evidently sufficient numbers for four clubs to march in the civic peace procession in 1814.⁸⁶ Daniel Defoe had described the growth of such bodies earlier in the century: 'a Number of People entering into a Mutual Compact to Help one another, in case any Disaster or Distress fall upon them'⁸⁷ and T. Alcock in 1752 remarked that Friendly Societies existed in one form or another, especially in the West Country.⁸⁸ Sir Frederick Eden noted their contribution to the welfare of the poor: 'no institutions have ever made a more considerable progress in a short space of time than has been made within a few years by the Benefit Clubs or Friendly Societies'.⁸⁹

One such body in Devizes was the Scribblers Club, established in 1765 to give impoverished clothworkers some sense of control over their lives, when accident or disaster could strike without warning. Club treasurer John Anstie reported to the Bath and West Society in 1783 that very few members now applied to the parish for relief, and that if they had not belonged to the club, 'the whole of this money must have been drawn from the Poor's Rates, but even a larger sum'. Moreover, it helped to 'preserve that honest pride and spirit of independency which the poor generally lose when they submit to parochial maintenance'. As a result of this letter, the Bath and West offered premiums for new societies.⁹⁰ Certainly in Devizes, Friendly Societies proved their worth in hard times and played a major role in poor relief as Anstie pointed out in his 1783 letter to the Bath and West Society with facts and figures, tabulated below, which show a drop in numbers during the American war, though the cash paid out doubtless tided previous contributors over periods of hardship:

Table 8. Cash drawn for Sick and Burials from September 1765 to September 1783; the Scribblers Club at the Black Horse, Devizes

Year	Number of members	Cash paid
1765-6	108	£ 48 0s. 5d.
1766-7	107	£ 58 15s. 5d.
1767-8	97	£ 41 10s. 11d.
1768-9	101	£ 40 17s. 6d.
1769-70	104	£ 40 18s. 0d.
1770-1	108	£ 41 2s. 6d.
1771-2	107	£ 57 17s. 6d.
1772-3	105	£ 47 14s. 2d.
1773-4	106	£ 27 11s. 0d.
1774-5	103	£ 38 9s. 6d.
1775-6	91	£ 51 1s. 4d.
1776-7	81	£ 41 12s. 6d.
1777-8	82	£ 38 18s. 0d.
1778-9	86	£ 38 18s. 0d.
1779-80	85	£ 23 6s. 9d.
1780-1	83	£ 31 0s. 4d.
1781-2	77	£ 42 6s. 0d.
1782-3	75	£ 38 15s. 3d.
Total		£ 748 15s. 1d.

Source: John Anstie to the Bath and West Secretary 10 Oct. 1783: Letters and Papers on Agriculture, Planting etc. Vol. 3 (1791), pp. 349-352.

Perhaps based on Jeremy Bentham's idea of 'a frugality bank',⁹¹ the Devizes Savings Bank was founded in 1816 for more flourishing workers:

to afford every industrious and provident person ... a steady increase of their savings and to enable them ... to obtain that personal comfort and independence which arise from prudent conduct.⁹²

Deposits of between 1s. and £25 were invested in 4% Consols. With distinguished patronage from Viscount Sidmouth, the Duke of Somerset, the Earl of Pembroke and Joshua Smith M.P., the Bank was run by 39 managers, including William Wroughton Salmon, bankers Thomas and Charles Tylee, and brewer James Gent. In a House of Commons debate on the Savings Bank Bill in 1816, George Rose claimed that such banks 'tended ... to revive in the lower classes that decent spirit of independence... which shrinks from accepting parochial relief'.⁹³

Some half dozen of the leading gentry and professionals in Devizes contributed to the Wiltshire Society, established in 1817 to apprentice children of poor persons from Wiltshire resident in London and to lend them money when their apprenticeships

expired to establish themselves in trade.⁹⁴ For widows, the Devizes Annuity Society flourished at The Queen's Head.⁹⁵ Other charities had a moral rather than economic purpose, to make the poor virtuous and God-fearing. Patrick Colquhoun thought the best antidote to crime was 'promoting religious and moral habits among the inferior classes of society', to produce a submissive and disciplined work force.⁹⁶ The Rev. Fenner held a club at his house every six weeks for poor men, when they sang hymns and psalms and partook of beer and dinner in the schoolroom.⁹⁷ An unidentified charity book dated 1808 lists books given to the poor in the Roundway and Green areas on the town's outskirts. They included *The Excellent Daughter* and *The Christian's Way to Heaven* as well as bibles, prayer books and *The Salisbury Spelling Book*.⁹⁸ Indoctrination of the children of the masses was another way of ensuring social harmony; 'an increasing desire to instruct the poor, to inform the ignorant and reclaim the vicious is spreading among us' noted Hannah More.⁹⁹ A Sunday School, founded in 1817, based first at Anstie's old factory and later on the Green, was funded by leading townsmen such as William Salmon, James Gent, John and Charles Tylee. Bishop Barrington approved of Sunday schools as habituating the poor to practise Christian principles while not indisposing them to manual labour.¹⁰⁰ Hannah More's *Cheap Repository Tracts* assured the poor that an all-wise Providence had created scarcity 'to show the poor how immediately they are dependent upon the rich'.¹⁰¹ The aim was to humanise but not to overthrow the class structure:

So when on earth things look but odd
They're working still some scheme of God.¹⁰²

Reflecting the growth of subscribing organisations, the most unusual charitable institution in Devizes was the Bear Club, founded in 1756 and meeting every Tuesday evening at The Bear. Membership was by invitation from existing members and provided 'an opportunity for persons of all shades of political opinions to meet in social and friendly intercourse'.¹⁰³ This was similar to the Evening Club founded in Manchester in 1720 where members paid for ale and entertainment.¹⁰⁴ The Bear Club in Devizes came to possess a certain social *cachet*, and membership rose from 50 in 1775 to 190 in 1815. Normally between 10 and 20 attended the weekly meetings, but 70 to 100 'gentlemen of the first rank and consequence' ¹⁰⁵ were attracted to the annual dinner, when Devizes carriers and soap boilers might rub shoulders with the likes of Henry

Addington and the Marquesses of Ailesbury and Lansdowne. Wiltshire M.Ps and gentry belonged to the club and in Devizes the most numerous groups, tabulated below, were attorneys, brewers, clothiers, doctors, drapers, gentlemen, grocers and innkeepers, paralleling the representation of these elements, bar the last named, on the Corporation.

Table 9. Bear Club Members in Devizes 1760-1820

Attorney	12	Grocer	11
Banker	4	Ironmonger	5
Brewer	7	Mealman	1
Cabinet maker	1	Plumber	1
Cheese factor	2	Schoolmaster	4
Cordwainer	1	Stonemason	1
Cutler	1	Wine merchant	1
Farmer	6	Baker	2
Glover	2	Brazier	3
Innkeeper	12	Butcher	3
Maltster	8	Clothier	11
Organist	1	Coachmaker	1
Sadler	1	Currier	2
Soapboiler	2	Draper	20
Watchmaker	1	Gardener	3
Auctioneer	3	Hatter	1
Bookseller	6	Land surveyor	1
Builder	3	M.P	4
Chemist	2	Poulterer	1
Clergy	6	Snuffmaker	3
Corn factor	1	Timber trader.	2
Doctor	19	Woolstapler	1
Gent	15		

Source: J.Hurley, *The History of the Bear Club 1756-1875* (Devizes 1995), *passim*.

Thus the membership consisted largely of traders, professionals and superior craftsmen, ranging not only across the social spectrum, but also a wide area of Wiltshire and beyond, including the Earl of Northampton, Lord William Seymour, Sir J.W. Anderson, Alderman of London, Sir Eyre Coote, F.Falkner of Bath and the Rev. Dr J. Skinner. Some of these figures were related to Devizes members. Charles Compton, Earl of Northampton (1760-1828) had married the eldest daughter of the town's M.P. Joshua Smith while Sir J.W. Anderson was the husband of grocer Charles Simpkins' daughter. Others lived in neighbouring counties. Sir Eyre Coote (1726-1783), who had led British forces in India, resided at Rockbourne on the Hampshire border and the Rev. Dr Skinner's living was at Camerton in Somerset.

The purpose of the club, 'supported by the most respectable persons in the county',¹⁰⁶ was philanthropic as well as social; it was described in

1825 as 'the oldest County charity which has been supported entirely by voluntary subscriptions'.¹⁰⁷ Dickens later remarked that many of the great London charities originated beneath the waistcoats of citizens at their dinners. Subscriptions, donations and fines for non-attendance at meetings funded education and clothing for poor boys from the Devizes district from the age of 8 or 10 for three or four years, and fitted them for various trade apprenticeships at a sum not exceeding £10. Six boys were taught initially, the curriculum including Cyphering, Tables, Writing, Mental Arithmetic and Book-Keeping, but by 1796 twenty-four pupils were being educated by a master, whose salary was fixed at £40 in 1812. Club members took a keen interest in the boys whom they had nominated and committees carried out periodic inspections. Clothing prizes were awarded to the best school leavers but in 1796 one boy was expelled for bad behaviour.¹⁰⁸ Great attention was paid to moral instruction 'to prevent their Swearing and Lying, the Grand Leaders to other Vices' and to neatness in their person. The clothes provided - coat, waistcoat, breeches and hat - should only be worn on Sundays, and parents were urged to send the boys 'clean and Decent to Church and School'. Prayers were said daily; the boys were taught the catechism and had to attend two Sunday church services. Politeness and a sense of place were required; the boys must, 'always show respect to those whom they meet, particularly to those in Stations and degrees above them'.¹⁰⁹ The Bear Club School was similar to the Portsmouth Beneficial School, founded in 1755, which also used members' contributions and fines to fund schooling for poor boys, and, like the Devizes School, to 'train the boys in right habits ... instilling into their minds useful knowledge, correct views of duty ... whereby they might become useful members of the community'.¹¹⁰

Between 1760 and 1820, the Bear Club in Devizes apprenticed some 146 boys, many of them sons of widows or small tradesmen and artisans. The most common destination at the end of the boys' schooling was apprenticeship to shoemakers or tailors or as servants, though a wide range of trades was covered, from smiths to hairdressers. Most found work in the Devizes area, but a few were sent as far afield as Bath, Birmingham and London. One was apprenticed to a Bristol glass merchant, another to a Marlborough basket maker, so the club evidently had wide contacts. Some went into their father's trade or into the army, one even entering the East India Company's service. The club thus enabled poorer

families to provide their sons with a smattering of education and with employment opportunities which they otherwise could not afford. The prospering gentry and traders of the Devizes area, with a paternalistic sense of duty, were 'showing the lower classes the interest which those blessed with more ample means take in their welfare'.¹¹¹

But philanthropy was not the only motive for charity. A writer in 1833 admitted that:

the poor laws have not been instituted for the relief of the destitute only, but for the general *peace and security* of the community ... to shield society from the evils of mendicancy and crime.¹¹²

A Wiltshire observer stressed the connection between unemployment and crime: 'Idleness and ignorance were never yet united without producing their natural fruits - riot, theft and every iniquity'.¹¹³ Most traders and professionals had a personal interest in order and philanthropy. William Sharp preached in 1755 that neglect of a poor man's family could lead to vice, violence and crime, whereas benevolent patronage could produce industrious artisans and useful members of the community.¹¹⁴

Charity was, therefore, seen both as an antidote to disorder and crime and a means of social control. The foundation of the Philanthropic Society in London in 1788 'for the prevention of Crimes and the Reform of the Criminal Poor' reflected upper class fear of violence and lawlessness. Although the relationship between the social orders was generally characterised by paternalism and deference, occasionally the hunger and frustration of the poor spilled over into violence, particularly during periods of dearth and high food prices in the mid-1760s, 1795-1796 and 1800-1801. Devizes escaped the worst of the riots in the West Country and the Midlands, but sometimes the only response to subsistence problems was to riot against the vested interests of farmers, dealers and middlemen in order to bring hoarded supplies to market. The majority of the working population depended on a limited range of staple foods, especially bread; Cobbett thought that a family of five required 5 lbs. of bread a day.¹¹⁵ Believing that they were defending traditional rights or customs and conforming to the national pattern of attempting to intimidate the local authorities, in January 1765, 'a tumultuous mob', armed and disguised, attacked the houses of the Mayor, the Town Clerk, the Excise Officer and others, destroying windows and furniture, though the immediate cause of the outbreak was unclear.¹¹⁶ Thirty years later, a riot occurred in Devizes, as in most other Wiltshire

towns, because of food shortages and the magistrates' enforcement of the Winchester corn measure of eight gallons instead of the old bushel containing nine.¹¹⁷ The labourers viewed this as a conspiracy to lessen the size of the bushel while at the same time maintaining the price of corn. When three sacks of corn pitched in the market were ripped open, the magistrates summoned the Yeoman Cavalry. Although the market was interrupted 'and the inhabitants alarmed', prosecution of the ringleaders was dropped when they expressed their contrition.¹¹⁸ In 1800, another grain crisis 'occasioned the populace to show a disposition to riot', but without serious consequences.¹¹⁹

Cobbett recognised that 'want, horrid want, is the parent of crime'.¹²⁰ Despite the benevolence and good works of society's more prosperous members, their very affluence was sometimes a temptation to the indigent and envious. Southey claimed that 'more offences are committed in England than in other countries because there is more wealth and more want; greater temptations to provoke the poor, greater poverty to render them liable to temptation'.¹²¹ Everyone below the level of skilled craftsman was probably under-nourished, especially with the increase in indirect taxes on consumables. The multiplication of material possessions, growing inequalities and the stimulation of consumer expectations made property more vulnerable, while society's increasing mobility led to an increase in opportunistic theft. Eighteenth-century writers from Defoe to Fielding and Colquhoun commented on the rising tide of crime, accentuated by newspaper reports. Crimes against the person tended to lessen in the eighteenth century with the growing distaste for violence, but crimes against property increased. A capitalised society was releasing new forms of wealth which could not be adequately protected without a regular police force. Larceny, the most common crime, often decreased in wartime, when troublesome elements in the population were serving in the armed forces, but increased in difficult periods of post-war economic and social adjustment when large numbers of unemployed soldiers were released into the community. Periods of recession and rocketing food prices caused poverty and unemployment and as Colquhoun observed 'indigence, fostered by idleness ... produces a disposition to moral and criminal offences'.¹²² Sixty-five year old Mary Cutting was obviously motivated by need when she stole a lump of coal from a local coal yard in 1817,¹²³ but other more saleable items such as watches, silk handkerchiefs and rolls of

luxury cloth were targeted by thieves. In 1792, the shutters of draper Thomas Whitfield's shop were cut and he was robbed of printed cottons, corduroys and velvets.¹²⁴ Richard Robbins, aged 17, embarked on a life of petty crime, taking a telescope from the Rev. Charles Lucas's summer house in 1818 and the following year stealing a great coat from a post chaise¹²⁵ as well as committing a number of crimes elsewhere in Wiltshire.

Like many other urban communities in the last quarter of the eighteenth century, Devizes was forced to confront the problem of petty crime against property. Colquhoun lamented that 'crimes have spread broad and wide' but thought that prosecutions for such crimes should no longer be left to private citizens, because few had the time or money to undertake them.¹²⁶ Despite the offer of Government rewards and 'Tyburn Tickets'¹²⁷ for catching criminals, it was still left largely to private enterprise to defend personal property. Against a background of national unrest and rising crime, the Devizes Prosecution Society was founded in 1787, 'for the purpose of preventing as far as is possible all offences ... against our persons and our property ... (which) ... too often go unpunished for want of an effectual prosecution'.¹²⁸ By 1800 there were 500 similar associations countrywide. Scaled rewards were offered for information leading to arrest and conviction and to finance legal action. Town members contributed 3s. 6d. and those out of town 7s. 6d. Sixty-two subscribers joined initially in 1787, the most numerous being brewers, clothiers, drapers, farmers and grocers, those with the most valuable goods to be stolen.

Table 10. Subscribers to Devizes Prosecution Society 1787: Most numerous groups

Attorney	4	Draper	5	Innkeeper	3
Brewer	3	Farmer	5	Plumber	2
Butcher	3	Gentleman	2	Snuffmaker	2
Clothier	5	Grocer	4		

Source: WRO, 1553/6, Devizes Prosecution Society Minute Book 1789-1791.

The scale of rewards on offer varied, as the ensuing table indicates:

Burglary, highway robbery, housebreaking	
Setting fire to house, barn, outhouse, hay	
Maiming or stealing cattle	5 guineas
Receiving stolen goods knowingly	3 guineas

Stealing poultry, corn, hay	2 guineas
Cutting or damaging trees, hedges, rails, ironwork	
Stealing fish from ponds	
Robbing orchards, pulling up garden stuff	10s. 6d.

Source: WRO, 1553/6: Devizes Prosecution Society Minute Book 1787-91, *passim*.

In 1811 additional rewards were offered for offences such as privately stealing from the person of a Society member and for stealing eggs.

Through its committee of sixteen, the Prosecution Society was soon dealing with cases of stolen poultry, heifers, horses and garden produce, as well as pilfering from shops and damage to hedges and fences. In 1791 clothier John Anstie was allowed £10 14s. for prosecuting one of his workers, Joseph Cole, who had stolen some fancy waistcoats from his factory. Cole, convicted at Winchester Assizes, was reprieved on the intervention of his master, who 'in the true spirit of philanthropy took him again under his protection, with a view to reclaim him and make him an honest and deserving member of Society'.¹²⁹ Despite a gap in the Prosecution Society records between 1791 and 1811, the range of petty crimes seems to have been consistent. Thefts of poultry, horses, stockings and waistcoats occurred regularly, but between 1812 and 1820 cattle maiming, sheep thefts and malicious damage aimed at farmers and magistrates increased. Crimes were thus motivated by hunger, opportunism or the growing anger of the poor at the shortage and exorbitant price of food, as farmers withheld wheat in the hope of obtaining higher prices. After a cattle maiming incident near Devizes in 1817, a Bow Street officer attended to inspect the cattle and a large reward was offered.¹³⁰

Another deterrent was the installation of lighting and watch boxes to make town streets safer. The late-eighteenth century zeal for improvement, which produced schools and hospitals, enclosures and canals, also spawned Improvement and Paving Commissions, 'ad hoc' bodies, to improve urban amenities by providing lighting and paving and clearing away refuse. Their aim was not so much public health as convenience and the protection of property. Improvement Commissions were one of the major developments of the Georgian era. In 1771 it was reported that 'a general spirit prevails for correcting ancient errors and establishing new improvements'.¹³¹ Westminster citizens had banded together in 1725 and 1762 to levy a

rate to pave and light the streets, and Salisbury pioneered the provincial movement in 1736. Soon Bath, Birmingham, Portsmouth, Southampton, Winchester and other communities followed suit, taking what Borsay has called 'an important step towards urban collectivism'.¹³² The growing volume of commercial traffic put pressure on the fabric and layout of towns; moreover, the corporations had signally failed to provide adequate services. Many towns therefore sought legislative approval to establish special Improvement Commissions. From a slow start, with sixteen associations formed between 1689 and 1759, the number of such bodies in England and Wales rose to 100 by 1800.¹³³ Seventy percent of the Improvement Acts between 1690 and 1799 were passed after 1760.¹³⁴ The co-opted members, usually the chief business inhabitants, sought to reinforce the principle of personal obligation which was the basis of English local government with an element of collective responsibility. In 1780, an Improvement Act was passed:

For Amending, Regulating, Cleansing, Lighting Watching and keeping in Repair the Streets, Lanes and Passages within the Borough of The Devizes, and for Preventing Nuisances, Annoyances and Obstructions therein

as 'the said Borough hath a considerable Market and is a very great Thoroughfare in the High Road between London and Bath'.¹³⁵ The task was formidable. With no building regulations, there were obstructions to commercial traffic from overhanging windows, jutting out buildings, outward-opening doors, flights of steps, mounting blocks and piles of garbage, and when there was no moon it was pitch dark.

The Trustees' first meeting was held at The Bear in July 1781, with William Salmon appointed Clerk and Treasurer. The Mayor was an ex-officio member; the rest served for life, vacancies being filled by co-option. Improvement Commissions tended to have a broader membership than Turnpike Trusts. The Devizes Trustees were composed of £10 householders or those paying £12 a year in poor rates. Clothiers, drapers, attorneys and gentlemen were well to the fore among the 97 Trustees, with most of the leading trades represented, from bankers to bakers and brewers to grocers, as well as three M.P.s and seven gentlemen. The most numerous groups were 10 drapers, 9 doctors and 8 clothiers. As there were no religious or party qualifications, Devizes Nonconformists had the chance to exercise influence in the community and take part in public

work. Initially meetings were held weekly, to make appointments, agree contracts and decide on policy. Attendances reached 158 in the first year and 102 in the second, but the original enthusiasm faded and later there were frequent adjournments through sparse attendance or lack of business once the system was running, despite a quorum being only five. During Autumn 1785, for example, 12 weekly meetings were adjourned as no Trustees attended.¹³⁶ A small core of founder members regularly attended, including clothier John Anstie, baker George Sloper, drapers James Mayo and Robert Bruges and gentleman John Flower.

Finance was provided by a 9d in the £ property rate and by Sunday tolls from cattle and carriages passing through the town, though the Commissioners were also assisted by loans from prominent traders such as James Sutton, John Tylee, Samuel Tayler and Robert Waylen (sen.) on the security of the tolls. A printed abstract of the Act was delivered to each house and the town was divided into three districts, with a Surveyor appointed for each area by tender to supervise the provision of amenities. Scavengers were also contracted annually for St. John's and St. Mary's to cleanse the streets, paupers being used to carry out the work for which they were paid 5s. each.¹³⁷ Watercourses and drains were to be cleaned three times weekly, and roads within the town repaired. In 1805, nearly two tons of sarsen stones were removed from Avebury to mend the streets.¹³⁸ James Sutton, who financed coats and watch boxes for 4 night-watchmen to patrol the streets from 11 p.m. to 4 a.m., was thanked by the Corporation for his 'very generous support'.¹³⁹ Residents who paved in front of their houses were allowed 2s. 6d to defray the cost, and handbills cautioned those who did not sweep the footways to 8 feet in front of their doors, on pain of prosecution.

Better paved streets were good for business. Adequate lighting was an aid to civil order as well as prolonging effective trading hours. Ninety lamps, costing 18s. each and carefully positioned on local land surveyor Richard Richardson's advice, were erected by town carpenters and ironmongers and lit from dusk until 2 a.m.¹⁴⁰ In 1795 the Improvement Commission tried using a Bath contractor, Isaac Tucker, to light the lamps, but after six months his work proved unsatisfactory and his contract was not renewed. Lighting advice was sought in 1805 from a former resident, Alexander Lockey, who described how Reading contracted with 'a person in London' to supply lighting at 17s. 6d. a lamp for seven months. His suggestion that a similar scheme might work

for Devizes was rejected on cost grounds, but it is clear that the Commissioners were conscious of similar developments in other communities. Most townsmen took their duties seriously. John Anstie was thanked in July 1784 for his 'great care, attention and punctuality in lighting the lamps and repairing the streets during the last year'.¹⁴¹

The Commissioners were conscientious in supervising officials, scrutinising accounts and dealing with recalcitrant residents. A Superintendent of Watchmen had to be appointed in 1787, several watchmen being dismissed for misbehaviour, and prosecutions were threatened against inefficient lamplighters. Many inhabitants were pre-empting the twice-weekly visit of the Scavenger, carrying away 'great quantities of dung and soil', perhaps because ashes and manure had some market value for use on gardens and in brick-making. A 10s. reward was offered to apprehend those who vandalised the lamps. In 1787, William Halcomb, landlord of The Bear, was forced to apologise for his 'improper conduct' in removing posts and chains erected to protect new paving in the Brittox, a street leading to his inn. Instilling a sense of collective responsibility was clearly not easy, but the censure of fellow townsmen was a weapon which the Commissioners were not slow to employ. The accountability of Improvement Commission officials contrasted sharply with the Corporation's laxity. Both directly and indirectly, the Improvement Commission's work helped to stimulate the local economy. Plumber George Bishop supplied lighting oil and grocer Thomas Biggs candles and brooms, while draper Robert Bruges provided watchmen's clothing.¹⁴² Men were employed carrying and breaking up stone, repairing the road surfaces and opening drains. Urban improvements in the eighteenth and early nineteenth centuries are evidence of increasing local initiative, a growing civic consciousness and a sense of identity among the bourgeoisie. Sidney and Beatrice Webb saw a historical progression in the late eighteenth century from 'associations of producers', such as the church, the professions and the guilds, to 'associations of consumers', formed to ensure the carrying out of particular functions.¹⁴³

Realising the importance of their commercial environment, the bourgeoisie began investing in the urban fabric, building new market halls and assembly rooms and taking action to improve town amenities and gentrify their environment. Bath had its first assembly room by 1708 and regional centres such as Canterbury, Lincoln and York by the 1750s. A common urban environment developed, based on

the London pattern. Many towns were improving their market facilities, realising their importance to general trade. Stockport market place, for example, was re-paved and levelled in 1818. In Devizes a new stone Shambles, financed as a political gift by Henry Addington, replaced the old flimsy, flammable wooden structures. The Corporation next turned their attention to the Wool Hall, built in 1615. Both Hungerford and Marlborough had built new Town Halls in 1786 and Devizes, also on the route to Bath, was conscious of the shabbiness of its civic building. Dissatisfied with Bath architect John Pinch's plans and estimates for its repair, the Corporation turned to architect James Wyatt for advice, perhaps through the good offices of the Sutton family. Wyatt thought the hall so decayed as not to be worth repairing, so in 1806 the services of Thomas Baldwin, one of the creators of Georgian Bath, were sought.¹⁴⁴ By 1808 an elegant bow-fronted Bath stone building graced the site, with an assembly room in the Adam style to accommodate civic and social events, attract genteel visitors and reflect the town's civic identity as well as the Corporation's authority.

The wealth generated by commercial growth and agricultural improvements helped to encourage investment in transforming the town landscape, making it attractive to residents and visitors and creating a hospitable environment for cultural activities. This was done by collective action, in contrast to the sectionalism and individualism of agricultural changes. Prosperous merchants and gentry, familiar with London, Bath and Bristol, expected higher environmental standards and were prepared to co-operate and provide finance in the form of loans. Although Devizes had to wait until 1825 for a more effective Improvement Commission, a start was made in creating a more orderly and salubrious civic environment. Pragmatically pursuing their economic interests, the merchants and shopkeepers dominating the various voluntary bodies set up to improve the urban scene realised the commercial benefits of a cleaner, safer and more stable community. The humiliating loss of the American colonies engendered an impetus to put the country on its feet again, a desire to take religion and civic duties seriously. Despite religious disagreements, different sects co-operated in charitable and civic activities. The doctrines of stewardship and personal responsibility fundamental to Nonconformity influenced the development of local humanitarian and charitable movements, which helped to knit the community together. The search for solutions to urban problems also contributed to the formation of

middle class identity. Whether dealing with public order, poor relief or charitable works, the provincial 'middling sort', with a sense of civic responsibility and a stake in the social order, was finding its voice. Taking individual and group action to achieve civic improvement and social harmony, and linked through their religious affiliations and philanthropic activities, they were perhaps unconsciously trying to mirror the architectural regeneration which had transformed eighteenth-century Devizes.

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Frederick George Bishop (1880 - 1949) coffin maker

by *Marion Nixon*

A small, nondescript notebook was amongst the belongings of Frederick George Bishop when he died in 1949, and has since remained in the family. This notebook proved to be his account book for the coffins he made between 1898 and 1944, a period of 46 years, for the parishioners of Bishop's Cannings, as well as the related items and services he provided, with the names of the people for whom the coffins were made and the costs involved.

The parish of Bishop's Cannings, in the Vale of Pewsey, occupies 3,585 hectares and ranges from the chalk edge of the Marlborough Downs to the lower-lying Upper Greensand in the valley. It was an area of mixed farming, which formed the main source of employment either directly or in supporting services; the main products were corn, cattle and sheep, but the type of farming depended largely upon the specific terrain of the farm. The tythings of Bourton, Easton, Horton, Coate and Bishop's Cannings form the parish, and until 1934 Roundway, Southbroom and Chittoe were also included (Chandler 2003, 18). At the time of the Domesday Book the parish was held by the Bishop of Salisbury (Morris 1979, 3) but subsequently changed hands a number of times until it passed to the Ecclesiastical Commissioners in the nineteenth century, and then in 1858 it was purchased by the Crown Estate (Thorburn 2005a, 327).

The three main settlements, Bishop's Cannings, Horton and Coate, were linked by roads and footpaths, and after 1810 by the Kennet and Avon Canal (Figure 1). In the late nineteenth and early twentieth century "many barges, laden with timber or gravel, trailed along it" (Gandy 1929, 133), but by the 1930s the canal was little used, and no longer properly maintained by its then owners the Great

Western Railway Company, who had taken it over in 1852 to prevent competition with its rail service. In many places the water was clogged by plant life and the margins invaded by reeds. Wrecks were occasionally encountered disintegrating along the edge of the water and even a long narrow boat, and all acted to impede the passage of any traffic endeavouring to use the canal. However, the towpath remained useable and walking beside the canal was peaceful, the quiet being broken only by birdsong and the scuttle of moorhens across the water where it was relatively clear of vegetation. Along the side of the path trees, hedges and plants provided food and shelter for many birds, insects, invertebrates and other wildlife. The canal remained weed covered and silted-up until the Kennet and Avon Canal Trust began a programme of clearance and restoration; it was re-opened to traffic in 1990 (Hackford and Hackford 2001, 14).

There are accounts of some parts of the parish as it was at the end of the nineteenth and the beginning of the twentieth century. One author, Ida Gandy, was one of seven children of the Reverend Charles Hony, the vicar of St Mary the Virgin, and was born in Bishop's Cannings in 1885; she lived in the vicarage for about twenty years and described life in the parish during this period in three books



Fig. 1 Frederick George Bishop, a studio photograph taken around 1910.

(1929, 1960, 1963). Another writer, Sidney John Smith (1993), reminisced on life in Coate at about the same time; he was born in 1889, the second son of Thomas Smith of Potterne who, in the same year, was appointed Pastor of the Non-Conformist Chapel in Coate and took his family to live there. There was a school in each of the three settlements and there is a short description of the one in Bishop's Cannings during the years 1871 to 1907 (Thorburn 2005b, 13).

Horton appears to lack a narrator for the same period but it was here that Frederick George Bishop (Figure 1) was born in 1880, and where he became carpenter and coffin maker. In 1894 he inscribed his name in a notebook which has survived in the author's family. This proved to be a list of the people for whom he had made coffins, together with the date and cost in each case, including other items or services supplied (Appendix). A number of the people recorded in the notebook have been found in the censuses of 1891 and 1901, which give their age and occupations; in addition Ida Gandy and Sidney John Smith recalled some of the people living there in their books. Together this allows a glimpse into life in this part of the Pewsey Vale from near the end of the reign of Queen Victoria to that of King George VI.

I

Bishop's Cannings lies in a hollow near the foot of one of the steepest escarpments of the Marlborough Downs. The parish church of St Mary the Virgin is large and retains evidence of a late Norman church but is almost entirely Early English, with a fifteenth-century spire on the crossing tower (VCH 1953, 193; Pevesner 2002, 112), and "All around the church was the scattered village. There was no concentration of houses in any particular place; they just gathered in little groups along the roads and by-lanes" and "the majority of the cottages were thatched and white washed" (Gandy 1929, 75). Some 600 metres to the east of the church lies Bourton with a few dwellings. Here the west branch of the Salisbury Avon rises under the chalk downs and winds its way diagonally across the valley to Horton, about 800 metres downstream. Easton, also with few houses, lies 600 metres to the east of Bourton, at the foot of Easton Hill.

The farmers of Bishop's Cannings kept large flocks of sheep which were grazed on their own pieces of downland (Gandy 1929, 109) and in 1901 ten shepherds were employed in the tything. Warm clothes were necessary against the chill winds encountered on the downs and the shepherds of Bishop's Cannings wore cloaks of stout navy blue cloth with a scarlet lining, relics of the Crimean War brought home by their fathers and handed down (Gandy 1929, 110; 1960, 52). Elsewhere in Wiltshire shepherds wore heavy overcoats (Watson 1938, title page), including George Ford of Stonehenge who was photographed about 1900 (Watkin 1989, 97) and Isaac Bawcombe of the south Wiltshire downs wore a smock-frock (Hudson 1961, 40). On a farm in Bratton, which lies on a ledge below the northern escarpment of the Salisbury Plain, shepherds were regarded as "the aristocrats among farm-workers and, at lambing time everything gave way to their needs" (Reeves 1980, 105). Cattle were also kept on some of the farms and to reach a field beside the canal one herd used a track which became covered with soft, fine mud in autumn and winter to a depth of some 8 cm, and as late as 1939 this track could be traversed only by leaping from one boulder to the next in order to avoid arriving with very muddy boots at Bishop's Cannings School (pers. obs.).

Among the principal landowners of the parish was the Ruddle family and Gandy (1960, 86) wrote that the:

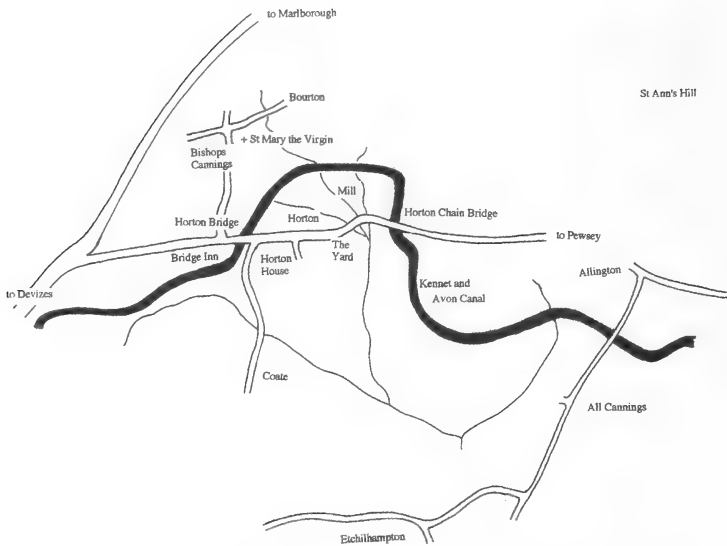


Fig. 2 A sketch map of the parish of Bishop's Cannings.

sturdy yeoman family of Ruddles, who take their name from the ruddle once so important in sheep country.....Later they spread themselves into South Wilts. From 1591 onward a close succession of Ruddles are being baptised, married, buried. They were prosperous yeoman who seem to have maintained their position generation after generation.....two pieces of land formerly bore their name - 'Ruddles' piece', in the neighbourhood of Easton, and 'Duck Ruddles' at Roundway (Gandy 1960, 86).

There were five Ruddles in Bishop's Cannings at the time of the 1901 census, namely George Ruddle, farmer of West End Farm, George Skeate Ruddle, farmer of Lynes House, his nephew Charles Ruddle, George Ruddle, schoolmaster at the School House and George Giddings Ruddle a farmer in Bourton who continued to farm there until 1959 (Gandy 1960, 59); he and the Commissioners of His Majesty's Woods and Forests were the principal landowners in the parish (Kelly's 1935, 35) (ruddle is a red variety of ochre used for marking sheep).

Coate is about 3000 metres to the south of Bishop's Cannings church and where a stream runs through the hamlet the valley floor was often waterlogged, perhaps the area referred to as Cannings Marsh in the *Anglo-Saxon Chronicles* (Swanton 2000, 1010E). Behind Manor Farm House was a boggy area where there were mounds, each about 150 centimetres high and separated from the adjacent ones by 90 centimetres; in his youth Smith (1993,

15) would jump from one to another. His illustration of the mounds shows their similarity to the Tussock Sedge photographed by Heath (2004, 262) and which was once locally plentiful in the Pewsey Vale. Smith (1993, 5) noted that there were 47 houses or cottages in Coate, about half with thatched roofs, with "only one really picturesque house and that is Cross Farm which is timbered": his drawing of the farmhouse adorns the cover of his booklet. According to Smith three farms, Calcote Farm, Manor Farm and Lodge Farm, were large each with 25 - 30 cattle, and two, Cross Farm and Lower Farm, were smaller, and each had just a few fields. Some of the smallholders had a grass field and kept one or

two cows, or a few pigs, but no sheep were kept in Coate (Smith 1993, 4-6). The crops grown included wheat, barley, oats and hay, and machines were used for harvesting. A threshing machine with a portable engine was driven by an engine driver from Devizes but the machine was later in the charge of a villager (Smith 1993, 8). Each of the large farms had 6 - 8 working horses. A single furrow plough was pulled by two horses, seeds were sown by a drill also drawn by two horses, and harvesting was done by a self-binder machine drawn by three horses. Besides heavy horses others were kept for carting produce and goods to and from market, for riding and for the gigs and traps needed for the numerous necessary journeys in and around the village and beyond.

Horton lies within an open loop of the Kennet and Avon canal between Horton Bridge at the western end and Horton Chain Bridge (earlier called Townsend Bridge) at the eastern end (Figure 2). Beside the former is the *Bridge Inn* which was built to provide sustenance for the early traffic along the canal. The road joining the two bridges runs from Devizes to Pewsey, and the first proposal to treat it with tar macadam was recorded in the minutes of the Rural District Council of 1924 (Chandler 1991, 109). Until the mid-1940s farm carts were still used in Horton, motorised traffic along the road being fairly sparse. From Horton Bridge the road runs downhill until Horton House comes into view; the house lies at the end of a long straight drive running between pasture land where cattle or horses were sometimes

to be seen. Along the road houses and cottages lay on either side including a few that were thatched, some of which were timber-framed (Slocombe 1988, 12). The Methodist Chapel was on the corner of Horton Road and Pig Lane. From the village St Ann's Hill, or Tan Hill, is visible; it is one of the highest parts of the Pewsey Vale and rises majestically to a height of 293 metres with a plateau extending for 1600 metres. During the frosts of 2004 a 'donkey' reappeared on the surface of Tan Hill and it faces to the right like the Devizes 'Millennium' horse, so both are unlike all the other White Horses in the Vale which look to the left (Edwards 2005, 117).

II

The population of Wiltshire increased steadily from 1881 to 1951, yet that of the parish of Bishop's Cannings fluctuated during the same period.

Year	Wiltshire	Bishop's Cannings
1881	258,965	955
1891	264,997	894
1901	271,394	762
1911	286,822	917
1921	292,208	695
1931	303,373	605
1951	386,692	1,235

In 1901 the parish included:-

	Males	Females
Bishop's Cannings	474	447
Horton	104	181
Coate	84	75

Wiltshire was largely agricultural towards the end of the 1800s, and in 1901 more than half of the working population was employed on the land and many were still so employed even by the middle of the century (VCH, 195). The total area of Wiltshire under cultivation declined slowly but continuously. The number of sheep fell by one third between 1870 and 1914, and halved again by 1924, and reached their lowest level by 1939; there was, however, an increase in milk production (Watkin 1989, 116).

The census of 1901 shows that most of the men of the parish of Bishop's Cannings were engaged in agriculture or closely associated occupations. There were sixteen shepherds and fourteen people involved with cattle, milk and butter production. Sheep and

cattle were still present in the parish in the 1930s and 1940s. One shepherd lived next door to Fred Bishop; he walked to and from Tan Hill each day to care for his flock of sheep. Cattle grazed in the fields and from Horton Mill the milk produced was delivered to the door where it was measured out and poured into the customer's jug. Besides the main crops of wheat, oats, beans and turnips, flax was grown and processed in a factory in adjacent Roundway. At the beginning of the century there were three blacksmiths and one apprentice and four carpenters and wheelwrights in the parish, one of the latter being Fred Bishop. Mechanisation increased and agricultural machinery became larger and more complex resulting in fewer people being employed on the farms. After men had left to serve in World War II and more food crops were needed so Italian prisoners of war, held in the camp near Roundway, worked on farms in the parish. There is a bronze in the parish church of St Mary the Virgin in memory of three men who died in the Boer War, and a Peace Memorial records the names of twenty three men who lost their lives in World War I.

The occupations of the population of the three tythings in 1901 have been summarised and are shown below:-

	Bishop's Cannings	Coate	Horton
Farmers and others in trades related to the land			
Farmers	9	6	4
Bailiffs on farms	1	1	
Dairyman/maid, butter packer	4	1	
Cowmen	3	6	
Shepherds	10		6
Carters on farms, cattle	4	3	11
Carters on farms, horse	18	5	
Agricultural labourers	38	24	21
Millers			2
Blacksmiths	2		2
Carpenters and wheelwrights	2		2
Wood sawyer			1
Leather currier	1		
Saddler and harness maker	1		
Thatchers	2		1
Maltsters	5		
Engine driver on farm			1
Market gardeners		3	
Service providers			
Bakers (bread)	1		8
Bricklayers	1	1	
Grocers, shopkeepers and assistants	5	2	5
Grooms	4		1
Innkeepers and victuallers	1	1	2

	Bishop's Cannings	Coate	Horton
Laundress	4		
Minister, Chapel		1	
Domestic servants	18	7	11
Dressmakers	2	1	2
Nurses	2		
Painter and decorator	1		
Police constable	1		
Post master	1		
Plumber	1		
School teachers	2	3	
Vicar	1		
Miscellaneous			
Canal labourer			1
Carters at lime works	1	1	
Engineers, boilermaker	1	1	
Engineers, in foundry			1
Engineers, waterworks	2		
Quarryman	1		
Road contractor and labourer	2		
Soldiers	2	1	
Sanitary inspectors	1	1	
Tobacco-leaf sorter	1		

Some of the houses in Bishop's Cannings employed servants including:-

The Vicarage	A house maid, a parlour maid and a nurse maid
Manor House	A general servant
West End Farm	A general servant
Lynes House	A general servant
Easton Farm	A general servant
Black House Farm	A general servant
Old Manor House	A general servant
G. G. Ruddle's house	A general servant

And in Horton in:-

<i>Horton Bridge Inn</i>	A domestic cook
Horton House	A general domestic servant
Townsend Farm	A servant-housekeeper

And others may have employed daily servants who were at home at the time of the census. Many of the servants were born in the parish and the others within the county.

III

The blacksmith, wheelwright and carpenter, with the saddler and thatcher, were once found in every village or parish and were pivotal in the independence of any rural community (Wymer 1946, 4). The skill of the blacksmith depended upon his ability to make

instantaneous decisions and sudden and violent actions upon materials at very high temperatures and, with the wheelwright and carpenter, worked to suit the specific needs of the land in the locality. This was apparent in the design, decoration and colours of carts and wagons as they were often distinct and varied from one county to the next; there were even local variants, one of a wagon being found around Devizes (Vince, 1970, 40).

Making a coffin for members of the local population was often the responsibility of the village carpenter although only rarely described (Bailey, 1998). However, it was the subject of a chapter in *The village carpenter* by Walter Rose who was born twenty years earlier than Fred Bishop. He tells of the carpentry business of his family in Haddenham, Buckinghamshire, during the nineteenth and early twentieth century in this book, and says that "No story of the village carpenter would be complete without its chapter on Undertaking" but he "deplored the fact that a village carpenter's calling, otherwise pleasant, should have such a doleful side" (Rose 1937, 121).

Frederick George Bishop was carpenter and coffin maker in Horton, where he was born near the end of 1880. He was the first child of William and Mary Bishop, and was joined by Herbert in 1882, Elizabeth in 1884, and finally Tom in 1886. They lived at 1 The Island, Horton, the first of a group of five terraced cottages, and their cottage comprised three rooms. It soon became too small for the family so first Fred and later his sister went to live with their maternal grandparents, James and Isabella Hiscock and their son Alfred, in a cottage which had more than five rooms and lay on the other side of the road and almost opposite to 1 The Island. Fred Bishop attended the school held in one of the cottages and afterwards joined his grandfather James Hiscock, a Master Carpenter, and Albert James Hillier, a blacksmith, in their workshop at The Yard, Horton, as an apprentice in 1894. A photograph of The Yard taken in the 1890s shows the blacksmith's forge and the carpenter's workshop as well as some of the people working there at that time (Buxton 1990, 141). Alfred Hiscock, like his father, was a carpenter and the skill of the Hiscocks was noted by Gandy (1960, 60) who wrote that "Horton produced particularly good craftsmen" and that Mr Hiscock had designed a "special plough for chalk soil".

Fred Bishop spent his entire working life in The Yard, in Horton, where he eventually worked alone as blacksmith, carpenter and wheelwright. The Yard lay about halfway between Horton Bridge



Fig. 3 The Yard, Horton, with a cart and other items awaiting repair in The Yard and the author, photographed in 1936.

and Horton Chain Bridge and its drive was flanked by timber-framed, thatched cottages, one being figured by Slocombe (1988, 12). The driveway led to the forge and the carpenter's shop, with space between them for tethering horses waiting for new shoes (Figure 3). Beyond lay a large area for carts, wagons and agricultural machinery in need of repair and for assembling large items under construction. Here there were low, wooden houses which provided shelter for numerous chickens and ducks which inhabited The Yard and the adjacent orchard. The forge had a brick built hearth and chimney, behind which lay the large, horizontal, pear-shaped bellows. Besides the hearth stood the anvil, hammers, fire tongs, and other tools, and alongside was a large vessel of water for tempering the hot metal. The noise emerging from the forge came from the wheeze of the bellows, increasing the fire's intensity and temperature, the sound of hammering of metal on metal to shape an object, and the sizzling when the hot metal was plunged into cold water to quench it. These sounds were distinctive and evocative of any working smithy. Here shoes were made and fitted to the horses brought in, including heavy cart and shire horses. Besides shoeing horses Fred Bishop was called upon to carry out many widely different

tasks for farmers, tradesmen and other members of the community. He fashioned metal parts for farm carts, wagons, agricultural machinery, fences, gates, and other machines brought in for repair. The carpenter's shop was spacious with a workbench running the length of one of the longer walls. Vices were fixed to the bench, and around them lay saws, hammers, chisels, planes, adzes, pincers, files and other tools in frequent use; less used tools were kept in drawers beneath. The work was varied and included making and repairing farm implements including wagons, carts, field gates, wheelbarrows, animal feeding troughs, houses for small farm animals, beehives, ladders, and in addition coffins when needed. The timber required for the various types of work was stacked against the wall opposite to the long bench and in the large storeroom beyond the workshop. Sawn logs lay outside, drying beneath trees or bushes, the planks being laid flat with strips of wood between each to allow air to circulate and promote drying.

Among the wood stacked in the carpenter's shop a few coffin boards usually stood ready for use. The size required for the coffin was determined using a piece of string, the length and width being recorded with knots. The coffin boards were trimmed to the

appropriate size; if the sides were to be shaped then four shallow saw cuts were made in each and, after treatment with boiling water or a hot iron, were bent, and the base and top shaped to fit. The wood was made smooth by planing and sand papering and then either linseed oil was applied to the wood or it was polished and the chosen furniture added. In all "A plain elm wood coffin represents a good day's work, even starting early" (Hartley, 1939, 36). The cost of a coffin made in Pewsey for Henry Pyke, who died on November 6th, 1797, was £1 3s including carpentry in the vault of the church (Hobbs 2005). In 1857 an undertaker of Bethnal Green Road, London, charged £1 11s 6d for an elm coffin with lining, and £4 10s for an elm shell with furniture (May 2003, 8). Walter Rose recorded every undertaking of the family business in a village in Buckinghamshire, whether the coffin was of elm or oak, single or double nailed, the furniture the best or second class, the lining of calico or swansdown, the quality of the shroud, and says "I have written scores of bills at an inclusive charge of less than £1" and that "Many coffins were paid for by the parish authorities, with whom my father contracted to supply a coffin at a fixed price of eleven shillings and sixpence" towards the end of the nineteenth century (Rose 1937, 125, 128). An elm coffin made by Fred Bishop in the 1890s cost £1 5s or a few shillings more (Appendix). While the cost of a coffin is occasionally reported it is unusual to find the cost of those made by one carpenter, who remained and worked in one parish, for a period of nearly half a century.

When Fred Bishop became an apprentice the work of the village blacksmith, wheelwright and carpenter remained much as it was in the latter half of the nineteenth century and described by Rose (1937). A small notebook with a black leatherette cover, inside of which was inscribed 'Frederick G. Bishop, May 21, 1894', was found in 1980 among the effects of his cousin-in-law, Ethel Annie Putnam, the author's mother. This proved to be his account book, spanning 1898 - 1944, for the coffins he made, the first one when he was just eighteen years of age and the last made just four years before his death. This notebook is apparently the only surviving record of his business. The notebook gives the names of those whose coffins he made and some have been traced in the Census Returns of 1891 and 1901, and reveals that they were people from all walks of life in the parish including some of the large landowners and farmers. It must be emphasised that the people listed in the Appendix do NOT include all of those who died in the area during this period.

To the Executors of the Estate	
Mr G. Ruddle	
for Panel Oak Coffin	
and shell	10 ..
shroud	6 6
9 Pair of gloves	
and 6 ties	19
sections for for bell	
Attendance at funeral	10 6
use of Bier	1 ..
Vicars fee for ditto	1 ..
Hire of Car and pair	
and 2 sing & horse	
Coaches for funeral	4 4 ..
under bearers	1 10 ..
	<hr/>
	16 2 ..

Fig. 4 A page from the account book for the funeral of Mr G. Ruddle, dated September 4th, 1903.

Most of the coffins made by Fred Bishop were of elm (Appendix), a wood which is particularly suitable as it is good under damp conditions. Oak, a hardwood, was also used but was more expensive and sometimes a shell, or case, of elm was made, so adding further to the cost. Handles and fastenings for the coffins were sometimes noted and were of brass, electroplated brass, or painted black metal. Besides the coffin a shroud, a lining, a dress or a swansdown robe was requested, and in some instances a bier or horse-drawn mourning carriages. Other charges noted included digging the grave, some of which were of extra depth, and in one case for lining the grave with bricks. Horse-drawn glass-sided mourning carriages were required for some of the funerals. On a number of occasions Fred Bishop arranged for the return of the deceased from the Union Workhouse or the hospital in Devizes and even from places beyond the county boundary, including London. Sometimes he made arrangements with the vicar for the service at the

1904	Mr Benger		
sep 2	For funeral Expenses of the late Mr P H C Benger		
	Making Pannel Oak Coffin with shell linings & trimings	8	10 ..
	Shroude	7	..
	6 under Bearers	15	..
	Vicars fees	1	1 ..
	Sextons fees for digging grave Extra		
	Sept 4	16	..
	Hire of Car and Pair of Singel horse Coaches	4	4
		14	13 0

Fig. 5 A later page from the account book for the funeral of Mr A. C. Benger, dated September 2nd, 1904.

When the coffin was for a child the age was often given. The entries were written by Fred Bishop until 1932, after when they were entered by his wife, Beatrice Maud Bishop (nee Hillier).

IV

Among the most expensive funerals were those for members of the Ruddle family, three of whom were described by Ida Gandy when they attended the church of St Mary the Virgin, Bishop's Cannings, and the services were taken by her father in the late nineteenth century. There was Squire Ruddle or 'old George' "with his side whiskers and shabby broadcloth coat in front of us....his horsy nephew ('young George'); his cousin Lizzie Giddings in her ancient grey cloak, with a stocking round her throat if the weather was cold" (Gandy 1963, 69) (broadcloth was made in the west country and in Devizes until 1824 (Pugh 2001, 91)). Squire Ruddle was born in Bishop's Cannings where he was a farmer and employer and owned much land in the parish. At the time of the 1901 census he was living at West End Farm where he employed a servant, also born in Bishop's Cannings. He died on August 30th, 1903, aged 77 years, and his funeral was held in the parish church on Friday, September 4th, at 2. 30 pm "amid every sign of respect and esteem". The Reverend C. W. Hony took the service and among the congregation were many local farmers and Devizes townsmen, and included Mr J. Harraway of Easton Farm, Mr A. J. Combes of the Manor House, Mr J. Combes, Mr Grose, Mr T. S. Lucas, Mr G. T. Smith, Mr E. F. Toone, Mr A. G. Randell, Mr Guy Jackson and a large number of mourners. The oak coffin and shell made by Fred Bishop was was covered in floral tributes and conveyed from West End Farm to the church in Mr S. V. D. Weeks' car (*Devizes Gazette*, 10.9. 1903). The number of under bearers was not recorded but was probably six as that was the number of ties supplied (Figure 4), and transcribed below:-

1903	To the Executors of the Late Mr G Ruddle	
	To A. Hiscock	
Sep 4	for Pannel Oak Coffin and shell	7 10
	shroud	6 6
	9 Pair of Gloves and 6 ties	.. 19

church, the services of the sexton, and for the hearse, carriage(s) and horses.

The cost of coffins made by Fred Bishop show a slow increase in price over nearly half a century. An elm coffin varied a little in price depending upon the furniture requested; in 1898 it was £1 5s, by 1903 £1 7s, in 1916 £1 19s and by 1918 it had reached £2 15s. Subsequently comparison is more difficult as wadding or a shroud were sometimes included in the price and the fittings varied between black and best brass, the latter being more expensive. By 1930 the cost had roughly quadrupled to £5 12s 6d and in 1943 was £7. Between 1898 and 1921 Fred Bishop made eight coffins of oak but only four in the following years up to 1944. The price of an oak coffin in 1898 was £5 and with a shell £7; this increased to £11 16s 6d by 1921 and the last one he made, in 1943, cost £16 16s. The account book gives the name of the deceased, the date, the type of wood used, as well as other items and services supplied (Figures 4, 5).

sextons fee for bell	
Attendance at funeral	10 6
use of Bier	„ 1 „
Vicars fee for ditto	1 1 „
Hire of Car and Pair and 2 single horse	
Coaches for funeral	4 4 „
under bearers	1 10 „
	<hr/>
	16. 2

The funeral arrangements were made by Mr F. Hiscock and Mr T. Stone of Devizes.

George Skeate Ruddle, known as 'young George', was "always smart and well groomed. On weekdays he often rode twenty miles to a Meet, or drove along the roads in a high yellow dog-cart drawn by the fastest horse he could buy. When his uncle died he succeeded him as squire of the Manor of Bourton." (Gandy 1960, 87). G. S. Ruddle was born in Bishop's Cannings in 1828 but when only 15 years of age his father, George Ruddle, died. He never married and was a farmer and employer; he lived at Lynes House at the time of the 1901 census where he employed a servant, also born in Bishop's Cannings, and who was deaf and dumb. He moved into West End Farm after his uncle's death and died there on May 11th, 1909 aged 81 years. *The Devizes Gazette* (13.5.1909) reported that he was one of the best known agriculturists in the county, he sold corn in Devizes market, was a supporter of the Conservative party, and a Member of the Devizes Board of Guardians. He was a churchwarden at St Mary the Virgin, Bishop's Cannings where his funeral was held on Friday, May 14th. A coffin of oak was made for him by Fred Bishop together with a shell and the total cost was £10 13s (Appendix, 57). His cousin Elizabeth (Lizzie) Giddings was born in Bishop's Cannings and at the time of the 1901 census she was at Lynes House. She died in May, 1924, and had a polished elm coffin; the total cost was £6 15s including a funeral car to Devizes and rail fare to Salisbury (Appendix, 121).

Albert Charles Benger of The Shop, in Horton, was grocer and baker. His bakehouse was behind the shop where there was a thick wooden, waist high, bread trough on firm legs, in which the dough was prepared. The lid of the trough could be turned over to form a tray on which the dough was rolled and handled to form loaves of various shapes. The lid was then used to carry the loaves to the oven where a long-handled bat, or peel, was used for their transfer into and out of the oven. During the day the bread was delivered by horse-drawn van to the villagers.

Benger died in September, 1904, when 61 years of age, a panel oak coffin and shell was made for him (Figure 5) and transcribed below:-

1904	M Benger		
Sep 2	For funeral Expences of the late Mr A C Benger		
	Making Pannel oak Coffin with shell linings and trimmings		
		7	10 „
	Shroude	„	7 „
	6 under Bearers	„	15 „
	Vicars fees	1	1 „
	Sextons fees for diging grave Extra depth	„	16 „
	Hire of car and Pair & 2 singel horse		
	Coaches	4	4
		<hr/>	
		14	13 0

In 1901 Albert and his wife, Sarah, lived at The Shop together with his father-in-law, Henry Amor, a widower and retired sawyer. The latter died in February, 1899, aged 84 years (Appendix, 12). Sarah died in 1932 aged 88 years (Appendix, 177).

Abel Hiscock was living at Horton Mill in 1901 with his wife Rosanna and their children; Job aged 34 years, Mary of 31 years and Maria aged 25 years. Both Abel and Job were corn millers, the former on his own account. The family was unusual compared with others living in Horton at that time as, although Abel and Rosanna were both born in Coate, their children were born in London; Job in Spitalfields, Mary in Lambeth and Maria in Southwark. "Abel, a fine broad-shouldered, whiskered old man..... sometimes when in the right mood he would allow a peep inside the mill.....At his heels usually trotted his formidable pet sheep, Daisy, who loved to rush suddenly from some hiding place and knock people down" and "his wife had suffered more than once" and "preferred the sow, and let it stretch in comfort before the kitchen fire." (Gandy 1960, 60). Abel Hiscock died in December, 1910, aged 76 years, and had an elm coffin; there were six under bearers, a mourning carriage and pair of horses, and three single-horse mourning coaches; the total cost was £12 (Appendix, 59). Rosanna died in February, 1925, aged 88 years (Appendix, 123).

By 1901 Frederick Greader was 34 years of age and lived in Horton House, as head of the household, with his brother William, aged 25 years, sister Mary, 23 years old, and a general domestic servant. Both

Frederick and William were farmers and employers. Frederick Greader died in February 1927 aged 60 years and the account book shows that he was brought from London to be buried in a grave dug to a depth of 120 centimetres and lined with 900 bricks; the cost for materials and labour was £26 (Appendix, 140). In 1891 John Every was 49 years old and was coachman and domestic servant; his wife Elizabeth was 36 years. By 1901 John was groom and gardener. On the day of this census his son Frank (34 years), a soldier on leave, and Matilda Bush, his mother-in-law, were both with John and Elizabeth. John Every died in 1917 when 75 years of age and he had an elm coffin, the cost being £4 10s (Appendix, 81). The Hendy family were living at Dairy Farm in 1901; Thomas was 48 years of age and was bailiff, his wife, Eliza, was 50 years, and their sons Sydney, 20 years, and Harry, 15 years, were both agricultural labourers. Thomas Hendy died in November 1915 aged 62 and the cost of his funeral was £2 4s (Appendix, 62). Henry Hillier was an agricultural worker, aged 56, in 1901; he died in November 1926 when 81 years and his coffin was of polished elm with brass fittings, the cost was £4 17. 6d (Appendix, 135). His daughter, Emily Hillier, had been his housekeeper and she died in January 1944 aged 75; her coffin was among the last few made by Fred Bishop and together with a shroud cost £9 5s (Appendix, 240). In 1901 John Lane, aged 44, was living with his father Thomas Lane, a 73-year-old widower who was a blacksmith working on his own account and John was a worker but later was listed as a blacksmith; he died in 1935 aged 78 (Appendix, 196). William Weston, an engine foundry worker in 1901, was a shopkeeper in Horton by 1935. He died in June 1937, aged 75, and his wife, Annie, earlier in the same year aged 73; an elm coffin was made and a shroud supplied and the cost in each case was £6 10s 0d (Appendix, 211, 214). In Coate two smallholders, Mrs Fishlock (Appendix, 171) and Mr Frank Wordley (Appendix, 116), kept one or two cows and, in his youth, Smith (1993, 10) collected milk from both farms; Mrs Fishlock also made butter each week. Tom Hand lived in Coate and was engine driver on one of the farms there and he also cared for the engines used for grinding corn, pulping mangolds and preparing other foodstuffs for cattle (Smith 1993, 8). He died in November 1935 aged 74 years, and his coffin cost £6 (Appendix, 198); Mrs Hand was 76 years when she died in May of the same year (Appendix, 195).

Fred Bishop made 245 coffins in all and the number in each year is shown below (the figures in parentheses are of children who are already included

in the total number). The fluctuation is quite considerable and the number made in 1918 may reflect the effect of the virulent influenza epidemic, although the same number was made in 1929.

Year	Number of coffins	Year	Number of coffins
1898	10	1922	3
1899	14	1923	6
1900	11 (2)	1924	3
1901	6	1925	6 (1)
1902	2	1926	9
1903	10 (1)	1927	7
1904	1	1928	6 (1)
1905	-	1929	14 (2)
1906	1	1930	3
1907	-	1931	9
1908	-	1932	11 (1)
1909	2	1933	4
1910	2	1934	2
1911	-	1935	6 (1)
1912	-	1936	10 (2)
1913	-	1937	6
1914	-	1938	3
1915	4	1939	3
1916	5	1940	8
1917	13 (2)	1941	4 (1)
1918	14 (3)	1942	-
1919	6	1943	5
1920	6	1944	7
1921	3 (1)		

By accumulating the coffins made in each month the number was highest between November and March, with the maximum in December; however, the numbers in May and June were also quite high. This table includes only 235 of the 245 coffins made as the dates for ten had been omitted.

Month	Number of coffins
January	24
February	25
March	26
April	15
May	24
June	20
July	8
August	15
September	17
October	10
November	21
December	30

During his lifetime Fred Bishop saw considerable

changes and lived through three wars. The slow decline of agriculture in this mainly farming parish was reflected in the increasing mechanisation with the concomitant reduction in employment, and the rise of motorised traffic. Likewise the influence of the Victorian funeral gradually declined during the first two decades of the twentieth century, and the last funeral for which Fred Bishop arranged mourning carriages was in 1918 (Appendix) by which time cars were available for hire for such occasions.

V

Fred Bishop (Figure 6) was born in 1880 in Horton, where he went to school, worked and remained until his death in 1948. He married Beatrice Maud Hillier, who was born in Horton in 1884, and who was the author's second cousin. They lived in one of a pair of cottages opposite to Horton House. Until the 1940s there was no electricity and no piped water, this last was carried from a source about 100 metres along the road. Like most who lived in the parish in these years Fred Bishop rarely travelled far although he did once visit London. He occasionally went to Devizes on business or to the market, a return walk of some 10 kilometres. If this was on a market day he sometimes visited *The Bear Hotel* to have a half pint of Wadworth's bitter and talk with the farmers there. He was the epitome of a countryman, with a sure and measured step and his progress was audible as his nailed boots struck the road, and he had the same local dialect as others living in the parish. He knew the parish, most of the inhabitants, and the surrounding countryside well; many people called at The Yard for business and for a chat including the farmers, and he always spoke of George Giddings Ruddle as 'Squire Ruddle'. His work made him strong and he was bronzed from exposure to all weathers. Although his work demanded physical strength his large hands were gentle especially when tending animals, from the heavy shire horses brought to him for shoeing to his chickens and ducks in The Yard, and the marmalade cat at home who would curl up on his lap and sleep on winter evenings. At the end of the day when all his tasks were completed he would sit and enjoy a quiet smoke with a pipe filled with Anstie's tobacco. Adjacent to The Yard was an orchard with plum and apple trees among which was a very large tree bearing cooking apples, and one of the other trees had small, bright green and red eating apples named 'Tan Hill Fair', which were crisp, juicy and flavoursome. He grew



Fig. 6 *Frederick George Bishop photographed in the late 1930s.*

vegetables in the garden around their cottage and in an allotment and the produce was sufficient to sustain both his wife and himself throughout the year. The potatoes were stored in a clamp on his allotment and the onions dried to keep through the winter. Several beehives were kept in the garden and he fed the bees in winter with a solution of sugar and water, leaving them to gather pollen from the wild flowers in the surrounding fields in the summer. At the end of summer the honeycombs were removed from the hives and after cutting the surface of the comb the honey was drained and filtered through butter muslin before bottling. Some of the honey was eaten in the comb. Initially a clear, pale, golden liquid, the honey later crystallised and was delicious whether eaten with the honeycomb or after separating. The bees were told of the death of their keeper by his wife who knew that otherwise they were liable to swarm. Fred Bishop continued to work until his death in 1949 in The Yard itself. He attended the church of St Mary Magdalene where he sometimes served as sidesman, and his funeral was held there among family and friends.

He was buried in the churchyard, as his wife was in 1973. A fitting tribute to the work of Fred Bishop, and that of other village blacksmiths, wheelwrights and carpenters, is to be found in the motto of the Worshipful Company of Blacksmiths 'By hammer and hand all arts do stand'.

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APPENDIX

The people for whom Frederick George Bishop made coffins, between 1898 and 1944, are listed below. Their costs, and other details are taken from his account book. Some names may be incorrectly spelt.

	£	s	d.			
1898				-6	Nov-20	George Waylen, rise lid 1 16 0
-1	Jan-03	David Coombs	1 8 0	-7	Nov-23	Sarah Hillier, rise lid 1 16 0
-2	May-11	John Lucas. Oak coffin, shell	5 0 0	-8	Dec-06	William Miller 1 10 0
-3	Aug-08	William Besant	1 8 0	-9	Dec	George Brewer 1 5 0
-4		Emley Bailey	1 5 0	-10	Dec	Jane Brewer 1 5 0
-5	Nov-08	Sharlott Harraway. Polished elm, brass furniture	4 10 0	1899		
				-11	Feb-09	George Wiltshier 1 8 0

-12	Feb-17	Henry Amor	2 17 0		Hire of carriage and pair and 2 single horse coaches for funeral	4 4 0
-13	Mar-15	John Bailey	1 8 0		Underbearers	1 10 0
-14	Mar-17	Frederick Lane	2 0 0			
-15	May-19	Susanna Merritt	1 8 0	1904		
-16	May-03	Mrs Maslen, brass furniture	3 10 0	-54	Sep-02 The late Mr A. C. Bengier. Panel oak coffin, shell, lining, trimmings	7 10 0
-17	May-21	Elizabeth Wiltshier	1 6 0		Shroud	7 0
-18	May-20	Albert Burry	3 0 0		Underbearers	15 0
-19	June	John Bishop	2 5 0		Vicar's fees	1 1 0
-20	July	Samuel Pearce	1 8 0		Sexton's fees for digging grave extra depth	16 0
-21	Aug-04	Frances Willis	1 7 0		Hire of carriage and pair and 2 single horse coaches	4 4 0
-22	Aug-26	James Wiltshire	1 8 0			
-23	Sep-10	Henry Marshman	1 10 0	1906		
-24	Sep-16	Dhara Miles	1 7 0	-55	Mar-30 The late Luther Hughes. Polished elm coffin, brass fittings	2 16 6
1900					Shroud	6 6
-25	Jan-24	Thomas Fishlock	1 8 0		Conveying from Devizes	4 0
-26	Feb	James King	1 8 0		Fees at church	6 6
-27	Feb-02	Mary Wett, coffin, rise lid, dress, cap	0	1909		
-28	Feb	Chorline Cheaver	1 8 0	-56	Mar-01 The late Saphice G. Ruddle. Oak coffin, brass fittings, shell	7 0 0
-29	Feb	William Drew	1 8 0		Funeral car to Devizes	1 0 0
-30	Mar-29	John Waite, Allington	1 8 0		Railway fare to Salisbury	2 0 0
-31	May-03	Arthur Cowdry, 9 years	16 0	-57	May-14 The late G. Ruddle Esq. Oak coffin, shell, brass fittings	7 10 0
-32	Aug-06	Jane Dyke. Polished coffin, rise lid	1 16 0		Expenses at church and re-opening vault	3 3 0
-33	Sep-11	Ernest Hillier, aged 1 year 11 months	16 0	1910		
-34	Oct-13	Mary Clements Lucas. Oak coffin, brass furniture	4 15 0	-58	Dec-03 Jane Smith. Polished elm coffin, brass fittings, trimmings	3 17 6
-35	Nov-20	Anna Drew	1 7 0		Bringing out from the asylum	15 0
1901					Swansdown robe	5 0
-36	Jan-21	Thomas Weston	1 8 0		6 underbearers and fees at the church	1 2 6
-37	Jan-20	John Fishlock	1 8 0	-59	Dec-13 The late Abel Hiscock. Polished elm coffin, linings, trimmings	2 10 0
-38	Feb-08	Thomas Hillier	1 8 0		Shroud	5 0
-39	Apr-25	Mr Bush. Polished elm, rise lid, electro-plated brass fittings	2 5 0		6 underbearers	18 0
-40	Nov-19	Mary King	1 8 0		Fees at the church	4 6
-41	Dec-30	John Nash	1 10 0		2 Women	6 0
1902					Mourning carriage and pair, and 3 single horse mourning coaches	3 10 0
-42	Feb-08	Edwin Porter. Elm coffin, rise lid	1 16 0		Telegram	6
-43	Feb-17	Richard Cook	1 16 0	1915		
1903				-60	Sep-29 The late J. Minty. Polished elm coffin, brass fittings, rise lid	3 12 6
-44	May-16	Mary Pearce	1 7 0			
-45		Mabel Cowdry	13 0	-61	Oct-26 The late Jane Godwin. Polished elm coffin, brass fittings	3 12 6
-46		Anna Merrett	1 7 0		Swansdown robe	5 0
-47		Emma Bailey	1 8 0		4 underbearers	15 0
-48		Henry Neat	1 8 0		Fees at church	5 6
-49		Frank Stevens	1 8 0	-62	Nov-18 Thomas Henty. Polished elm coffin, black fittings	2 4 0
-50		James Hillier	1 16 0			
-51		Anna Stevens	1 7 0	-63	Nov-27 Arthur Burry. Polished elm coffin, brass fittings, wadding, ribbon	3 12 6
-52		Betris May Potter, 15 months	11 0		4 underbearers 2/6 each	10 0
-53	Sep-04	The late Mr G. Ruddle. Panel oak coffin, shell, shroud	7 16 6		Fees at church	5 6
		9 pair of gloves and 6 ties	19 0	1916		
		Sexton's fee for bell and attendance at funeral	10 6	-64	Jun-19 The late J. Raimond. Polished elm coffin, wadding, ribbons, attendance, black fittings	1 18 6
		Use of bier	1 0			
		Vicars fee for ditto	1 1			

-116	Jun-05	Francis Wordley. Polished elm coffin, electroplated brass fittings, dress. Grave dug, extra depth for 2	6 7 6	4 underbearers	1 0 0
-117	Aug-20	Susan Jane Harrey. Best brass fittings, elm coffin and dress	6 15 0	-144 Aug-02 William Benskin. Polished elm, electroplated brass. From hospital Carriages and etc.	7 12 6 10 11 6
-118	Nov-10	Ellen Merrett. Polished elm coffin, electroplated brass fittings, attendance	6 3 6	1928	
-119	Dec-05	Thomas Merrett. Polished elm, electroplated brass fittings. From asylum and attendance	5 17 6	-145 May-03 Willes. 1 year 7 months	1 0 0
1924				-146 May-05 Mrs Greenaway. Polished elm, electroplated brass fittings, shroud	6 0 0
-120	April	Caroline Wiltshire. Polished elm coffin, electroplated brass fittings, wadding, attendance	5 14 0	-147 Nov-24 William Neate. Polished elm, electroplated brass	5 12 6
-121	May-03	Elizabeth Giddings. Polished elm coffin, best brass fittings, dress	6 15 0	-148 Dec-15 George Harraway. Polished elm coffin, engraved plates, shroud 4 underbearers Fees at the church	7 5 0 1 0 0 11 6
-122	May-14	Ellen Pratt. Polished elm coffin, electroplated brass fittings, dress, bringing from Devizes, and underbearers	7 11 0	-149 Dec-29 Samuel Hubbard. Polished elm, electroplated brass, wadding	5 16 0
1925				-150 Dec-29 Eliza Gasslen. Polished elm, electroplated brass, trimmings, dress Fees at church 4 underbearers	7 5 0 11 6 1 0 0
-123	Feb-19	Rosana Hiscock. Coffin, black fittings, attendance	3 10 6	1929	
-124	Mar-27	Miss Combes. Oak coffin, 4 underbearers 2/6 each	12 6 6	-151 Jan-09 The late Mr Bertie James Butcher. Polished elm, brass fittings, engraved plates, white lining etc. Cement concrete and fixing York stone cover at top, relaying turf and cleaning up generally. Including all brick mortar putty lime charcoal wood dust cement concrete etc. haulage of materials etc. 24 super 2 1/2 York stone covers at 1 s 81/2 d each	7 5 0 26 9 3 2 1 0
-125	May-18	George Sawyer, Cross Roads. Polished elm, electroplated brass	5 12 6	-152 Feb-07 John Ward. 8 years 7 months. Elm coffin. Bringing from hospital	1 8 0
-126	May-28	Mary Pyreader. Oak coffin, elm shell, brass fittings, woman fees	12 5 6	-153 Feb-13 John Huges. Died at Tilbury Ashley. No cost.	0 0 0
-127	Sep-03	Herbert Bishop, 1 year 8 months	1 7 0	-154 Feb-16 Rebecca Burgess. Polished elm, electroplated brass fittings, shroud	6 0 0
-128	Dec-23	Frank Bishop. Polished elm coffin, electroplated brass, dress	5 18 6	-155 Mar-15 Albert Hiscock. Polished elm coffin, electroplated fittings, shroud	6 0 0
1926				-156 Apr-12 Bessy Spredbury. 10 years	1 10 0
-129	Jan-07	John Grant. Polished elm coffin, electroplated brass fittings, dress. Died at hospital. 6/6 d for hearse	6 5 6	-157 Jun-06 Sidney Burry. Polished elm, electroplated brass, rise lid	6 10 0
-130	Jan-12	Philip Wordley. Polished elm coffin, electroplated brass, dress	6 0 0	-158 Jun-29 Mr Carr, Horton Road. Polished elm	5 10 0
-131	Jan-16	John Benger. Polished elm coffin, electroplated brass, trimmings. Grave extra depth	6 12 6	-159 Jun-29 Jane Drew. Polished elm	5 12 6
-132	May-29	Robert James. Polished elm coffin, best brass fittings, screws	6 18 0	-160 Aug-17 Ann Wordley	5 12 6
-133	Aug-25	Emily Willes. Polished elm coffin, brass fittings, attendance	5 17 6	-161 Oct-15 Fanny Watcher	5 12 6
-134	Sep-01	Sarah Wiltshire. Polished elm coffin, electroplated brass, dress	5 19 0	-162 Oct-19 James Blake. Polished elm, electroplated brass, shroud	5 18 6
-135	Nov-19	Henry Hillier. Polished elm, electroplated brass fittings, wadding	4 17 6	-163 Dec-16 James Ebenezer Colby. Polished elm, electroplated brass, shroud	6 0 0
-136	Dec-11	Frank Benger. Polished elm, electroplated brass, trimmings, dress	6 0 0	-164 Dec-24 James Merrett. Polished elm coffin	5 12 6
-137	Dec-22	Linda Eilyn Yardley. Polished elm coffin, electroplated brass, dress	6 0 0	1930	
1927				-165 Mar-22 J. Trimnill	5 12 6
-138	Jan-06	Samuel Portch. Polished elm, best brass fittings, dress	6 18 0	-166 Apr-24 Miss Drasies	5 0 0
-139	Jan-29	Rose Florence Waite. Elm coffin electroplated brass, shroud	6 0 0	-167 Oct-06 George Wiltshire. Polished elm and dress	5 12 6
-140	Feb-12	Frederick Greader. From London. Vicar's fee, brick grave 8 feet deep J. Stevens for labour and 900 brick stones, and cement	6 6 0 20 10 0	1931	
-141	Mar-02	James Minty. Polished elm, electroplated brass, shroud	6 0 0	-168 Jan-17 Albert Burgess. Polished elm, electroplated brass, shroud	6 0 0
-142	Mar-14	Mark Little. Polished elm coffin, electroplated brass, shroud. Extra depth grave	6 0 0	-169 Jan-20 William Wiltshire. Polished elm coffin, electred brass fittings, shroud. Bringing out from Devizes	6 5 0
-143	May-02	Cornelius Burry. Polished elm coffin electroplated brass, attendance Double depth grave,	6 2 6 1 1 0	-170 Mar-21 Fred Stevens. Polished elm coffin, electroplated brass	5 12 6

-171	May-05	Mary Fishlock. Polished elm coffin, shroud	6 0 0	-209	Dec-20	George Staffs. Elm coffin, shroud	6 2 6
-172	Jun-25	Simeon Miller	5 1 6	1937			
-173	Jun-28	Mrs Potter	5 12 6	-210	Jan-02	T. Portch, Coate. Unpolished oak coffin, best brass fittings. Double depth grave	10 10 0
-174	Nov-19	Mr Mark Wiltshire	5 12 6	-211	Feb-20	Mrs Weston. Elm coffin and shroud	6 10 0
-175	Nov-20	Albert E. Weeks	5 12 6	-212	Mar-04	Frank Yeates. Polished elm coffin	5 10 0
-176	Dec-01	John Brook, Stanton	6 12 0	-213	Apr-11	James Brinkworth. Coffin and shroud	6 5 0
1932							
-177	Jan-07	Sarah Bengier	5 12 6	-214	Jun-18	William Weston. Coffin and shroud	6 10 0
-178	Feb-01	Mr Charles Gregor, Easton. Polished elm coffin, best plain brass furniture, trimmings	7 10 0	-215	Jul-16	Mrs Drew. Coffin	5 15 0
-179	Mar-02	John Drew	5 12 6	1938			
-180	Apr-23	Fred Godard	5 12 6	-216	Oct-13	John Miller. Polished elm coffin, shroud	6 7 6
-181	May-14	Mr C. R. Smart	5 12 6	-217	Nov-27	Mary A. Trimwell. Polished elm coffin, shroud	6 5 0
-182	Jul-20	J. H. Pottenger. Upholstered oak coffin, best brass fittings	10 10 0	-218	Dec-13	Mary J. Pearce. Polished elm coffin, shroud	6 0 0
-183	Sep-24	Mrs Stone	5 12 6	1939			
-184	Oct-22	Mrs Stacey. Polished elm, brass fittings, dress	6 19 0	-219	Jan-24	Eliza Bengier. Coffin, shroud	6 15 0
-185	Nov-07	Mrs Portch. Polished elm coffin, shroud	6 19 0	-220	Aug-25	Mrs Jessie Wordley, Coate. Coffin, best brass fittings, shroud	8 0 0
-186	Nov-10	John Waile. Polished elm, electroplated brass	5 12 6	-221	Oct-24	Eliza Jane Kyte. Coffin, shroud	6 10 0
-187	Nov	Woodruff. 7 weeks	18 0	1940			
1933							
-188	Jan-09	Mrs C. Drew. Polished elm coffin, electroplated brass fittings	5 12 6	-222	Mar 13`	Sarah Cox. Coffin, shroud	6 2 6
-189	Feb-09	Mrs Pottenger. Unpolished oak coffin, solid brass fittings	10 10 0	-223	Mar-27	Frank Cox.	1 10 0
-190	Mar-10	Sarah Wiltshire. Polished elm coffin, brass fittings, shroud	6 0 0	-224	Apr-17	Mrs Harraway. Coffin, robe. Brick grave for two	9 0 0
-191	Sep-23	Mrs Gilbert. Polished elm coffin, brass fittings, shroud	6 0 0	-225	May-18	Harriet Cowdry. Elm coffin, shroud	6 15 0
1934							
-192	Mar-02	Joan Portch. Polished elm coffin, shroud	6 0 0	-226	Sep-01	Annie E. Stiles. Coffin, shroud	8 2 6
-193	Jun-13	James Kyte	5 17 0	-227	Oct-23	Mrs Cross. Elm coffin, oak mouldings, shroud	8 7 6
1935							
-194	May-12	Mrs Cowdry	5 12 6	-228	Nov-07	Bertha Drew. Elm coffin, oak moulding and bearers	9 15 0
-195	May-14	Mrs Hand	5 12 6	-229	Dec-21	Fred Rogers. Elm coffin, shroud	8 12 6
-196	Jun-15	John Lane. Coffin and shroud	6 0 0	1941			
-197	Aug-28	Hannah Miller	5 12 6	-230	Jan-21	Mrs Yeates. Elm coffin, shroud. Double grave	8 12 6
-198	Nov-02	Tom Hand. Coffin and shroud	6 0 0	-231	Feb-25	Edwin Wordley. Elm coffin, shroud	7 10 0
-199	Dec-23	Sally Lewis. 3 years 11 months. Coffin and bringing from hospital to Bourton	3 4 0	-232	Apr-16	Mrs Priddle. Polished elm coffin. Silk robe	10 16 6
1936							
-200	Feb-20	Alfred Kent. Coffin and removal from infirmary	8 10 0	-233	Apr-25	Mrs Hibberds child. For everything	3 10 0
-201	Mar-16	Mrs Willis. Elm coffin, shroud	6 0 0	1943			
-202	Jun-06	Harry Burgess. Coffin, shroud	6 15 0	-234		Emily Mortimer. Cannings. Elm coffin	7 7 0
-203	Jun-28	John Ball. Coffin, shroud	6 0 0	-235		Mrs Willis. Oak coffin and shroud	16 16 0
-204	Jun	Yeates. Little coffin and verger's fee	10 6	-236		Michael Geraghty. Coffin, shroud	9 15 0
-205	Jul-24	Mrs Carter. Elm coffin, best brass fittings, double depth grave, shroud	8 17 6	-237	Dec-03	Ann Stages. Coffin, shroud	9 17 6
		Verger	1 3 0	-238		Miss Minty	9 10 0
-206	Jul-27	Attendance at funeral of Brights child	5 6	1944			
-207	Sep-16	Albert Ayres	5 12 6	-239	Jan-28	Jane Cowdry	10 12 6
-208	Nov-07	Mrs Tinker. Elm coffin, shroud	6 0 0	-240	Jan-13	Emily Hillier. Coffin and shroud	9 5 0
				-241	Jan-24	Albert Nash. Coffin and shroud. Double depth	9 10 0
				-242	Feb-11	Ernest Stevens. Coffin and shroud	8 15 0
				-243	Aug-30	Mary A. Stevens.	8 15 0
				-244	Sep	Louisa Grant	9 0 0
				-245		Louisa Cowdry. Coffin and shroud	8 15 0

Training trenches on Salisbury Plain: archaeological evidence for battle training in the Great War

by *Graham Brown and David Field*

Field investigation in Wiltshire and elsewhere by the former Royal Commission on the Historical Monuments of England (RCHME) throughout the 1990s first revealed the extent and importance of military archaeology in Britain. On Salisbury Plain Military Training Area, in particular, attention was brought to a wide number of practice trench systems most of which appear to date to the First World War. Recent large-scale surveys of some of these systems demonstrate the extent to which soldiers were given an elementary grounding in battle practice before being sent to the Front. They also provide evidence of how those who designed, engineered, and used such complexes, utilised natural and archaeological features in their construction.

Introduction

After almost one hundred years, as the memories of those individuals who fought in the major conflagration of the First World War fade, the film, books, and documentary evidence inform our views of trench warfare. The sites of these battles have invariably been levelled, cultivated and built upon. Evidence of them is seen mainly in museums where artefacts and uniforms are used to tell the story. In any case, to those in the UK, they are on foreign soil and do not provide the kind of permanent landscape reminder that, for example, pillboxes or airfields do for a later war. Bereft of such sites we have become accustomed to view such encounters as events that occurred somewhere else and until recently archaeology appears to have contributed little. In recent years, however, there has been a tremendous increase in interest in the field evidence of battlefields of the First World War, which have become part of an integrated tourist circuit – the ‘Western Front Experience’ (Saunders 2001, 45). Many thousands of people, including school parties

from England, go to gain first-hand knowledge of the warfare of those early years of the 20th century. Places such as Beaumont Hamel and Vimy Ridge attract considerable numbers of visitors, while the areas around Ypres and Verdun, once only visited by veterans and their families (Coombs 1976) now serve a wider interest. After decades of cultivation, however, the earthwork remains of many of these battlefields survive only in isolated pockets or in woodland, or as soil marks in the surrounding arable fields (Chippendale 1997, 506).

Earthworks of 20th-century warfare, however, are not exclusive to the Western Front and the other foreign theatres of war, for in the UK they can also be found across large tracts of the military estates and other areas of the country where they remain as testimony to how soldiers trained for warfare. Trench systems, often naturally silted up or partially or completely backfilled, are increasingly being identified across the countryside. Some are small disjointed examples designed to provide soldiers with the merest familiarisation of trench life, while others form more extensive, coherent systems that

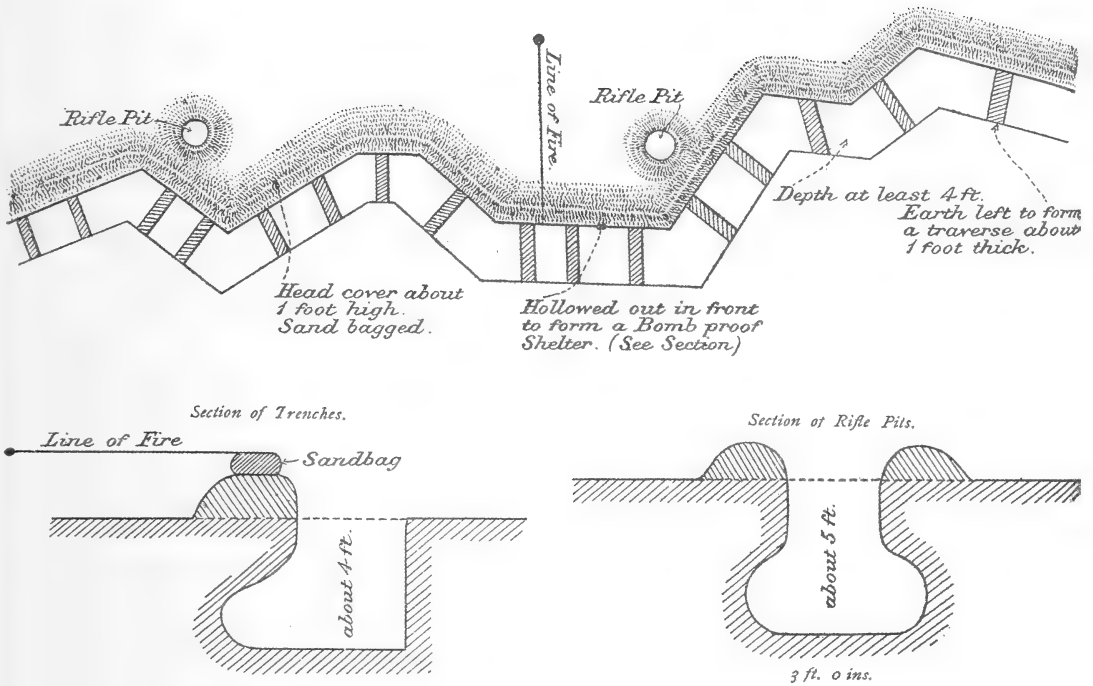


Fig. 1 Sketch plan of Boer trenches (after Anon. 1900, 92)

allowed greater knowledge of fieldcraft.

The extent of such systems is particularly striking on the Salisbury Plain Training Area, the largest military estate in the UK, where many have been preserved from cultivation and where their comprehensive nature can be observed and appreciated. Notice of this was first made as part of a widespread investigation of extant archaeology on the military estate when a number of systems were transcribed from aerial photographs (McOmish *et al.* 2002, 137-48). More recently, analytical survey, and interpretation of sites on the ground have enabled these systems to be placed within their landscape and cultural context.

The northern part of Salisbury Plain in Wiltshire has been used as a military training area since the end of the 19th century. This large expanse of undulating downland was considered particularly suitable for large-scale cavalry manoeuvres, but pressure on ranges elsewhere meant that land for infantry and artillery training was badly required. The Ministry of Defence (MoD) took advantage of the low prices of land during the agricultural depression and in 1897 began the process of buying up large estates on the chalk (James 1987). As a consequence, the traces of over one hundred years of military activity have

been engraved on the land and can be observed and recorded: rifle and anti-tank ranges, observation posts, impact areas, all survive as earthworks to this day. Present almost everywhere are trench systems that were mainly constructed to provide training in what to expect on the Front during the First World War. Many of these were quite sophisticated and, often at several hectares in extent, might provide the stage for a reasonably large mock battle.

While trenches had been used quite widely from the 18th century, much warfare still took place on open ground; however, a major lesson of the Crimean War and American Civil War was that trenches had to be taken seriously. During the latter half of the 19th century, earthen redoubts linked by zigzag trenches were prominent both in warfare and training (e.g. Smith 1995, 422-40), and on Dartmoor experiments were carried out in 1869 into the effect of 12-pounder artillery shells on 'shelter' trenches (Anon. 1870, 18). During the Boer War, the importance of trenches became abundantly clear; the Boer trenches being more effective than the British ones. One British officer commented: 'The Boer trenches are marvellous, and a real lesson to us, *our* rotten little scooped-out affairs, a foot or so deep, in one long line, always open to *enfilade*, look child's

play to theirs; theirs are *at least* 4 feet deep, hollowed out in front below ground with good head cover, and sandbagged; also, each trench (so to speak) can only hold 3 men, then a traverse of earth comes, a *foot thick*, and the trenches are never in one straight line...' (Courtney 1900, 92; Figure 1).

The success of Boer methods was not lost on the British and tests subsequently took place, first on Dartmoor, then on Salisbury Plain in 1903, when 'three 4 foot deep S-shaped Boer trenches, filled with standing dummies, were fired at both by guns and howitzers with fair effect' (Guy 1981, 1-2). The typical Boer trench was clearly more effective and can be seen as the precursor of the trench systems of the First World War.

While a number of military manoeuvres appear to have taken place on the chalk prior to MoD acquisition, these mainly involved soldiers marching from town to town, setting up camp and taking part in occasional rifle practice rather than participating in realistic battle training. Military manuals indicate that the British attitude as regards the use of trenches changed radically between 1877 and 1908, and by the latter date the use of comprehensive trench systems was being advocated (Anon. 1908, 4).

A fully developed trench system as used during the First World War comprised three main elements: a front-line, a support trench or reserve-line, and a series of communication trenches that connected them. Each of these would be composed of zigzag lengths in order to give maximum protection against *enfilade* fire or shellbursts. In most cases the front line developed a crenellated plan that allowed projecting 'bastions' to give covering fire to other parts of the trench. Machine guns positioned at each end of the trench provided raking oblique fire, while saps were dug forward into 'no man's land' towards the opposing front line as listening and observation posts. Along the communication trenches, shelter bays were constructed, often underground, which fulfilled a number of functions, including command and first-aid posts, while a little further to the rear there may have been cookhouses, latrines and other dugouts.

The fieldwork

Trench systems visible on aerial photographs of Salisbury Plain Training Area were plotted and checked on the ground during a programme of fieldwork carried out by the authors in order to ascertain the extent and condition of each (McOmish

et al. 2002). Two of these have been analytically surveyed at large scale in order to attempt to understand their morphology and demonstrate how they fit into an already complex archaeological landscape.

The first survey was of a particularly well-preserved system in an area of scrub on Beacon Hill, a prominent ridge on the eastern edge of the military estate overlooking the Bulford Rifle Ranges between the garrisons of Bulford and Tidworth (Figure 2). The system is in fact part of a network of trenches along the summit of the hill and was probably one of the main trench training areas for the troops billeted in the vicinity. Today, the area is rich in flora, contains many stands of juniper trees, and is part of a Site of Special Scientific Interest. It was during a programme of scrub management that, along with an extensive spread of Neolithic flintwork, the system was fully revealed.

Covering some 7ha and extending for 350m, the system comprises two lines of trenches. It is situated on the southern slopes of the ridge with the firing line on the lip of the summit and a support trench 60m further down-slope to its rear; the theory being that it should be difficult to shell positions on the rear slopes of hills (Crawford 1999, 33). While natural silting has occurred, both trenches survive to a depth of up to 1.5m. The firing line is crenellated, with sides of 8m and each traverse encapsulates a small 'island', which enabled troops to pass along the line without affecting those in firing positions. The cutting itself is 2m wide, but the crenellation, islands and spoil heaps give considerable breadth to the trench amounting to some 12m in all. These measurements partly reflect the result of collapse, but the original proud, un-weathered profile may have been rather different and, together with the barbed wire entanglements, would have presented a formidable obstacle. In places, preservation is excellent and one of the crenellations (a in Figure 2) has a slight depression on the front edge that may have formed a 'rest' for a rifle. Slight linear depressions (b in Figure 2) projecting from the front edge of the firing line indicate the position of saps and at the western limit a short, slightly curving bay, linked to a communication trench, is perhaps an ideal location for a machine gun emplacement. The eastern end of the front line appears unfinished and is depicted as such on a 1920s aerial photograph (NMR: SU 2145/1). In contrast, the support line is a simple zigzag trench. Here there are no 'islands', it is simply a sinuous length of trench that would have enabled troops to pass relatively quickly along

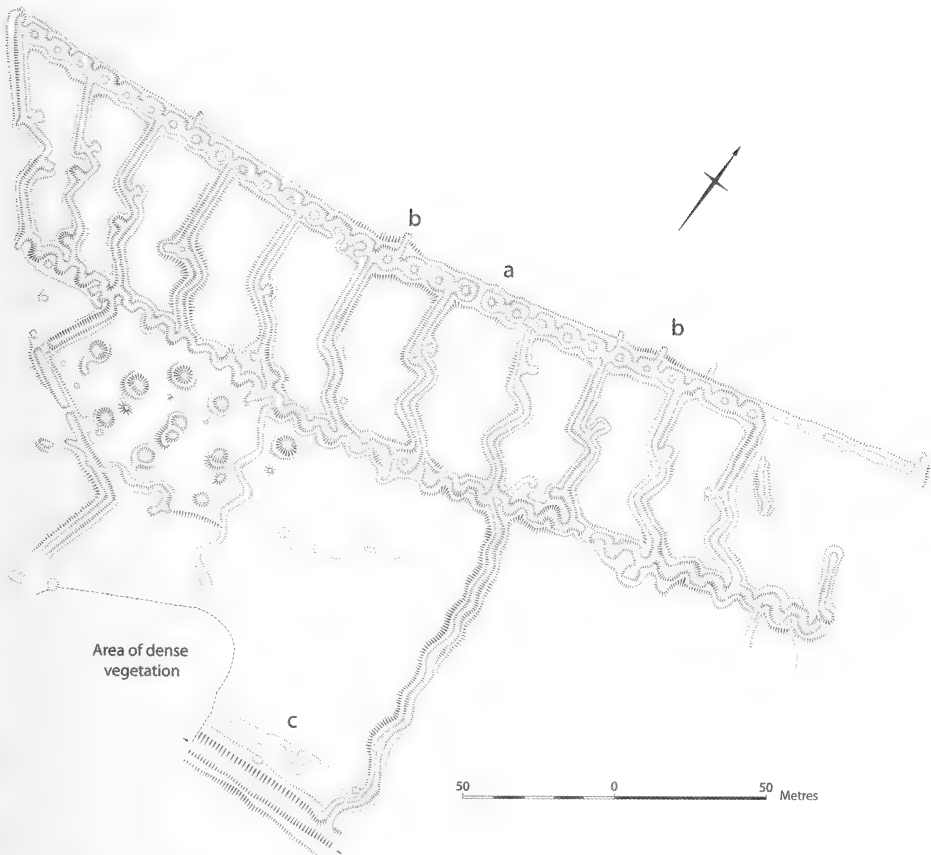


Fig. 2 Survey of earthworks of a trench system on Beacon Hill

to a communication trench.

Linking the firing line and support trench are eleven communication trenches spaced at 25m intervals. Like the support line, they are cut in a zigzag arrangement; however, the final 20m length leading to the firing line departs from the pattern and is straight, allowing a clear line-of-fire should the firing line be over-run and occupied by the enemy. Situated along the communication trenches are one or two, and in one case three, T-shaped shelter bays, which could either be used for command and control, or as small shelters or first-aid posts. To the rear of the support line are three longer communication trenches, which led to a 10m wide and 1m deep Bronze Age linear ditch with a bank to the rear that served to channel movement to and from the valley floor below. With its bordering tree line it provided excellent cover and may have been used as an additional reserve position, being fully incorporated into the trench system.

Situated a few metres north of the Bronze

Age ditch is a line of now silted and very shallow crenellated trenches (c in Figure 2) that may reflect an earlier phase of trench digging partially obscured by the construction of the main complex. In addition, there is a series of circular depressions and smaller, linear trenches immediately to the south of the support line. Some of these are more recent two-man battle trenches, though the function of others is less clear. Some were perhaps small dugouts, although only one appears to be linked to the trench system.

The second example is a small section of a trench system located within the Bulford Rifle Range itself, which was initially surveyed to illustrate the relative chronology of the earthworks that can be observed, not only here, but on a number of trench systems across the Plain (Figure 3). It is only a small part of a much more extensive system, most of which is at present covered in impenetrable scrub. The trench overlies a series of earlier, prehistoric landscape features, each of which is important in its own right

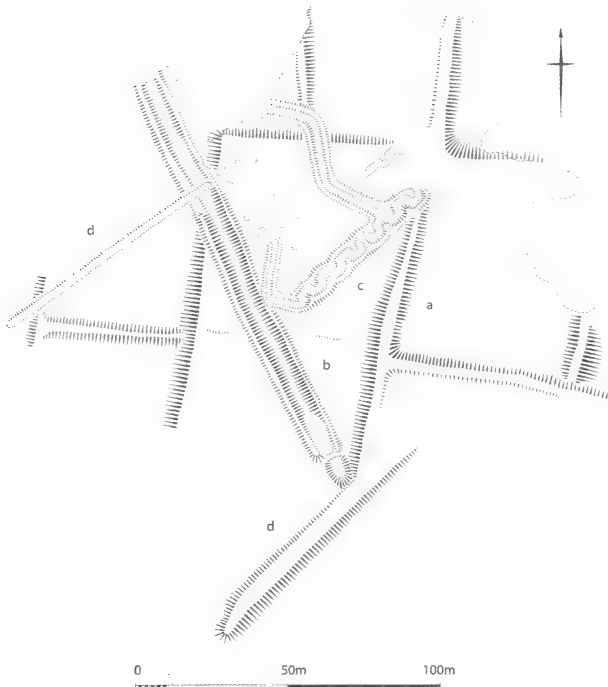


Fig. 3 Survey of the earthworks of a trench system on Bulford Rifle Range

and which formed part of the terrain of the battle practice. In turn, the earthworks of a rifle range overlay the system. The earliest feature is part of a prehistoric 'Celtic' field system (the rectilinear scarpes, or lynchets) blanketing this part of the down and probably dating to about 1500 BC, i.e. the Middle Bronze Age (a in Figure 3). Overlying, and cutting through this is a linear ditch of a type usually dated to some 500 years later, about 1000BC, i.e. the Later Bronze Age (b in Figure 3). Like that on Beacon Hill, this is a massive feature, some 10m wide and about 1m deep with a bank on either side, that extends towards the north-west from the southernmost firing point of the rifle range where it has been levelled. The familiar First World War crenellated trench system (c in Figure 3) can be seen almost centrally cutting into the field system, with a front line comprising six firing bays, without in this case, an 'island' to the rear. Two communication trenches are present; the northern example is of regular layout, while the other utilises part of the Bronze Age ditch as cover. The final piece of the chronological jigsaw is provided by two of the rifle range firing points, each 100m in length and 120m apart (d in Figure 3); both overlie the linear ditch and field system.

Trench systems

The use of deliberately dug holes in the ground for cover or protection in warfare has an extremely lengthy history and can be traced as far back in time as the Roman period or perhaps even into prehistory. Classical texts are littered with accounts of the construction of marching camps and other protective works. Engineers featured amongst William's army at Hastings (Aston 1993, 1-2) while rather later, miners from the Forest of Dean were used in the siege of Calais and the Battle of Crecy in 1346 (*ibid.*, 2). Thus tunnels, or mines, were used as early as the 11th century in order to place fires beneath masonry walls in the hope that they would crack and topple over; a corner tower of the keep of Rochester Castle, in Kent, being successfully undermined in this way in 1215 (Wiggins 2003, 9). The progress of tunnellers could often be heard above ground and led to defenders constructing counter-

mines in order to intercept the miners. Wiggins (*ibid.*, 13) described how the practice of digging zigzags or right angles within tunnels was designed to avoid counter-miners and was subsequently advocated by Luys Collado (1606) in the military manual of the day. The principles of advancing underground were, however, similar to those on the surface. A trench advancing head-on, at right angles to a fortification allowed it to be raked from end to end with gunfire from defenders. It was of the utmost importance therefore to vary the angle of approach and ensure that such *enfilade* fire was not possible. Thus a variety of methods of 'sapping' under fire were developed along with systems of crenellation and zigzags to assist with protection. The introduction of firearms heralded an important change in the techniques of battle and as their use became widespread during the English Civil War, lines of earthwork trenches for protection developed in response.

Later manuals establish procedures on how to lay out and construct trench systems using a trace or template in order that symmetry and accuracy is maintained (e.g. Solano (ed.) 1915; Anon 1917; Anon 1920). A perennial problem with ditch digging in gangs, as observed in many prehistoric monuments, is the variable nature of the result

and here it was essential that the overall plan be constructed accurately in the field. Responsibility for the layout of the trenches initially rested with the Royal Engineers and the purpose of the surveyed Cannock Chase model by the RCHME (Welch 1997) was presumably to instruct their officers in the correct and accepted design. Trench systems can, therefore, be surprisingly uniform. On Lincoln's South Common, a crenellated front line extending for some 200m can be traced as very shallow earthworks (Field 2005) and the proportions of the crenellation are almost identical to a similar system on Walmgate Stray, York (Pollington and Pearson 2005). Once surveyed and marked out on the ground by the Royal Engineers, or similarly qualified personnel, soldiers are likely to have carried out the digging, and there are countless references (e.g. Crawford 1999, 37, 139) to the practice of digging while on Salisbury Plain. Nevertheless, at the Front during the early days of the First World War it was the sole responsibility of the Royal Engineers, not only to supervise trench digging, but also to carry it out. This was later changed because of the heavy casualties suffered (Lloyd 1987, 79).

The existence of earthwork practice trenches is widespread across many of the military estates in England. While many appear to date to the early 20th century, there are examples of earlier fortifications. In Crowthorne Wood, Berkshire, the RCHME surveyed a complex of redoubts dating to the late 18th century, and three sinuous trench systems that appear to date to the late 19th century (Smith, 1995), while in the Aldershot area, Judie English recorded a redoubt on the eastern end of Hungry Hill, which dates to between 1855 and 1863, as well as two further 'military earthworks' on the Ash Ranges, in Surrey, which are slightly later (English 2004, 87-93; 2006, 245-53).

Many trench systems survive as extant earthworks on the military estate on Salisbury Plain, while others have been revealed as levelled features on aerial photographs. Some are quite fragmentary and possibly reflect their temporary nature, rapid construction, or the effect of shelling. Others, particularly those on Beacon Hill and the area to the north of Tilshead, are well preserved, and are amongst the best examples of early 20th-century trenches seen anywhere in the UK.

Trench systems vary enormously in area from perhaps as little as 0.25ha up to 26ha and archaeological fieldwork shows that great care was taken in siting them. Great ingenuity was used in adapting pre-existing features in the landscape

to best advantage, not only in the location of the systems, but also in the construction of trenches. Where situated on high ground, trenches were invariably placed just below the crest so that soldiers within them would not be sky-lined from below. A covered approach utilised hedgerows and other natural features so that troops could move to, and occupy, the support trench unobserved. Examples from across the military estate emphasise these points. On Chapperton Down, for example, a long communication trench was 'contoured' along the line of a pre-existing prehistoric 'Celtic' field lynchet, thus providing additional cover and protection as they approached the firing line.

Although it is difficult to date any particular system with precision from the earthworks alone, aerial photographs and, on occasions, map evidence, can be used to give a *terminus anti-quem*. For example, at least four trench systems are recorded on a military overlay of an Ordnance Survey map of the area to the north of Chitterne and, although it is unclear when the overlay was actually made, the base map itself is dated 1916 (Chitterne (North) 1:20,000 map G.S.G.S. 2748). On this overlay, a large trench system located to the south of Imber appears to be abandoned and used as an artillery target since the observation posts are positioned to the north and south of the system with their field of view directly towards the trenches (Figure 4).

Aerial photographs depict the extent and complexity of certain trench systems that have long been abandoned and can now only be seen as crop marks. They also show how they were used in the contemporary landscape. On Orcheston Down, for example, a site at Shrewton Folly comprises a complex system of trenches of at least two phases (McOmish *et al.* 2002, 141). The most coherent part of this group consists of three lines of trenches, a firing line, support trench and reserve line, extending for about 1km. Linking the front and support lines are twenty-five communication trenches, with a further ten that link reserve and support trenches. 120m in advance of the firing line is another continuous trench with eight smaller trenches (probably saps) leading from it. This latter trench was possibly constructed as a result of troops advancing from their initial front line and establishing a more advanced position. To the south-west of this coherent trench system is a more amorphous and disjointed scheme, which although incorporated, was probably initially unrelated to the larger system, but perhaps provided practice in trench digging.

The largest concentration of trenches (which can

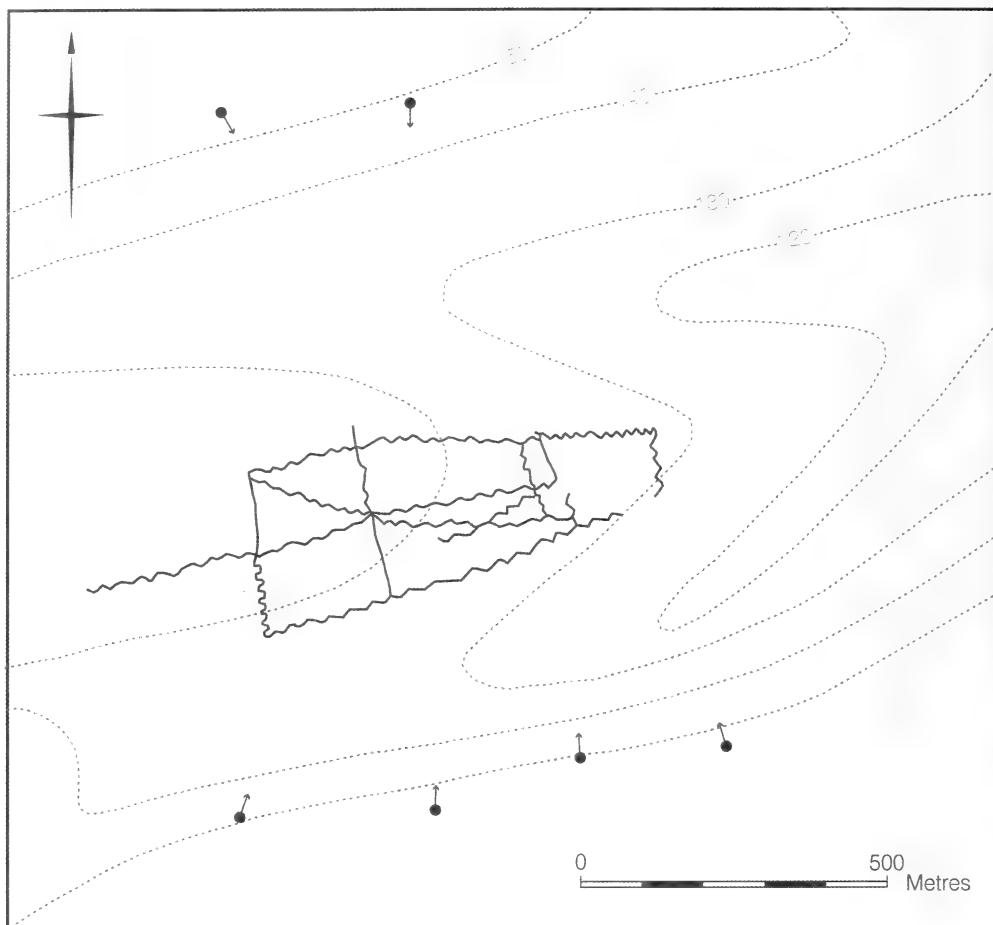


Fig. 4 Redrawn aerial photographic transcription of a trench system to the south of the village of Imber on Salisbury Plain. This system is also shown on the Artillery Training map of 1916, from where the observation posts (shown as the black circles with arrows) are taken

now only be seen on aerial photographs, for example Figure 5) is on Perham Down, which lies to the south of Tidworth. Here they form a complex system that overlies an extensive area of prehistoric 'Celtic' fields, which in turn have influenced the layout. Two opposing firing lines were established up to 200m apart. Each, along with their attendant support and communication trenches, extends for some 700m over the undulating downs. Like the other systems, the firing lines are crenellated while the remainder are zigzag or sinuous. On both sides, communication trenches lead away from the support trench for several hundred metres towards a hedgerow, from where woodland, prehistoric earthworks and tracks provided shelter and covered 'entry points' to and from the system.

Other aspects of warfare have left their traces.

Mining, that is the laying of explosive charges by tunnelling beneath the enemy's trench, was practised by at least 1916 when 'trenching and mining of all kinds are practised here...' (Guy 1981, 1-2). An example of this lies to the south of Imber where three areas are shown on a map, two within an extensive trench system, and the third on a south-facing spur just outside the trenches (Chitterne (North) 1:20,000 map G.S.G.S. 2748). Elsewhere, the sites of mine explosions survive as deep circular uniform craters of about 10m diameter and up to 2m deep with no spoil around the perimeter. To the north of Tilshead, for example, there are several equally spaced craters which date from at least 1913 when this area was first acquired by the military authorities.

Apart from the Imber example, certain other trench systems appear to have been shelled;



*Fig. 5 An aerial photograph of a small part of the trench system on Perham Down on Salisbury Plain
(NMR: ALK 7418/74, © copyright: Keiller Collection)*

for example the system at Chapperton Down is covered with shell holes; although it is not clear whether these are contemporary with trench use it may result from experiments with trench form in order to provide greater protection or of methods of destroying such systems by artillery fire. One new contributor to warfare was the aeroplane and, adjacent to a system of trenches in the southern limit of the military estate, near the Iron Age hillfort of Yarnbury, are hundreds of small craters, evidently the result of the Royal Flying Corps practising the dropping of hand held bombs or grenades from aircraft (Crawford 1924, 34).

Conclusions

Comparison of military manuals indicates that British military thought on the use of trenches changed radically between 1877 and 1908 (e.g. Anon 1877; Anon 1908) and by the latter date the comprehensive trench system was being widely advocated. Despite this, prior to the First World War, training in trench warfare was limited. The

response to the commencement of hostilities resulted in a piecemeal attempt at providing some idea of the processes, with trenches being dug wherever possible.

The existence of practice trenches is not just confined to Salisbury Plain, but widespread across many of the military estates in the UK, for example at Penally, Pembrokeshire, (Thomas 1997, 5-6; Brown 2004), Otterburn, Northumberland (Charlton and Day 1977, 137; Anon 1978, 155); Okehampton on Dartmoor (Francis 2002); and, Cannock Chase, Staffordshire (Welch 1997). Although the majority appear to date to the early 20th century, there are examples of earlier fortifications.

The lack of emphasis hitherto placed on trench systems in the UK by both historians and archaeologists is probably a result of common perception of British wars being fought on foreign soil. However, although forgotten, preparation for foreign wars has left its indelible mark on the British landscape, with remnants of trench systems, redoubts and other features dating from the 19th century still visible. Among these remains, trenches attributable to the First World War, either as fragments of front

line or complete complexes, are more widely present than formerly imagined on commons and open spaces across the country. When considered in detail, they emphasise that, by the early years of the 20th century, the training of soldiers in trench warfare was considered of utmost importance. They help to indicate the variety of training that was given to those designing and laying out the trenches; those planning tactics; and for those who would be engaged in day-to-day trench warfare.

Acknowledgements

We would like to offer our thanks to the military estate for allowing free access to the trenches on the Salisbury Plain Training Area over a number of years, and in particular, to John Loch, Jane Hallet, Ian Barnes and more recently to Richard Osgood, who have all provided help and encouragement, and to a number of successive Commandants who have all been extremely supportive. The penned illustrations are the work of Deborah Cunliffe. A draft of the paper was read by Mark Bowden, who suggested several helpful amendments. Our thanks are also extended to the staff of the library at the Royal Engineers Museum, Chatham who were extremely helpful in our research for the origins and development of trench warfare.

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APPENDIX: Trench systems on Salisbury Plain Training Area surviving as earthworks or cropmarks

Reference Number	Grid Reference	Area (m)	Description
ST94NE a	ST 967557	800 x 400	Sinuuous trench system along side of downs. Probably linked to ST94NE (c).
ST94NE b	ST 965452	500m long	Sinuuous trench on higher ground than ST94NE (a) but nevertheless probably contemporary
ST94NE c	ST 970465	400 x 200	Imber complex. 3 lines of trenches linked by 2 communication trenches. A diagonal trench also links them. Site heavily disturbed by shelling and vehicles
ST94NE d	ST 963455	1200	Long trench, probably WW2 anti-tank ditch.
ST94NE e	ST 958470	400	Same type as ST94NE (d).
ST94NE f	ST 955455	800 x 200	Complex trench system with 3 lines of communication trenches.
ST94NE g	ST 990475	250	Part of Chapperton Down complex. Communication trench on west side of valley set against Celtic field lynchet.
ST94NE h	ST 994480	500	Continuation of ST94NE j. Communication trench extends north to 3 lines of trenches on Chapperton Down. Heavily damaged by shelling. Forward trench 200m to north.
ST 94NE j	ST 980469	1000m long	Long trench leading to ST94NE (a).
ST94NW a	ST 925491	250	Single trench.
ST94NW b	ST 925490	100	Single trench.
ST94NW c	ST 920490	210	Single trench.
ST94SE a	ST 971429	400 x 100	Complex trench system comprising a north/south trench with at least 6 communication trenches overlying Celtic field system.
ST14NE a	SU 164495	200 x 100	2 lines of trenches (orientated east/west) connected by 3 communication trenches.
SU14NE b	SU 186469	120 x 70	2 lines of trenches (orientated north/south) connected by 2 communication trenches. Appear to use lynchet as a covered approach.
SU14NE c	SU 186468	500	Series of 'V'-shaped trenches on northern side of Netheravon airfield. Probably WW2.
SU14NW a	SU 142459	80 x 80	2 lines of trenches connected by 2 communication trenches.
SU14SE a	SU 171443	700 x 50	Series of small trenches facing east/west overlooking River Avon.
SU14SE b	SU 191448	300 x 300	Sinuuous trench.
SU14SE c	SU 190439	150	Sinuuous trench.
SU14SE d	SU 192439	100 x 100	Curving crenellated trench with further trench contained within the curve.
SU14SE e	SU 195437	200 x 100	2 crenellated trenches with numerous smaller trenches between.
SU14SE f	SU 192435	400 x 200	Area of small zigzag trenches.
SU14SW a	SU 110444	250 x 250	Area of small trenches c70m long.
SU14SW b	SU 123446	100 x 100	Small compact area of trenches.
SU14SW c	SU 125446	20	Small trench to north of long barrow.
SU15SE a	SU 155547	800 x 300	Series of small trenches facing northwest overlooking valley on northern side of Upavon airfield. Probably WW2.
SU24NE a	SU 263493	400 x 50	2 trenches extending in a north/south direction c400m long and connected by 12 communication trenches. Two saps extend forward of firing line.

Reference Number	Grid Reference	Area (m)	Description
SU24NE b	SU 260476	400	Narrow trench system connected by smaller communication trenches
SU24NE c	SU 2546	700 x 500	Perham Down complex. Complex area of trenches extending into SU24NW (c).
SU24NW a	SU 232485	200 x 100	Series of small irregular trenches.
SU24NW b	SU 247482	400 x 200	4 lines of trenches. Communication trench leads to a Celtic field lynchet, which was probably used as a covered approach.
SU24NW c	SU 2446	500 x 500	Extensive trench system.
SU24NW d	SU 231491	200 x 200	Series of 8 small trenches c100m long. No coherent pattern.
SU24NW e	SU 228488	200 x 100	Series of 6 small trenches c100m long. No coherent pattern.
SU24NW f	SU 225485	150 x 100	Series of 4 small trenches c100m long. No coherent pattern.
SU24NW g	SU 215472	400 x 400	Complex of 9 small trench systems comprising mainly firing trench and connected by communication trenches.
SU24NW h	SU215454	300 x 150	Beacon Hill complex. Firing trench and support trench connected by 10 communication trenches. Further communication trenches lead to a linear ditch.
SU24NW j	SU 214455	250	Single line trench. Possibly associated with SU24NW (h).
SU24NW k	SU 208455	300 x 100	Single line trench with communication trench abutting a linear trench.
SU24NW l	SU 215451	150	Curving single trench.
SU24NW m	SU 213479	100 x 50	2 lines of trenches linked by 3 communication trenches. The support trench is a continuation of a lynchet.
SU24NW n	SU 215482	150 x 150	Trench system overlying Celtic field system. 3 lines and 3 communication trenches.
SU24NW p	SU 215482	80 x 80	'Square' trench system.
SU24NW q	SU 215481	80	Single trench overlying Celtic field system.
SU24SW a	SU 215449	300 x 300	Complex trench system of at least 2 phases.
SU24SW b	SU 212448	250 x 100	3 lines of trenches connected by communication trenches, all of which are overlying Celtic field system.
SU24SW c	SU 208450	100 x 50	2 lines of trenches connected by 2 communication trenches, all of which overlie Celtic field system.
SU24SW d	SU 205442	300	Single trench.
SU24SW e	SU 204440	400 x 200	Area of single lines of trenches varying in length from c50m to c220m.
SU25SW a	SU 235508	200 x 150	Complex trench system, possibly of at least 3 phases.
SU25SW b	SU 235505	200 x 100	2 lines of trenches connected by 5 communication trenches, 3 of which extend 80m to the rear of the support trench.
SU25SW c	SU 225502	500	Single curving trench.
SU25SW d	SU 227505	300 x 300	Series of small trenches c50m long.
SU25SW e	SU224509	100	Single trench.
SU25SW f	SU 215505	400 x 300	Series of 6 trenches c100m long on the north, northeast and northwest sides of Sidbury Hill.

Notes and Shorter Contributions

The King Oak in Savernake Forest and its comparison with the living King of Limbs

by Joan Davies¹ and Graham Bathe²

The King Oak was a very large and imposing tree in the centre of Savernake Forest. The Earl and Marquesses of Ailesbury cared for this ancient oak. The tree is illustrated in J. G. Strutt's *Sylva Britannica* of 1822 and recently a drawing of the tree has been located in a Museum in Guernsey. This pencil drawing, made in 1845, was probably by the Rev. W. C. Lukis, who in 1853, jointly with Cannon Jackson, became the first Secretary of the Wiltshire Archaeological and Natural History Society. By the latter part of the 19th century the King Oak had reduced to a hulk, finally disappearing in the middle of the 20th century. There is now only one oak amongst the large ancient oaks still growing in the Forest which gives the impression, like the King Oak, of great girth, spread and height and this is the King of Limbs.

Although, judging by its size, the King Oak probably started life about a thousand years ago, its written and illustrated history only dates back for just over two hundred years. The King Oak is named on the first detailed map of the Savernake Estate of 1786 (WSRO 1300/360), where it is shown situated in an open glade south of Eight Walks and just west of Twelve O'clock Drive, features created within the Forest immediately prior to this date. Despite its demise, it has continued to be marked in this position at SU 2249 6591 on Ordnance Survey

maps. Its position is at the intersection of four other tracks and from five of the six directions one would have had to walk up an incline to reach the tree. It must have been a very noticeable and impressive feature. According to Jacob George Strutt, in the accompanying note in his *Sylva Britannica or Portrait of Forest Trees*, he wrote in his praises of Savernake Forest:

The King Oak, its most venerable ornament, spreads its branches over a diameter of sixty yards, and is twenty-four feet in girth. The trunk is quite hollow, and altogether its age appears to warrant the idea that it may have witnessed in its infancy, those rites and sacrifices of our Saxon ancestors, which were held in these shadowy recesses, at once to increase their solemnity, and to shield them from the profane eyes of vulgar observers.

The Earl of Ailesbury, Thomas Bruce Brudenell, was from 1747 to 1814 the 22nd Hereditary Warden of Savernake Forest. During the sixty-seven years of his Wardenship he planted many trees and tried to preserve the ancient ones. He, like other landed gentry of the eighteenth century, valued the veteran trees for their picturesque and amenity value. Work was carried out to preserve an ancient hollow oak in Savernake Forest in July 1783, where a tree not far from the King Oak was treated to keep out water by

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Fig. 1 J.G. Strutt, engraving of the King Oak, 1822

it being 'filled up with clay and covered with a cloth well dipped in pitch beeswax and grease' (WSRO 1300/2535). In 1809 even more elaborate efforts were proposed to try to save some of the branches of the King Oak from falling and the tree from splitting down the middle. This work is described in a report from T. Young to Lord Bruce (WSRO 1300/1634):

My Lord wishing me to state what I have at any time done to the King Oak I have to say that when my Lord Bruce came to the County in April last I went with his Lordship to the tree (which I never saw but once before merely by accident) which had two leading branches dividing themselves opposite directions about nine feet from the ground leaving a crutch or forking part. Between them the weight of the leaders with their additional limbs had opened this crutch entirely down to the ground nearly about one inch. To prevent the weather from affecting the trunk through this opening some sheet lead had been nailed over it and two iron bars had been fixed about twelve feet from

the ground to prevent the leaders from spreading any more. His Lordship found some part of the lead had been stole away and desired me to have the remainder taken off and the opening caulked up tight with a mixture of hemp and tar, leaving room for the bark to grow over it - which was immediately done. His Lordship wished at the same time to have something more done to secure the tree. I then proposed having an iron made to tie the leaders together between 20 and 30 feet from the ground, which was approved of, and the lower iron might have been taken away. I had desired the smith to make the irons when on the day following I was [informed? - page defaced] that my Lord Bruce and Mr Ward had consulted and agreed to have some iron placed still higher 20 feet than what I proposed.

Consequently I did not proceed with the irons. Indeed I was ordered not to proceed with them but [page defaced] Mr Ward on the spot which was [page defaced] a few days afterwards when we observed that one of the irons was quite loose,

indeed, almost out and not at all calculated to do any good. Nor I do not think that it ever had been of much service.

I then gave my ideas on paper and as my Lord Bruce saw that the tree was in danger and was anxious to have it done. In the mean time the iron which was observed to have been loose I was informed by one of Mr Watts men had fallen down.

I sent a lad to remove it to the Forest Sawpit that it might be taken care of, as it evidently could have been of no service whatever in the same place or in any other so low down on the tree. I am very sorry that for his Lordship's satisfaction I had it not put up. I am sensible that no blame can in any respect be attached to me and had I by this means by fixing up an iron to do no good evaded it. His Lordship would not have conceived any censure for me. I was also desired to take off all the old humps and paint [page defaced] which I should have done when the irons were fixed. It appears to me that considering the state of the tree it must be a miracle that would have saved the limbs or lives of the workmen in fixing the iron supposing the accident had not happened at present.

Over ten years later the King Oak was still a magnificent wide spreading tree, as shown in Strutt's engraving (Figure 1)(Strutt 1822). Jacob George Strutt travelled all over England and illustrated in his remarkable book, *Sylva Britannica, or Portrait of Forest Trees*, are forty-eight trees distinguished for their antiquity, magnitude or beauty.

There is an outline tracing of a later picture of the King Oak in the Devizes Museum Library, with a note that it was prepared by E. H. Goddard from an original in the Lukis Museum, Guernsey. It features in the Catalogue of the Collection of Drawings, Prints and Maps in the Library of the WANHS, prepared by Goddard in 1909, and is listed as 'King Oak 1845, tracing from a drawing by W. C. Lukis. AA1'. William Collings Lukis was born in the Channel Islands in 1817. He graduated with honours in 1840 from Trinity College, Cambridge and in 1841 was ordained deacon at Salisbury. He held the Curacy of Bradford-on-Avon, and successively the livings of East Grafton, Great Bedwyn, and Collingbourne Ducis. In addition to being a rural Dean he was active in archaeological digs and recording. At Avebury and Stonehenge, not only did he make very careful plans but also an accurate portrait of every stone. His interest in archaeological and natural history was inherited from his father Frederick Corbin Lukis (1788-1871), a renowned archaeologist and antiquary, who was also keenly interested in

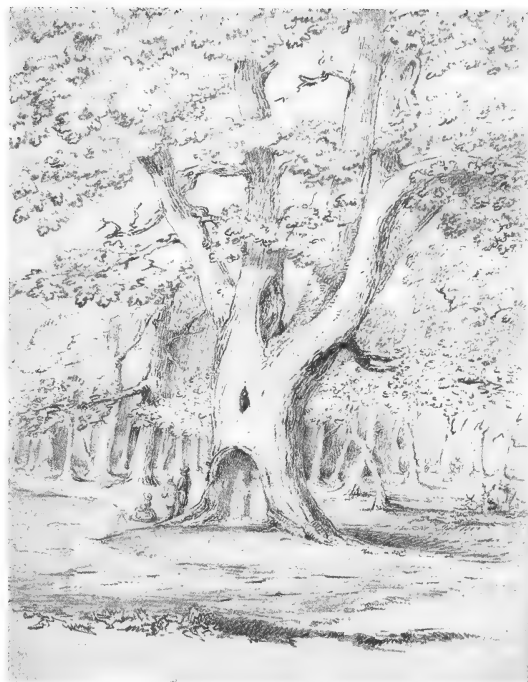


Fig. 2 Pencil drawing by W C Lukis, 1845, hitherto unpublished, reproduced with the permission of Guernsey Museums and Galleries. © States of Guernsey

geology and natural history. In 1907, Francis Du Bois Lukis, the last surviving son of Frederick Corbin Lukis, bequeathed his father's archaeological and natural history collection to the States of Guernsey. This fine collection was initially displayed at the Lukis Museum, in part of the old family home, and has since become part of the Guernsey Museums.

Following an enquiry, Alan Howell, of Guernsey Museums and Galleries, was able to locate and provide a copy of this pencil drawing. It is titled 'King Oak, Savernake Forest, about one third of the original tree, 17th October, 1845'. An accompanying note says that although it is unattributed it is assumed to be by a member of the Lukis family, and has been stored in a folder marked "W C Lukis". The pencil drawing is of the trunk and the lower part of the branches (Figure 2).

Ancient oaks have their own characteristics, with different shapes of trunks, hollow openings and arrangement of branches. Fortunately, this drawing has been made by looking from the same direction as the Strutt engraving, thus showing that both drawings are of the same tree. It appears as if a large bough on the far side of the tree had fallen between 1822 and 1845. Large branches continued



Fig. 3 Engraving of the King Oak by an unknown artist, late 19th century

to fall as the 2nd Marquess of Ailesbury, George William Frederick Brudenell Bruce, was buried at St Katharine's on 12 January 1878 in a coffin made at Durlay Warren, of which the head and footboards were made of wood from the King Oak. (*Marlborough Times* 1878).

Figure 3 depicts an undated engraving of the King Oak showing the tree with a hollow trunk and the remnants of its last remaining branch. It is from an unattributed short pamphlet on the History of Savernake Forest published by W Michael, Westbury, which includes an engraving of the ruins of Savernake Lodge. The two pictures are in a similar style and they both also appear in *Sylvan Savernake and its Story* by W Maurice Adams published in about 1903. The ruins of Savernake Lodge were demolished in 1886 so this engraving pre-dates this event. Mr. Maurice Adams says in his book 'Of the King Oak the hollow trunk now only remains, though some of its branches have fallen in the last half-century. The last surviving one was blown down in October 1872.' Assuming both engravings are broadly contemporary the date of the engraving of the King Oak is between 1873 and 1885.

By the early 1900s the King Oak like other named oaks in the Forest was protected by a surrounding fence (Figure 4). The Earl of Cardigan, Chandos Brudenell Bruce, describes in his book (*The Wardens of Savernake Forest*, 1949) how as a young child he with his mother and two young sisters were taken by his grandfather, the 5th Marquess of Ailesbury, to visit one or other of the huge venerable oaks in the Forest. The journeys were made in an open carriage with a pair of horses. Sometimes they

visited the Duke's Vaunt or a still more decayed ancient oak, the King Oak, which stood with other giants in a glade where the bracken so profuse elsewhere never grew. 'The old Marquess liked to contemplate the King Oak. It would not last much longer, but what a history it must have had!' The Marquess died in 1911, and noting the age of his younger granddaughter these journeys took place in about 1910.

In 1939 the Forestry Commission obtained a 999-year lease from the Savernake Estate for the silvicultural rights of Savernake Forest. The Inspection Records of the Forestry Commission, 1939 (F43/150) record the state of the King Oak:

The preservation of named oaks and other ancient oaks will be discussed with the Savernake Committee. The King Oak is now a rotted shell and might be removed.

The future of the King Oak was discussed at a meeting of the CPRE Savernake Committee with the Forestry Commission in 1940 when it was agreed that the King Oak, which was dead, should be replaced by a descendant of another historic tree. The Chairman, Lord Cardigan, said experiments with the Duke's Vaunt had been unsuccessful, and a proposal by Mr Peirson to use a descendant of another notable Savernake tree, the Cluster Oak, was approved. Sir Roy Robinson suggested that where necessary such sites might be marked, and in peacetime replanting ceremonies could be held.

Shortly following this decision the Forest became a giant ammunition storage depot, originally manned by British and Commonwealth troops and then expanded to include US ammunition guarded by American soldiers. It is doubtful if the remnants of the King Oak were finally removed until the end



Fig 4 Photograph of the King Oak in the early 1900s



Fig 5 Replacement King Oak, photo Joan Davies, 2003

of the war. Local people believe that some of the timber from the King Oak was taken as souvenirs by the Americans and a piece could be in a museum in America.

The Cluster Oak in Savernake Forest is situated near Column Ride and was first noted in 1916 by Arthur Yates, of Warren Farm, as an unusual tree with overlapping clustered leaves. It is a sport or mutant of the English Oak and has been classified as *Quercus robur L. var cristata* (Henry 1917). Acorns from the Cluster Oak were sown and in the late 1940s a replacement tree was planted close to the site of the King Oak. No signs of the original King Oak remain, but by measurement and looking at other trees in the photographs and drawings it appears the replacement tree is about 14m north of the original site.

A fence as well as many young trees now surround the replacement King Oak (Figure 5). After fifty years the replacement tree is thin and weak looking, heavily crowded by surrounding growth and its leaves are only slightly clustered. The original cluster oak still grows in Savernake Forest but it is very slow growing and none of the trees grown from its acorns have produced the same tightly clustered



Fig 6 King of Limbs, photo Joan Davies, 2002

leaves as the parent. The replacement will never be an impressive tree like the original King Oak. The only really impressive, wide-spreading ancient oak still growing in Savernake Forest is the King of Limbs, shown in the photograph in Figure 6.

The King of Limbs is situated in the south east part of the Forest, south of Birch Copse at SU 2428 6601. It is in Savernake parish, on the side of a track that runs along the Savernake, Little Bedwyn parish boundary. In the past the old Marlborough to Bedwyn Road was close to the tree. This route was closed, and a road along a new alignment to the north constructed in the eighteenth century. The tree has a giant girth of 10.3m (34ft), which is the third largest for an oak in Wiltshire. It is an ancient pollard, with a hollow trunk and many of its branches remaining. The tree is tall and spreading with an estimated height of 27m (88ft) and spread of 31m (34yds). This oak, like many of the other ancient oaks in the Forest, is a hybrid. The tree has intermediate characteristics between the Pedunculate or English Oak, *Quercus robur L.* and the Sessile or Durmast Oak, *Quercus petraea* (Matt.) Liebl. and has been classified as *Quercus x rosacea*, (Oliver and Davies 2001). Recently an older photograph of an un-named oak has been found in the Forestry Commission Office at Postern Hill (Figure 7). Its branches and nodules were carefully traced and by overlaying on a recent photograph of the King of Limbs, the unlabelled tree has been identified as the same tree. It is therefore an older photograph of the King of Limbs taken before some of its branches had fallen.

The trees in the background of this photograph are larch, which are about 20 years old. Larch would be felled for timber at about fifty years old. This background plantation was replanted with Douglas



Fig 7 King of Limbs, photo c. 1950

firs in 1987 therefore the photograph with the dog was probably taken in the early 1950s.

In 2006 the King of Limbs extends right across a wide track but, even so, with a spread of 31m (34yds) it is small compared with that given for the King Oak which, at 60yds, was truly enormous. However, the trunk girth of the King of Limbs is larger than that reported for the King Oak and from its size it is a very ancient tree. Like the King Oak it would have been familiar to the Hereditary Wardens of Savernake Forest and contributed to the character and amenity of this ancient landscape. Although the tree is hollow it is still a healthy looking tree so, if properly cared for, it should live for at least another hundred years or more.

By including this ancient tree with both a recent (2002) and a fifty-year-old photograph, in the same article as the King Oak, it is hoped history is being written for use in the future as well as presenting facts about a famous tree that has been dead and gone for fifty years or more.

The authors would be pleased to learn of any other old pictures (photographs, drawings, paintings) or any accounts in diaries, journals and letters, of the King Oak, King of Limbs and any other great trees of Savernake, irrespective of apparent quality, to assist in understanding the history of the Forest. Mr Tilley who lives at the edge of the Forest has told the authors he believed the King of Limbs had all of its main branches in 1975. Information about the Figure 7 photograph would be welcome as well as any knowledge of when the King of Limbs started to lose its main limbs.

Acknowledgements

We wish to thank Alan Howell of Guernsey Museums and Galleries for locating and providing a copy of the drawing presumed to be by W. C. Lukis, Guy Singleton for supplying the old postcard of the King Oak, Fraser Bradbury, Area Forester for Savernake, for his assistance and Brian Davies for his help generally and with surveying.

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Some early petrological analyses of Neolithic and Bronze age lithics in Wiltshire Heritage Museum

by *Paul Robinson*

The Implement Petrology Committee of the South Western Group of Museums and Art Galleries was founded in 1936 to study the petrology and distribution of Neolithic and Bronze Age stone implements in the South West of England. The Committee, which grew out of an idea expressed by Alexander Keiller to Lt Col. Drew, has always comprised archaeologists and geologists including museum curators working in those disciplines. It arranges for thin sections to be cut from the stone artefacts. These are polished and mounted onto slides which are then viewed under regular and polarizing light to identify the material from which the implement was made and its probable source. Since 1936 over 1500 stone implements found in South West England have been examined and documented by the Committee. The majority of these are Neolithic and Bronze Age axeheads and related items such as maceheads, adzes and hammers. They also include a number of smaller objects such as hones, rubbers and utilised pebbles.

In 1955, Nicholas Thomas, Curator of Devizes Museum, submitted 21 stone objects from the museum collection for examination to Dr F. S. Wallis, Chairman of the Implement Petrology Committee, by profession a geologist and the director of the Bristol City Museum. The objects comprised perforated whetstones, sponge finger stones, other whetstones, utilised pebbles, and unutilized pebbles and fragments of stone. Twenty of these came from Early Bronze Age barrows in Wiltshire, while one came from a presumed Neolithic context in a long barrow. This was the first time that Neolithic and Bronze Age stone objects of these classes had been examined petrologically.

As none of the items was thin sectioned in 1955, the identification of the material from which they were made was never published. I am grateful to Nicholas Thomas for permission to publish here Dr Wallis's conclusions which are contained in a letter from him preserved in the Museum's files.

In the catalogue below, the 'Stourhead Collection' accession numbers are listed in Cunnington and Goddard (1896). Accession numbers prefixed 'X' are listed in M.E. Cunnington and E.H. Goddard (1911, 9-26) and (1934, 8-61). These numbers are the original accession number of the objects. Numbers with a DM (i.e. Devizes Museum) prefix are an alternative numbering system employed in the Museum in the 1960s. Perhaps unfortunately, only the 'DM' numbers, not the original accession numbers, were used in Annable and Simpson (1964).

Catalogue

(each item is illustrated at half actual size)

1. Perforated whetstone from an unidentified barrow on Knighton Down in the parish of Broad Chalke. Accession number: Stourhead Collection 77 (DM 1791): Annable and Simpson (1964) no. 377. Identification: Fine grained reddish sandstone. Probably from (the) Old Red Sandstone of the Mendips.
2. Perforated whetstone from the secondary cremation in the bowl barrow, Wilsford (S.) G60. Accession number: Stourhead Collection 186a (DM 323): Annable and Simpson (1964) no. 267. Identification: Fine grained calcareous sandstone.
3. Perforated whetstone from the primary or secondary cremation in the bowl barrow, Warminster G5. Accession number: X108 (DM 776): Annable and Simpson (1964) no. 537. Identification: Black slate (from) North Cornwall.
4. Perforated whetstone, a surface find from Clyffe Pypard. Accession number: X110 (DM 778): Annable and Simpson (1964) no. 328. Identification: Black slate (from North Cornwall?).

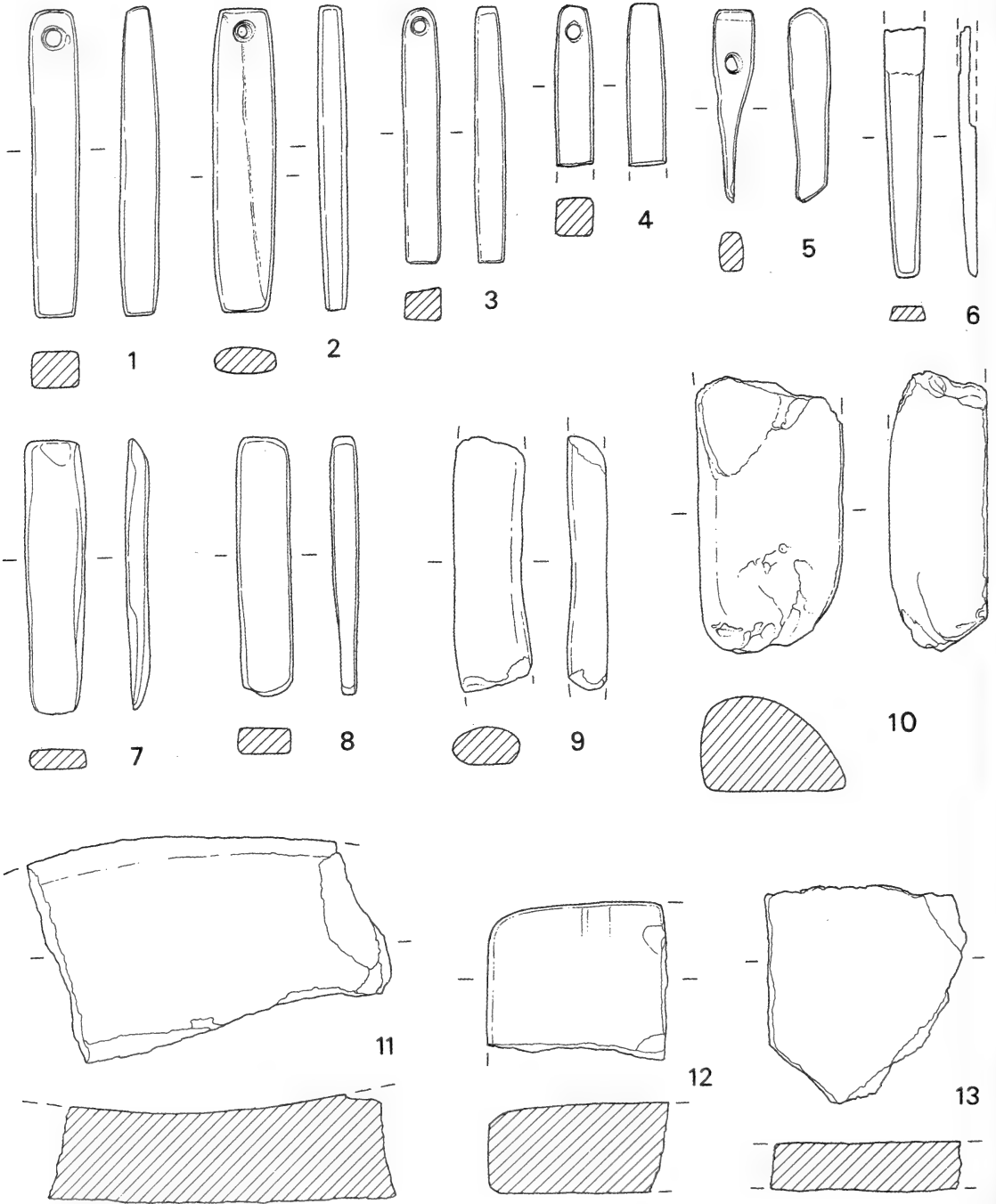


Fig. 1 Items 1-13

5. Perforated whetstone from a possible primary cremation in an uncertain bowl barrow at Shrewton (G1, 2 or 3). Accession number: Stourhead Collection 28 (DM 779): Annable and Simpson (1964) no. 329. Identification: Fine grained limestone.
6. Incomplete perforated (?) whetstone from the secondary cremation in the bowl barrow, Wilsford (S.) G60. Accession number: Stourhead Collection 186b (DM 324): Annable and Simpson (1964) no. 268. Identification: Fine grained blackish limestone.
7. Sponge finger stone from an inhumation in a flat grave beneath a sarsen at Durrington Walls. Accession number: Stourhead Collection 85e (DM 1620): Annable and Simpson (1964) no. 90. Identification: Fine grained limestone.
8. Sponge finger stone from the secondary cremation in the bowl barrow Winterbourne Stoke G8. Accession number: Stourhead Collection 49 (DM 1029): Annable and Simpson (1964) no. 303. Identification: fine grained limestone.
9. Whetstone from an uncertain barrow in the Cow Down group at Collingbourne Ducis excavated by the Revd. W.C. Lukis. Accession number: X30 (DM 785): not in Annable and Simpson (1964). Identification: Fine grained micaceous schist (from Brittany?).
10. Irregularly shaped whetstone from the Neolithic long barrow, Winterbourne Stoke G53. Accession number: Stourhead Collection 75a: not in Annable and Simpson (1964). Identification: Medium grained sandstone, probably from (the) Old Red Sandstone of the Mendips.
11. Irregularly shaped whetstone from a ? secondary cremation in the bowl barrow in the Cow Down group, Collingbourne Ducis G9. Accession number : X34 (DM 792): not in Annable and Simpson (1964). Identification: Medium grained pinkish sandstone probably from (the) Old Red Sandstone of (the) Mendips.
12. Pillowstone or broken whetstone from an unidentified barrow at Shepherds Shore, Bishops Cannings. Accession number: X96: not in Annable and Simpson (1964). Identification: Medium grained sandstone, probably from (the) Old Red Sandstone of the Mendips.
13. Irregularly shaped tabular whetstone from a primary cremation in the bowl barrow, Roundway G56. Accession number: X67 (DM 810): not in Annable and Simpson (1964). Identification: Fine grained reddish sandstone.
14. Sub-rectangular whetstone from the secondary cremation in the bowl barrow, Winterbourne Stoke G8. Accession number: Stourhead Collection 49a (DM 1030): Annable and Simpson (1964) no. 302. Identification: Medium grained quartzite sandstone.
15. Cushion stone made from a rounded pebble with polished surfaces, the working face slightly convex and the two ends flattened (compare with the similarly shaped cushion stone from Winterbourne Monkton (Annable and Simpson (1964) no. 75). From a primary inhumation in the bowl barrow, Amesbury G56 in the Cursus barrow group. Accession number: Stourhead Collection 89 (DM 782): not in Annable and Simpson (1964). Identification: Banded chert.
16. Rounded pebble with some batter marks where it has been used for hammering from a possible cremation in an unidentified barrow at Collingbourne Ducis excavated by the Rev. W.C. Lukis. Accession number: X29a (DM 787): not in Annable and Simpson (1964). Identification: Pink chert reddened by fire.
17. Unworked water worn pebble with some batter marks at the ends where it may briefly have been used for hammering, from the ? primary cremation in the bowl barrow, Wilsford (S.) G18 in the Normanton Down barrow group. Accession number: Stourhead Collection 114 (DM 746): not in Annable and Simpson (1964). Identification: flint.
18. Small unworked pebble with fractured end from the primary cremation in the bowl barrow, Roundway G5b. Accession number: X58 (DM 806): not in Annable and Simpson. Identification: Rolled chert pebble. Note: L.V. Grinsell describes this as a ' quartz pebble brought from (a) distance' (VCH Wilts. I i p.189).
19. Unworked fragment of stone from the primary cremation in the bowl barrow, Roundway G5b. Accession number: X75 (DM 812): not in Annable and Simpson (1964). Identification: Coarse grained grey sandstone.
20. Unworked fragment of stone from the primary cremation in the bowl barrow, Roundway G5b. Accession number: X76 (DM 813): not in Annable and Simpson (1964). Identification: Ferruginous sandstone.
21. Unworked fragment of stone from the primary cremation in the bowl barrow, Roundway G5b. Accession number: X77 (DM 814): not in Annable and Simpson (1964). Identification:

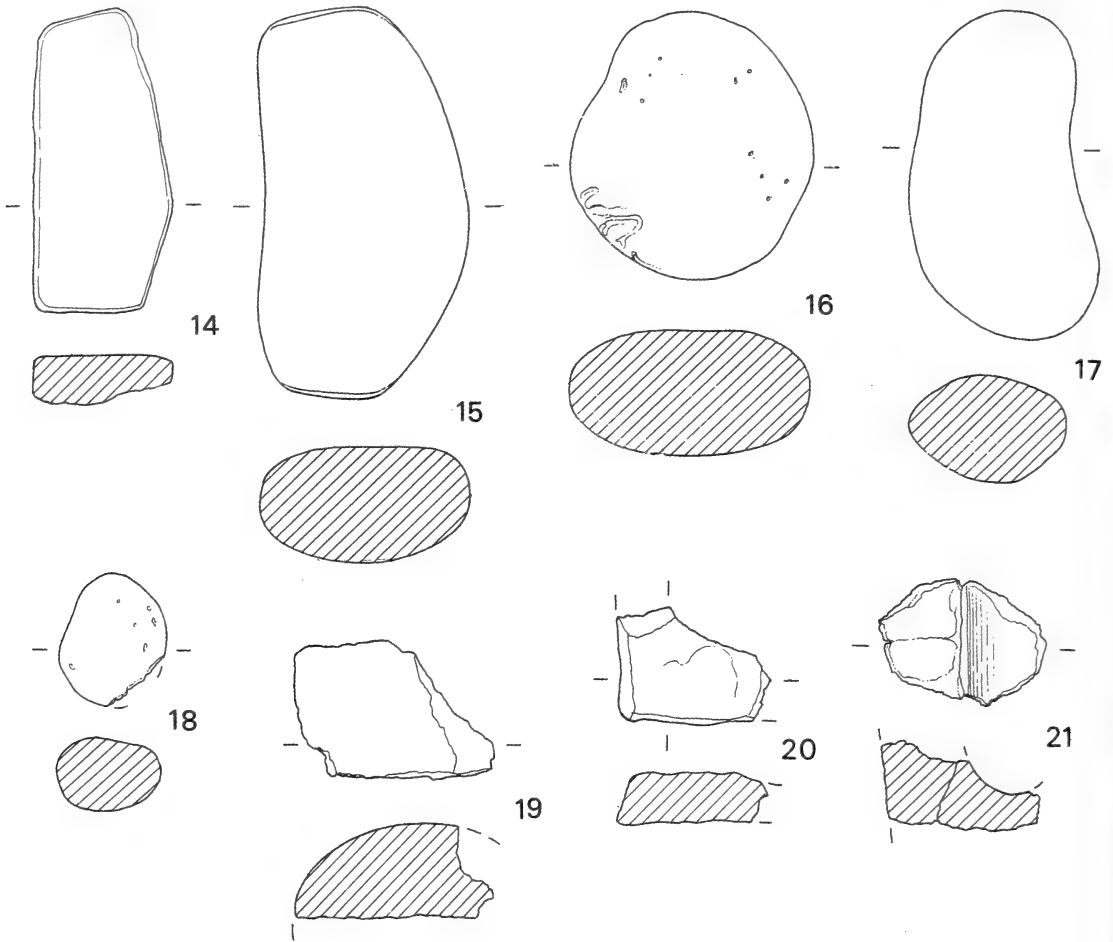


Fig. 2 Items 14-21

Ferruginous sandstone.

Although carried out 50 years ago, the petrological identifications by Dr. F. S. Wallis are very much more than of mere interest for the history of archaeology. Many of the stone implements which have been examined are among the most important Bronze Age artefacts in Wessex while several come from barrows located within the Stonehenge World Heritage site. The closer identification of all of these is important as a principle. The publication of the possible origin of the stone from which some of these were made, in North Cornwall or, in one instance, possibly Brittany, provides significant evidence for long distance contacts in the Early Bronze Age and may help to stimulate future research strategies.

Since we have no evidence of the method Dr

Wallis used to identify the materials, it would be desirable to verify his conclusions. His work overlaps with a current project to identify more accurately the significance of burial assemblages from Beaker and Early Bronze Age contexts in England in the course of which selected stone objects including some of those examined by Dr Wallis have been analysed using a portable x-ray fluorescence spectrometer. Here for example it is concluded that the perforated whetstones 'may belong to the Devonian-Carboniferous killas of Devon and Cornwall' (Ixer 2005, 56) supporting Dr Wallis's identifications. This note should, of course, be read in conjunction with the paper containing Ixer's identifications.

Acknowledgements

I am, as ever, grateful to Nick Griffiths for providing the illustrations to this paper and to Dr Joan Taylor for her encouragement to write it.

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An Earlier Neolithic site at Hackpen, Overton Hill, Avebury

by Nicola Snashall

Introduction

In July 2004 a number of sherds of pottery, together with several flint flakes were brought to the Alexander Keiller Museum by a walker, Dr Vanessa Coute. The finds were reported to have been discovered from spoil upcast from a badger sett in an arable field beneath the byway on the western slopes of Overton Hill. Preliminary examination of the pottery by the Curator (Ros Cleal) established that the pottery was of prehistoric date, the composition of the fabric suggesting that the material might be of either Earlier Neolithic or Middle Bronze Age date.

Fieldwork

During November 2005 the opportunity arose to further examine the find spot. A team consisting of Ros Cleal, Mark Gillings, Josh Pollard and the author conducted a visual survey of the area reported as the find spot and identified prehistoric pottery and flint flakes in the upcast of a badger sett located at

NGR SU11415 69010. The find spot is in a narrow west-facing valley overlooking the West Kennet Avenue and its environs. Visual examination of the spoil from a number of badger sett entrances within the area suggests that a significant depth of colluvium is present in the area.

Jim Gunter and Vaughan Roberts subsequently undertook geophysical surveys on behalf of the National Trust. A 60 m x 60 m area centred on the find spot was surveyed using both resistivity and magnetometry. The magnetometer survey produced poor results. By contrast, resistivity survey showed a number of sub-surface features that, when compared to a plot of badger sett entrances, appear to correspond to such activity. Although no archaeological features were clearly discernible, it is uncertain if this reflects a genuine absence or the masking effects of colluvium in this area. The proximity of the find spot to an active badger sett necessitated consultation with English Nature. Following discussions, the team returned in January 2006 in order to excavate the spoil from the badger sett itself.

Earlier Neolithic finds from Hackpen: 1937 and 2006

A previous find of Earlier Neolithic pottery, including two decorated and one undecorated rimsherds, animal bone and flint flakes, by a Mr F. Clements, 'on the west slope of the Hackpen ridge, above and to the south-east of Wayden's Penning,' was reported in this journal by Stuart Piggott (Piggott 1937, 90-91) and the finds are in the Alexander Keiller Museum. The 2006 ceramic assemblage is Earlier Neolithic in date (R. Cleal *pers. comm.* 2006) and comprises 29 body sherds and three rim sherds (one of which is decorated). Ros Cleal and Mark Gillings undertook a preliminary examination of both the 1937 and 2006 ceramic assemblages and revealed that the decorated rim sherd from the 2006 assemblage is from the same vessel as that described and illustrated by Piggott as Sherd 2 (R. Cleal *pers. comm.* 2006).

The 2006 excavation also produced a moderate assemblage of pottery and flint and a small fragment of sarsen. A total of 75 flint items were recovered, including both primary preparation flakes and trimming flakes, consistent with an Earlier Neolithic date (Table 1).

Table 1: The 2006 Flint Assemblage from Hackpen, Overton Hill, Avebury

Debitage (excluding cores)		44
Broken fragments (unidentifiable)		14
Core fragments	2	
A2 (narrow flake removals)	1	
B2 (blade and narrow flake removals)	1	
B3 (flake removals)	1	
Cores		5
Extended end scraper	1	
Serrated (and worn)	2	
Edge trimmed (narrow flakes and blades)	5	
Edge trimmed with gloss	4	
Tools		12
Total		75

Subsequent to the excavation of the badger spoil, one further find, a portion of red deer tibia (R. Thomas *pers. comm.* 2006), was found and brought to the Alexander Keiller Museum by Roger Vlitos and Susanna Bailey. Although from the general area of the other material, it may not have come from the same spoil heap.

Conclusions

A number of small-scale fortuitous discoveries of Earlier Neolithic material have been made in the past within the Avebury landscape, yet little is known about the nature of Earlier Neolithic activity away from the major monuments of the area (Cleal and Montague 2001, 18). The location of the badger sett entrance and colluvium present within the spoil suggest that the material is derived from either an open site or features sealed by colluvium. The remarkable discovery of two sherds of pottery from the same vessel some seventy years apart affords us the certainty of identifying the 1937 and 2006 assemblages as derived from the same site despite the disturbed nature of the contexts from which they were recovered. The freshness of both the ceramic and lithic assemblages is, however, worthy of note.

Together with the material reported by Piggott, the new assemblage suggests that the Hackpen site was a significant locale during the Earlier Neolithic. The site is also intervisible with West Kennet long barrow and the causewayed enclosure at Windmill Hill. Following further discussions with English Nature it is intended to carry out targeted fieldwork to establish more accurately the character of the site. Finds from the 2006 fieldwork are deposited in the Alexander Keiller Museum.

Acknowledgements

Work at Hackpen has been made possible by the co-operation, support and advice of Ros Cleal (National Trust), English Nature, Mr Tony Farthing and Mrs Judy Farthing, Mark Gillings (University of Leicester), Jim Gunter, Josh Pollard (University of Bristol), Vaughan Roberts, Richard Thomas (University of Leicester).

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A Middle Bronze Age Palstave from Broad Blunsdon, Wiltshire

by *Martyn Barber*

History and circumstances

As part of the Wiltshire Archaeology and Natural History Society's 150th anniversary celebrations, a finds identification day was held in Devizes on Friday August 1st 2003. Members of the society and the general public were encouraged to bring along items of potential interest for identification and, if the item(s) warranted it, recording. Amidst the Roman and medieval pottery, plus assorted flints and fossils, perhaps the most remarkable item was the last to arrive on the day – a Middle Bronze Age bronze palstave brought along by Mrs Julia Hunt, of Swindon (Figure 1).

The palstave is not a recent discovery, and while it had not completely escaped the attention of archaeologists, 90 years had passed since the only brief reference to its existence had appeared in print (Goddard 1913). The object had come into Mrs Hunt's possession two years previously, following the death of her godmother, Helen Smith, the eldest daughter of the original finder, Henry Smith. Mrs Hunt has provided some biographical details about Mr Smith – when he married in 1908 at Stanton Fitzwarren, he gave his age as 43, his occupation as farmer and his place of residence as Broad Blunsdon. His daughter Helen was born the following year. According to Mrs Hunt, the Smith family had connections with either Upper or Lower Burytown Farm, both just east of Broad Blunsdon, as well as Nightingale Farm, east of South Marston.

The relevance of such biographical details lies in the help it can give in confirming whether or not the palstave had indeed been recorded previously. Given the period when Henry Smith was active as a farmer, there are two obvious sources to check: the Rev. E. H. Goddard's (1911) list of Bronze Age bronzes from Wiltshire, and his more detailed gazetteer of prehistoric, Roman and Saxon antiquities from the county published two years later in 1913. Goddard (1911) contains nothing identifiable as Mrs Hunt's palstave, while his later piece contains the following

entry under Broad Blunsdon:

"Bronze looped palstave, 5½ in. long found at Burytown on high ground S of farm, 1906. In private hands" (Goddard 1913, 206).

The amount of detail is limited to say the least, but Mrs Hunt's palstave is indeed looped, c. 5½ inches (140mm) long, while a 'Burytown' findspot and a 1906 date of discovery fits with what is known of Henry Smith, as does the statement 'in private hands'.

Further detail is provided by the Ordnance Survey's former Archaeology Division (English Heritage NMR record SU19SE2), although when their information about the object was acquired is unknown (the Archaeology Division was set up in 1920), as is the identity of their source. Although Ordnance Survey records contain no information about the identity of the finder, the findspot is located a little more precisely to 'a field about ¼ mile east from Castle Hill', the location being marked for a while on Ordnance Survey maps at NGR SU 1632 9116. On occasions, Ordnance Survey fieldworkers were able to identify some findspots with considerable certainty simply by asking the finder or the landowner. In other cases, they obtained information from a third party, with less confidence about the accuracy or reliability of the information.

Of relevance here is an error in Leslie Grinsell's gazetteer of Wiltshire sites and finds published in Volume I part I of the Victoria County History for Wiltshire. Grinsell refers (1957, 43) to the Blunsdon palstave suggesting the Ordnance Survey to have been his primary source. He notes two published references, Goddard 1913, 206 (as noted above) and Goddard 1926, 350. The latter, however, refers to a different object. Although the dimensions are virtually identical (5½ inches (140mm), long, 2 inches (60mm) wide across the cutting edge) and the provenance – Broad Blunsdon – is similar, this axe was by 1926 in the possession of Mr A.D. Passmore,

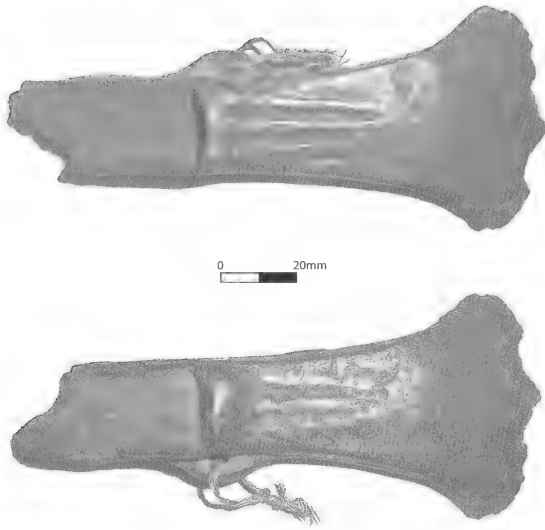


Fig. 1 *The Broad Blunsdon palstave*

and is now in the Ashmolean Museum, Oxford. Moreover, although no illustration of the palstave now in Oxford is included in Goddard (1926), the object is indeed different from that in Mrs Hunt's possession. No information was offered by Goddard about the circumstances or date of discovery. It is possible that both pieces were found at the same time, though the lack of evidence available suggests that it might be wise to err on the side of caution and treat them as separate finds.

Description

The palstave has a maximum extant length of 140mm, a maximum extant blade width of 59mm and a maximum thickness, stop to stop, of 32mm. The maximum loop width is 11mm, with a height of 7.5mm. The thickness of the septum is 11mm, while the width at the break across the septum is 26mm. The width at the stop is 24mm (external). The object weighs 434g/15.3oz.

The palstave is predominantly a very dark green to black with occasional hints of a gold-bronze colour. It appears to have been cleaned and polished at some stage since discovery. Several strands of twisted wire passing through the loop were used to display the axe in the owner's house.

The blade end shows considerable damage. The original cutting edge is visible only at the extremes

plus one small section near the middle and the cutting edges are sharp. There are no indications of recent sharpening. Damage to the blade comprises three large, curved 'nicks', and appears to be pre-depositional, with additional post-depositional corrosion.

The butt end is incomplete, with one corner missing, although whether through use or incomplete casting is unknown, although the latter is plausible; the flange end at the broken corner appears quite smooth. The septum flanges are smooth and well-finished, but the septum surface itself is comparatively rough and pitted. A portion missing from one septum flange appears to represent recent damage. The septum/flanges appear straight sided, though it is possible that the intent was for them to narrow slightly over their total length.

All four septum flanges are slightly different in character, but each rises gradually in height toward the stop, but with the stop itself rising above them. There is slight variation in angle of rise, while one appears more convex than straight, levelling off only when approaching the stop. The septum accounts for a little more than one-third of the total length of the object.

The flanges meet the stop at right angles and do not continue down the sides of the blade. In profile, the stops on each side are slightly misaligned; on one side they are *c.* 2mm closer to the blade than on the other. Both stops rise a couple of millimetres above the maximum height of the flanges. The stop, which is straight on one side and curved on the other, is flat and smooth on the septum side, but protrudes in a somewhat bulbous fashion on the blade side as the blade thickness decreases, initially quite rapidly and then more gently towards the blade. The blade itself flares gently outwards for *c.* two thirds of its length, before flaring out more noticeably towards an expanded cutting edge. This flaring is again accompanied by a noticeably sharper decrease in blade thickness. A slight niche above one blade tip is present, probably the result of blade expansion through hammering.

The casting seams are only partially removed. A broad, slightly raised irregular moulding represents the surviving trace on each side. The sides themselves are slightly faceted, giving the palstave a six-sided section at the blade end, rather closer to a four-sided section at the septum end.

The blade decoration is crude in execution and appearance. On one face it appears to represent two converging ribs, each emerging from a point close to the outer edge of the palstave body, meeting circa

40mm below the stop. Between these ribs is a third, centrally placed. All three ribs are virtually flat, perhaps partly as a result of polishing. The other face appears to feature a less successful attempt at the same design, with only the central and right ribs properly executed. The left hand rib fades short of converging with the other two. The decoration on both faces may represent a less than successful attempt to add surface decoration to a (probably) clay or (less likely) stone mould.

The loop is low, flat and broad. It is unclear to what extent the hole through it has been affected by the presence of the wire, but it currently measures a maximum of 4mm across.

Discussion

Palstave typology is not straightforward. Several studies have examined palstaves either in general or in detail for particular parts of the British Isles. No single entirely satisfactory classification has appeared. Although general regional and chronological trends in form and decoration are evident, clear dividing lines between different types are few. Given the history of this particular palstave, a detailed review of the various schemes proposed is not appropriate. In addition, Bronze Age metalwork from northern Wiltshire and adjacent regions has not been subject to detailed scrutiny. In the absence of such a study, the regional context is unclear.

The principal schemes for palstaves of the type considered here are those of Smith (1959), Butler (1963), Rowlands (1976), Schmidt and Burgess (1981), and Pearce (1983). Placing the Blunsdon palstave precisely within each scheme is a complex and subjective exercise – each emphasises different criteria – but in general, the low flanges compared to the height of the stop, the relatively broad blade compared to upper body width, the absence of flanges on the blade edges, the form of decoration, and the presence of a loop, all suggest that the Blunsdon palstave belongs within the ‘Taunton’ style of Middle Bronze Age metalwork. Such material comprises a series of largely distinctive metal objects and associated items whose main period of currency was, broadly speaking, c. 1400 to 1275 BC (Needham *et al.* 1997).

What the palstave represents in terms of Middle Bronze Age activity in the Blunsdon area is speculative. The findspot and original context of the object are unknown, as is the case for the overwhelming majority of Bronze Age bronzes from

the British Isles. There are no records of further Bronze Age activity of any kind in the vicinity.

It is unusual, though by no means unknown, for an object such as this to occur on a settlement site. Where a settlement context is proven through excavation, the evidence tends to support suggestions that these objects were deposited intentionally and with some formality rather than simply being disposed of when put beyond use by damage. The Blunsdon palstave displays considerable damage, but bronze is recyclable, and recycling of metal was extremely common during the British Bronze Age (see Barber 2003 for a discussion). Ultimately, there are limits to what we can say about the palstave, and what it can currently tell us about the Middle Bronze Age in north Wiltshire.

Acknowledgements

I would like to thank Julia Hunt for bringing the palstave to Devizes for identification, and for allowing me time to subsequently study the object. I would also like to thank Chris Chandler and Mike Stone, the other members of the finds ‘panel’ on the day, who dealt with the bulk of material brought in.

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The North Italian fibula from Avebury Down

by *Paul Robinson*

The North Italian bronze violin-bow fibula (accession number 1987.18) found in 1987 at Avebury Down at SU122714 is important not only as a particularly significant find within the World Heritage Site but also as it is one of the few - possibly the only - Italian fibula which has a genuine findspot in the British Isles. The brooch was published by Hawkes as possibly brought to England in the Late Bronze Age in about the 10th century BC (Hull and Hawkes 1987, 12 and plate 1). Most recently it has again been classed as a Late Bronze Age (1100 to 800 BC) artefact (Barber 2005, 139, no.78).

Professor Dr de Marinis from the University of Milan has confirmed that the brooch is from Northern Italy and, in correspondence with the writer, compares it closely to examples from Redù in Modena in North Italy, from 'Torre Annunziata' near Naples and from Menelaion in Therapnai in Greece.¹ He dates the brooch to the 13th-12th centuries BC, that is, to the Late Bronze Age in North Italy which corresponds in time, however, to the Middle Bronze Age in Southern England. When the brooch was deposited or lost is, however, a different matter and Hawkes' suggestion that it was brought to England at a slightly later time when derivative brooches were in use in the area of the Rhineland to north-eastern France may or may not be correct.

The fibula is unlikely to be associated with the Neolithic Henge Monument at Avebury. Its broader context should be seen within the middle and later Bronze Age settlement on the Marlborough downs

and with the other finds of metalwork from this region summarised most recently by Barber (2005) and McOmish (2005).

Finally it should be noted that the fibula is not the only example of 'exotic' Bronze Age metalwork associated with the Avebury area. Branigan identified a dagger recorded as having been found at Winterbourne Bassett² as a Cypriot dagger to which he gave 'a likely date between c.1600-1350 BC' (Branigan 1970, 93f). In reply Watkins qualified this by describing the dagger as 'very probably Cypriot but not..... a Cypriot dagger' (Watkins 1976, 136). Although he does not specifically discuss the provenance of the dagger, he dismisses all the purported finds of Cypriot daggers in Western Europe on three grounds - that they invariably lack context and association; they lack typological and chronological homogeneity and their erratic distribution conforms with no pattern of ancient exchange. Following Watkins' paper, the title of which 'Wessex without Cyprus: Cypriot Daggers in Europe', shows clearly that the author does not accept the Winterbourne Bassett dagger as having been lost in Britain in prehistoric times, it has generally been regarded as falsely provenanced, although it is included as a genuine find in Barber's recent corpus (Barber 2005, 138, no.34). It is, however, unfortunate that neither Branigan nor Watkins looked more closely into the dagger's provenance. It was donated with three other items (a bronze finger ring, an unidentified iron object, and

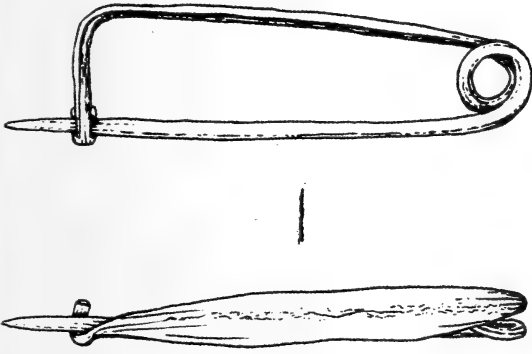


Fig. 1 The North Italian fibula from Avebury Down.
Scale 1:1

a bronze buckle), all said to be from Winterbourne Bassett Down, to Devizes Museum in 1868 by the Rev. Henry Harris, who was the rector of that parish.³ Although absolute certainty regarding the discovery of the dagger is lacking, the provenance does have a ring of truth about it and although its findspot, following Watkins' argument, is highly unlikely, that it was found in Winterbourne Bassett should not lightly be dismissed. The same does of course not hold for other classical antiquities which purport to have been found in or near Avebury (Robinson 2003) showing how careful it is necessary to be with regard to the provenances of non-local objects.

Notes

1. For the brooch from Redù see *Preistoria e protostoria nel Reggiano, Reggio Emilia* 1975, fig 12: 13. For that from Menelaion see K Kilian in *Praehistorische Zeitschrift* 1985. For that from Torre Annunziata see Walters (1899), fig 30.
2. Published in Annable and Simpson (1965) no.351: Goddard (1912), 100.

3. Handwritten donations book entitled 'Donations to Wiltshire Archaeological and Natural History Society, Devizes' p. 115 where it is described as 'a bronze dagger seven inches in length' and is one of a group of objects specifically said to be 'All found on Winterbourne Bassett Down'. In *WANHM* 11 (1869) p.120, it is described as 'a lance head ... found on Winterbourne Downs'.

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The name *Bedwyn*

by *Richard Coates*

The base-name of the villages Great and Little Bedwyn in Wiltshire has caused some difficulty and there is no generally accepted solution. It was first explained by Ekblom from the English regional word *bedwind*, *bedwine* ‘wild clematis, old man’s beard, *Clematis vitalba*’, known from Wiltshire (Grigson, 1975, 44-6), and Ekwall accepted this even in the fourth edition of *DEPN* (1960, 34). An un-compounded word for a climbing plant does not make a credible place-name, though; we have no villages called *Ivy* or *Dodder* or *Vine*. Gover, Mawer and Stenton (1940, 1 and 332) suggest, without offering an etymology, that it might first of all be a stream-name, since the name is on record even in Anglo-Saxon times for the stream which flows through the villages to the Kennet. They then, without making an explicit connection, compare British Celtic **betwā* ‘birch’, **windā* ‘white’. On the face of it, they are suggesting that a late type of Brittonic¹ name with the head (generic) first is involved here, and that is interesting because there are demonstrably other names in Wiltshire of this type (Coates and Breeze, 2000, 88-9, 112-6), though not as yet discovered so far east, and this suggestion is more likely to find favour now than at the time it was first put forward. Watts (2004, 47) reports the suggestions involving wild clematis and a possible stream-name, but observes that the most prominent local landscape feature is the multivallate Iron Age hillfort Chisbury Camp, and suggests that we have here ‘Beda’s *gewind* [‘winding, circular thing’]’ as an English name for the hillfort. However, *gewind* is not found in the required sense; its sparse record (Smith, 1956, vol. 2, 268) suggests a meaning ‘winding thing’ rather than ‘circular thing’. His solution also ignores the OE references to the stream.

There can be no absolute purely formal objection to either the early Brittonic **bedw wend* ‘white birch’ or the English ‘Beda’s “ring”’ solution. Both account well for the medial vowel seen in several of the earliest forms, e.g. (*æt*) *Bedewindan* in Alfred’s will (c.880), cited by Gover *et al.*, though as early as this *Bedan* would be expected for the genitive

singular form. Brittonic **bedw* (with some reflex of consonantal [w]) was however probably plural (cf. Modern Welsh *bedw* /bedu/, singular *bedwen*), and the proposed Brittonic form would therefore have meant ‘white birches’.

The birch is not a typical tree of southern woodland, but its huge output of light seed means that it can invade heath or abandoned arable or grazing. Of the 242 places in the Ordnance Survey gazetteer which appear to be formed with the word *birch*, only two are in Wiltshire. It may well be significant for the area, therefore, that one of these two is *Birch Copse*, some 3 miles north-west of Great Bedwyn, but its antiquity is unknown.² (It is there on the 1888 largest-scale OS map.) The surface geology of Great Bedwyn parish is described thus in *VCH Wiltshire* vol. 16:

Chalk outcrops at the south end of the parish, Upper Greensand in much of the centre. In the north part of the parish chalk outcrops as the lower land, the sands and clay of the Reading Beds, London Clay, and Bagshot Beds as the higher. There are deposits of clay-with-flints in the north-west and south-east parts of the parish, of gravel in dry valleys north-west and south-east of Great Bedwyn village, and of a small amount of alluvium immediately south-east of the village.

The higher ground in the parish, then, is capped with sandy Reading and Bagshot deposits (cf. OS geological sheet 267 (drift)), and indeed the site of Birch Copse coincides significantly with such a deposit. The heath that develops on such deposits is good ground for birch. Rackham (1986, 111) notes that “[b]irch-woods seldom appear to be ancient”; “[p]robably a piece of land is invaded by birches when grazing declines for a few years; the trees live out their short lives, die, and are not replaced.” (Cf. also Allaby, 1986, 56-7.) We can assume that the sands have been subject to alternating grazing and woodland regeneration since the last Ice Age, and it is plausible that birch was as much in evidence at

the moment of the naming of this area as it is now, possibly after cyclical disappearances.

Lowland birches (*Betula pendula*) are, however, always silver or "white", and a name simply meaning 'white birches' would in effect be tautologous. It would be better, therefore, to assume an original British name of the form **Betwōwindjon*, or **-jā*, meaning 'place, or stream, that is white with birches (or, I suppose, 'as if with birches', i.e. 'birch-white place')'. The suffix would leave no trace because it is lost in Brittonic, and would leave no phonological trace in the stem of the name in question. There is no formal objection to the idea that the form in **-jon* or **-jā* could have been a name for Chisbury Camp, as Watts's solution requires; and the present Birch Copse is some 2.5 miles west of the monument. Nor is there any formal objection to the idea that the form in **-jā* could be a name for a stream, in this case for one flowing between slopes with conspicuous stands of birch (not necessarily directly on its banks). The record requires us to believe that the name was at first a stream-name; and it may have been transferred to the hill-fort, some 0.5 miles (0.8 km) from the stream,³ but the record does not require us to believe that.

Notes

1. This is the name for the period of great linguistic change between British Celtic and the emergence of Welsh and Cornish, say mid-sixth to late-eighth centuries.

2. The other is *Birchanger Farm*, just west of Bratton on the Westbury road.
3. Even if all the possibilities raised in this paper were accepted as true, the name of the stream and that supposed for the hillfort might have been morphologically different, i.e. had different suffixes, in British, but both of these would have contained /j/ (i.e. the sound of <y> as in *yes*).

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Britons and Saxons at Chittoe and Minety

by Andrew Breeze

It has been suggested that the names of both Chittoe and Minety are of British Celtic origin. The evidence for this is considered below, with a positive conclusion for the first (where the meaning is 'thick wood, dense woodland') but negative for the second (where the meaning is an English one 'mint island, dry land where mint grows'). The arguments are as follows.

Chittoe

Chittoe (NGR ST 9566), on a minor road four miles south-west of Calne, is one of Wiltshire's less known villages. Yet its name (the second syllable having the 'oo' of English 'moor') has had abiding interest for linguists. Ekwall gave the forms *Chetewe* of 1168

and 1260, *Cuttewe* of 1195, and *Chutuwe* of 1390. He regarded the first element as clearly Celtic and as meaning 'wood' (cf. Welsh *coed* 'wood'). On the second element he made two suggestions: that it is an adjectival suffix; or, given Welsh *yw* 'yew', that it means 'yew tree' (Ekwall 1960, 106). Yet others reject these as unconvincing. Mills says merely that the toponym may relate to Welsh *coed* 'wood' (Mills 1991, 79). Coates is more forthright. He is sure the first element means 'wood', but on phonological grounds rules out both of Ekwall's suggestions for the second element. He prefers a meaning equivalent to Welsh *coed tew* 'thick wood, dense woodland', and cites two pieces of evidence to support this.

Of these the first is *blaen gwydd tew* 'crest of the close trees' in a winter poem in the thirteenth-century Black Book of Carmarthen (c.f. Jackson 1971, 66). Second are parallels for the toponym at three other places in England: Thickwood (NGR ST 8272), eight miles north-west of Chittoe; Thick Wood near Duntisbourne Abbots (NGR SO 9607), north of Cirencester; and Thick Wood near Bix ('box-tree wood'), by Henley-on-Thames. But Coates admits the two last of these are not attested early (Coates and Breeze 2000, 88-9).

He mentions a further difficulty. If at Chittoe we have an equivalent of Welsh *coed tew* 'thick wood', the adjective will follow the noun. This is standard in Welsh of all periods. Yet in the British language (from which Welsh, Cornish, and Breton derive), the adjective came *before* the noun. Adjective-after-noun is thus an innovating feature, scarcely to be expected before Primitive Welsh evolved out of Late British about the year 600. Chittoe is 34 miles south east of Maisemoor (NGR SO 8121) in Gloucestershire, taken as equivalent to Welsh *maes mawr* 'great field, extensive open land', with noun before adjective. As Wiltshire was in English hands by the end of the 6th century, Coates thinks it remarkable to find adjective-after-noun as far east as Chittoe, where Celtic speech can hardly have survived long into the 7th century. Despite this, he stands by his etymology 'thick wood', where he explains the -e in early attestations of *Chittoe* as a relic of a Brittonic plural inflection (Coates 2002, 47-85). As often, the new Cambridge dictionary ignores Coates's discussion, repeating Ekwall's old etymology 'woody place' with adjectival suffix (Watts 2004, 137), even though Coates ruled it out on phonological grounds.

However, support for Coates's etymology appears in a native source, the *Mabinogion* tale of Peredur. This Arthurian romance of the earlier thirteenth century actually contains the expression *coedydd tew* 'thick

woods'. Peredur travels along a mountain ridge until he comes to a valley with meadows and ploughland on its floor, and *coedydd tew* on its rugged sides (Lloyd-Jones 1931-63, 156). The Welsh text, not hitherto quoted in this context, thus tends to confirm Coates's etymology as correct, since it shows *coed(ydd) tew* 'thick wood(s)' as a natural Celtic expression.

So we can understand Chittoe with some confidence as the place of 'thick wood, dense woodland'. That should cause no surprise. The native Britons naturally persisted longer in forest areas, less attractive to English settlers. To this day many English forests and chases bear Celtic names, including (in south-north order from Hampshire to Staffordshire) Melchet, Chute, Savernake, Braydon, Arden, Kinver, Morfe, Wrekin, Cannock, and Needwood.

There are three further points. The first of these is archaeological. In and near Chittoe we should not expect to find traces of early Anglo-Saxon settlement, but we may come across signs of Romano-British survival. In the Avebury region there is nowhere else where this is more likely, because of Chittoe's proximity to the small Roman town of *Verlucio*, understood as 'very light (place)', presumably from its situation in a forest clearing (Rivet and Smith 1979, 494; Reynolds 2005, 169, 174). The second is a linguistic one, that it seems in the Brittonic languages the adjective came after the noun by the year 600, when Chittoe had become known to the English. Finally, the present etymology implies the places called Thickwood and the like in Wiltshire, Gloucestershire, and Oxfordshire are more ancient than has been thought. Those forms can be understood as English translations of Celtic forms. They thus point to British enclaves in uplands north-east of Bath, north-west of Cirencester, and west of Henley-on-Thames, the last still an area of ancient forest. They imply many other English places have names which, unknown to us, are translations of lost Celtic forms, especially in forest areas and remote moorland.

To this day Chittoe is an out-of-the-way settlement, with dense woodland around it. So Coates's etymology 'thick wood' makes excellent sense. Given the existence of *coedydd tew* 'thick woods' in the *Mabinogion* tale of Peredur, he can be regarded as having solved this particular Wiltshire place-name problem.

Minety

Minety (NGR SO 0091), on flat, open land nine miles north-west of Swindon, is an unassuming Wiltshire village. It is recorded as *Mintig*, *Mintih*, and *Minty*

in charters of 880 and 884, and *Minty* or *Mynty* of records from 1156 to 1314. On etymology the first witness is none other than John Aubrey (1626-97), who remarked 'At Mintie is an abundance of wild mint, from whence the village is denominated' (Aubrey 1847, 49). Coming from an expert botanist, the observation is to be taken seriously. Later writers explain the form from Old English *minteg* 'mint island' or (in the dative case) *mintie* 'at a mint stream' (Ekwall 1960, 327; Mills 1991, 231). But *Minety* is not on a stream. The most recent explanation is thus 'mint island', the 'island' referring to dry ground in a marsh (Watts 2004, 416). Yet Professor Coates dissents. He takes the last element as equivalent to Middle Welsh *ty* 'house'. The first element is more difficult. He at first explained it by comparing Welsh *min* 'edge' or *myn* 'young goat, kid'; later as Primitive Welsh **men* 'my', so that the whole would mean 'my house' (Coates and Breeze 2000, 114; Coates 2002, 82).

The purpose of this note is to disagree with Coates, rejecting each of his derivations, and (for once) accepting the non-Celtic etymology proposed by the English Place-Name Society, for the simple reason that none of the three explanations that Professor Coates offers has any parallel in Welsh or Cornish toponymy. There is no equivalent to 'edge house', 'kid house', or 'my house' in the thousands of place-names we have from those regions. The sole equivalent we find is Welsh *Maendy* and Cornish *Mountjoy*, both meaning 'stone house' (the latter from Middle Cornish *meyndi*). There is a hamlet called *Maendy* (NGR ST 0076) near Cowbridge in the Vale of Glamorgan, and a farm called *Maendy* (NGR ST 0778) five miles east near St Fagans. As for *Mountjoy* in Cornwall, this is an upland hamlet (NGR SW 8760) four miles east of Newquay, its Celtic name reformed on the analogy of places like *Mount Pleasant* (Padel 1988, 125).

Nevertheless, the phonological objections to derivation of *Mintig*, *Mintih*, or *Minty* from a Celtic form meaning 'stone house' are insuperable. To show this involves a little technical argument. It is true that Old English *mintē* 'mint' is an early borrowing of Latin *mentha* 'mint', where Latin *e* has been raised to *i* before a nasal consonant and *i* in the following syllable (Campbell 1959, 202). But we cannot postulate a similar process for a Brittonic (not Latin) loan in Primitive Old English, for the following reason. Although the root of British **magn-* 'stone' reached the stage **main-* in the later sixth century (Jackson 1953, 466), there is no reason to see the first vowel of Old English *Mintig* as due to raising of Late British **main-*. Let us repeat the point to make it clear. Old English *Mintig* and the like might derive

from an unattested form **Mentig*. Unfortunately, this corresponds to nothing in Brittonic at the date of borrowing, because the first element of Primitive Welsh or Cornish 'stone house' (the one Brittonic form resembling *Minety*) was **Main-*.

So the field is left to the English derivation 'mint island'. Other factors support that. We have the statement of Aubrey, a pioneer archaeologist and field worker, that mint actually grew at *Minety*. We find English toponyms elsewhere that refer to mint, as at *Minterne* (NGR ST 6504) 'mint-place house' near Cerne Abbas in Dorset; *Minstead* (NGR SU 1128) 'place where mint grows' in the New Forest; and *Minsted* (NGR SU 8520) 'place where mint grows' in West Sussex (Sandred 1963, 257, 270). The conclusion must be that, unlike other toponyms of north-west Wiltshire, the name of *Minety* is of English origin and provides no evidence for Celtic survival. It thus sheds some light on Celt and Saxon in early Wiltshire (Eagles 2001, 199-233).

A final note. The mint found at *Minety* was presumably Water Mint (*Mentha aquatica*), with tufts of lilac or reddish flowers, which grows in fens and wet meadows, and is the commonest waterside mint in Britain. Described as giving off a 'delicious damp fragrance', it was (according the Elizabethan botanist John Gerard) strewn in 'chambers and places of recreation, pleasure, and repose, and where feasts and banquets are made' (Grigson 1958, 318). So *Minety*, like *Slaughterford* 'blackthorn ford' or *Box* 'box-tree' to the west of it, will have an English name referring to a plant that grew there.

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A revised date for the early medieval execution at Stonehenge

by Derek Hamilton¹, Mike Pitts² and Andrew Reynolds³

The Anglo-Saxon man who was beheaded and buried at Stonehenge (Pitts *et al.* 2002) was radiocarbon dated in 2001 by two samples to cal. AD 600–690 (Bayliss in loc. cit.) by the Radiocarbon Accelerator Unit at the Research Laboratory for Archaeology and the History of Art, Oxford.

Given the importance of this date, and recent improvements in pre-treatment methods for bone (see Bronk Ramsey *et al.* 2004), English Heritage and the Oxford Radiocarbon Accelerator Unit decided to retest these samples. The method in use when these samples were originally dated (Bronk Ramsey *et al.* 2000) could give ages that were too old, especially where collagen yields from the chemical pre-treatment were very low. In this instance one of the original dates (OxA-9921) was performed on only 2.8mg collagen.

The new date, OxA-13193 (Table 1), is indeed younger than the original dates (OxA-9361 and OxA-9921), by about 200 years in the case of the very low collagen sample and about 100 years for the other. In the light of this new measurement the previous dates have been withdrawn.

While this brings forward the likely era in which the man died by 60–200 years, we do not feel this affects the discussion of the circumstances of that event (Reynolds and Semple in Pitts *et al.* 2002). While 'deviant' burials made apart from community cemeteries are recorded from the 7th century elsewhere, as reported in 2002 in this journal, isolated individuals and small and large execution cemeteries are known throughout the Anglo-Saxon period and into the 12th century. The burial is still at least 240 years older than any known historical reference to Stonehenge.

Table 1. Revised radiocarbon date for Stonehenge skeleton 4.10.4

Laboratory number	Radiocarbon age (BP)	δ13C (0/00)	δ15N (0/00)	C:N Ratio	Calibrated date range (95% probability)
OxA-13193	1258 ± 34	-19.5 ± 0.3	8.6 ± 0.4	3.3	cal AD 660–890

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A Medieval Base Cruck Hall at Westcourt Farmhouse, Shalbourne

by *Jonathan Buxton*

Following a television documentary on BBC 'South Today' in early 2002 about the finding during renovation of Arabic numerals in a roof at Salisbury Cathedral (www.bbc.co.uk/wiltshire/features/cathedral_timbers.shtml), similar marks were recorded at Westcourt Farmhouse on behalf of The Shalbourne History Project. Dendrochronology has provided early 14th century dates for the Westcourt timbers. A small group of houses in central southern England, dated to the first quarter of the 14th century, is now identified as being built by the same carpenters using Arabic numerals.

Westcourt Farm lies on the west side of the village of Shalbourne in north-east Wiltshire. The historic parish of Shalbourne consisted of three tithings, Shalbourne or Town, Bagshot in the north and Oxenwood in the south; the last two, which were in Berkshire until 1895, were united by a strip of land which formed the east of the parish. Westcourt has always lain in Wiltshire, in Shalbourne tithing. The early history of the house, which was the manor house of Westcourt (alias Shalbourne Dormer), is described in the *Victoria County History of Berkshire*.¹

There was a period of divided ownership of the manor in the 12th and 13th centuries, but by 1302–3 William de Harden had reassembled most of the manor and would have been the builder of the original hall now dated to around 1319. William de Harden died in 1329–30 and was succeeded by his daughter Anastasia. Her husband, Sir Robert de

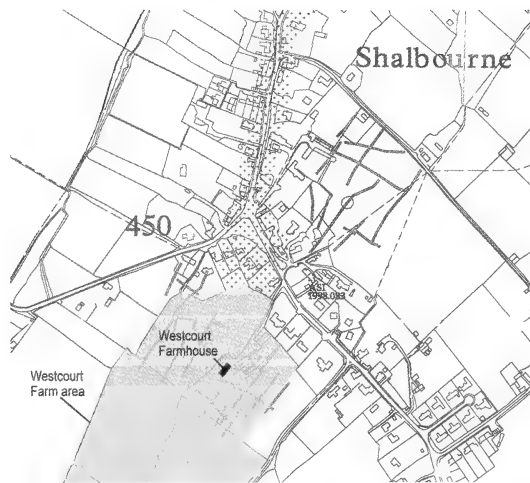


Fig. 1 Westcourt Farmhouse, Shalbourne, showing earthworks. (Sites and Monuments Record Trowbridge)

Bulkmore, was the highest taxpayer in Shalbourne in 1332² and paid 7s 11d in the Tax List for Kinwardstone Hundred (Shalbourne, Harding and East Bedwyn). After the division of the lands in the 16th century, one part was sold to Edward, Duke of Somerset, and the other, in 1600, to his son, Edward, Earl of Hertford, thus reuniting the estate.

A chapel built in 1208 by Bishop Herbert Poore and dedicated to St Margaret stood beside the

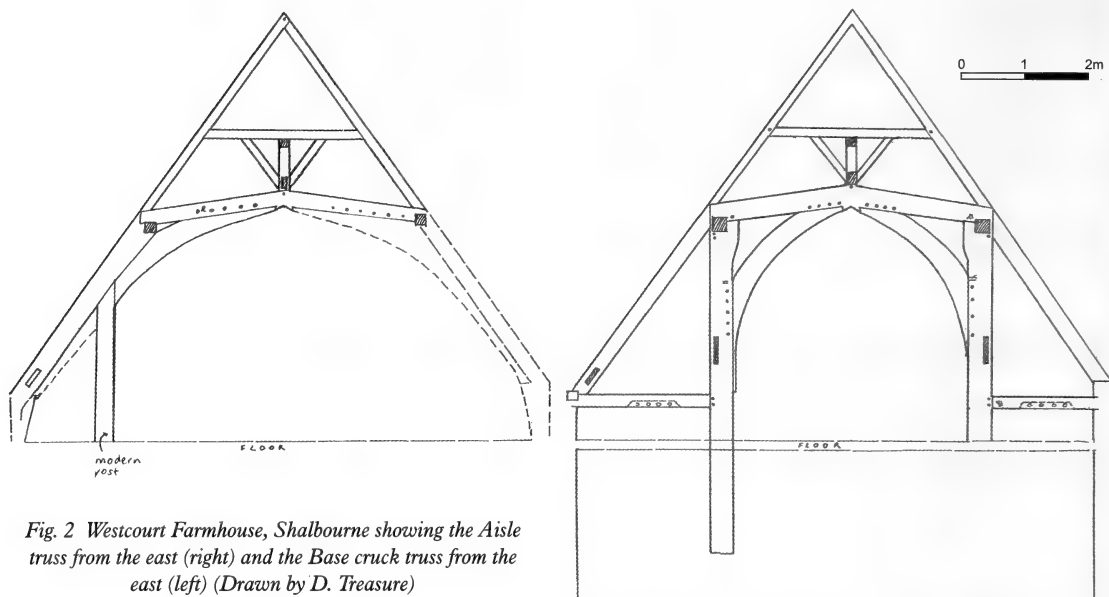


Fig. 2 Westcourt Farmhouse, Shalbourne showing the Aisle truss from the east (right) and the Base cruck truss from the east (left) (Drawn by D. Treasure)

manor house of Westcourt until demolition in 1840. In 1399 the chapel was mentioned in the Bishops Registry of Salisbury and was an appurtenance to the manor until 1545.³ It was then sold with land but later became reunited with Westcourt and was still mentioned in deeds in 1826.⁴ Lewis's *Topography*, Volume 4 (1840) also notes that the Chapel was attached to Westcourt. Extensive earthworks, mapped from aerial photographs taken in 1971 and recorded on the Wiltshire Sites and Monuments Record surround the house (Figure 1).

The front of the building faces northwest with the earliest part between two wings added c. 1600. The Grade II* listing identifies the early structure as a 'two-storey 2-bay central section' with a 'single-storey lean-to infill' at the rear between the wings (Listing Reference SU 36 SW 13/175, Shalbourne, River Road, Westcourt Farmhouse). This structure is formed of an oak timber frame comprising an open hall and was revealed in renovations during 2001. The building includes both a base-cruck open truss and, at the west end, an aisle truss with arcade posts (Figure 2). In the upper part of the roof, which is of crown-post construction, the heavily smoke-blackened medieval structure is largely intact.

Visible at ground floor level is the southern arcade post, which rests 0.91m above the floor on a small timber plate. The foot of the northern post has been cut off for a ground floor door opening. At the western end of the first floor landing there is a 0.25m gap between the massive arcade post and the

frame of the later cross-wing. The post has a 0.125m deep chamfer with a flat stop and shallow step 0.43m above first floor level. About 0.35m further up, five pegs secure chamfered arch bracing. A straight brace rises eastwards to the roofplate. A tiebeam runs out to the eaves, where a common rafter, rather than a principal rafter, supports a heavy wind-brace, also chamfered. In the upper part of the roof, a crown post with straight four-way braces surmounts the cranked tie of the aisle truss. The arch braces from the arcade posts meet at a dropped section of the tie. The roof plates are trapped on top of the arcade posts under the tie.

Half way along the first floor landing, on the north side, the base cruck of the central open truss of the hall can be seen (Figure 2). The arch-bracing has been cut off below ceiling level but survives above, where it is attached to the massive tie with six pegs. Two wind-braces about 3.66m long rise from the base of the truss into tenoned joints on the northern roofplate. In the upper roof the cranked tie of the truss rests on the roofplate. A short central crown post with straight four-way braces is set on the tie.

At the east end, the hall roof originally extended 1.12m further to the east, but was shortened when the east cross-wing was built. Part of a base-cruck blade re-used in this area as a support has peg-holes for arch-bracing to a tie. Between the main trusses of the hall there is a trussed rafter roof supported by the collar purlins of the crown posts and with no ridge pieces. On the north side of the roof, the

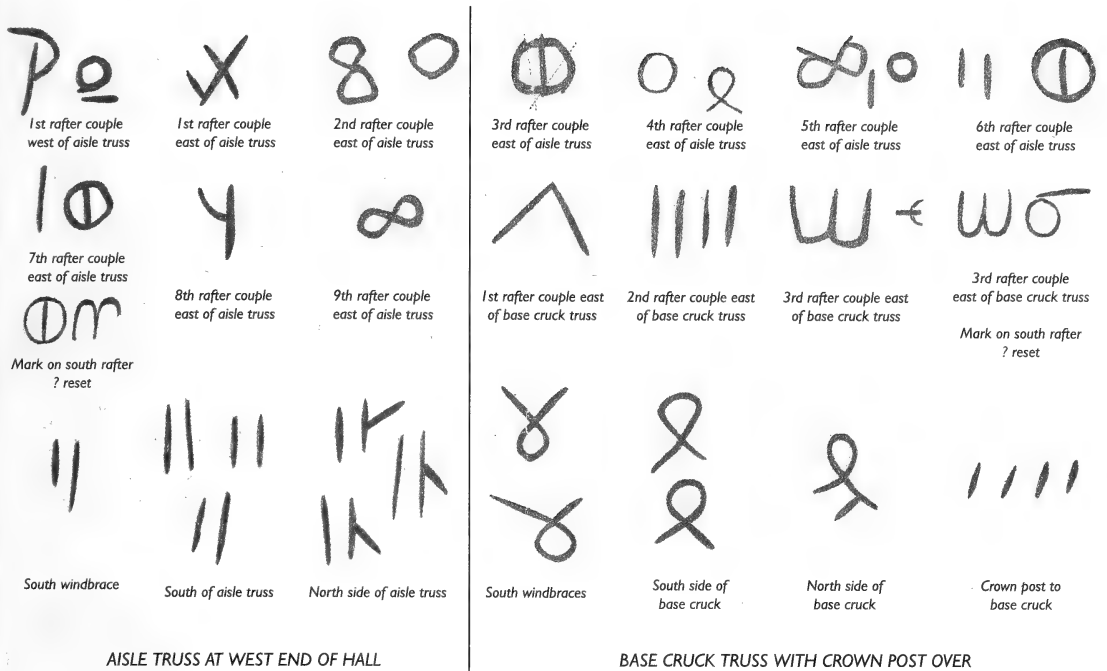


Fig. 3 Arabic assembly marks at Westcourt Farm, Shalbourne, Wiltshire (1319-1320)

Sites:	1	2	3	4	5	6	7	8	9	10	Dendro-dates
Salisbury Cathedral Eastern Chapels		77	33	82	6	66	^A	88	9	o	1222
Wells Cathedral West Front sculpture		7	3	2	43	6	^A	88	9	o	1235-42
Salisbury Cathedral Nave & North Porch	^	7	3	8	44	J	^		9	+	1251/2
Great Haseley, Oxon Church Farm Barn					9	66					1313
Wells, Somerset Priory of St John		77	33	88	54	66	^	8	9	o	1314/15
Salisbury Cathedral The Bishop's Palace		7	3	2		6	^A		9	o o	1315/16
Wells, Somerset The King's Head		7	3	2	J	o	^	8			1318/19
Shalbourne, Wilts West Court Farm			3	22	h	6	^	8		o o	1319/20
Abingdon, Oxon St Helen's Church	1	2	3	2	5	6	^	8	9	o	circa 1391

Fig. 4 Arabic assembly marks in English buildings: AD 1200-1400



Fig. 5 Location of dendro-dated Arabic numbers in English buildings

chamfered roofplate runs on to the west beyond the aisle truss for a short distance supporting one pair of original common rafters. This observation shows that before the construction of the west cross-wing the building continued in line at the service end of the hall. When the building had timber front and rear walls, it was probably about 7.92m wide, an imposing size in its day.

The Oxford Dendrochronology Laboratory took seven samples from the medieval roof of Westcourt

Farm, Shalbourne (Table 1). All retained complete sapwood, although this broke on one of the rafters (wfs7). Three of the rafters sampled (wfs3, wfs6, and wfs7) were found to have originated from the same tree and were combined to form the mean wfs367. All samples cross-matched between each other and were combined at the relative offsets to form the 143-year site master WSTCRFTM. This was compared to local and regional reference chronologies, spanning the years 1177-1319. An arcade post was found to have been felled in the spring of 1316, an arcade plate and an arch-brace from the closed truss were felled in the spring of 1319, and four rafters were found to have been felled in the winter of 1319-20. Given the consistency of felling dates, it would appear that the building was under construction during 1320, although the main frame may have begun fabrication as early as the summer of 1319.

Apart from the early date of construction, the roof at Westcourt Farm is especially important as being the latest discovery in a series of high-quality timber-framed roofs employing Arabic assembly marks (Figures 3, 4 and 5). The earliest of these is the tithe barn at Church Farm, Great Haseley, Oxon (1313), followed by the Priory of St John, Wells, Somerset (1314/15), the Bishop's Palace, Salisbury, Wilts (1315/16), and *The King's Head Inn*, Wells, Somerset (1318/19). All of these buildings use Arabic assembly marks together with the conventional Roman system, yet significantly, all of the roofs are of slightly different design. The wide distribution of the buildings suggests the presence of a talented and

Table 1: Summary of tree-ring dating, Westcourt Farm, Shalbourne, Wiltshire

Sample no & type	Timber and position	Dates AD spanning	H/S bdry	Sapwood complement	No of rings	Mean width mm	Std devn mm	Mean sens mm	Felling seasons and dates/date ranges (AD)
*wfs1	c S arcade post aisle truss	1206-1315	1296	19¼ C	110	1.71	0.57	0.181	Spring 1316
*wfs2	c S arcade plate	1177-1318	1271	47¼ C	142	1.04	0.60	0.204	Spring 1319
wfs3	c 1st rafter W of aisle truss S side	1213-1319	1285	34C	107	1.16	0.39	0.184	Winter 1319/20
*wfs4	c 2nd rafter E of aisle truss S side	1264-1319	1304	15C	56	2.11	0.60	0.218	Winter 1319/20
*wfs5	c N arch-brace aisle truss	1243-1318	1297	21¼ C	76	1.63	0.50	0.241	Spring 1319
wfs6	c 3rd rafter E of open truss S side	1202-1319	1282	37C	118	1.21	0.50	0.188	Winter 1319/20
wfs7	c 3rd rafter E of open truss N side	1207-1302	1287	15+15CNM	96	1.32	0.43	0.189	(Winter 1319/20)
*wfs367	Mean of wfs3 + wfs6 + wfs7	1202-1319	1285	34C	118	1.21	0.42	0.169	Winter 1319/20
* = WSTCRFTM Site Master		1177-1319			143	1.47	0.45	0.177	

Key: *, †, = sample included in site-masters; c = core; mc = micor-core; ¼C, ½C, C = bark edge present, partial or complete ring; ¼C = spring (ring not measured), ½C = summer/autumn, or C = winter felling (ring measured); H/S bdy = heartwood/sapwood boundary - last heartwood ring date; std devn = standard deviation; mean sens = mean sensitivity. Sapwood estimate (95% confidence) of 9 - 41 used for English timbers (Miles 1997)

educated master carpenter working for high-status clients within the region. In each case the various carpentry elements in contemporary use were combined to artistic effect in creating remarkably long-lasting structures.

Acknowledgements

Mrs P. M. Slocombe and Mrs D. Treasure are thanked for their investigations, studies and drawings, and full copies of their reports are available at the Wiltshire Buildings Record, Trowbridge. Dr Daniel Miles, Oxford Dendrochronology Laboratory,

facilitated and part-funded the tree-ring dating.

Note: since this paper was written, three more high-status buildings of similar date with Arabic markings have been discovered; two in Somerset and one in Wiltshire.

Notes

- ¹ *V.C.H. Berks.*, Vol. 4, pp. 231-232.
- ² Wiltshire Record Society Volume 45.
- ³ Feet of Fines Wilts. East. 37 Hen. VIII; *V.C.H. Berks.*, Vol. 4, p. 231, fn. 100.
- ⁴ *V.C.H. Berks.*, Vol. 4, p. 234.

A Lye Pit in Savernake

by *Graham Bathe¹ and Dick Greenaway²*

A Q-shaped, mounded pit, situated in Cobham Frith, Savernake, has been identified as a lye pit, constructed for the production of wood-ash in industrial quantities. Wood ash was used as a top dressing for grassland and in the production of lye which served as a cleansing agent, and was a component in the manufacture of soap. The residue was then used in glass making.

Cobham Frith is an ancient woodland on the fringes of Savernake. It has been known by its current name since at least 1486, when Henry VII hunted deer there (Brentnall, 1950). In 1716 it was a coppice of 60 acres (WSRO, 1300-301). In the 20th century the native trees were felled and the site converted to a conifer plantation, although many ancient coppice stools persist as dead stumps. In 2006 Cobham Frith supported dense larch of about 10cm diameter, planted in furrows gouged by machinery from north to south across the forest floor. The furrows have extended into and damaged part of the lye pit, which is situated at SU25412 66886, and at an altitude of 120m, close to the lane from Knowle Hill to Chisbury. The feature is essentially an earthen

pit, shaped like a reverse letter "Q", excavated into alluvial gravels. The interior of the main pit forms a depression of 5 metres diameter and 1.2 m deep, with a bulge at the north-west, where the curving tail of the "Q" would have provided an air-inlet. There is no obvious lining of the pit, nor sign of charcoal or other burnt material, although this is normal for lye kilns. With the banks sloping outside the central depression, the feature is 10m across at its widest (Figures 1 and 2).

Lye is an alkaline liquid obtained by leaching out soluble components from the burnt ashes of terrestrial vegetation and seaweed (a process known as lixiviation). The liquid was then boiled with lime and evaporated in large iron pots, the residue being *pot-ash* – hence the name. It is an impure form of potassium carbonate (Rymer, 1976). There is no traced account of lye manufacture from wood ash in Wiltshire. The Sites and Monuments Record does not have any lye pits listed, and there is no reference to lye in the *Wiltshire Archaeological and Natural History Magazine*. However, recent fieldwork in West Berkshire and literature surveys have shown

¹ Byeley in Densome, Woodgreen, Fordingbridge, SP6 2QU ² The Cottage, Ashampstead Common, Pangbourne, Reading, RG8 8QT



Fig. 1 Photograph of Q-shaped Lye Pit, Cobham Frith, from the north-west, with the curving tail of the Q adjacent to sycamore in foreground

that lye production was a widely practised woodland industry until about 1830 and survived in places into the 20th century.

The cleansing properties of wood ash have been recognized from very early times. The Greeks and Romans made potash, and wood ashes are still widely used for cleansing in many parts of the world. The residues after the wood ashes have been lixiviated forms a flux historically used in the manufacture of glass. When mixed with sand it lowers the temperature at which the sand melts and makes the molten liquid easier to handle (Kenyon, 1967).

There are many early references to ash making. In 1271 three men and a woman are recorded as working in woods in Staffordshire burning birch, lime and other trees to make ash for sale to dyers. In the 13th century fern ash and beech ash were used in glass making at the Vale Royal Abbey in Cheshire (Stamper 1988). As an agricultural fertilizer wood ash was recommended as a top dressing for new grassland and was in widespread use from at least the 1680s when grants of considerable quantities featured in tenancy agreements on the Verney estates in north Buckinghamshire (Williamson 2003). There appear to have been two levels of production. Small quantities were made for local consumption whereas large scale operations were for industrial and agricultural use. An account by James Dunbar in 1736 described the former where piles of bracken were burned on the ground and repeatedly stirred until the bracken was reduced to fine, white, papery ash (Rymer 1976). The problem of loss due to strong winds was countered by stacking unburned fern to windward. A similar account in 1917 suggests

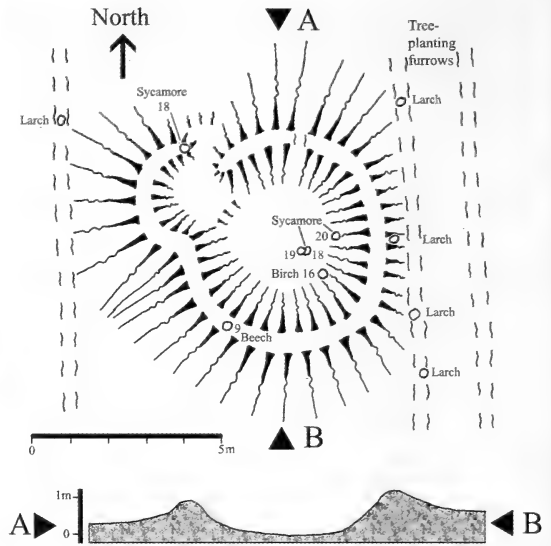


Fig. 2 Plan of Lye Pit, Cobham Frith (SU 25412 66886). Numbers show diameter of self-sown trees at chest height (cm).

hollowing out the base to make a shallow pit. Larger quantities were made in carefully constructed kilns, of which the Cobham Frith pit is an example. Davies-Shiel (1972) discovered 147 of these kilns in Cumbria and their size and shape is very similar to that found in Cobham Frith and in several woods in West Berkshire, although the differing geologies cause the Cumbrian kilns to be made of dry stone and the southern ones to be constructed as earthen pits. The best documented and best preserved kiln in Cumbria has an oval bowl 3.96m across and 3.5m from front to back. It is 3.0m high, whereas the earthen pits seem to be only half this. Davies-Shiel refers to an account dated 1748 that stated '*most people, who make pot-ash, burn this wood in kilns or pits dug in the ground, although the Swedes burn it in the open air*'.

The medieval woollen industry, which was particularly important to the economy of Wiltshire and Berkshire, must have had a very large requirement for a washing liquid. Woollen cloth was washed at least twice during its manufacture or in dyeing. The weavers and fullers of Marlborough had their own regulations as early as the 12th century (Rogers 1986), and organizations such as that owned by Jack of Newbury (d. 1519) must have provided a large and reliable market for lye. In Wiltshire however it is believed that the woollen industry was largely dependent on lye derived from stale urine, a practice

that persisted into the 20th century (Ken Rogers, *pers comm.*).

Soap was made from at least Anglo-Saxon times. A 15th-century recipe for white soap required fern ash to be mixed with unslaked lime to produce a lye which was to stand for two days. It was then strained into a metal kettle, mixed with oil and tallow and made hot, finally being mixed with bean flour and moulded by hand. In the 1830s women in the Forest of Dean went into the woods to cut and burn the green fern 'to make lye to put into hard water to wash our clothes and the clothes of the aristocracy. Balls were sold by the dozen in shops in Gloucester' (Rymer 1976). Soap making must have been widespread, and the trade led to the formation of surnames names like *Soper*.

In the early 19th century it became possible to import very good quality potash from Canada and Sweden where colonists in the virgin forests were encouraged to support themselves by making potash from the trees they felled in carving out their new fields. Small-scale production of wood ash seems to have continued in remote areas of Britain until the early 20th century and small quantities were being made for craft potters in the 1970s for the manufacture of glazes.

The larger southern kilns so far found have a number of common characteristics. They are all about 4m to 7m in internal diameter and 1m to 1.5m deep with a trench in one side to admit air low down into the kiln. Wood ash when compacted in a sack or barrel is heavy, and this may be why kilns are invariably positioned near a road or trackway. A magnetometer survey of three kilns in West Berkshire indicated that they had been subjected to intense heating, particularly around the rim. The shallower pits, about 6m in diameter but only about 0.5m deep, are frequently closely associated with saw pits. When surveyed with a magnetometer these did not show the same degree of intense heating. This may be because the affected soil was scraped out with the ash or leached away by rainwater. In any case, the heating of the soil under the fire would have been less intense than within a deep kiln fed with a draught of air at the bottom.

Elsewhere, the word "lye" has often been transposed into place names, and inspection of the *Ordnance Survey Gazetteer* shows widespread distribution. Examples include Lye Wood and Hartridge Lye Wood in West Berkshire and Lyewood House, Lyeway Farm and Lyeway in Hampshire. The word Lye features in a number of place names at Savernake and its environs, from at least the 16th

century. Whilst the occurrence of these names does not prove a connection, the unusual pronunciation, alongside but in contra-distinction to the more familiar "lea", and the identification of the pit at Cobham Frith, raise interesting possibilities.

Lye Hill (now generally spelt Leigh Hill, but often retaining its local pronunciation of "Lye", and with the spelling persisting at "Lye Hill Cottage"), is recorded in c1584 (WSRO 1300/87) and 1599 (WSRO 9/6/5). An area nearby was referred to as "The Lye" (Ailsbury, 1962). Lewdons Lye, recorded in a Court Book of 1541 (WSRO 1300/86), and as Lewdens and Lowedens Lye in 1590 (WSRO 1300/87), retains the name Luton Lye today. Lye Copis is recorded in 1548-9 (WSRO 1300/86), with a reference to "Lye Coppice alias Lewdens Lye Coppice" in 1597 (*ibid.*). A Litly Lye is recorded in 1552 (*ibid.*). Burbage had a Great Lye or Lye Magna in 1574 (WSRO 9/6/757), and there are many subsequent references to Great Lye Field and Little Lye Field. The parish also had a Rolfe's Lye and Upper Lye in 1846 (WSRO 3354). In West Woods, Clerk's Lye was present in 1783, becoming Clark's Leigh in 1802 (Fowler 2000). It is quite possible that lye pits are overlooked but common-place relicts of Wiltshire woodland management. The authors will be very interested in any documentary references to potash and lye making and would welcome the opportunity to inspect suspected potash kilns or pits.

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Wiltshire Archaeological and Natural History Magazine and its Editors 1854-2006

by *Lorna Haycock*

‘Well, our magazine labours will live after us and show that at all events we did our best to keep up an interest in the history and antiquities of the county’.¹

The preface to Volume 1 of the Society’s committee minute books in 1853 states: ‘*In the hope of sustaining a more lively interest in the objects for which it has been established, it is proposed to commence, as a medium of intercourse, a series of publications...relating to the General History and Antiquities of the County of Wilts. To those who reside in the more remote parts of it, such a means of communication will be, it is presumed, particularly acceptable.*’

The committee suggested: ‘*that the Society do publish from time to time a book called The Wiltshire Magazine, printed in the form of Notes and Queries and issued in parts in June and December.*’²

So began the long series, now reaching its hundredth edition, of our highly respected journal, which has changed in character and purpose over that period from a publication by committed and educated amateurs to be a showcase for academic research on the archaeology and local and natural history of the county. From the outset, religious and political discussion was eschewed and the magazine aimed to provide ‘popular amusement and instruction’.³ Papers read at the Annual General Meetings were printed and Society members were

encouraged to contribute short notes and articles ‘...based on individual research, investigation and information, thus furnishing accurate and valuable materials for the Magazine’.⁴

The early volumes contained much domestic detail, including accounts of donations, Society meetings and excursions, as well as manorial, parochial and genealogical topics, reflecting the preponderance of clergy among the Society’s leading members. Some members rushed into print; in 1885 it was reported that ‘...contributions to the magazine...increase in number, so that at times the Editor has some difficulty in keeping pace with supply’.⁵ Long running series on the Flora and Ornithology of Wiltshire were interspersed with articles on folklore, heraldry and transcriptions of the records of Quarter Sessions, Churchwardens’ accounts and the Society’s growing collection of manuscripts, foreshadowing the function later fulfilled by the Records Branch, in time to become the Wiltshire Record Society. By 1862 the Society was exchanging the journal with thirteen other bodies, including the Society of Antiquaries and Kent and Essex Archaeological Societies. In December 1866 the Committee decided that the new medium of photography should feature in the magazine.⁶

Gradually the Society’s antiquaries turned from a preoccupation with the curious to focus on specific sites. Not until Volume XV11 (1878) did articles

appear on Stonehenge, written by William Long and others, running to 244 pages. The Committee had felt '...for many years past that it was right to put forth a treatise on Stonehenge which would collect and embody and record all that was known of that world-renowned monument'.⁷ Moreover, the 23rd Annual General Meeting based at Salisbury made an excursion to the site.⁸ In Volume XXXI (1904), Professor William Gowland contributed an article on his Stonehenge excavations, and the increasing participation of Ben and Maud Cunnington in the 1920s and 1930s led to more reports on major sites such as Atworth Roman villa, Cold Kitchen Hill, Windmill Hill, Avebury and the Amesbury barrows. The growth of archaeology as a scientific discipline thereafter resulted in longer and more technical articles, lavishly provided with maps, tables, photographs, line drawings and specialist reports. In the age of rescue archaeology in the post-second world war period, developers and corporate bodies increasingly funded these articles; local and Natural History papers too, have become more professional and well referenced.

The evolution of the journal to its present form has not only been affected by social and educational forces, but has also been influenced by the contributions of individual editors, who, incidentally, were not named at the beginning of each volume until Volume 78 (1984). Not until 1942 did clerical dominance cease with the retirement of Canon Goddard. The first volumes were edited by the Society's joint secretaries; the Revd. J. E. Jackson, Rector of Leigh Delamere and the Revd. W.C. Lukis, Vicar of Great Bedwyn. Jackson was a major influence on the magazine. There was scarcely a volume from 1854 to within a year or two of his death in 1891 that did not contain some contribution from him. An associate of John Britton, he was author of *A History of Grittleton* (1843) and editor of Aubrey's *Wiltshire Collections* (1862). Much of the research he published in *WANHM* featured papers he had read at the three day annual meetings or was based on material from the Longleat archive, where he was often at work. His co-editor, Guernsey archaeologist and naturalist, W.C. Lukis was Curate of Bradford-on-Avon and later held the livings of Great Bedwyn and Collingbourne Ducis, as well as being Rural Dean in the Salisbury diocese. His contributions to the magazine included accounts of his excavations at Collingbourne and he also wrote papers for the Royal Archaeological Institute, the British Archaeological Association and the Society of Antiquaries, of which he was elected a Fellow

in 1853. He was one of the early members of the Camden Society and also belonged to several foreign archaeological societies.

When Jackson retired from the editorship in 1864, the Committee expressed '...their deep sense of the obligations under which they lie, for the vast amount of time, trouble, the diligence and learning he has brought to bear upon the work... their profound sense of the invaluable services he had for so many years bestowed on the Society in conducting the Magazine'.⁹ When in the same year, 1864, the Revd. Lukis left Wiltshire, he was succeeded by the Revd. (later Canon) W.H. Jones FSA, Vicar of Bradford-on-Avon for 34 years, and Jackson's work was taken over by the Revd. A.C. Smith. Jones edited *Domesday Book for Wiltshire* and contributed many articles to the early volumes of *WANHM*, as well as writing and editing several books on diocesan subjects, such as *The Statutes of the Cathedral Church of Sarum* and *Fasti Sarisburiensis*. The Revd. A.C. Smith was a prolific contributor to the magazine on birds, Yatesbury, Silbury and Porch House, Potterne, as well as compiling his authoritative map of the Roman and British antiquities of North Wiltshire. Of forty-six Natural History papers in the first ten years of the journal, fifteen were by Smith. Of him, Canon Goddard wrote, 'he was a born naturalist and the circumstances of his life made him an archaeologist too'.¹⁰ Smith's death in 1899 left the Society with 'a sense of great loss'.¹¹

After Jones's death in 1885, and Smith's resignation in 1890, the system of dual editorship was abandoned. On the recommendation of Canon Jackson, Canon E.H. Goddard, Vicar of Clyffe Pypard, was appointed Editor, combining this with the duties of General Secretary; he was also Librarian for forty years and a Fellow of the Society of Antiquaries. He was to edit the magazine for fifty-two years, an achievement noted in 1948: '...half the long row of volumes testify alike to his editorial zeal and the merit of his personal contribution'.¹² The volume indices which he compiled illustrate '...his capacity for the patient assembling of those essential clues without which knowledge is lost in the labyrinth of print'.¹³ After 1902 each volume had its own index, instead of members having to wait for a collective index at the end of every eighth volume. Obituaries and reviews were introduced as regular features in 1896 during Goddard's editorship. He contributed articles himself on church plate, old glass in Wiltshire churches, a catalogue of Bronze Age implements in Wiltshire, and his list of Wiltshire's antiquities in Volume XXXV (1913)

at once became authoritative. Despite the difficulties caused by two World Wars, Goddard's labours kept the magazine regularly appearing up to Volume XLIX (1942). In 1917 it was asserted that '...the magazine is, together with the museum, by far the most important part of the Society's work';¹⁴ the reputation it had acquired was in no small part due to Goddard's work. Resigning through 'advancing age' in 1942, he was a hard act to follow.

For the next twenty-one years, clerical support was replaced by involvement from Marlborough College. H.C. Brentnall FSA, a classicist who taught at Marlborough for over four decades and edited the journal for thirteen years, succeeded Goddard. During that time he improved the appearance of the magazine, with better quality paper and larger, clearer type. A regular contributor, he wrote articles on Marlborough Castle, Bedwyn and Preshute, as well as representing the Society on the Victoria County History Committee and acting as correspondent of the Ancient Monuments Inspectorate in Wiltshire. He was President of the Society when the Records Branch was formed in 1937 and a member of the County Records Committee from 1947.

After Brentnall's death in 1955, another Marlborough master, Hubert Wylie, took over the editorship, assisted by Owen Meyrick and J.M.Prest, and later by Ken Annable, the Revd. E.H.Steele and Dick Sandell. He was succeeded by E.E. Sabben-Clare, historian and under-master from the same school, who later became Headmaster of Bishop Wordsworth School, Salisbury. He was assisted by Meyrick, Prest and T.R.F. Thomson. In his Presidential address in 1956, R.B. Pugh explained that WANHS was the only local archaeological society to publish bi-annually and this needed to change because of high printing costs, so in 1958 the practice of annual publication was begun. A larger format was adopted to meet the needs of archaeologists for diagrams, maps and illustrations. Some parts were printed in double columns and the cover colours were changed to the Wiltshire county colours, green and white. To produce revenue, advertisements were accepted but could be removed if members wished. It was hoped that the magazine would be at one and the same time interesting and scholarly, but also serve the interests of general readers.¹⁵ Beginning in 1960, the issue of a Bulletin each spring, at the suggestion of the Revd. Steele, would now cater for more ephemeral material, but the county's richness in archaeological sites should continue to attract articles by eminent professional archaeologists. Pugh believed that the magazine

must contain '...so far as possible original papers, founded on new research' but it should be balanced by the need to '...catch the attention of those of our members who are not experts'. He suggested the exclusion of non-Wiltshire book reviews, accounts of excursions and the publication of texts, now the field of the Records Branch, and the adoption of the title *The Wiltshire Magazine*, which, he believed, would most accurately reflect its content. Apart from the latter suggestion, most of these changes were adopted by Sabben-Clare.¹⁶

No successor could be found when Sabben-Clare resigned in 1963, so an editorial committee, consisting of Curator Ken Annable and Librarian Dick Sandell continued the work. In the following year Isobel Smith, the Society's first female Editor, joined them. She was a distinguished prehistorian who had studied for a doctorate under Gordon Childe at the Institute of Archaeology in London. In the late 1950s she carried out the challenging task of writing up the pre-war excavations at Windmill Hill and Avebury by Alexander Keiller; the resulting book remains a major reference work today. In 1965 she obtained a permanent position as Senior Investigator with The Royal Commission on the Historical Monuments of England. After her retirement to Avebury in 1978 she continued to publish on the Neolithic and Bronze Ages (Isobel Smith died in 2005 and an obituary is carried in this volume).

During Smith's editorship, the magazine was split into two parts and published separately to ensure earlier publication of Natural History material. Part A featured Natural History and Part B Archaeology and Local History, and between 1975 and 1981 separate titles were used- *Wiltshire Natural History Magazine* and *Wiltshire Archaeological Magazine*. From Volume 76, however, publishing in one volume restored previous practice. After editing the journal for fourteen years, Isobel Smith retired. In 1978 an editorial committee was formed, chaired by the President of the Society and led, until his death in 1980, by Charles Friend, former director of the publishing firm of Eyre and Spottiswoode and Chairman of the Society's Programme Committee. The new committee adopted a chronological arrangement for archaeological articles.

Christopher Chippindale took over as Editor in 1981. A Cambridge University archaeology graduate, with experience of fieldwork in Europe and North Africa, and a freelance production editor, he had become acquainted with the Museum while researching for his definitive publication *Stonehenge*

Complete (1983). His interest in the monument and his friendship with Peggy Guido led to him taking on the editorship with the aim of catching up on the arrears of four issues by producing one double issue and two others in the space of two years. He had already contributed articles to the magazine on 'Stonehenge' and 'John Britton's Celtic Cabinet'. He is currently Curator of the British Collections at the Cambridge University Museum of Archaeology and Anthropology.

Caroline Malone edited the magazine for one issue in 1987 while she was Curator of the Alexander Keiller Museum at Avebury, later moving to Bristol University Archaeology Department as lecturer and then becoming Keeper of the Department of Prehistory and Early Europe at the British Museum. At present, she lectures on Archaeology at Cambridge University. To help the Society out of a hiatus, Kate Fielden took over as Editor in 1987. Kate has a D.Phil in Near Eastern Archaeology and spent several years at our museum, working with Ken Annable and the urban and rural archaeologists (Jeremy Haslam and Chris Gingell). Since 1985 she has been part-time Curator at Bowood, where care of the archive has enhanced her understanding of the more recent history of the area. She found the task of *WANHM* editor instantly interesting and challenging and there followed ten happy years with a distinguished team of specialist editors, including John Chandler, James Thomas, Marion Browne, Patrick Dillon and Michael Darby. The layout of the magazine was standardised and a watchful eye kept on financial and verbal economy to obtain grant aid for published papers from developers and statutory bodies and help authors to express their work simply and well without making the Editors' impact obvious.

Dual editorship was resumed on Kate's resignation in 1998, with John Chandler as General Editor and typesetter and Joshua Pollard overseeing the archaeological content. This continued for five issues, from 1999 to 2003. John, a classicist and former Wiltshire County Council Librarian, became a freelance writer and historical researcher in 1988, working on archaeological evaluations and lecturing on local history. He has written numerous books, articles and a series of parish histories of Wiltshire and in 2000 successfully restarted Hobnob Press. He has also edited the Wiltshire Record Society's volumes since 1994. During John's editorship, *WANHM*'s cover was changed from green to brown, the new Society logo replaced the old Stonehenge emblem and the chronological order

of articles was abandoned. Josh Pollard, a graduate of Cardiff University, has held academic posts at universities in Newcastle, Belfast and Newport. He currently lectures in archaeology at Bristol University and is Director of the MA course in Landscape Archaeology there. His particular field is the Neolithic and he is involved in fieldwork around Avebury and Stonehenge, publishing widely on the Avebury area. The current editor, Andrew Reynolds, is a native Wiltshire man with a long-standing interest in the post-Roman and medieval periods. He has published extensively on the county's archaeology, particularly the Avebury region and is now Reader in Medieval Archaeology at the Institute of Archaeology, University College, London and a member of the editorial board of the journal *World Archaeology*.

WANHM enjoys a place on the shelves of British and foreign universities and is now an academic journal, a forum for the presentation and synthesis of excavations in Wiltshire and discussion of the county's natural and local history. Publication in the journal carries its own special *cachet* and contributors include leading academics in their fields. Compared with the present standard of articles, the early efforts of *WANHS* members seem in some ways prosaic and naïve, with very little discussion and analysis. Like so many in the Victorian age, they were keen to record and disseminate knowledge in an age before primary records were widely available to the public. But as the disciplines of history and archaeology have developed and publication in these fields has markedly increased, more critical and probing analysis has become the norm. This is not to decry the efforts of the amateur pioneers, working as they did in an age of handwritten copy and unsophisticated printing techniques. Their enthusiasm and vision laid the foundations of a publication that amply fulfils the aim to '...keep up an interest in the history and antiquities of the county'. Indeed, the vision and passion for the natural and human history of the county displayed by these pioneers of antiquarianism continue to provide the raw material for modern enquiry. The role of the Society's journal remains as important as ever as a medium for recording the county's history, in its broadest sense, for future generations.

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3. *WANHM*, Volume I (1854), p.4.
4. *Ibid*, Volume XIII (1872), pp.13-14.
5. *WANHM*, Volume XXII (1885), p. 135 .
6. *WANHS committee book 1*, p.64.
7. *WANHM*, Volume XVII (1878), p.3.
8. *Ibid*, pp.31-46/
9. *WANHS committee book 1*, pp.50-51.
10. *WANHM*, Volume LII (1948), p.118.
11. *WANHS committee minute book 1*, p.273.
12. *WANHM*, Volume LII (1948), p.118.
13. *Ibid*, p.119.
14. *WANHM*, Volume XXXIX (1917), p. 148.
15. *WANHM*, Volume LXVIII (1963), p.212.
16. *WANHM*, Volume LVI (1956), p.97.

Obituaries

Isobel Foster Smith (1912 – 2005)

The death of Isobel Smith, at 92, has marked in many ways the end of an era in the study of Wiltshire prehistory, and particularly so in relation to Avebury, where she was both a long term resident and the author of the definitive account of the excavations by Alexander Keiller at Avebury henge, West Kennet Avenue and Windmill Hill.

I first met Isobel on an excavation in Gloucestershire in the late 1970s, when I was a Ph.D. student, and it was more than ten years before I met her again, this time on her home ground; it was only in the 1990s, when I was appointed to the Curatorship of the museum at Avebury, that I came to know her well, when she was already in her early eighties. From that time onwards I saw her regularly. During that time I realised that Isobel was, more than anyone I had ever met, an entirely private person, so much so that even to write an obituary seems to be something of an intrusion into her life. Not only was she private for herself, but she also clearly believed that it was a person's work which should matter to the world at large, not the details of his or her private life, so that I make no apologies for giving here very few details about her life outside archaeology. She would have thought it none of my business, and I rather agree with her.

When Isobel was born, in, as far as we can establish, the outskirts of Toronto, Canada, shortly before Christmas in one of those last years before the First World War, the fact that she would end her days in a small English town after a highly distinguished career in archaeology would have been unimaginable. She attended University in Toronto, reading English and French, although she also told me that it was during those years that she became interested in the archaeology of religion. This seems so unlikely that if I had not written it down at the

time I would have thought I had imagined it, but perhaps, apparently coming from a background of an at least conventionally religious family, it is not surprising that this was her first way in to what must have been a highly unusual subject. She did not pursue it then, however, and having received a bursary or scholarship for a year's study in Europe, spent time in Paris and possibly in other places, including England, before returning for some time to Canada. She was in England again after the Second World War, and once told me that she had seen an advertisement in *The Times* regarding the re-opening of the Institute of Archaeology in London, which was how she came to it. For some time she worked as Professor V. Gordon Childe's secretary or personal assistant, and is remembered from those years by many younger archaeologists of the time. By her own account it was Stuart Piggott who encouraged her to take up the study of Neolithic pottery, although close association with Professor Childe must have also been of some influence, and it was with Gordon Childe that she published one of her two first published papers, in 1954, on a barrow at Whiteleaf Hill, Buckinghamshire (the other being with S. Hazzledine Warren in the same year, on pottery from the submerged Neolithic surface on the Essex coast).

If a list is ever compiled of those unpublished doctoral theses which had most merited publication, Isobel's Smith's *The Decorative Art of Neolithic Ceramics in South-East England and its Relations* (University of London 1956) would be, at least for students of the British Neolithic period, probably top of the list. When I last borrowed it, as recently as about 1990, the list of borrowers of the copy I had read like a list of Who's Who in Neolithic studies of the second half of the twentieth century. Although Stuart Piggott had reviewed Neolithic ceramics in his *Neolithic cultures of the British Isles* (1954) his coverage of the pottery of southern Britain had been broad brush rather than detailed. Isobel's

work filled in the detail and not only contained a widespread review of earlier Neolithic pottery in south-eastern England, including the sub-styles of the Peterborough tradition (for which she defined the sub-style of Fengate Ware (Smith 1956, 69)) but also, as is often forgotten because of the later work associated with newly excavated henges, covered Rinyo-Clacton Ware (Grooved Ware). The later work of Ian Longworth, using the huge resource of the then newly discovered Durrington Walls assemblage, set the scene for the definition and treatment of Grooved Ware for the rest of the century, but Isobel had been there first, a fact fully acknowledged in the Durrington Walls report, where it is pointed out that it was she who 'gave the first clear definitions of the Clacton and Woodhenge styles and added a third, the Woodlands' (Wainwright and Longworth 1971, 235).

Isobel first came to live in Wiltshire (as it turned out, permanently) in 1956, when she was employed by Gabrielle Keiller to write up the excavations by her late husband, Alexander Keiller. This was a huge and demanding task and one which was not dissimilar to that involved forty years later in writing up the Stonehenge excavations by Professors Atkinson and Piggott, but with very different resources. Having been involved in the Stonehenge publication myself, I can fully appreciate the daunting nature of the task Isobel undertook. In the Stonehenge case the work was carried out by a large team, including specialists, with all the resources of a large independent archaeological unit at its disposal and backed by English Heritage. Isobel undertook the task of not only elucidating the Avebury henge and Avenue excavations but also that of one of the largest causewayed enclosure excavations carried out in this country, with only the assistance of W.E.V. Young, the then Curator of the museum at Avebury, and some help from Denis Grant King, a former assistant of Alexander Keiller, and with a very small number of specialists (principally Margaret Jope for the animal bones and Don Brothwell for the human remains). The archives in the museum at Avebury attest to the thoroughness with which she carried out this work and Isobel's tiny writing is a feature throughout the archive: identifying, elucidating, organising. The synthesis she produced (Smith 1965), including the results of her own new work at Windmill Hill in 1957 and 1958, was an extraordinary achievement and one which remains highly valued by prehistorians today, as evidenced by its frequent citation in works on British prehistory. (And valued in more tangible

ways too: not long before her death I mentioned to Isobel how much a copy of *Windmill Hill and Avebury* was listed for in a secondhand catalogue I had seen: she was astonished and horrified, assuring me that no-one could possibly find anything of any interest in it now!)

Although Isobel's doctoral thesis was on ceramics, she wrote widely and authoritatively on lithics, particularly (although not exclusively) on flint, and she wrote many excavation reports. Alan Saville contributed a thorough bibliography of Isobel's published works to her *festschrift*, *Monuments and Material Culture. Papers in honour of an Avebury archaeologist: Isobel Smith* (Cleal and Pollard 2004), which shows that while 46% of her papers were wholly or partially concerned with ceramics, 23% were concerned wholly or partly with lithics. Her contribution to the study of Wiltshire is also demonstrated by the fact that over a third of her published works concerned Wiltshire sites or artefacts. Omitting reviews and a bibliography, and including joint papers, Isobel published 90 works (this includes one, on the Hambledon Hill pottery, which is forthcoming), and between 1958 and 1979 published at least one every year. Even in the 1980s she still published an average of more than one paper per year, this rate only lessening in the 1990s.

From the 1960s two other arenas of activity opened up for her. In 1965 she was appointed as an Investigator with the Royal Commission on Historical Monuments (England), in which post she remained until retirement in 1978. Initially she worked with the team which produced the volume on Iron Age and Romano-British Gloucestershire, and subsequently worked on the long barrows of Hampshire and the Isle of Wight, and on the Stonehenge Environs (RCHM(E) 1976, 1979a and 1979b). As was usual at the time, the authorship of these volumes is not made explicit in the publication; this seems particularly unfortunate as Isobel's name was also omitted from her *Windmill Hill and Avebury*, possibly at Gabrielle Keiller's request in order not to detract from her late husband's achievements (although I have no firm evidence for that).

WANHS figured largely in Isobel's life too, and the Society has reason to be particularly grateful to her for her long editorship of the Magazine. From its inception to 1955 the Society had only six Editors in 102 years. A number of temporary editors, and then a committee took charge from 1955 to 1964, and Isobel joined that committee in 1964. The following year she took over as Honorary Editor and remained as sole editor until resigning in 1979 (Anon 1981).

The onerous nature of such an editorship, with the tyranny of the annual timetable, should not be underestimated, and for Isobel, whose attention to detail and meticulousness is well-known, it must have been particularly demanding. It says much about her that she filled the post for 13 years while having a full-time job, and the volumes she saw through the press stand as a fitting reminder of her life and work and the standards she believed in as necessary for making a contribution to the profession.

Isobel led, at least for the last two or three decades, a most retiring life; she never held a university post and did not frequent the conference circuit, but in her own characteristic and retiring way she made a substantial contribution to the understanding of British prehistory, and particularly to our understanding of Wiltshire in prehistory. Her standards were high, and she could be an exacting critic, but she was also a most generous, kind and funny woman; to die at ninety-two is not of course unexpected (and Isobel appeared to face the prospect with perfect equanimity), but nonetheless the archaeological world is greatly diminished by her going.

Ros Cleal

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Isobel Foster Smith and her pursuit of prehistory: an appreciation

The University of London's Institute of Archaeology came into being in 1935 through the energies of R. E. M. Wheeler (he became Sir Mortimer in 1952) and his wife Tessa. It was housed in the architectural splendour of St. John's Lodge, on the Inner Circle of Regent's Park. Gordon Childe became its Director in 1946 and his inaugural lecture was fogbound but, notwithstanding, he introduced himself and proceeded. He settled into the institution and, again, London's amenities. However, it was only after some five years that he realised that the Institute's Director was entitled to a secretary. Like many, Gordon Childe wrote all but his more routine letters in longhand, often using a pencil. His handwriting was not unclear but European place-names were rendered in their particular languages, for example *Praha* for Prague or *Wroclaw* for Breslau. He also suffered from *Armorica* being regularly returned to him as *America*! Someone to handle his correspondence, his friends and colleagues who called, not to mention matters, beyond the ken of the Institute's Secretary, Ian Cornwall, pertaining to the policies of the University of London, was needed. Clearly an exceptional person was necessary and that was to be Isobel Foster Smith, who appeared early in the Advent Term of 1950.

Isobel, small, slight and bespectacled, charmed all from the outset when she appeared in the Institute's tearoom. While never talking about herself or past activities, various details emerged. Primarily Isobel was a Canadian from Ontario and across the years certain accented usages persisted. Her degree from the University of Toronto was in English and French while the present writer, fresh from Germany, was impressed by her acquaintance with linguistics. From Canada Isobel had obtained a French scholarship to Grenoble and the Sorbonne, renowned European mainland universities, but, in 1939, with war imminent, she made for England. For the war years Whitehall recruited her and she served there for the duration. After a visit to Canada, Isobel returned to England and sought an academic post, not easy at that time. After shifting secretarial work, the post of academic secretary to Gordon Childe at the University of London's Institute of Archaeology might have been made for her. There was rapport with Jay Jordan Butler, who for a year

and more had been struggling with British ways and purposes, others found her easy to talk with while the present writer sometimes, at her behest, discussed with her various incoming and outgoing German language missives. Isobel was also helpful to those pursuing Roman studies who were concerned about Sir Mortimer Wheeler's absences. Many matters were given arrangement and order, from Childe's books and offprint distribution to his timetabling for seminars and, for some, supervisions.

Within the walls of St. John's Lodge it was almost impossible not to take an interest in archaeology, there were such as Max Mallowan and the redoubtable Kathleen Kenyon in post, not to mention the group clustered around Gordon Childe, pursuing European prehistory. Isobel was taking part, with critical observations, in the interminable coffee-table, and other, discussions besides attending lectures and seminars. In the event she was appointed, in 1953, to the post of Assistant in the Department of Prehistoric European Archaeology, an appointment limited to two years and under no circumstances renewable. The Eleventh Annual Report of the Institute of Archaeology had in it a paper by Isobel on the *Late Beaker Pottery of the Lyonesse (Clacton) surface* (Smith 1955) besides a notice of her enrolment for a PhD (Childe 1955, 2). Its title, *The Decorative Art of Neolithic ceramics in South-Eastern England and its Relations*, was a portent of things to come. The Institute's report for 1956 has in it a paper, with Jay J. Butler, on *Razors, Urns and the British Middle Bronze Age*, while there was a notice (Childe 1956,4) of her involvement, with Gordon Childe, in the preparation of a report upon Lindsay Scott's excavation of the Whiteleaf Hill, Buckinghamshire, long barrow. In the event the first annual report by W. F. Grimes, Gordon Childe's successor (Grimes 1958,4), records that 'Miss Isobel Smith was awarded the PhD for her thesis.'

Isobel's thesis, which she resolutely refused to publish, broke entirely new ground in that it was shown in detail that the earlier Windmill Hill wares, the thick lavishly decorated Peterborough pottery, which encompassed the Mortlake sub-style, and the flat-bottomed Fengate forms, were a linear developing series owing nothing to external stimuli. Indeed, it effectively weaned British prehistory away from what was termed the invasion hypothesis (Clark 1966), a notion that had for long been fraught with difficulties.

When the years at the University of London's Institute of Archaeology, the hub of our discipline, headed by an unforgettable all-star cast (Thomas

2003, 2), came to an end, excavations and the need for useful employment severed one's connections with that remarkable staff college. However, in 1956, when immersed in the excavation of some of Amesbury's damaged barrows (Ashbee 1985) east of the River Avon, Isobel appeared and one was able to discuss the emergent barrow features, man-made and natural, for the experimental earthwork was then in the future. During the lunch break she explained that her motor vehicle was a by-product of her new undertaking, the definitive publication of the many years of excavation by Alexander Keiller (Murray 1999), upon Windmill Hill and at Avebury from 1925 until 1939. This involved living in Avebury and work in the museum adjacent to Avebury Manor, where Keiller had lived. This was great news as Norman Cook, then the young Keeper of Archaeology in Maidstone's Museum, who had encouraged my modest early endeavours, had succeeded Stuart Piggott, as principal archaeologist in 1937. From time to time he had told me much about Alexander Keiller's great enterprise as well as his concerns for accuracy and accurate records. Indeed, this, plus Stuart Piggott's comments (1954, 17-32), and post-war visits to Windmill Hill and Avebury, besides its museum, had stimulated a particular interest in these sites.

Besides reference to Alexander Keiller's records, the notes, drawings and photographs, Isobel's work involved various small-scale excavations designed to check the nature of Windmill Hill's ditches, and such stratigraphy as they proffered, as well as features claimed within Avebury. A major undertaking, jointly directed by Isobel and the present writer, was, during 1959, the excavation of the denuded remains of the Horslip long barrow (Ashbee, Smith and Evans 1979, 207-28) on the south-western slope of Windmill Hill. In the event, sherds of earlier Neolithic pottery were found but no trace of burials. During 1960 the Experimental Earthwork, on Overton Down (Jewell (ed.) 1963; Bell, Fowler and Hillson 1996; Ashbee and Jewell 1998) was set up to determine the nature of natural weathering and denudation. As a result of initial observations and the scrutiny of the ditch infills of such sites as the Crichel and Launceston Down barrows (Piggott and Piggott 1944) and the Fussell's Lodge long barrow (Ashbee 1966), Isobel was able to show that the ditches of Windmill Hill had been for the most part back filled. A decade of painstaking work led to the remarkable volume, published in 1965 by the Oxford University Press, entitled *Windmill Hill and Avebury: excavations by Alexander Keiller, 1925-1939*. Modestly,

indeed, almost self-effacedly, Isobel allowed no more than the miniscule inscription '*This report has been prepared for publication on behalf of Mrs Alexander Keiller by I. F. Smith*'. It is a seminal work, the basis of any appreciation of Windmill Hill and Avebury to this day. However, its standard reference, when the Harvard mode is employed, is always 'Smith, 1965'. A measure is the publications, popular and otherwise, that it has brought about (e.g. Burl 1969; Ucko *et al.* 1991) and, latterly, further research upon particular aspects of Avebury and its landscape (Whittle 1997; Pollard and Cleal 2004; Fowler 2004; Gillings *et al.* 2004).

With the publication of Windmill Hill and Avebury, Isobel faced archaeological unemployment in 1965. Never one to rest upon her laurels she applied for a post in what was the Department of British and Medieval Antiquities of the British Museum, at that time led by Rupert Bruce Mitford. He and I were then concerned with Sutton Hoo Barrow 1, its dumps and barrow remnants from 1939, besides a resurvey of the barrow group. With us, and undertaking photography, was Gabrielle Keiller (Murray 1999, 111), then working as a volunteer helper. In the event, after soundings with Richard Dufty, then the Secretary of the Royal Commission on Historical Monuments (England) an appropriate post for Isobel emerged, that of Senior Investigator at the Salisbury Office.

From 1965 until her retirement in 1978 Isobel held this post. Her impact upon the Commission's publication styles and especially upon prehistory was considerable. Their publication of the long barrows of Hampshire and the Isle of Wight (1979) was substantially her work, in which she was assisted by Bruce Eagles FSA, also of the Salisbury Office. At a much earlier juncture he had assisted, in 1957, with the arduous excavation of the Fussell's Lodge long barrow (Ashbee 1966). It was visited from time to time by Isobel who rendered sterling support with the excavation and examination of concentrations of well-preserved human remains beneath the collapsed mortuary structure. Close upon the heels of the Hampshire volume came the seminal work, with Desmond Bonney, *Stonehenge and its environs, Monuments and Land Use* (1979) published by the Edinburgh University Press for the Royal Commission. This, until the definitive publication of Stonehenge and its supportive landscape (Cleal *et al.*, 1995) was the clearest and most comprehensive study to date. The clarity of the presentation of Stonehenge's structural phases is unsurpassed. The damage to the area brought about by the

National Trust allowing arable land-development was appreciated, as were the necessary excavations of near-raised barrows. The maps are particularly valuable, the most recent showing the railways brought to the area during the First World War (1914-1918). Another aspect of Isobel's work with the Royal Commission was the initial Gloucestershire volume (1976) which treated the Iron Age and Romano-British earthworks and other monuments within the Cotswold area embraced by the county. The prime mover for this considerable work was Collin Bowen, while Bruce Eagles also assisted. Few have ever appreciated the exacting nature of the Royal Commission's intensive fieldwork, the drawing, distance-walking and the comprehensive surveys, often in difficult terrain.

Isobel's work on Windmill Hill and Avebury led to various papers, particularly radiocarbon dates, while at the same time she produced notable reviews, for example of the present writer's work on round barrows (1960; Smith 1961), Stuart Piggott's (1962) account of the West Kennet long barrow excavations 1955-56, and later in 1970 the present writer's consideration of earthen long barrows. There were also excavations and, particularly, assessment of Neolithic pottery from the length and breadth of Britain. These included that from the Fussell's Lodge and Lambourn long barrows (1966) and that from Baston Manor, Hayes, in Kent (1973) besides that from Carn Brea in Cornwall (1981). Two considerations of the Neolithic are of especial note: causewayed enclosures, emanating from a conference in Leicester (1971) and a view of the Neolithic (1971) in a collective volume. Particularly valuable papers are her account, with Collin Bowen, of sarsen stones in Wessex (1977) and, later, with John Evans, their excavations at Cherhill (Evans and Smith, 1983). In the words of their summary 'A sequence of deposits ranging in date from Late Glacial to the present produced detailed evidence of environmental changes, reflecting both climatic fluctuations and the effect of human activities' (late Mesolithic, Earlier and Later Neolithic and Earlier Bronze Age). The environmental evidence with pottery and lithics broke new ground in the assessment of the Avebury area, and had implications for the chalklands at large.

During the earlier 1960s Isobel joined the committee of the Wiltshire Archaeological and Natural History Society. She became the Society's Honorary Editor in 1962 and continued the arduous tasks involved in the production of one of England's premier, and always eagerly awaited, archaeological

publication, for about twenty years. It was a time of change and crisis and there was the emergence of the reassuring dark green covers, the need to combine certain years, besides the microfiche pressures exerted by those who saw themselves as scientific. It was felt that a packet of fiche was no substitute for the dignified volumes, and even today there are those who have them bound! During Isobel's editorship the present writer published in WAM (a long-standing abbreviation) the Amesbury 51 Beaker barrow (Ashbee 1978) and the Amesbury 39 barrow (Ashbee 1981) both of which had excited the attentions of Sir Richard Colt Hoare and William Cunnington. Her textual insights from time to time sharpened impersonal prose styles although, in the days of expensive block-making when size was paramount, illustrations were sometimes rather smaller than they could have been. Editing is an intricate task and during those years Isobel continued her research and publication of largely Neolithic pottery for many considered that her assessment of their pottery was an accolade. Isobel's analysis of the Cornish Carn Brea Neolithic pottery which included some sophisticated vessels, broke new ground and gave a remarkable insight into the period in that sea-girt region's early development (Mercer, 1981). This was followed by her (1997) consideration of the Helman Tor's similarly sophisticated Neolithic pottery (Mercer, 1997). The report has radiocarbon dates and, like Carn Brea a damaged site, may have been a stronghold.

Conservation, in all its dimensions, interested Isobel. Chalkland old pasture, with its grasses and flora, attracted her as did the nature of Wiltshire, a chalkland county. Earthwork monuments were a particular concern and she was pained that the Stonehenge supportive landscape, allegedly protected by the National Trust, had been subjected to arable farming, deep ploughing and progressive barrow destruction. Although Alexander Keiller was accused of archaeological gardening at Avebury, it has recently been claimed that restoration of the great monument and all around it, is largely his creation. Nonetheless, Isobel's insights into his motivations and work, plus her own appreciation of Avebury at large, led her to be gravely concerned regarding inappropriate development close by or in its vicinity.

The initial threat came in 1987 when a planning application was made to erect a massive, high-standing hotel and conference centre, on the site of an erstwhile transport cafe by the Bath Road close by the Sanctuary stone circle on the top of Overton

Hill. The present writer whose letter to the *London Times* (18th Nov 1987) was denounced as 'hysterical', received a fulsome letter from Isobel thanking him for his interest and endeavour, while telling him of the motives of the project, which was not without a measure of obscurity. The proposed structure because of its form and size would have subordinated its surroundings and would have been visible from a vast tract of the fragile northern Wiltshire chalklands and many prehistoric monuments. In another context Isobel described the scheme as a 'desecration'. Shortly after this in 1989-90, an application was made to build a large hotel in place of West Kennet Farm opposite the junction of the minor road into Avebury which follows the West Kennet Avenue. After the dereliction of the farm it was established that there was a major Neolithic ditched site beneath. A third Avebury exigency in 1989 was the establishment of an Elizabethan theme park within the grounds of Avebury Manor adjacent to Alexander Keiller's Museum. It seems that there had been no planning permission and that listed buildings were altered. In the event the Kennet District Council acted and all was halted (*London Times*, 28th July, 1989). Shortly thereafter the National Trust acquired the Avebury Manor House, which dates from Elizabethan times and is (as is the church) adjacent to the circle. Isobel's painstaking assessments of what would have been wounding and inappropriate developments gave great heart to those opposing them. Fortunately after public enquiries they were disallowed by central Government.

Isobel has been described as an entirely private person by one who came to know her quite well during the ninth decade of her days. Her appearance at the Regent's Park Institute of Archaeology at the outset of the 1950 Advent Term is well remembered. She was able to elucidate the difficult passages of Dechelette, timetable students' tutorials, and make precise and foolproof arrangements for Gordon Childe's much loved excursions. He revelled in his remarkable car and drove some of us from time to time. Isobel arranged for a hired car to carry the rest of the party as few of his students were car owners. At Mawgan Porth in 1951 Isobel had, I remember, serious political discussions with Peter Jewell, while on the excavation she was popular because she was able to put helpers into the wider picture and show people how to use tools with an economy of energy. As has been related above all the Wiltshire barrow excavations were visited and all were better for extended discussions of their nature and contents.

During 1958 when the Milton Lilbourne barrows were excavated (Ashbee 1986) Isobel was a regular visitor and one of her especial interests was one of the considerable bell-barrows which had quantities of occupation debris in its fabric and did not have a central burial. A motor vehicle allowed ready access to Avebury and it was at this time that the low-ploughed Horslip long barrow, at no great distance from Windmill Hill, was first seen. We said to one another that pottery might remain and could be closely comparable with that from Windmill Hill. The Ministry of Works agreed to support the excavation, referred to above, and Gabrielle Keiller appreciated the archaeological implications and reimbursed the farmer, who lost his winter wheat from the area to be excavated. The Horslip long barrow had been raised from ditches dug into the lower chalk and their conditions, silting and other infills were a new experience. In the event such stratified material as was recovered came from ditch infills for the mound had been completely removed and all that remained was the eminence brought about by differential weathering (Ashbee 1960, 58 fig.19). The Horslip long barrow, excavated in 1959, was worked upon for three weeks at Eastertide, and later, during the summer, for six weeks. At Easter a considerable medial section was dug, a process closely supervised by Isobel and myself, by Ministry of Works personnel, who were based in Avebury. They attended for four days a week and, on Fridays, had to write out their time-sheets, as well as cleaning their tools and gear. Frequent heavy rain fell and, during the later days, sections had to be drawn. As an aid to dry drawing, a latrine cabin was placed at points of good visibility. Isobel and myself took turns thereafter at measuring and drawing sections during the continual heavy driving rain. At the completion of the excavation in early September 1959, the pottery, lithics and animal bones from the long barrow were stored in the Avebury Museum and visits were made to confer with Isobel and to scrutinise in detail this material.

During the following year, 1960, the Experimental Earthwork, raised upon the chalk of Overton Down (Jewell (ed.)1963; Ashbee and Jewell, 1998) came into being. Isobel was a frequent visitor and, from time to time, took part in the proceedings. As has been noted above it was the observation of the Overton Down's ditch silting which led to her being able to say that only Windmill Hill's ditch bottom silt could be attributed to natural agencies and that subsequently chalk rubble had been raked down to cover and bury the deposits found in them. Her frequent visits to

Overton Down were valuable in that she was able to record the precise date of surface stability of the bank and take photographs of the massive snow cover of early 1963. At this time one made frequent visits to Avebury as, at the outset, the chalkland earthwork (Ashbee and Jewell 1998) was investigated at intervals of six months, one year, two years, four years and eight years, this last in 1968. As I worked upon the Horslip long barrow excavation and Isobel the finds, letters were frequently exchanged, as were offprints and Christmas cards. Especial visits were made to Isobel's excavation of the Beckhampton Road long barrow in 1964 and joint visits were made to John Evans and his excavation of the South Street long barrow during 1966 and 1967 (Smith and Evans 1968; Ashbee, Smith and Evans 1979). Beckhampton Road was notable for the loyal band of helpers who laboured on the excavation and those who supported the later laboratory work.

The present writer became President of the Cornwall Archaeological Society in 1976 and, thereafter, until 1980, when he was succeeded by Geoffrey Wainwright, there were four annual visits to Cornwall. The route from Norfolk was always *via* Avebury and an hour was spent almost each time talking about what we were both doing. After this Avebury became a considerable distance and liaison with Isobel became offprints, the odd letter (about the building threats in the area), and Christmas cards.

Isobel was considered as an entirely private person and few knew of her beyond her eminence in the pursuit of prehistory. In 1951 when, for a while Isobel supervised the excavation of an area of the Mawgan Porth excavation (Bruce Mitford 1997; Ashbee 1998-9), she brought with her, as a fellow camper on the Cornish coast, her friend, at first sight austere but one who proved to be charming and competent. The friend said "call me Poppy" and during the duration of their stay she managed domestic, camp and other matters. It also emerged that Poppy was a musician, primarily a violinist, of considerable talent. Poppy was encountered from time to time when visits were made to Church Walk Cottage, although she always absented herself from archaeological discussion. At some point across the years it emerged that Isobel was also a violinist and that from time to time they supported the Marlborough College orchestra, although Poppy was often absent from Avebury as she played in a notable London based combination. So far as can be remembered, when an unannounced visit was made, Isobel was encountered, in her new car, near

the Red Lion, Avebury. It was felt that she seemed far from her normal self and thereupon she told me of Poppy's recent demise.

It should also be recorded how, from time to time, when domestic problems came to pass in Church Walk Cottage they were lessened, if not entirely solved, by Robin Kenward, a member of the Prehistoric Society and one of the London archaeological scene. Thus it emerged that Isobel slept upon the plan-press in the little first-floor bedroom, where, from time to time she wrote at a small table. Robin prepared lightweight planks, cut to the dimensions of the press, and screwed them into position as bed-heads. Robin, who was a practical and caring person, repaired the primitive outside lavatory, and introduced Isobel to Calor Gas for cooking. A continuing problem was that the cottages, a row, were built of broken sarsen stone and that it sweated and induced dampness, sometimes acute. Robin concluded that there must have been constant wood, or perhaps turf, fires in the hearth of the small downstairs room. She brought in wood, and even some of the consolidated Irish turf available at that time; and an autumnal regime of fires ameliorated, although never entirely cured, the damp conditions that sometimes softened paper.

Richmal and I had a great affection for Isobel, her friendship, organisation, and discussion at the Institute of Archaeology, her constructive visits and active help with the Wiltshire barrow excavations, besides broader discussions at the report and publication stages, plus letters and cards. As a person she was the complete prehistorian, her excavations were meticulously recorded, in notebooks, drawings and photographs. The small excavations on Windmill hill and at Avebury were unerringly directed to the specific problems that she had detected. Working with her on the Horslip long barrow was a memorable experience as the pottery, lithics and environmental materials, such as they were, became a developing dimension of the operation. Her interest in Neolithic pottery was encouraged by Stuart Piggott, who had, in 1931, brought together the Neolithic Pottery of the British Isles (Piggott 1931). It should be remembered that in those early days and even during the early 1950s diffusion was seen as the fundamental European pattern, but Isobel saw the changes as developmental rather than the result of external stimuli. Her PhD thesis (University of London, 1956) has been consulted by many, and many, including the present writer, urged its publication, but there was always resolute refusal. Isobel's interest in lithics, flint

implements and, particularly, fine-grained rock axes, was considerable, although secondary to her pursuit of pottery. Grahame Clarke (Fagan 2001, *passim*) particularly recommended her analysis of the flint and stonework from Windmill Hill (Smith 1965, 85-144). From the first, Isobel was keenly observant of field monuments and a visit to Stonehenge, prior to Stuart Piggott and Richard Atkinson's excavations and trilithon raising is vividly remembered. Various undamaged barrows in the supportive landscape were also visited and she was swift to note that their profiles were above the normal angle of rest for chalk rubble. Another joint foray was the scrutiny of long barrows, and some sites thereof, in the vicinity of Avebury and their close examination for fragments of imported oolite (Piggott 1962, 58, tbl. iv). Another earthwork interest was the Wansdyke and the manner in which it emphasised the Avebury area. This ability to analyse earthworks by category and dimension was carried on into her association with RCHME and it undoubtedly enhanced the status of the Salisbury office.

Isobel led a secluded life, even when immersed in Windmill hill and Avebury. There was music with Poppy and she was a prodigious reader and, because of her early interest, was conversant with French prehistory and was sent offprints by P. R. Giot, who had visited her. Despite overtures, Isobel, apart from her work with Gordon Childe, kept university prehistory at a distance and never came to conferences. Nonetheless, she was always interested in what was being done in various university departments and liked to see the programmes and field notes put out by the Prehistoric Society. Isobel was always reticent about her life although from time to time one sensed that she had seen much of the world and its arcane affairs. My memories are of a brilliant mind and a generous critic who was one of the twentieth century's foremost prehistorians.

Paul Ashbee

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WANHS Archaeology Field Group: recent activities and future plans

by Jim Gunter, Brian Clarke, Robin Holley, Christina Staff and Susie Stidolph

Recent activities of the Archaeology Field Group have led to both an increase in members and fieldwork undertaken by the Group. The results of work on minor sites (Rodbourne, Crowden Hill, Wilton and Wilcot) will be published next year in 'Excavation and Fieldwork in 2006'.

Winter workshop

The first of a series of archaeological illustration workshops was run by professional illustrator and AFG member, Liz Gardner. The workshop concentrated on ceramics, demonstrating how information derived from a single pot-herd can often facilitate complete reconstruction of a vessel. The next workshop, in 2007, will focus on illustrating stone tools.

Tilshead Project

During Easter 2006 fieldwork continued as part of the Tilshead Project (NGR SU 034481; Gunter and Stidolph 2006) and focussed on the interior of the enclosure whose banks and ditches had been the subject of earlier excavations and which had produced evidence of occupation from the Early Neolithic to Iron Age. A magnetometer survey of the interior revealed a series of circular anomalies (Figure 1). Excavation of the boundary ditch revealed only medieval green-glazed pottery indicating that the enclosure is somewhat later than indicated by previous work. A second trench across one of the circular anomalies proved more rewarding

and excavation revealed the remains of a child facing east-south-east in the circular ditch. An examination of the teeth indicated that the child was below 10 years of age. An x-ray of a metal object found with the skeleton suggests that it is a bow brooch of the Late Iron Age or Romano-British period. Teeth submitted for C14 dating have provided a date of 2200 ± 50 BP (c.270 BC) placing the burial in the Middle Iron Age, allowing the ditch to be tentatively interpreted as that of an Iron Age roundhouse. Two test pits in the centre of the enclosure investigated geophysical anomalies. Both produced sherds of Romano-British Black Burnished Ware and one pit revealed a posthole. Three seasons of excavations have shown that the area covered by the enclosure has a history of use beginning in the Neolithic with its principal period of occupation in the Middle to Late Iron Age, extending into the Romano-British period. Further roundhouses within and without the enclosure warrant investigation.

Additional work was undertaken to the south of the investigations described above. A bank at NGR SU03454785 running through a field to the south of the A360 owned by WANHS chairman Bill Perry was investigated to determine if it was related to the features excavated to the north. Resistivity survey showed no evidence of a ditch but areas

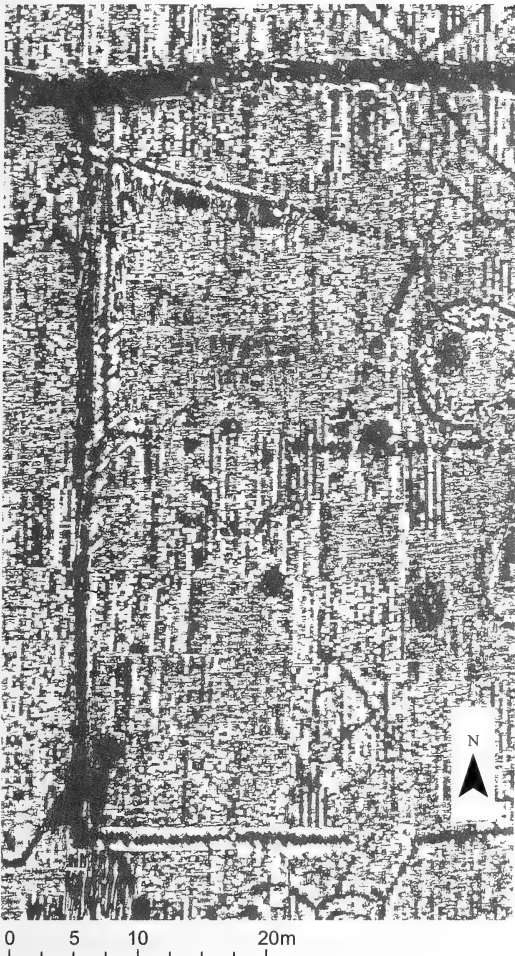


Fig. 1 Magnetometer survey results at Tilshead (north)

of high resistance suggesting possible buildings. Eight cuttings were made during the August Bank Holiday weekend to investigate features revealed by the geophysical survey. No evidence for substantial buildings was found, although cobbled surfaces and possible cob walls (indicated by flint base layers) suggest livestock pens. A possible drainage gully in a cobbled surface at the eastern side of the field may indicate stabling associated with a former inn nearby. The majority of the dateable evidence was Victorian, including bottles, pottery, iron objects and a halfpenny dated 1897. An abraded sherd of residual prehistoric pottery was also found. A further trench was excavated in October cutting through the bank itself, revealing modern rubble and assorted rubbish, but also patches of cobbles. Sherds of medieval pottery were found on the stone surfaces. Research at Tilshead continues.

Pollissoirs

A limited number of *polissoirs*, utilised in the Neolithic for finishing polished flint and stone axes are known from the Avebury area including the Marlborough Downs. Recorded in Britain in the Avebury area, they are more common in Northern France. The Group is now engaged in a survey checking every sarsen on the Downs and beyond. Both Piggledene and Lockeridge Dene were examined during the year with several possible *polissoirs* identified. In late Summer a field trip to the Marlborough Downs to examine known polishing stones, revealed another possible example on Overton Cow Down.

Stonehenge and FOAM

Group members continued to provide assistance and gain experience on projects run by other organisations ranging from the prestigious Neolithic/Bronze Age Stonehenge Riverside Project run by Professor Mike Parker Pearson, Dr Joshua Pollard, Professor Julian Thomas and others to the more gruelling but equally important scrub clearance of barrows near Stonehenge with FOAM (the Friends of Ancient Monuments) led by Julian Richards.

Future plans

Following work reported last year (Gunter and Stidolph 2006) the search for Roman activity around Calne continues and is likely to be developed further in 2007. Several Group members are currently training to take part in the North Wessex Downs AONB Woodland Archaeology project. Woodland has long been known to conceal archaeological features protected by tree and scrub cover. The aim is to conduct audits to identify both pre-woodland archaeological features as well as the archaeology of woodland and its related industries such as coppicing. This project will combine the archaeological and natural history interests of the Society.

Acknowledgements

The AFG would like to thank all of the landowners who facilitated the work outlined in this report and in Excavation and Fieldwork in 2005: Julian Pearson, Sue and Chris Barlett and the Blake family. Dr Rosamund Cleal and Dr Nicola Snashall, Alexander Keiller Museum, Avebury, kindly assisted with finds identification.

Reviews

edited by Bob Clarke

The Avebury Landscape. Aspects of the field archaeology of the Marlborough Downs, edited by Graham Brown, David Field and David McOmish. Oxbow Books, 2005, 224pp, black and white figures and plates, paperback, price £30. ISBN 184217 152 6.

We have been well blessed over the last several years with volumes focussed on the archaeology of the major Avebury monuments and their immediate environs. However since Chris Gingell's publication of the work of the Marlborough Downs Project (Gingell 1992) there has been a notable lack of attention afforded to the wider landscape of the Marlborough Downs. This volume goes some way to addressing this imbalance, drawing together papers presented at a conference held at the University of Bath in Swindon in April 2002 and also incorporating additional contributions; most notably from the former Royal Commission on the Historical Monuments of England (RCHME) and Peter Fowler.

Papers are arranged both thematically and chronologically. This familiar arrangement mitigates to some degree the lack of an index, which though common in conference volumes nevertheless detracts somewhat from ease of use. Fowler's Foreword provides a thoughtful springboard that sets the tone for the rest of the volume. He commends the wide-ranging and flexible approach to the definition of the boundaries of the Marlborough Downs taken by the authors. The flexibility within the volume extends to chronology, style and subject matter allowing for the inclusion of material as diverse as Julie Scott Jackson's highly useable gazetteer of palaeolithic evidence from across the Marlborough Downs to Jon Cannon's more focussed discussion of the contemporary use of Swallowhead Spring as a ritual site.

The earthwork survey plans of all of the major monuments within the Avebury landscape are of

excellent quality and will ensure that this volume is destined to have an enduring and useful life on the bookshelves of students and researchers alike. Add to these the plans of Avebury Trusloe, Avebury Manor and the summary of aerial survey and geophysical work across the Marlborough Downs, including the work of the RCHME and latterly English Heritage, the volume is well worth the purchase price. Notable not only for the quality of the visual output, much new evidence is contextualised and interpreted with rigour, as exemplified by Field's paper on the use, perception and meaning of sarsen from prehistory to the post-medieval period.

It is not possible in a short review to do justice to the work of each contributor and there are few volumes that create in the reader a desire to read each and every paper. This volume is a notable exception. It is to be hoped that its publication will mark a starting point for future research into the archaeology of the Marlborough Downs, not only to set Avebury in its local and regional context, but also to provide a better understanding of the Downs as an area of immense archaeological significance.

GINGELL, C. 1992, *The Marlborough Downs: A Later Bronze Age Landscape and Its Origins*. Wiltshire Archaeological and Natural History Society Monograph 1 with the Trust for Wessex Archaeology

NICOLA SNASHALL

Snail Down, Wiltshire, The Bronze Age Barrow Cemetery and Related Earthworks, in the Parishes of Collingbourne Ducis and Collingbourne Kingston. Excavations, 1953, 1955 and 1957, by Nicholas Thomas. Wiltshire Archaeological and Natural History Society Monograph 3. 2005, 325pp, black and white figures and plates, paperback, price £25. ISBN 0947723129.

Between 1953 and 1957 substantial excavations were carried out at the extensive early Bronze Age barrow cemetery on Salisbury Plain known as Snail Down. The investigation was carried out under the able direction of Nicholas Thomas, then curator of Devizes Museum, and Professor Charles Thomas. The resulting monograph is divided into three major parts. Part one covers the excavation of the monuments, each receiving its own section. Part two covers the specialist and technical reports including human remains, artefacts, environmental evidence and radiocarbon determinations. In Part Three, the Snail Down Cemetery is placed within a landscape context and a useful discussion covers possibilities for the choice of location.

The site produced Neolithic pottery and a possible Beaker period settlement. Imported stone tools were also present. The cemetery contains many traditional Wessex barrow types, including bell, bowl, disc, saucer and pond. Excavation demonstrated that the burial rite was predominantly cremation followed by deposition in pits. Grave goods were considered to be 'modest' across all excavated features, although more impressive finds from excavations by Cunnington and Colt-Hoare in 1805 are discussed and include the Early Bronze Age copper-alloy dagger and ring headed pin with two free-cast rings from the double bell-barrow. The pin forms part of the Stourhead Collection at the Wiltshire Heritage Museum and is an important example of Early Bronze Age metalwork. One example of trepanning was present among the burials. A secondary inhumation of an adolescent male recorded in barrow XXII is considered to be from a group passing through the area as complete burial is otherwise alien to the site. This latter aspect and the landscape location support the theory that Snail Down was the focus of one community's sepulchral activities.

The Snail Down report raises two interesting points. First is the continued use of Salisbury Plain by the Ministry of Defence. The primary reason for the excavation was damage to the barrow cemetery caused by military vehicles, in this case tanks. Whilst this kind of damage is clearly a product of intensified land use in a time of crisis, the volume's principal author suggests damage is still being caused to more discreet remains in the locality of the cemetery. Whilst on rare occasion this may be true, it has to be noted that over the last decade the situation has radically improved, due in part to the work of the Defence Lands Archaeological Officer, and the work carried out by Graham Brown and David Field of

English Heritage. The second issue is the time that has elapsed between fieldwork and publication. This monograph benefits from comprehensive treatment of all facets of the excavation and this, in part, has delayed publication. This reviewer, however, is of the view that this monograph bears witness to an increasing problem of publishing archaeological excavations to a depth that transmits all relevant information but within a limited budget. The generous funding of English Heritage, however, is to be noted and commended. This monograph adds significantly to our understanding of Early Bronze Age funerary location and practice and is a worthy addition to the Society's monograph series.

BOB CLARKE

Mosaics in Roman Britain: Stories in Stone, by Patricia Witt. Tempus Publishing, 2005, 192pp, black and white figures, black and white and colour plates, paperback, price £17.99. ISBN 0754 34217.

'Stories in Stone' deals with Romano British mosaics from a figurative point of view providing both identification and interpretation. After an introduction to how mosaics were constructed and the history of their discovery, the author takes a thematic approach with chapters on love stories, heroes, Rome, religion and culture, protection and prosperity, time, deities and hunting. The final chapter is most thought provoking and concentrates on the messages in mosaics and what they can tell us of the people who commissioned them. Good comparative material is presented. Scenes at Brading on the Isle of Wight are compared with closely related scenes at Frampton in Dorset and Pitney in Somerset. The author discusses the deities and characters represented and their relationship to each other.

The volume notes a number of Wiltshire mosaics, in particular Bradford on Avon, Downton and Littlecote Park. A popular theme emerges relating to Bacchus, as represented by depictions of canthari (drinking vessels), dolphins, and panthers. Canthari are often shown in association with dolphins and were seen as reinforcing a good luck message. They perhaps denote the mix between wine and water and the importance of both commodities. However it is suggested that Bacchus turning the Tyrrehanian pirates into dolphins is perhaps why they are represented. At Bradford on Avon, a panel in the main reception room mosaic shows a cantharus with

dolphins on either side. At Downton, the mosaic's central theme shows a cantharus with handles formed by dolphins. The cantharus is also shown in two panels in the Orpheus mosaic at Littlecote, in one accompanied by panthers and in the other by sea leopards and dolphins. Other Wiltshire mosaics are briefly mentioned. The Rudge mosaic, now lost, is thought to have contained a design scheme based on Achilles, similar to that at Keynsham in Somerset. The mosaic fragment of a hound from Cherhill compares well with hunting scenes found at Hinton St Mary, Dorset.

The author suggests there is no clear evidence of iconoclasm. Whilst this may be true, there is evidence from Bradford on Avon to suggest deliberate destruction of the central design theme of the mosaic. A hole was cut through the mosaic, the central design removed and the hole surrounded by a circular stone building. It is suggested that this may have been a baptistery, the hole made to contain a tank or font.

It is interesting that similarities in design schemes could be drawn from the far reaches of the empire. The reason given for this penchant for figurative design is perhaps enforcing a message of belonging to a wider cultural world. It is also pointed out that seasonal mosaics appear to have particular resonance to regions of agricultural production such as North Africa and Britain.

There could have been further discussion on the geographical spread of figured mosaics in Britain, with only brief mention made of the concentration in the South West and on Humberside. Overall, however, the book is well illustrated and is complemented by a comprehensive gazetteer and a large bibliography. The book fills a gap in the current study of mosaics and presents a balanced view, even where opinions are divided. The author is to be congratulated for producing a valuable reference work and a further addition to the literature on mosaics.

MARK BRACE

Corpus of Anglo-Saxon Stone Sculpture Volume VII, South-West England, by Rosemary Cramp. Oxford: Oxford University Press on behalf of The British Academy, 2006, 446pp, black and white figures and plates, hardback, price £65. ISBN 0197263348.

The publication of the seventh volume of the *Corpus of Anglo-Saxon Stone Sculpture* brings to full publication for the first time all of the surviving

material from the core shires of Anglo-Saxon Wessex: Devon, Dorset, Somerset and Wiltshire. Cornwall is to be covered in a volume of its own in due course. While the sculptural record of Wessex is rather more limited than other regions of the British Isles (such as Lincolnshire and Yorkshire), its quality is outstanding and includes a number of nationally key pieces, several of them from Wiltshire. The number of sites that have yielded Anglo-Saxon stone sculpture is uneven in distribution among the four counties covered (Devon 10, Dorset 21, Somerset 29 and Wiltshire 21). Western Somerset has only a few pieces and that is where the density of known finds drops off to the low level observed in Devon. Virtually all of the material is derived from ecclesiastical sites with a very few exceptions. The inscribed stone from the late- to sub-Roman cemetery at Cannington (Somerset) is the only dubious inclusion in the volume and can hardly be considered as a piece of 'art'. The high-quality 11th-century figural sculpture from Congresbury, found under the floor of an 18th century barn in 1995, is itself almost certainly derived from St Andrew's Church, the probable site of the monastic community documented by King Alfred's biographer Asser in the later 9th century.

The range of sculpture from the four counties comprises the remains of grave covers and markers, standing crosses, architectural detail and up to three probable examples of rare stone fonts (from Melbury Bubb, Potterne and Wells). That from Potterne is placed in the earlier 11th century rather than in the immediate post-Conquest period, as has been argued elsewhere, on the basis of the style of the inscription around its rim. While certain of the material is derived from major Anglo-Saxon minster churches, in Wiltshire from Amesbury, Avebury, Bradford-on-Avon and Ramsbury, other churches were clearly only ever of parish status and no doubt attest secular patronage of estate churches: Wiltshire examples include the fine pieces from Codford St Peter (the famous 'dancing man') and Broad Chalke. Other high quality or stylistically important material includes that from Avebury, Bradford-on-Avon, Britford, Colerne, Cricklade, Inglesham and Ramsbury. A striking feature of the Wiltshire material in particular is the very high-quality of the 8th and 9th century sculpture. The finely decorated 8th century stone slab of unknown function from Holy Trinity at Bradford-on-Avon (now reset as an altar in the adjacent St Lawrence's chapel of c. A.D. 1000) provides an insight into the embellishment of one of south-western England's earliest and most important

monastic churches, while the fine sculpture from Britford probably reflects royal patronage of c.A.D. 800. Further 8th or 9th century material includes that from Codford St Peter, Colerne and Hanging Langford. The Codford 'dancing man' mentioned above is related to a period when Wessex art styles were influenced by foreign models, notably the eastern Christian world, while the pose of the man and the composition of the decorative scheme are suggested to represent King David celebrating his defeat of the Philistines.

The quality of the volume is faultless, with excellent maps and black and white plates showing each piece, often with additional views showing details. The text is highly readable and easy to relate to the plates, which are bound at the back of the volume. Apart from simply collecting and illustrating the Wessex corpus, the volume uses the material to examine key social issues, not least the nature and range of cultural influences on the West Saxon kingdom. The research encapsulated in the present volume represents a huge undertaking. Professor Cramp, her co-authors and research assistants, have once again provided a first rate source for those working on the art, archaeology and history of the early middle ages. The book will remain the standard work of reference for decades to come and this reviewer strongly recommends its purchase to all those with an interest in the Wessex region – the volume also serves as an excellent field guide.

ANDREW REYNOLDS

In Defence of Landscape: An Archaeology of Porton Down, by David Ride. Tempus Publishing, 2006, 172pp, black and white figures, black and white and colour plates, paperback, price £17.99. ISBN 0752437496.

A comprehensive book on Porton Down has been long awaited and this volume substantially addresses that need. Dr Ride worked at Porton Down for some 23 years, 17 of which he spent leading the Archaeology Section of the Porton Down Conservation Group. He begins by discussing the military origins of Porton Down and the reasons for its existence and also provides a good overview of the prehistoric archaeology of the area. Dr Ride then gives a vivid description of the life and work of J.F.S. Stone, his education, sport and army career in the Royal Garrison Artillery (R.G.A.) and his

early work at the Chemical Warfare Experimental Station. There is a clear account of how Stone's interest in archaeology developed during this time including the important excavations of Neolithic flint mines on Easton Down and the Anglo-Saxon Saxon cemeteries, including decapitated skeletons, on Roche Court Down and Stockbridge Down (the latter in Hampshire). Stone's many and varied field projects included the rescue excavation of the Iron Age hillfort on Boscombe Down West in 1947 which added much to the archaeology of Wessex. His work on spectrographic analysis of glass and faience in Bronze Age Europe made a fundamental contribution to the subject.

The following chapter describes the chalk geology of Porton Down (consisting of three types; Seaford, Newhaven and Tarrant), considering the process of fossilization and, later, the way that flint was mined for tool making at Easton Down, Martins Clump and Tower Hill. Ride also comments on the low number of recognised flint mines in view of the apparent demand over many hundreds of years and the possibility that many may yet be found. The forms and uses of round barrows and the burials and finds that they contain are also considered. Thomas Guest's oil painting of the Saxon burial from the Winterslow Hut group of Barrows, partially excavated by Rev. A.B. Hutchins, shows a shield boss and hand grip, spearhead, buckle and the bronze bound remains of a wooden bucket. These finds accompanied the secondary burial of a large skeleton, presumably male.

Ride then considers the division of land both for agriculture and defence with a discussion of the 10km long earthwork known as the Quarley High Linear and its relationship to the hill forts of Quarley and Danebury. The possibility of such intense building activity is suggested to be attributable to some scare or threat in the middle phase of the Iron Age, which seems to have disappeared fairly suddenly causing the work to remain uncompleted. Excavation of the Quarley High Linear showed that it was in fact round bottomed instead of flat as at first thought; compacted silt gave a false impression of the ditch bottom profile. The author also comments on the value of the rivers Avon and Bourne as defensive barriers.

A most interesting chapter shows how the arrival of the Saxons altered the pattern of settlement and laid the foundations of the villages we know today. In the Bourne valley, the medieval hamlet of East Gomeldon came and went over a period of 200 years, not depopulated by the Black Death it seems but

more by economic factors. Ride then describes sheep farming and the technology of their management telling us something of the families who managed the land and the sheep of Porton Down and in some cases the survival of those families into the present day.

The closing chapters consider the more recent history of the locality, including the fascinating life of William Benson and his fight to ingratiate himself with George I, the building of Wilbury House, fully describing the construction and design and the local gun flint industry. The concluding chapters describe agriculture on Porton Down during the 18th and 19th centuries and the abundant plant and animal life there and the book finishes with a section on the development of the camp and artillery ranges, their use and remains. This is a well written and informative book of interest to layman and professional alike.

COLIN KIRBY

Wiltshire Reformatory for Boys Warminster 1856-1924, by Ivor Slocombe. Hobnob Press, 2005, 42pp, black and white figures and plates, paperback, price £3.95. ISBN 0946418454.

Wiltshire's first Reformatory for boys, set up in 1856, quickly became a model for such institutions nationally. Movement away from the 'short, sharp, shock' of prison or corporal punishment to reformatory is described through the actions of one of the country's leading prison reformers of the time, Mary Carpenter. She considered the home to be one of the major causes of child crime and urged that children should be removed from poor influence and placed in a new type of reformatory. These institutions were to promote such things as personal cleanliness, moral health and a sense of duty. From these opening observations the author takes the reader through the establishment of the first reformatory at Bugley in the shadow of Cley Hill, near Warminster. Treatment is then given to the development of the site. The degree of research undertaken is demonstrated by the in-depth view of every facet of life therein, including issues surrounding the schoolmasters. It is interesting, but not surprising, to learn that 'drunkenness' was a major problem amongst the staff. The publication goes on to discuss the many facets of life for the boys and it is a relief to note that there were, indeed, success stories. This is a fascinating insight into the Victorian, and later, penal reform system and

is presented in a thoroughly absorbing and well written manner.

BOB CLARKE

Wiltshire Toll Houses, by Robert Haynes and Ivor Slocombe. Hobnob Press, 2004, 94pp, black and white figures and plates, paperback, price £6.50. ISBN 0946418217.

Wiltshire Toll Houses, in fact toll houses in general, are a poorly serviced group of structures. This publication goes some way to addressing this situation, for our county at least. Toll houses have often been the neglected part of the turnpike network, but this book reminds the historian of the importance of such structures, especially when considering the development of the county's roads. Contained within this volume is a very usable introduction covering the types that may be encountered and various functions of the Turnpike Trusts. Without doubt the highlight of the publication is the Gazetteer. The authors cover every known site with the parish name, toll house location, where possible, a six figure National Grid Reference and a photograph of the existing structure with a plan or map. The book is well laid out making the topic accessible to both enthusiast and lay reader alike, very reasonably priced and well presented. This reviewer recommends this book to those who frequently travel the county's highways, be it through business or pleasure.

BOB CLARKE

In Wiltshire's Skies, by Colin Cruddas. Tempus Publishing, 2004, 127pp, black and white figures, black and white plates, price £12.99, paperback, ISBN 0 7524 3235 4.

Following his previous books, which include the aviation histories of Dorset and Hampshire, the author has now concentrated his efforts on probably the most important and influential area of British military aviation, namely Wiltshire. The book is arranged in broadly chronological order starting around 1909 with the building of the Barber Hangar and the establishment of the Bristol Flying School at Larkhill. From these early beginnings, coupled with the large military presence in the Salisbury Plain area, followed a rapid build up in the number

of airfields and training establishments in the region. The importance of training aircrew and maintenance personnel in the build up to and during the First World War led to a massive growth and expansion in the size and number of airfields in Wiltshire. The author has managed to unearth some fascinating and unique photographs of the era.

The inter-war years brought an inevitable reduction in all things military with the closure and rationalization of military sites across the country. As the author points out, this had a lesser impact on Wiltshire aviation due to its high profile training commitments. The author has listed and located around 40 airfields and landing sites around the county and has managed to find illustrations from quite a number of these.

As war once again loomed, the Wiltshire skies came alive with training aircraft based around

the county. As the war progressed an additional requirement was realised in the research and development field. The result was the metamorphosis of Boscombe Down from a training role into its present day position as one of the leading research establishments in the world. The author has rightly devoted a complete chapter to Boscombe Down and its importance in the history of not only Wiltshire but also British aviation as a whole.

The work is lavishly illustrated with interesting photographs with explanatory captions where required. Narrative is kept to a minimum and the author has allowed the illustrations to speak for themselves. This is a fascinating book for anyone associated with or interested in the history of aviation in Wiltshire.

BARRY HUNTINGFORD

Excavation and Fieldwork in Wiltshire 2005

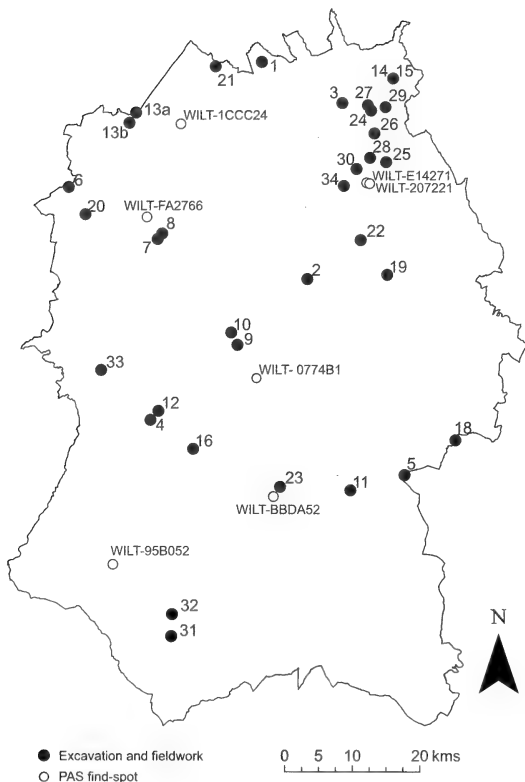


Fig. 1 Location of excavation, fieldwork and PAS highlights.

Ashton Keynes

1. *The Long House (SU 04560 94170); medieval*
 In May/June 2005 Cotswold Archaeology carried out an archaeological excavation at The Long House, Ashton Keynes. Archaeological features recorded included a series of possible gravel quarrying pits, postholes, tree-throw pits and shallow ditches/gullies. The latter represented a previous site boundary (the present site boundary was immediately to the south of the excavated area). The majority of the pottery

retrieved from these features was 11th-13th century in date, with some later medieval and occasional modern material. Two large inter-cutting pits were recorded in the north of the site, with a third at the northern limit of excavation. These features were relatively rich in pottery and organic remains. It is possible that they relate to medieval crop processing activity.

Avebury

2. *Silbury Hill (SU 100 685)*

A geophysical survey was carried out in February 2005 by the geophysics team, English Heritage Research Department, immediately east of Silbury Hill (SAM 21707) in an attempt to identify any significant archaeological activity in this area and assist the wider interpretation of the monument within a landscape context. An extensive caesium magnetometer survey was conducted and successfully recorded a wide range of anomalies. Many of these anomalies appear to result from the variable geology of the river valley location on the floodplain of the Winterbourne stream (or river Kennet). However, immediately east of Silbury Hill a series of linear magnetic anomalies indicates the presence of a complex of ditched enclosures and associated occupation activity. More weakly defined anomalies suggest the presence of further enclosures extending under deposits of alluvium running up to the present course of the Winterbourne stream. These results suggest that the Romano-British activity previously recorded beyond the survey area, directly east of the Winterbourne, may extend up to the external quarry ditch around Silbury Hill. Additional limited earth resistance survey provided tentative indications of possible structural features within the enclosures identified by the magnetic survey but an archaeological interpretation of these anomalies is perhaps less likely than a natural explanation, given the variable underlying geology of the floodplain and river terrace location.

Blunsdon St Andrew

3. *Groundwell Ridge (SU 141 893)*

Following the previous successful geophysical results from this extensive Roman site (SAM 29664) a trial Ground Penetrating Radar (GPR) survey was conducted by the geophysics team, English Heritage Research Department in August 2005 in an attempt to locate a deep wall feature identified in the 2005 excavation trench. A 30m x 30m grid was established, partially overlapping the excavation trench and known location of the wall, and surveyed with a low (225MHz) centre frequency GPR antenna. The resulting data was inconclusive, possibly due to a combination of the back-fill of the excavation trench and the uneven surface vegetation. However, the high conductivity soils found over this site may also limit the effective depth of GPR signal penetration.

Bratton

4. *Church of St James the Great (ST 9145 5191); medieval*

An archaeological evaluation was undertaken by Cotswold Archaeology in June 2005. Two trenches were excavated within the proposed development area. Three overlapping ditches were identified during the course of the evaluation and probably represent silting up and re-cutting of a single property boundary. Pottery recovered from the fill of the ditches suggests a mid-late medieval date for this activity. A notable build up of colluvial material, in places sealing an earlier ground surface, was also observed. The work has indicated that medieval boundary ditches survive 0.8m below ground at the western end of the site.

Bulford

5. *Beacon Hill (SU 215 454); Neolithic, Roman and Modern*

During fieldwork by the former RCHME (now English Heritage) a particularly large cluster of Neolithic struck flint was observed during recording of an early 20th century trench system on Beacon Hill. This is the largest such concentration noted on SPTA in over a decade of fieldwork by members of RCHME. Along with a few small sherds of Roman-British pottery, the flintwork had been revealed both by the trench digging and later scrub clearance. No material was collected but instead left, pending a satisfactory collection scheme, as earthworks and the presence of scrub rendered a grid layout and collection difficult. No further fieldwork is planned.

Burton

6. *Nettleton Road (ST 8172 7942); post-medieval*

An archaeological evaluation was undertaken by Cotswold Archaeology in September 2005 at the request of Meadgate Homes. The evaluation aimed to investigate a line of stones running alongside the lane known as Church Hill and thought by local residents to have once been a causeway. Five trenches excavated across the putative causeway confirmed the presence of a causeway alongside the east-west spur of the Church Hill lane. The causeway comprised several phases of stone surfacing approximately 2.6m wide, built on to a 4m wide bank of redeposited natural clay. Although only limited dating evidence was recovered, the causeway appears to have been in use by the 17th century, and may be medieval in origin. The causeway seems likely to have been used until the construction of a dry-stone wall along its centre line in the 19th or 20th century. A possible early road surface extending beneath the modern lane was also identified and, although poorly dated, its construction and use appear to have been broadly contemporary with the causeway. The causeway survived along much of the Church Hill lane.

Chippenham

7. *Cocklebury Cottages, Eastern Avenue (ST 928 739); medieval*

An archaeological watching brief was undertaken by Cotswold Archaeology. A single linear feature was uncovered containing fragments of 13th to early 14th century pottery, and possibly represents farming activity. A large depth of subsoil yielded pottery of a wide date range, including 12th-century sherds.

8. *St Mary's Street (ST 9226 7326); post-medieval*

An archaeological evaluation was undertaken by Cotswold Archaeology in October 2005. Two trenches were excavated across the proposed development area indicating that post-medieval deposits survive at a depth of 0.5m below the modern ground level. A probable garden wall was uncovered with an associated rough stone surface, as well as two boundary or drainage ditches. These features in all likelihood relate to the use of the area as a yard, garden or orchard in the 18th and 19th centuries.

Devizes

9. *Nursteed Close (SU 0175 6075); Prehistoric to post-medieval*

In September 2005, Oxford Archaeology carried out a field evaluation on behalf of The Ministry of Defence, Defence Estates. Three twenty 1m

wide trenches revealed no archaeological remains. Residual worked flint and pottery from subsoils indicates activity from the prehistoric to the post-medieval period.

10. *Quakers Walk (SU 0100 6220); prehistoric, post-medieval*

An archaeological evaluation was undertaken by Cotswold Archaeology in July 2005. Nine trenches were excavated revealing a number of ditches, one of which contained a residual blade-like flint of possible Mesolithic date. A large post-medieval ditch extended through two of the evaluation trenches in the western part of the site. This latter feature correlates well with one of a series of cropmarks previously identified within the proposed development area and plotted from aerial photographs. It is noteworthy that physical evidence for the majority of the cropmarks was not observed despite being targeted by evaluation trenches.

Durrington

11. *Durrington Walls (SU 151 436); Neolithic*

A geophysical survey was conducted by the geophysics team, English Heritage Research Department in August 2005 over the unexcavated portion of the Neolithic circular timber structure (SAM 10365) originally revealed inside the henge monument of Durrington Walls during excavations in 1966-7 in advance of the rerouting of the A345. Prior to the survey a small trench of approximately 10m x 7m was opened with a mechanical excavator to remove topsoil and colluvial overburden to a depth of 1m, well above the suspected prehistoric land surface. Fluxgate magnetometer, earth resistance and ground penetrating radar (GPR) surveys were then conducted over the stripped area to identify the location of underlying archaeological remains and estimate the remaining depth of colluvium overburden. Ground conditions in the trench were too dry to obtain useful earth resistance data but the magnetometer and 450MHz centre frequency antenna GPR surveys detected post-pit type anomalies proved through subsequent excavation. The GPR data also provided a useful estimate of the depth to the top of the post-pit anomalies, indicating that the colluvial overburden was shallower than had been anticipated from a previous auger survey.

Edington

12. *Greater Lane Farm, ST 9239 5296; medieval*

An archaeological evaluation was undertaken by Cotswold Archaeology with two trenches excavated

across the development area. Two phases of medieval activity comprising pitting and ditches were identified along with a possible prehistoric pit and features dating to the modern period. Residual prehistoric, Roman and Anglo-Saxon artefacts were also recovered and the site was protected by a considerable thickness of colluvium and modern topsoil/subsoil.

Easton Grey

13. *Works to Existing Water Main (ST 8970 8820 and ST8890 8700); Roman*

A watching brief undertaken by Cotswold Archaeology during maintenance work on a water main revealed a ditch and posthole of Roman date to the south of the SAM there and the River Avon. A quantity of Roman pottery was recovered from the backfill of the original pipeline trench where it passed through the Romano-British settlement at Easton Grey (Scheduled Monument SM12046).

Highworth

14. *Highworth Cemetery (SU 201 922)*

In May and November 2005, Oxford Archaeology carried out an archaeological watching brief at Highworth Cemetery in advance of redevelopment. The work was commissioned by CgMs Consulting on behalf of McCarthy and Stone (Developments) Ltd. No archaeology was revealed.

15. *Rear of No. 24, High Street (SU 201 922); Modern*

In April 2005, Oxford Archaeology carried out a field evaluation on behalf of Gregory Gray Associates. The evaluation revealed 18th, 19th and 20th century worked soils overlying cornbrash. An 18th century cobbled path associated with the standing dwellings was also observed. No earlier deposits, features or artefacts were encountered.

Imber

16. *St Giles Church (ST 965 485), Medieval*

Between December 2005 and February 2006, Oxford Archaeology carried out archaeological and historical analysis of St Giles Church, Imber. The church is the most substantial surviving element of the village taken over for military use in the 1940s. The work was carried out in response to a restoration project carried out in 2005 and 2006. This project saw the replacement of stone work of the tower parapet and the re-roofing of the south aisle. An archaeological record was made both before and during these works. The south aisle roof was stripped

and rotten wallplates renewed and faulty guttering rebuilt. The roof consisting of five bays divided by moulded principal rafters with one order of moulded purlins appears to be late medieval in style and is probably the original 15th century roof of the aisle. Two missing merlons from the 15th century tower parapet were replaced. The carved finial of the south-east tower pinnacle and a crocketed member from the south-west pinnacle were also replaced. The replacements to roof and parapet were made of traditional materials and care was taken to preserve and protect the surviving historic fabric.

Ludgershall

17. *Station Approach (SP 264 507); Modern*

In June 2005, Oxford Archaeology carried out a field evaluation on behalf of Purbeck Plant Hire (Andover) Ltd, prior to development which revealed that the site was ploughed prior to the 19th century.

18. *Willis Green Golf Course (SU 275 495); Prehistoric and medieval*

An archaeological evaluation of the site was undertaken by Cotswold Archaeology in August and September 2005. Eighteen trenches were excavated, and trackway ditches and pits of possible prehistoric date were recorded dispersed across a wide area. An infilled ditch, forming the boundary of one of the medieval deer parks of Ludgershall Castle, and marking the county boundary, was also identified.

Marlborough

19. *95 London Road (SU1944 6900) Romano-British, Post-Medieval*

A watching brief carried out by Bernard Phillips and Mogs Boon during the cutting of house foundations recorded features and finds of the late 18th and 19th centuries. No earlier features were evidenced despite the previous finding of a truncated Romano-British pit during the cutting of an archaeological evaluation trench by Wessex Archaeology (project code 59000).

North Wraxall

20. *Truckle Hill (ST 837 762); Roman*

In 2004 the well preserved remains of a Roman building were unexpectedly recovered in a small valley immediately beneath Truckle Hill near North Wraxall in Wiltshire during quarrying for stone rubble by the landowner. A rapid building recording exercise was carried out by Wessex Archaeology and the surviving wall footings were remarkably

well preserved. Subsequently, the English Heritage Geophysics Team carried out a geophysical survey in September 2005 in the immediate vicinity to determine whether any further Roman remains might be present. A second aim of the survey was to identify areas likely to be free of archaeological features from which material could be excavated to cover the exposed remains, thus protecting them from weather damage. Earth resistance measurements indicate that the partially excavated building extends further beyond the exposed remains and the site of at least one potential additional structure has been located as well as evidence suggestive of landscaping and a possible road running along the base of the valley. It appears that the entire head of the valley may have formed a managed landscape in Roman times, perhaps similar in character to the nearby site at Nettleton about 1.5km to the north-west, albeit on a smaller scale. The site is close to Truckle Hill Roman Villa (Wiltshire Scheduled Monument 878) which lies approximately 100m up-slope to the south-west on the edge of the plateau forming Truckle Hill. This substantial villa was excavated in 1859-60 by G. Poulett Scrope, although there is no evidence that he investigated any remains in the valley in which the recent discovery lies.

Oaksey

21. *All Saints Church (ST 9910 9365); modern*

A watching brief and historical research were undertaken by Cotswold Archaeology during the replacement of existing drainage. The works disturbed only reworked graveyard soils, although three coffins were revealed during the excavation of a soakaway pit at the western end of the church. These were not disturbed, and the trench was backfilled once recorded. Historical research comprised a search of cartographic sources and aerial photographs of the development area in the Wiltshire SMR and NMR. Neither search revealed relevant information.

Ogbourne St Andrew

22. *Barbury Castle (NGR SU163731); Early Bronze Age*

A group of three Early Bronze Age round barrows are found at the head of a south-facing dry valley in an area of undulating chalk downland known as Maizey Down, near the village of Ogbourne St. Andrew, Wiltshire, including a bell barrow 20m in diameter and 4m high (SAM 12206), a bowl barrow 26m in diameter and 0.75m high (SAM 12207) and a

second bowl barrow with an adjacent plough levelled saucer barrow 15m to the west (SAM 12208). All three upstanding barrows show evidence of partial excavation in the late 19th century and contain a large number of sarsen blocks (especially SAM 12207) that appear to represent the result of field clearance, rather than forming an integral part of the monuments. In addition, the barrow group has also been subject to more recent damage due to burrowing animals, from active badger setts and extensive rabbit warrens.

In 2005 a detailed geophysical survey was conducted by the geophysics team, English Heritage Research Department over the smaller of the two bowl barrows SAM 12208, also known also as OSA8, as part of a programme of research designed to examine the impact of badger activity on prehistoric funerary monuments. This was followed by the partial excavation of the barrow and a wider area magnetic survey in April 2006 to cover the other extant barrows and potentially reveal the remains of any more degraded monuments in the immediate vicinity of OSA8. The initial geophysical survey of OSA8 involved the application of magnetometer and earth resistance techniques to delimit the extent of the barrow, including the location of the surrounding ditch. A Ground Penetrating Radar (GPR), using 900, 450 and 225MHz centre frequency antenna, was then used in an attempt to image both internal archaeological features within the barrow and also the tunnels and chambers of the intrusive badger setts. The initial magnetic survey successfully identified both the circular ditch and some intense anomalies from ferrous litter over the centre of the mound. The GPR data was highly complex with the high frequency antenna (900MHz) detecting very subtle anomalies in the near surface and the lower frequencies providing a greater penetration depth (to approximately 1.8m with the 225MHz antenna). It would appear that the 900MHz data has identified the main badger burrows as low amplitude anomalies between 0.5m to 1.0m from the surface. It is of interest to note that these anomalies correlate with two high resistance responses in the earth resistance data, suggesting the presence of air-filled voids.

Shrewton

23. *Shrewton Church of England Primary School (SU 0680 4400); post-medieval and modern*

In February 2005 Cotswold Archaeology excavated nine evaluation trenches on land at Shrewton at the request of Wiltshire County Council Environmental

Services Department. The trenches were positioned to explore earthworks, previously recorded by the RCHME, and any below-ground archaeological remains. In those instances where such a relationship could be shown, the earthworks were found to result from post-medieval/modern structures, apparently shown on 19th century cartographic sources. A small number of minor undated ditches and pits were also uncovered, as was an undated but probably pre-1773 water channel. Late post-medieval/modern disturbance of the ground was widespread, especially in the present school field. A single residual sherd of medieval pottery suggests limited occupation of the site in that period.

Swindon

24. *The Triangle Site (SU 1750 8840); prehistoric*

An archaeological evaluation was undertaken by Cotswold Archaeology in December 2004 on land known as the 'Triangle Site', Swindon. The evaluation comprised 30 trenches across the proposed development area. Archaeological features consisting of ditches, pits and postholes were found on a raised plateau on the eastern part of the site, and on level ground in the southern part. No archaeological features were present on the western part of the site. Other recorded features included tree-throw pits, plough furrows and modern infilled field boundaries. Dated features belong within the Early to Middle Iron Age period. Evidence for domestic activity and nearby settlement was identifiable from concentrations of animal bone and pottery. Postholes indicate the presence of domestic structures. The majority of features, consisting of truncated pits and ditches, were undated, although their association with the dated features suggests an earlier Iron Age date for these also; the ditches were probably field boundaries.

25. *Commonhead Roundabout Geotechnical Survey (SU 193 823); Roman*

A watching brief was undertaken by Cotswold Archaeology of 20 geotechnical pits which showed that the level of the land in the area had been greatly altered by the construction of the original roundabout. One of the pits uncovered an undated ditch and associated stone deposit, believed to be the drainage ditch and bedding for an earlier road.

26. *St. Joseph's Upper School (SU 1790 8570); prehistoric*

An archaeological evaluation was undertaken by

Cotswold Archaeology in June 2005. Five trenches were excavated across the development area revealing a single small undated oval pit containing a charcoal-rich fill and sealed by a layer of alluvium associated with the River Cole. Although the pit contained no dating evidence, the presence of a small quantity of burnt flint may suggest a prehistoric origin. The fieldwork also demonstrated that ground levels had been artificially raised throughout in recent times, probably during the construction of the school in the 1960s.

27. *Kingsdown Crematorium, (SU1712 8902)*
Mesolithic, Neolithic, Bronze Age, Post-Medieval

Continued observation following car park, road and path construction for a new cemetery revealed 1227 struck or utilised flint artefacts of Mesolithic to Bronze Age date. Of these 174 are tools or core related items including microliths, a variety of scrapers, knives, awls, notched flakes and blades, and arrow heads. The work was carried out by Bernard Phillips for Swindon Borough Council.

28. *'The Beeches' 364 Marlborough Road, (SU1740 8282)*
Mesolithic, Neolithic, Romano-British, Anglo-Saxon

An archaeological evaluation by Bernard Phillips and Mogs Boon, comprising eight test pits, revealed struck flints dating to the Mesolithic and Neolithic periods, negative features of Romano-British date and a possible sunken floored Anglo-Saxon building associated with grass tempered pottery sherds.

29. *Plot 11c, South Marston Park (SU 192 888);*
Romano-British

In November 2005, Oxford Archaeology carried out a field evaluation for Michael Sparks Associates on behalf of Graftongate Developments Ltd. Seven trenches were excavated and the evaluation revealed one possible Romano-British field boundary and several smaller undated gullies and pits.

30. *Swindon Gateway, Coate (SU 185 815);*
Late Mesolithic, Bronze Age, Iron Age, Roman and Medieval

In December 2005 and February/March 2006, Oxford Archaeology carried out a field evaluation on behalf of John Samuels Archaeological Consultants (JSAC) on the proposed Swindon Gateway development. 84 trenches were excavated of which 48 contained archaeological features other than medieval ridge and furrow. Fieldwalking was also undertaken across a 20 hectare field in the north-west of the site. The

evaluation defined areas of known archaeological potential, as well as previously unknown ones. 315 features were identified, 128 of which can be dated by pottery. The evaluation demonstrated the survival of archaeological features and activity across most of the landscape from the late Mesolithic, Bronze Age, Iron Age, Roman and Medieval periods.

Tisbury

31. *Old Wardour Castle (ST 939 264); Medieval*
A small scale Ground Penetrating Radar (GPR) survey was conducted by the geophysics team, English Heritage Research Department in August 2005 with 225 and 450MHz centre frequency antennae over a 10m x 10m square to investigate a partially collapsed void feature immediately south east of the castle building (SAM 26706). No significant anomalies had been detected in this area during the previous earth resistance survey of the site conducted in 1997. The results of the GPR survey contained no convincing evidence for any additional features, such as a drainage conduit, approaching the location of the void from the main castle building. However, the course of some building foundations was revealed, following the known location of walls destroyed during the civil war, and a degree of buried rubble perhaps associated with the subsequent landscaping of the site. Whilst the geophysical survey failed to provide any conclusive evidence to suggest the origin of the void feature, it seems unlikely that this forms part of a larger, unstable structure. A single piece of wood recovered from the void during the survey was identified as coniferous, possibly a worked stake or plank rather than root material, and may suggest that the void represents the location of a former tree planting pit, although it may also be related to the levelling of the site when the garden terrace was created.

32. *The Old Coalyard (ST 94 29); Undated and modern*

In November 2005, Oxford Archaeology carried out a field evaluation on behalf of Stephens Cox Associates revealing two undated ditches, and a range of modern features, most of which are associated with the most recent phase of land-use as a coalyard.

Trowbridge

33. *Land rear of 55 Castle Street (ST 856 578)*

In February 2005, Oxford Archaeology carried out an archaeological watching brief commissioned by Food Convertors Ltd. No archaeological deposits or features were revealed.

Wroughton

34. *National Museum of Science and Industry (SU 143 795); Undated and modern*

In March and September 2005, Oxford Archaeology was commissioned by Creative Planet to undertake an archaeological evaluation in advance of proposed development on the periphery of the airfield at the National Museum of Science and Industry at Wroughton. Phase 1 of the evaluation comprised nine 3.5m by 1.6m trenches and one 5m by 1.6m trench, evenly distributed across the site. The sole

feature uncovered was a possible shallow ditch running NE/SW through the site. Construction of the airfield during the 1940s does not seem to have resulted in any truncation in the area. Phase 2 of the evaluation revealed a limited quantity of modern archaeological remains that included undated ditches, a probable hollow-way or former track-way, a quarry pit and the remains of a structure, possibly a gun emplacement, most likely dated to the Second World War period.

Highlights from the Portable Antiquities Scheme (PAS) in Wiltshire in 2005

recorded by Katie Hinds (Wiltshire Finds Liaison Officer)



WILT-95B052 – A five-piece hoard of bronze Roman trulli (3) and wine strainers (2) from Kingston Deverill. One of the trulli is stamped P.CIPI. POLIBI, for Publius Capius Polibius, a well-known maker of these objects near Pompeii at the end of the 1st century. The find was discovered by metal detectorist Paul Bancroft who immediately alerted the Wiltshire FLO. She was able to contact Wessex Archaeology, who excavated the hoard the following day. From Kingston Deverill.¹



WILT-E14271 – Penny of Offa from Chiseldon by the moneyer Eadnoth. It is of a type only previously represented by a specimen in the Fitzwilliam Museum, Cambridge (ex Blunt collection), though it is not present in Blunt's corpus. The new corpus of the coinage of Offa will feature this type as no. 165. The coin has a large flan 19mm in diameter and weighs 1.24g and is of the East Anglian series with a runic description. The coin was identified for the PAS by David Algar (Salisbury & South Wiltshire Museum) and Paul Robinson (WHM).

¹ For the location of find-spots see Figure 1



WILT-FA2766 – Incomplete copper alloy button from Kington St Michael, Late Bronze Age/ Iron Age in date. It is 19mm in diameter, 3mm thick (excluding loop) and weighs 2.81g - about a sixth is missing from the edge (a recent break). The button was brought along for identification to the launch of Brian Read's *Metal Buttons c. 900 BC – c. AD 1700* on 1st April at Wiltshire Heritage Museum.



WILT-BBDA52 – Incomplete copper alloy Anglo-Scandinavian buckle from Shrewton, missing its backplate and pin. It is 51mm in length, max 27mm wide and weighs 19.39g. Kevin Leahy, PAS Early Medieval Finds Adviser, comments: A very interesting and important find. It is an example of a buckle with a hollowed, angled front bar decorated in the Anglo-Scandinavian Urnes style of the 11th-12th centuries.



WILT-207221 – A piece of oval-sectioned curving copper alloy rod, apparently broken at one end with an enamelled square mounted to one side of the rod at the other. The enamel decoration, light green colour of the metal and smooth patina suggest this is of Iron Age date. The object is possibly part of a decorative horse harness. Found in Chiseldon.



WILT-0774B1 - Roman copper-alloy female figurine of Abundantia or Fortuna from Urchfont, 55mm in height and with a 4mm diameter shank beneath the feet for attachment. It is worn/corroded almost to the level of the bottom of the feet. The object weighs 30.16g. The figure holds a filled dish in one hand and a slightly flat cornucopia in the other and is remarkably similar to one from Duncliffe Hill, Dorset (Henig and Keen, *Dorset Proceedings* Vol.106 1984), identified probably as Fortuna, who also carried a cornucopia, more usually associated with Abundantia.



WILT-1CCC24 – The back face of a medieval lead papal bulla with the inscription in relief +/NICO/LAVS/PPV, from Malmesbury, 37mm in diameter, 2.5mm thick and weighing 17.77g. The reverse, much worn, has been smoothed off. Nick Griffiths comments “There is some evidence that bullae were kept as souvenirs once the document had been removed, perhaps to use the Papal name as a good luck charm, a bit like pilgrim souvenirs”. Nicholas V was Pope from 6th March 1447 to 24th March 1455.

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by Philip Aslett

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