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Articles for the *Proceedings* should normally be sent to the Editor at the Dorset County Museum before 31st October for publication in June the following year.

#### COVER

Fossil hindwing of Odonata from the Middle Purbeck, Durlston Bay. See 'A provisional checklist of fossil insects from the Purbeck Beds of Dorset' by Ed. A. Jarzembowski in this volume.

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# Maps and Minterne Magna - a Diverting Story

DENNIS R SEAWARD & KATHERINE BARKER

*A series of maps dating from 1616 to modern times shows how by diverting the Sherborne to Dorchester highway, successive landholders were able to change a medieval farm into a country house and arboretum, following changing fashion in landscape gardening. Posterity is left with the tortuous bends on the A352 road at Minterne.*

## Medieval and Tudor Minterne

Running south from Sherborne the modern A352 road to Dorchester crosses the clay vale of Blackmoor, then climbs the chalk scarp to a low col above Lyon's Gate before continuing its course down the valley of the southward-flowing River Cerne. A little downstream is the small settlement of Minterne Magna (ST659043), first mentioned in the Cerne Abbey charter dated AD 987.<sup>1</sup>

The manor of Minterne came to the Crown at the Dissolution in 1539 as part of the possessions of Cerne Abbey, and in 1551 was granted to Winchester College which promptly leased to *John Goulde of Minterne yeoman . . . the scite of the manor [with various exceptions] for 20 years . . .*<sup>2</sup> The lease apparently covered the old demesne farm which occupied a large proportion of the manor, leaving several small tenants holding the remainder of the cultivated ground - the excepted part - by copy from the lord of the manor, the Warden of Winchester College.

Early in the 17th century there came to a head a long-standing dispute between the College and the Duchy of Cornwall, lord of the adjoining manor, over rights to land at Hartley on the border between each and claimed by both.<sup>3</sup> This may be the reason for the earliest known map and survey of the area; it was probably commissioned by the College since the original is among the

College muniments. This is *The Topographical description of Minterne with Hartley . . . made bi John More Ano Do 1616*, and a detail is reproduced as Fig 1.<sup>4</sup> The map extends north to include the adjacent Duchy manors of Hartley and Hermitage. The survey shows that the Minterne leasehold farm occupied some 308 acres, while 8 tenants of Winchester College, probably all copyhold, held from 6 to 66 acres each totalling 273 acres; the remaining 201 acres was common.

Minterne is depicted as devoid of trees, probably a true representation since woods, hedgerow trees and single prominent trees are shown on the northern part of the map, not reproduced here. The road from Blackmoor is drawn passing south through the village, enclosed between 5 cottages on the west, and a cottage, the church (with a grey roof), two cottages and the farm house on the east. A short distance south of the farm house the road passes unenclosed through the *farme pastur*. Tenants' cottages are shown conventionally<sup>5</sup> in a three-quarter elevation with gabled red roof, single corbel-top chimney at one end, and a window at each side of a central door. The farm house seen in

<sup>5</sup> Note that the expression *Tenants' cottages are shown conventionally* is used advisedly, and may embrace comparatively substantial houses as well as cottages. Two more cottages are shown on the map, east of the main settlement away from the road (ST660044), as similar to the others but 'opposite-handed' with plain chimney at the left end. One of these is in an enclosure labelled *glebe*, and it is probably the considerable parsonage house described in a glebe terrier of 1612 (DRO photocopy 344) - only 4 years before the map - as a *mansion house containing a hall, a parlour, a little buttery, a kitchen, and three chambers over the said rooms, with the wainscot in the hall and Parlour and a bench in the hall*. See also note 21.

<sup>1</sup> Squibb, 1984, 373; Sawyer, 1968, charter no. 1217.

<sup>2</sup> Hutchins, iv, 469; WCM 14250.

<sup>3</sup> WCM 14204, 14207-13; DRO photocopy 362; DRO/D1/LL737.

<sup>4</sup> WCM 21378.

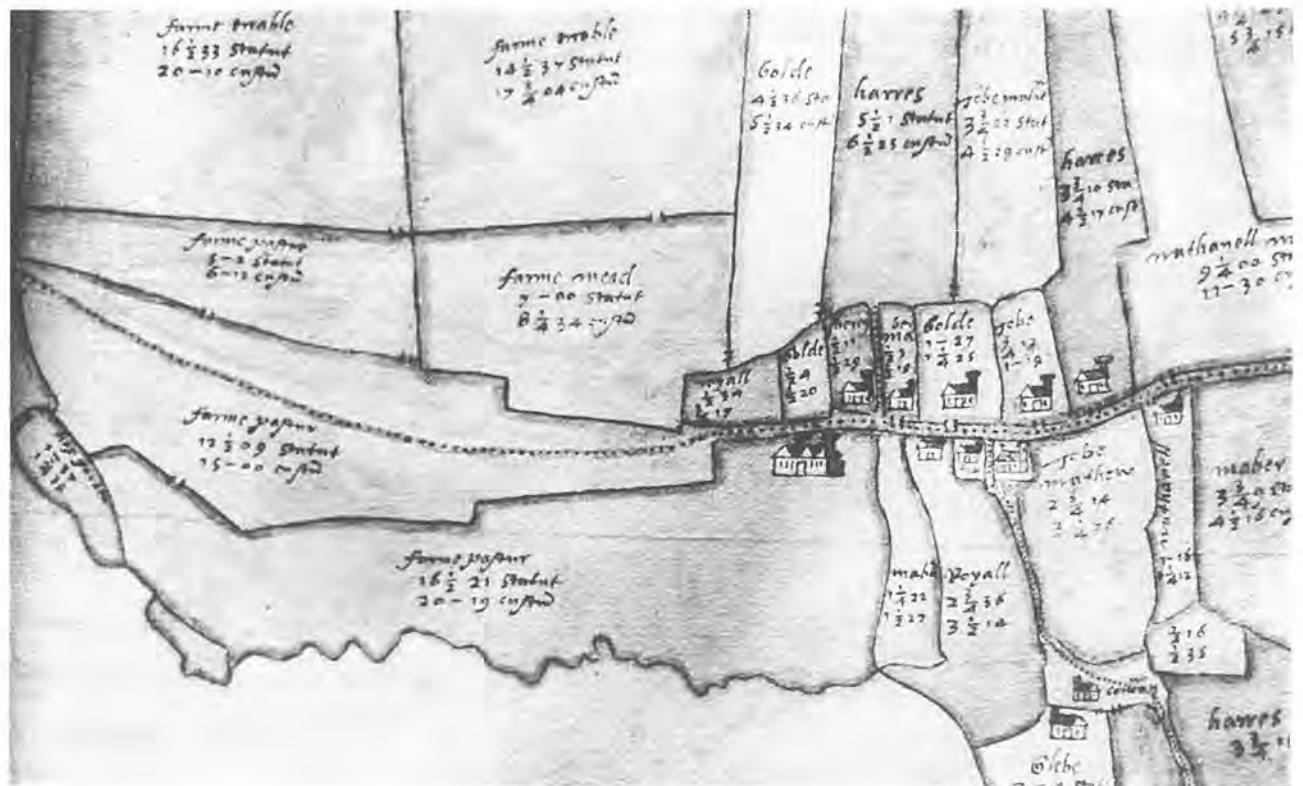


Figure 1 Minterne in 1616. Detail from *The Topographical description of Minterne and Hartley with in the County of Dorset with the confinns made bi John More Ano Do 1616 (Winchester College Muniments 21378)*. Routes are shown by the dotted line. North to the right.

similar view has a gabled red roof with 3 dormers and 2 corbel-top chimneys, and 3 windows each side of a central door.

The lease of the demesne farm was subsequently acquired by Richard Collier who, in 1633, assigned the lease to John Churchill.<sup>6</sup> In 1642 the College was in correspondence with Richard Collier with regard to his sale of the farm of Mynterne to John Churchill of Glanwytes Wotton, so that the lease of the farm may be renewed in Churchill's name.<sup>7</sup> With this and his other property at Glanvilles Wootton, Churchill had acquired 'the typical estate of a small West Country gentleman, the status to which he had risen.'<sup>8</sup>

### The Churchill Years

The appearance of the manor probably changed little between the date of the map - 1616 - and 1633 when the estate came into John Churchill's hands. He seems to have lived at his house in Glanvilles Wootton and to have been more concerned with his property there; from 1646-1650 he was involved in proceedings for delinquency during the Civil War. At his death in 1659 the lease passed to his son and heir Winston, who made Minterne his country seat but was seldom there due to the demands of his political career. At the time of the hearth tax returns in 1662-1664 the house was occupied by two tenants.<sup>9</sup> Like John before him, Winston was active at Wootton, enclosing a common there and buying land at Duntish and Cattistock, but there is no record of any changes he may have wrought at Minterne except for a suggestion that some building work was under way in 1669.<sup>10</sup>

Sir Winston's third surviving son, Charles, succeeded to Minterne on his father's death in 1688 (the first son was to become Duke of Marlborough). When General Charles discovered that he held the property not as owner but by lease from Winchester College and had to pay the College a large fine for renewal, he is said to have drawn his sword and smashed the

glass top of a table which was decorated with the Churchill crest.<sup>11</sup> His military career required long periods abroad, but according to Hutchins the house 'was ornamented, and almost wholly rebuilt by General Churchill.' In 1708 'he was seized with an apoplectic fit and the last years of his life were passed in retirement on the estate of Great Minterne.' He had married Mary Gould of Dorchester in 1702, and three years after his death in 1714 she married Montagu, Earl of Abingdon.<sup>12</sup>

The next available map and survey *By Mr John Vincent 1724*,<sup>13</sup> see Fig 2, shows only *Mintern Farme* (including two very small copyholds referred to below) totalling about 271 acres, and the completely detached *Cadverd*, (Cadford), a farm of 95 acres at Lyon's Gate, 1½ km to the north. The map is otherwise untitled, and among the Minterne muniments, so was presumably not made for the College. Why Lady Abingdon found a survey necessary is not apparent, but it records great changes since 1616. At the house the old road is shown blocked by a (?stable) building, and for some 350m it has been diverted 60m to the west in a sharp S-bend. At the point of diversion the old road is gated and now serves only as access to the house, still fronting to the west, but which has become square in plan with a central courtyard and extensions to east and west. In the space created by the road diversion are two small closes listed at the end of the survey and labelled *Colonel Charles copyhold* and *Goff's copyhold*. This perhaps suggests that the diversion dates from Charles Churchill's time; unfortunately the presentments of the homage of the College court<sup>14</sup> make no mention of these land transfers, and no other material referring to the diversion has been found.

Although the survey still refers to the leasehold as *Mintern Farme*, the house is now (1724) shown set among pleasure grounds; to the north are *bowling Green housing & Courts*, while to the south are *Groves & walks Round*. The groves seem to be bushes or trees set closely and regularly in two blocks a little distance from the house with a view between them

<sup>6</sup> Dawe, 1961, 188.

<sup>7</sup> WCM 14244

<sup>8</sup> Rowse, 1956, 4.

<sup>9</sup> Rowse, 1956, 5, 9, 37; Meekings, 1951, 50; the memorial floor slab in Minterne Magna church gives the date of John Churchill's death as 1659, not 1652 as stated in Hutchins, iv, 469 and 482, Ravenhill, 1889, 90 and Rowse, 1956, 110.

<sup>10</sup> Rowse, 1956, 110-111, 77.

<sup>11</sup> Rowse, 1956, 115-6; Ravenhill, 1889, 93.

<sup>12</sup> Hutchins, iv, 471; DNB; Rowse, 1956, 116.

<sup>13</sup> 1724 Vincent map, MM.

<sup>14</sup> WCM 14256-14372.

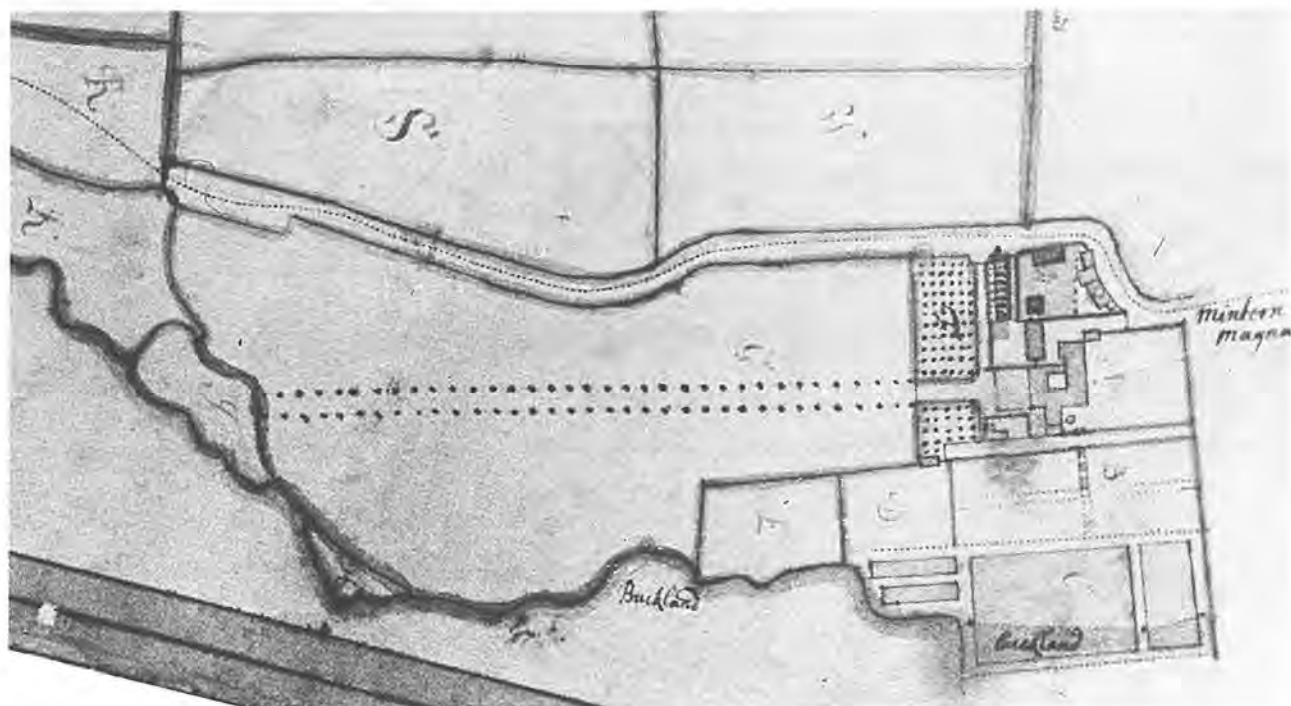


Figure 2. Minterne in 1724. Detail from a plan of Minterne Farme and Cadverd (= Cadford), by Mr John Vincent 1724 (Minterne Muniments). The route from Sherborne to Dorchester is shown by the dotted line. North to the right.

southward along an avenue of trees nearly  $\frac{1}{2}$ km long, the full length of a field now called *Lines* - the open *farme pastur* of the 1616 map. Immediately east of the house the ground which slopes steeply to the stream has been terraced, and steps lead down to two rectangular ponds and two smaller long narrow ones. South east of the house are the kitchen garden and orchard. At the end of the avenue of trees between the garden and the stream, and a spring issuing from the Greensand, labelled *Willow bead* in 1724, is *Lady Abingdon's Well* on the 6" OS map of 1888.<sup>15</sup>

Lady Abingdon 'probably resided a good deal at Minterne after her second husband's death' in 1743.<sup>16</sup> After her own death in 1757 in a fire in her town house in Dorchester, the estate lease remained in her family, held successively by three Goulds.<sup>17</sup> The last, James, in 1765

desired leave [of the College] to cut down all the trees, Ash etc., growing in a meadow adjoining to the lawn in front of the house. It was granted to him with this limitation; 5 or 6 or more were then marked, and he was desired, whenever more were wanted, to send for H. Watts who had orders to mark whatever he thought proper, and to cut down those first, which obstructed Mr. Gold's prospect. He was told not to cut a single stick, unless Watts the College Bailiff was previously acquainted with it, and marked accordingly. These trees he requested for firewood.<sup>18</sup>

Perhaps the *groves* of the 1724 map had grown so tall as to obscure the prospect and the avenue.

Certainly the *groves* had disappeared completely on the next known survey, which is a *plan of the manor of Minterne . . . belonging to Winchester College surveyed . . . in 1767 by Jno Eyre*, forming part of a detailed survey of the whole manor (Fig 3).<sup>19</sup> It shows that more avenues had been planted (perhaps in Lady Abingdon's time?); the avenue in *Lines* field had been

joined by a shorter parallel avenue to the east, while two others are shown leading from the highway westward towards Up Cerne Hill. The central courtyard of the house had been opened to the west front, and the two small ponds had gone. Enclosure had reduced the common from the 201 acres of 1616 to twenty, and a large proportion of the newly enclosed land had gone to the leasehold estate. The leaseholder had also acquired 216 acres of copyhold land, probably since about 1710,<sup>20</sup> including that of the *good farmhouse* which was on the site of the house of one of the tenants of 1616. Thus by 1767 - and possibly a good deal earlier - farming operations had been removed from the original farm or manor house, now *mansion*, at the southern end of the village, to what was originally one of the tenants' houses at the northern end of the village, now the *good farmhouse*.<sup>21</sup>

The 1767 survey may have related to the acquisition of the lease by James Gould in 1765, a copy of which still survives at Minterne. For it was a requirement of the lease that

every seven years or at such time as . . . [the leaseholder] shall renew or take again a new lease . . . [he shall] bring a true and perfect Terrar or Boundary in Writing of all the Lands and Tenements which are by these presents demised<sup>22</sup>

Alternatively, it may have been made in anticipation of a further transfer, for in 1768 James Gould sold the remainder of the lease

<sup>20</sup> Manor court proceedings of date between 1706 and 1716 *present Mr John Pottinger, Mr Harris, Mr Frampton [all copyholders] for letting their estates* (WCM14261).

<sup>21</sup> The *good farmhouse* of the 1767 survey is shown upper right on Fig. 1 and Fig. 3. It bears datestones, not previously published, of 1660 (inscribed *RH* and *FEARE GOD - HONER YE KING*) and 1689 (inscribed *RH*); the initials almost certainly refer to Richard Harris, father and son. The former was probably born in the 1630's and died after 1667, while his son was born in 1667 and died between 1689 and 1697 (*DROMICR/602*). The Harris family apparently occupied the house on this site from before 1605 until after 1698 (probably some date between 1706 and 1716 - see note 20). By 1767, James Gould had acquired the Harris' copyhold (WCM 14246, 14255, 14258). See also note 5 regarding differing standards of *cottages* shown similarly on Fig. 1.

<sup>22</sup> 1765 lease, MM. This lease and that of 1551 (WCM 14250) both give the term as 20 years.

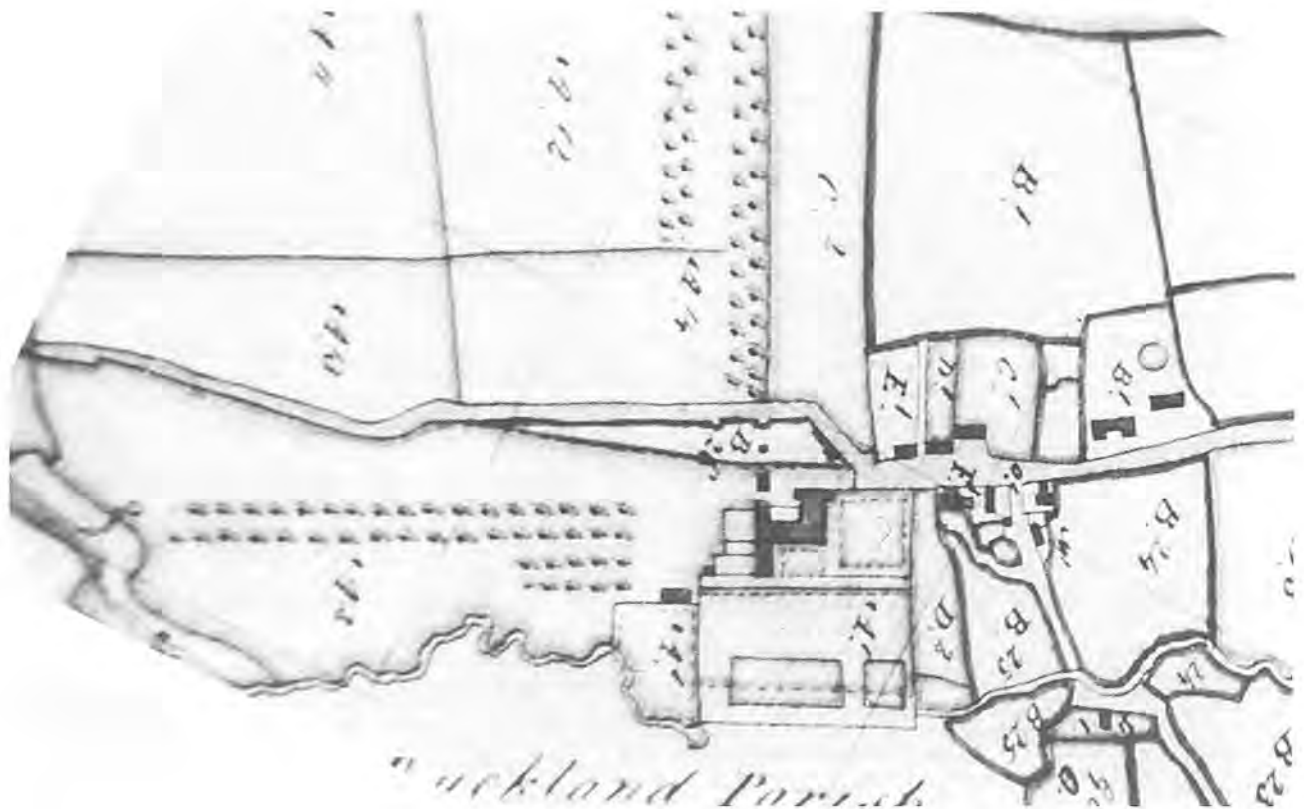


Figure 3 Minterne in 1767. Detail from A *reduc'd plan of the manor of Minterne situate in Dorsetshire belonging to Winchester College survey'd, valued & plan'd in the year 1767 by Edwd Jno Eyre*. (Winchester College Muniments 21379). North to the right

<sup>15</sup> OS 6" 1st. edn., Dorset XXII SW.

<sup>16</sup> Ravenhill, 1889, 92; Powicke and Fryde, 1961, 414.

<sup>17</sup> Ravenhill, 1889, 92.

<sup>18</sup> WCM 23150.

<sup>19</sup> WCM 21379.

of the Minterne estate to the Hon Robert Digby, younger son of the 7th Baron Digby of Sherborne Castle.<sup>23</sup>

### Minterne under Robert Digby

Subsequent changes are well recorded by Robert Digby who was an inveterate diarist. He and his successors kept journals recording social, sporting, farming, gardening and estate matters, and occasionally national and political events.<sup>24</sup> Thus, on 11 November 1768 he set out from London to see Minterne, apparently for the first time; on the 14 November.

Mr Fooks and I rode [from Sherborne Castle] to Minterne. The Estate compact but naked and the trees not thriving. The house ill contrived and ill situated; from thence went to Melbury.<sup>25</sup>

For the next twelve months after this first visit to Minterne, Robert recorded occasional periods of a few days spent at Minterne planting trees, visiting nurseries at Dorchester and Blandford, starting building operations. There are no journals covering the years 1769 to 1784, and for much of this period Robert was away on naval duty and at sea, gaining promotion from Captain to Rear Admiral in 1779. These years are also missing from the edited abstracts from the Journals contained in a decorated book, probably compiled, drawn and painted by Lady Teresa Maria Digby (wife of Edward St Vincent Digby) between 1830 and 1874.<sup>26</sup>

Notwithstanding his absences and the gap in the record, Robert Digby was actively engaged in making very significant changes at Minterne. The family seat was at Sherborne Castle where his brothers Edward and Henry had commissioned 'Capability' Brown in 1754-1755 and 1776-1777 to create the lake and landscape of the park<sup>27</sup> sweeping away much of the intimate detail of the garden earlier eulogised by Alexander Pope.<sup>28</sup> Robert set about achieving similar results at Minterne. The best, or only, site for a lake lay in the valley immediately east of the house. But this was already occupied by formal terraces, rectangular ponds and a kitchen garden. Formal and kitchen gardens were still needed, but where could they be sited? There was little room for them to the north within the leasehold, and nothing could be allowed to spoil the prospect to the south; the west side was obstructed by service buildings and by the road, already diverted away from the house by 1724, but only by 60m.

The solution was to divert the road again, and by a much greater amount. In 1774, two Justices of the Peace at Special Sessions held in Cerne Abbas

... having upon the application of Robert Digby Esquire and Ambrose Flambert Surveyor of the Highways of Minterne Magna ... found that a certain part of a highway within the said parish ... for the length of one hundred and seventy five lugg [624m] may be diverted and turned so as to make the same more commodious to the public ... and we having received the consent of the said Robert Digby to the said new highway being made through his lands ... do hereby order that the said highway be diverted and turned through the lands aforesaid.<sup>29</sup>

The leaseholder required licence from the Warden of Winchester College for even small alterations (witness the approval for James Gould to remove a few trees, quoted above), but no mention of the road diversion has been found in court proceedings, in parish churchwardens' accounts of road works, or elsewhere.<sup>30</sup>

<sup>23</sup> Ravenhill, 1889, 92. The name *Gould* or a variant - *Gold*, *Goulde*, *Gollde*, *Gowle* - recurs frequently in a Minterne context between 1519/20 when a *Roger Gold* was rent collector for the Abbot of Cerne (WCM 14216), through generations of copyhold and, for a time, leasehold tenants, with six *Gold* names on the subsidy roll of 1543/4 (Stoate, 1982) until 1768 when the estate passed to the Digbys. The *Gould* family of Dorchester had become involved in Minterne through the marriage of Mary with the Churchills, but whether there was already a connection with the yeoman farmers of Minterne has not been investigated.

<sup>24</sup> Robert Digby journals, MM.

<sup>25</sup> Robert Digby journal, MM. His entry in the Sherborne Castle game book for 7 November 1765 shows that he had been house hunting in the area for some time: *Mr D breakfasted with Mr King in his way to Glanvilles Wootton. A vile house and situation. Determined not to purchase it.*

<sup>26</sup> Lady Digby MS, MM.

<sup>27</sup> G. Clarke, personal communication, 6 December 1991.

<sup>28</sup> In a letter to Martha Blount, c 1724, quoted in full in Hunt and Willis, 1975, 208-211.

<sup>29</sup> Order for turning a road at Minterne, 1774, MM.

<sup>30</sup> WCM 14256-14372; DRO/PE/MIM/CWI.

The Justices order was no doubt quickly effected. The northern end of the diversion - starting further away from the house than the first diversion - turned the road abruptly west, squeezing it through the gap between two houses, to this day a bottleneck and dangerous corner on the busy A352 Sherborne to Dorchester road (Fig 6). It seems that neither road change required the removal of any houses. But the new road turned out to be considerably longer (850m) than envisaged in the application to the Justices. It is difficult to see how the new road could be justified as *more commodious to the public* unless the move to higher ground overcame foundation problems which may have been experienced with both the original road and the first diversion (both still traceable) running along shallow parallel valleys floored with Greensand. Certainly this geological formation caused continuous difficulties just north of Minterne village where the road, here called Sandy Lane, runs through a hollow way in Greensand. Springs emerging in the banks cause them to subside. The Journal records

Sandy Lane being so bad, fresh springs having broke out, that it is almost impassable (15 May 1792). The Gullivers employed righting the bank in Sandy Lane and putting in large withy stakes to keep it up (4 March 1799)<sup>31</sup>

and an item for

fourscore of brush faggots for Sandy Lane

is in the Churchwardens' accounts for 1746.<sup>32</sup> However, the same accounts hold no obvious reference to similar difficulties encountered along the lengths now superseded.

Unfortunately the moving of the road, the creation of the new garden and the formation of the lake date from the period up to 1784 for which there is no Journal. In that year a ha-ha figures in Robert's new Journal implying that the old formal garden had been removed and the land opened to grazing animals - bringing the landscape to the house. By 1786, the lake was being stocked with fish.<sup>33</sup> Many conifers - scotch firs, spruce and silver firs - and fruit trees, were being received from nurseries and from the parks at Melbury and Sherborne Castle. Planting positions for nectarines refer to a hot house, a kitchen garden, and *the SW part of the oval wall*.<sup>34</sup>

The plan of an oval walled garden is a conspicuous feature on an 1803 map of freehold and lifehold estates belonging to the Honble. Robert Digby, by T. Davis of Horningsham, part of which forms Fig 4.<sup>35</sup> This oval is intersected by another which incorporates the first part of the earlier road diversion. Perhaps the Admiral (Robert had been promoted in 1794) was obsessed with curves and boat shapes for he

had some very peculiar crotchets. Anything like an angle was to be avoided if possible. His corners were all rounded off, as may still be seen in the churchyard ...<sup>36</sup>

Part of the churchyard wall under the yew tree being tumbled down, took the whole S wall down and made it circular (16 May 1796).<sup>37</sup>

The Journals now provide a continuous compelling picture of Robert Digby personally and enthusiastically involved in producing his version of a 'Capability' Brown landscape in his own park<sup>38</sup> as the following extracts show:

1785, 23rd Oct. Marked out the foundation of the bridge and floored it with the large blue marl stone from lake near Frogg Hole.<sup>39</sup>

1786, 7th June ... and laid the foundation of the cascade in Froggole Wood ...

28th Aug. The bridge was keyed about the 20th. Got it as high as

<sup>31</sup> Robert Digby journal, MM.

<sup>32</sup> DRO/PE/MIM/CW1.

<sup>33</sup> Robert Digby journal, MM. 17 July 1786. *Took ye Fish out of ye little old stew (pond) and turn'd 194 Brace of Carp into the Lake and 3 brace between the Cascades and 22 brace of Tench into the Lake.*

<sup>34</sup> Robert Digby journal, MM. 6 December 1785.

<sup>35</sup> 1803 Davis map, MM.

<sup>36</sup> DNB; Ravenhill, 1889, 94.

<sup>37</sup> Robert Digby journal, MM.

<sup>38</sup> Robert was keen to learn from 'Capability' Brown; on 24 January 1777, he wrote in the Sherborne Castle game book *Capt. R.D. went with regret to Minterne before breakfast, sorry to lose any of Mr. Brown's company.*

<sup>39</sup> *Frogg Hole* is at the north end of the lake; see Fig. 4.

the string [course] and left off to make the new way into the servants hall . . .

4th Nov. The Ice House which was just finished fell in owing to the arch which was made elliptic by mistake, being ill turned, and the taking away the center too soon. Wm Mullet had a narrow escape . . .<sup>40</sup>

1787, 17th Nov. My team brought last night 40 tons of [Long] Burton thin stone for finishing the bottom of the 2 cascades . . .

29th Nov. Finished planting the load of Scots Firs and fine beeches from Melbury which Lord Ilchester had given me . . .

1788, 14th Jan. Employed making the new road from the bridge up to the Hawhaw . . .<sup>41</sup>

8th July. Began to make the new reach of Minterne River . . .

23rd Oct. I rode over to Blandford to see my wagon loaded at the nursery. I bought the remainder of his cedars . . .

14th Nov. Opened the drain all the length of the North front to find out how the smell came to the library and drawing room . . .

1790, 1st Feb. Making great alterations in Sweet Mead by filling up the old river and making a new one . . .<sup>42</sup>

27th March. Laid the foundations of the north pier of Eleanor [Robert's wife] bridge . . .

14th Sept. I called at Mr Whetley's nursery at Merriott near Crewkerne where I ordered 30 of the Mossy cup oaks at 6d each and 4 Luccombe oaks 9 feet high at 2s each . . .<sup>43</sup>

19th Sept. The dung pots carrying sand from Port Hill to the Mount at Little Minterne water . . .<sup>44</sup>

1791, 5th Jan. Laying down Cow Nap and making the carrier to water it . . .<sup>45</sup>

1792, 24 Apl. Returned to Minterne to pursue my favourite

amusement of cascading, having the two Withy bed cascades in hand, that above Froghole just finished . . .

1793, 28th Dec. I went to admire my new cascades at Rugwell just set aplaying . . .

1797, 22nd March. Working on the parapet wall of the north front of Minterne House . . .

1798, 24th Aug. Commenced the foundation of the [church] tower . . .

1800, 28th Feb. Thinning and trimming the Limes in Lines . . .<sup>46</sup>

1801, 8th Jan. Miller employed raising and new modelling the singing galleries in the church. Marked out the foundation for a mill at Little Minterne water.<sup>47</sup>

The 1803 map shows well the result of Robert Digby's landscaping. Little remained of the scene he had acquired in 1767 except the avenues of trees in *Lines* and on Up Cerne Hill. Between the old road and the first diversion was now *Coneygar wood*. The lake and clumps of trees and distant woods which he created obviously owe much to the example of 'Capability' Brown at Sherborne Park, but his tinkering with the valley downstream is personal and idiosyncratic. Was he as a child influenced by the

natural cascade with never-ceasing murmurs admired by Pope at Sherborne Castle?<sup>48</sup> Robert's pretty classical bridge of 1785-1786 over the Minterne stream<sup>49</sup> mentioned in the Journal extracts above, can be seen as a rustic single-arch version of the fine 3-arch Pinford Bridge in Sherborne Park

said to have been built to the design of Robert Mylne in 1790; in the museum is a design for a bridge in the park by Robert Adam, 1767, and another by the Hon. Capt. Digby *architectus* of the

<sup>40</sup> The *Ice House* is shown on the 6" OS of 1888, c 120m north of the house.

<sup>41</sup> Minterne Magna bridge and the road up towards the house are shown on Fig. 4.

<sup>42</sup> *Sweet Mead* is field no. 402 on the 1803 map ¼ km south of the house

<sup>43</sup> Presumably a reference to Mr. Whitley's nursery at Merriott, which was moved to Brompton (Mdx) 'between 1785 and 1791' (Dunning, 1978, 57). The *Luccombe oak* is a form of the Spanish oak *Quercus x hispanica* first recorded in 1762, so this is an early mention; the mossy cup oak is *Quercus cerris*, Turkey oak, introduced in 1735 (Mitchell, 1974, 235-6).

<sup>44</sup> The Mount was perhaps intended to provide a viewpoint? It was probably in fields nos. 452-3, *Little Minterne Nap* and *Old Nap* on the 1803 map.

<sup>45</sup> *Cow Nap* was a part of *Sweet Mead* where much levelling and diversion of the river was done, 'the carrier to water it' presumably implying that water meadows were being constructed.

<sup>46</sup> *Limes* is field no. 396, south of the house, on Fig. 4.

<sup>47</sup> Robert Digby journal, MM.

<sup>48</sup> Letter to Martha Blount, c 1724, quoted in Hunt and Willis, 1975, 208.

<sup>49</sup> The Minterne bridge is shown in an 1801 painting by Robert Sherborne (Robert Digby's illegitimate son) in Minterne House and in a 1980 photograph, both reproduced in Aslet, 1980, 500.

<sup>50</sup> The Pinford bridge reference is from RCHM, 1952, 69 and plate 113. Reasons for the attributions to Mylne or Adam cannot now be traced; evidence from Sherborne Castle Estate accounts shows that Pinford Bridge was actually built in 1767-70 according to research by Ann Smith, archivist (personal communication 20 December 1991). Robert Digby's drawing, now hanging in the Estate office, must date from some time between 1755 and 1779 when he was a naval captain (DNB).

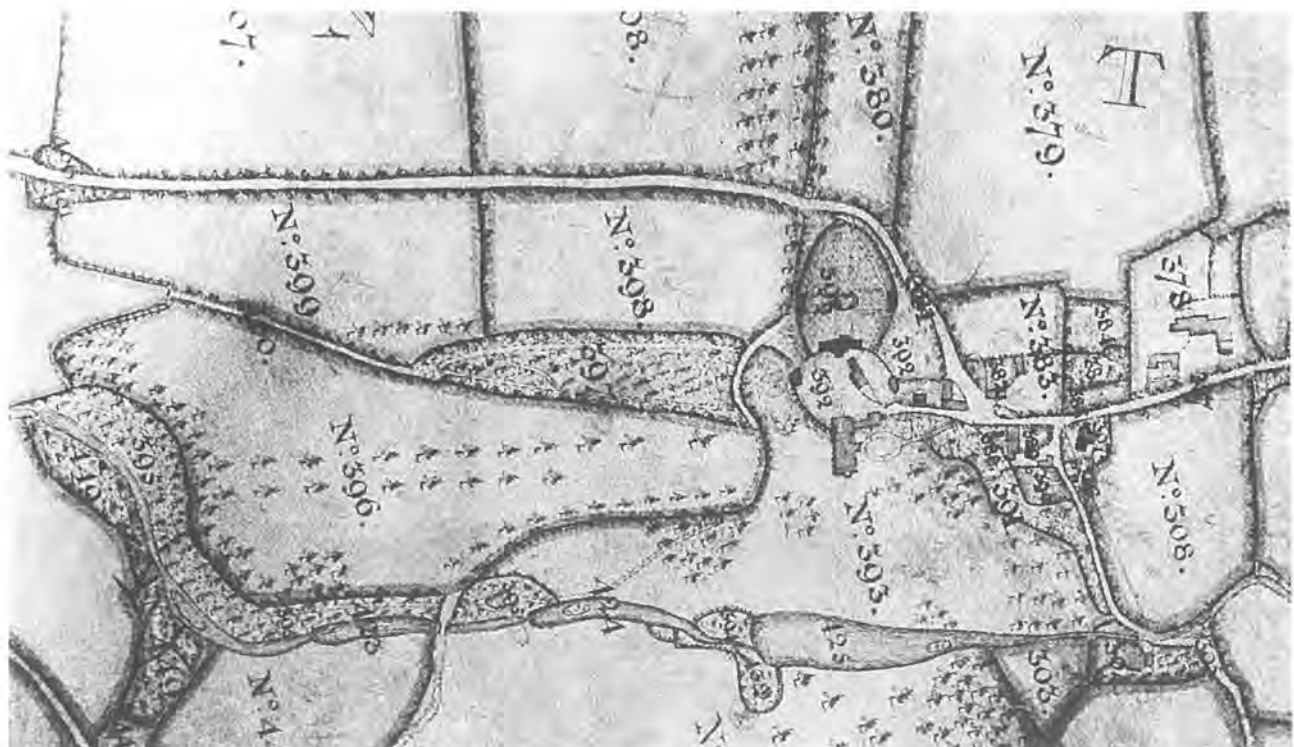


Figure 4 Minterne in 1803. Detail from A map of freehold and lifehold estates situate at Minterne and Hermitage in the County of Dorset belonging to the Honble Robert Digby 1803, surveyed by T. Davis jnr, Horningsham. (*Minterne Muniments*). North to the right

late 18th century and somewhat similar to the existing bridge.<sup>50</sup> The 'Hon. Capt. Digby, *architectus*,' was Robert Digby of Minterne who may well have been the actual designer of Pinford Bridge. His interest in bridges is clear from the Journals, and his competence in building is manifest, not only in the admittedly small bridges at Minterne, but in his rebuilding of the house. Hanging in the present Minterne House are two paintings of Robert's house done by his illegitimate son in 1801.<sup>51</sup>

The house shown on the 1803 map is very different from that of 1767. Apart from a small (?servants') north wing, it has a simple rectangular plan, faces south, and is approached by a new carriageway sweeping in from the road through a new entrance to a grand turning circle in front of a north porch. No longer is the main entrance direct from the old road on the west side.

Production of the 1803 map was probably prompted by the event recorded in the Journal in April that year<sup>52</sup> when the purchase was concluded of Highfield Farm, 3km to the north. The deeds, with those of Hartley Farm adjoining, were added to the estate. With these purchases Admiral Digby now had freehold, leasehold or copyhold interests over a large part of Minterne Magna, Buckland Newton and Hermitage parishes. The map is accompanied by a terrier covering the whole area with a unified system of numbering for all 513 enclosures.

### Minterne After Robert Digby

Admiral Robert Digby died in 1814 without legitimate issue and Minterne passed to his nephew, Admiral Sir Henry Digby.<sup>53</sup> The change of leaseholder was no doubt the reason for the preparation of the map of the manor of Minterne Magna . . . belonging to Winchester College, 1815 by Berjew and Poole (Fig 5).<sup>54</sup> This portrays the estate to which Sir Henry succeeded. The most obvious difference since 1803 is the disappearance of the tree avenues in *Lines* and on Up Cerne Hill. As the style of tree planting became less formal in the mid-eighteenth century under 'Capability' Brown's influence, avenues had gone out of fashion and many were destroyed.<sup>55</sup> A single row appears on a map of the manor of Minterne Magna by J. Comely, of 1843 (not reproduced here) made for the College following Sir Henry's death in 1842.<sup>56</sup> Otherwise, the map shows only small changes

since 1815.

The Digby's bought the freehold from the College in 1865 and extended the house by building a large west wing, spoiling the symmetry of Robert's late 18th century mansion; the plan first appears on the 1st edition 6" OS map of 1888 (not reproduced here).<sup>57</sup> The same map also shows that since 1843 a large area at the southern end of *Lines* field where the ground falls to the stream and including *Lady Abingdon's Well*, had been fenced off, planted up and called *The Shrubbery*.

Admiral Henry's son and grandson, the ninth and tenth Lords Digby, benefited by the magnificent tree setting they inherited at Minterne, and started the rhododendron and shrub collection from the Himalayan and Chinese expeditions of the period. The eleventh Lord Digby wrote of the establishment of the Minterne arboretum, and of his further introductions and raising of hybrid rhododendrons; the garden is now renowned.<sup>58</sup>

By 1902, *The Shrubbery* had spread north to cover the western slope of the stream valley to the shore of the lake near the house, and the 1774 road diversion had acquired an avenue of trees. The map recording this is the 1902 2nd edition of the 1:2500 OS Dorset, sheets XXII:10 and 14 (Fig 6) and it must be the last to show the house described above which was now giving problems with *drains, dry-rot and rats*.<sup>59</sup> The tenth Lord Digby, Edward Henry Trafalgar, who inherited in 1889, engaged the architect Leonard Stokes to report upon its condition. They decided that complete rebuilding was necessary, but it was 1908 before Stokes' *beautifully sophisticated design* which we see today was complete.<sup>60</sup>

### Farm to Country Seat

In 1616, the *Farme* of the manor of Minterne lay at the southern end of the settlement beside the road. By 1724 the traveller found himself re-routed away from the *Farme* house. Described as 'ill situated' in 1768, a roadside site had become a disadvantage. There follow the stages - characteristic of the times - in which the creation of a country house involved the removal of farming operations to an alternative site, and the appropriation and change of the surrounding landscape. The diverting of the road is part of the process which achieved the transformation of the 'naked' estate into the wooded, verdant landscape of today.

<sup>51</sup> Aslet, 1980, 499 and 500.

<sup>52</sup> Robert Digby journal, MM. 5 and 25 April 1803.

<sup>53</sup> Ravenhill, 1889, 96.

<sup>54</sup> WCM 21381.

<sup>55</sup> Thomas, 1984, 209-10.

<sup>56</sup> WCM 21383; Ravenhill, 1889, 96.

<sup>57</sup> WCM 27 April 1865; Aslet, 1980, 575-6; OS 6" 1st edn., 1888, Dorset XXII SW.

<sup>58</sup> Digby, 1955, 9-15.

<sup>59</sup> Aslet, 1980, 576.

<sup>60</sup> Aslet, 1980, 576-7; Newman and Pevsner, 1972, 295-6.

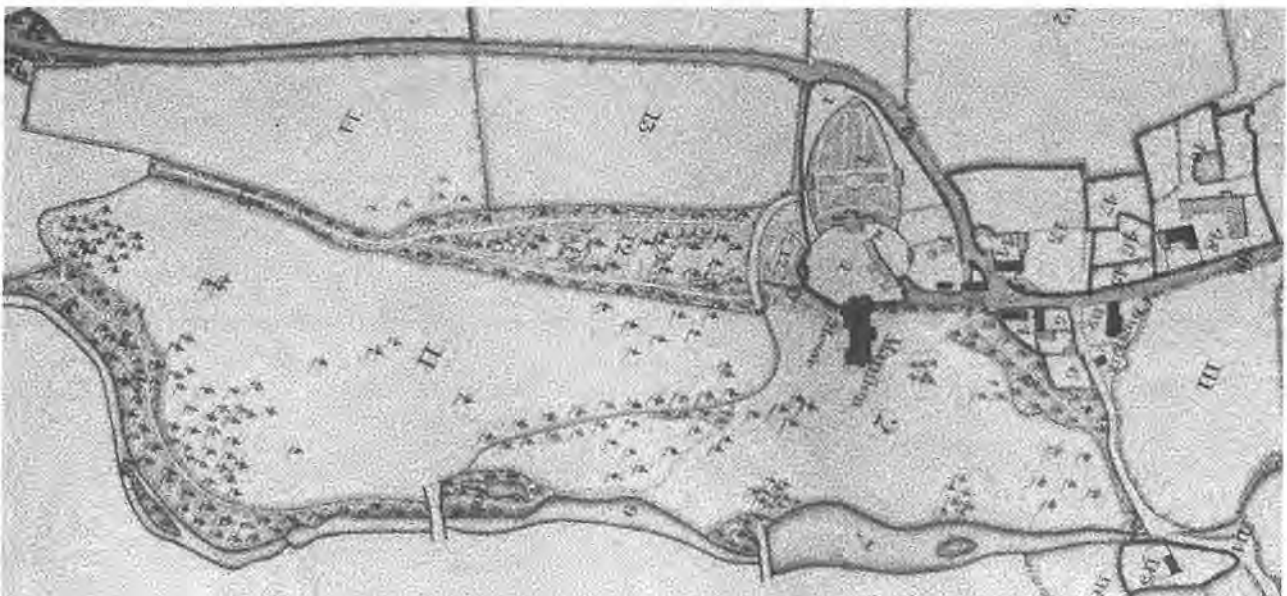


Figure 5 Minterne in 1815. Detail from A map of the manor of Minterne Magna in the County of Dorset belonging to Winchester College 1815, by Berjew and Poole. (Winchester College Muniments 21381). North to the right

## REFERENCES

## UNPUBLISHED SOURCES

Note that in transcriptions, in most cases, spelling is modernised and abbreviation extended.

*Minterne Muniments (The Lord Digby's archive)*

1724 Plan and survey of Minterne Farme and Cadverd, by John Vincent.

1765 Indenture 1st Nov. 6 Geo. III, between the Warden of Winchester College...and James Gould, the leasehold of the manor of Minterne for 20 years. [Copy].

1767-1769; 1784-1814, Journals of Robert Digby.

1774 Order for turning a road at Minterne Magna; special sessions of the Justices of the Peace, Cerne Abbas, 24th August 1774.

1803 A map of freehold and lifehold estates situate at Minterne and Hermitage in the County of Dorset belonging to the Honble Robert Digby, surveyed by T. Davis jnr., Horningsham.

1803 Terrier of the last.

n.d. (?between 1830 and 1874) Lady Digby MS; edited abstracts from Robert Digby's journals and Eleanor Digby's continuation. Decorated. Also pedigree and family history etc., with later additions. Probably by Lady Teresa Anne Maria Digby.

*Winchester College Muniments*

Those marked with an asterisk seen in abstract in WCM index volumes in DRO, not in original.

\*WCM 14204 (1618) Depositions...in a cause between...Duke of Cornwall...and Winchester College touching the title to certain lands...15 Jan. 15 Jac. I.

\*WCM 14207-14213 (1566 and ca. 1585-6) Relating to a dispute between the Prince of Wales and the College over certain lands.

\*WCM 14216 (1519-1520) account roll of Roger Gold, rent collector.

\*WCM 14224 (1643) Sale of the farm at Mynterne by Richard Collier so that lease of farm may be renewed in John Churchill's name, 22 Mar. 18 Car.

WCM 14246 (1605) The rental of Myntern.

WCM 14255 (1635-50) Rough notes of court rolls, Minterne.

WCM 14250 (1551) Indenture of 4 Nov. 5 Edw. VI, Winchester College to John Goulde.

WCM 14256-14372 (1682-1843) Presentments of the homage, Minterne manor court.

WCM 21378 (1616) The Topographical description of Minterne and Hartley...made bi John More.

WCM 21379 (1767) Plan of the manor of Minterne...belonging to Winchester College...by Edwd Jno Eyre.

WCM 21381 (1815) A map of the manor of Minterne Magna...belonging to Winchester College, by Berjew and Poole.

WCM 21383 (1843) A map of the manor of Minterne Magna...describing by a red boundary the division between the copyhold and leasehold lands belonging to...Winchester College, valued by Jas. Comely, Winchester.

WCM 23150 (1765) Minterne; notes on manorial custom from ca. 1765.

\*WCM (not numbered) (1865) Sale of site of manor at Minterne; minutes of College meeting 27th April 1865.

*Sherborne Castle Estates Archive*

Game Books (1765, 1777).

Accounts (1767-1770).

(Extracts and research by Ann Smith, Archivist).

*Dorset Record Office*

Photocopy 344 Minterne Magna; glebe terrier, 1612.

Photocopy 362 (not dated but ca. 1612) Fo.13, A plott...of certain groundes...supposed to be undulie challenged by the tenants of the manor of Mynterne. By John Norden. (Part of MIC/R/1, = PRO/LR2-207).

PE/MIM/CW1 (1727/8-1857) Churchwardens' accounts of Minterne Magna.

DCM D1/LL737. Survey of the manor of Fordington, 1607.

MIC/R/602. Parish Registers, Minterne Magna.

## PUBLISHED SOURCES

Aslet, C., 1980. "Minterne Magna, Dorset: the seat of Lord Digby". (In two parts). *Country Life*, Feb. 21, 1980 (498-501); Feb. 28, 1980 (574-577).

Dawe, P.N., 1961. "The Dorset Churchills", *Somerset and Dorset Notes and Queries*, xxvii, 185-192.

Dictionary of National Biography.

Digby, Col, The Lord, 1955. "The history of the Minterne rhododendron garden", *The Rhododendron and Camellia year book*, 1956, 9-15.

Dunning, R.W.(Ed.), 1978. *A history of the County of Somerset*, vol. iv. *Victoria History of the Counties of England*. Oxford.

Hunt, J.D. and Willis, P.(eds.), 1975. *The genius of the place: the English landscape garden 1620-1820*.

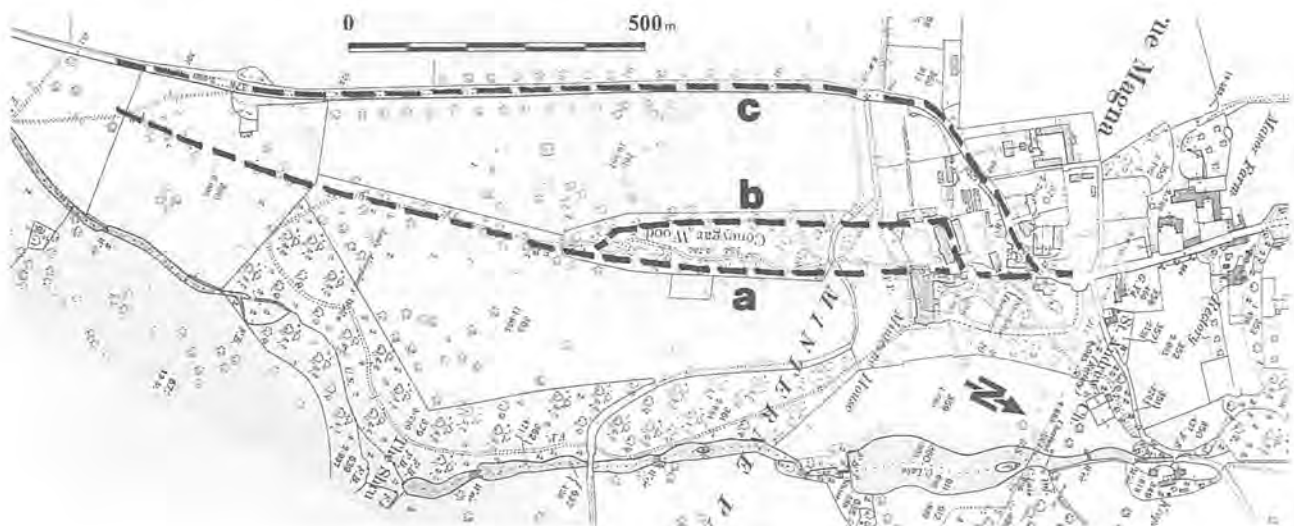


Figure 6 Minterne in 1902. Detail from OS 1:2500 Dorset, Sheets XXII: 10 and 14, 2nd edition, 1902. On this are superimposed, at (a) the original road of the 1616 map; at (b) the first diversion, as shown on the 1724 map; at (c) the present road as diverted by the 1774 Order, and first shown on the 1803 map. Nat. grid ref. of Minterne House is ST660041. North to the right.

- Hutchins, J., 1873. *The history and antiquities of the County of Dorset*, 3rd. edn., vol. iv..
- Meekings, C.A.F., 1951. *Dorset hearth tax assessments, 1662-4*. Dorchester.
- Mitchell, A., 1974. *A field guide to the trees of Britain and northern Europe*.
- Newman, J. and Pevsner, N., 1972. *The buildings of England: Dorset*.
- Ordnance Survey, 1888. 6"(1st. edn.) *Dorset XXII SW* (Minterne).
- Ordnance Survey, 1902. 1:2500(2nd. edn.) *Dorset XXII, 10 and 14* (Minterne north and Minterne south).
- Powicke, R.M. and Fryde, E.B.(Eds.), 1961. *Handbook of British Chronology*, 2nd edn..
- Ravenhill, H.E., 1889. "Minterne: its connection with the Churchills and Digbys", *Proc. Dorset Nat. Hist. and Ant. Fld. Club*, x, 89-96.
- Royal Commission on Historical Monuments, 1952. *County of Dorset, vol. 1 - West Dorset*.
- Rowse, A.L., 1956. *The Early Churchills: an English Family*.
- Sawyer, P.H., 1968. *Anglo-Saxon Charters: an annotated list and bibliography*.
- Squibb, G.D., 1984. 'The Foundation of Cerne Abbey' *Somerset and Dorset Notes and Queries*, xxxi, 373-6.
- Stoate, T.L., 1982. *Dorset Tudor Subsidies granted in 1523, 1543 1593*. Bristol.
- Thomas, K., 1984. *Man and the Natural World: changing attitudes in England, 1500-1800*.

#### Abbreviations

- DNB Dictionary of National Biography  
DRO Dorset Record Office  
MM Minterne Muniments  
RCHM Royal Commission on Historical Monuments  
WCM Winchester College Muniments

#### Acknowledgements

The authors are grateful to the Lord Digby, Minterne House; the Warden and Scholars of Winchester College; Mr Simon Wingfield Digby, owner Sherborne Castle Estates, and to the Dorset Record Office, for access to and permission to publish extracts from documents and maps, and particularly thank Lord Digby for his interest and help. Joe Bettey drew the Dunning reference to our notice.

# Parish Life in Dorset during the Early Seventeenth Century

J. H. BETTEY

Evidence concerning many aspects of parish life and social conditions in Dorset, as well as about church buildings, the clergy, services and the central role of the parish church in daily life, emerges from a study of the churchwardens' presentments which are preserved among the diocesan archives in the Wiltshire Record Office at Trowbridge.<sup>1</sup> After Dorset became part of the newly-founded diocese of Bristol in 1542, many parishes in the county remained as 'peculiar', whose ecclesiastical supervision was outside the control of the bishop and the usual diocesan administration. Out of just over 230 medieval parishes in Dorset, 41 were peculiars of the Dean or one of the Prebends of Salisbury cathedral, others like Wimborne Minster, Corfe Castle, Sturminster Marshall and a few other parishes were free from the normal episcopal control. The peculiars were spread right across the county from Poole and Hamworthy in the east, to Gillingham in the north and to Lyme Regis, Beaminster and Netherbury in the west, and included Chardstock which was then in Dorset. Some were thinly-populated rural parishes such as Stockwood, Winterborne Tomson, Folke or Hermitage, while others such as Beaminster, Fordington, Bere Regis and Sherborne were important centres of population. Although many of the diocesan records for the

1. For a complete list see Pamela Stewart, *Guide to the Records of the Diocese of Salisbury*, Wiltshire County Council, 1973. The important collection of Wimborne Minster records are in the Dorset Record Office PE/WM/CP2/8-10.



Part of a print of Lyme Regis church before 1850, showing the pulpit which has the inscription 'To God's glory Richard harvey of London Mercer and Merchant Adventurer 1613. Faith is by hearing'. Courtesy of the Lyme Regis (Philpot) Museum.

Dorset parishes were destroyed, either in the fire at Blandford Forum in 1731 when the archdeacon's records perished or during the Reform Riots in Bristol in 1831 when the episcopal records were burnt by the mob, many of the documents relating to the ecclesiastical history of the peculiars have survived. Many are in the Wiltshire County Record Office at Trowbridge, and others in the Dorset County Record Office.

During the seventeenth century the churchwardens of each parish were required to make annual written 'presentments' or reports to the ecclesiastical authorities; these were part of the greatly increased duties which had been imposed upon the churchwardens, ranging from responsibility for the church fabric to care of the poor, maintenance of highways and the obligation to pay a bounty for the carcasses of 'noyfull fowles and vermy'n'. In their presentments the churchwardens were required to report on all matters affecting church life, morality, belief and behaviour in their parishes, so that appropriate action could be taken by the ecclesiastical authorities and proceedings in the church courts could be taken against offenders. The penalties imposed by the church courts included admonitions, fines, excommunication and public penance which was commonly imposed for libel, slander or sexual offences, all of which were matters for the ecclesiastical authorities. The records of many public penances are to be found among the voluminous records of the church courts, and in the small rural communities of Dorset this public humiliation must have been a severe ordeal and a very real punishment. For those able to do so, however, it was often possible to avoid public penance by paying a fine instead.

## Churches and Churchyards

It is clear from these presentments for the Dorset 'peculiar' that by the early seventeenth century many Dorset churches had been allowed to fall into considerable disrepair. The maintenance of the chancel was the responsibility of the rector, whether lay or ecclesiastical, and not all were willing to undertake expensive work. At Beer Hackett in 1613 the chancel windows were reported to be 'in decay for wante of glazing', and the quire at Yetminster was 'not decentlie and comelie kept'. At Stratton, the chancel which was the responsibility of Sir Thomas Trenchard, had been allowed to fall down completely, and at Folke the church was in such poor condition that it had to be completely rebuilt in 1628. At Bloxworth in 1610 the church was being rebuilt and the churchwardens reported that 'the old building is tome down and workmen at this present about the new'. At Winterborne Tomson in 1606 the roof was badly in need of repair, while the chapel of Forston in the parish of Charminster was said to be 'like to fall into decay for want of reparations'. The parish of Frome Whitfield, north of Dorchester, was almost completely deserted, and the churchwardens reported in 1606 that

Mr Henry James our parson is not resident with us and hath been absent these six years, and there hath been no service in that time. The church is filled up with hay and corne and is so far in decay that it is like to fall down.

In 1608 the parish of Frome Whitfield was united with Holy Trinity, Dorchester by an Act of Parliament.<sup>2</sup> At Stourpaine in 1634 the churchwardens mentioned that the vicarage of the deserted village of Lazerton had been united with their parish, even though Lazerton was deserted early in the fifteenth century and had been joined to Stourpaine in 1431 when it was recorded that 'the church of Lazerton had so small profits that it had been and was then destitute of a chaplain'.<sup>3</sup>

In some parishes the church naves were in bad repair because the parishioners had neglected their obligations to maintain them. At Alton Pancras in 1608 the windows and roof were said to be defective 'by the parishioners default' and at Winterborne Kingston the church was likewise 'in decay in roof and walls'. Even when repairs were undertaken disputes could arise, as at Yetminster in 1636 when each of the two churchwardens engaged a different builder to do the work, leading to a long and complex action in the church courts.<sup>4</sup> There was a similar dispute at Beaminster

2. PE/DO(HT) IN3; B2/16/2; B2/16/3. J. Hutchins, *History of Dorset*, 3rd Edn., 1866-70, II, 417.

3. Christopher Taylor, *The Making of the English Landscape: Dorset*, 1970, 115-116.

4. Wiltshire Record Office, D5/19/40.

where the churchwardens could not agree over the choice of builder to repair the fabric, nor over the quality of the wine which should be provided for the Communion.<sup>5</sup>

In several parishes the responsibility for maintaining the fence around the churchyard rested upon the occupants of particular tenements and was frequently neglected. As a result livestock were often to be found in churchyards. At Winterborne Kingston in 1606 John Buggis, 'a poore man', was reported for not maintaining his part of the fence, and the churchwardens complained that 'swine do come in and root up the graves in our churchyard'. Thomas Nashe of Sherborne was presented in 1617 'for that he doth not fence the churchyard but suffers his pigges to lye in our churchyard commonly'. Pigs were also found in the churchyard at Wimborne Minster, and at Preston in 1617 horses and sheep grazed in the churchyard and sought shelter in the porch. At Fordington in 1606 Christopher Rasker, a maltster, was presented because 'he putteth his horses and sheep in our churchyard and they lie in the church porch and make it very filthie'.

### Interior Decoration and Furnishing

The medieval paintings which had adorned the walls of parish churches had been obliterated with whitewash at the Reformation, and by the early seventeenth century the practice of decorating the walls with scriptural texts was already established. At Fordington in 1606 the churchwardens reported that 'the sentences of scripture painted on the walls' needed to be renewed, and at Bloxworth the Commandments were not displayed in the church, while Ryme Intrinseca did not have a table showing the kindred who were forbidden to marry, a necessary constraint in small and closely-related parishes. The royal arms had also to be displayed in churches, and were said to be missing from the Sherborne chapelry of Castletown in 1610.

Seating arrangements within the churches mirrored the rigid social structure of each parish, and inevitably gave rise to disputes. Many of the pews were rented by their occupants who took the liberty of adapting them to suit their own convenience, creating the sort of problem described by the churchwardens of Preston and Sutton Poyntz in 1635.

The seate or pew in our church belonging to Mr Robert Mapp and by him formerly erected is offensive to certain persons sitting behind it by reason of the height of it, it standing a greate deale higher than any seate in the said church, soe that those persons that are behind neither see nor well here the minister reading divine service.

Growing population meant that many churches were crowded and seats were difficult to find. This may explain the behaviour of William Gibbes at Beaminster in 1622 who was reported 'for his rude behaviour in prayer time and violent thrustinge for a Roome to sitt in'. In 1617 the Beaminster churchwardens had complained that the church was so crowded that some men had to sit with their neighbours' wives in the same pew 'both in one seat very disorderly together'. It was ordered that the churchwardens 'and some of the better sort' in the parish should reorganise the seating 'and place them according to their qualitie and condition in good decent order'. By 1638 it was reported that at Beaminster, and at other places including Lyme Regis, galleries were being built to accommodate the congregation.

### Behaviour in Church

All parishioners were expected to attend their parish church, and the meeting of neighbours inevitably led to occasional quarrels and disputes, and orderly behaviour was not always observed. At Folke in 1606 it was reported that John Barber 'is a malicious contender with his neighbours', and at Ryme Intrinseca 'Shusan the wief of Robert Husway and Agnes the wief of John Plowman be contendinge and stewinge in the church, and the one thrustinge and pullinge out the other'. Maude Brett and Jane Dicker were also reported for fighting during the service at Alton Pancras in 1606. At Charminster Walter Dearing and John Devenish fought in the churchyard, while 'Thomas Perham did offer violence unto Thomas Harbin and strike up his heels in the churchyard'. The services were also disturbed by unruly children. At Lyme Regis the churchwardens complained that about twenty boys were 'very disorderly and noisy during services and sermons in spite of reprooffs', and at Sherborne in 1638 several people were reported for 'Rude and Immodest behaviour in

the church by filthy and profane talk', while others allowed their children to disturb the congregation by 'unruly behaviour and incessant crying'.

Not all the parishioners accepted the conduct or preaching of the clergy without complaint. Many were reported for sleeping during the services, while others were more vocal in making their feelings known. Edward Wills of Hermitage in 1606 not only slept through the services but also made 'unreverent and uncharitable speeches ... to the no small grief of the well-disposed who heard the same'. He was alleged to have called the vicar 'Jack a Napes and other unseemly terms'. At Over Compton in 1634 John Birknell declared that 'his pigge can write and preach as well as the parson', while in 1607 John Clark of Alton Pancras struck the vicar with his foot during the service. At Winterborne Kingston in 1622 John Gawler abused the minister and called the bible 'a boke of lyes'. At Over Compton Andrew Abington was so incensed by the service and the poor quality of the singing that he cried out 'Singe better or else hold your peace' and then left the church. The vicar at Alton Pancras in 1607 was accused of going to Chesilbourne 'to football upon a sabbath daye and carried many of his parishioners with him and lost Evening Prayer'. Few went as far in expressing their disapproval as Henry Spinter of Alton Pancras in 1608

... a fortnight before Christmas one Sabbath day a littel before the evening prayer [he] went up into the tower and at a trappe door did pisse down upon their heads in the belfry that they could not stand there, to the great offence of those that were present as the fame goeth.

In several parishes the clergy were non-resident and the services were irregular. At Ryme Intrinseca in 1631 it was stated that 'our Rector is not resident with us nor has been the past three yeares, being resident with the Earl of Peterburrow whose household chaplain he is'. Stratton and Charminster were both served by the same vicar so that the services were irregular and sermons very infrequent. At Winterborne Kingston in 1606 there was no resident vicar, and there were very few services, while at Winterborne Anderson the vicar, John Moore, had been imprisoned for



Lyme Regis church looking west with the 1613 pulpit and the western gallery of 1611 which now supports the organ. The gallery has the painted inscription 'Johm Hassard built this to the glorie of Almightye God in the eightieth yeare of his age Ano Domini 1611'. From a postcard of about 1900, courtesy of the Lyme Regis (Philpot) Museum.

debt and was later excommunicated, although when he arrived to conduct a service and was asked if he was still excommunicated he replied that 'he could not tell neither did hee care'.

Physicians, surgeons and schoolmasters were licensed by the church, and at Fordington in 1622 Roger Haydon, formerly a shoemaker, was said to have 'taken upon him the profession and practice of Physicke and Chirurgery, but whether he be licensed or not we cannot tell'; while at Caundle Marsh Robert Lilly was alleged to 'teach school without a licence', and John Arnold of Over Compton was similarly accused.<sup>6</sup> Some parishes found it difficult to obtain suitable parish clerks who could read the first lesson and lead the responses in church. At Bloxworth in 1609 the churchwardens reported that 'our parische cleark can not read the first lesson distinctlye neither have we any in the parish fitter for the place'; while at Mapperton it was stated that

We presente that we have not a sufficient parish clerke that can read the first lesson, but yet the parishioners are well pleased with him for that he keepeth the church clenlie.

### Puritans and Separatists

Puritan sentiments and opposition to some aspects of the established liturgy are evident from the presentments. At Bloxworth and Stratton in 1606 the ministers refused to use the sign of the cross in baptism and objected to wearing a surplice. At Lyme Regis in 1616 'our minister doth sometimes wear the surplis and the other ornaments thereunto belonging and sometimes he doth omit it, and for the Lettaney, some times he doth read it and sometimes he doth not'. At Halstock in 1613 the minister was said to have advised his congregation that

it were better to eate and drinke before we come to the communion than to think of our breakfast at home. And that it made no matter whether we received it sitting, standing or kneeling, but that in his opinion it might best be done sitting.

Similarly at Bloxworth in 1616 several people were reported for receiving the sacrament sitting and not kneeling, while the minister, Robert Welstead, was presented for administering it in that manner. At Beaminster in 1606 the altar had been moved out of the chancel to the preferred Puritan position in the middle of the nave. 'Our communion table standeth not in our chancell but standeth in the middle allie of our church to the good liking of all the parishioners'. The minister at Beaminster, Mr Spratt, did not bow at the name of Jesus, refused to pray for archbishops and bishops, would not use the services as prescribed by the Book of Common Prayer, and objected to reading the King's book concerning recreations on the sabbath, boldly telling his parishioners that they should use their own discretion and that 'I doe advise you rather to obey God's lawes rather than the lawes of the King ...'. The Elizabethan Injunctions of 1559 had ordered that every parish church should be provided with a 'comely and honest pulpit', but although preaching had become so important in the services, several churches were still without pulpits, and for example, at North Wootton it was stated that 'we have no pulpit nor never had to our knowledge'. The church at Charminster and the chapelries of Leigh and Chetnole also lacked pulpits. Puritan sermons were very long, and this may explain some of the restive behaviour in church. At Beaminster even the churchwardens complained that the sermons lasted for a least an hour and were followed by catechising the youth of the parish, 'so that people are often kept at church till 5 o'clock'.

A few people had already set up their own forms of worship. At Winterborne Tomson in 1610 William Gybbes was said to have become a preacher

and in a most wild and odious sort, to the great prophaning of God and his Holy Word, and to the great disgrace of his ministers.

In an action which came before the church court in 1617 Richard Holmes of Bloxworth stated that he had called at the house of Christopher Chickerell on a Sunday morning and had found seven or eight people sitting around a table and Chickerell's wife reading a chapter of scripture to them. After the reading they asked questions of one another about the chapter and its meaning, and they told him that they were separatists and did not agree with the way the church was governed.<sup>7</sup>

6. Roger Haydon became well-known as a surgeon in Fordington and Dorchester, although he was later suspected of having Catholic sympathies. David Underdown, *Fire from Heaven*, 1992, 67, 135.

7. W.R.O. D5/22/6.

### Church Ales, Sports, Games and Processions

Puritan views are also evident in the opposition to games, calendar customs and the traditional church ales, as well as in the insistence upon sabbath observance and regular church attendance. In many parishes the church houses in which the church ales had been held had already gone out of use or had been converted to other purposes, for example at Halstock, Yetminster and Evershot.<sup>8</sup> Not all parishioners were happy to see the church ales and traditional pastimes disappear, and at Yetminster in 1634 there was a complaint that the church house had been let to a tenant 'to the great injury of the parish'. Games such as fives and skittles continued to be played in some churchyards, but were increasingly condemned by churchwardens, as a profanation of the sabbath or because of the damage caused. There are numerous references to fives being played at Fordington, Netherbury, Beaminster, Bere Regis, Long Burton, Sherborne and elsewhere, but clearly these traditional pastimes were no longer tolerated. At Fordington in 1606 it was stated that 'the youths of our parish do commonly play against our tower at a play called the vives, and they have been presented for it but they continue playing there notwithstanding'. A similar presentment was made from Netherbury and complaints about the damage caused to the windows by the fives players. The churchwardens at Halstock reported that the games and plays which used to be held in their churchyard had 'upon admonition been discontinued', and that the church house was no longer used for church ales. At Lyme Regis, which was to become such a Puritan stronghold, several persons were reported for 'playing at scytels in the churchyard', while others were condemned for taking part in what was clearly an ancient ceremony

there is a yearly use and custom in the town of chusing kob wardens on Easter Day and going forth with drum, ancient and flag and musical instruments on Whitsunday in the morning to fetch in bowes and so to go to the Cob houses to breakfast before morning prayer, which we take to be a profane use contrary to the right sanctity of the Lord's Day.

The one ceremony which did survive was the rogationtide procession around the parish boundaries, but in some parishes, particularly in west Dorset, recent enclosures had made this difficult. At Netherbury, for example, in 1613 it was reported that 'Wee present that by reason of the new inclosures and multitude of hedges wee have bene for many years constrained to forbear goeing on procession or perambulation'. Likewise, at Long Burton in 1625 it was said that 'though we be ready to goe yet the groundes of the parische are soe hedged that we cannot goe'. At Alton Pancras the churchwardens explained their failure to perambulate the parish boundary on the grounds that 'we went the last yeare', while at Beaminster the excuse was 'the journeyes being very long and tedious, and the bowndes of our parish well knowne'. The ancient obligation upon certain farms and houses near the parish boundaries of Alton Pancras to provide unlimited refreshment for those taking part in the annual procession led to a long dispute in the church courts in 1636 when the householders objected to the heavy expense of providing this yearly entertainment.<sup>9</sup>

### Church Attendance

Those who did not attend church regularly were reported by the churchwardens, but their efforts to secure total attendance were not always successful. At Beaminster in 1622 they wrote despairingly to the ecclesiastical authorities saying that there were so many people who had failed to receive the Easter communion that they could not name them all, and asking for advice as to how they could reform the backsliders. Margaret Fridaie of Osborne did not attend church or receive the sacrament, but in her defence the churchwardens added that 'she is as we conceive a silly wench and one that is relieved by the parish'. The excuses of other non-attenders were various and ingenious, including poverty, lack of appropriate shoes or clothing, picking apples or nuts, having to borrow money, illness, old age or fear of arrest for debt. William Taylor of Hermitage pleaded in 1602 that he could not come to church because warrants had been issued for his arrest on charges of debt, but witnesses stated that he was daily to be found in the alehouse. Likewise Thomas Crib of Thornford was said to attend church rarely 'in regard he is is much indebted and therefore feareful to goe abroad.'

8. For a long dispute over the ownership and use of the church house at Evershot see P.R.O. E134/1 Charles I, Hilary 8.

9. W.R.O. D5/19/40.

In most parishes the churchwardens were careful to report any departure from strict sabbath observance. Even displaying goods in a shop window was regarded as reprehensible, and Thomas Wills, a mercer of Sherborne, was presented in 1623 because 'he usually openeth his shop windowes on the Saboth day before morning and after evening prayers, and very seldome frequenteth our parish church on the Sabboth day.' At Beaminster in 1609 James Wilmot was reported 'for tucking cloth on the Sabboth daie, thereby much prophaning the Sabboth', and at Netherbury two tipping houses were open during the time of service in the church and 'doe usually give entertainment to manyfold persons on the Sabbath dayes ... to the great offence of well disposed persons'.

In spite of the heavy penalties, a few popish recusants were to be found in some parishes. The influence of the Arundell family was evidently a force at Netherbury where George Arundell and his wife and several others were reported as recusants during the 1630s. Other Catholic sympathisers were presented at Haydon, Winterborne Kingston, Preston, Sutton Poyntz and Bere Regis. At Winterborne Kingston in 1622 the wife of William Bezant was reported 'for holding popish opinions and for taking the sacramental bread from her mouth and refusing to eat it'. Some attempted to avoid the penalties for recusancy by attending church but leaving early, such as George Drake of Bere Regis, who was said never to remain for either sermon or sacrament.

### Moral Behaviour and Ecclesiastical Discipline

The control which the church continued to exercise over all aspects of morality as well as over matters such as marriage, probate, slander, social conduct and many other incidents of daily life is shown in many of the presentments. Numerous people were reported for bastardy, for 'incontinence before marriage' or for a suspicious lifestyle. At Charminster in 1606, for example, it was stated that 'Hugh Ludlow is vehemently suspected to lyve incontinently with Joan Jacob the wife of Robert Jacob, and thereupon labourerth a common fame within our parish'. At Turners Puddle in 1609 the churchwardens reported that 'Thomas Meader of Throop in the parish of Affpuddle and Mary Pearse wife of John Pearse of Turners Puddle keep company together to the dislike of many in our parish'. Richard Tucker and his wife Joanne of Alton Pancras were presented in 1606 because she was with child before they were married, but the churchwardens charitably added 'that they be verie poor people therefore we all beseech you to use them accordinglye'. Hubert Besome of Winterborne Kingston was reported in 1608 for beating his wife, Dorothy, but clearly he had the sympathy of the churchwardens since they added 'There is a fame of suspicious life by Dorothy Besome ... who is suspected to be a very lewd woman'.

Much more serious was the accusation against the widow Mollens from Sherborne in 1634 that she was a witch. This was based entirely on the fact that she behaved strangely and that two neighbours had been taken ill and claimed that she had bewitched them. Thomas Tyler of Charminster was also accused of witchcraft in 1616, but he appears to have secured a hold on several gullible women in the parish, to have practised medicine, secured abortions, cast out evil spirits and to have established a powerful local reputation for his powers. At Alton Pancras 'the fame goeth in our parish that Katherine Crier is generallie supposed to be a witch or soothsayer'.

Persistent trouble makers and those who stirred up discord among their neighbours were also reported to the church authorities. At Folke in 1606 John Barber was reported to be 'a malicious contender with his neighbours', and at Hermitage in 1622 Katherine Poxwell was said to be

a very seditious person, a sower of discord among her neighbours, a slanderous person and a scold ... being often admonished yet still persisteth, and for the same was excluded from the communion at Easter last.

Swearers and spreaders of slander were also presented, such as John Granly of Lyme Regis in 1613 'for prophaning the holy name of God'. As Thomas Rawlings, a tailor of Bere Regis, was riding towards Affpuddle in September 1638 he overtook Thomas Joyner who asked if he might ride behind on the horse. As they rode along Joyner spoke of Anne Neake and said that she was more common than the highway and that John Dyett of Bere Regis had more use of her than her husband did. When his remarks were reported to the churchwardens he was presented to the church court and was later sentenced to public penance for his slander.<sup>10</sup> Edward Pound of Alton Pancras was also sentenced to public penance in 1617 when several women 'sitting under a hedge in a meadow

called Plaine meade in Alton Pancras' heard him quarrelling with his employer, Agnes Winter, and saying to her

Thou art a scurvy baggage and a gyll. My dog is as good a mistress as thou art, and had thou not lied thou would have layn in the Goale, and thou mayest kisse my tayle.<sup>11</sup>

The humiliation involved in public penance meant that it was not a light punishment, and the church courts set out very precisely how it was to be conducted. For example, in 1629 William Rookelie and his wife, Alice, of Wimborne Minster were sentenced to perform public penance in the churches of Blandford Forum and Wimborne Minster. They were to appear, each dressed in a white sheet, and stand in front of the whole congregation. Immediately after the sermon they were both to read a lengthy confession of their offence and ask forgiveness for it. Their offence was that William Rookelie had made their servant girl, Mellior Rabbets, pregnant, and thereafter he and his wife

not having the feare of God before our eyes nor regarding our owne soules health, have endeavoured to shift off the said offence and suspicion thereof ... and to lay the same upon Mr William Gallard, clerk, parson of Stanbridge, against whom we heretofore conceived some displeasure.<sup>12</sup>

Several irregular marriages were reported by the churchwardens, including that of Thomas Parris and Mary Marshall of Chardstock. The marriage was said to have taken place without banns or licence in his bed-chamber since he was

a man of about 80 yeares and upwards lyinge in his bedd not able to stand or goe, wholye decayed in bodye and mynde, who dyed as 'tis reported the day followinge ...

A subsequent legal dispute reveals that this hasty marriage took place in order that the wife should have widows' rights to a copyhold tenement in Chardstock and retain possession for the benefit of her husband's children by a previous marriage.<sup>13</sup>

Above all it was irregular life and dissolute behaviour which roused the anxiety of churchwardens throughout the county, since such conduct was not only contrary to church teaching and an affront to the accepted moral standards of the community, but was also likely to result in illegitimate children and so become a heavy burden upon the poor rates. In some parishes a few families were persistent offenders. The Froomes of Bere Regis, for example, flouted all attempts by the ecclesiastical authorities to impose moral discipline and were constantly in trouble. From 1609 John Froome was reported for hunting during the time of divine service on the Sabbath, for absence from church, for being the father of Mary Brown's illegitimate child, for suspicious life-style, swearing and other irregularities. During the same period George Froome was accused of incest with his sister, of 'living incontinently with Dorothy Scutt as the fame goeth in our parish', and with numerous other offences. His reputation meant that other sins were also laid at his door, such as 'Avis Spear hath a bastard and she will not confess who is the father, but as the fame goeth in our parish George Froome is the father'. During the next few years both John and George Froome were frequently before the ecclesiastical courts and were sentenced to fines and public penance, but apparently without much effect. The family were land holders in Bere Regis, but by the time of his death in 1617 John Froome had dissipated most of his wealth, for in a survey of the lands belonging to the Prince of Wales the surveyor, John Norden, noted that an heriot or death tax of his best beast had been paid on behalf of John Froome, gent., and that this had consisted of a horse worth only 26s. 8d; in the margin Norden wrote, 'Poor Jade and poor gent. that had no better horse nor heriot'.<sup>14</sup>

The churchwardens of Alton Pancras had similar problems with one parishioner, John Bennet, who was constantly in trouble for sexual misconduct. In their presentment of 1609 they gave a graphic account of Bennet's attempt to rape the wife of John Vincent, and evidently believed Bennet's boast that 'he has lain with as many women as there are white sheep in Barcombe'. In horror the churchwardens added that 800 sheep were kept there.

11. W.R.O. D5/22/6.

12. D.R.O. PE/WM/CP2/10.

13. This is discussed in more detail in J. H. Betsey, 'Marriages of Convenience by Copyholders in Dorset during the Seventeenth Century', *Dorset Proceedings*, 98, 1976, 1-5.

14. British Library, Add. MSS 6027.

# 'This frightful and Blasphemous Sect': apocalyptic millenarians in Victorian Dorset

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## Abstract

*In the 1840s an Anglican Curate, the Rev. Henry James Prince, founded the Agapemone, an apocalyptic millenarian, and messianic sect, based at Spaxton in Somerset. The sect recruited well from the Weymouth area where a colleague of Prince, the Rev. Samuel Starkey, was active between 1843 and 1846. The article discusses the activities of Prince and Starkey in Dorset, and the subsequent fate of the Agapemone communities in the county.*

## Introduction

Early Victorian Dorset was amongst the most conventionally religious of counties. The 1851 'Census of Religious Attendance' shows that Dorset had one of the highest levels of churchgoing in England, with over twice as many people attending church on average during Census Sunday as did so in London or Lancashire. The county was part of the heartland of the Anglican church although non-conformity too was well represented in the shape of Congregationalists, Primitive Methodists, Unitarians, and Roman Catholics, as well as small congregations of more 'exotic' bodies such as the Mormons (Gay 1971).

Apart from the Mormons, Dorset nonconformity would have been seen as 'solid and respectable'. Yet present in Dorset at the time, though not identified in the Religious Census, were members of one of the most disreputable of Victorian sects, the 'Agapemone'. Recent research has revealed a considerable amount of material concerning this sect, which was represented in the south of the county from the early 1840's to at least the 1880's. The purpose of this article is to examine this interesting, but little known, episode of Dorset life.

## The Beginnings of the Agapemone

After ill health forced Henry James Prince (1811-1899) to abandon a successful medical career, he became a theology student at the Lampeter College in 1836. Here he founded a highly pious evangelical group, known to history as the 'Lampeter Brethren' (Jones 1970).

Evangelicalism is a school of theological thought which stresses the importance of 'personal conversion and faith in the atoning death of Christ' as well as placing the authority of scripture over that of worldly authorities (Cross and Livingstone, 1974, 486). The stress placed on faith, as opposed to intellectual understanding, made revivals - 'outbursts of mass religious fervour ... stimulated by intensive preaching and prayer meetings' (Cross and Livingstone 1974, 1183) - a natural tool of evangelicalism. Both were distrusted by the Anglican hierarchy in the first half of the nineteenth century, to the extent that several of the most zealous evangelicals were effectively forced to abandon the Established Church for non-conformity.

As a committed evangelical it was hardly surprising that Prince should initiate a revival at his first curacy at Charlinch, Somerset in 1840. The revival was both effective and disturbing. A typical sermon was: 'searching as fire, heavy as a hammer, and sharper than a two-edged sword. ....Many of the men dropped their heads on their chests; nearly all the women sobbed and shrieked' (Dixon 1868, 279). At the school: 'boys and girls, great and small together, were either leaning against the wall quite overcome by their feelings of distress, or else bowed down with their faces hidden in their hands, and sobbing in the severest agony' (Prince 1842a, 9).

Not surprisingly the parochial discord that followed was unwelcome to the Anglican establishment. Prince had 'stirred up the anger of the ungodly exceedingly in so much as they nearly all quitted the church' (Prince 1842a, 8). 'Husbands threatened to murder their wives, and wives threatened to forsake their

husbands.... [some] children were coaxed, others threatened by their parents'; all to persuade them away from the straight and narrow (*op.cit.*, 41). In May 1842 Prince's licence to preach was revoked for administratively, but hardly doctrinally, irregular practices (*op.cit.*, 43).

Prince quickly took another curacy but by 1843 he had been silenced again. He now moved to Brighton and opened an independent chapel there. Over the next three years Prince became convinced that the apocalypse was imminent and that he was a mouthpiece or embodiment of the Holy Ghost, chosen to lead a final campaign to convert or condemn sinful humanity. Followers had built a 'Free Church' at Spaxton, the village adjacent to Charlinch, and from 1845 he concentrated his efforts on Dorset, Somerset and West Wales. Early in 1846 he declared that the time for repentance was over; the few had been chosen, the unrepentant majority were forever damned. A mansion, cottages, glasshouses and palatial gardens arose around the Spaxton chapel. By 1847 Prince and his leading followers were in permanent residence there and proselyting had ceased.

During the next decade the Agapemone, as Prince called his sect, achieved national notoriety. Formal prayer, services, and the observance of Sunday were rejected as being redundant. The 'last days' were occupied with mixed sports and spontaneous worship. Wealthy converts were induced to give substantial sums to the community. Prince himself, though preaching chastity, seems to have taken a series of 'spiritual wives' from both female servants and the wives of his followers.

The subsequent history of the Agapemone, which was finally dissolved in the late 1950's, is of no concern here (For a fuller account see Mander 1976). The focus of the remainder of this article is upon Dorset; how the Agapemones came to Dorset, the ways in which they excited controversy and activity in the 1840s and 1850s, their success in recruiting followers in the county and the later history of these congregations.

## The Rev. Samuel Starkey comes to Dorset

Prince's evangelical zeal may have alarmed bishops but it impressed many of the lesser clergy including his Rector at Charlinch, the Rev. Samuel Starkey. After Prince's second dismissal from a curacy, Starkey managed to absent himself from his parish in order to join Prince in evangelical work. When Prince went to Brighton, Starkey headed for Weymouth. These towns were probably selected because they were, respectively, the 'two most fashionable watering places of Sussex and Dorset' (Dixon 1868). Starkey took a house in Belfield Terrace and 'preached when he could find a clerical friend in the town who was willing to lend him a church' (Dixon *op.cit.*). Belfield Terrace was almost brand new in 1843 according to R.C.H.M. (1976, 346). But why did Starkey choose to go to Weymouth rather than remain at Charlinch and what was the message that he preached?

It is important to remember the status of the two men at this time. Though Prince appears already to have revealed his divine status to his brother-in-law Arthur Rees, these explosive claims were not, it seems, ever made in public (Deck 1845, 16). By now

he was known in evangelical circles as the author of a series of pious tracts (Dixon 1868, 288; see eg. Prince 1842b, c). It is likely that his 'persecution' by the Anglican hierarchy may have actually increased his status amongst fellow evangelicals. However he could now only get a congregation outside Anglicanism. Starky, still the Rector of Charlinch, had more to lose. He seems to have been warned off further revivalist work at Charlinch (W.R.O. D1/27/5/4, October 2nd, 1843); he may have been lucky to avoid having his licence to preach withdrawn. He needed to avoid openly flaunting Anglican canon law. He had secured the services of another evangelical curate from Lampeter to keep up the work at Charlinch. However, so long as other clergy permitted him to 'borrow' pulpits to preach from he was relatively safe from episcopal condemnation, and could promulgate evangelical doctrines. And where better to find such loans than amongst fellow evangelical clergy?

An 'evangelical link' almost certainly accounts for Starky's choice of venue. Dorchester was the centre of a circle of evangelical Anglican clergy most of whom had parishes nearby (Moule 1913). The best known of this group today is the Rev. Henry Moule, Vicar of Fordington, inventor, and father of several noteworthy sons. One became Bishop of Durham, another the first curator of the Dorset County Museum, and a third is remembered as one of the young Thomas Hardy's dearest friends. It seems likely then that Starky's 'clerical friends' were evangelicals who knew of him and Prince either because of the work at Charlinch (two editions of Prince's account of the revival had come out before the end of 1842) or because some of them shared his Cambridge University background, itself a centre for evangelical piety in the early nineteenth century (Bebbington, 1989).

The correspondence of Denison, Bishop of Salisbury from 1837 to 1854, reveals the extent of Starky's engagement with certain of the Dorset clergy. Unhappily only the Bishop's end of the various exchanges, preserved in his duplicate book (W.R.O. D1/27/5/3, 4 & 5), survives but the nature of the missing part of the correspondence can be guessed at. On September 22nd, 1843 the Bishop wrote to Archdeacon Buckle, saying that he had heard that Starky was at Weymouth and was officiating in churches in the area without permission from himself. At about the same time letters came from Starky himself and from the Rev. J.E. Philipps of Osmington. Starky appears to have claimed that he had only occasionally officiated in the Weymouth area. Unfortunately Philipps reported that Starky was regularly preaching for the Rev. Octavius Piers at Preston, the next parish to Osmington. On October 2nd the Bishop wrote to Philipps thanking him for his information and remarking that he knew of Starky's implication in the activities for which Prince had been dismissed. The Bishop implied that Starky's having gained a licence to be absent from his parish was not unrelated to this involvement.

On October 5th the Bishop expressly forbade Starky to officiate in the diocese. By now he had discovered that Starky had agreed to stand in for David Hogarth at Portland (one of the evangelical group) during an absence. The letters give the impression that Starky had been in the area for some months and that he had strong local support. On the 5th the Bishop also wrote to the Rev. W. Brodrick of Bath, whom he hoped would illuminate him as to the exact nature of Prince's 'erroneous doctrines' and 'faulty practices', in order that the soundness of Starky could be better judged. There was a 'good deal of excitement on the subject, and he [Starky] has several partizans amongst the Clergy of the neighbourhood'. The letter of the 5th names the Rev. Henry Jenour, curate of Portland, as having petitioned the Bishop on Starky's behalf. On the 10th the Bishop was writing to Reginald Smith, Rector of West Stafford, yet another of the Moule group. Smith, together with Henry Moule himself, had met Denison at Salisbury to plead that Starky be allowed to deputize for Hogarth. (On October 17th another letter to Smith reminded him that he had written 'in the character of an intimate friend of Mr Starky'). Another letter on the same day

was to a further partisan, the Rev. John Menzies, Rector of Wyke Regis. Menzies, who may have been associated with Moule and was certainly of an evangelical nature (see eg. letter from Denison of May 10th, 1842), seemed willing to let Starky officiate in his parish. Denison wondered whether he had thought deeply about what had gone on at Charlinch. Faced with this enthusiasm the Bishop, who appears to have been a fair minded man, conceded some ground. On the 17th he wrote to Starky allowing him to undertake occasional preaching but only in licensed buildings and with the express invitation of the incumbents. This will be during 'that short time during which you tell me that you propose to remain at Weymouth'.

Though Denison had made concessions he retained considerable doubts. He suggested that 'awakening of sinners' had occurred hand in hand with 'serious doctrinal error' at Charlinch. He was particularly unhappy concerning Starky's association with Prince who had made 'the claim to such a special and sensible guidance of the Holy Spirit, as, if it existed must necessarily supersede all other rules' (October 17th to Starky). He was concerned that revivals lay behind 'errors' such as those of Irvingism and the Brethren which, he knew, had also had positive aspects (October 17th to Smith). Moreover he was quite aware that a certain amount of deceit concerning the extent to which Starky had already been active in Dorset had been practiced (October 18th to Jenour).

In fact Denison was in a strong position. By the end of 1843 he was acting on behalf of Bishop Law of Bath and Wells who had become too 'mentally infirm' to perform his job. Hence Denison now had authority over Starky both in his home parish and in the parishes in which he wished to preach. As he reminded Starky, the latter was on sick leave. If he wanted a full time post, then one awaited him at Charlinch (October 17th, 1843). On April 2nd, 1844 Denison reminded Starky that his leave of absence was now up. Starky obviously begged to be allowed to remain (April 18th) and the Bishop was worried that he might get nominated for a lectureship at Weymouth (letter to Archdeacon Buckle of April 9th). By May 24th however Starky was back in Charlinch. Denison was now able to refuse to licence further absence on the grounds that George Thomas, his curate there and another Lampeter graduate, had in the absence of the rector, disturbed the parish with further extreme evangelical activities. Pleas from Starky to be allowed more time off received short shrift on July 1st and August 19th.

By September however Starky had resurfaced in Weymouth, officiating at evening services in the parish church. On the 3rd of that month Denison wrote to the curate, Brassey, enquiring what the financial 'footing of this evening lecture is'. The Bishop also wished to know what else Starky was doing in the area and whether he had 'interfered' with services in the past. There followed an exchange of letters between Denison, Brassey, Urquhart a subordinate curate who held the actual lectureship and who had invited Starky to participate, and the rector Dr Wyndham, who had instituted the evening lectureship.

Starky clearly made a powerful impression on the evangelical Dorset clergy. In addition, he also appears to have been an effective evangelist. Dukes (1908) reports that 'his (ie. Starky's) zeal on behalf of the Agapemone led to its adherents in Weymouth and other parts of the south country being called "Starkyites"' and the same term is used in a report, taken from the *Salisbury Herald*, of 1852 (*B.W.T.* January 22, 1852, 4, col 4 & 5), as well as in a letter written to the Home Office by a Dorset magistrate in 1846 (see below).

Starky appears to have based his work in the parish of Preston, a few miles north-east of Weymouth, whose Vicar, Octavius Piers, was especially admiring of his mission. Piers was a man who, like Prince, was not afraid to upset those in authority. He had denied the efficacy of Baptismal regeneration (a sure sign of an evangelical temper) in print (Piers 1844a) and denied a candidate admission to confirmation 'because she went to balls'

(Piers 1844b, 5). His self-composed epitaph describes him as 'a poor, lost, miserable, hell-deserving sinner' (Piers 1848). Piers asserted that the ability of many of his confirmation candidates to give him 'a rational account of their conversion to God, and of their faith in Christ Jesus [was] a work chiefly effected either, through the instrumentality of Mr Starkey's [sic] ministry, or through the reading of Mr Prince's invaluable little tract, entitled, "How you may know whether you do, or do not, believe in Jesus Christ"' (Piers 1844b, 7).

Starky's impact at Weymouth is all the more striking given the ultimate failure of Prince's mission to Brighton. He had established a thriving congregation in a hired chapel by early 1844 (P.R.O. C31/804/101, 8). However the Lampeter Brethren and his brother-in-law, by now aware of his claims to be a divine person, began to circulate denunciations of him amongst his congregation and by June 1845 he was forced to abandon Brighton (P.R.O. C31/804/101, 21-22).

### Activity in Somerset and Wales

Elsewhere, however, Prince's fortunes were prospering. In June of 1845 he opened the 'Trinity Free Church' at Spaxton (P.R.O. C31/804/101, 12) where a considerable following nurtured, no doubt, by George Thomas, still remained from the days of the Charlinch revival. Over the next eighteen months the buildings of the Agapemone rose around the chapel.

Prince had followers not just at Charlinch but all around Bridgwater as well. Throughout 1845 they were busy preaching and opening dissenting chapels. Their activities, highly successful it seems in terms of recruits, were so frenetic as to be seen as a threat to civil order (see eg. *S.C.G.* June 28th, 1845, 3, c.2).

After opening the Spaxton chapel Prince set off for Wales where three of his clerical followers were married in a single wedding to three heiresses of the Nottidge family. Together with a little entourage of still faithful Lampeter graduates, he then went on a month's preaching tour of West Wales (*W.* July 18th, 1845, 2, c.7).

### Return to Weymouth

Unlike the proselytizing in Somerset, Prince's Welsh adventure was relatively unsuccessful and by mid-August 1845 the whole of his entourage were at 5 Belfield Terrace, Weymouth (P.R.O. C31/804/208, 47).

Until 1845 it appears that Prince had been known in Dorset only through his writings. However in April, after his brief visit to Charlinch, he had visited Weymouth where he clearly enjoyed some success, 'inducing large numbers of persons to attend his Sermons and Lectures' (P.R.O. C31/804/101, 10). Whatever Starky's message had been in 1843 and 1844, there was no doubt about what Prince was preaching. 'When Mr Prince first came to Weymouth, he told us he was a special messenger to proclaim the Second Coming of our Lord - he told us that his coming was nigh, very nigh indeed; and when he cried out "Behold He Cometh!" - he said, that is the cry' (Piers 1846, 8-9).

It is a little difficult to know exactly what the effect upon the Dorset clergy was of meeting Prince in person. Piers freely confessed that he 'loved and admired Mr Prince for his work's sake, as an eminent minister of the gospel' (Piers 1846, 3). James Deck, an ex-missionary, who kept a school at Weymouth also 'loved and esteemed [Prince and Starky] as brethren and true servants of the Lord Jesus Christ' (Deck 1845, 5). However Prince was becoming more open about his apocalyptic millenarian, and messianic message. In March 1845 he had received a 'testimony' or a divine message, 'Behold He Cometh', derived from the parable of the Wise and Foolish Virgins in Matthew 25, 6 ('*B.*' 1895, 1). This seems to have increased his millenarian fervour and it may be that the idea of establishing a safe haven at Spaxton in preparation for the final apocalypse now took shape. Increasingly the Dorset clergy found themselves obliged to choose between orthodoxy and heterodoxy.

On 22nd April, 1845 Bishop Denison wrote an extremely stiff note to Starky. He had been told that Starky and Prince had been to Charlinch and assisted at a 'schismatical meeting which has been established there' by Prince. As a result he was going to ban all further preaching by Starky in Dorset unless he could demonstrate his innocence of this charge. On the 29th of the same month Denison made himself even clearer. Any preaching or ministerial work in the Diocese of Salisbury would result in Starky facing an ecclesiastical court. It appears that Starky failed to take heed and in August an Ecclesiastical Commission was held at Upwey, mid-way between Dorchester and Weymouth, to investigate charges against himself and Octavius Piers. Starky can hardly have returned from Wales before the Commission met and it seems likely that the charges related to events in April or May. Starky had 'lately, at divers times, committed the canonical offence of preaching and publicly praying, in unconsecrated places, without the Licence of the Ordinary [ie. the Bishop] thereof, and thereby brought great scandal on the church'. Piers too was on trial, having aided and abetted such meetings in his parish. The court found that there were grounds for further proceedings (*D.C.C.* 21st August, 1845, 4, c.1).

Perhaps surprisingly no further action was taken. Denison wrote to Piers on the October 14th telling him that, despite the Commission's findings, he was going to be lenient since it appeared that Piers had not repeated the offence (*W.R.O.* D1/27/5/4). Denison was probably aware that the opinions of his clergy had changed regarding Starky and Prince. As early as the 29th of April he had written to Henry Moule, telling him of the inhibiting of Starky's preaching in the diocese, and approving of some action by Moule. This action may have been the sermon preached by Moule against Prince's use of denunciations of those who did not accept his mission (Deck 1845, 13) or an incident when Moule and Smith baited Prince and Starky in their dwelling, daring Prince to smite them with his divine power. The incident was terminated by the flight of Prince and Starky to their bedrooms (Piers 1846, 6). It appears that Prince had rather "queered the pitch" by his visit. Certainly both Piers and Deck seem to have had reservations concerning Prince for some time before the end of 1845. Piers, though admiring his ministry, did not 'own or recognise in him any higher character' (Piers 1846, 3 & 8). Deck had seen one of the letters from Rees denouncing Prince and had gone to the opening of the Free Church at Spaxton, and there had unsuccessfully tried to ascertain the truth of the claims therein (Deck 1845, 6).

Despite these set-backs Prince, together with Starky, George Thomas, and two further ex-curates from Lampeter, Lewis Price and Thomas Williams, spent the last half of 1845 preaching 'the immediate coming of Christ and exclaim[ed] in the loudest tone "Behold He Cometh, He Cometh, He Cometh"' in Weymouth and the surrounding villages (P.R.O. C31/804/208, 30). But by the end of the year a number of hostile pamphlets appeared (Deck 1845, Piers 1846, Rees 1846). Strikingly Piers, Deck, and the redoubtable Rees had all once supported Prince; they felt, perhaps, some need to publicly disassociate themselves from his current 'heresies'. In addition Piers was clearly motivated by the loss of a considerable number of his parishioners who were now followers of Prince and Starky (Piers 1846).

The complaints made against Prince and his lieutenants were threefold. The first concerned his habit of 'denouncing curses and woes upon towns, churches, and individuals, converted or unconverted, who do not bow to their authority or recognise their claims' (Deck 1845, 5). An affidavit in Chancery five years later claimed that Prince even went so far as to demand that the 'saved' rejoice in the prospective damnation of their unconverted friends and family (P.R.O. C31/804/208, 3).

A second bone of contention was the schizophrenic nature of the claims of Starky and Prince to be variously Elijah, the messenger of Malachi III, one of the Two Witnesses, the Holy Ghost personified, the servant of the Lord, one of the Two

Anointed Ones and so on (Piers 1846, 6). Prince was either confused or hedging his bets.

The final straw, however, seems to have come on, or around, the 1st of January 1846 when Prince collected together the faithful (identified as all those willing to assent to the damnation of relatives!) at a 'Tea Meeting' in a Weymouth Inn (actually the Assembly rooms of the Royal hotel, according to Dixon 1868). There he announced that Jesus had left the Mercy Seat, that the door of mercy was shut that therefore sinners could no longer be saved through the intercession of Jesus ... [But those present] were safely shut up in the Kingdom of Heaven' (P.R.O. C31/804/208, 32). '[T]he Son of Man was about to come; that the world was in its latest day; that the godly few were being chosen from the mass; and that the wicked many were about to perish in penal fires' (Dixon 1868, 296).

Whether because of local opposition, because he was satisfied with his haul of souls or because he needed to oversee events in Somerset, Prince departed for Bridgwater in mid January (P.R.O. C31/804/208, 32).

### Madness in Weymouth

Prince spent the months of February to June of 1846 in Bridgwater, probably overseeing the erection of the mansion and other buildings on the Agapemone site. By July he was back in Weymouth (P.R.O. C31/804/208, 47). The activities of his local followers had, by now, generated a furore even greater than that of the previous year in Bridgwater. On June 12th, Colonel Howard, one of the County Magistrates, felt impelled to send a highly colourful appeal to the then Home Secretary, Sir James Graham. This letter, revealing the sorts of popular rumour which abounded concerning the Agapemonites, deserves quotation at length.

'Sir, A sect has arisen here calling themselves Starkytes. The principal Actors in which are the Revd. Starkie [sic] and the Revd. Prince, with several others. The Revd. Prince I understand personates the Almighty, receiving his worshippers naked in body, but veiled. Others personate the Holy Ghost, St Peter, etc. The Women are received naked and those who will not comply with this [infamy?] are pronounced to be in such a state of sin as to be for ever excluded Heaven - So infatuated are the Dupes / Many very respectable people / to this frightful and Blasphemous Sect, that in my capacity as County Magistrate I have already been obliged to send three young women to our County Lunatic Asylum, driven mad by the doctrines they hold, and the populace are so indignant that the Borough is every evening in a state of riot by the people's [hooting?], hissing and stoning the Members, some times to the amount of seventy or eighty, as they return from their evening meetings. If I might advise it would be that some [clever?] and competent person, a Bow Street Officer for instance, be sent here, who by appearing to become a member of the sect might be able to bring before the Magistrates sufficient Evidence to stop their further proceedings, or punish them.' (P.R.O. HO45/1635).

In the event nothing came of the appeal to the Government. The Home Secretary wrote to the Mayor of Weymouth, asking whether outrages were occurring and, if so, whether any Clergy were involved. William Devenish, the Mayor replied that it was true that the Rev. Prince was pretending to be God, that two or three young women had been driven out of their wits by threats of the punishment to come and that his followers attracted hostile crowds 'chiefly Women and Boys'. The magistrates had been obliged to offer protection to several sectarians. On the other hand the disturbances of the peace were minor and there was no hard evidence as to the more outrageous assertions concerning the group's conduct. He did suggest that Prince might be charged with holding religious services in an unlicensed building (*ibid*). This latter point is of some interest; in Somerset Prince's followers opened about a dozen chapels in the Bridgwater area during 1845 whereas in Dorset none seem to have been registered, perhaps because Starky and Prince hoped to use the

Anglican churches to spread their message.

The correspondence ended inconclusively. The Borough Council Minute books have no record of this exchange, though there may be some significance in the coincidence that on the 11th. of June, it was decided to establish a proper police force for the town with an inspector and eight constables (W.M. 110 MB.4, 1846-56, 30)

It is not clear from this account whether Prince was actively recruiting in Dorset in mid 1846. It certainly appears that there was a strong congregation of Agapemonites in Weymouth itself, distinct from those at nearby Preston. It has not proved possible to confirm Colonel Howard's claim concerning the committal of young women to the County Lunatic Asylum at Forston. Although the Visiting Justices and Medical Officer's report for 1846 mentions 'AB' who believed herself possessed of the Devil (Forston 1847, pp 21), the summary tables of admissions show no individuals suffering from religious mania. The comparable report for 1845 mentions two women with religious delusions (Forston 1846, 26) who likewise cannot be identified in the summary tables.

By July the disturbances seem to have abated. Denison, writing to Menzies, said that he was: 'glad to learn that the miserable excitement which has been occasioned by the fanatical proceedings of Messrs Prince and Starkey [sic] is now dying away. I have been less surprised than grieved at the development of the mischief...'. Denison went on to ponder whether he should have stopped the activities of the two earlier but concluded that it was better that he had not since it could have assumed 'in some respects a more embarrassing form' (letter to Rev. J. Menzies, 23rd July, 1846).

### Who were Prince's Followers?

For the next few years there is little evidence as to what the Agapemonites were up to in Dorset. Prince seems to have withdrawn into his 'commune' at Spaxton and what little material there is concerns his follower's activities there. He seems to have given up direct proselyting between 1846 and 1856, believing it seems that the end was nigh.

However, by comparing the returns for the Censuses of 1841 and 1851, with lists of known Agapemonites gathered from other sources it is possible to say quite a bit about actual individuals from Dorset who were followers of Prince in the late 1840's<sup>1</sup>. In all some 68 certain and another 15 possible members can be identified. This gives a total of 83, almost the same number given by Colonel Howard in 1846.

Not surprisingly most of the Dorset Agapemonites were born, and usually still lived, in the areas where Starky and Prince had been most active; Weymouth, the coastal villages immediately to the east, especially Preston, Sutton Poyntz and Osmington, with a few coming from further afield at Affpuddle, Dorchester and Abbotsbury. Five had been born outside of the county. Of the 83, 49 were still in Dorset at the time of the census, 28 at Preston, 12 in or near Weymouth and the rest elsewhere in the county. 33 were living in or near to the Agapemone at Spaxton, and one was dead.

Table 1 shows the Agapemonites from Dorset categorised by social class as conceptualised in the Registrar General's classification of socio-economic status. Armstrong's (1972) adaptation of this 20th century scheme to the classification employed by the 1851 census has been followed here. The Dorset members were superior in socio-economic terms both to the average non-conformist population (see eg. Dunton 1984, 325) and, it would appear, to the population at large. Armstrong gives figures for the City of York in 1851 suggesting that 8% of heads of households fell into RG1, 14% into RG2, 49% into RG3, 13% into RG4 and 13% into RG5 (Armstrong 1972, 212). As can be seen social classes 1 and 5 (the 'extremes' of

<sup>1</sup>Other sources here include the privately held burial records of the Agapemonites, and various newspaper reports. A full discussion of the problems of identifying individual sect members will be found in the author's forthcoming Reading University Ph.D. thesis.

the range) are under represented amongst the Agapemonites as is social class 3 whereas classes 2, the lesser gentry and tradesmen, and 4, the semi-skilled workers are over-represented. The considerable number of farmers and their families who joined the Agapemone in Dorset is probably the reason for the over-representation of social class 2.

Occupation	Number	%	Average Age	% Female
RG 1: Professional (Clergy, solicitors etc)	3	3.6	45.3	33.3
RG2: Intermediate (Farmers, Self Employed Masters, & Independents)	30	36.1	28	57
RG3: Skilled (Craftsmen & clerks)	27	32.5	29.2	48
RG4: Semi Skilled (servants, Agricultural labourers)	15	18	30	53
RG5: Unskilled (Labourers etc)	6	7.2	17	16
Unknown	2	2.4	-	50
Totals	83	100	29.7	42.9

TABLE 1 Details of Dorset Agapemonites in 1851

A closer look at the individuals involved shows further differences. The Preston Agapemonites were largely a middle class group, dominated by three families of Scutts. Robert and Thomas farmed Sutton Farm, John farmed at South Down Farm. Another wealthy Preston farmer was Josiah Croad. Also at Preston was Thomas Willshire a tax collector, and the Fooks family, who were blacksmiths. The Weymouth Agapemonites were a humbler group altogether, comprising school teachers, laundresses, shoemakers, domestic servants and stable workers. At Dorchester the Agapemonite families included the Styles, shopkeepers and Iron Foundry workers

As can be seen from Table 1, although women from classes 1 and 2 were well represented amongst Agapemonites, these was also a large contingent of semi-skilled women. Both the farms and the Agapemone itself, as would be the case with any large middle class household in Victorian times, called for a considerable number of housemaids and female servants, though it is also clear that there were a fair number of female outdoor farm workers. 42.9% of Dorset Agapemonites were female. This goes against the common assumption that millenarian sects tend to recruit disproportionately more women than men (Harrison 1979, 111), especially given the fact that women were actually in a majority in the 1851 population (Walvin 1987, 126).

The average age of the Dorset 1851 sample was 29.7 years. The Agapemone was a predominantly young population.

### Renewed Activities in the 1850's

From the early 1850's, the Dorset Agapemonites began to 'make the news' again. In the middle of 1850, the *Bristol Times* reported that Hazlebury Plunknett, near Yeovil, had for the last fortnight 'been visited by hords [sic] of Pilgrims making the Swan Inn a halfway house on their road to the Agapemone'. These pilgrims came in 'Waggons filled with furniture, and many of the good things of Egypt'. The waggons had the name of Preston on them. (*B.W.T.* 23rd May, 1850, 2, c.2). This seems to be the time at which a number of the Agapemonite farmers from Preston including the Croads and some of the Scutts moved to farms around Spaxton owned by them or by Prince.

This in-gathering seems to have coincided with a shift in the temper of the Agapemone from an almost antinomian good spirit to a more austere and autocratic regime. This change was followed by numerous protests, desertions and eventually even suicides in Somerset. Drastic events of a similar nature also occurred in Dorset. Thomas Style had opened a 'wholesale

grocers and druggists' shop at 32 High East Street, Dorchester during 1840 (Kelly 1849, 2666; D.R.O. PE/DO9AS 6th August, 1840). During the 1840's he had married and had a daughter but in 1849 he died. He must have been an Agapemonite since he was buried at Spaxton, in the Agapemone garden - a rare privilege for one not apparently resident in the Spaxton area or a key member of Prince's circle. His widow, Hanna Style 'possessed of property independent of the business', kept the firm going. In 1851 she was assisted there by Charles Verriour, an Agapemonite from Somerset (P.R.O. HO 107/1858/16/8) and her daughter was at school in Spaxton (P.R.O. HO 107/1924/173/42), so she was presumably still a believer at that stage.

However by early in 1852 she had decisively and repeatedly rejected the Agapemone. Her maid servant, however, was still a believer and, having disappeared off to Spaxton for some days, returned at eleven o'clock one evening. Gaining entry to the house she then let in Clara Cobbe, wife of the builder of the Agapemone, who seems to have gone straight to Mrs Style's bedroom. Sturton, the shop assistant who had let her in, found another Agapemonite, John Hodder, walking in the yard. Challenged Hodder said that he had 'a message from God' for Mrs Style. Sturton fetched Mrs Style's partner, Mr James, from his house which was nearby. Hodder and James began to argue but soon they were all summoned to Mrs Style's bedroom where a singular scene was being played out. Clara Cobbe and the maid-servant, having twice failed to pull Mrs Style from her bed were 'urging her in the most violent terms imaginable to go away with them instantly to the Agapemone in a carriage which was then waiting for her at the door. Mrs Style repeatedly declared, "I have given it up and I will not go". She was 'exhorted .. on pain of eternal damnation' to go with them. Mr James's attempts to convince them that they were wasting their time were, needless to say, not appreciated. Despite 'horrible imprecations and alarming threats, intermingled with the most revolting and blasphemous language', Mrs Style would not budge from her bed. Thomas Williams, an ex-Lampeter trained curate who had remained faithful to Prince, then appeared and 'With an air of wonderful solemnity and immeasurable importance ... said "Hanna! I am come to ask you once, twice and thrice". Hanna said "No." Williams rejoined, "You never will be asked again".'. Mr James, who throughout seems to have displayed a remarkable sang froid, or perhaps just had a sound sense of humour, rejected a suggestion that the police should be sent for. Nevertheless Clara Cobbe threatened him with punishments, declaring "I am God, I am God, I am God". Cheated of their prey the Agapemonites departed at around one in the morning (*D.C.C.* 15th January, 1852, 4, c.2). Similar attempts at compulsion occurred in Somerset where the reason the Agapemonites gave for their actions was that 'the "Lord" was collecting the scattered flock together for judgement' (*ibid*). Perhaps they believed that if they could get the 'strays' back to the Agapemone then force, or the charisma of Prince, would then keep them there?

More scandal was to follow. Thomas Willshire, the tax collector and overseer of Preston, cut his throat in May of 1855. *The Poole and South Western Herald* opined that he had been unsettled by the 'soul-destroying dogma of the notorious "Prince" and "Starky"'. Luckily he "'loved his own" too much to confiscate his little property to them, and enter the Agapemone'. The inquest heard that he had been disturbed for 18 months, being 'very restless and unable to sleep' and 'would suddenly jump up from the table, pace about the house, and exclaim that death was preferable to life'. The verdict was 'temporary insanity' (*P.S.W.H.* 22nd May, 1855, 7, c.5 & 6).

In 1856 a Bridgwater paper claimed that two further suicides besides Willshire's had recently occurred. An Agapemonite lady near or at Weymouth, had recently killed herself. In addition Thomas Scutt, the farmer of an estate owned by Prince in Somerset, and originally from Preston, had unsuccessfully attempted to cut his throat at the Agapemone and was now under

the care of two keepers. The paper had no doubts as to Scutt's motivation. He had once been a man of considerable property which he gave to Prince. (*B.W.T.* 10th April, 1856, 3, c.1).

### Agapemonites in Dorset after the 1850's

Despite the ingatherings of the faithful to Somerset, various groups of believers remained in Dorset after the 1850s.

Most is known about the Preston group. At the time of the 1861 census, Prince, together with Starky and others, was the guest there of the farmer John Scutt. The 'Visitation Queries' of 1864 for the parish of Preston noted that in addition to Wesleyan and Baptist dissenters there were '15 Princites' (W.R.O. D1/56/7). In 1867 there were said to be 20 and in 1870 a score (W.R.O. D/1/8 & 9). In 1873 the vicar of Preston reported that 'There are besides 10 (or now 12) votaries of the Agapemone, or followers of the strange heresy and believers in the blasphemous assumptions of Mr. Prince. These fanatics have been doing their utmost to revive an interest in their creed and practices in this Parish during the first months of this year. Happily [to] the credit of the commonsense of the parishioners, they failed in entrapping more than two "silly women", who left in disgust' (W.R.O. D1/56/10). In 1876 there was 'a house (once in better occupation) where some 10 or 12 Princites assemble' (W.R.O. D1/56/11). The group is last mentioned in 1879 (W.R.O. D1/56/12). By 1915, the incumbent of Preston had a couple of non-conformist groups in his parish but Agapemonites were not amongst them (W.R.O. D1/56/14). The Scutt family, clearly the most important Agapemonite family in Preston, largely died off in the 1880's and this may have terminated the group. Interestingly Preston had a dominant landlord, the Weld family of East Lulworth, a factor not conducive to non-conformist activity according to Everitt (1972). However the Welds were Roman Catholics and hence, one presumes, not in a position to compel conformity in the way that an Anglican would have been.

The Agapemone seems also to have retained a congregation at Weymouth. Jane Watts of St Thomas' Road appears as an agent there for Prince's literature in the 1870's and in the 1880's Henry Charles of Dorchester Road succeeded her in this role. (The Watts family had been schoolteachers at Preston in 1851). The same sources reveal that Prince had also retained followers in Dorchester. In the 1870's Henry Taylor at the Ironworks was supplying Princite pamphlets ('B.' 1877 and 1888).

By the 1890s a new generation of Agapemonites, led by another renegade Anglican, John Hugh Smyth-Pigott, were active in London, Reading and on the Continent. As part of a series on the resurgence of the Agapemone, the non-conformist *British Weekly* provided what is probably the last sighting of the Dorset Agapemonites. 'Mr Starky ... set up an Agapemone [at Weymouth]. Its adherents had an eventful history. In their early days they were sorely persecuted. No ill treatment by their opponents of the 'Starkyites' (or "Lampeters" ..... ) was regarded by the public as excessive. When they were stoned in the streets, their windows broken, their property destroyed, and their lives in jeopardy, even the mayor of the town replied to their appeal for protection that "it served them right". Yet they continued steadfast and for forty years services were held in a large drawing room. ... this little community ... was never disgraced by the shameful demoralisation that befell the Agapemone at Spaxton'. However: '....decay has been going on in the Princite community for years past, until it is nearly extinct' (*B.W.* 18th August, 1892, 261).

### Abbreviations

<i>B.W.</i> British Weekly	<i>W.</i> The Welshman
<i>B.W.T.</i> Bridgwater Times	<i>W.M.</i> Weymouth Museum

<i>D.C.C.</i> Dorset County Chronicle	<i>S.C.G.</i> Somerset County Gazette
<i>D.R.O.</i> Dorset Record Office	<i>S.R.O.</i> Somerset Record Office
<i>P.R.O.</i> Public Record Office	<i>W.R.O.</i> Wiltshire Record Office
<i>P.S.W.H.</i> Poole And South Western Herald	

### Bibliography

- 'B.' (Prince, H.J.), 1877 *The Way to God; The Windows of Heaven; and the Gate into Glory* 2nd edition (Bridgwater)
- 'B.' (Prince, H.J.), 1888 *Leaves from the Tree of Life III: A Hook in the Nose of Leviathan* 5th edition
- 'B.' (Prince, H.J.), 1895 'A Little Letter to J—'
- Bebbington, D.W., 1989 *Evangelicalism in Modern Britain: A History from the 1730's to the 1980's*
- Bradley, I., 1976 *The Call to Seriousness*
- Carwardine, R.J., (1978) *Transatlantic Revivalism: Popular Evangelicalism in Britain and America 1790-1865* (Westport, Connecticut)
- Cross, F.L. and Livingstone, E.A., 1974 *The Oxford Dictionary of the Christian Church*
- Deck, J.G., 1845 *A Word of Warning: The heresy of Mr. Prince, with extracts from his letters.*
- Dixon, W.H., 1868 *Spiritual Wives*
- Dukes, E.J., 1908 Agapemone in; J.Hastings (ed) *Encyclopedia of Religion and Ethics*, 175-177
- Dunton, H.I.B., 1984 *The Millerite Adventists and Other Millenarian Groups in Great Britain, 1830-1860* Unpublished Ph.D. Thesis, University of London
- Everitt, A., 1972 *Patterns of Rural Dissent in the Nineteenth Century* (Leicester)
- Forston, 1846 *Report of the Visiting Justices and Medical Officer of the County Lunatic Asylum, Forston, Dorset, Epiphany Session 1846* (Dorchester)
- Forston, 1847 *Report of the Visiting Justices and Medical Officer of the County Lunatic Asylum, Forston, Dorset, Epiphany Session 1847* (Dorchester)
- Gay, J., 1971 *The Geography of Religion in England*
- Harrison, J.F.C., 1979 *The Second Coming: Popular Millenarianism 1780-1850*
- Jones, O.W., 1970 'Prince and the Lampeter Brethren' *Trivium*, 10-20.
- Kelly 1848 *Post Office Directory of Dorset, etc.*
- Lee, S., (Ed) 1892 *Dictionary of National Biography*
- Lewis, S., (1840) *A Topographical Dictionary of England* vol 1.
- Mander, C., 1976 *The Reverend Prince and His Abode of Love* (East Ardsley)
- McCormick, D., 1962 *Temple of Love*
- Moule, H.C.G., 1913 *Memories of a Vicarage*
- Pears, E.W., 1848 *A Sermon Preached at the funeral of the Rev. Octavius Piers, M.A. ...*
- Piers, O., 1846 *The Door not shut: or Three reasons for not believing Mr. Prince to be a true prophet.*
- Piers, O., 1844a *Baptismal Regeneration as taught in the liturgy of the Church of England, and contrasted with the word of God. A dialogue etc.* (Weymouth)
- Piers, O., 1844b *A letter of Remonstrance .... to the Bishop of Salisbury, with reference to certain circumstances which took place at the Confirmation held in the Parish Church of Melcombe-Regis* (Weymouth)
- Prince, H.J., 1842a *The Charlinch Revival; or, an account of the remarkable work of grace which has lately taken place at Charlinch, in Somersetshire* 1st edition
- Prince, H.J., 1842b *Strength in Jesus I: To perform duty*
- Prince, H.J. (1842d) *How you may know whether you do, or do not, believe in Jesus Christ*
- Prince, H.J., 1842c *How You May Know Whether You Do, Or Do Not, Believe In Jesus Christ*
- R.C.H.M. Royal Commission for Historical Monuments, 1976 *Inventory of Monuments in the County of Dorset: Volume Two South-East, Part 2*
- Rees, A.A., 1846 *The Rise and Progress of the Heresy of the Rev. H.J. Prince*
- Walvin, J., 1987 *Victorian Values*

# Excavations at Coburg Road and Weymouth Road, Fordington, Dorchester, 1988 and 1989

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## INTRODUCTION

Plans to relocate Dorchester Rugby Football Club to a new clubhouse and pitches at Coburg Road, centred on SY 678 899, and to redevelop the old Rugby Ground at Weymouth Road for the new stadium of Dorchester Town Football Club, centred on SY 686 891, were first proposed in 1987. Both areas of land, 4.08 hectares and 3.15 hectares respectively, are owned by the Duchy of Cornwall. Geophysical survey of both sites was undertaken in 1988 to assess the archaeological implications of these developments, the results of which are described in this report. Subsequently in July 1988 and Spring 1989 excavations and observations were undertaken in advance of construction at Coburg Road and Weymouth Road respectively (Fig. 1, W262 and W302) and the results of both these excavations are described in the following report.

## LOCATION, TOPOGRAPHY AND GEOLOGY

Both sites lie on the south-western outskirts of Dorchester between Maumbury Rings and Maiden Castle (Fig. 1), although the sites are now separated from the latter monument by the southern Dorchester By-pass (completed in autumn 1988). The area consists of a gentle, undulating landscape comprising a series of low ridges and dry valleys between Maiden Castle and the River Frome which drain into the South Winterborne river.

The Coburg Road site (Fig. 1, W262) lies on the gentle south-facing slope of one of these ridges. To the west and south,

dry valleys separate the site from the new by-pass road, no more than 250 m away. The north of the site lies close to the top of the ridge, around the 88 m contour, on fairly level ground, while to the south the slope falls away to the 77 m contour on the edge of a dry valley running from north-west to south-east. This dry valley continues south-eastwards and ultimately bisects Conygar Hill and the spur on which the Herrington Barrows are sited, before linking up with the valley of the South Winterborne.

The Weymouth Road site (Fig. 1, W302), lying between the A354 and the Dorchester–Weymouth railway, similarly lies on the northern edge of this dry valley, but also at the head of a secondary shallow combe cutting into the ridge to the south of Maumbury Rings. The site is generally flat, around the 60 m contour, with a very slight rise to the north.

Both sites lie on deposits of Upper Chalk. At Coburg Road this deposit was only sealed in the extreme north-west corner by a mid-brown clay-with-flints deposit and to the extreme south by an inconsistent deposit of chalky colluvium associated with the dry valley (Fig. 2). A number of irregular solution and periglacial features were noted throughout the excavation area but predominantly on the margins of the clay-with-flints deposit. Otherwise the chalk surface was severely striated by modern ploughmarks.

Corresponding to the Weymouth Road site's topographic position at the head of a shallow combe much of the Chalk bedrock was sealed by deposits of a colluvium consisting of a flint gravel. Where exposed, the chalk surface was generally scoured and pitted by solution and periglacial features.



Plate 1: The north of the Coburg Road site during excavation, looking west, ring-ditch 4 is in the foreground.

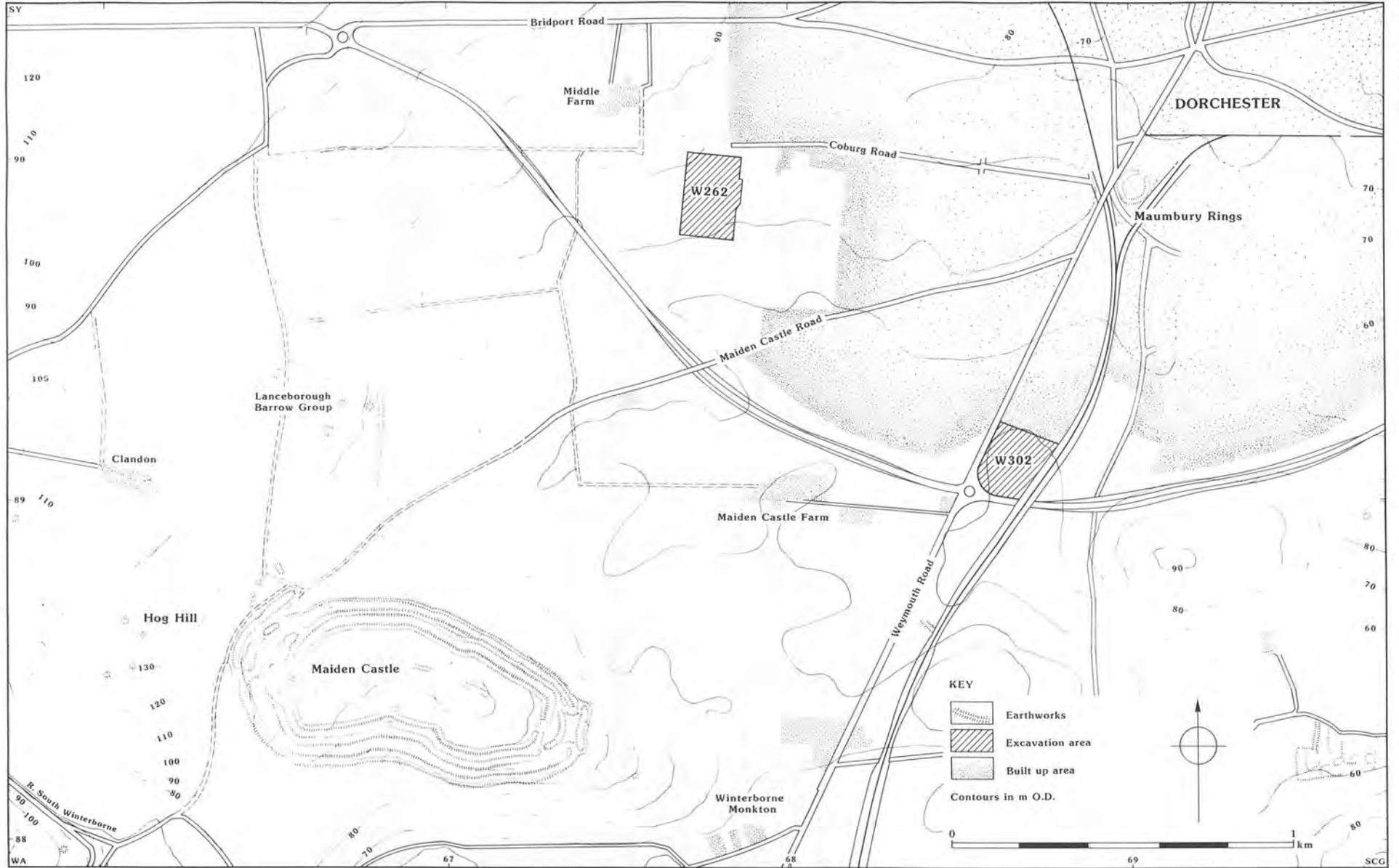


Figure 1. Location of Coburg Road (W262) and Weymouth Road (W302).

## PREVIOUS ARCHAEOLOGICAL HISTORY

Both sites lie in the Parish of Fordington, within the open fields of the Manor of Fordington (Sharples 1991, fig. 11), until enclosure in 1874. The orientation of the new rugby ground at Coburg Road has been determined by the advance of the suburbs of Dorchester, especially with the construction of the West Dorset Leisure Centre and school playing fields to the east of the site (Fig. 2).

At Weymouth Road the site is bounded to the west by the A354 trunk road, which is presumed to reflect the line of the Roman Road from *Durnovaria* to Radipole (Weymouth) (RCHM(E) 1970, 540), while to the east the Weymouth railway line constructed in the 1850s has ensured that the site survives only as a narrow strip between road and railway (Fig. 1).

Both sites lie in a landscape dominated by the well-known monument of Maiden Castle, clearly visible from both, and to a lesser extent by the Neolithic henge monument of Maumbury Rings, now hidden from view of the two sites by buildings on the outskirts of modern Dorchester. Other prehistoric earthworks survive, predominantly the Bronze Age barrows at Lanceborough (RCHM(E) 1970, 465) but also a low, north-south bank and ditch to the east of them (RCHM(E) 1970, 519; Green 1986, 193; Fig. 1).

This landscape has recently been subjected to intensive survey and excavation; much of the work being instigated and undertaken as a result of the proposed route of the Dorchester By-pass. Some density of archaeological features was already suggested by recorded soilmarks east of the Lanceborough Barrow Group (RCHM(E) 1970, 494). The density of recorded features was increased in 1981 when further soilmarks were recorded as a result of a report for the Dorset Archaeological Committee on the archaeological implications of the Dorchester By-pass (Wells 1981). This was further expanded in 1985 for the Maiden Castle Landscape Survey with plotting and recording of soilmarks from aerial photographs (Sharples 1991, fig. 12). This survey identified a series of soilmarks within the Coburg Road site. These consisted of four ring-ditches centred on SY 6780 8995 alongside a number of linear, north-south soilmarks and a broad, approximately east-west mark south of the ring-ditches. No soil- or cropmarks were recorded at Weymouth Road prior to construction.

Fieldwalking was also undertaken as part of both the 1981 and 1985 surveys although in both cases the Coburg Road and Weymouth Road areas lay immediately adjacent to, but outside, the survey areas. A considerable quantity of lithic material was recovered south of the Bridport Road and north of Middle Farm (Fig. 1), suggesting that this area was considerably exploited for the procurement of flint from the Early Neolithic onwards (Woodward 1991). It was not possible during the present excavations to undertake systematic sampling of the ploughsoil at Coburg Road although some 'casual' finds were collected during topsoil stripping. The Weymouth Road site had been partially disturbed during construction of the Dorchester By-pass and it was presumed that some level of landscaping or soil disturbance had taken place to create the present rugby pitches, although again some 'casual' finds were collected during earthmoving operations. It is noteworthy that the 1985 fieldwalking survey had revealed a low level of artefactual material for the area immediately south of the Weymouth Road site.

During 1986 and 1987 trial excavations, area excavations and observations were undertaken along the route of the Dorchester By-pass, (Woodward and Smith 1987) (Fig. 1). A series of sites from Bronze Age to medieval in date was recorded and excavated, most notably a Middle Bronze Age enclosure south-west of Middle Farm (SY 6730 8990) and the east end (SY 6765 8945) of an extended Romano-British settlement along the ridge to the east of the Lanceborough barrow group. Both these sites are separated from Coburg Road to the east and north respectively by dry valleys. Observations during road construction to the south of Weymouth Road had identified only occasional and isolated features throughout the route to the north

and east of Maiden Castle Farm (SY 680 892 and SY 692 890) (Woodward and Smith 1987, 86). These features were predominantly natural disturbances or were medieval in date.

## GEOPHYSICAL SURVEY

Geophysical survey of the two proposed development areas was undertaken in February 1988. An area of 18,000 m<sup>2</sup>, centrally placed within the proposed development, was surveyed at Weymouth Road, while an area of 68,400 m<sup>2</sup> was surveyed on a 120 m wide strip between Coburg Road and Maiden Castle Road (SY 6790 9002 to SY 6785 8946) (Fig. 1). Ultimately, however, this strip remained outside the finalised development area but the results can clearly be related to those recovered from the observations and excavations immediately to the west (Fig. 2). The survey was located by means of a 30 m grid and was carried out using a Geoscan fluxgate magnetometer, with readings recorded at 1 m intervals along traverses at 1 m separation within each 30 m square. The detailed survey report is held in archive.

### Coburg Road

The geophysical survey (Fig. 2) confirmed the existence of the easternmost ring-ditch, identified as a soilmark, and suggests a possible fifth ring-ditch to the north-east. The broad soilmark south of the ring-ditches was shown by geophysical survey to continue to the north-east. A number of other linear features may be associated with it, including a subrectangular enclosure centred on SY 6793 8995. Some of the magnetic anomalies clearly represent recent or modern field boundaries. Areas of localised anomalies occurred throughout the area suggesting possible areas of pits or settlement features, predominantly in the north-east of the surveyed area.

### Weymouth Road

The geophysical survey suggested considerable modern interference to the site. A former field boundary, indicated on OS 1:2,500 National Grid Plan SY 6889 (1976), was identified but otherwise, given the disturbed state of the site, no firm predictions could be made except that some of the magnetic anomalies might represent pits or ditches.

## LAYOUT OF THIS REPORT

The results of the excavations at the two sites are described below in the order in which they took place. The descriptions of each excavation and of excavated archaeological features is described for each site first, followed by the finds and environmental reports from Coburg Road only. Few finds were recovered from the excavations at Weymouth Road, most of these being of recent date, and these are recorded where appropriate within the site description.

Each excavation was allocated a unique Trust for Wessex Archaeology (TWA) archive reference, W262 Coburg Road and W302 Weymouth Road, although the number series within each excavation is not mutually exclusive. All number references within this report are those used within the primary archive, but to avoid any concurrence of numbers between the two excavations, all Weymouth Road contexts used in this report are prefixed by W302.

The original site records, all the original archival material and the finds from both excavations will be deposited in Dorset County Museum; all are currently held by the TWA in Salisbury. Microfiche copies of these records and archive have been prepared for the National Monuments Record and TWA.

## EXCAVATIONS AND OBSERVATIONS AT COBURG ROAD

### The Excavation

The development involved the construction of three rugby pitches, a clubhouse, car parking facilities and a new access road from Coburg Road. This involved the levelling of the natural slope into two unequal terraces with a total cut of 17,600 m<sup>2</sup> (43%) of the area and fill of the remainder.

All 4.08 ha were stripped of topsoil prior to bulk earthworks. Stripping was undertaken using a Poclain excavator with toothless bucket and Volvo dump trucks. Topsoil, on average 0.25 m in depth, was machined directly to the top of the subsoil, i.e. Chalk bedrock, except for the areas of clay-with-flints and colluvium, which remained unstripped, and was temporarily stored adjacent and to the east of the site. The topsoil consisted of brown rendzinas (Andover Soils) which occur where erosion and subsequent mixing of topsoil with underlying chalk has been most intense (Staines 1991). This material was ultimately relaid on the new football pitches. During these operations the Volvo dump trucks crossed the stripped areas of the site to avoid compaction and damage to topsoil on the unstripped areas. It was possible to ensure that these 'running' areas were either recorded first or were devoid of archaeological deposits and consequently it can be assumed that few archaeological deposits in these areas were not observed. All further excavation was undertaken by hand with the exception of three machine-cut trenches across the linear

boundary ditch to the south of the ring-ditches.

The bulk earthworks were undertaken after the completion of topsoil stripping and were carried out by box scrapers. Archaeological excavation was undertaken during a four week period in July 1988. This work was undertaken during topsoil stripping and only minimal observations were undertaken during the initial bulk earthworks.

**The aims of the excavation**

1. to record and plan all archaeological deposits within the topsoil strip area (4.08 hectares),
2. to undertake selective excavation of archaeological deposits on a sampling basis within the cut area (1.76 ha),
3. to excavate those archaeological deposits outside the cut areas that might be critical for the archaeological understanding of the site,
4. to place an emphasis on identifying and dating structures and settlement features.

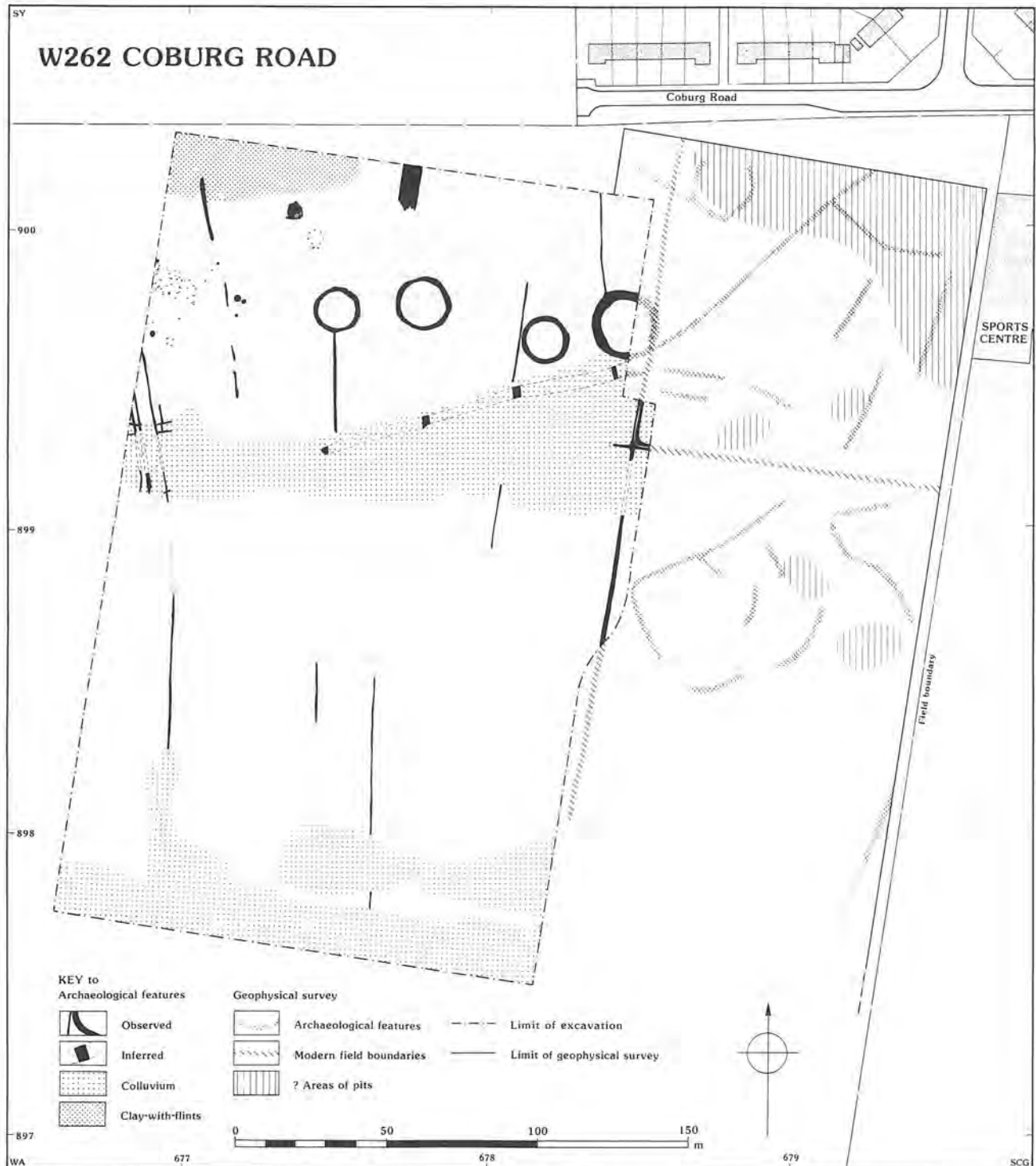
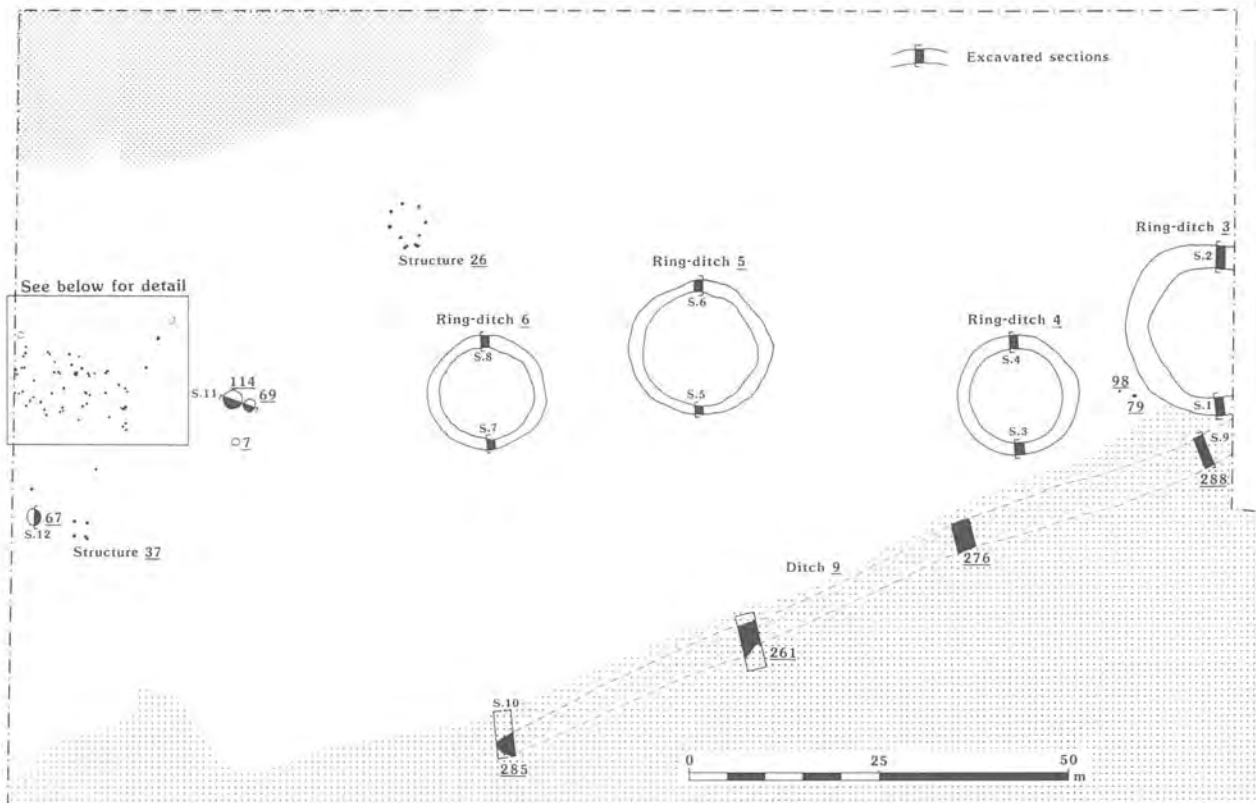


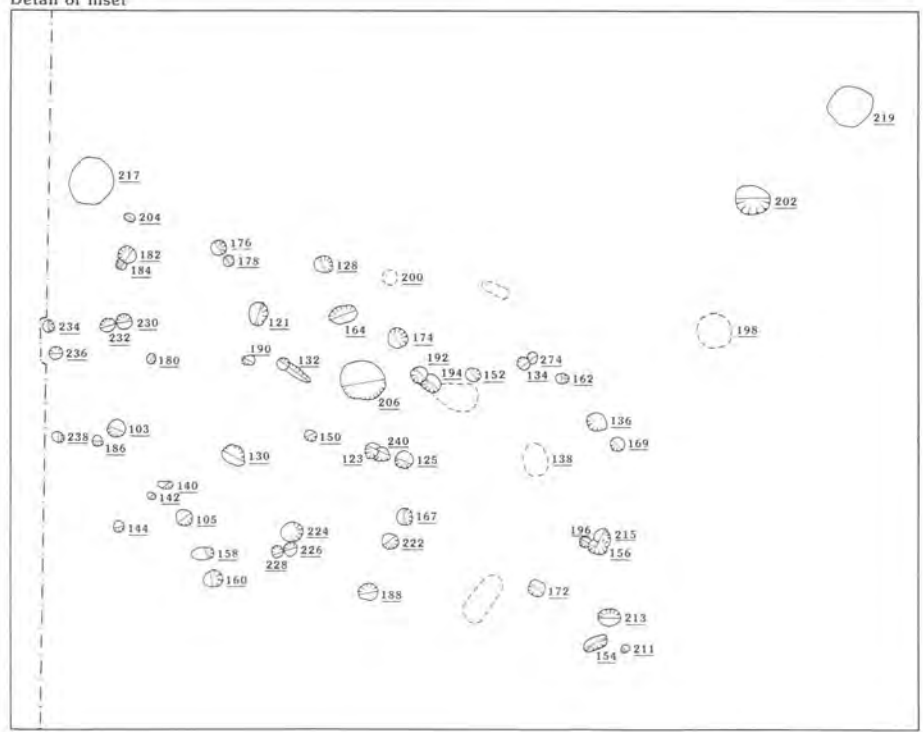
Figure 2. Coburg Road: All features and geophysical survey results.

# W262 COBURG ROAD Bronze Age Features



See below for detail

## Detail of inset



WA

SCG

Figure 3 Coburg Road: Bronze Age features.

**Stratigraphy, dating and phasing**

The majority of archaeological deposits, with the exception of some linear features, were within the northern area of the site (Fig. 2). Archaeological deposits, excepting the colluvial deposits, consisted solely of discrete Chalk cut features. The majority of features were therefore readily recognisable except in areas adjacent to the clay-with-flints deposit where the density of 'solution' features was such that there was some doubt as to the nature of potential features. In the time available it was not possible to examine all doubtful features and excavation was concentrated on those clearly or probably of an archaeological origin. (It is only these features that are included on the following site plans).

There were few stratigraphic relationships between features; this comprised only four recognised relationships between ditches, and eight between post-holes. All recorded post-holes were half-excavated; 11 pits were identified of which seven were half-excavated. The remainder were only partially excavated. Two cremation pits were fully-excavated and sieved. A full profile was obtained across the four ring-ditches, although less than 5% of each ring-ditch was excavated, while a 1 m section was excavated across each of the remaining linear features.

The dating of excavated deposits was based on ceramic evidence and the association of archaeological features. Ceramic material recovered from the excavation dates from the Middle and Late Bronze Age, and the Romano-British and post-medieval periods. No other material category

could be assigned a date outside these periods with the exception of an oblique arrowhead of Late Neolithic–Early Bronze Age date and a late medieval copper alloy nail.

The excavated features represented on the site can be summarised as follows:

- Phase 1. Early–Middle Bronze Age ring-ditches and cremations.
- 2. Bronze Age linear boundary ditch.
- 3. Late Bronze Age settlement features.
- 4. Roman sunken-featured structure.
- 5. Medieval field boundaries.
- 6. Recent or modern features.

**Phase 1. The Ring-ditches and cremations**

The four ring-ditches, recorded as soilmarks on air photographs, were identified towards the north-east of the excavation area (Fig. 3). Three of the four ring-ditches, (4, 5 and 6), were entirely stripped while the most eastern ring, (3), was only half-stripped; the remaining portion lying outside the excavation area. The geophysical survey suggested that this feature also probably forms a complete circle (Fig. 2). A possible fifth ring-ditch is also suggested 50 m to the north-east of ring-ditch 3 by the geophysical survey.

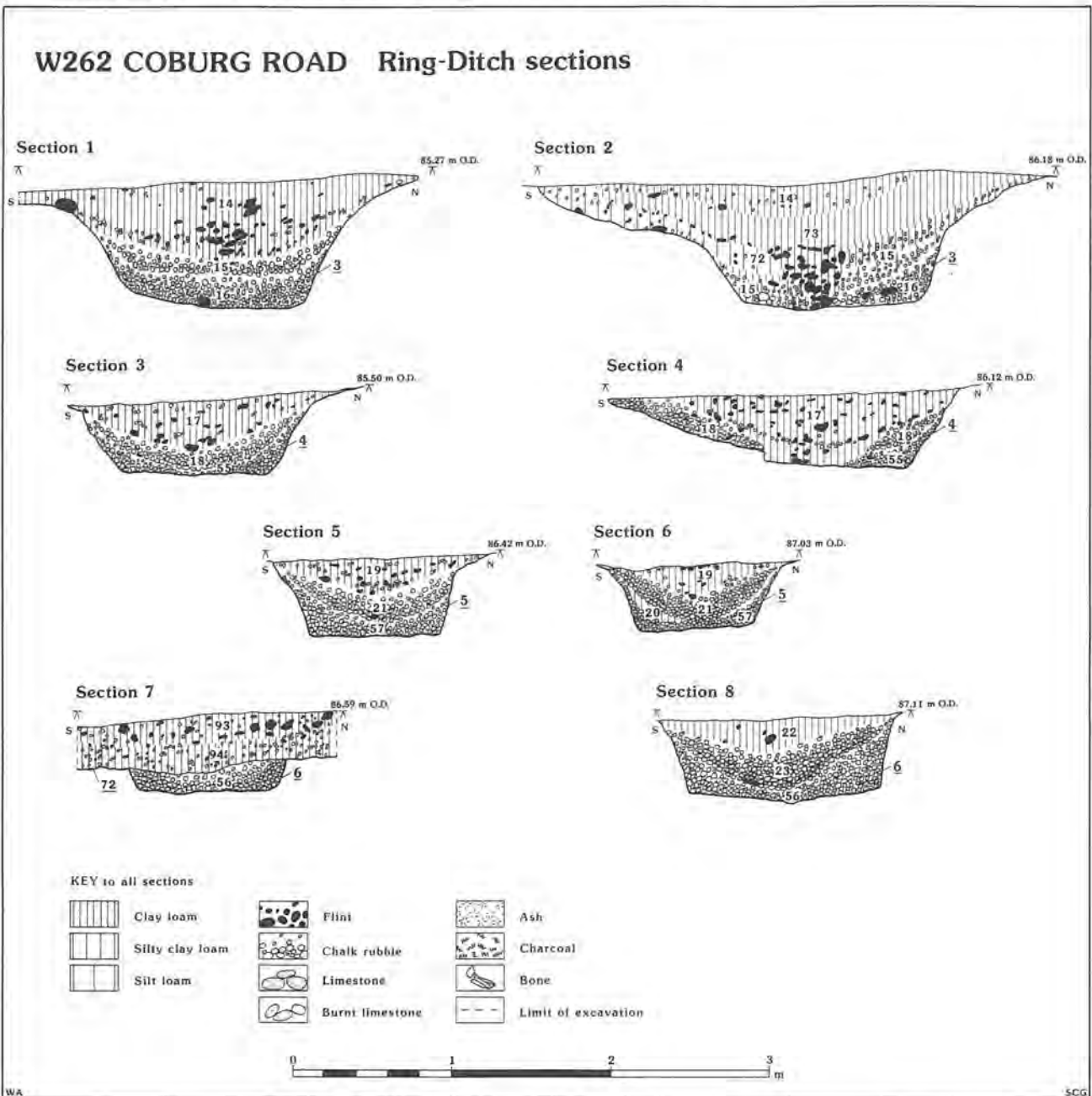


Figure 4. Coburg Road: Ring-ditch sections.

The four ring-ditches form a linear, east-west alignment, over a distance of c. 120 m; all situated around the 86 m contour. They were no more than 25 m apart. Their diameters and depths are provided below (Table 1). Two sections, to the north and south of each ring-ditch, were excavated (Fig. 4) and the profiles and infilling of each ring were seen to be broadly similar. (The north section of ring-ditch 4, Fig. 4, Section 4, was probably under-excavated). The basal fills of all the ring-ditches consisted of compacted, abraded chalk rubble interspersed with lenses of silty loam. These deposits were sealed below deposits of flinty clay loams.

The well-defined profiles of the ring-ditches suggested that the basal chalk rubble fills may have partly derived from a chalk mound, but otherwise there was no clear evidence for internal or external chalk earthworks. The interiors of all four ring-ditches were examined for associated features. None were identified with the exception of irregular 'root' disturbances within rings 3 and 4 (not shown on Fig. 3).

Table 1: The ring-ditches

	Diameter		Maximum Width of Ditch	Maximum Depth of Ditch
	External	Internal		
Ring-ditch 3	22.0m	17.0m	2.3m	0.80m
Ring-ditch 4	15.5m	12.0m	2.0m	0.45m
Ring-ditch 5	17.5m	15.0m	1.2m	0.50m
Ring-ditch 6	15.0m	12.0m	1.6m	0.47m

Only small quantities of finds were recovered from the ditch sections. The only datable finds consisted of one very small sherd (<1g) of possible Romano-British pottery from the basal chalk fills of ring-ditch 5; two sherds, one possibly Romano-British, the other indeterminate, from the upper soil fills of ring-ditch 5 and two from the upper soil fills of ring-ditch 3, one Romano-British (BBI) and the other post-medieval.

Situated between ring-ditches 3 and 4 were two shallow pits, 3.5 m apart, containing cremations (Fig. 3). Pit 79 was subrectangular in plan, at most 0.6 m long and less than 0.2 m deep. Pit 98 was more circular, 0.5 m in diameter, but similarly less than 0.2 m in depth. Cremation 5300 from pit 79 consisted of an adult of undetermined sex. The cremated bone was accompanied by fragments of a single vessel of Middle Bronze Age date (Fig. 14.1). Both cremated bone and pottery were evenly distributed within the pit fill. Cremation 5301 from pit 98 consisted of an adult of undetermined sex; no other material was recovered. In both cases the cremations had suffered considerable disturbance. Only 20–25% of the amount of bone one would expect from a complete adult cremation was present.

**Phase 2. Linear boundary ditch 9**

The linear soilmark recorded on air photographs to the south of the ring-ditches was initially identified as a broad colluvial deposit running east-west across the excavation area (Fig. 2), becoming increasingly broader towards the east. This colluvium filled a shallow terrace cut into the gentle south-facing slope.

A hand-excavated section, 288, (Fig. 5; Section 9; Table 2) was cut through the colluvium south of ring-ditch 3 (Fig. 3) and indicated that the northern fringes of this deposit sealed a substantial linear ditch, 9, aligned

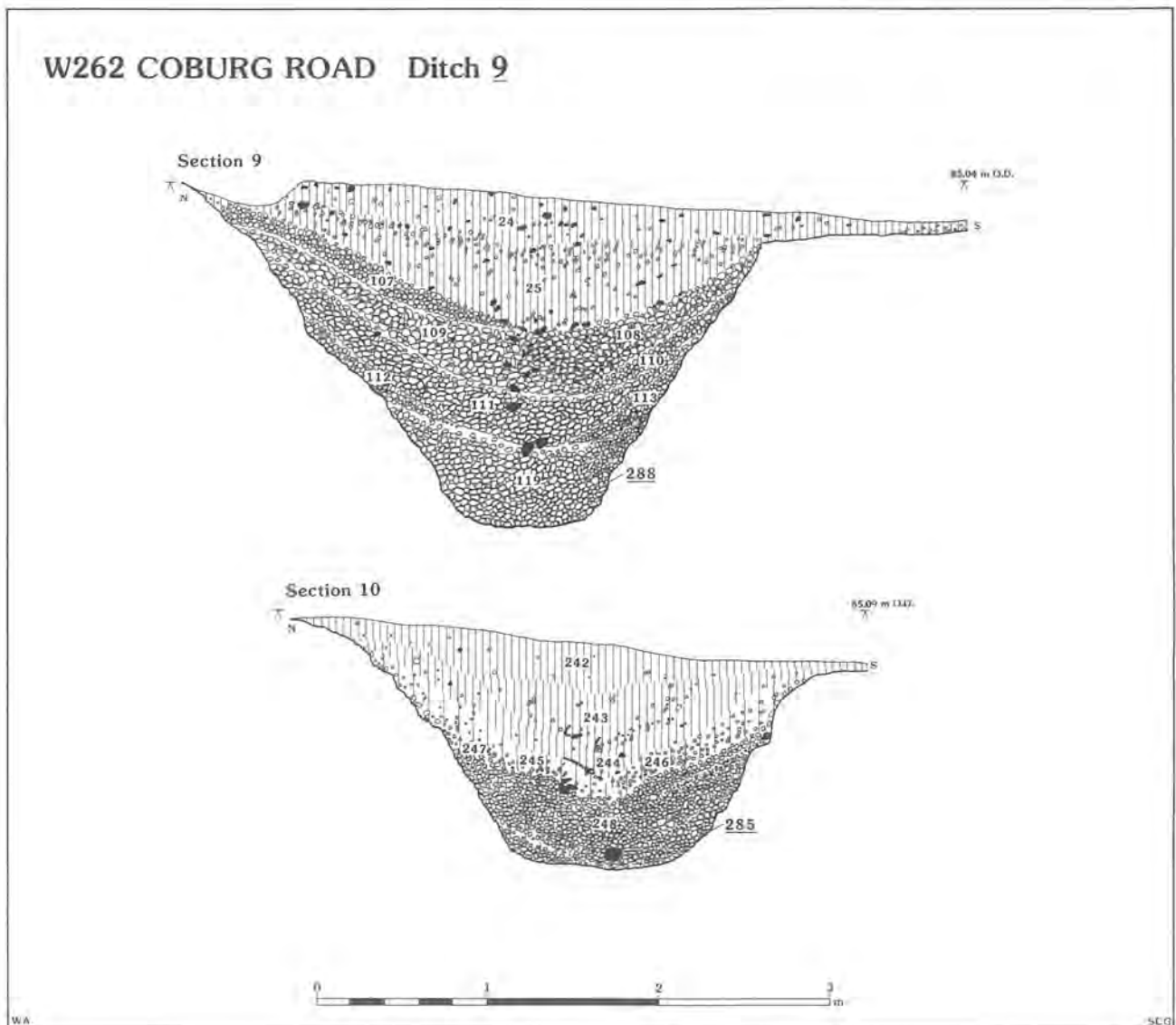


Figure 5. Coburg Road: Ditch 9 sections.

south-west–north-east. Three further trenches, 261, 276 and 285, were cut by machine, firstly through the colluvial deposits and then through the fills of ditch 9. The most western of these sections, 285, apparently identified a terminal to this feature; the colluvial deposit to the west of this section was sufficiently shallow and well-stripped to confirm that ditch 9 did not continue to the west. To the east, ditch 9 continued beyond the limits of the excavation and both air photographs and geophysical survey indicate that the feature continues to the north-east, changing to a slightly more northerly alignment (Fig. 2). Both these surveys also indicate the feature as a continuous, uninterrupted ditch, presumed but not proven to occur within the excavation area.

Table 2: Ditch 9

Section	Width at top	Width at base	Max. depth	Profile
288	3.20 m	0.70 m	1.60 m	steep-sided V
276	3.10 m	0.30 m	1.25 m	less steep V
261	3.30 m	0.70 m	1.30 m	U
285	3.00 m	0.90 m	1.05 m	broad U

Ditch 9 was on average 1.3 m deep and varied between a steep-sided V-profile towards the east to a more shallow U-profile towards the west of the feature (Fig. 5; Table 2). The terminal at 285 was regular and rounded in shape (Fig. 5; Section 10). The plan of the ditch in section 261 appeared to consist of two conjoining rounded terminals suggesting that the ditch had not been constructed as a single continuous feature, but may at least at this point consist of shorter conjoining lengths.

The sequence of deposits within the ditch was broadly similar in all four excavated sections (Fig. 5); slight differences occurring as a result of the varying ditch profile. The lowest fills consisted of loose vacuous chalk rubbles lining the lowest 0.45 m of the ditch. These deposits probably derived from the rapid erosion of the upper edges but otherwise was not a deliberate infill. A single sherd (1 g) of pottery in a mica-rich fabric of indeterminate date was recovered from these fills in section 288.

These deposits were sealed below further fills of chalk rubble but increasingly with a greater soil content. In some sections these later chalky fills were separated by clearly defined lenses of light grey-brown silty loams. The chalk rubble fills generally tipped into the ditch equally from north and south, but perhaps slightly more pronounced from the north as might be expected from upslope of the ditch. Otherwise they can be presumed to derive from a more gradual erosion of the ditch edges and bank material from north and south of the feature. Finds from these fills included a flint scraper (Fig. 13, 2) from 285, a single sherd (2 g) of possibly Romano-British pottery from 261 and a sherd (3 g) of undetermined date from 288.

In all four excavated sections the chalk fills were sealed by a series of chalky light grey-brown clayey loams. These fills included quantities of flint (Fig. 13, 3–6) and a possible quartz pebble hammerstone, and a sherd (4 g) of Late Bronze Age pottery from 288.

### Phase 3. Settlement features

#### Post-ring 26 (Fig. 6)

Post-ring 26 was 15 m to the north-west of ring-ditch 6, around the 87 m contour (Fig. 3). This circular structure, with an internal diameter of 4.5 m, consisted of a ring of seven post-holes set at regular 2 m intervals. The post-holes were on average 0.38 m in diameter, ranging between 0.3–0.51 m, and 0.35 m deep, ranging between 0.31–0.41 m. The post-hole profiles were all similar with deep U- or steep-sided V-profiles. Two double post-holes to the south of the structure, with shallower profiles than the post-ring, may define an entrance. The post-holes of the post-ring were filled with light grey brown clayey loams with some flint nodules suggesting packing stones set around posts, although in no case did the packing survive *in situ* or were the nature or dimensions of posts discerned. There was no central post-setting within the structure or any other surviving internal or external features. Similarly the structure showed no evidence for replacement or modification with the exception of the possibly replaced posts of the southern entrance. Material from the fills of the post-holes consisted solely of two pieces of flint from post-holes 33 and 34 and a single sherd (3 g) of possibly Romano-British pottery from post-hole 34.

#### Post-rings 300, 301, 302 and 303

A series of post-hole features was identified 50 m to the west of ring-ditch 6, around the 87 m contour (Fig. 3). With the exception of two isolated post-holes and the four-post structure 37 to the south and excepting pits,

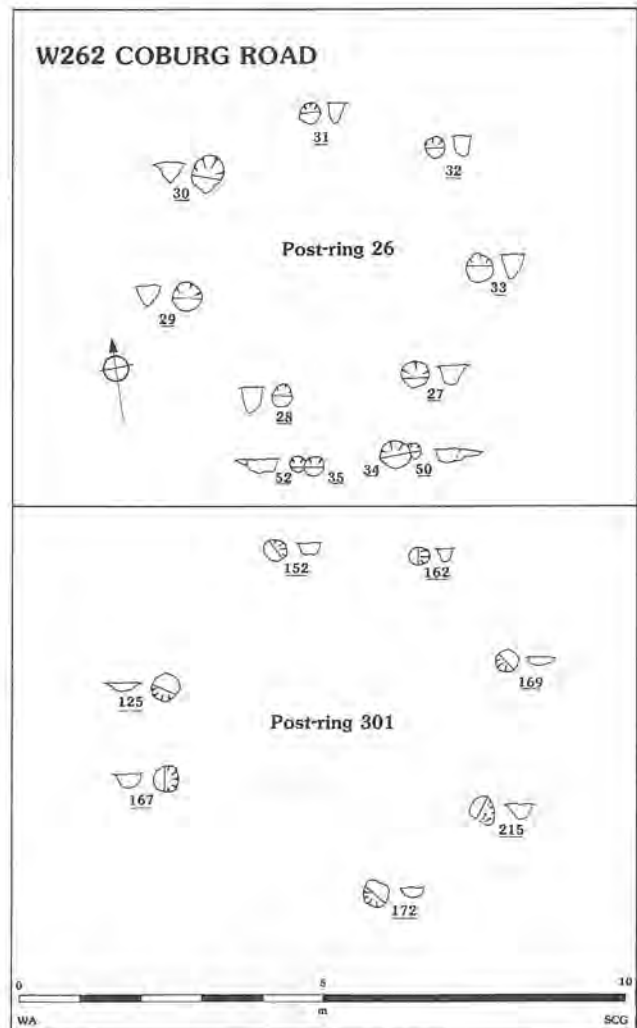


Figure 6. Coburg Road: Post-rings 26 and 301.

these post-holes were neatly confined to a discrete area of 180 m<sup>2</sup> on the western edge of the excavation. The western limit of this post-hole group lay beyond the excavation area.

A total of 54 post-holes, possible post-holes and pits was identified and recorded (Fig. 3, inset, excluding pits 217, 198, 202 and 219). On excavation the majority of these features were shown to consist of well-constructed post-holes (on average 0.22 m deep for all possible post-hole features), 60% of which contained evidence for flint packing stones around timber posts, and it is reasonable to assume these features represent the remnants of circular post-rings. Given the compatibility of diameter, depth, profile and spacing of the post-holes of the undated circular post-ring 26 to the north-east, a tentative reconstruction of other post-rings can be made from this group of features (Fig. 9). However the absence of contemporary levels associated with this post-hole group and of stratigraphic relationships between post-holes, allied to the small quantities of finds recovered from their fills, allows no clear chronological sequence to be discerned.

**Post-ring 301** (Fig. 6): 5.5 m in diameter, consisted of seven post-holes set at slightly irregular intervals, on average 2 m apart. The post-holes were on average 0.42 m in diameter (range of 0.3–0.5 m) and 0.19 m deep (0.13–0.25 m) (Fig. 9) with generally irregular and variable profiles. There was no evidence for an entrance although the extended break to the south-east, between post-holes 167 and 172, may be associated with an entrance where shallower post-holes may not have survived. All the post-holes, with the exception of 162, contained flint packing material. Material recovered from the post-holes consisted solely of one sherd (1 g) of post-medieval pottery and a fragment of copper alloy lace tag from post-hole 162.

**Post-ring 300** (Fig. 7): Post-ring 300 consisted of a ring of six post-holes comprising 85% of a circle. The post-ring had an internal diameter of 5.5 m. The post-holes were generally set 2.5 m apart and averaged 0.34 m

in diameter (0.27–0.52 m) and 0.24 m deep (0.12 m–0.39 m) (Fig. 9). The post-holes were deep U-profiled with the exception of the shallower post-holes to the south-east (160, 226 and 228) which may define an entrance to the post-ring. The majority were filled with clayey loam soils notably absent of possible flint packing material, with the exception of post-holes 150 and 160. The only material recovered from this post-ring was one sherd (2 g) of pottery of Late Bronze Age fabric from post-hole 144.

**Post-ring 302** (Fig.7): This post-ring consisted of seven post-holes comprising c. 80% of a circle with an internal diameter of 6 m. The post-holes averaged 0.45 m in diameter (0.35–0.51 m) and 0.36 m deep (0.3–0.46 m) (Fig. 9), and were generally deep U-profiled and set 2.5 m apart. A post-hole of comparable size and profile, 188, to the south-west of the post-ring may be associated and possibly defines the west side of an entrance to the structure. Flint packing stones were present without exception in all post-holes, although no clear post-pipes survived. Material recovered from the post-holes consisted of a single sherd of Late Bronze Age pottery in each of post-holes 123 and 134; an inverted rim of Black Burnished ware from 194 and a sherd of indeterminate date and fragment of cow or horse bone from 136.

**Post-ring 303** (Fig.8): This post-ring comprised a complete circle of eight post-holes set c. 3 m apart, with an internal diameter of 7.5 m. The post-holes averaged 0.49 m in diameter (0.44–0.56 m) and 0.27 m in depth (0.23–0.34 m) (Fig. 9) and were U-profiled. There was no suggestion of an entrance. With the exception of post-hole 174 flint packing material was present in every post-hole. Material recovered from the post-holes included a substantial quantity (339 g) of Late Bronze Age pottery from post-hole 103, including fragments of a large vessel with an intumed T-shaped rim and a finger impressed cordon (Fig. 14, 2). Also recovered from post-hole 103 was a fragment of possible fired-clay weight. One sherd of flint tempered pottery of undetermined date was

recovered from post-hole 105 and two more from 128.

**Other post-holes**

The four post-rings incorporated the majority of excavated and identified features within this discrete group of post-hole features. The remaining features lay adjacent to and outside them and may represent the remnants of other possible post-rings, or were situated within them where they may have served internal structural or non-structural functions.

Three post-holes, 196, 274 and 178, were positioned immediately adjacent to individual posts of rings 302 and 303 (Fig. 3). These three post-holes were less substantial than those comprising the main post-rings and can tentatively be suggested as representing replacement posts or perhaps additional or later modifications to the original rings.

Three pits, 206, 164 and 217, were identified within the immediate area of the post-rings (Fig. 9). Additionally three further features, 121, 130 and 138, can also be tentatively suggested as shallow, possibly non-structural, features. All three were of above average diameter and correspondingly much shallower in depth and profile in comparison with features clearly representing post-holes. Additionally none could be shown to include flint nodules suggesting packing stones. These features all occupied comparable off-centre positions within post-rings 300, 301 and 303 (Fig. 9). The absence of any material from their fills makes it difficult to suggest a possible function, though pit 206, may represent a storage pit within post-ring 303 (Fig. 9).

The remaining features within this post-hole group consist of a group of very shallow post-holes on the west edge of the excavation, south of pit 217 possibly representing the remnants of a fifth post-ring lying predominantly beyond the excavation area (Fig. 9); a small group of three varying post-holes, 213, 211 and 154, to the south-east of post-rings 301 and 302 (Fig. 3); and three narrow, shallow post-holes, 132, 140 and 142, within post-rings 300 and 303 (Fig. 3).

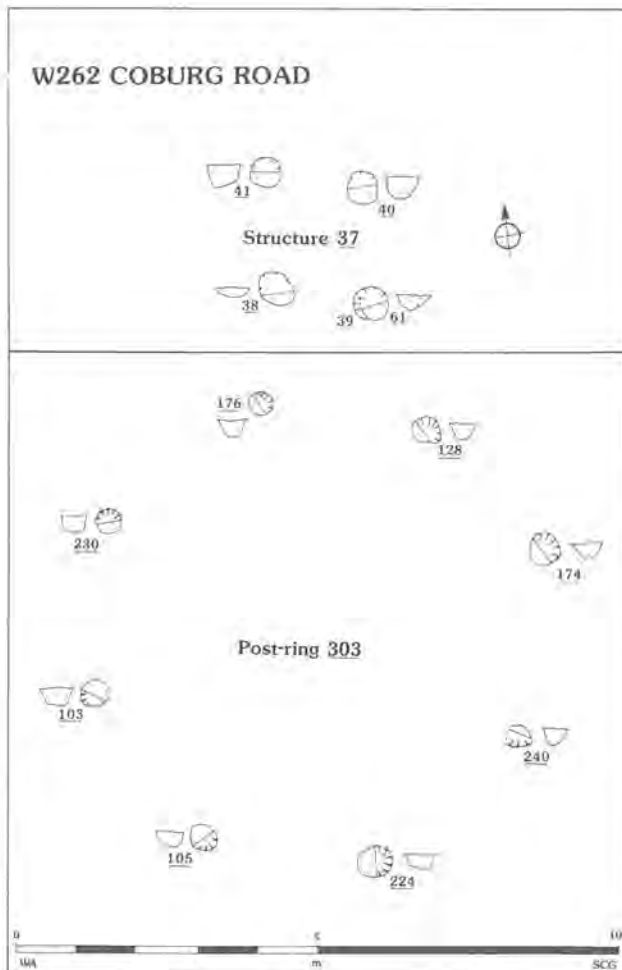


Figure 7. Coburg Road: Post-rings 300 and 302.

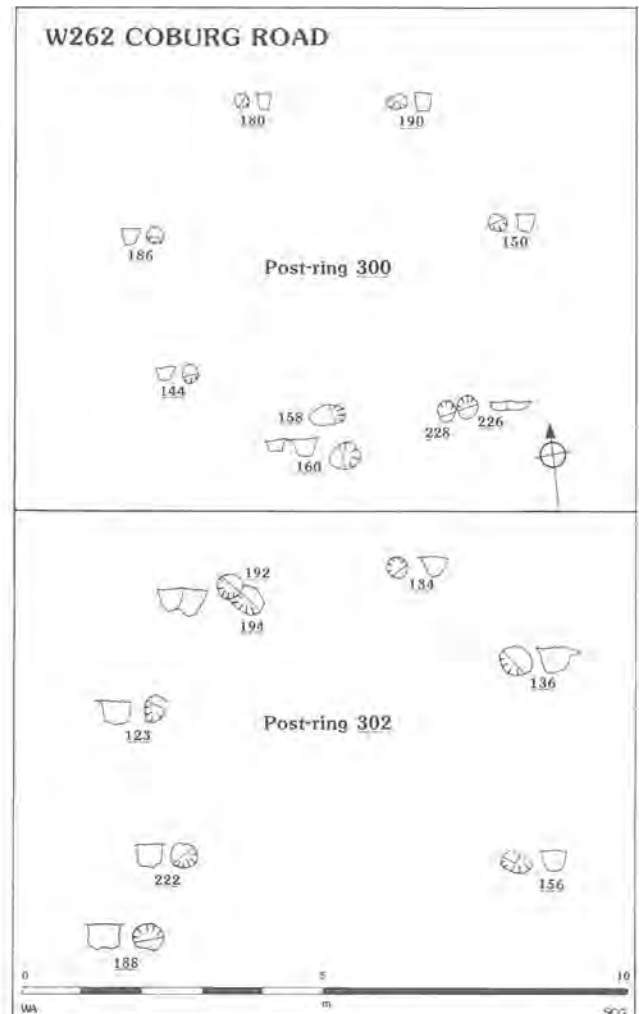


Figure 8. Coburg Road: Structure 37 and post-ring 303.

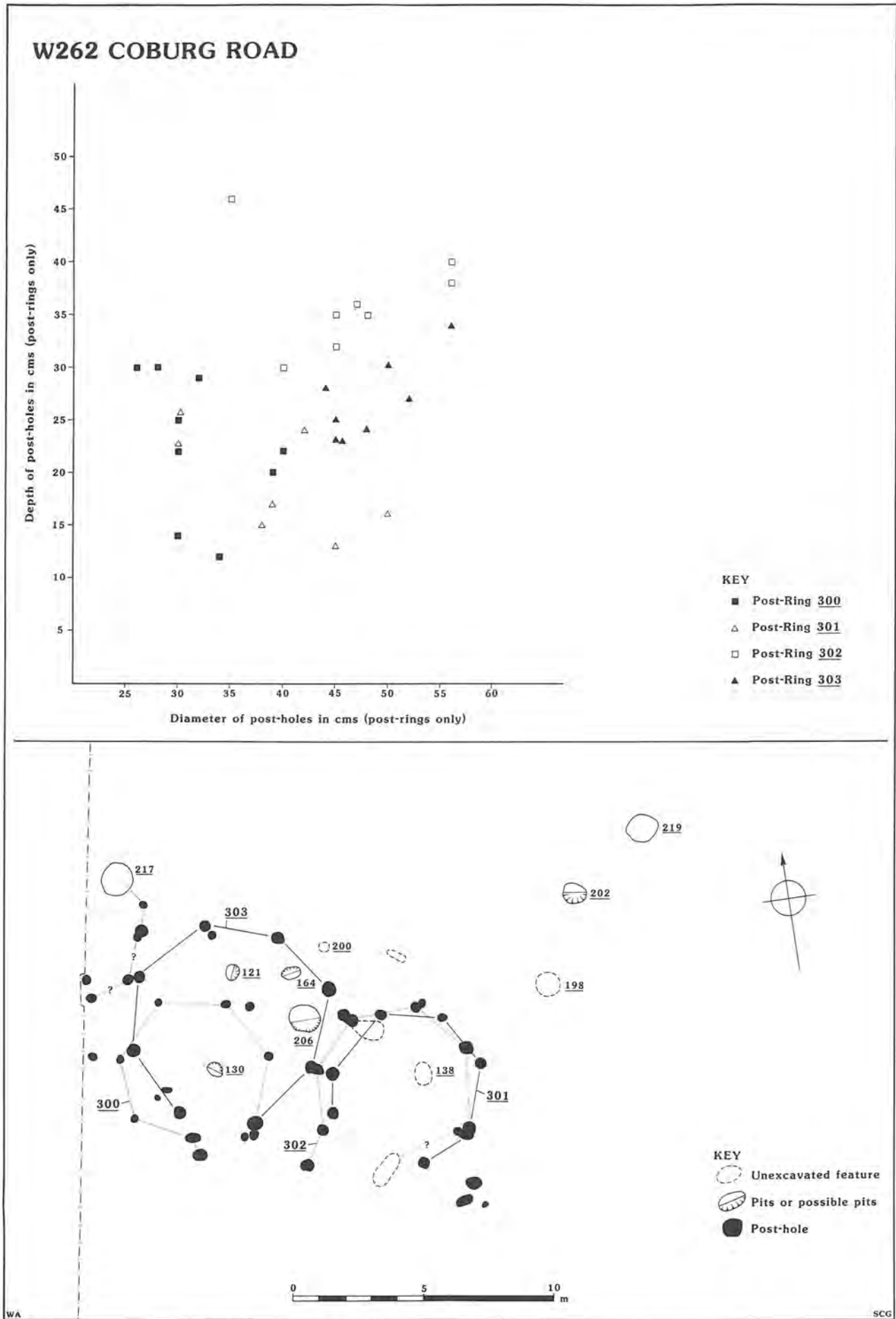


Figure 9. Coburg Road: Relationship of post-rings 300, 301, 302 and 303, with depth and diameter of post-holes.

### Discussion

From the above descriptions it is suggested that this discrete group of post-holes represents the remnants of at least four circular post-structures, with possibly a fifth lying predominantly beyond the west edge of the excavation (Fig. 9). These post-rings are assumed to represent the internal supports for roof timbers. While the precise chronological sequence cannot be discerned from the stratigraphic or material record, it is logical to infer two phases of building represented by the superimposition of post-rings. Each phase could therefore be represented by a pair of adjacent structures, perhaps 300 and 302 replaced by 301 and 303. In both cases there was apparently a preference for having the entrance to the south and slightly intumed towards each other. Some internal features are suggested, especially pit 206, possibly representing an internal storage pit. The post-rings do not appear to show much evidence for repair or modification over time; the structures possibly being replaced wholesale rather than suffering piecemeal repairs.

### Structure 37 (Fig. 8)

Four-post structure 37 was positioned 15 m south and marginally downslope of post-rings 300 and 301 (Fig. 3). The posts were set 2 m apart, but were positioned slightly off-square. They were generally 0.5 m in diameter, but of variable depth. The south-easternmost post-hole, 39, had been replaced or repaired by post-hole 61. The post-holes probably represent supports for a roof-structure. Finds from them consisted of small quantities of flint from 39, 40 and 41, including one core (Fig. 13,7), and burnt Limestone from 39 and 40.

### Pits

Eleven pits or possible pits were identified within or adjacent to the settlement structures described above and were partially excavated. Not all potential pits could be examined and correspondingly only those features examined by excavation or features positively of an archaeological origin are included in Figure 3.

Four pits were identified within or immediately adjacent to the settlement structures 300, 301, 302 and 303.

**Pit 206** (Fig. 11, Section 13): lay within post-ring 303 (Fig. 9) and possibly represented an internal storage pit, 1.25 m in diameter and 0.91 m deep, cylindrical with a flat base. The dark, relatively stone free, silty loamy fills contained Late Bronze Age pottery, including a plain rim sherd (Fig. 14,5), and a bone point.

**Pit 164** (Fig. 11, Section 14): also lay within post-ring 303 (Fig. 9) but was a shallow U-profiled feature, 0.96 m in diameter and 0.29 m deep. This contained pottery of Late Bronze Age date including a plain rim (Fig. 14,3) and 22 body sherds from a single vessel.

**Pit 217**: 1.20 m in diameter and 4 m north-west of post-rings 300 and 303 (Fig. 9), was not fully excavated. The upper fill contained Late Bronze Age pottery and one minute (<1g) piece of cinder or clinker.

**Feature 200**: immediately to the north of post-ring 303, comprised a very shallow (0.05 m deep) scoop or base of a shallow pit, 0.2 m in diameter; it contained Late Bronze Age pottery including one plain rim (Fig. 14,4).

The remaining seven pits were positioned 4–17 m from the post-hole group. Pits 198, 202 and 219 lay 3.5 m, 7 m and 10.5 m respectively to the north-east of post-rings 301 and 303 (Fig. 9). Both 198 and 202 were shallow and U-profiled, no more than 0.9 m in diameter and less than 0.1 m deep; only pit 202 contained any material - a single undated sherd in a quartz-rich fabric. Both features may represent the surviving bases of shallow pits. Pit 219, 1.2 m in diameter, was only partially excavated, although small quantities of Late Bronze Age pottery, burnt Limestone and a minute fragment of cinder or clinker were recovered.

Three pits, 7, 69 and 114, were 15 m to the east of post-rings 301 and 302 (Fig. 3).

**Pit 114** (Fig. 11, Section 11): was cylindrical, 2.6 m in diameter and 1.9 m deep. The basal fill consisted of a 0.1 m thick deposit of dense ash, which was sampled for carbonised plant remains and animal bone, along with the overlying dark loam fill. These deposits were sealed in the base of the pit by a thick deposit of loose Chalk rubble probably primarily derived from erosion of the upper edges of the feature but also possibly partly a result of deliberate backfilling. The upper fills of the pit consisted of a series of dark brown clay loams, containing few inclusions of chalk or flint. Late Bronze Age pottery was fairly evenly distributed throughout the pit fills (Fig. 14, 8–13). One bone point was also recovered from the base of the feature.

**Pit 69** (Fig. 11, Section 11): also cylindrical, was 2 m in diameter and 1.25 m deep. The fill was rather different to that of 114, consisting of layers of Chalk and flint rubble in the base of the feature, probably resulting from deliberate infilling, sealed by a shallow deposit of relatively stone-free clay loam which in turn lay below a further series of Chalk, flint and, in the upper portion of the pit, burnt Limestone rubble. These deposits were also probably a result of deliberate infilling. Late Bronze Age pottery was again recovered from throughout the pit fillings (Fig. 14, 14–18).

**Pit 7**: 1.4 m in diameter and subcircular in plan, was not fully excavated. Pottery from the upper fills included material of Late Bronze Age date (Fig. 14, 6 and 7) but also two small pieces of post-medieval date.

One further pit, 67 (Fig. 11, Section 12), was identified 14 m to the south of post-rings 300 and 303 (Fig. 3) and adjacent to the four-post structure 37. It was 2 m in diameter and 1.2 m in depth, had steep sloping sides and a slightly uneven base. A shallow deposit of dark clay loam lined the base of the pit and this was sealed by a substantial deposit of loose Chalk rubble, probably derived from erosion of the upper edges, and a layer of clay loam in the upper portion of the pit. A small quantity of Late Bronze Age pottery was recovered and one bone point.

### Phase 4. Sunken-featured structure 81

Feature 81, an apparently isolated structure 27 m to the north-west of ring-ditch 6 and only 7 m from circular post-structure 26, was subsquare in plan with sides of c. 5 m length (Fig. 10). The feature lay close to the southern extent of the clay-with-flints deposit where the proportion of irregular natural 'solution' type features was increased. The apparently irregular elements of the structure's unexcavated north and west edges may have resulted from intercutting with some of these features.

Only the south-eastern quadrant was excavated (Fig. 11, Section 15) and here consisted of a near-vertically sided, slightly undercut, sunken-feature. The structure survived to a maximum depth of 0.7 m and had a flat, even base, suggesting a worn floor surface. Two shallow internal post-holes, 277 and 279, were recorded towards the east and south edges of the building, although it was unclear if these represented structural supports, for example for a roof, or supports for internal features. Two possible stake-holes, 281 and 283, were also recorded on the southern external edge; their function was unclear.

The base of the feature had been infilled with flint rubble in a clay loam matrix. The flint rubble was concentrated around the inner edges of

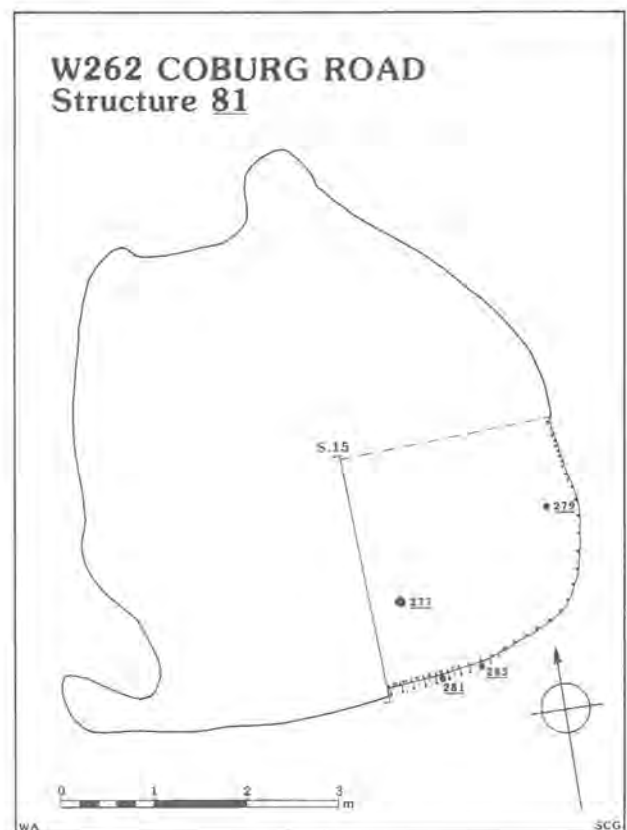
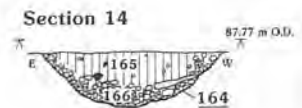
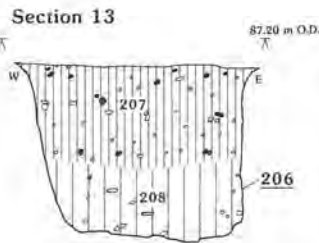
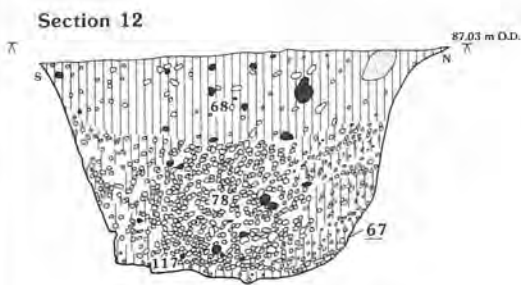
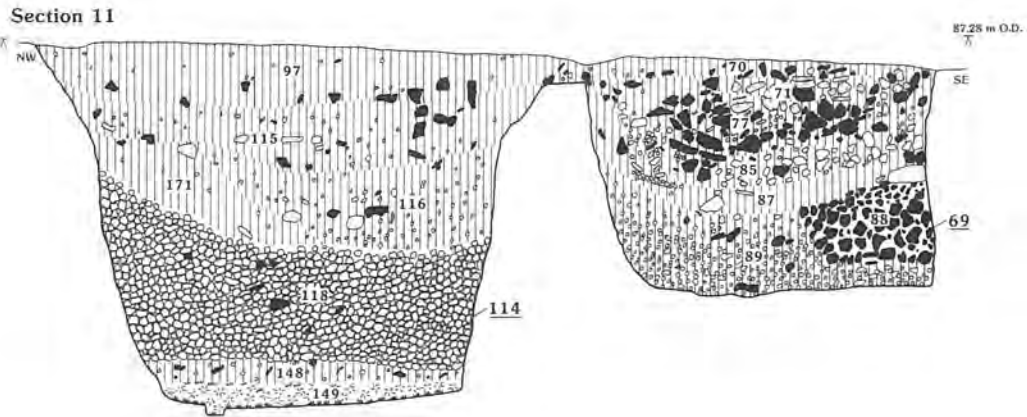
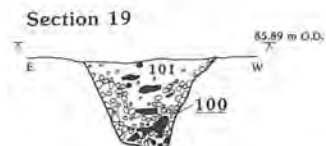
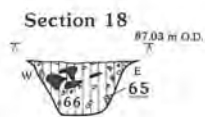
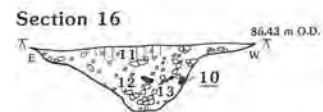
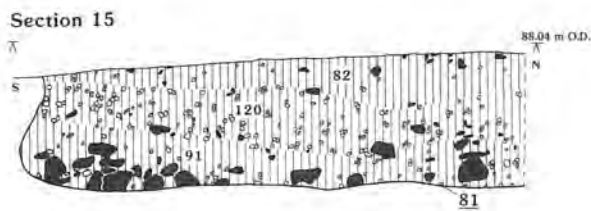


Figure 10. Coburg Road: Structure 81.

### W262 COBURG ROAD Pit sections



### Sections - Post Prehistoric Features



WA

SCG

Figure 11. Coburg Road: Sections of post-prehistoric features.

the structure, suggesting that it was derived from the collapse of unmortared dry-stone walls on the interior of the building. With the exception of flint, only two fragments of slate (1 g) were recovered from this deposit. The flint rubble was sealed below deposits of chalky clay loams. Small quantities of abraded Romano-British pottery, including a sherd of New Forest Ware were recovered from the upper fill, alongside small quantities of worked flint (Fig. 13,8 and 9).

**Phase 5. Linear field boundaries**

A series of linear field boundaries was recorded. These included eight aligned approximately north-south. These ditches, 10, 92, 74, 65, 90 and 100 (Fig. 12) and ditches 286 and 287 (unnumbered but included on Figure 2 in the central southern part of the excavation), appear to define a series of strips of irregular width. The features generally survived as uninterrupted lengths of ditch, although invariably their full original extent had been removed by later erosion. The exceptions to this were the southern and northern ends of ditches 10 and 92 respectively, which cut across the soil fills of ring-ditches 3 and 6 but otherwise terminated on the internal edges of these features. Ditch 74 consisted of a number of interrupted ditch segments and the well-formed and rounded terminal of one of these suggested that the ditch may have been intentionally constructed in this manner.

The alignment of all the ditches was broadly similar (Fig. 2), although those to the south of the colluvial deposit across the central part of the excavation were generally slightly more north-south. That this slight modification in alignment coincides with the colluvial deposit is suggested by ditch 65 (Fig. 2). A series of short east-west portions of

ditch also seem to occur at this point. The colluvium itself occupies a shallow east-west terrace in the gentle south-facing slope, although the northern extent of this deposit is perhaps over-exaggerated because of the presence of the linear boundary ditch, 9. It is therefore possible to suggest that this shallow terrace represents a headland or trackway between two alignments of strip fields.

All the ditches were steep-sided and flat-bottomed, at most 1 m wide and no more than 0.45 m deep (Fig. 11, Sections 16-19). They were all filled with chalky silty loams. Virtually no material was recovered for the excavated sections except for a flint flake from 10 and two cow bones and one sherd (9 g) of grog-tempered Bronze Age pottery from ditch 74, comparable in fabric to the vessel from the cremation pit 79 (Fig. 14, 1). The small proportion of the colluvial deposit excavated from the upper fills of ditch 9 (contexts 24 and 242, Fig. 5, Sections 9 and 10) produced two sherds of flint-tempered pottery of indeterminate date with small quantities of flint, other stone and animal bone.

**Phase 6. Modern features**

Three further linear field boundaries were located towards the east of the excavation. Ditches 83 and 249 were aligned approximately north-north-east to south-south-west with ditch 251 at right-angles to 249 (Fig. 12). Both 249 and 251 had been recut at least once. All conform to the alignment of the present day field boundaries around the excavation and, as such, can be considered to be of recent, post-enclosure date. Ditch 249 also conforms to an approximate north-south soilmark recorded prior to earthmoving and the continuation of this feature and ditch 251 beyond the limits of excavation is shown by the geophysical survey (Fig. 2).

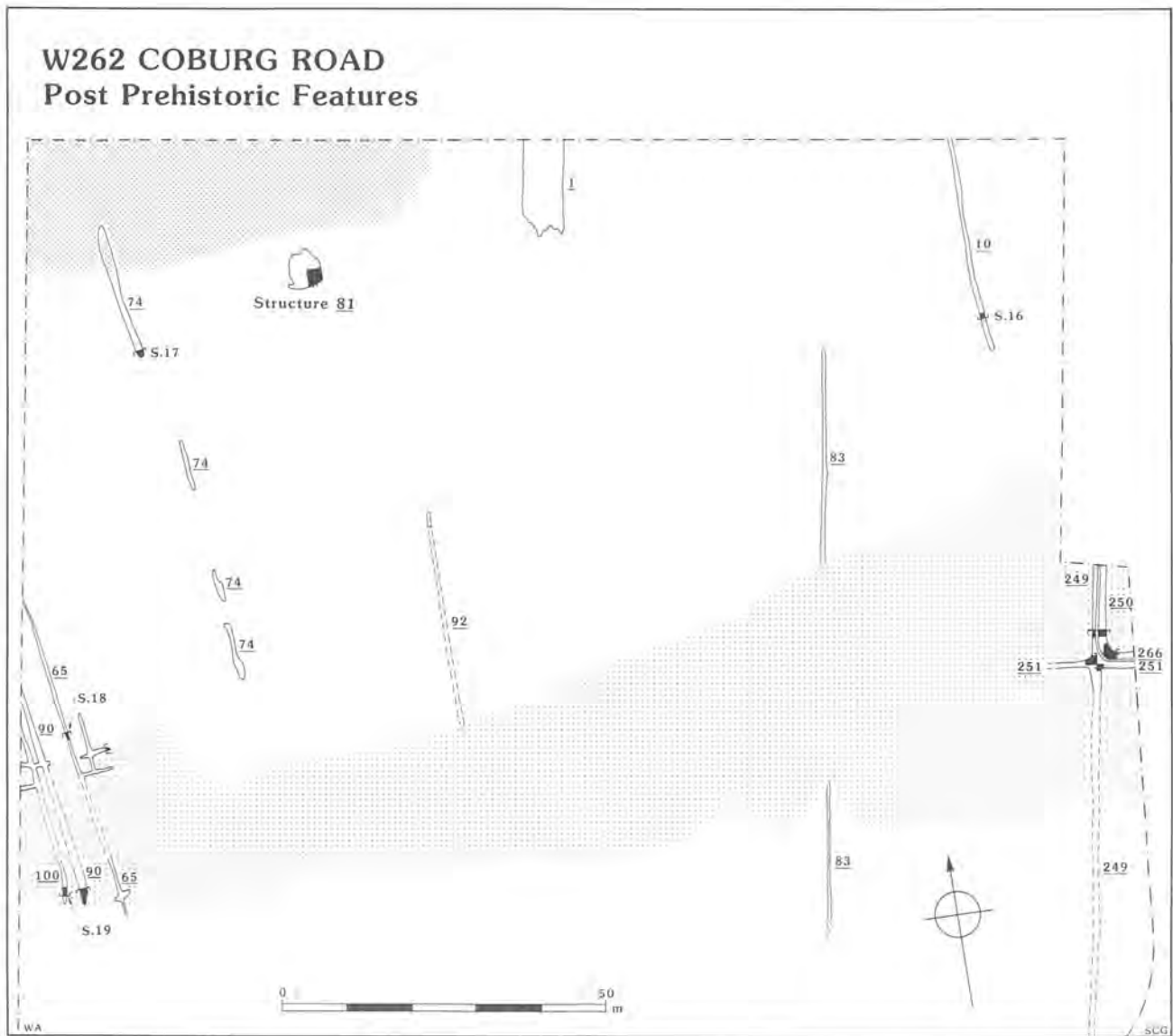


Figure 12. Coburg Road: Post-prehistoric features

One further modern feature was identified. Feature 1, towards the north of the excavation (Fig. 12), consisted of a broad, shallow depression, 6.7 m wide, at least 15 m long and 0.3 m deep, with a worn and smooth base. The feature was filled with light grey chalky loams and contained small quantities of post-medieval material. A slight groove cut into the chalk occurred on the west edge of the feature, which was also parallel to the present field boundaries. The feature may represent an infilled silage clamp or served some other temporary recent agricultural function.

## EXCAVATIONS AND OBSERVATIONS AT WEYMOUTH ROAD

### The Excavation

The construction of the new stadium for Dorchester Town Football Club was to involve the topsoil stripping of the full development area and the construction of a redeposited chalk platform, 0.83 ha in area, to the south-west of the site on which the new football pitch itself would be placed. With the exception of foundation trenches for the new stands, no substantial disturbance of subsoil deposits was anticipated; the chalk for the new platform being brought in.

The 3.15 ha of the excavation area was stripped of topsoil by Poclain excavator with a toothless bucket. The stripping was undertaken in two stages. The turf and upper 0.1 m of topsoil was removed first and temporarily stored on the edges of the site; the lower flinty topsoil, to a total depth of 0.25 m, was stripped second and carted off site. All observations and excavation was undertaken during these stages of stripping during April–June 1989.

### The aims of the excavation

1. to record and plan all archaeological deposits within the topsoil strip area of the site (3.15 ha);
2. to undertake selective excavation of archaeological deposits on a sampling basis within the topsoil strip area so as to determine their nature and date.

### Results

The exposed surface after topsoil stripping consisted of weathered Chalk, in which were a number of irregular periglacial and solution features, some up to 10 m in diameter. These features were filled with dark brown silty clay with frequent flint inclusions. A tongue of colluvium sealed the chalk bedrock across the south of the excavation, at most 30 m in width and extending approximately 60 m north-eastwards into the excavation area. The colluvium was at most 0.38 m deep and consisted of deposits of flint gravel in a dark brown silty clay matrix. A second colluvial deposit occurred along the west edge of the excavation area. This deposit, up to 0.25 m deep, consisted of yellowish brown silty clays with occasional flint or chalk inclusions.

A series of archaeological features was recorded, all of which can be shown to be recent in date. These included the post-settings for two 'showrings'. Both were rectangular in plan, laid out parallel to Weymouth Road and the railway line, with semicircular ends. The more northern 'showring' was 68 m wide and at least 105 m long; the other being 54 m wide and probably shorter, although at least 65 m. The southern end of this 'showring' has been removed by the new by-pass road. A number of other isolated post-holes also occurred within the site and were probably associated with the 'showrings'.

Jo Draper, who kindly undertook the research, writes:

In 1921 the Dorchester Agricultural Society, founded in 1840, held its one day annual show on the site. 'This year a new site for the showground has been secured in Weymouth Avenue, adjacent to the main road. A commodious and level field belonging to Mr J. Marvin Lock of Dorchester' (*Dorset County Chronicle*, September 8th, 1921). He was a Dorchester butcher and doubtless usually used the field to store animals before slaughter.

A programme of 1931 seems to be the earliest surviving and proves the site to be the one excavated. It also demonstrates that

the arcs of post-holes are part of the Horse Ring, a large oval enclosure doubtless re-erected each year.

A 1961 programme shows much the same layout, although more of the field to the south is used. Between 1962 and 1965 the show moved to its present home in Came Park, Winterbourne Came, on the outskirts of Dorchester as a programme of 1965, in Dorset County Library, demonstrates. It is perhaps surprising that forty years use of this field for a large annual event has left so little archaeological trace.

Other identified features included the fenceline, indicated on geophysical survey and recorded on 1976 OS plans (SY 6889 1:2,500), and also the cinder 'foundations' for a cricket square with water pipe, also clearly indicated by geophysical survey, to the north of the site.

There was no indication that the stripped area had suffered severe erosion or disturbance by agriculture or recent earthmoving, especially in view of its most recent use for rugby pitches. The only two areas of disturbance were firstly along the southern edge of the site, where the topsoil and subsoil had been disturbed by construction works for the by-pass road, and secondly by construction of the cricket square. Otherwise the excavation area had not been disturbed by construction of the railway line to the east in the 1850s. Similarly the survival of the post-holes of the fenceline and the showrings, both pre-dating the laying out of the rugby pitches, suggests that the construction of these facilities had not otherwise involved substantial landscaping.

No features or deposits associated with the Roman road from Dorchester to Radipole were observed. Flanking ditches to the road are known closer to the Roman town (RCHM(E) 1970, 540; Pearce 1986; Bellamy 1989) but at this point it is likely that if a ditch still defined the east extent of the road, it lies beyond the excavation area and closer to the present line of Weymouth Road. The recent fenceline recorded in the present excavations mirrors the alignment of the earlier strips of the medieval open fields at right-angles to the Weymouth Road. The site was effectively enclosed in the 1850s with construction of the Dorchester–Weymouth railway two decades earlier than formal enclosure in 1874. The small quantities of post-medieval material recovered from the excavations attest to manuring in the 18th and 19th centuries while the small quantities of recent modern material were probably associated with the annual Dorchester Agricultural Society Show. The construction of a new stadium, albeit permanent, is perhaps a fitting re-use of the site for entertainment.

## THE FINDS FROM COBURG ROAD

edited by Elaine L. Morris

The artefacts recovered from Coburg Road consist of a small collection of Middle and later Bronze Age pottery, fired-clay and utilised stones from activity associated with the area of settlement and cemetery features, and objects resulting from late or post-medieval activity in the vicinity. The pottery contributes significantly to the range of material recovered from the Dorchester area both in terms of chronology and evidence for the nature of ceramic production in the later prehistoric period. The possible clay weight is additional evidence for textile production in the Middle-Late Bronze Age of this area, as already shown at Poundbury (Davies 1987, fig. 79, 1 and 2) and Middle Farm (Walker in prep.).

### Copper alloy objects

by J.M. Mills

Two copper alloy objects were recovered; a late medieval lace tag fragment from post-hole 162, component of post-ring 302, and a nail found on the chalk surface in the southern part of the site after the topsoil had been removed. The nail, an unusual type formed by rolling a triangular-shaped sheet of copper alloy with the head bent out at c. 90° to the shank and back on itself, is probably a late medieval type (Mills 1993).

### Worked flint and chert

by Frances Healy

#### Description

The composition and incidence of the worked flint and chert are summarised in Tables 3 and 4. Both were rare in the primary Chalk rubble

fills of ring-ditches 3-6 and of linear ditch 9. Lithic material was instead concentrated in the subsequent soil fills of the ring-ditches and in the secondary chalk rubble fill and subsequent soil fills of the linear ditch, as well as in the Late Bronze Age pits of phase 3. The totals recovered from these prehistoric phases must be viewed in the light of the fact that less than 5% of the fills of the ring-ditches and linear ditch were excavated, in contrast to 50% of most of the much smaller Late Bronze Age features. The apparent frequency of lithics in Late Bronze Age contexts, 20% of the total recovered, is thus misleading. If the density of lithics in the excavated sections of the ring-ditches and the linear ditch is representative, then approximate true percentages might be ring-ditches: 30%, linear ditch: 50%, Late Bronze Age features: 5%, remainder: 15%.

The collection consists almost entirely of nodular Chalk flint, obtainable from the Upper Chalk of the area. Some indication of the original size of the nodules is given by a mean weight of 150 g for complete flint cores, individual large examples (Fig. 13, 7) reaching as much as 380 g. The Portland chert which forms 1.5% of the collection seems, where cortex survives, to have been collected as worn, rounded pebbles, some of which (Fig. 13, 1) were originally small. The former presence of larger pebbles or fragments is evidenced by a flake measuring 79 x 48 mm from the primary fill of ditch 9. Portland chert occurs as derived pebbles in the Dorchester area, mainly in soils of the Carstens series, patches of which lie in the South Winterbourne valley, some 2 km south of the site, and also at similar distances to the west and north (Staines 1991).

Both flint and chert are often partly masked by calcareous encrustation. Flint is almost invariably corticated. Assemblages from the ring-ditches and linear ditch are fresh, matt and sharp, with little edge-damage. Some of the material from the Late Bronze Age features of phase 3 is in comparable condition; other pieces have the slightly glossed surface, damaged edges and arrises and blotchy iron-staining of flint from the ploughsoil. These features are common among material from Romano-British and later contexts.

The miscellaneous debitage listed in Table 3 consists mainly of fragments from the initial breaking-up of nodules. Cores, among which

multi-platform and keeled forms are common (Table 4), are roughly, and often far from exhaustively, flaked, generally with hard hammers. The regularity and control pieces such as Figure 13, 1 or 13, 3 are rare. Figure 13, 4 and 7, with their hinge and step fractures and broad, irregular flake scars are more representative. Core rejuvenation flakes generally remove the angle of platform edge and core face (Fig. 13, 5), although core tablets and crested flakes are also present. Blades are rare (Table 3) and flakes generally squat and thick-butted, often with prominent bulbs of percussion. Six of the flakes are chips in the sense of complete removals with a maximum area of less than 10 mm<sup>2</sup> (Newcomer and Karlin 1987, 33). The characteristics of complete flakes and blades from the larger groups (soil fills of the ring-ditches, secondary chalk rubble and soil fills of ditch 9) are summarised in the archive. All share the same features, among them predominance of flakes with less than 25% dorsal cortex (66% overall); rare parallel-sided flakes (15% overall); frequent hinge fractures (42% overall); predominantly plain butts (60% overall), with only rare faceted, linear or punctiform examples; rare soft-hammer flaking (11% overall); and rare platform abrasion (2% overall).

Forty-one identifiable retouched forms were recovered (Table 5) including 21 scrapers and an oblique arrowhead (Fig. 13, 10). Eight of the scrapers, including Figure 13, 2, are characterised by thick, steep modified edges and large removals.

*Discussion*

A single oblique arrowhead (Fig. 13, 10) found on the surface of colluvium in the south-east corner of the excavated area (SY 6778 8977), is of a form generally found in Later Neolithic or, more rarely, Early Bronze Age contexts (Green 1980, 111-6, 235-9). Some of the rarer features of the excavated debitage may indicate the presence of a small amount of contemporary material. These include a few symmetrical flakes with faceted butts, rare regularly-worked cores and a few blades and blade-like flakes with thin butts and diffuse bulbs.

Apart from this minority component, the technology and typology of the collection are consistent with a common origin, regardless of context, and with the Bronze Age date indicated by the presence of fresh material

Table 3: Composition and incidence of worked flint and chert

1 = Misc. Debitage, 2 = Cores, 3 = Core Rejuvenation Flakes 4 = Flakes, 5 = Blades, 6 = Retouched

FLINT									
Phase	1	2	3	4	5	6	TOTALS	BURNT	BROKEN
1 Chalk fills of Ring-Ditches.	1	0	1	11	1	0	14	0	2
	7.1%	0.0%	7.1%	78.6%	7.1%	0.0%		0.0%	14.3%
1 Soil fills of Ring-Ditches.	3	5	4	105	0	6	123	3	41
	2.4%	4.1%	3.3%	85.4%	0.0%	4.9%	2.4%		33.3%
2 Primary chalk fills of Ditch 9.	1	0	0	5	0	0	6	0	3
	16.7%	0.0%	0.0%	83.3%	0.0%	0.0%	0.0%		50.0%
2 Secondary chalk fills of Ditch 9.	7	0	1	100	5	4	117	3	53
	6.0%	0.0%	0.9%	85.4%	4.3%	3.4%	2.6%		45.3%
2 Soil fills of Ditch 9.	9	2	2	65	7	5	90	0	11
	10.0%	2.2%	2.2%	72.2%	7.8%	5.6%	0.0%		12.2%
3 Late Bronze Age Features.	5	3	2	149	20	5	184	7	95
	2.7%	1.6%	1.1%	81.0%	10.9%	2.7%	3.8%		51.6%
4, 5, 6 and Unstratified.	10	8	7	297	10	21	353	9	136
	2.8%	2.3%	2.0%	84.2%	2.8%	5.9%	2.5%		38.5%
<b>TOTALS</b>	<b>36</b>	<b>18</b>	<b>17</b>	<b>732</b>	<b>43</b>	<b>41</b>	<b>887</b>	<b>22</b>	<b>341</b>
	4.1%	2.0%	1.9%	82.5%	4.8%	4.6%	2.5%		38.4%
CHERT									
Phase	1	2	3	4	5	6	TOTALS	BURNT	BROKEN
1 Soil fills of Ring-Ditches.	0	2	0	2	2	0	6	0	4
	0.0%	33.3%	0.0%	33.3%	33.3%	0.0%		0.0%	66.7%
2 Primary Chalk fills of Ditch 9.	0	0	0	1	0	0	1	0	0
	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%
3 Late Bronze Age Features.	0	0	0	1	0	0	1	0	1
	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%		0.0%
4 and 6.	0	0	0	6	0	0	6	0	5
	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%		83.0%
<b>TOTALS</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>10</b>
	0.0%	14.3%	0.0%	71.4%	14.3%	0.0%	0.0%		71.4%

Table 4: Cores

1 = Single Platform Flake Core 2 = Multiform Flake Core 3 = Keeled, non-Discoidal Flake Core 4 = Discoidal Flake Core 5 = Unclassifiable/Fragmentary Core

Phase	1	2	3	4	5	TOTALS
1 Soil fills of Ring-Ditches.	0	3	1	2	1	7
2 Soil fills of Ditch 9.	2	0	0	0	0	2
3 Late Bronze Age Features.	1	0	0	0	2	3
4 and 6.	1	1	2	0	4	8
TOTALS	4	4	3	2	7	20
	20.0%	20.0%	15.0%	10.0%	35.05	

Mean weight of complete flint cores 150g.  
 Mean weight of complete chert cores, 29g.  
 Cores:flakes + blades 1:39.

in the secondary fills of the ring-ditches. They conform to the general characteristics of Bronze Age industries from southern England, summarised by Ford *et al.* (1984), and from the Dorchester area, synthesised by Bellamy (in prep.). Scrapers such as Figure 13, 2 were first isolated as a Bronze Age form by Stone in his account of the Boscombe Down and Thorny Down settlements, both in Wiltshire (1936, 482; 1937, 656), and have been redefined as such by Fasham and Ross in their report on the post-barrow industries from R4, Micheldever Wood, Hampshire (1978, 590).

More precise dating is a matter of probability rather than certainty. Most of the industries with which the collection compares are of Middle Bronze Age date, like those cited above or like local examples from Rowden and Cowleaze (Harding 1991). Full domestic industries of

indisputably Late Bronze Age date, associated with post-Deverel-Rimbury pottery or with appropriate radiocarbon determinations, seem rarer, and are often difficult to isolate because of the certain or probable presence of residual material. The industry of Eldon's Seat, Encombe, Dorset consists of unretouched flakes thought to have been used in shale-working (Cunliffe and Phillipson 1968, 226). On the Kennet gravels in Berkshire, Late Bronze Age settlements yielding thousands of sherds of pottery have produced only a handful of pieces of struck flint, some of it apparently residual (Bradley *et al.* 1980, 217, 242, 274). Late Bronze Age industries of similar technology and composition to Middle Bronze Age ones do, on the other hand, seem to have been present at Potterne, Wiltshire (Healy in prep.), and at some sites in eastern England, among them North Ring, Mucking (Bond 1988), Broads Green (Holgate 1988a) and Lofts Farm

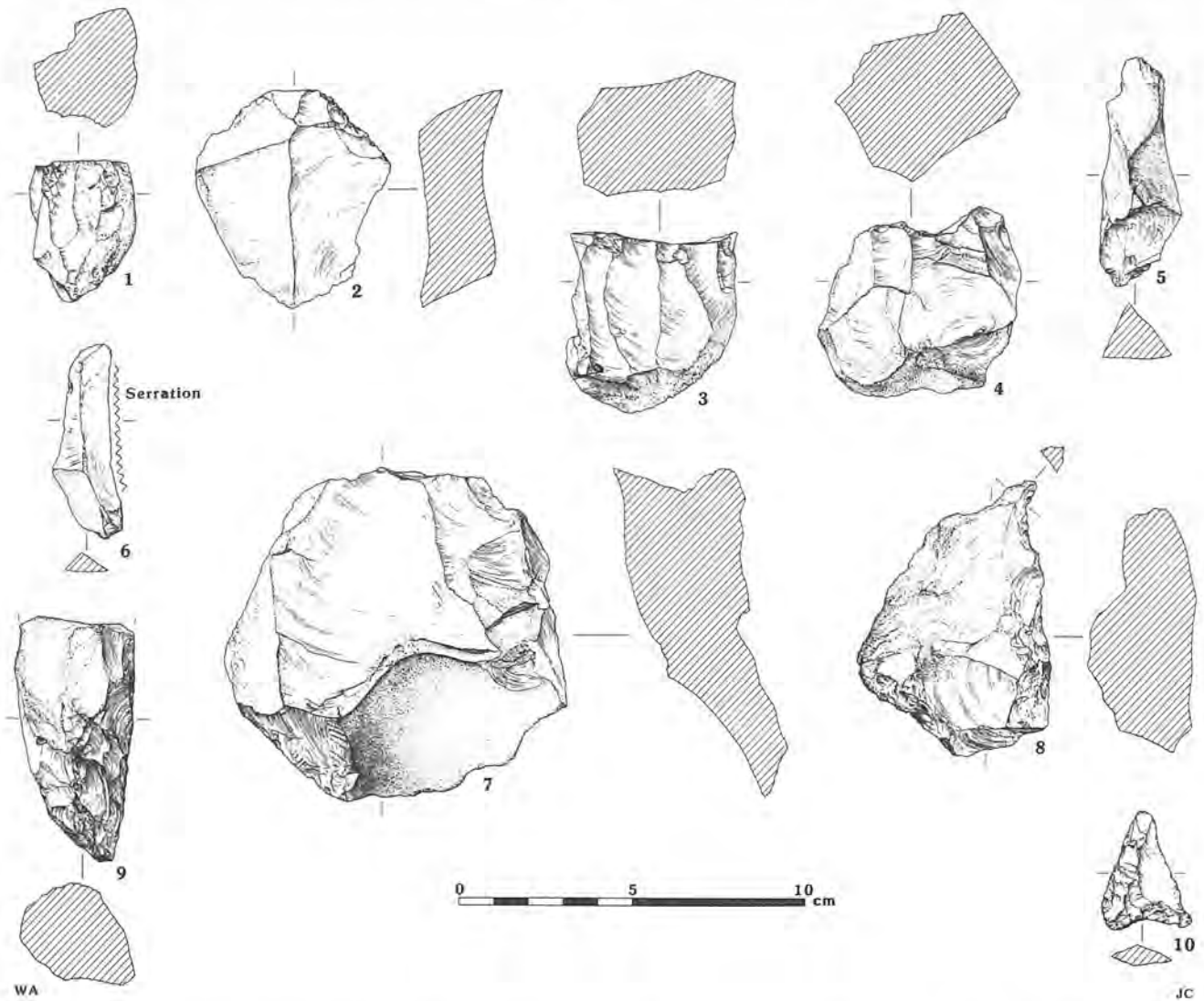


Figure 13. Worked flint and chert: 1 phase 1; 2-6 phase 2; 7 phase 8-9 phase 4; 10 unstratified. Scale 1:2.

Table 5: Retouched forms

Phase	1	2	3	4	5	6	7	8	TOTALS
1 Soil fills of Ring-Ditches.	0	0	2	0	1	0	3	0	6
2 Secondary Chalk fills of Ditch 9.	0	0	3	0	0	0	1	0	4
3 Soil Fills of Ditch 9.	0	0	2	0	1	0	2	0	5
3 Late Bronze Age Features.	0	0	4	0	0	0	1	0	5
4, 6 and Unstratified.	1	1	10	3	2	1	2	1	21
TOTALS	1	1	21	3	4	1	9	1	41
	2.4%	2.4%	51.3%	7.3%	9.8%	2.4%	22.0%	2.4%	

(Holgate 1988b), all in Essex.

At Coburg Road, the fact that the lithics from Late Bronze Age features are less uniformly fresh than those from the ring-ditches and linear ditch, while technologically and typologically indistinguishable from them, suggests that they are likely to be residual in those features and contemporary with the fresher material. Most Late Bronze Age features contained very little flint, and there is no correspondence in them between high frequencies of lithics and of pottery. The two pits most prolific of pottery, 69 (107 sherds) and 114 (47 sherds), together contained only 29 pieces of flint, while 48 pieces of flint from pit 67 were found with only 6 sherds of pottery. It seems probable that most of the collection is of Middle Bronze Age date, broadly contemporary with the apparently urned cremation in pit 79.

The 1.5% of chert in the collection matches the presence of small quantities in other local collections, among them those from Mount Pleasant (Wainwright 1979a, 139, 150), Maiden Castle (Edmonds and Bellamy 1991), Alington Avenue (Bellamy in prep.) and various sites on the line of the Dorchester By-pass (Bellamy in prep.). As at Maiden Castle (Edmonds and Bellamy 1991), chert does not seem to have been worked or used differently from flint, and its presence may simply reflect sporadic collection from local deposits. If the Coburg Road chert was indeed collected from soils of the Carstens series, it may have been brought to the site from approximately 2 km away.

The area to the west of Dorchester has recently been the subject of extensive investigations (Woodward 1991) and the southern Dorchester By-pass Project (Woodward and Smith 1987; Smith in prep.). In some ways, the Coburg Road material bears out the results of previous work: the site lies at the south-eastern edge of one of the two main concentrations of lithics identified in the course of the landscape survey, focused on the Bridport Road Ridge; and the oblique arrowhead is an addition to the small cluster of oblique and chisel arrowheads already known from the immediate area (Sharpley 1991, fig. 29). A local Early or Middle Neolithic presence, identified both in the Bridport Road Ridge concentration of the landscape survey and among both excavated and collected material from Middle Farm, 0.6 km to the west, is not, however, represented. Neither is there any confirmation of the conclusion drawn from the landscape survey that the Bridport Road Ridge area was one of raw material procurement and preparation. When the composition of the material from Bronze Age and other contexts at Coburg Road is compared with that of the excavated assemblages from the Dorchester area synthesised by Bellamy (in prep.), its core:flake ratio of 1:39 and its 4.6% of retouched forms distinguish it from assemblages interpreted as primarily industrial, and suggest that it resulted from the production and use of a full domestic assemblage.

The site lies within an area which, by the Middle Bronze Age, is likely to have been largely open, with scattered living sites set within field systems (Woodward 1991). Concentrations of struck flint within this progressively enclosed and organised landscape are interpreted by Bellamy as the result of clearance of nodules and fragments from fields and the subsequent working and use of the accumulated material in marginal locations apart from settlements. These locations included barrows, such as the Lanceborough group and the Maiden Castle Road South ring-ditch, and field boundaries, as at Middle Farm (Bellamy in prep.). Coburg Road confirms and reinforces this model. It would be tempting to suggest that the settlement which generated the flint industry and perhaps the cremation burial is represented by structure 26, an undated post-built round building.

Fig. 13

Illustrated artefacts have been chosen to show the character of the debitage and the range of retouched forms. They are ordered by phase and by category within phase. Individual entries are ordered thus: Category. Raw Material. Condition. Descriptive and/or other comment (if any). Context; object number (if any), phase.

1. Core. Chert pebble. Surviving cortex rolled and worn. 14; 1 (soil fill of ring-ditch 3).
2. Scraper. Chalk flint. Heavily corticated, slightly encrusted. 245; 2 (secondary chalk rubble infill of ditch 9).
3. Core. Chalk flint. Heavily corticated, encrusted. 25; 2 (soil fill of ditch 9).
4. Core. Chalk flint. Heavily corticated, encrusted. 243; 2 (soil fill of ditch 9).
5. Core rejuvenation flake. Chalk flint. Corticated, encrusted. 25; 2 (soil fill of ditch 9).
6. Serrated blade. Chalk flint. Heavily corticated. 243; 2 (soil fill of ditch 9).
7. Core. Chalk flint. Lightly corticated. 40; 3 (post-hole of four-post structure 37).
8. Borer. Chalk flint. Corticated, a few blotches of iron-staining, edges and arrises abraded. 82; 4 (fill of sunken-featured structure 81).
9. Heavy implement. Chalk flint. Corticated, encrusted, slightly glossed, a few blotches of iron-staining, edges and arrises abraded. Bifacially flaked; probably part of a pick or large 'fabricator'. 82; 4 (fill of sunken-featured structure 81).
10. Oblique arrowhead. Indeterminate flint. Corticated, slightly glossed, a few blotches of iron-staining, edges and arrises abraded. Bifacially flaked; Clark's (1934) form F. Unstratified, found on surface of colluvium at SE corner of excavated area; Obj. 4208.

### Stone

by J. M. Mills, with stone identifications by Paul Ensom (formerly Dorset County Museum)

The stone recovered from the site includes six fragments of slate, two utilised pieces and several fragments of burnt Limestone. In addition, 17 unworked fragments of stone were retained for identification.

### Utilised fragments

Two pieces were considered to have been utilised, probably as hammerstones. One, a vein quartz beach/river pebble found in the Bronze Age linear ditch 9, has an area c.14 x 20 mm at one end which is 'chipped'; the second, a Budleigh Salterton pebble possibly from Chesil Beach, was recovered from colluvium 242, and has slightly convex surfaces, a rounded edge which is slightly 'pecked' and one battered end.

In addition, six small fragments of slate were recovered. These were undoubtedly derived from slate roof tiles and are therefore of post-medieval date. Four fragments were identified in modern feature 1 and two in the sunken-featured structure 81. These fragments have not been retained.

### Burnt Limestone

Several fragments of Limestone were found in features of Bronze Age date. None of the fragments had worked surfaces and all were burnt. The presence of burnt Limestone was noted but not quantified. One piece (from post-hole 40, structure 37) was retained as an example and has been

identified as being gastropod rich Limestone, possibly Purbeck limestone.

#### Other stone

A further 17 pieces of unworked stone were excavated. Although the pebbles may have been utilised, no wear or polish was observed. With the exception of three small pieces of Sandstone with a possible source in the Mendips, all the material recovered has a source or sources in Dorset, most within a few kilometres of the site. A fragment of beef calcite, 25 mm long, was recovered. Beef calcite was used as temper in some of the pottery from the site.

#### Pottery

by Rosamund M.J.Cleal

#### Introduction

A total of 395 sherds, weighing 2784 g, was recovered. The majority are prehistoric in date, although there are small numbers of Romano-British and post-medieval sherds. The prehistoric assemblage comprises part of a Middle Bronze Age urn associated with a cremation, and a Late Bronze Age assemblage contemporary with the occupation.

#### Methodology of fabric analysis

Sherds were examined using X20 magnification, and a fabric series was established using the standard recording system of the Trust for Wessex Archaeology (Morris 1989). Full fabric descriptions are provided in archive and an abbreviated version, using a notation devised by the author, is given in Table 6. Table 8 gives quantification of the fabrics, and Table 7 summary sherd counts and weights for all contexts (further details in archive). The notation employed in Table 6 makes possible the provision of considerable detail in a much condensed form.

#### Middle Bronze Age

A single vessel of Middle Bronze Age date (Fig. 14, P1) is represented by

27 sherds from the cremation pit, 79. The vessel is in a soft fabric tempered with small fragments of grog (Fabric G1). This fabric has also been identified at Middle Farm (Woodward and Smith 1987,88), located approximately 0.6 km to the west, in vessels of late Early or Middle Bronze Age date related to the Deverel-Rimbury tradition (Cleal, in prep.). Small, straight-sided urns occur at Middle Farm, although there are no exact parallels for P1. The position of the single fingernail impressions, high on the body just beneath the rim, is slightly unusual, but does occur on a single vessel at Middle Farm (Cleal, in prep., P45). This style is also represented at Poundbury, where non-plastic fingernail decoration is fairly common in the Middle Bronze Age assemblage (Smith 1987, 114, fig 83, no. 45). The similarities between P1 at Coburg Road and the assemblage from Middle Farm, combined with their close geographical proximity, are such as to suggest that the occupation of these two sites may be contemporary and related.

#### Late Bronze Age

The Late Bronze Age assemblage is dominated by fabrics which contain the fibrous form of calcite known as 'beef'. These constitute 54% by sherd count and 70% by weight of all the fabrics which can be dated to the Late Bronze Age by the occurrence of diagnostic material (Table 8, D, fabrics L8, L10, L11 and L13). Beef type calcite occurs within the Purbeck Beds, which run approximately east to west 5-6 km south of Dorchester, most notably in the Chief Beef Beds (Melville and Freshney 1982, 62-64). Although no attempt has been made to trace the exact source of the beef in the Coburg Road fabrics, it would seem likely to be derived from the beef sources nearest to the site, which indicates the Upwey/Poxwell area. Beef occurs alone as thick layers of calcite, and also mixed with clays in which other forms of Limestone may also occur (Ensom 1983, 1984); such deposits have been observed by the writer at Moigns Down, Poxwell (SY 751 834), approximately 5 km south-west of Dorchester, where beef and clay with beef are exposed along the springline. Beef was also found, with shale, in the Middle Purbeck Beds

Table 6: Fabrics (full details in archive)

Fabric Code : this conforms with the standard TWA fabric recording system (Morris 1989) with an additional abbreviation for ceramic style, indicating the presence of diagnostic material in the fabrics where applicable., BA indicates Early or Middle Bronze forms, LBA — Late Bronze Age forms, LP — indeterminate later prehistoric, Indet. — pottery of unknown ceramic style only.

Fabric descriptions are notated as follows: Abbreviation of main inclusions (omitting rare types) / frequency of inclusions / maximum size (size of majority of inclusions in parenthesis, if there is, marked preference).

Abbreviations used (NB these vary from the TWA standard abbreviations used in the Fabric Code, as the descriptions are more specific than is necessary in the general fabric abbreviations): :

Inclusions	Frequency (% by area)
Bf - Beef type calcite	s - sparse
C - non-Beef type calcite	m - moderate 10-15%
Ca - Calcareous of unidentified type	c - common 20-25%
F - Flint	vc - very common 30%
G - Grog	a - abundant 40-50%
L - Limestone	
S - Sand (quartz unless otherwise specified)	
Sh - Shell	
V - Voids	

#### Size

Maximum dimension of inclusions is given, with preferred maximum given if this is clearly different from the overall maximum. For sand a division into fine (f) and coarse (c) is given. Codes with the figure 99 indicate sherds in unclassifiable fabrics (usually because of the smallness of the sherd or fragment) in which the inclusion type prefixing the figure is present (eg F99 is an unclassifiable fabric with flint as the dominant or only inclusion visible).

Code	Description	Code	Description
F:8/Indet	F / c / 5 (2)	L:12/LBA	Ca; S / m; c / 3; f
F:9/Indet	F; S / m; vc / 3; c	L:13/LBA	Bf; Ca; L / s; s; s / 6; 6; 2
F:10/LBA	F; S / s; m / 6; f	Q:5/?LBA	S / a / f
G:1/BA	G / m / 3	Q:6/LBA	M;S / s;m / f; f
L:8/LBA	Bf / c / 6(4)	R:4/Indet	mixed minerals / m / 5
L:9/LBA	C / vc / 3	S:5/LBA	Sh / a / 10(5)
L:10/LBA	Bf / a / 5	V:2/Indet	V / a / 8
L:11/LBA	Bf; L / s; a / 5; 8(3)		

exposed during the excavation of a multi-period site at Poxwell (SY 736 840; Cosgrove 1986). However, although it may occur naturally in clays, the frequency and size range of the beef in the Coburg Road vessels strongly suggests that most, if not all, was added as a tempering material; this is further supported by the presence of a small fragment, clearly too large to have been a piece of temper worked loose from a vessel, in context 148 (component of pit 114).

The sources of the *non-beef* calcite, the Limestone, and the shell inclusions in the Late Bronze Age fabrics have not been established, although most, and probably all, could be within the Purbeck Beds or elsewhere within the same general area.

A strong preference for calcareous inclusions seems indicated amongst the Late Bronze Age material. Calcite in particular is thought to be a tempering material well suited to vessels likely to be exposed to thermal shock, as it has expansion characteristics close to those of the pottery itself (Rye 1981, 32–33). That its suitability for using on a fire was appreciated by the makers of the Coburg Road pottery seems to be indicated by the high incidence of sooting among vessels with beef in their fabrics. Of five vessels with sooted exteriors (P3, P6, P9, P14, P15) all but one contain some beef, although it should also be noted that in most cases the beef is sparse, and the majority temper is Limestone. In addition, calcite is an easy temper to prepare as it crushes readily, and the beef form seems particularly suitable in this respect. The preference for beef type calcite appears marked at Coburg Road, but it also occurs in the Early Iron Age pottery at Maiden Castle (Brown 1991), and in a Middle Bronze Age vessel at Middle Farm (Cleal in prep).

A minority of sherds (5%) are in sandy fabrics (Q5 and Q6), which may be dated to the Late Bronze Age on the basis of the rim P16 (Fig. 14), which is in fabric Q6. Fabric Q5, although including no diagnostic material, is sufficiently similar to Q6 to suggest that they are of similar date.

The contemporaneity of the pits 69 and 114 is demonstrated by both fabric and form, and the same fabrics also occur in pit 7 and pit 67, although there are no featured sherds from the latter, and vessels of different type from the former (cf. P6 and 7 with P8–13 and P14–18). The pottery from both the pits and the area of settlement will be treated as one assemblage. Little survives of most of the vessels and it is difficult to reconstruct forms. The angle of lie of the rim in P2 is certain, as is that of

P9, but in most other cases that shown is approximate, as insufficient survives of the rims to accurately establish their angles. The assemblage includes the following types:

- A large-convex bodied vessel with T-shaped rim and finger-impressed cordon (Fig. 14, P2)
- B carinated vessel, with clearly defined, but not sharp, shoulder angle (Fig. 14, P8)
- C slack-bodied vessel with upright or slightly everted simple rim (Fig. 14, P14)
- D small bowl with high rounded shoulder and inturned rim (Fig. 14, P15)
- E bowl or jar (insufficient survives of any of the Coburg Road vessels to be certain of the form) with the rim set at an angle to the body and internally bevelled and sometimes thickened; the rims of these vessels may be upright or everted (Fig. 14, P9–P13, P18).
- F round-shouldered jar or bowl; similar to type A but with marked change of angle at the shoulder (Fig. 14, P6)
- G small cup or bowl with everted rim; clearly related to type E (Fig. 14, P4)
- H jar with ovoid body and inturned rim (Fig. 14, P17)

The majority of the Late Bronze Age pottery was recovered from the pits to the east of the main concentration of post-holes, and from pit 67 to the south-west (Table 7; Fig. 3). Subsequent use of the area, and the stripping prior to excavation, would have removed any surface pottery, and relatively little seems to have become incorporated in the fills of the post-holes in the main area of settlement. Only post-hole 103 in post-ring 303 contains more than a few sherds of pottery, and it is tempting to envisage at least the large vessel represented by P2 (Fig. 14) as a storage vessel kept within a hut. Most, although not all, fabrics present in the pits are also represented in the area of the post-holes, fabrics L10 and L13 (from the pits) being the major exceptions. As the site consists of separate features not related stratigraphically to each other and as the ceramic assemblage itself is not of a type to enable close dating on internal evidence, it is impossible to establish whether the pottery represents one assemblage of vessel types in contemporary use, or change through time.

Table 7: Sherd counts and weights of all pottery (see also in archive for counts and weights by fabric)

Prehistoric pottery is listed under inclusion types, other pottery by date.,  
Phase 1: Early to Middle Bronze Age Ring-ditches and Cremations

	Grog (BB1)	?R-B	R-B	Post-med	Unident			
Chalk fills Ring-ditch 5	-	2/2g	-	-	-			
Soil fills Ring-ditch 3	-	-	1/5g	1/2g	-			
Cremation pit 79	27/165g	-	-	-	-			
Phase 2.								
	Limestone	Mica	Unident? rock	R-B				
Linear Boundary Ditch 9	2/7g	2/3g	-	-				
Phase 3.								
	Flint	Grog	Limestone	Quartz	Shell	VOIDS	R-B	Post-med
Pit 7	-	-	12/160g	2/3g	-	-	-	2/12g
Structure 26	-	-	-	-	-	-	1/3g	-
Pit 67	-	-	4/211g	1/1g	1/2g	-	-	-
Pit 69	1/6g	-	94/700g	9/104g	3/78g	-	-	-
Pit 114	3/21g	-	31/543g	1/5g	3/37g	-	-	-
Post-ring 300			1/2g					
Post-ring 301								1/1g
Post-ring 302			1/6g	1/1g	1/2g	-	1/15g	-
Post-ring 303	51/109g	1/6g	22/194g	7/18g	51/205g	20/38g	-	-
Structure 81	1/1g	-	1/13g	1/5g	9/21g	-		
Phase 5								
	Grog							
Ditch 74	1/9g							
Phase 6								
	Flint	R-B (BB1)	R-B (Indet.)	Post-med				
Colluvium 24	2/14g	-	-	-				
Ditch 251	-	1/11g	1/4g	-				
Modern feature 1	-	-	-	7/41g				

The differences which do exist (eg. the occurrence of the cordoned vessel P2 in the area of post-holes and the absence of such vessels from the pits; the presence of forms with thickened rims in pit 114 and their absence elsewhere) could be explained by differences in spatial organisation of the site, rather than by temporal differences between the vessels.

The closest parallels for at least some of the elements of the Coburg Road pottery are certainly in the Eldon's Seat I assemblage from the Isle of Purbeck (Cunliffe and Phillipson 1968, figs 10–12) which affords a vessel with a T-shaped rim and applied finger-tipped cordon almost identical to P2 (Cunliffe and Phillipson 1968, fig. 10, no 1). The small assemblage from Sheepsleights, again on the Isle of Purbeck, also contains a vessel similar to Coburg Road P2 (Calkin 1948, fig. 4, no. 6) but this group shows no other strong similarities. Eldon's Seat I, apart from providing an exact parallel for Coburg Road vessel type A, also includes forms similar to type C (Cunliffe and Phillipson 1968, fig. 13, nos 55–66), type D (*op cit* fig. 13, no. 65), type H (*op cit* fig. 11, no. 6, fig. 14, no. 82) and possibly type B (*op cit* fig. 10, no. 6). Coburg Road type F, and the related types E and G, cannot be matched, even loosely, at

Eldon's Seat. It is clear, however, from the lack of fine, carinated bowls, haematite coating, and decoration, at Coburg Road that the assemblage is Late Bronze Age rather than Early Iron Age, and that it is likely to be approximately contemporary with Eldon's Seat I.

Parallels for types E, F and G may be found further afield in Barrett's post-Deverel-Rimbury tradition (Barrett 1980) such as vessels 3 and 39 at Aldermaston, Berkshire (Bradley, *et al.* 1980, figs 12 and 13) which seem reasonable parallels for P11 and P12 at Coburg Road. Ovoid jars with inturned rims are also present at Aldermaston (Bradley, *et al.* 1980, fig. 11, no. 5; fig. 13 no. 28). Although the post-Deverel-Rimbury complex of forms is well-represented in the Thames Valley, there are as yet few examples from southern Wessex, and it would seem reasonable to postulate that the Coburg Road assemblage belongs to this relatively little-known period in Dorset. Barrett (1980, 309) noted that post-Deverel-Rimbury material is 'barely attested' in Wessex and little has changed in this respect in the south of the region since his observation. Barrett does not attempt to date the Eldon's Seat assemblage, but if both it and the Coburg Road assemblage may be very approximately dated by analogy with the Thames Valley post-Deverel-Rimbury sites, a date in the 10th–early 11th centuries BC might be postulated (Barrett 1980). In addition, Cunliffe and Brown suggest (1987, 303–305) that the succeeding Kimmeridge II and Eldon's Seat II assemblages in southern Wessex occupy, successively, the period 800–400 BC, which, as the Coburg Road pottery appears to belong to the period immediately preceding this, would suggest a date within the 10th or 9th centuries BC.

Table 8: Fabric Totals.

**A: Romano-British and later pottery.**

Fabric	Sherd count	Sherd weight
R-B: Black Burnished	3	29g
R-B: New Forest	1	5g
Indet. R-B	15	47g
Post-med	11	56g
Totals	30	137g

**B: Indeterminate pottery (probably or possibly prehistoric).**

F:8/Indet	3	19g
F:9/Indet	51	112g
F99	3	12g
G99	1	6g
M99	1	1g
Q99	8	12g
R:4/Indet	1	3g
S99	1	2g
V:2/Indet	18	35g
V99	2	3g
Indet.	1	2g
Totals	90	207g

**C: Middle Bronze Age**

Fabric	Sherd count	Sherd weight
G:1/BA	28	174g

**D: Late Bronze Age**

Fabric	Sherd count	% count	Sherd weight	% weight
F:10/LBA	1	0.4	8g	0.3
L:8/LBA	68	27.5	667g	29.4
L:9/LBA	19	7.7	196g	8.7
L:10/LBA	17	6.9	228g	10.1
L:11/LBA	47	19.0	667g	29.4
L:12/LBA	23	9.3	40g	1.8
L:13/LBA	1	0.4	18g	0.8
Q:5/?LBA	12	4.9	110g	4.9
Q:6/LBA	1	0.4	10g	0.4
S:5/LBA	58	23.5	322g	14.2
Totals	247		2266g	

**Overall Totals**

A,B,C and D	395	2784g
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**Romano-British Pottery**

The majority of sherds are small and featureless, the only exceptions being Black-Burnished ware sherds, an everted rim from post-hole 194 and a sherd of the dog dish form from ditch 251.

**Post-medieval pottery**

A small quantity of post-medieval pottery was recovered. One small fragment appears to be Jackfield Ware, but the majority is small and featureless.

**Fig. 14**

For fabric descriptions see Table 6 (abbreviated description) or archive (full description).

- P1 Four rim, 23 body sherds (149 g) of single vessel. Rim diam. 120 mm. Fabric G:1/BA. Single non-plastic fingernail impressions. Oxidised or partially oxidised throughout. Context 80, phase 1, fill of cremation pit 79.
- P2 One rim, 25 body sherds (160 g) of large vessel; inturned T-shaped rim; fingernail impressed cordon. Rim diam. uncertain, Å mm. Fabric S:5/LBA. Oxidised surfaces. Context 104, phase 3, fill of post-hole 103.
- P3 One plain rim, 22 body sherds of single vessel (126 g). Sooting on exterior of most body sherds. Fabric S:5/LBA. Surfaces oxidised or partially oxidised. Context 166, phase 3, pit 164.
- P4 Plain rim sherd (8 g). Fabric F:10/LBA. Oxidised surfaces. Context 201, phase 3, fill of ?pit 200.
- P5 Plain rim sherd (3 g), ?Late Bronze Age. Fabric F:7/Indet. Partially oxidised to unoxidised. Context 207, phase 3, fill of pit 206.
- P6 One rim, six body sherds (112 g) ?of single vessel. Fabric L:11/LBA. Irregular groove or series of impressions around shoulder exterior, not clear whether intentional or accidental most likely the latter. Sooting on exterior below rim; lower part of body dark grey. Irregular firing and firing colour masked by sooting. Context 8, phase 3, fill of pit 7.
- P7 Rim and three body sherds (30 g) of single vessel. Fabric L9/LBA. Unoxidised (except top of rim). Context 8, phase 3, fill of pit 7.
- P8 One large shouldered sherd (72 g); angle uncertain.. Exterior surface probably lightly burnished, no distinct burnishing marks visible. Fabric L:10/LBA. Surfaces partially oxidised. Context 115, phase 3, fill of pit 114.
- P9 Rim sherd (60 g), internally enlarged. Similar to P10, ?but different vessels. Rim diam. c. 400 mm. Exterior possibly lightly burnished, heavily masked by soot; traces of heavy burnishing on rim; surviving patches suggest haematite coating (under x20 magnification no added colouring material visible, very slight colour difference probably result of burnishing iron rich clay). Fabric L:8/LBA. Exterior masked, interior oxidised or partially oxidised. Context 118, phase 3, fill of pit 114.
- P10 Rim sherd (40 g), enlarged on interior with excess clay poorly attached to vessel wall. Rim angle uncertain, ?similar to P9. Light burnishing. Fabric L:11/LBA. Oxidised to partially

oxidised surfaces. Context 116, phase 3, fill of pit 114.

- P11 Rim sherd (18 g). Rim angle uncertain. Fabric L:13/LBA. Oxidised or partially oxidised. Context 115, phase 3, fill of pit 114.
- P12 Plain rim sherd; rim angle uncertain, ?similar to P9. Fabric S:5/LBA. Partially oxidised to unoxidised. Context 97, phase 3, fill of pit 114.
- P13 Rim sherd (11 g). Fabric L:8/LBA. Oxidised surfaces. Context 115, phase 3, fill of pit 114.
- P14 Two rim, two base-angle, 13 body sherds of single vessel. Rim diam. c. 180 mm. Fabric L:11/LBA. Two grooves on exterior may be intentional. Sooting on exterior (upper body). Unoxidised (black core and interior). Context 77, phase 3, fill of pit 69.
- P15 Decorated rim (40 g) with single non-plastic fingernail impressions (one ?double). Fabric L:10/LBA. Sooting on exterior (upper body). Unoxidised throughout. Context 87, phase 3, fill of pit 69. Also one rim sherd of same vessel from 85, phase 3, fill of pit 69.
- P16 Small rim sherd (10 g). Fabric Q:6/LBA. Unoxidised. Context 85, phase 3, fill of pit 69.
- P17 Small rim sherd, ?later prehistoric. Fabric L:12/Indet. Oxidised or partially oxidised throughout. Context 87, phase 3, fill of pit 69.
- P18 Rim sherd (23 g). Fabric L:8/LBA. Oxidised surfaces, unoxidised core. Context 70, phase 3, fill of pit 69.

### Fired-clay

by J.M. Mills

Two pieces of fired-clay were recovered, both from Bronze Age features; one small, irregular fragment (5 g) from the upper soil fills of ring-ditch 4 (Phase 1) and one large fragment (138 g) from the fill of post-hole 103, component of post-ring 303 (Phase 3). Both pieces had a very fine sandy clay matrix and were poorly fired. The larger piece has two surfaces at c. 90° to each other and may be a weight fragment, although insufficient survives to suggest strongly a particular type.

### Bone objects

by J.M. Mills with species identifications by S. Hamilton-Dyer (Faunal Remains Unit, University of Southampton)

Four bone points were recovered; two from the secondary fills of pits 114 and 67, one from the primary fill of pit 206 and one unstratified example from near pit 206.

Two types of bone point have been identified. The first is a small point or awl made from an ovi-caprid metatarsus with a broad, irregular butt end. This is a common type from the Early Bronze to later Iron Age periods (Fasham, *et al.* 1989, fig. 97, 5 and fig. 105, 2; Sellwood, 1984, fig. 7.36, nos 3.145–3.153; Wainwright 1979a, fig. 80, B3; 1979b, fig. 50, 5116). The second type, of which the other three are all examples made of bone or antler, is likely to be later Bronze Age with similar examples recovered at Eldon's Seat (Cunliffe and Phillipson 1968, pl. Vb, no. 36). These points are very fine and well made, with distinctive flat butt ends. The wear on the butts of two of the Coburg Road points may suggest a functional nature for the butt as well as the point. The overall polish suggests that they may have been used for fastening clothing or as pin beaters.

### Cremated human bone

by Jacqueline I. McKinley

Two cremations (5300 and 5301) were recovered from two separate pits, one of which contained pottery of Middle Bronze Age date. The two pits, 79 and 98 (Phase 1), were approximately 3.5 m apart and situated between ring-ditches 3 and 4, in the east of the excavation (Fig. 3). The site has suffered severe erosion by ploughing, which has considerably disturbed the cremations, as illustrated by the quantity and condition of the associated pottery.

### Methods and results

Each cremation was passed through a series of sieves of 10 mm, 5 mm and 2 mm mesh. The material in each sieve was then weighed; this provides an overall view of the amount of fragmentation of each cremation. The sizes of the largest fragments of skull and long bone were also recorded.

Identifiable fragments were then separated out for further identification, being divided into skull, axial, upper and lower limb areas. Details of identification are available in archive. Variations from the normal buff-white colour of well oxidised bone, were noted where present. Age was assessed from the degree of epiphyseal/suture fusion (McMinn and Hutchings 1985) and the degree of degenerative changes to

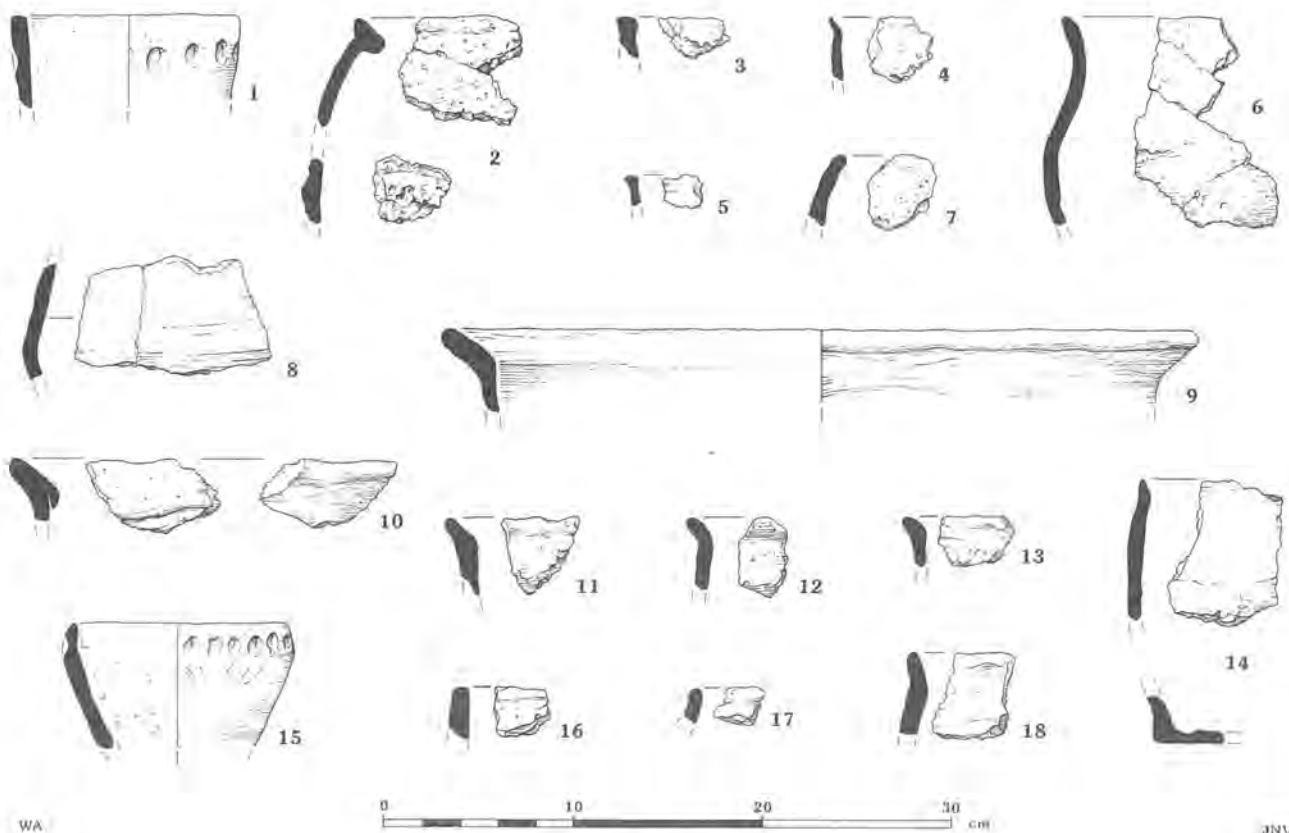


Figure 14. Bronze Age pottery. Scale 1:4

the bone. Insufficient evidence remained to enable sexing.

The individuals were adults. In both cases the majority of the bone shows black/blue/grey colouration, with some mottling both across and through the bones of cremation 5300. A single fragment of sheep/pig bone was also recovered from 5300.

#### Discussion

Both cremations had suffered considerable disturbance. The pits, 79 and 98, from which the cremations were recovered, were approximately 0.5 m in diameter, and survived to a depth of 0.1–0.2 m. In both cases the cremations represented only 20–25% of the amount of bone one would expect from a complete adult cremation and it is probable that much of the original buried bone has been lost due to plough disturbance.

Both pits had been cut much wider than would have been necessary for the deposition of a cremation urn — the presence of which is suggested, though not proven, by the fragments of one vessel recovered from pit 79. The relatively large quantity of burnt material other than bone recovered from the pit fills, suggests that the over-sized pits were cut to receive pyre debris, as well as the urn containing the bone. The fills of the pits were of dark, charcoal rich soil, with fairly large quantities of heat-shattered flint nodules. The presence of pyre debris within the pits suggests that the cremations were conducted close to the area of deposition. The lack of heat-related change to the pit cuts, would suggest that the depositions took place after the pyre had cooled.

The bone itself, in both cases, was generally poorly cremated. The predominance of black/blue colouration of the bone illustrates the

Table 9: Plant remains, species list

Taxa	MBA cremations		LBA pit 114		habitat
	context: sample	pit 79 80 5300	pit 98 99 5301	148 5302	
<i>cf. Triticum dicoccum</i> Schübl. (cf. emmer caryopses)	-	-	-	-	1
<i>T. dicoccum</i> Schübl. (emmer glume bases)	-	-	-	2	-
<i>T. spelta</i> L. (spelt glume bases)	-	-	-	5	35
<i>T. dicoccum/spelta</i> (emmer/spelt caryopses) <sup>a</sup>	-	-	-	-	6
<i>T. dicoccum/spelta</i> (emmer/spelt glume bases)	-	-	-	4	97
<i>T. aestivocompactum</i> s.l. (bread/club wheat caryopses)	1	-	-	-	-
<i>Triticum</i> sp. (wheat caryopses)	1	1	-	-	-
<i>Hordeum vulgare</i> L. emend. (hulled 6-row barley caryopses)	-	-	-	-	5
<i>Hordeum cf. vulgare</i> var. <i>nudum</i> (cf. naked barley)	1	1	-	-	-
<i>Hordeum</i> sp. (hulled barley caryopses)	-	-	-	2	21
Indeterminate cereals	-	-	-	4	10
<i>Arrhenatherum tuberosum</i> (Gilib.) Schult. (onion couch)	3	9	-	-	CDG
<i>Atriplex hastata/patula</i> (orache)	-	-	-	12	2
<i>Bilderdykia convolvulus</i> (L.) Dumort. (black bindweed)	-	-	-	3	4
<i>Brassica rapa</i> ssp. <i>campestris</i> (wild turnip)	-	-	-	-	1
<i>Bromus</i> sect. <i>Bromus</i> (chess)	-	-	-	1	1
Caryophyllaceae NFI (seed embryos)	-	-	-	-	3
<i>Chenopodium album</i> L. (fat hen)	-	1	-	-	4
<i>Chenopodium</i> sp./ <i>Atriplex</i> sp. (seed embryo)	-	-	-	-	3
<i>Galium aparine</i> L. (cleavers)	-	-	-	4	5
Gramineae NFI	-	1	1	-	-
<i>Linum catharticum</i> L. (purging flax)	-	-	-	-	1
<i>Medicago lupulina</i> L. (black medick)	-	-	-	-	1
<i>Odontites verna/Euphrasia</i> sp. (red bartsia/eyebright)	-	-	-	-	1
<i>Papaver dubium/hybridum</i> L. (long-headed/prickly-headed poppy)	-	-	-	-	5
<i>Papaver</i> sp. (poppy)	-	-	-	1	1
<i>Plantago lanceolata</i> L. (ribwort)	-	-	-	1	-
<i>Polygonum aviculare</i> agg. (knotgrass)	-	-	-	-	1
<i>Polygonum persicaria</i> L. (red shank)	-	-	-	1	-
<i>Prunella vulgaris</i> L. (self-heal)	-	-	-	-	2
<i>Rumex</i> sp. (dock)	-	-	-	1	3
<i>Sambucus nigra</i> L. (elder)	-	-	-	1	-
<i>Trifolium</i> sp. (clover)	-	-	-	2	3
<i>Tripleurospermum maritimum</i> (L.) Koch (scentless mayweed)	-	-	-	1	6
Umbelliferae cf. <i>Aethusa cynapium</i> L. (cf. fool's parsley)	-	-	-	1	-
Umbelliferae cf. <i>Torilis</i> sp. (cf. hedge-parsley)	-	-	-	-	3
<i>Valerianella dentata</i> (L.) Poll. (valerian)	-	-	-	-	1
<i>Valerianella</i> sp.	-	1	-	-	-
<i>Veronica hederifolia</i> L. (ivy-leaved speedwell)	-	1	-	-	-
Total:		6	15	47	226
volume processed: (litres soil)		22	5	5	5

Habitats: A = arable; B = bankside; C = cultivated; D = disturbed; G = grassland; n = nitrogen-rich soils  
H = hedgerows; R = roadside; S = scrub; W = woodlands; c = calcareous soils;

incomplete oxidization of the organic component during cremation. The presence of a small fragment of incompletely oxidised soft tissue 'slag' in 5300, highlights this point (McKinley forthcoming a; b and in prep.). Incomplete combustion could result either from insufficient time to complete oxidisation or lack of oxygen possibly due to bone being buried in wood ash at the base of the pyre (McKinley 1989 and forthcoming). Unfortunately, the disturbed nature of the deposits precludes further comment on probable pyre technology.

(Note: This report was submitted in September 1989)

### Terrestrial Mollusca

by Michael J. Allen

Terrestrial Mollusca were observed in two samples, 5302 and 5303, from the basal and penultimate fills of the Late Bronze Age pit 114. These were scanned using a stereo-binocular microscope. Both samples displayed comparatively few molluscs, but the assemblages were dominated by open country species. The Vallonias together with *Helicella itala*, *Trichia hispida* and *Pupilla muscorum* were most abundant. No shade-loving species were noticed. Thus it is evident that both assemblages represent open dry downland, possibly cultivated.

### Carbonised plant remains

by W.J. Carruthers

Samples were taken from the fills of two Middle Bronze Age cremation pits, 79 and 98 (Phase 1), and the basal fills of a Late Bronze Age pit 114 (Phase 3) for plant macrofossil analysis. The samples were first dry sieved to remove large artefacts and bone, and then underwent flotation for the recovery of carbonised plant remains. One mm and 500 meshed sieves were used for the recovery of the flots. The author received the samples as unsorted dry flots. Some hand-recovered fragments of charcoal were also sent for identification, and are reported on here.

#### Results

The list of carbonised plant macrofossils recovered from the flots is presented in Table 9. The volumes of soil subjected to flotation are given at the bottom of this table.

The state of preservation of the remains was generally good with little evidence of surface erosion or vacuolation of the cereal caryopses. However, several modern seeds were also recovered from the samples, in particular orache (*Atriplex patula/hastata*) seeds, so that it is possible that contamination could have occurred. As the cereal taxa recovered were consistent with the dating evidence it is unlikely that this had affected the results of the carbonised macrofossil analysis to any great extent.

#### Middle Bronze Age cremations

A small number of carbonised plant remains was recovered from cremations 5300 and 5301. The presence of a bread/club wheat (*Triticum aestivocompactum* s.l.) caryopsis is of interest in this context as the sparse evidence from this period does not indicate that it was a widely grown cereal. Bread/club wheat caryopses have not been recovered in significant numbers from sites earlier than the Iron Age, although sporadic occurrences date back to the Neolithic (Godwin 1975). However, this cereal was recovered from Middle Bronze Age cremations on the Ashville Trading Estate site at Abingdon, Oxfordshire (Jones 1978). In addition, barley and onion couch tubers were present both at Abingdon and at Coburg Road. It is possible that these remains represent some sort of ritual offering, bread/club wheat possibly being a valued commodity at that time. It has also been suggested that the frequent occurrence of onion couch tubers in cremation assemblages may be due to their use as tinder (Mark Robinson, pers. comm.). Onion couch (*Arrhenatherum tuberosum*) tubers were also recovered from Middle Bronze Age cremation urns at Field Farm, Burghfield, Berkshire (Carruthers 1992). This grass often grows on abandoned arable land or abandoned pasture.

Fragmentation of the barley caryopses meant that it was not possible to be certain of the identification as naked barley (*Hordeum* cf. *vulgare* var. *nudum*), although surface characteristics were suggestive of this taxon. Naked barley predominated up to the Middle Bronze Age period in the British Isles, after which hulled barley became more important (Godwin 1975).

The few weed seeds recovered may have been present amongst the cereals or amongst fuel for the cremation fire, since they represent weeds of cultivation, waste ground and grassland. The presence of a damaged valerian (*Valerianella* sp.) seed is perhaps of interest in this period.

Although not identifiable to species because of its poor state of preservation it was very similar to the seed of valerian (*V. dentata*) recovered from the Late Bronze Age pit, 114. This species is commonly found in Iron Age assemblages but is rare in sites of an earlier date.

Three fragments of charcoal from the two cremations sent for identification were of ash (*Fraxinus excelsior*). This light demanding tree grows well on calcareous soils and burns well even when green.

#### Late Bronze Age pit 114

Samples 5302 and 5303 from Late Bronze Age pit 114 were taken from the two lowest fills, contexts 148 (penultimate) and 149 (bottom fill) (Fig. 10, Section 11). The lowest fill contained about five times the number of carbonised remains recovered from the upper fill. In both samples the predominant component was glume bases; 52% of the pit fills were chaff, 18% grain, 22% weeds of arable or disturbed ground, 4% grassland taxa and 4% of a wide range of habitats. This composition suggests that crop processing waste was the primary source of material, particularly since much of the grain was tail-grain. The grassland taxa, such as purging flax (*Linum catharticum*), self-heal (*Prunella vulgaris*) and clover (*Trifolium* sp.) may have been introduced as burnt hay that had been used as bedding or fodder. The calcareous soils of the locality would have provided a particularly suitable grassland habitat for purging flax.

Of the cereal remains, 2% was from emmer, 21% spelt, 56% emmer/spelt, 14% hulled barley and 7% unidentified. The predominance of spelt as opposed to barley and emmer is more characteristic of Iron Age rather than Bronze Age sites. In addition, a number of the weed species, such as valerian, chess (*Bromus* sect. *Bromus*) and scentless mayweed (*Tripleurospermum maritimum*), become far more common in Iron Age assemblages, a factor which may well be associated with the increased cultivation of spelt.

The wild turnip (*Brassica rapa* ssp. *campestris*) and elder seeds could represent food plants or weeds. Brassicas can be used to produce oil from their seeds or as vegetables, and elder can be used as a food or dye plant.

#### Animal bones

by S. Hamilton-Dyer

#### Methods

In general the methods used for identification and recording were based on the FRU (Faunal Remains Unit, Southampton) method 86 system, with some modifications. Archive material includes metrical and other data not in the text and is kept at the FRU. Measurements follow von den Driesch (1976) and are in millimetres unless otherwise stated. For a full species list and abbreviations used in text and tables see Table 10.

#### Results

The animal bone comprised 68 fragments recovered by hand, together with a small quantity of material extracted from soil samples. Most of the material came from the Late Bronze Age features (Phase 3), pits 67, 69, 114 and 206 (Table 10). Many of the fragments were unidentified artiodactyl material, probably belonging to cattle and sheep. The identified cattle bones included the fragmentary remains of a skull from pit 114. This had large but short, thin walled, horncores, probably indicating a castrated male. At a lower level in the same pit was the large horncore of a sheep, probably a ram. This had been cut on the anterior face, near the base, possibly to remove the horn. The material from this pit also included the single dog bone, a maxilla fragment, although there was indirect evidence of dog in the form of gnawing on some of the better preserved bones. Only three fragments of pig were identified, from pit 67. This pit also contained a fragment of a goose coracoid. The sieved material came from pit 114. Many of the bones were of amphibians, including some charred, but also contained bones of a vole (*Microtus* spp), a common shrew (*Sorex araneus*), and part of a fish vertebra, possibly pike (*Esox lucius*).

The majority of the recovered fragments were in a very eroded state. This is unfortunately typical of the preservation encountered in shallow features on chalkland sites. Pig bones may be less likely to survive than those of cattle or sheep, because most of the animals are usually slaughtered at an age where their bones are relatively porous and easily damaged.

With such limited data it is not possible to compare phases and feature types, except that bones from ditch deposits were very few in number and that pits seemed to have variable assemblages.

Table 10: Animal bone, species distribution

Phase	Feature	COW	S/G	PIG	LAR	SAR	DOG	GOO	SMM	AMPH	FISH	TOTAL
1 Early-Middle Bronze Age	all	-	2	-	4	1	-	-	-	-	-	7
2 Bronze Age	ditch 9	1	-	-	-	1	-	-	-	-	-	2
3 Late Bronze Age	pit 67	3	1	3	3	5	-	1	-	-	-	16
	pit 69	1	3	-	3	6	-	-	-	-	-	13
	pit 114	2	2	-	1	2	1	-	(4)	(20+)	(1)	8
	pit 206	-	3	-	3	5	-	-	-	-	-	11
	other features	1	2	-	1	3	-	-	-	-	-	7
5 Medieval	all	2	-	-	-	-	-	-	-	-	-	2
6 Modern	all	1	-	-	1	-	-	-	-	-	-	2
	grand total	11	13	3	16	23	1	1	0	0	0	68

( ) material from sieving (not included in totals)

Abbreviations used in text and Table 10

COW, domestic cattle, DOG, domestic dog

S/G, domestic sheep (or identified to 'ovicaprid'), SMM, small mammals (probably mouse, *Mus* sp., *Apodemus* spp. or vole, *Microtus* spp).

LAR, large ungulate (probably COW but may also include HOR), GOO, domestic goose or wild greylag, *Anser anser*

SAR, small artiodactyl (probably mostly S/G or PIG), AMPH, amphibians (probably common frog, *Rana temporaria* or common toad, *Bufo bufo*)

PIG, domestic pig, FISH, unidentified fish, possibly pike, *Esox lucius*.

## DISCUSSION

### The ring-ditches, cremations and linear boundary ditch 9

In the absence of evidence to the contrary it is suggested that the four ring-ditches represent the remnants of destroyed round barrows. No contemporary internal features survived and it is assumed that all four were originally furnished with internal mounds which have been entirely removed. The occurrence of two cremation burials between ring-ditches 3 and 4 appears to confirm a funerary function for these rings and, presuming the cremations did not pre-date the ring-ditches and are probably secondary to their construction, these features probably date to no later than the Middle Bronze Age.

There was no secure dating evidence from the ring-ditches themselves. The one minute sherd of possible Romano-British pottery from the primary chalk fills was probably intrusive, while the two sherds of comparable date from the upper soil fills suggest the barrow ditches remained at least partially open for a considerable length of time. Two linear boundaries, although cutting across the infilled barrow ditches, terminate on their inner edges, implying the barrow mounds of at least rings 3 and 6 may have survived even as moderate earthworks perhaps even into the medieval period and it was only their incorporation into the open fields of Fordington that finally precipitated their total destruction.

The four barrows form a linear east-west cemetery lying false-crested along the 86 m contour, just to the south of the highest point of the ridge. Further elements to the cemetery may be suggested by a possible fifth ring-ditch recorded on geophysical survey (Fig. 2).

The barrow cemetery at Coburg Road provides an addition to the number of Bronze Age funerary monuments in the environs of Dorchester identified by excavation. They were previously unrecorded as earthworks and must have been completely levelled by later agricultural activity (Woodward and Smith 1987, 87, and Davies *et al.* 1985, 104). As at Alington Avenue, however, the long-term presence of a mound associated with the ring-ditches has been suggested by the layout of later field systems.

Extensive sampling of the Bronze Age barrows on the route of the Dorchester By-pass, Alington Avenue and Fordington Farm have, in every case, indicated that these monuments were constructed in an open, probably grazed, grassland (Davies *et al.* in prep; Allen 1991) and there is no reason to assume otherwise for the Coburg Road monuments. Extensive grassland management of much of the chalk immediately to the south of Dorchester seems to have existed from at least the Late Neolithic and clearance of the former woodland occurred considerably

earlier. As a result it has been suggested that many of these barrow cemeteries were located on areas of already severely eroded soils and consequently more marginal land (Woodward, 1981, 119; 1991) and the Coburg Road cemetery appears to conform to this model. The structures lie on soils indicative of intense erosion (Staines 1991), off the deeper and probably less erosion-prone soils of the clay-with-flints and on the upper portions of a gentle south-facing slope, likely to be more susceptible to erosion than flatter ground or more even slopes. However, earlier Neolithic activity is otherwise not represented within the material record at Coburg Road. The local Early or Middle Neolithic activity represented by lithic material identified to the north and west of Coburg Road by survey (Woodward 1991) and excavation (Bellamy in prep.) does not occur here; the earliest lithic material being a single oblique arrowhead of Late Neolithic or Early Bronze Age date and possibly a small quantity of contemporary material.

The barrow cemetery at Coburg Road was associated with two cremation burials, one associated with pottery of Middle Bronze Age date. Both burials were severely disturbed and eroded and, given the shallow nature of the cremation pits, other such burials may have been removed from the cemetery area. The pottery from the cremation pit was comparable to and possibly contemporary with the assemblage from the settlement enclosure at Middle Farm (Woodward and Smith 1987, 88) 0.6 km to the west.

A comparable subrectangular, single-ditched enclosure has been identified by geophysical survey, but not proved by excavation, 100 m to the south-east of the cemetery (Fig. 2). This enclosure is of approximately comparable size c.50 m in diameter, and also shows some evidence of internal subdivision. Both enclosures occupy comparable topographic locations, on the upper portions of ridges above dry valleys but adjacent to the deeper soils of the clay-with-flints deposit. A Bronze Age date might be suggested on this limited evidence.

This enclosure is an addition to a series of others identified by aerial photography to the north of Maiden Castle. With the exception of Middle Farm, all are undated by excavation, although an Iron Age (Green 1987, 145) or Bronze Age date (Woodward 1991) has been suggested.

It has been suggested for this area north of Maiden Castle and west of Dorchester that by the later Bronze Age these enclosures and other scattered living sites lay within a series of field systems within a predominantly open landscape (Woodward 1991). It is possible that the undated, circular post-structure 26 to the north of the barrow cemetery was also a component of this landscape. Single circular post-rings of later Bronze Age date have been recognised elsewhere such as at Rowden (Woodward 1981, 119)

where single habitation huts were set within arable fields or allotments and at Middle Farm (Woodward and Smith 1987, 88), although in this case set within a subrectangular enclosure.

That the Coburg Road structure was positioned within a contemporary field system can only be postulated from the excavated evidence. Contemporary shallow ditches, low banks or lynchets would not have survived the erosion that has since levelled the barrow mounds, although it is anomalous that the post-holes of this structure have also survived this degree of erosion. It is likely therefore that this structure was situated in the lee of a lynchet or perhaps within the corner of a field defined by lynchets and low banks and it is the erosion of these field system features across the settlement that has afforded some protection and preservation for these features.

The substantial linear boundary ditch 9 may be of Bronze Age date, although, like the ring-ditches, dating evidence from the ditch fills was scarce. This substantial ditch, at least 500 m in length from the excavated and geophysical survey results, runs to the south and east of the barrow cemetery. That this boundary post-dates the barrow cemetery is suggested by its changing alignment around ring-ditch 3. The construction and early infill of this feature cannot be precisely dated. A single minute sherd of possible Romano-British pottery from the secondary chalk fills is probably intrusive and the single sherd of Late Bronze Age pottery from the upper soil fills, comparable in fabric to other material from the settlement features to the west, may indicate that the ditch was predominantly infilled by this date.

The ditch is an addition to the number of substantial earthworks of prehistoric date identified in the environs of Dorchester (Green 1986) and further increased as a result of excavations on the route of the Dorchester By-pass (Woodward and Smith 1987, 86 and 88). Many of these features remain undated although the large linear boundary ditch at Middle Farm has been proved by excavation to be of Middle Bronze Age date. A *terminus ante quem* for its construction was provided by a radiocarbon determination of 3200±90 bc (HAR-9160; 1599-1411 cal BC). The Middle Farm ditch was also predominantly infilled by the Late Bronze Age as indicated by a handful of sherds recovered from the upper ditch fills. The Coburg Road ditch therefore bears comparison to the ditch at Middle Farm in terms of size, profile and dating evidence. Both occupy a similar ridge-top location and both can be suggested as components of the same enclosure or boundary system. A third comparable, but undated, boundary ditch recorded c. 0.8 km to the east of Coburg Road (Green 1986, feature 5) may also be of a similar date and may be part of the same system on this east-west ridge.

### The Late Bronze Age settlement

It was within this landscape of infilled and near-redundant field systems, that the Late Bronze Age settlement was constructed. The settlement features occupy an area of 840 m<sup>2</sup> although the west limit of the settlement lay outside the excavation area. The settlement structures, with the exception of the four-post-structure 37, are represented by the remains of four post-rings. The post-hole group (Fig. 3) suggests the presence of two neighbouring circular structures and it is suggested that two phases of post-ring are represented; the initial rings being wholly replaced.

The position of pits and other features a respectful distance away allowed an open space for access to the structures, whose entrances apparently faced south. Pits dug at a comparable distance to east and south of the structures suggests a concise and defined extent of the settlement area, although it was not associated with an enclosure ditch. The settlement could however have been defined by low banks, hedges or fencelines that have since been removed. As in the case of structure 26, the survival of the post-holes of these structures probably results from their position in the lee of a lynchet or low bank. A similar situation was recorded at Eldon's Seat I, where the structures were built against the lower slope of a lynchet which occasionally spilled across them (Cunliffe and Phillipson 1968, 195). At Hog Cliff Hill the Late Bronze Age structures were constructed in

the lee of a field bank of an existing field system (Ellison and Rahtz 1987, 261).

The location of the Late Bronze Age settlement on the upper edges of the east-west dry valley adjacent to the clay-with-flints deposits mirrors that of the settlement enclosure at Middle Farm (Woodward and Smith 1987, 88). The settlement, like its Middle Bronze Age predecessor, may have been deliberately chosen to straddle the division between the deeper, brown earth soils of the ridge tops and the shallow, eroded chalky soils of the valley sides. The limited environmental evidence from the settlement suggests a mixed-farming subsistence economy. Sheep, cattle and pig, in order of quantities recovered, are attested alongside the bone of a dog and a goose. No hunted species were represented, with the exception of a single bone of a pike which points to limited exploitation of the Rivers Frome and South Winterborne. Plant remains recovered from the base of pit 114 included crop processing waste and cereal remains, predominantly spelt but including emmer and barley, confirming arable cultivation. Open grassland species were represented including purging flax, self-heal and clover, and also wild turnip and elder seeds both possibly representing food plants or weeds. The bone points and possible clay weight may be indicative of textile production.

In the absence of radiocarbon dates or extensive stratigraphy the precise chronological position of the Late Bronze Age settlement at Coburg Road is not easily established. On ceramic evidence, ie, the lack of fine carinated bowls, haematite coating and decoration, the settlement occupies a Late Bronze Age rather than Early Iron Age location and a date within the 10th or 9th centuries BC is postulated. The ceramic assemblage bears most comparison to the assemblage from Eldon's Seat I, with which it may be approximately contemporary and the Coburg Road assemblage provides a substantial increase in the quantity of stratified material of this type from Dorset. The Late Bronze settlement at Coburg Road also fills an important gap in the local sequence where settlement remains dating to between the demise of the Middle Bronze Age settlements at Middle Farm and Poundbury towards the end of the 2nd millennium BC and the construction of the hillforts of Maiden Castle and Poundbury are lacking. Later assemblages of Kimmeridge II style pottery were recovered from Hog Cliff Hill (Ellison and Rahtz 1987, 256), while Maiden Castle and Chalbury hillforts and a feature of unknown function at Stinsford have produced pottery of 'Eldon's Seat II' type (Cunliffe and Brown 1987, 303; Speller 1985).

The plan of the Late Bronze Age settlement is similar to that recorded at Winnall Down, Hampshire (Fasham 1985, 126) where an unenclosed settlement consisted of a series of post-built round-houses comprising a mixed farming unit associated with small quantities of plain post-Deverel-Rimbury pottery (Fasham *et al.*, 1989, 147); though full plan may not have been recovered. Some similarity with Eldon's Seat I is also evident where groups of huts formed a mixed farming economy based on cereal production and rearing of cattle, sheep and pigs, although here also alongside shale-working (Cunliffe and Phillipson, 1968, 230).

### Activity and landuse from the end of the Bronze Age

Material evidence for activity from the end of the Bronze Age to the later Iron Age was absent from the Coburg Road excavations, while the quantities of Romano-British material recovered were small and invariably highly abraded. The low level of Romano-British pottery from the excavation mirrors the results of survey and excavation in this area to the north of Maiden Castle (Woodward 1991).

The most ambiguous feature excavated at Coburg Road was the undated sunken-featured structure, 81. In apparent isolation, the date of this structure cannot be discerned from the excavated evidence. It had no stratigraphic relationship with other features or deposits and datable finds from the fills consisted solely of small quantities of abraded Romano-British pottery from the upper fills. The two minute fragments of post-medieval slate from the basal fill of the feature can be assumed to be intrusive. While the majority of Romano-British pottery from the site was

recovered from this feature, the quantity was proportionate to the percentage of the feature excavated in comparison with other excavated features.

Several sunken-featured structures have recently been identified in the Dorchester environs: at Poundbury (Green 1987, 91), of post-Roman 6th–7th century date; Alington Avenue (Davies *et al.* 1985 108), of Romano-British date; and on the route of the Dorchester By-pass at Maiden Castle Road (Woodward and Smith 1987, 87), also of Romano-British date. The Coburg Road example compares with the square, deep-cut, structures recorded at Maiden Castle Road and Fordington Bottom (Chowne 1988) which are both certainly Romano-British. These other examples were suggested as non-domestic structures and the same is probably the case for the Coburg Road example. The building may represent an outlying barn or store for the Maiden Castle Road settlement or perhaps the 'villa' at Dagmar Road, which lies some 0.8 km to the east on the same ridge as Coburg Road.

The Phase 5 linear boundaries conform to the open medieval fields of the Manor of Fordington surveyed by Simpson in 1779 (Sharples 1992, fig. 11). The colluvium infilling the shallow terrace across the central area of the site also fits neatly as the east–west headland or trackway between strip fields indicated on Simpson's map. The one perhaps doubtful boundary might be ditch 74 whose irregular and intermittent plan is incompatible with the others, although its alignment is comparable; a possible prehistoric date has previously been suggested.

Continued agricultural activity at Coburg Road is represented by the small quantities of post-medieval material recovered and invariably incorporated into the upper fills of a range of features, including those of Bronze Age date. The small quantity recovered is in keeping with the low but consistent levels of such material recovered by survey from the fields to the north of Maiden Castle (Woodward 1991). The linear boundaries to the east of the excavation, 83, 249 and 251 (whose continuation to the east is clearly shown by geophysical survey), are alternatively a component of the post-enclosure (after 1874) field system and which the alignment of the new rugby ground will continue to mirror.

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#### REFERENCES

- Allen, M.J., 1991, 'The environmental history', in Bellamy, P.S., 1991, 123–127.
- Barrett, J., 1980, 'The pottery of the later Bronze Age in lowland England', *Proc. Prehist. Soc.* 46, 297–319.
- Bellamy, P.S., 1989, 'Excavations at the Station Master's House, Weymouth Avenue, Dorchester', unpubl. Wessex Archaeology.
- Bellamy, P.S., 1991, 'The excavation of Fordington Farm Round Barrow', *Dorset Proceedings* 113, 107–132.
- Bond, D., 1988, *Excavations at the North Ring, Mucking Essex: a Late Bronze Age Enclosure*, East Anglian Archaeol. 43.
- Bradley, R., Lobb, S., Richards, J. and Robinson, M., 1980, 'Two Late Bronze Age settlements on the Kennet Gravels: excavations at Aldermaston Wharf and Knight's Farm, Burghfield', *Proc. Prehist. Soc.* 46, 217–295.
- Brown, L., 1991, 'The Iron Age pottery', in Sharples, N., 1991, 185–203.
- Calkin, J.B., 1948, 'The Isle of Purbeck in the Iron Age', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 70, 29–59.
- Carruthers, W.J., 1992, 'The plant remains', in Butterworth, C.A. and Lobb, S.J., 1992, *Excavations in the Burghfield area, Berkshire. Developments in the Bronze Age and Saxon Landscapes*, Wessex Archaeology Report 1, 149–158.
- Chowne, P., 1988, 'Interim report on the Western Link Road, Bradford Peverell, Dorset', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 109, 125–126.
- Clark, J.G.D., 1934, 'Derivative forms of the *petit tranchet* in Britain', *Archaeol. J.* 91, 34–58.
- Cosgrove, M.E., 1986, 'The geology', in Hurst, J.D. and Wachter, J.S., 'A multi-period site at Poxwell, Dorset', *Proc. Dorset Natur. Hist. Archaeol. Soc.*, 108, 63–80.
- Cunliffe, B.W. and Brown, L., 1987, 'Production, trade and exchange', in Cunliffe, B.W., *Hengistbury Head, Dorset, Vol 1, the Prehistoric and Roman Settlement, 3500 BC–AD 500*, Oxford Univ. Comm. Archaeol. Monog. 13, 303–321.
- Cunliffe, B.W. and Phillipson, D.W., 1968, 'Excavations at Eldon's Seat, Encombe, Dorset', *Proc. Prehist. Soc.* 34, 191–237.
- Davies, S.M., 1987, 'The fired clay objects', in Green, C.S., 1987, 109–112.
- Davies, S.M., Stacey, L.C., and Woodward, P.J., 1985, 'Excavations at Alington Avenue, Fordington, Dorchester, 1984/85: interim report', *Proc. Dorset Natur. Hist. Archaeol. Soc.*, 107, 101–110.
- Driesch, A. von den, 1976, 'A guide to the measurement of animal bones from archaeological sites', *Peabody Museum Bulletin* 1.
- Edmonds, M. and Bellamy, P.S., 1991, 'The flaked stone', in Sharples, N., 1991, 214–229.
- Ellison, A. and Rahtz, P., 1987, 'Excavations at Hog Cliff Hill, Maiden Newton, Dorset', *Proc. Prehist. Soc.* 53, 223–269.
- Ensom, P.C., 1983, 'A temporary exposure in the Purbeck limestone formation (Upper Purbeck Beds) at Friar Waddon Pumping Station, Dorset', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 105, 89–91.
- Ensom, P.C., 1984, 'An annotated section of the Purbeck limestone formation at Worbarrow Tout, Dorset', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 106, 87–91.
- Fasham, P.J., 1985, *The Prehistoric Settlement at Winnall Down, Winchester*, Hampshire Fld Club Archaeol. Soc. Monog. 2.
- Fasham, P.J. and Ross, J.M., 1978, 'A Bronze Age flint industry from a barrow site in Micheldever Wood, Hampshire', *Proc. Prehist. Soc.* 44, 47–67.
- Fasham, P.J., Farwell, D. and Whinney, R., 1989, *The Archaeological Site at Easton Lane, Winchester*, Hampshire Fld Club Archaeol. Soc. Monog. 6.
- Ford, S., Bradley, R., Hawkes, J. and Fisher, P., 1984, 'Flint-working in the metal age', *Oxford J. Archaeol.* 3, 157–173.
- Godwin, Sir H., 1975, *History of the British Flora*, 2nd ed., Cambridge Univ. Press.
- Green, C.S., 1986, 'Earthworks of prehistoric or early Roman date in the Dorchester area', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 108, 193–194.
- Green, C.S., 1987, *Excavations at Poundbury, Dorchester, Dorset 1966–1982. Volume I: The Settlements*, Dorset Natur. Hist. Archaeol. Soc. Monog. 7.
- Green, H.S., 1980, *The Flint Arrowheads of the British Isles*, Brit. Archaeol. Rep. 75.
- Harding, P., 1991, 'Stratified groups from Rowden and Cowleaze', in Woodward, P.J. 1991, 73–87.
- Holgate, R., 1988a, 'The flint', in Brown, N., 'A Late Bronze Age settlement on the boulder clay plateau: excavations at Broads Green 1986', *Essex Archaeol. Hist.* 19, 7–14.
- Holgate, R., 1988b, 'Flint', in Brown, N., 'A Late Bronze Age enclosure at Lofts Farm, Essex', *Proc. Prehist. Soc.* 54, 276–280.
- Jones, M., 1978, 'The plant remains', in Parrington, M., *The excavation of an Iron Age settlement, Bronze Age ring-ditches and Roman features at Ashville Trading Estate, Abingdon (Oxfordshire)*

- 1974-76', *Counc. Brit. Archaeol. Res. Rep.* 28, 93-110.
- McKinley, J.I., 1989, 'Cremations, possibilities, methodologies and realities', in Roberts, C.A., Lee, F. and Bintliffe, J. (eds), *Burial Archaeology: Current Research, Methods and Developments*, *Brit. Archaeol. Rep.* 211, 65-76.
- McKinley, J.I., forthcoming a, *Spong Hill, Vol 7: the Cremations*, E. Anglian Archaeol.
- McKinley, J.I., forthcoming b, 'Fuel ash slag in cremations', *J. Archaeol. Sci.*
- McMinn, R.M.H. and Hutchings, R.T., 1985, *A colour atlas of human anatomy*.
- Melville, R.V. and Freshney, E.C., 1982, *The Hampshire Basin and Adjoining Areas*, H.M.S.O.
- Mills, J.M., 1993, in Hawkes, J.W. and Heaton, M.J., *A Closed-Shaft Garderobe and Associated Medieval Features at Jennings Yard, Windsor*, *Wessex Archaeol. Rep.* 3, .
- Morris, E.L., 1989, *The Analysis of Pottery*, unpubl, Wessex Archaeol. Guidelines.
- Newcomber, M.H. and Karlin, C., 1987, 'Flint chips from Pincevent', in Sieveking, G. de G., and Newcomer, M.H., (eds), *The Human Uses of Flint and Chert*, Cambridge Univ. Press, 33-36.
- Pearce, P., 1986, 'Observations at South Station, Dorchester', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 108, 180.
- RCHM(E), 1970, *An Inventory of Historical Monuments in the County of Dorset Volume II, South-East*.
- Rye, O.S., 1981, *Pottery Technology*, Taraxacum Manuals on Archaeology 4.
- Sellwood, L., 1984, 'The objects of bone and antler', in Cunliffe, B.W., *Danebury, an Iron Age Hillfort in Hampshire, Vol.2: The Finds*, *Counc. Brit. Archaeol. Res. Rep.* 52, 371-395.
- Sharples, N., 1991, *Maiden Castle. Excavations and Field Survey 1985-6* English Heritage Archaeol. Rep. 19.
- Smith, I.F., 1987, 'The Neolithic and Bronze Age pottery', in Green, C.S., 1987, 114-117.
- Speller, K., 1985, 'Observations along a Wessex Water Authority Pipeline: Stinsford crossroads to Robin's barrow, October-November 1985', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 107, 155-156.
- Staines, S., 1991, 'Soil mapping', in Sharples, N., 1991, 12-15.
- Stone, J.F.S., 1936, 'An enclosure on Boscombe Down East', *Wiltshire Archaeol. Natur. Hist. Mag.* 47, 466-489.
- Stone, J.F.S., 1937, 'A Late Bronze Age habitation site on Thorny Down, Winterbourne Gunner, S. Wilts', *Wiltshire Archaeol. Natur. Hist. Mag.* 47, 640-660.
- Wainwright, G., 1979a, *Mount Pleasant, Dorset: Excavations 1970-1971*, *Rep. Res. Soc. Antiq. London* 37.
- Wainwright, G., 1979b, *Gussage All Saints. An Iron Age Settlement in Dorset*, *Dept Environ. Archaeol. Rep.* 10.
- Wells, C.R., 1981, 'The archaeological implications of the Dorchester By-pass', unpubl. rep. Dorset Archaeol. Comm.
- Woodward, P.J., 1981, 'Excavations at 'Rowden', Winterbourne Steepleton, 1981, SY 616891: an interim note', *Proc. Dorset Natur. Hist. Archaeol. Soc.*, 103, 119-121.
- Woodward, P.J., Jenkins, V. and Davies, S.M., 1986, 'Excavations and survey at Fordington Farm and the Trumpet Major: an interim note', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 108, 169-171.
- Woodward, P.J. and Smith, R.J.C., 1987, 'Survey and excavation along the route of the Southern Dorchester By-pass, 1986-1987 — an interim note', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 109, 79-89.
- Woodward, P.J., 1991, *The South Dorset Ridgeway Survey and Excavations 1977-1983: The Pre-Iron Age Landscapes*, *Dorset Natur. Hist. Archaeol. Soc. Monog.* 8.



# Excavation and Survey of Bronze Age Sites in the Badbury area, Kingston Lacy Estate.

MARTIN PAPWORTH

with contributions by Mark Corney, Nancy Grace, Alison Locker, Julian Richards, Hazel Riley, David Tomalin  
Angus Wainwright and Jenny Yates

## Summary

*Excavation, survey and aerial photography since 1988 have revealed new evidence of Bronze Age settlement, agriculture and burial practice south of Badbury Rings.*

*Two evaluation trenches were excavated across an enclosure dated by radiocarbon analysis to the Middle Bronze Age. These dates are from the bones of a cow and calf burial in the secondary filling of the inner ditch and from a sheep and two lambs and a sheep buried in separate pits between the inner and outer ditches of the enclosure. The date range from these burials is 1,390 to 1,020 cal. BC at 1 sigma.*

*The results from a series of trenches dug in advance of planting the new beech avenue, flanking the B3082 from Wimborne to Blandford, are described. Sections were dug through several ditches visible on aerial photographs. These included a ring ditch (ST 94830352) a deep linear ditch (ST 95600301) and several smaller features interpreted as field boundary ditches. Further east (ST 98200284) a group of postholes are thought to be the remains of a round house.*

*Remains of a Romano-British ploughsoil survived in the upper fillings of some of these features and two shallow ditches were covered by a thin-packed layer of stones mixed with small sherds of Romano-British pottery.*

*These excavations are considered in relation to the updated lists of ring ditches/barrows, enclosures, field systems and linear ditches for the area.*

## INTRODUCTION

Badbury Rings is surrounded by a dense concentration of features of prehistoric and Romano-British date. The National Trust have conducted an archaeological landscape survey which has included a study of aerial photographs and documents for the Kingston Lacy Estate. This revealed over 100 sites of ring ditches/round barrows and a series of linear features and enclosures which enhance previously published site distributions for the area

(RCHM 1975; Bowen 1990). A series of excavations have dated some of the features and these have been related to the prehistoric landscape.

Sites are referred to here by numbers given in the Royal Commission's Survey (RCHM 1975), in Bowen (1990) and by Mark Corney (RCHME) for this current survey.

Bronze Age dating descriptions in this report are those discussed in Woodward (1991) and Barrett, Bradley and Green

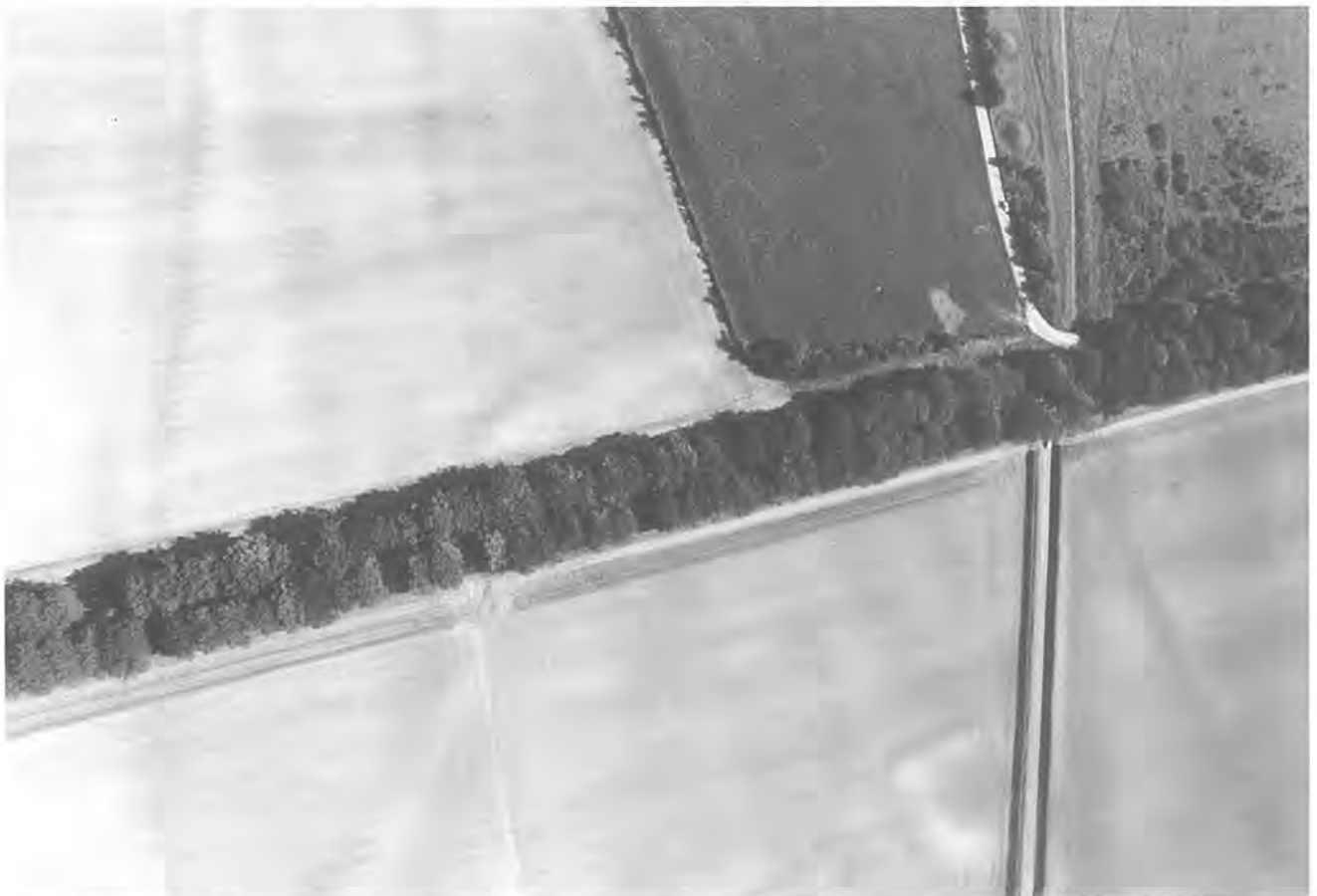


Plate 1 Air photograph of Crab Farm enclosure a86 (bottom right), linear 35/a89 (centre), linear a90 (left), round barrows 47 and 48, Roman road M4e (top right). Harding NT Film 401 Neg 24, September 1988.

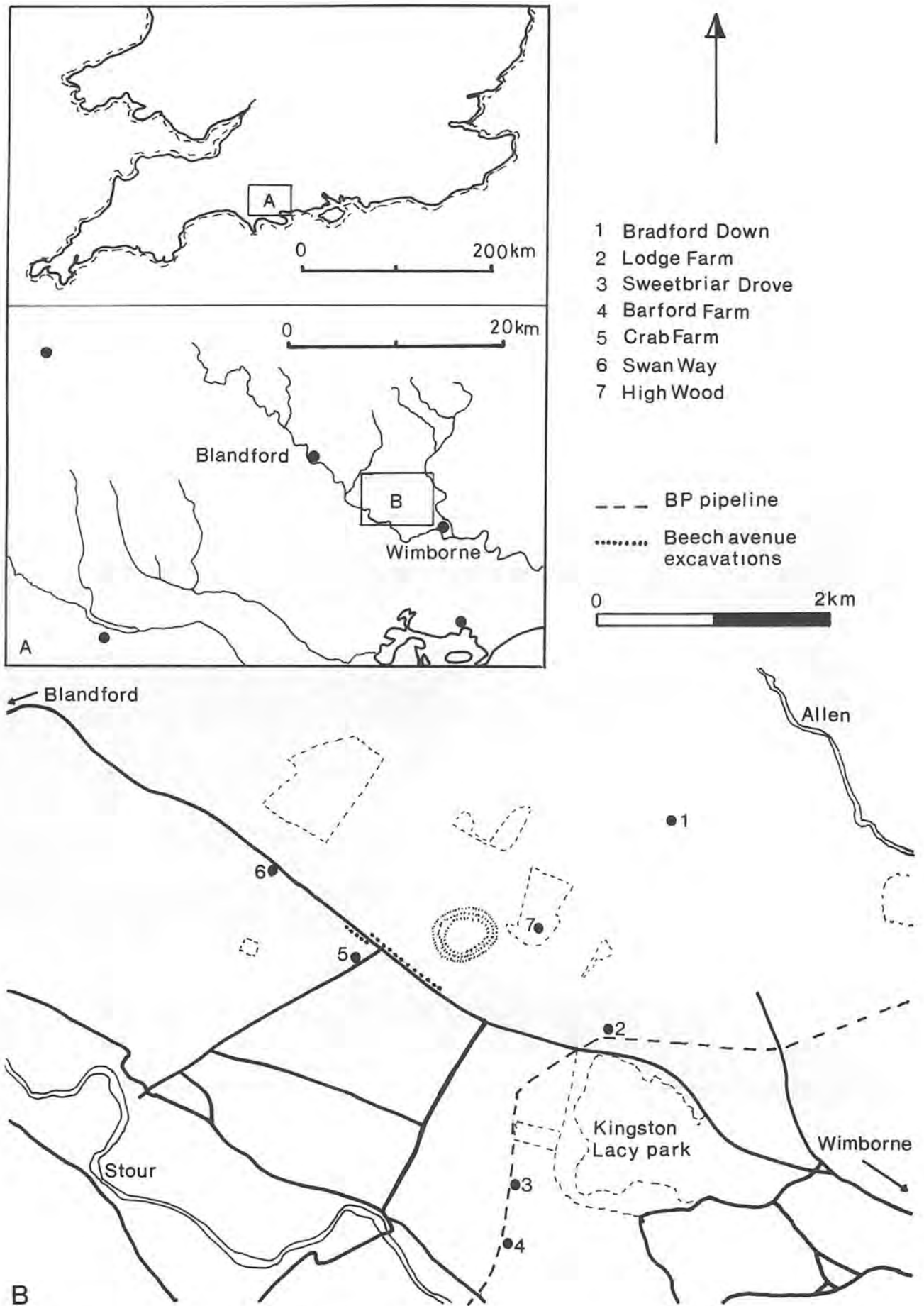


Figure 1 Location map Badbury Rings area

(1991). Early Bronze Age is used to describe the principal period of round barrow construction and associated ceramics, defined as 2,200-1,400 BC (Woodward 1991, 140). The term Middle Bronze Age is used in relation to Deverel-Rimbury ceramics, which dominate this period, and where radiocarbon dating provides a more precise chronology. This period is considered to be 1400-950 BC, with a settlement shift from established sites occurring around 1,000 BC, marking the beginning of the Late Bronze Age (Barrett 1991 228). This transitional period from the Bronze Age to the Iron Age is defined as 950-600 BC.

The term later Bronze Age is used to describe features of Bronze Age morphology which are not closely dated but which cross or are laid out in relation to features which are considered to be of Early Bronze Age date. For example where linear features partly enclose or lie in close proximity to ring ditches and round barrows. The later Bronze Age period includes the Middle and Late Bronze Age periods and is defined as 1400-600 BC (Woodward 1991, 146).

#### CRAB FARM ENCLOSURE (RCHM Shapwick a86) (Plates 1-4)

The enclosure at ST 95560281 lies 650 m west of Badbury Rings and 150 m south-west of the Blandford Road (Fig. 1). Its east edge is cut by the early 19th century road to Shapwick which runs parallel with and a few metres north-west of the Badbury-Dorchester Roman road. The enclosure is sited 60 m above O D on a gentle south-west slope and lies within a line of ring ditches/barrows (RCHM Shapwick a75, a76, 47-49, 52-54).

The enclosure aroused interest by its description as a 'Roman amphitheatre' on the 1773 map of the Kingston Lacy Estate (DCRO, Woodward B/KL). The interim report (Papworth 1988 a 141) incautiously interpreted the site as a 'Neolithic henge', but pottery and flint reports, together with the three radiocarbon dates now date the site to the Middle Bronze Age.

The 1742 and 1773 maps show the site as lying on Shapwick Common Down. On the enclosure map of 1813 (DCRO, Inclosure 50) the earthwork is shown as being enclosed within a small field referred to as part of Prior Down. The reference to the



Plate 2 Crab Farm enclosure looking north-east, darker soil of the outer ditch filling (18) of trench B (foreground) packed chalk of bank remnant (13) (centre), trench A (background).

site as a Roman amphitheatre indicates that it was an impressive earthwork in the late 18th century. However, ploughing in the late 19th century and 20th century had reduced the enclosure, by 1954, to a bank measuring 10 m wide and 0.7 m high with external dimensions measuring 55 m north-west to south-east and 47 m north-east to south-west surrounding an internal depression (Ordnance Survey, 1954).

#### Survey Method

By 1987 the bank of the earthwork only survived on the south, west and north sides where it had been spread to a width of 20 m with a maximum height of 0.5 m. On the north-east side, the bank had been levelled. The area enclosed was 30 m in diameter and formed a hollow 0.4 m below the level of the bottom of the bank on the south-west side (Fig. 2). The profile of the enclosure could be seen in the hedge boundary on the south-east which flanks the Shapwick Road. The 1773 map (DCRO, Woodward B/KL) shows an entrance on the south-east side of the earthwork.

Following a contour survey the earthwork was fieldwalked using a 10 m grid laid out in the national grid. This revealed a scatter of flint debitage across the earthwork with a concentration in the central and south-western parts of the site. Burnt flint was particularly noticeable across the monument and was concentrated in the same areas as the flint debitage, that is where the monument was least disturbed (detailed data available in archive).

In August 1988 two trenches 25 m long and 1.2 m wide were excavated within the field, parallel with and 2 m from the hedge flanking the Shapwick road (trenches A and B, Fig. 2). They were placed to coincide with the position of the bank and the aim of the work was to gather information to justify taking the earthwork out of the plough and returning it to permanent pasture. Aerial photographs were taken of the site in October 1988 (Harding NT film 401) which revealed the site to be a sub-circular enclosure with the straight side on the north.

English Heritage requested that a section be cut across a linear ditch which the aerial photograph (Harding NT film 401, neg 23) showed extending 200 m north-west from western edge of the enclosure. The section was required to determine whether the scheduled area should include this site. The excavation removed the ploughsoil from an area 15 m long and 3 m wide (trench C) and an area 20 m long and 1.0 wide (trench D, Fig 2). The ditch was not located although this linear feature was later confirmed by geophysical survey. During this work the top of the outer ditch of the enclosure was seen and plotted but not excavated.

In 1990 and 1991 resistivity and magnetometer surveys were conducted across the earthwork and in October 1991 the site and surrounding land was fenced from the arable field to create a horse paddock.

#### The Geophysical Survey

by Jenny Yates

The magnetometry was carried out using a Geoscan FM 36 Fluxgate gradiometer on two rows of 4, 30 x 30 m grids running parallel and 2 m from the hedge of the Shapwick road (Fig. 3). The resistivity meter was a Geoscan RM15 using a grid on the same alignment as the magnetometry by 10 m to the east to focus on the features identified by the magnetometry survey. Also the grids were positioned against the fence as the instrument is not significantly influenced by wire fences.

The survey identified four features. Feature A was identified as a sub-circular anomaly of negative magnetic flux density and high resistance interpreted as the bank of the enclosure.

Feature B, a sub-circular anomaly of positive magnetic flux density, was interpreted as the outer ditch of the enclosure. The feature could not be detected at the boundary of grids M5 and M6 on the north side.

Feature C was a small curvilinear anomaly of positive magnetic flux density. This feature appears to be a silted ditch on the north-east side of the outer ditch.

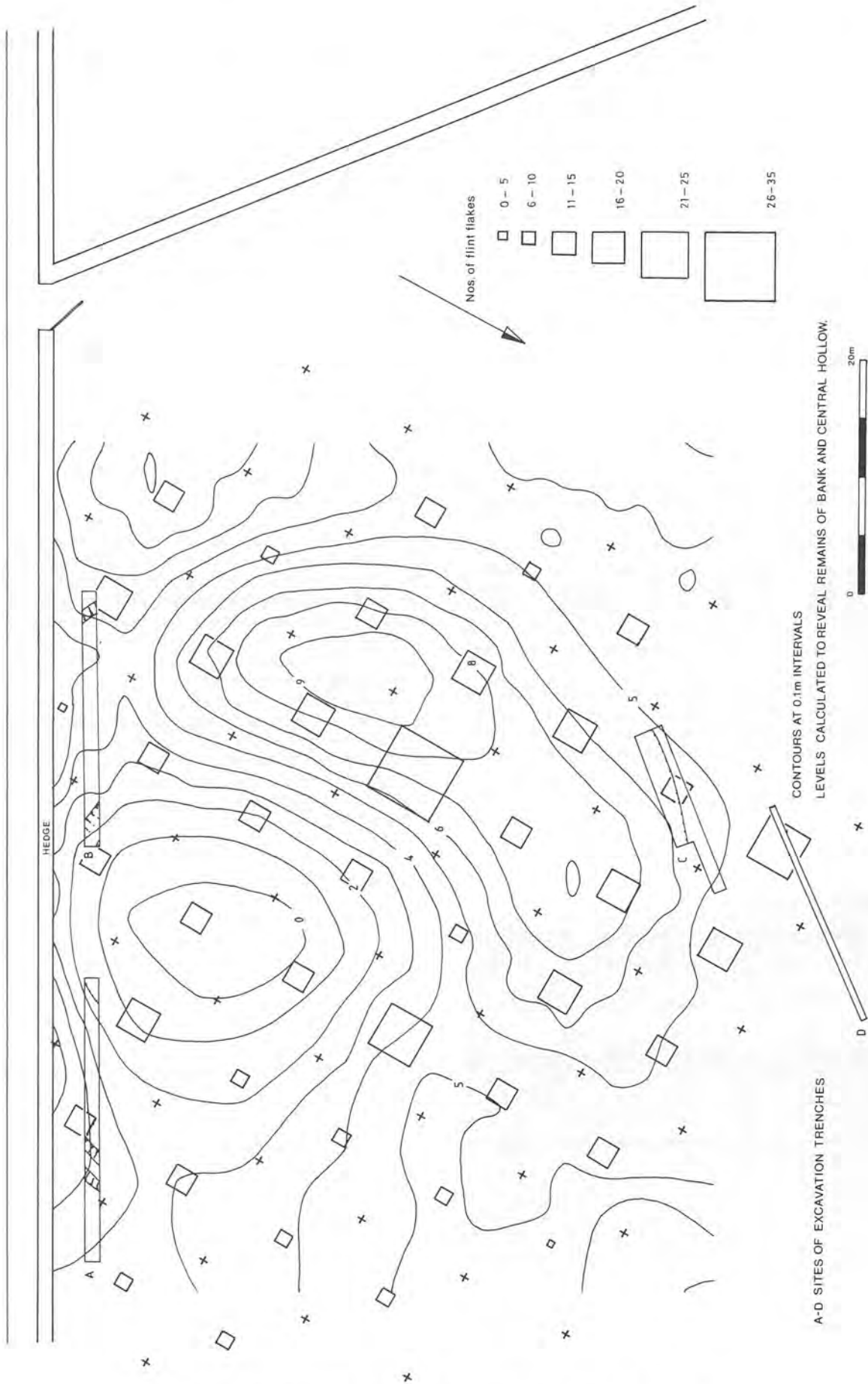


Figure 2 Crab Farm enclosure trench locations and flint flake distribution



Plate 3 Crab Farm enclosure trench B looking south-east. Left to right, posthole (27), sheep burial pit (28), V-shaped ditch (20), pit (62), sheep burial pit (63), posthole (64), outer enclosure ditch (30).

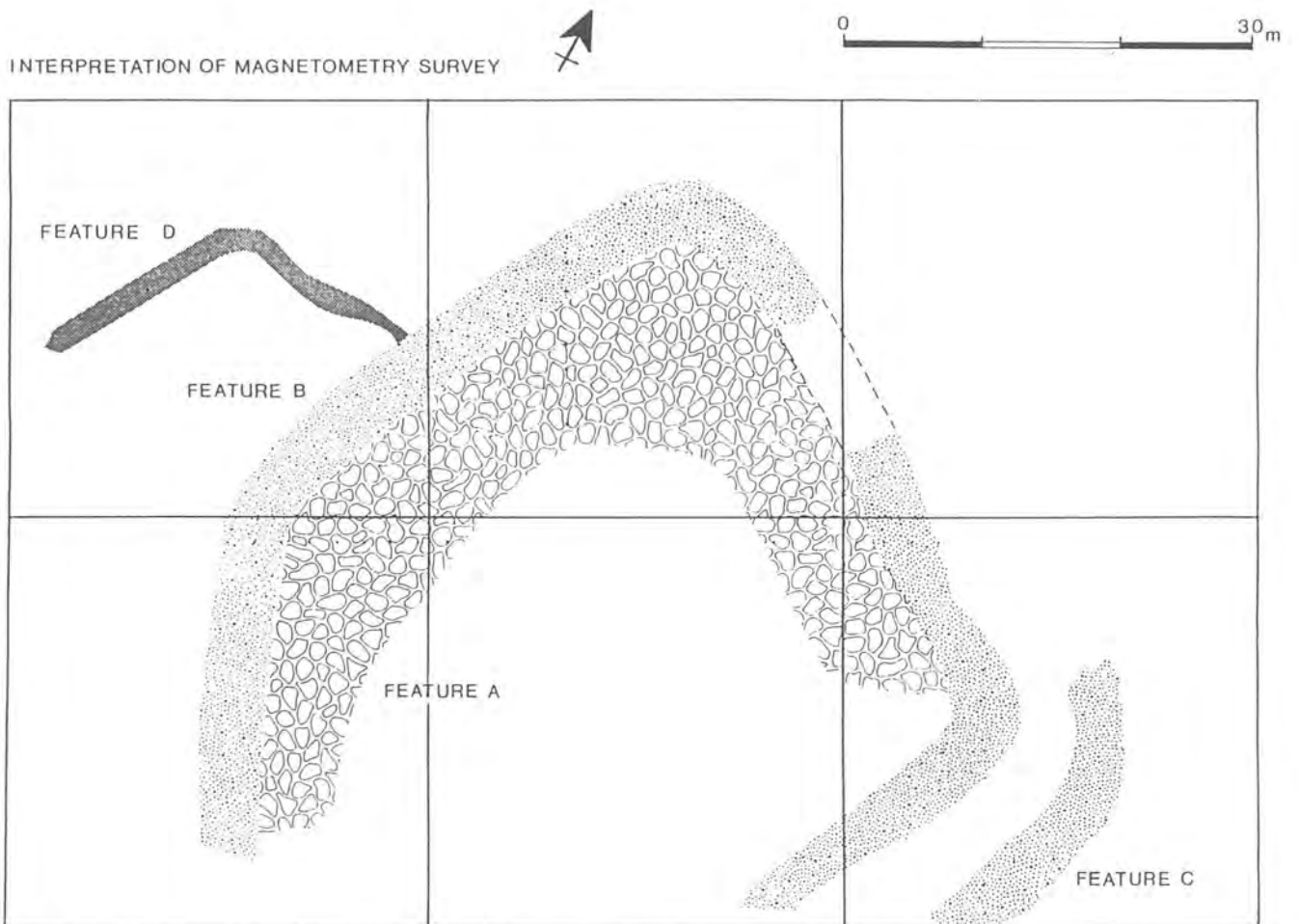


Figure 3 Interpretation of magnetometry survey, Crab Farm enclosure

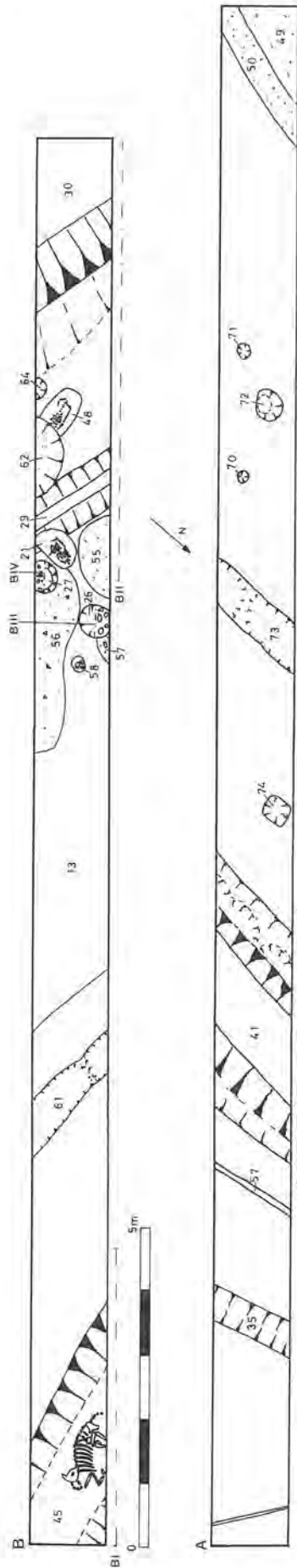


Figure 4 Plan of excavation trenches A and B, Crab Farm enclosure

Feature D is a linear anomaly of positive magnetic flux density and appears to be a silted ditch. It emerges from the north side of the enclosure where a ditch is shown on the aerial photograph (Harding NT film 401 neg 23).

#### Pre-Enclosure Activity (Fig. 4)

Below the ploughsoil and in the position of the plough-eroded bank was a feature consisting of a series of shallow interconnecting scoops. Similar features were seen in both trenches A, (73) and B, (61) both measuring 0.6 m wide and 0.2 m deep. With the exception of struck flint, no datable finds were identified within the fillings but the feature was found 2.5 m from the inner ditch edge in Trench B and 7.0 m from the ditch edge in trench A. Features (73) and (61) appear to be associated and may represent the remnant of an earlier enclosure on a slightly different alignment to the embanked enclosure.

At the south-west end of trench B was a cluster of features which lay between the inner and outer ditches. They were partly covered by layer (11), which contained late Romano-British material, and partly by the edge of the bank (13).

One of the earliest features was a V-shaped flat-bottomed ditch (29) measuring 0.8 m tapering to 0.2 m wide, and 0.5 m deep. The ditch (29) had silted before being cut by a pit (28) containing the articulated skeleton of a pregnant sheep (21). This skeleton yielded a date of 2990+80 BP (RCD-34). The ditch (29) was also cut by a pit (62) on its south-west edge (1.1 m dia. and 0.4 m deep) which had been disturbed by rabbit activity. Pit (62) cut another pit (63) which contained the skeleton of a sheep (48) and yielded a date of 2940+70 BP (RCD-36). The skull of the sheep had been removed by the pit (62) and the upper part of the burial had been truncated, probably by ploughing in the later prehistoric period.

On the north-east side of ditch (29) were two circular features 0.5 m diameter with similar fills but of different depths; (26) was 0.2 m deep and (27) 0.4 m deep. (27) contained a post-pipe, 0.2 m diameter, with a packing of burnt flint and burnt heathstone. Other features on the north-east side of (29) were seen in plan but not excavated (55); (56); (57); (58). Occupation features may have extended further north-east below the packed chalk bank remnant (13), but this layer was not fully excavated.

In trench (A), where no undisturbed remnant of the bank survived, four probable postholes were identified: (70), (71), (72) and (74), cutting chalk below plough soil. They contained no datable finds.

#### The Enclosure

This was defined by an inner and outer ditch which were 11.5 m apart in trench (A) and 15 m apart in trench (B). The bank remnant (13) survived in only the central 7 m between the two ditches in (B) and here it existed as a thin layer of packed chalk 0.05 m thick.

The profile and filling of the outer ditch (41)/(30) was similar in both trenches A and B although only approximately 50% width of the ditch (30) was excavated in trench (B). The ditch, in A, was 2.9 m wide at the top tapering to a flat base 1.5 m wide; it was 1.2 m deep. The primary filling in both trenches consisted of a 0.02 m band of clay loam containing charcoal flecks. The charcoal flecks were very numerous in trench B and compacted. In trench A a thin band of chalk (39), 0.02 m deep, also appeared to have been trampled on, it lay above the charcoal layer (40). Above this was a layer of frost fractured chalk followed by a series of layers which indicate gradual silting of the ditch. Few datable finds were associated with this filling, although several sherds of Deverel-Rimbury type, in layers (31) and (33), were identified.

The inner ditch was seen in plan in trench A and excavated to the layer of frost fractured chalk (53) in trench B. Probing indicated that 0.3 m of the ditch was unexcavated giving a total depth 1.7 m. The ditch had a U-shaped profile with a width of 2 m.

The frost fractured layer (53) indicates that the ditch was left open for at least one winter with a thin band of dark brown loam

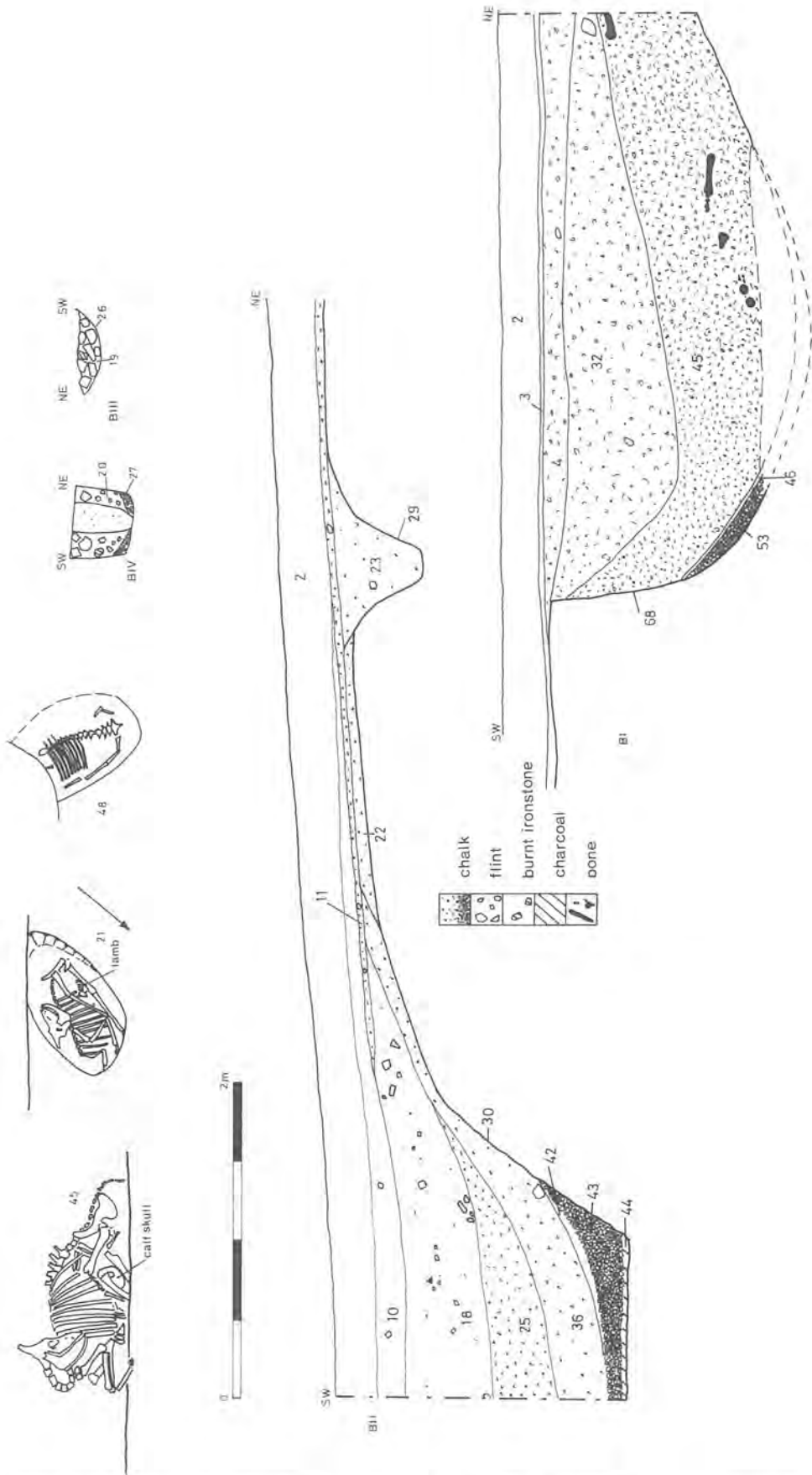


Figure 5 Sections of postholes 26 and 27, V-shaped ditch 29, outer enclosure ditch (30) and inner enclosure ditch (68) and plans of animal burials.

(46) accumulating above (53) as rainwash from the topsoil during the warmer months. The rapid initial weathering of features cutting chalk was demonstrated after the re-excitation of five Iron Age beehive pits at Micheldever Wood (Fasham 1987, 68). The results from this work indicate that the inner ditch at Crab Farm may not have been left open more than a year before it was backfilled and it is unlikely that the ditch was open for more than five years.

After this initial weathering, the ditch appears to have been deliberately backfilled with weathered chalk mixed with occupation debris. Above (46), layer (45), 0.8 m deep, contained the articulated skeleton of a pregnant cow near the bottom of the deposit. This yielded a date of 2930 BP + 70 (RCD-35) and pottery finds support this Middle Bronze Age date. Above (45), layer (32) was a similar filling, 0.7 m deep, containing a dense concentration of weathered chalk with Middle Bronze Age pottery.

### Romano-British Period

Evidence for the Late Bronze Age - Iron Age use of the site is lacking apart from two small body sherds of sandy brown pottery within the secondary filling of the outer ditch (25) which may be of this date.

The upper layers of the outer ditch contained Romano-British material, particularly in trench B where layer (18) was 0.5 m deep. The soil was a loose friable loam which may have been derived from ploughing. It contained late Romano-British pottery and lay below a thin (0.05 m) deposit (11) containing similarly dated pottery and a coin of Claudius Gothicus (AD 268-270). It lay directly on top of the Bronze Age features (28) and (29), and indicates that some deposits were truncated in the Romano-British period. The chalk in (11) may have come from the bank of the enclosure. The layer slopes gently south-west and

continues across the edge of the outer ditch. The slope angle of (11) indicates that there was at least a 3 m berm between the bank and outer ditch in this period. Above (11) was a buried turf line which was 0.2 m at its deepest. This layer (10) contained several sherds of Romano-British pottery.

A shallow V-shaped ditch (59) on the north-east end of trench (A) measured 0.6 m wide and 0.2 m deep. It contained an iron nail but no other diagnostic finds.

### Radiocarbon dates

The three radiocarbon dates with calibrated age ranges from Washington University intercept method (Stuiver & Reimer, 1986) using data of Pearson & Stuiver (1986) are:

**RCD-34** 2990 ± 80 BP1 1390 to 1100 cal BC

2 1430 to 1000 cal BC

Taken from the bones of a sheep burial with lambs within pit (28)

**RCD-35** 2930 ± 70 BP 1 1265 to 1020 cal BC

2 1390 to 930 cal BC

Taken from the bones of a cow burial with calf in the secondary filling (45) of the inner ditch (68).

**RCD-36** 2940 ± 70 BP1 1265 to 1035 cal BC

BP 2 1395 to 930 cal BC

Taken from bone of the sheep burial within pit (63).

These dates compare well with the radiocarbon dates from the Down Farm and South Lodge enclosures which give a date range of 1200-950 cal BC. Barrett's discussion on Middle Bronze Age chronology considers such enclosed settlements to be a feature of this period (1991, 222).



Plate 4 Crab Farm enclosure looking south-east. Cow burial with calf within secondary filling (45) of inner enclosure ditch (68).

CRAB FARM FINDS

**Prehistoric Pottery**

by Dr. David Tomalin

In the description of the sherd-bearing contexts given below, it will be seen that a few putative Early Bronze Age sherds of the Food Urn or Form 3 Biconical Urn tradition have been recorded. Whilst the presence of Form 3 Biconical Urn pottery can be argued with some confidence it must be noted that, in Dorset, this style of shouldered grog-tempered pottery is known to have persisted throughout the transition of such pots into bucket urns of the Deverel-Rimbury tradition (Tomalin 1983, 182-186; 1988, 214). Moreover, the fragmentary condition of the Crab Farm sherds makes any differentiation between Form 3 biconical urn and grog-tempered bucket urn quite impossible. That some sherds undoubtedly belong to one or other of these two forms is without doubt. In contrast, the presence of grog-tempered Food Urn pottery is securely attested but only by sherd 4.4.

*Context (4) (Inner ditch tertiary fill)*

This context appears to be a late tertiary fill and includes two fragments of bucket urn (4.1 & 4.2) and two thin-walled fragments which can be reasonably attributed to a type I globular urn (4.3).

- 4.1 Bucket urn sherds 15% comminuted flint 2 mm.
- 4.2 Bevelled rim. 5% comminuted flint (Fig. 6).
- 4.3 Featureless body sherd but temper suggests Type I Globular Urn. 15% comminuted flint, 2 mm.
- 4.4 Cord-decorated bevelled rim sherd of Food Urn tradition with right-hand cord. (Fig. 6).
- 4.5 Eroded, relatively thick-walled, grog-tempered sherd possibly bearing comb-point decoration. Perhaps Food Urn tradition. (Fig. 6).
- 4.6 Unclassified reduced thin-walled body sherd. Possibly black burnished Durotrigian ware.

*Context (5) (Ploughsoil)*

This context is a modern ploughsoil sealing and truncating the uppermost levels of the inner ditch. Three sherds from this context include one small featureless grog-tempered body fragment of Food Urn character. The textural characteristics of this sherd are comparable with the Food Vessel/Urn, Collared Urn, Form 3 Biconical Urn repertoire of Early Bronze Age pottery. The grog tempering of this sherd, and another from context (15), could equate this pottery with the plough destruction of a lost Early Bronze Age horizon. The possibility of such an event is intimated by the recovery of Food Urn sherd 4.4 in the tertiary fill of the inner ditch.

- 5.1 Small Food Urn/Form 3 (Tomalin 1988) Biconical body sherd. Grog tempered.

- 5.2 Unclassified rim sherd. Possibly lid with approx. diameter of 13 cm. Reduced sand-tempered fabric, possibly Iron Age.

*Context (15) (Exterior ditch tertiary fill)*

- 15.1 Food Urn/Form 3 (Tomalin 1988) Biconical? body sherd. Grog tempered.
- 15.2 Unclassified body sherd.
- 15.3 Thick-walled storage jar. Flint tempered.

*Context (21) (Sheep burial pit fill)*

- 21.1 Basal sherd of Bucket Urn. Grog tempered?

*Context (22)*

- 22.1 Bucket Urn? body sherd. Flint tempered.

*Context (23) (Small V-shaped ditch fill)*

The sampled fill of this ditch contains three sherds. All are hard featureless body sherds tempered with 5% angular calcined flint. The hardness of each sherd, the thickness of the body wall and the size and quantity of temper is all compatible with the bucket urn style of the Deverel-Rimbury ceramic tradition although a Biconical Urn attribution, perhaps of slightly earlier date cannot be excluded. The stratigraphic sequence indicates that the ditch is earlier than the enclosure which would support the earlier ceramic style.

- 23.1 Bucket Urn? body sherd. Flint tempered.
- 23.2 Bucket Urn? body sherd. Flint tempered.
- 23.3 Bucket Urn? body sherd. Flint tempered.

*Context (31) (Exterior ditch secondary fill)*

Secondary fills 31 and 33 contain later Bronze Age sherds attributable to the Deverel-Rimbury ceramic tradition. Rim sherd 31.1 contains some 3%

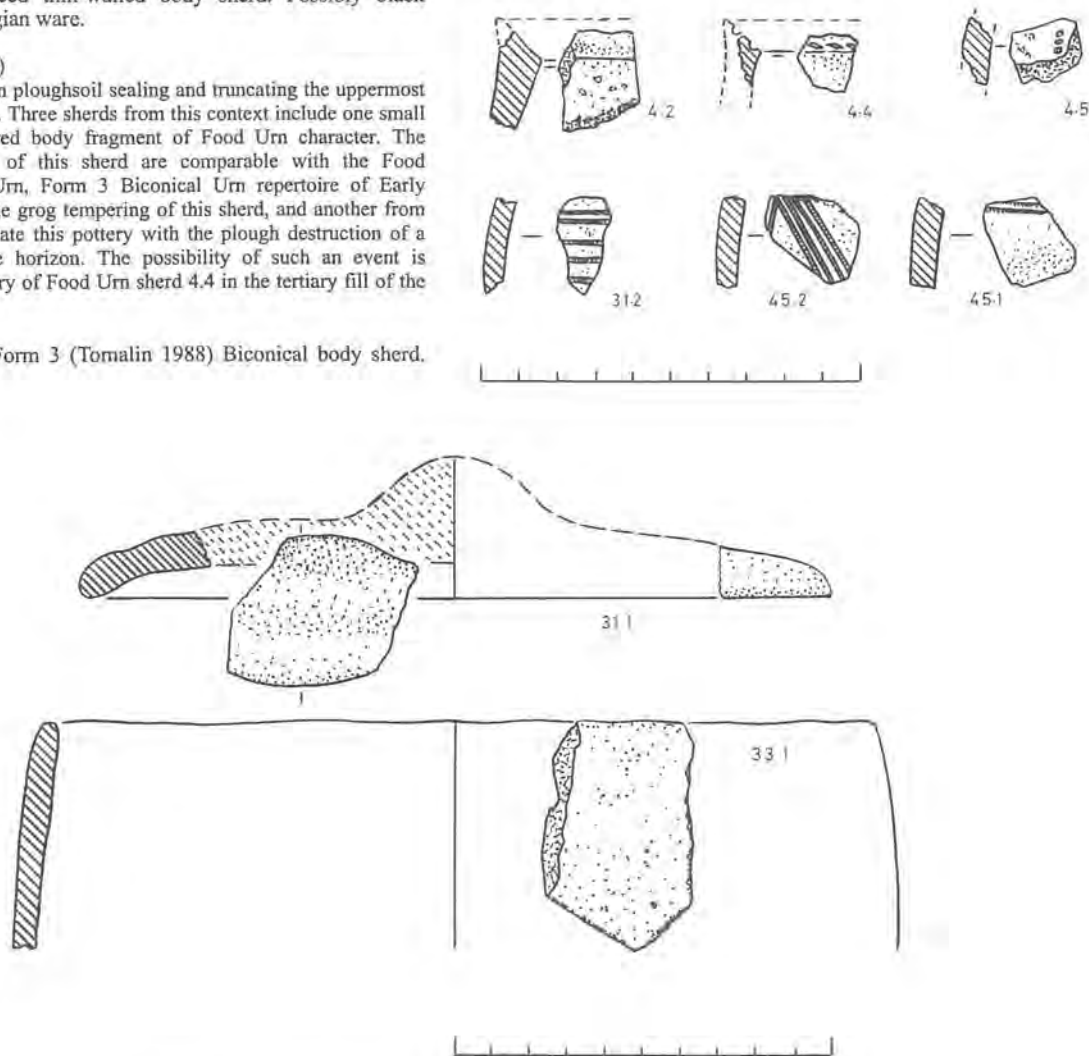


Figure 6 Bronze Age pottery Crab Farm enclosure, at half life size.

angular calcined flint with a particle size mode set around 1 mm. It can be identified as a lid of a Deverel-Rimbury vessel similar to those found at Cheselborne (Dorchester Museum accession 1858.4.9) and Shearplace Hill (Tomalin 1983, 384).

- 31.1 Lid sherd of Deverel-Rimbury tradition. Lid diameter 20 cm approx. 3% grog, 35 flint 2 mm (Fig. 6).
- 31.2 Type IIb Globular Urn? Comb-scored neck sherd. Grog-tempered. (Fig. 6).
- 31.3 Body or shoulder sherd.
- 31.4 Grog-tempered body sherd.

*Context (33)* (Exterior ditch secondary fill)

- 33.1 Body or neck sherd. Possibly Deverel-Rimbury (Fig. 6).

*Context (32)* (Interior ditch secondary fill)

Secondary fills (32) and (45) contain later Bronze Age sherds attributable to the Deverel-Rimbury ceramic tradition. Distinctive examples are the combscored examples from context (45). These are attributable to type IIb globular urns. Bucket urn sherds displaying some 15% flint temper with a particle size mode set around 2 mm, occur in fills 32 and 45.

- 32.1 Bucket Urn rim. 15% flint, 2 mm (Fig. 6).

*Context (45)* (Interior ditch secondary fill)

- 45.1 Type IIb Globular Urn? Comb?-scored body sherd. (Fig. 6).
- 45.2 Type IIb Globular Urn? Comb?-scored body sherd. (Fig. 6).
- 45.3 Bucket Urn? Hard-fired body sherd.

The ceramics cited above include at least one sherd (4.4) which is clearly of Early Bronze Age date whilst several others display textural characteristics which could accord with the same. These are sherds 4.2, 4.5, 5.1, and 15.1 all of which, like sherd 4.4, might be assigned to the Food Urn tradition as defined by Tomalin (1988, 212-215). The bulk of the pottery from the site is however clearly attributable to the Deverel-Rimbury style of Middle or Late Bronze Age ceramics. Whilst none of these sherds come from a context which can be directly associated with a primary event in the construction of the monument, the aggregate of ceramic evidence suggests that the monument is most likely to be earlier than these artefacts.

The argument for a Middle Bronze Age date for the principal use of the site is reinforced by the three radiocarbon dates. That from context (45), 2930 ± 70 BP, concerns cow and calf bones associated with type IIb globular urn sherds contained within an early secondary fill in the inner ditch. A further complementary date of 2990 ± 80 BP concerns sheep and lamb bones associated with a single basal sherd of a Deverel Rimbury bucket urn found in pit context (21).

### The significance of the Crab Farm pottery.

The context of the sherds from the Crab Farm enclosure begs immediate comparison with at least three other Middle Bronze Age sites of the region where Deverel-Rimbury settlement is attested on the Dorset chalklands.

On the Pitt Rivers estate at Rushmore Park, in Cranborne Chase, the rectangular enclosure at South Lodge provides an important analogy to the Crab Farm enclosure (Pitt-Rivers, 1888, IV, 1-44). Here a bank and a deep V-sectioned ditch was served by a single entrance giving access to a principal and subsidiary round house standing within an enclosed area of 3000 square metres (Barrett, Bradley and Green 1991, 144-183). The ceramics at this site comprised flint-tempered bucket and barrel urns accompanied by globular urns of Calkin (1964), ApSimon (1962) and Ellison's (1976) types I and II. This site lies some 16 km north of the Crab Farm enclosure.

Excavations at Down Farm, in the parish of Gussage St Michael, have revealed two Middle Bronze Age round houses associated with Deverel-Rimbury pottery. In phase 2 at this site, these were succeeded by two further round houses surrounded by fence posts enclosing an area of 750 square metres. The south eastern half of the enclosure was flanked by a shallow V-profiled ditch with flat bottom. In phase 3, the round houses were succeeded by a timber rectangular long house (Barrett, Bradley and Green 1991, 283-314). This site is 12 km NNE of Crab Farm.

Some 35 km due west of Crab Farm at Shearplace Hill, Sydling St Nicholas, lies a sub-rectangular enclosure of some 1800 square metres surrounded by a bank and ditch and served by a single entrance.

The ceramics from Shearplace were obtained from cross-sections of the bank and ditch and from an internal area excavation which revealed the post-holes of two or perhaps three round houses (Rhatz & ApSimon 1962; Tomalin 1983). Two annexed enclosures and an associated hollow way and field system serve to differentiate this site from the surviving features so far detected at Crab Farm.

The excavated ceramics from Shearplace Hill probably represent about 35% of the estimated site total. Phase 1 is marked by the use of grog-tempered biconical urns which are perhaps accompanied by a few minor or incidental pots of the Food Urn tradition. This pottery was employed during the occupation of round house C which appears to be the earliest building to be erected on the site (Tomalin 1983, 373-391 for phase re-interpretation). There is also a possibility that a very limited number of barrel urns had arrived on site before the close of this phase.

Biconical urns, perhaps of late and somewhat straightened style, continue during the early part of the main occupation (Phase 2) at Shearplace when the palisade and the surrounding bank and ditch were constructed to enclose subsequent houses B1 and then A1. During the later part of the main occupation (Tomalin 1983, phase 3a-b), the two round houses were rebuilt as houses A2 and B2. By this time bucket urns and globular urns of types I and II were in use, attesting the presence of a classic Deverel-Rimbury repertoire. Toward the end of the site history (phase 3b), heavy flint-tempered urns of Cranborne style and globular urns of type IIb are known to have been in use (Tomalin *ibid*).

Despite the modesty of the evaluation sections at Crab Farm, there now seems good reason to suspect that this enclosure may have served a settlement of very similar character to that of Shearplace-South Lodge Type. The internal area of the enclosure might be estimated to be some 1000 square metres, a size smaller than the latter two enclosures but larger than the fenced area at Down Farm. This seemingly provided the setting for a settled Deverel-Rimbury community distinguishing itself by its discard of bucket urns and of globular urns of types I and IIb. The presence of urn lids such as 31.1 and the use of heavy coarse flint-tempered storage urns of the Cranborne style all serve to suggest that the sherd sample described here is part of a domestic assemblage.

### The Worked Flint

by Julian Richards

Worked flint collections from the sites described in this report varied considerably in size and stratigraphic integrity, the majority being recovered from accumulative ditch deposits. An initial catalogue was prepared of all supplied material, within context by site and by broad technological and functional attributes. The material was divided into the categories shown on tables 1, 4 to 7 and all diagnostic tools were separated at this point (see table 8).

### Animal Bone

by Alison Locker

*Context (45): Cow and Calf Skeletons* (Plate 4)

The complete skeleton of a cow (*Bos sp.* domestic), within the lower secondary fill of the inner ditch is dated by radiocarbon analysis to 2930 ± 70 BP.

The skeleton was lying in articulation with the head turned back across the shoulder and the calf lay below the ribs between the fore and hind limbs with the head facing and touching the hind limbs (Fig. 6). The only marks on the skeleton were knife cuts under the diastema of the left mandible.

The skeleton was measured (after Jones *et al.* 181) and a shoulder height of 100 or 108 cms was calculated depending whether the factors of Matolcsi (1970) or Fock (1966) are used. Since the humeri and radii (used for Matolcsi's method) were distally unfused although the epiphyses were present, and the metacarpals (used by Fock) were distally just fused, the discrepancy in size may result from incomplete growth in unfused bones and the metacarpals are a more reliable result.

In the mandible the third molar was just starting to erupt and the animal was estimated to be two and a quarter to two and a half years old (Grigson 1982A, 13).

The basal circumference of the horn core (107 mm) and the length of the outer curvature (70 mm) is comparable with the young Neolithic domestic females largely from Windmill Hill shown by Grigson (1982B, 28).

With this skeleton was found an extra right fully fused metacarpal for which a shoulder height of 103 cms was estimated using Fock's 1966 no sex factor. This indicates the presence of part of another older animal of approximately the same size.

The size range of the cattle from the Later Bronze Age/Early Iron Age midden at Potterne, Wilts (Locker forthcoming) is 98 to 122 cms so the Crab Farm cows are at the lower end of this range.

The calf associated with this skeleton is a complete skeleton in which the mandibles show the deciduous premolars three and four to be just erupting with no wear suggesting foetal to birth size (Grigson 1981A, 23).

Also in the same context was a femur, humerus and pelvis of a sheep. The humerus was from an animal estimated as measuring 55 cm high at the shoulder (Teichert 1975).

*Context (21): Sheep and two lambs*

The complete skeleton of a horned sheep (*Ovis sp. domestic*) with all teeth in wear and a shoulder height of 54-59 cms (Teichert 1975) was present, together with the skeletons of two lambs in which the deciduous premolar four was just erupting and the metapodials were centrally unfused, suggesting these were of foetal/birth size.

*Context (48): Sheep skeleton*

This post-cranial skeleton of a sheep had an estimated shoulder height of 62.6 cms (Teichert 1975). No butchery marks were observed and the limb bones were fully fused. The head was truncated from the rest of the skeleton during the construction of a pit (62).

The later Bronze Age/Early Iron Age midden at Potterne, Wilts. (Locker forthcoming) showed a size range of 53-69 cms for sheep with the majority being 57-65 cms so that the three adult animals from Crab Farm (45, 21 and 48) fit within this range.

A small quantity of bone was recovered from Bronze Age contexts; (4), (32) and (45) from the Middle Bronze Age inner ditch fill, (34), (36) and (42) from the outer ditch fill. The deposits are dominated by sheep bones, including a number of loose teeth. The rabbit (*Orytolagus cuniculus*) tibia and calcaneum are intrusive, dog in context (4) is represented by a single canine and hare (*Lepus sp.*) by a vertebra and a metapodial fragment. None of the bones were measurable.

The horse remains are a single tooth and the acetabulum of a pelvis and pig a single humerus shaft.

Two undated layers are in the upper secondary fills of the outer ditch, contexts (24) and (25). These lie between the Middle Bronze Age and Romano British remains. Context (24) contained 10 bone fragments including ox, sheep, hare and fox and (25) 5 fragments including sheep.

The burial of a complete cow with its calf within the inner ditch and a sheep with two lambs and another adult sheep in separate burial pits suggest that these may have been ritual offerings. If the cow and the sheep had died giving birth and were of no significance one would have expected the carcasses to have been butchered and eaten.

Other animal burials which appear to be votive have been found in

north-east Dorset. The Early Bronze Age pond barrow at Down Farm, Gussage St Michael, had two sheep and two cow burials around the edge of the monument (Barrett, Bradley, Green 1990, 128) and within the Deverel-Rimbury settlement at South Lodge a half skeleton of a cow was found in a pit (*ibid.* 181).

Table 2 Other Bronze Age Contexts

	4	23	31	32	34	36	42	45	T1
Ox	-	-	1	2	-	-	-	5	8
Sheep	9	1	2	4	1	7	1	6	31
Pig	-	-	-	-	-	1	-	-	1
Ox sized	3	-	2	-	1	-	-	2	8
Sheep sized	-	2	4	2	-	-	-	9	17
Dog	1	-	-	-	-	-	-	-	1
Hare	-	-	2	-	-	-	-	-	2
Rabbit	-	-	-	-	-	-	1	-	1
Indet	12	3	-	12	3	-	-	-	30
Total	25	6	11	20	5	8	2	22	99

Table 3 Roman Contexts

	10	11	15	18	35	T1
Ox	2	1	2	1	-	6
Sheep	-	3	4	-	-	7
Pig	-	-	-	-	1	1
Horse	1	1	-	-	-	2
Ox sized	-	1	-	5	-	6
Indet	-	23	6	-	-	29
Total	3	29	12	6	1	51

Table 1 Crab Farm (Shapwick a 86) worked flint

CONTEXT NO.	CORES		FLAKES			BLADE	TOOLS	CHIPS	Total (ex chips)
	COMP	FRAG	COMP	BRK	RET				
Ploughsoils									
1	1		52	15		2	sf 120	5	71
2			32	10				1	42
3			27	7				3	34
5		1	14	7				1	22
6			10	3				1	13
22			1						1
Inner Ditch									
4			18	3			sf 121		22
45			9						9
Outer Ditch (south-west side)									
10			4	1				4	5
11		2	24	7					33
18	1		14	1				1	16
36			8	1				1	9
42			4	2		3			9
Outer Ditch (north-east side)									
15	1		19	5				1	25
24			5						5
31	1		10			1			12
33			5	1				2	6
34	1		12	5		1			19
Animal Burials									
21			3						3
Small Ditch									
23	1		6	3		1			11
Features Below Bank									
9			1					1	1
Totals	6	3	278	71		8	2	(21)	368

Tabulated data are presented by excavated site and is discussed and compared after the presentation of the final excavation report.

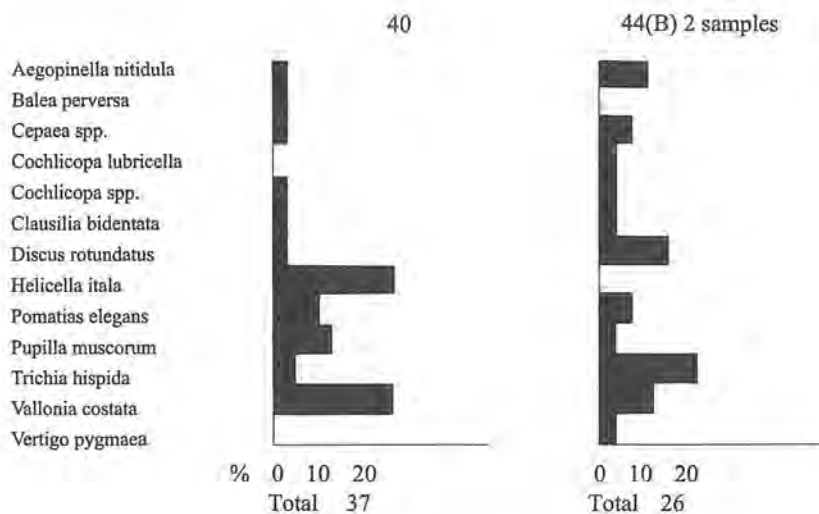


Figure 7 Mollusc samples Crab Farm enclosure

### Mollusc Samples

by Angus Wainwright (Fig. 7)

Three two kilogram samples were taken from the primary filling of the exterior ditch of the enclosure; these were sieved to obtain mollusc remains. The primary filling was a thin layer of dark brown loam mixed with charcoal flecks.

The samples produced very few shells, both samples from context (44) in trench (B) produced 13 and that from context (40) in trench (A) 37. Those shells which were present represented a wide range of species from those typical of woodland such as *Balea perversa* to open country species such as *Pupilla muscorum*. This assemblage of species with opposing habitat requirements appears to be the result of mixing of soils. The samples lay beneath a thick layer of frost fractured chalk indicating that the mixing of soils took place in prehistory.

### Romano-British Pottery

by Nancy Grace

The stratified contexts containing pottery of Romano-British date were (10); (11) and (18) with other sherds occurring in the plough soils (1); (2); (3) and (6). These sherds have been examined macroscopically.

Context (10) contained eight sherds: one sherd plain, colour-coated ware, one sherd of light grey sandy fabric and six of Black Burnished pottery with worn surfaces, lacking decoration but including one rim sherd of a flanged bowl.

Context (11) contained 31 sherds: one small fragment of undecorated Samian ware; one sherd of light grey sandy fabric; two worn sherds of colour-coated ware; one sherd of black fabric full of voids and with a bright orange painted line; five sherds of orange fabric, mostly fine wares; eighteen sherds of BB type body sherds, one with a raised strip or cordon. There were only two rim sherds, one BB type (unclassified) and the other an orange fabric with grey core and medium quartz inclusions.

Context (18) contained 17 sherds. They comprised three body sherds of New Forest ware; one sherd of dark grey fabric; two pale orange fabric sherds; three sherds of orange fabric with sparse voids and inclusions of quartz and magnetite; two sherds of light brown fabric and nine BB type undecorated with worn surfaces. Most of the Romano-British pottery from these contexts is in small worn fragments characteristic of plough abrasion and weathering.

### THE BEECH AVENUE EXCAVATIONS

In the winter of 1988-89 a series of excavations were carried out on sites visible on aerial photographs. This work took place in advance of planting a beech avenue which will eventually replace the present avenue. The first avenue was planted in 1835 and flanks the Blandford Road from the western edge of the Kingston Lacy Estate (the Shapwick parish boundary) to Lodge Farm and the edge of Kingston Lacy Park. The second avenue was planted parallel with and 20 m to the north and to the south of the Blandford Road. Most of the areas affected by the planting had been ploughed since the 1960's, a process which had levelled all

prehistoric earthworks with the exception of the round barrows RCHM Shapwick 40 and 41. These two mounds were taken out of the plough as part of the beech avenue work. The southern edge of SAM 719 ("Romano-British Settlement south-west of Badbury Rings") was affected by the planting and a trench was excavated along its length as a condition of the scheduled monument consent.

### THE SWAN WAY RING DITCH (RCHM Shapwick 42)

This site (ST 94830352) lies on the east side of a track to Shapwick village called the Swan Way (Fig. 8). It is visible on aerial photographs NMR ST9403/1 and CUAP AQY-95. The track cuts the western 10% of the ring ditch which from the arc of the excavated ditch and the aerial photographs is approximately 60 m in diameter. It is part of the RCHM Badbury Barrow group, lies at 68 m OD and sited on a south-east slope above a shallow coomb.

The barrows in this area are not shown in detail on the 1742 and 1773 maps (B/KL), but on the 1813 enclosure map (Inclosure 50) the neighbouring barrows are plotted (RCHM 40, 41, 43) and on the 1886 25" - 1 mile Ordnance Survey map these barrows are shown together with the smaller mounds (RCHM 38, 39, 44) on the north side of the Blandford Road. From this it appears that either the earthwork of RCHM 42 was very slight at this time or it had already been levelled by 1813. The 1742 and 1773 maps show this area as part of Shapwick Common Down which was in the process of being enclosed by 1813.

The effect of enclosure on the downland archaeology of the area is illustrated by the account of the levelling of the Badbury Barrow described by Rev. J.H. Austen. (1846, 348):

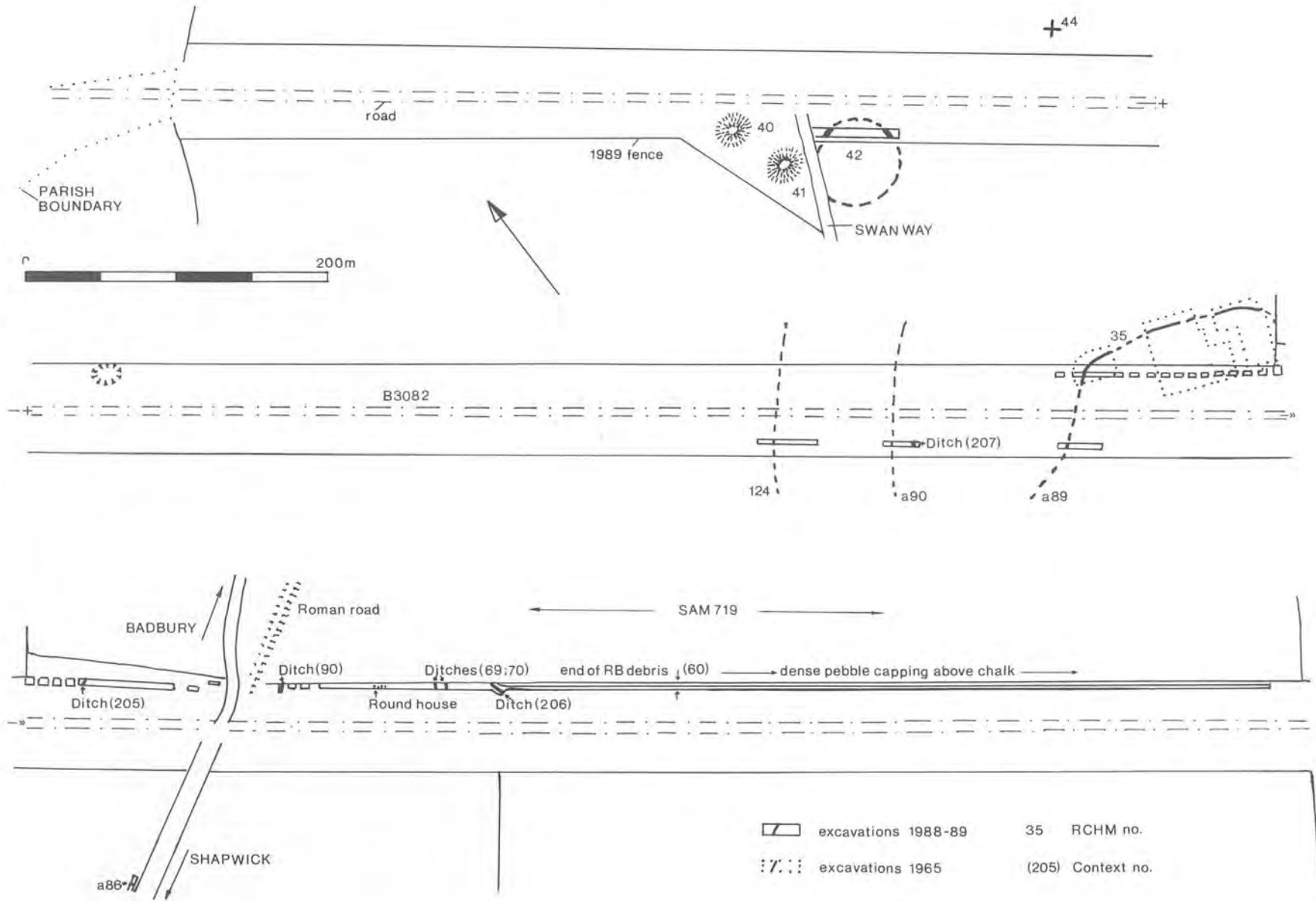
'On Nov. 1, 1845, I accidentally ascertained that a barrow situated about five miles from Wimborne, Dorset, upon the road leading to Blandford, and in the immediate neighbourhood of Badbury Camp, was being levelled'.

This barrow Austen says 'with perhaps the exception of the "Deverill barrow" opened by W. Miles Esq., in 1825, is more highly interesting than any yet examined'.

The barrow undoubtedly lay in the vicinity of this group and contained at least 15 cremations and 3 inhumations together with two food vessels, an ornamented handled pot, collared urns and, at the centre of the mound, a large block of sandstone decorated with cup marks and carvings of daggers and axes (Piggott 1939 291).

The siting of this group approximately five miles from Wimborne and on the Blandford Road led RCHM (1975, 63) to suggest that either RCHM 40 or 41 was the Badbury Barrow. Their diameters are similar to the 60 ft (18 m) diameter recorded

Figure 8 Location plan of the beech avenue trenches



by Austen but they are unlikely candidates as they survive as earthworks 0.8 m high. The ring ditch RCHM 42 is too large for the Badbury Barrow and if the ditch had, for example, surrounded the berm of a bell barrow then one would expect the mound, which Austen describes as 9 ft (2.8 m) high, to have been shown on the 1813 map.

#### The Excavated Features (Fig. 9)

The trench was parallel with and 17 m from the south edge of the Blandford road and extended for 55 m east of the east hedge boundary of the Swan Way (Plate 5). The ploughsoil was stripped by machine and the trench measured 6 m wide. The ploughsoil was up to 0.3 m deep above the chalk which was scored by numerous plough marks. The area of exposed chalk was cleaned and revealed only the arcs of the ring ditch as clear archaeological features. Other irregular scoops in the chalk appeared to be attributable to root disturbance or periglacial features. The outer edge of the ditch was located at 10 m and 50.5 m on the north side of the trench and 6 m and 54.5 m on the south side.

Both the east and west arcs of the ditch were similar in section (Plate 6). The top of the ditch was 4.2 m wide with the interior side sloping gradually for 1.7 m and then sloping steeply to a flat bottom 2 m wide. The external edge of the western ditch was interrupted by two semicircular cuts 0.25 m wide, 0.35 m in diameter and 4.2 m apart. The flat bottoms of these features were 0.6 m below the general chalk surface. They had the appearance of post sockets although their fillings were identical with the ditch filling (7). There were no equivalent features within the eastern ditch section. Here the northern 1.5 m of the ditch section differed from the western ditch arc in that it had been cut vertical on the internal edge widening the ditch bottom to 3.1 m. Within context (14) and against this steepening of the ditch were found a cluster of decayed bones of a dog.

The sequence of fillings in both ditch excavations was similar

although the east and west ditch arcs were separately numbered. In the following the first context number refers to the western ditch section.

The primary filling was a layer of frost fractured chalk 0.2 m deep (10)/(16). Above this was a light orange brown fine loam with numerous chalk lumps (9)/(14), containing occasional fragments of Deverel-Rimbury pottery also a cluster of flints forming a knapping site. At the junction of (14) with (16) was a burnt area 0.5 m long, 0.2 m wide and 0.1 m deep with numerous charcoal flecks which was probably the site of a small camp fire. Above (9) a lens of packed chalk (8) spread from the interior ditch edge to halfway across the ditch and lay below (7). (7)



Plate 6 Swan Way east arc of the ring ditch sections VI and VIII looking south. (ii)



Plate 5 Swan Way ring ditch after topsoil stripping looking north-west.

contained numerous fragments of pottery which were the remains of a barrel urn and similar sherds were found in context (6) which lay above it. Above this an orange brown loam (3)/(5) contained fragments of pottery of Iron Age or Romano British date.

**Prehistoric Pottery**  
by Dr David Tomalin

*Context (3)*

Three sherds:-  
Two flint-tempered body sherds. Probably Deverel-Rimbury tradition.  
Durotrigian black burnished or BBI body sherd.

*Context (5)*

Two sherds:-  
Unclassified body sherd  
Sand-tempered body sherd perhaps of Iron Age date.

*Context (6)*

Small find 502. Featureless flint-tempered sherds possibly of Deverel-Rimbury or later date.  
Sherds attributable to barrel urn; small find 504 *et al.*, below.  
Three Beaker sherds of indeterminate style.

*Context (7)*

Small find 504. Numerous sherds of barrel urn with FT rim cordon, shoulder cordon and vertical body cordons. Heavy flat rim. 8% comminuted white colluvial flint with 5% shell particles and 4% sub-angular chalk (Fig. 10)  
Small find 505.  
More sherds of barrel urn 504  
Small find 506  
Some 10 sherds of a vertically ribbed barrel urn. Probably part of barrel urn 504-505 although a diminution in shell fraction of the tempering ingredients is discernable.

*Context (14)*

Two sherds:-  
Unclassified flint and grog tempered urn fragment. Possibly part of the base.

Fingertip-decorated shoulder? sherd possibly biconical urn or bucket urn.  
Small find 507  
Body sherds of flint-tempered fingertip-decorated bucket urn.  
Also: body fragment of rusticated beaker.

*Context (15)*

Small find 508  
Single flint-tempered base sherd. Perhaps a barrel urn but temper differs from barrel urn 504 *et al.*

*Barrel urn 504-506 from the beech avenue*

The barrel urn from Shapwick 42 (Fig. 10) contains some 5-8% comminuted shell mixed with 5-10% angular white flint and some 4% sub-angular chalk particles. It is characteristically thin-walled, reduced and hard-fired. Its temper inclusions have been crushed to a particle size mode of some 1.5 mm.

The style of the urn, with its flat expanded rim, its fingertipped cordons at neck and shoulder level and its weak plain vertical ribs, closely resembles some particular barrel urns of Calkin's (1964, 19-24) South Lodge type. An unpublished urn from Codford, Wilts (Devizes Museum), is similar in all of these attributes including its shell-flint temper recipe; the only aberrations in this case being a change from fingertip to fingernail impressions and a lower siting for the neck cordon. From bowl barrow G2 at Bowerchalke come two shell and flint tempered barrel urns, one of which also closely resembles the Shapwick 42 example (Annable and Simpson 1964, 127, cat. no. 575).

The geographical location of the beech avenue barrel urn serves to consolidate a potential link between the high chalkland of Cranborne Chase and a second concentration of such urns on the podsolic heathlands of the Bournemouth region. Calkin (1964, 19-24, Fig. 23) was the first to conjecture a link between these two groups, observing that the visicular cavities in many of the Bournemouth barrel urns might be the result of the leaching out of chalk or shell temper. The essential geographic link between the two areas would appear to be the Lower Stour corridor and it is interesting to observe that it was just 1.5 km north of the beech avenue, at King Down, that a barrel urn (now lost) was recorded over a century ago by John Thurnam (1871, 356-7, Fig. 34). The source of the shell-rich material of which these urns are composed, seems, in all probability, to be Kimmeridge Clay. Best suited to the distribution pattern is the Vale

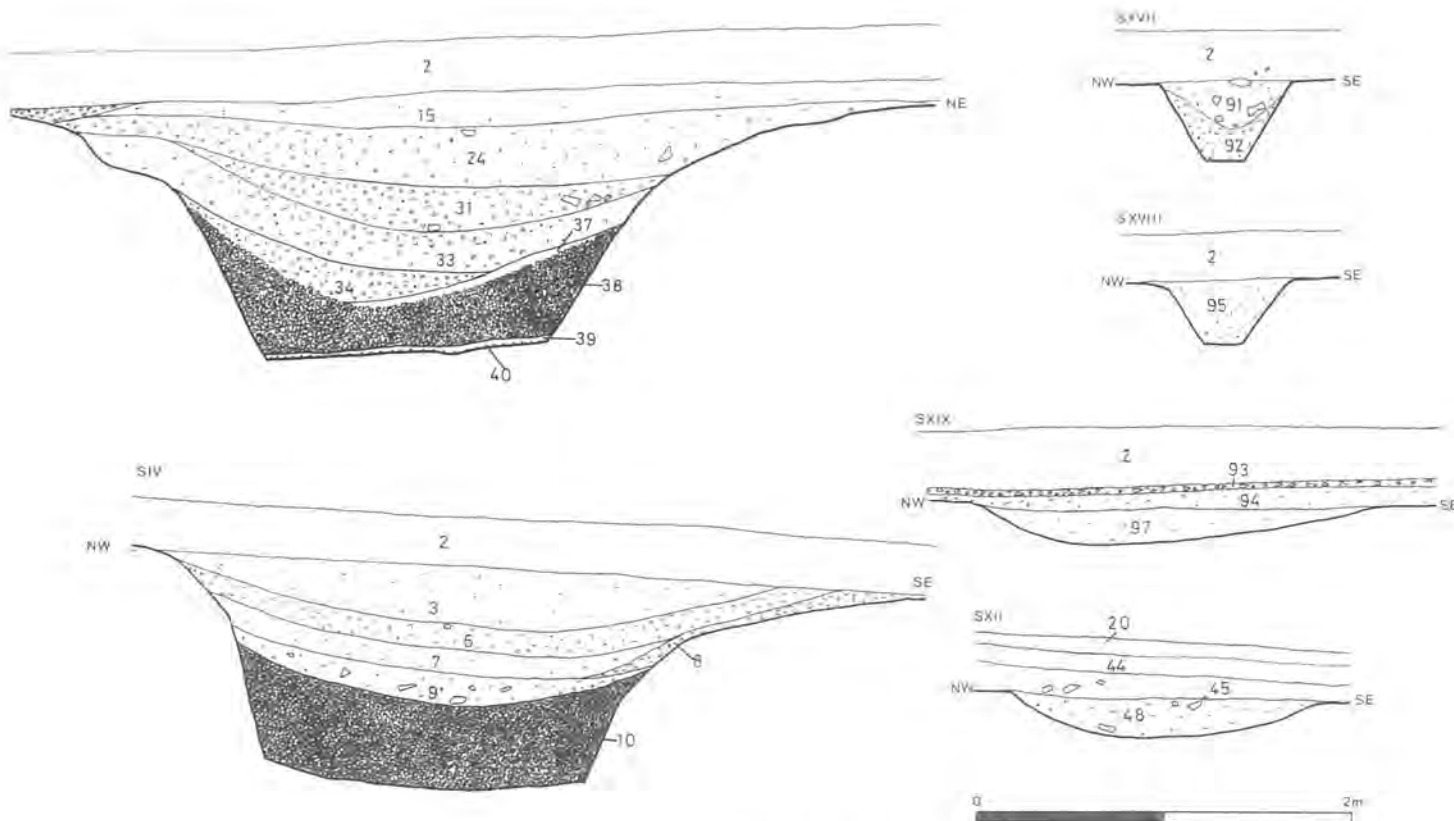


Figure 9 Various ditch sections excavated along the line of the beech avenue and at Crab Farm enclosure

Dinton where a most convenient outcrop would have been accessible to the potters responsible for the shell-tempered barrel urns which have since been recovered at Bowerchalke, Ebbesbourne Wake, Woodminton and Codford. The close stylistic and textural similarities between some of urns and the beech avenue find provides a further hint of centralised production.

*The context of the Swan Way ring ditch pottery* (RCHM Shapwick 42)

The sherds from the beech avenue complement the evidence for local Deverel-Rimbury settlement and burial on chalk spur between the rivers Stour and Allen in the parish of Pamphill.

The two sections of ditch examined had potentially differing sherd yields. Context 14 has yielded a little putative evidence for Deverel-Rimbury activity. This comprises a sherd of an unclassified grog and flint tempered urn and also some body sherds of a fingertip-decorated bucket urn (find 507).

If the Overton Down experiment is used as a guide (Jewell and Dimbleby 1966), then it seems likely that these artefacts had arrived on the floor of the ditch within a decade of its construction. Certainly the sherds should be in position within two decades.

With the subsequent accumulation of the early tertiary fill within (contexts 7 and 15), there occurs a generous quantity of contemporary sherds. Some 80% of this material is attributable to a single shell-tempered barrel urn represented by sherd finds 504-506. These sherds could be attributed to contemporary Deverel-Rimbury occupation or a phase of destruction and redeposition of Deverel-Rimbury material.

In the overlying fill (context 6), a few further shell-tempered barrel urn sherds occur and they are accompanied by three derived Beaker sherds. These might perhaps accord with the destruction of old habitation due to arable activity over the site. In the uppermost fill of the ditch

(contexts 3 and 5), a few possible Deverel-Rimbury shards are present but they are accompanied by a putative Iron Age sherd and a black burnished sherd of Durotrigian or BB1 origin.

**Bone report**

by Alison Locker

*Context (9)*

Ox; upper molar

*Context (10)*

A fragment of human pelvis (the area of the acetabulum) was identified with a few other indeterminate fragments of bone which from their appearance and condition are likely to be fragments of the same pelvis. The bone was not complete enough for any estimation of age or sex.

*Context (14)*

Ox; 1 upper molar

1 lower molar

Dog; 2 eroded canines

1 1st molar

? 1 very eroded 3rd phalanx

**Mollusc samples**

by Angus Wainwright (Fig. 11)

Five one kilogram samples were taken from five different contexts in the ditch in the southern section in the west arc of the ditch (SI).

*Context (10)*

Primary fill of fractured chalk. As would be expected, few shells were

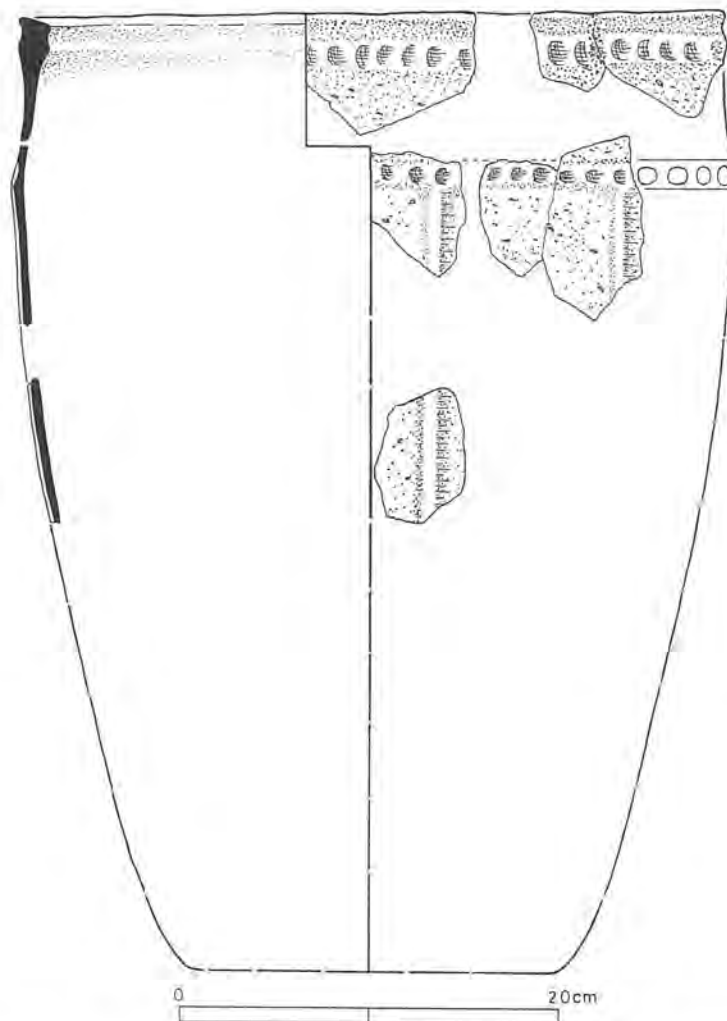


Figure 10 Deverel-Rimbury barrel urn, Swan Way ring ditch at one-quarter life size

found in this deposit (19 in all). The species present are similar to those in context 9 and may represent shells brought down by worm action, from this deposit, rather than shells originating from turfs tumbling into the ditch as context 10 was laid down.

**Context (9)**

Secondary fill. The fauna represented by the shells in this sample is indicative of the vegetation of the sides of a possibly abandoned earthwork. The environment was generally open and the vegetation generally grassy but the presence of such species as *Discus rotundatus* indicates the proximity of scrub and rank grass. The presence of *Pomatias elegans* indicates areas of bare and crumbling soil, presumably on the ditch sides.

**Contexts (3), (6) and (7)**

The shells in these samples suggest that these deposits were formed in similar environments. In all three cases the habitat was generally very

arid, probably a tightly grazed grass sward.

**Discussion**

The close proximity of the site to the round barrows RCHM Shapwick 40 and 41 indicates that it had some form of mortuary function, a suggestion which is supported by a fragment of human pelvis found in context (9). The two semicircular cuts on the west outer edge of the ditch indicate post-settings although the lack of similar evidence in the eastern ditch arc argues against a ring of posts.

The 60 m diameter of the ring ditch is similar to the ditch diameters of disc barrows such as RCHM Wimborne St Giles 103, 111 in the Oakley Down group. The differential weathering of the ditch sections would suggest a bank external to the ditch as the sharper angle of the outer edge of the ditch indicates that this side was protected from frost action (see Fig. 9). A bank on the

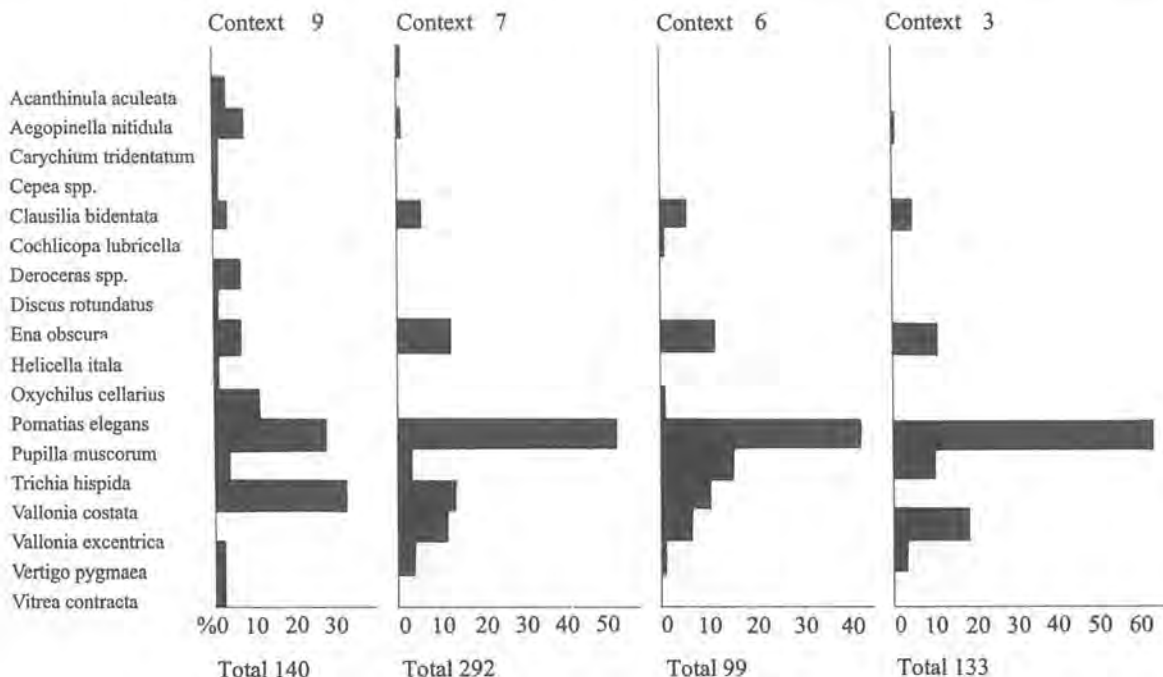


Figure 11 Mollusc samples swan way ring ditch

Table 4 Swan Way Ring Ditch (Shapwick 42) worked flint

CONTEXT NO.	CORES		FLAKES				TOOLS	CHIPS	Total (ex chips)
	COMP	FRAG	COMP	BRK	RET	BLADE			
<b>Ploughsoils</b>									
1	2		13	2			sf 122 sf 123		19
2			15	5					20
3	1		16	2	1				20
5			15	1				1	16
<b>East Section</b>									
6			24	1		1			26
7			20	1				2	21
8		1	1	1					3
11	1	1	9	1					12
<b>West Section</b>									
14	4	2	59	14				2	79
15			3	1					4
16			2	2					4
16 (S11)	5	1	40	13				38	59
16 (S21)		2	10	3				11	15
<b>Totals</b>	<b>13</b>	<b>7</b>	<b>227</b>	<b>47</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>(54)</b>	<b>298</b>

outside edge of the ditch would support the interpretation of this site as a disc barrow but the Deverel-Rimbury ceramics argue strongly against such an Early Bronze Age classification.

The levelling of the site may have occurred at an early date when the bucket urn found in contexts (6) and (7) appears to have been broken into small pieces and spread across the western side of the ring ditch together with beaker sherds which indicate disturbance of earlier deposits in the vicinity. The filling (3) covers contexts (6) and (7) and contains small fragments of Iron Age and Romano-British pottery. This provides a rough date for the destructive phase of activity.

Howard (1989, 32) suggested the early levelling of another Bronze Age round barrow on the Kingston Lacy Estate, perhaps in the Romano-British period. This was the Barford Farm double ring ditch (ST 96700055) 3.5 km south-east of this site (Fig. 1). Roman disregard of ancient burial grounds is most clearly demonstrated in Dorset where the road from Badbury to Old Sarum cuts the disc barrows at Oakley Down. Similarly, at Badbury Rings, RCHM Shapwick 51 is cut by the side ditch of the Badbury-Dorchester Roman road.

The deep ploughing of this ring ditch and lack of surviving internal features make further discussion of the site difficult. Only 10% of the site was examined and internal features may survive towards the centre of the enclosed area on the south side of the excavation. The Deverel-Rimbury pottery dates the ring ditch to the later Bronze Age. This with its size makes it comparable with the Crab Farm enclosure a86. Both sites lie close to barrow groups and the outer ditch profiles are very similar. They are also intervisible, lying 900 m apart and either side of a shallow coomb.

#### LINEAR BANK AND DITCH (RCHM SHAPWICK 35/a89)

This feature was excavated in 1965 (Vatcher, 101) when the phase III ditch was considered to date to the Late Iron Age. The excavation report was published in 1987 (Gingell, 65) when it was dated to the Middle Bronze Age. Bowen (1990, 46) considers the history and form of this earthwork to be of particular importance when compared with other linears.

The line of the north side of the new beech avenue crossed the 1965 trenches and this provided an opportunity to examine a number of possible pits and postholes which were shown on the original excavation plan but did not have a surviving description. The trench 35 m long and 3.5 m wide was laid out 17 m from and parallel with the north edge of the Blandford Road. It crossed the Vatchers' excavation trench A (Gingell 1987, 68) from north-west to south-east. The south-east corner of the 1965 excavation was clearly visible in the centre of the trench, cut in January 1989, at a point 30.1 m from the western edge.

This linear had been a clear earthwork in the 1960s, extending from the west edge of a field boundary at ST 95670300 and continuing west for 130 m until turning south and passing under the Blandford Road ST 95540305 (Plate 1). Aerial photographs (Harding NT film 401 neg 23) show that the linear turns south-west on the south side of the Blandford Road continuing for a further 800 m until it is obscured by the complex series of crop marks at ST 94900240. North of the road and east of the field boundary, mentioned above, the linear's course is uncertain but follows the alignment of the hedge (determined by probing), which runs parallel with the Blandford Road for 130 m before being cut by the entrance track to Badbury (Bowen 1990, 46). this hedge is part of an early enclosure shown on the 1742

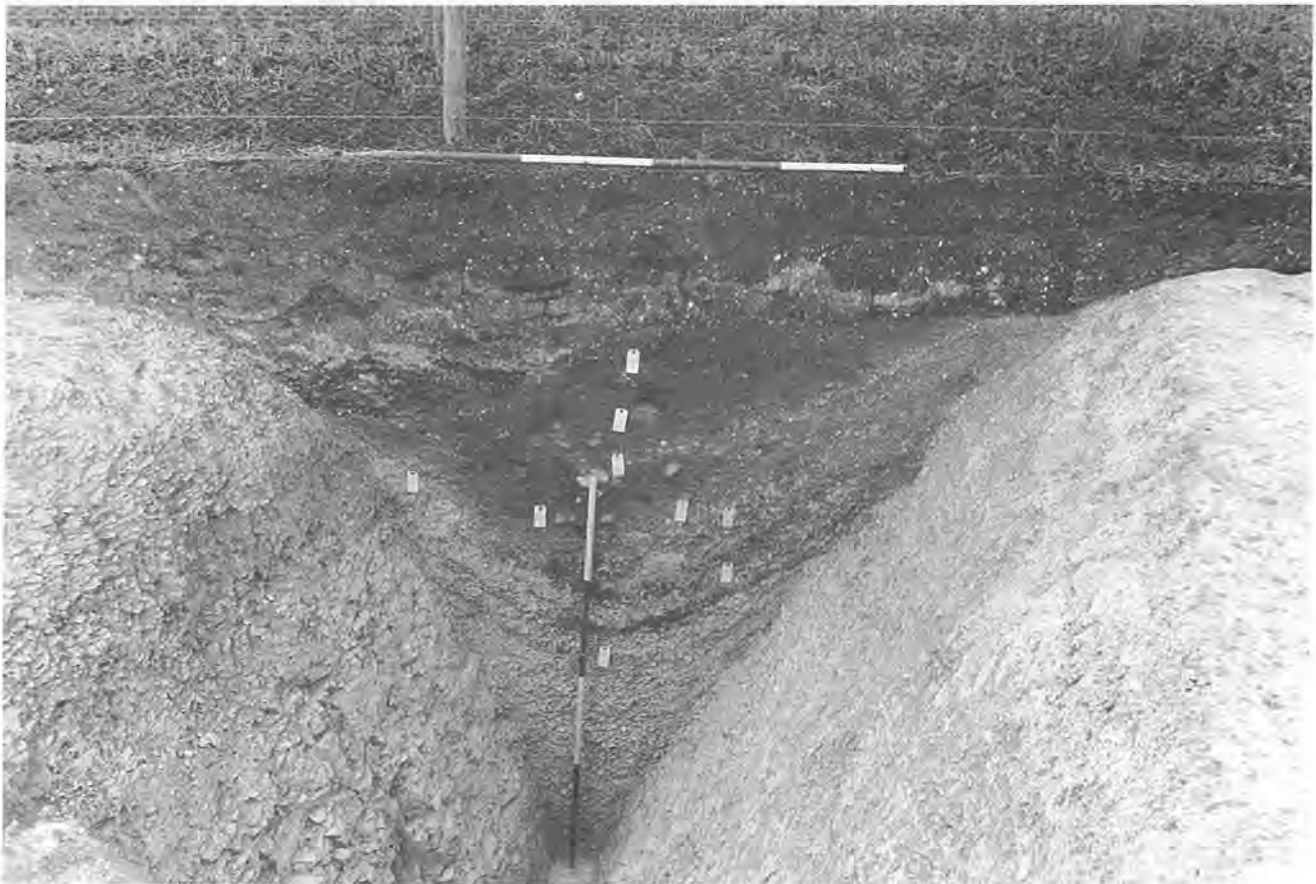


Plate 7 Linear V-shaped ditch (RCHM 35). Section XIII on the north side of the Blandford Road looking north-east.

map (B/KL). The series of excavations along the Beech Avenue to the east did not locate the ditch and from this it appears probable that the linear continued north towards Badbury. The linear may have been obscured by the construction of the Dorchester-Badbury Roman road or continued further east where a bank survives 5 m wide and 0.8 m high and follows an erratic course north almost to the hillfort outer ditch.

Sections across the ditch of RCHM 35/a89 were cut both on the north and south sides of the Blandford Road (Plate 7).

On the north side of the road the ditch had a 'V' shaped profile measuring 4 m wide where it cut the chalk and was 3.2 m deep tapering to a flat bottom 0.2 m wide. The primary fill was of frost fractured chalk (57) 1.2 m deep. Above this were secondary fills of chalk rubble mixed with an orange brown clay loam, layers (56) and (55) divided by thin 10 mm bands of darker topsoil which had accumulated against the east ie the bank side of the ditch. Layers (56) and (55) were 0.2 m and 0.3 m thick respectively. Layer (53) above (54) was a thin band of chalk fragments, 0.05 m thick, tipping from the east. A small fragment of pottery was found in context (56) above (57) which was similar to several sherds found in context (52). Layer (52) seems to represent a period of stabilisation and gradual silting of the ditch as it contained fewer chalk rubble fragments, it was 0.35 m thick and contained two groups of knapped flint together with animal bone and pottery dated to the Middle Bronze Age (Tomalin this report). (52) was covered by a thin spread of chalk rubble (51) which was similar to (53). Above (51) was a fine clay loam, (47), containing fragments of pottery probably of Iron Age date which lay below a similar filling (46) containing Romano-British pottery. Above this was the 1965 backfilling layer (34), 0.4 m deep, which had been truncated by the modern ploughsoil (20) 0.25 m deep.

On the south side of the Blandford Road the ditch was not fully excavated. As with the section to the north, the cut of the ditch on the east side was higher and at a sharper angle than that on the west side. This indicated that the east side of the ditch had been protected from weathering by the bank before it had been levelled by ploughing. The ditch on this side of the road was narrower than that excavated 50 m to the north-east, measuring 3.3 m wide where it cut the chalk. The ditch silts were excavated to a depth of 1.7 m. The series of layers here closely resembled the sequence encountered on the north side of the road. Against the eastern edge of the ditch was a layer of angular chalk lumps which was partly excavated (104). Above this was a layer of grey brown loamy clay 0.18 m deep (103), and above this a thin band of weathered chalk lumps 0.05 m deep (102). This was covered by a deposit 0.25 m thick of grey brown loamy clay containing flint debitage and above this the top filling of the ditch was a light orange brown loamy clay 0.48 m thick and containing fragments of Romano-British pottery. The west side of the ditch had been protected from ploughing by the bank, and an orange brown loamy clay with fragments of prehistoric and Romano-British pottery mixed in it survived here (98). It covered the ruts of an old cart track which scored the top fillings of the ditch and were aligned north-west to south-east. The rut centres were 2 m apart and up to 0.2 m deep (99).

On the north side of the road, in the position of the bank and 6.5 m from the east side of the ditch, two oval pits were shown but not described on the 1965 plan (Gingell 1987, 68). These were crossed by the beech avenue trench. That to the north (36) measured 2.4 m dia. east-west and 0.6 m deep and that to the south 2 m east-west and 0.4 m deep. They had both been fully excavated and backfilled in 1965. A series of trenches were cut 3.7 m wide and 6 m long and 4 m apart from 120 m from the east ditch edge to the south-east as far as the hedge corner. These crossed the area of the 1965 trench B and revealed only three features, (26), (27), (28), all had been excavated previously, measured 0.5 m diameter and 0.07 m deep and had been truncated by subsequent ploughing.

The position of the linear bank had protected a layer of orange brown loamy clay (45) on its east side. This was up to 0.2

m deep and contained abraded fragments of Romano-British pottery including Samian and BBI wares.

## THE FINDS

### Prehistoric Pottery

by Dr David Tomalin

*Context (47) small find 514*

Quantity of reduced, eroded featureless, quartz sand-tempered body sherds with well smoothed or lightly burnished external surface. Perhaps of Iron Age date but they cannot be satisfactorily classified.

*Context (52) small find 515*

Four body sherds of a large fingertip-decorated and thick-walled vessel tempered with some 5% comminuted shell. The shell temper and fingertip decoration is compatible with a barrel urn but the highly oxidised fabric is atypical unless this thick-walled version had been employed for some special purpose. The matrix is oxidised throughout. Such a vessel seems to resemble such urns as those from Ebbesbourne Wake G8 or Amesbury G3 which are all tempered in the same manner (Annable & Simpson 1964, 127, cat nos 475 & 576).

The few sherds from the ditch sections are not very informative but the oxidised pottery from the lower ditch fillings (52) and (56) seems to confirm the reinterpretation of this ditch (phase III) by Gingell (1987, 77) as Middle Bronze Age. The survival of occupation material appears to be meagre in comparison to that discovered in 1965 and emphasises the damaging affects of ploughing over the last 25 years.

### Romano-British Pottery

by Nancy Grace

Romano-British pottery was found in contexts (20); (45); (46) and (100). (20) was the modern ploughsoil and contained fifteen sherds.

Context (45) was the remnant of a Romano-British ploughsoil and contained 52, mostly very small and abraded shards. These included one small piece of colour-coated ware which was a decorated body sherd with a leaf pattern. The rest of the body sherds of any size were BB type and included a beaded rim sherd.

Context (46) was the tertiary filling of the ditch on the north side of the Blandford road, contained 12 sherds of BB type pottery including two rim fragments, one from a cooking pot or storage jar.

Context (100) was the tertiary filling of the ditch on the south side of the Blandford road. Only four sherds were found within this context: one very worn sherd of decorated colour-coated ware, two sherds of BB ware, one probably a base; and one large sherd of yellow-brown fabric with an orange slip.

### ROUND HOUSE (ST 95830283) (Fig. 12)

Remains of a building were found 365 m south-east of the ditch RCHM Shapwick 35/a89 and on the north side of the road. This consisted of a group of seven postholes and probably represented the southern half of a round house with an entrance to the south-east. A patchy remnant of the Romano-British ploughsoil (58) covered the postholes below a humic topsoil disturbed by scrub and tree roots.

The pair of postholes (67) and (65) forming the outer entrance measured 0.3 m dia. and 0.2 m deep but those forming the inner entrance (64) and (66) were oval measuring 0.6 m long, 0.3 m wide and 0.3 m deep with the long axis aligned with the curve of the building; these probably held double posts. Two postholes, (61) and (62), lay adjacent to each other, were 2.5 m to the south-west of (66) and measured 0.3 m dia. and 0.2 m deep. A further 2.5 m to the north of these lay posthole (63) which measured 0.3 m dia. and 0.3 m deep. All cut chalk and appear to be part of a circle of posts of estimated diameter 6.5 m with the north half of the building laying under dense scrub on the north side of the Badbury boundary fence. A small fragment of oxidised pottery similar to that found in (52) was found in posthole (61). This was the only datable find from the posthole fillings but on typological grounds the posthole plan would indicate a later Bronze Age date.

Similar round houses have been found within the Dorset Middle Bronze Age enclosures at Shearplace Hill (Rhatz 1962, 289), Down Farm and South Lodge (Barrett, Bradley and Green 1991, 188). All have a ring of posts measuring 5.5 m-8 m diameter with a porch orientated towards the south or south-east.

A concentric groove around the posthole ring and aligned with the outer postholes of the porch at Shearplace Hill has been interpreted (Avery and Close-Brooks 1969, 345) as marking the position of an outer wall as has a ring of burnt daub surrounding a ring of posts at Crickley Hill, Glos. (Guilbert 1981, 299). The round house excavated at Rowden, Winterborne Steepleton (Woodward 1991, 43) confirmed this idea of an inner support structure of posts and an outer wall on the line of the porch entrance. In this instance the building had been constructed on an oval terrace cut into chalk and the sides of the cut had been faced with flint nodules. The reconstruction drawing of this Middle Bronze Age building (*ibid.* 70) included the flint facing within the structure with the roof sloping to ground level.

Nothing survived to indicate an outer wall surrounding the postholes at Badbury but, assuming such a structure had existed, the diameter of the building, would have measured approximately 10 m. This was based on the position of the outer postholes of the porch. The narrow 3 m linear trench did not reveal further postholes or pits in the vicinity of these postholes but prehistoric sherds mixed with the Romano-British pottery of the early ploughsoil layer (58) indicate the disturbance of occupation deposits.

#### DITCHES (Figs. 9, 12, 13)

Several ditches were excavated as part of the Beech Avenue excavations. These have been interpreted as field boundaries with the exception of (203) and (204), described below, and a shallow V-shaped ditch (210) which was filled by layer (90). This measured 0.7 m wide and 0.16 m deep and was interpreted as the south-east side ditch of the Dorchester to Badbury Roman road. The other ditches have been divided into two groups based on their profiles and stratigraphic associations.

#### V-SHAPED DITCHES

Sections were cut across four ditches which were V-shaped with a flat bottom. On the south side of the road (201) ST 95350314 was aligned north-east to south-west and measured 0.7 m wide and 0.3 m deep with a flat bottom 0.2 m wide. A small fragment of prehistoric pottery with 2 mm flint temper was found in the upper filling (91).



Plate 8 Small V-shaped ditch (203) looking north. Beech avenue north side.

Table 5 Linear Bank and Ditch (Shapwick 35/a89) worked flint

CONTEXT NO.	CORES		FLAKES			BLADE	TOOLS	CHIPS	Total (ex chips)
	COMP	FRAG	COMP	BRK	RET				
Ploughsoils and backfill									
20			11	4					15
30			1						1
35			6					3	6
36			22	4				5	26
38			2						2
39			1						1
41			3	4			sf 124		8
Main ditch section									
46	1		23	2					26
47	9	1	53	6	1		sf 125	3	71
51			9					2	9
52	7		117	14	1	3		18	142
52(516)	2		38	10				37	50
52(517)			38	9				13	47
53				1					1
55	2		14						16
57			2						2
South of road ditch cutting									
100	1		10	1					12
101	1		15				sf 126		18
							sf 127		18
Totals	23	1	365	55	2	3	4	(81)	453

Also on the south side of the road and 80 m to the south-east ST 95410309 was a similar ditch, aligned north-east to south-west, measuring 0.7 m wide and 0.4 m deep with a flat bottom 0.2 m wide (202). Both of these ditches cut chalk directly below modern ploughsoil and although no banks survive on the ground there are traces of banks on the north-west side of (202) and the south-east side of (201) visible on aerial photographs (Harding NT film 401 neg 23). They curve towards the south and run parallel to each other.

On the north side of the road, ST 95870280, a pair of smaller V-shaped flat bottomed ditches were parallel, 6.5 m apart and aligned north-east to south-west. that to the north-west (203) measured 0.5 m wide at the top, 0.2 m wide at the bottom and was 0.2 m deep and that to the south-east (204) measured 0.4 m wide at the top 0.1 m wide at the bottom and 0.2 m deep. Three small sherds of prehistoric pottery were found in the filling (70), two of a coarse very dark brown fabric and one of a fine sandy orange-brown fabric. The two ditches appear to define a trackway.

SHALLOW CURVED DITCHES (Fig. 13)

Three ditches were excavated and each produced shallow curving sections. Ditch (205) on the north side of the road ST 95680294 measured 1.5 m wide and 0.2 m deep. Ditch (206) on the north side of the road ST 95890277 was 2.5 m wide and 0.2 m deep and ditch (207) on the south side of the road ST 95430307 measured 2 m wide and 0.2 m deep.

(205) was aligned north-east to south-west, and contained a sherd of pottery similar to black burnished ware in its upper filling (48) and occasional small fragments of animal bone and struck and burnt flint.

(206) (Plate 9) was aligned north to south and contained a fragment of purbeck limestone within its upper filling (59), but no diagnostic pottery, and was sealed by a band of packed pebbles and flint nodules 0.02 m thick (75). Numerous small fragments of Romano-British pottery appear to have been trodden into the surface. This included Samian, Black Burnished and colour coated wares. The layer was not traced to the north-west where it was substituted by a ploughsoil (58) which was similar

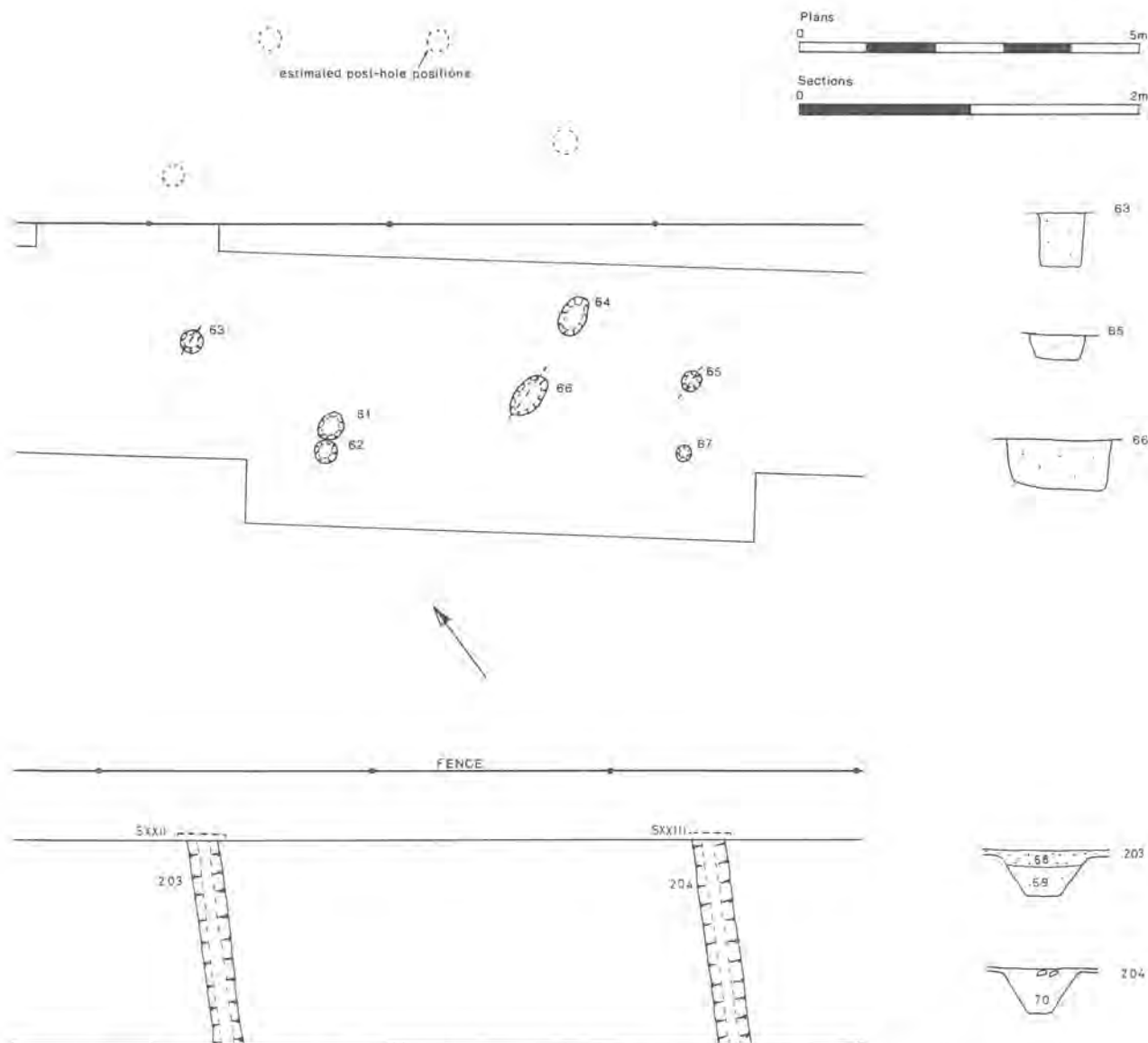


Figure 12 Beech avenue plan and section of round house postholes 61-67 and parallel V-shaped ditches 203 and 204



Plate 9 Shallow curved ditch (206) looking south. Beech avenue north side.

to (45) described above. It was traceable from ST 95650296-95890287 ie 300 m north-west of (206). The stony layer (75) was best preserved above (59) but a similar layer (60) could be traced for 130 m to the south-east (ST 95990270). At this point, the chalk bedrock was overlain by a tertiary capping of pebbles. A 1.7 m wide trench was continued to the south-east edge of the scheduled area but no archaeological features were found within this gravel subsoil.

A band of irregular depressions, 2 m wide and averaging 0.3 m diameter and 0.08 m deep, followed the north-west edge of the ditch (206). These features were not encountered elsewhere and may mark the position of a hedge following the line of the ditch.

The ditch appears to mark a change of land use as it divides the ploughsoil (58) from the stony layer (75)/(60).

A similar 0.02 m deep packed deposit of gravel (93) with small sherds of Romano-British pottery within it was found on the south side of the road. It lay above a layer of orange brown loamy clay (94) with occasional sherds of Romano-British pottery which in turn lay above the ditch (207) which contained no diagnostic finds.

### The worked flint

by Julian Richards

see tables 1, 4-8

#### Discussion

Excluding material from unstratified deposits (ploughsoils) and from the upper levels of ditches where intrusive material was clearly present, the potential of the assemblages examined lies within the more substantial and well-sealed groups from three ditches; the Crab Farm enclosure, the Swan Way ring ditch and the linear bank and ditch. All of these excavated ditches can be dated either by radiocarbon or associated artefacts to the Middle and later Bronze Age.

The aim of the study has been to examine raw material source and type, technology and product. In view of the limited size of the assemblages, their chronology and circumstances of deposition, it is hardly surprising that a degree of homogeneity can be observed.

Condition - All material examined was patinated ('corticated') the colour ranging from pale blue to white. This is consistent with burial in chalky alkaline soils. Condition varied although the majority of the material, recovered from sealed ditch deposits, is extremely fresh and sharp.

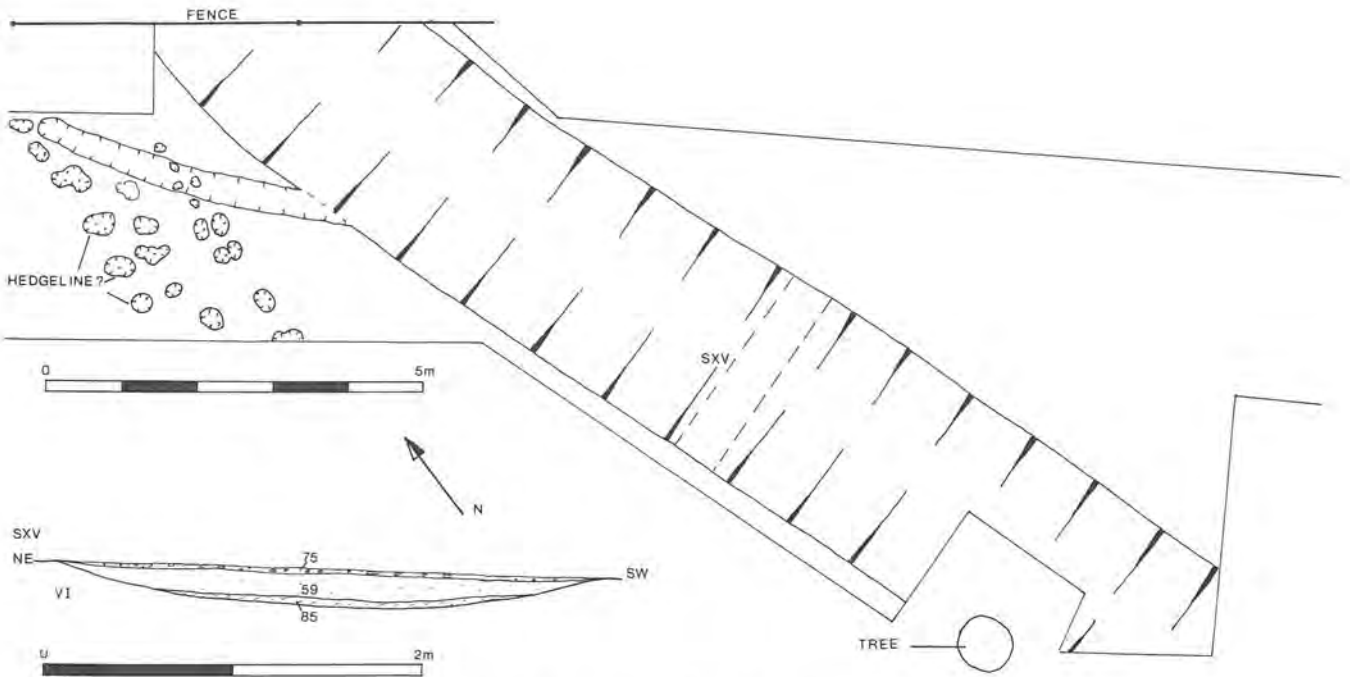


Figure 13 Beech avenue shallow curved ditch 206

Raw material - Without exception the raw material utilised was in the form of irregular or rounded flint nodules derived from the chalk. It is likely that the majority were 'mined' in the course of digging the ditches and in consequence the utilisation of such a windfall may not represent more normal patterns of procurement and primary reduction. No chert was observed.

Technology - During the excavations individual 'knapping clusters' were observed at the Swan Way ring ditch and at the linear ditch and bank. These, assumed to represent *in situ* reduction were recorded and removed as individual contexts and appear, on initial analysis, to demonstrate the potential for refitting. This potential was not exploited and indeed it is uncertain within the context of the sites under examination, whether or not the results from such an exercise would be useful.

The technology demonstrated by the sealed ditch groups is extremely simple and in all cases indicates the primary decortication of nodules. There is an extremely high proportion of wholly or partly cortical flakes which in all cases show the characteristics of hard hammer removal (Ohnuma and Bergman 1982, 189). Hammers are likely to have been of

flint as demonstrated by core/hammers from contexts (46) and (47) at the linear bank and ditch. The majority of flakes show plain butts with the exception of a small number showing either abrasion or, in a very few cases faceting from context (14) at the Swan Way ring ditch. This group is also distinctive in containing occasional elongated flakes showing what may be a deliberate use of ridges to guide flake shape (Gingell and Harding 1979).

It is difficult to identify a specific product for the relatively simple processes described above. In some cases cores are present, and appear to have been rejected for a variety of reasons including edge angle recession, hinge fractures and in the case of some of the smaller examples, the inability to produce flakes of a useful size. Some clusters of flakes have no associated core(s) and here decorticated lumps of useful raw material could have been removed for use elsewhere. However, unless the identified knapping groups were sufficiently discrete to be totally sampled, this point must remain one of speculation.

The majority of the tools, 13 scrapers and two fabricators (none illustrated; Table 8), were recovered from unstratified contexts. Viewed as a group, the scrapers suggest a later Neolithic/early Bronze Age date,

Table 6 Miscellaneous ditches: worked flint

CONTEXT NO.	CORES		FLAKES			BLADE	TOOLS	CHIPS	Total (ex chips)
	COMP	FRAG	COMP	BRK	RET				
48 (cut 205)	3		50	8			sf 128		62
59 (cut 206)			1	9					10
68 (cut 203)			5	2			sf 129		8
69 (cut 203)			1	1					2
70 (cut 204)	2		2						4
85 (cut 206)		3	2	1	1				7
90 (cut 210)			2						2
Roundhouse									
61 (posthole)					1				1
Totals	5	3	63	21	2	/	2		96

Table 7 Buried Ploughsoils - worked flint

CONTEXT NO.	CORES		FLAKES			BLADE	TOOLS	CHIPS	Total (ex chips)
	COMP	FRAG	COMP	BRK	RET				
40	1		35	2			sf 130	3	39
45	2	1	29	8			sf 131	1	41
58	2		56	3		1	sf 132 sf 133 sf 134		65
60				1	2				3
75	1			13	3				17
Totals	6	1	120	27	5	1	5	4	165

Table 8 Flint Special Finds

S.F. No.	Site ref. and Context No.	Description
120	Shapwick a 86 context 1	Scraper; neat, steep to abrupt retouch on almost circular cortical flake.
121	Shapwick a 86 context 4	Side scraper; shallow invasive retouch on partly-cortical flake.
122	Shapwick 42 context 1	Scraper; steep to shallow coarse retouch on thick flake.
123	Shapwick 42 context 1	End scraper; irregular retouch on elongated flake.
124	Shapwick 35/a89 context 41	Fabricator ('rod'); abrupt blunting retouch on sides and distal end of elongated flake blank. Some wear visible on distal end.
125	Shapwick 35/aa89 context 47	Fabricator; abrupt blunting retouch on sides and distal end of elongated partly-cortical flake. Some wear visible on distal end.
126	Shapwick 35/a89 context 101	Scraper; regular invasive retouch at distal end of elongated partly-cortical flake.
127	Shapwick 35/a89 context 101	Scraper; regular abrupts retouch on distal end of large irregular, dipping, partly-cortical flake.
128	Ditch cut 205 context 48	Scraper; irregular and abrupt retouch at distal end of partly-cortical flake.
129	Ditch cut 203 context 68	Scraper; regular fine abrupt retouch on distal end of slightly-dipping cortical flake.
130	Ploughsoil context 40	Scraper; almost circular with neat steep to invasive retouch on dipping flake.
131	Ploughsoil context 45	Scraper; regular abrupt retouch on distal end of large irregular, dipping, partly-cortical flake.
132	Ploughsoil context 58	Scraper; shallow retouch to side and distal end of partly-cortical flake.
133	Ploughsoil context 58	Scraper; regular shallow retouch on side/distal end of small partly-cortical flake.
134	Ploughsoil context 58	Scraper; regular steep to shallow retouch on side and distal end of small dipping flake.

perhaps borne out by the presence of the fabricators which are generally suggested as dating to the later Neolithic (Richards 190, Fig. 11). The macroscopic wear on both fabricators suggests a nearby domestic context for these tools.

### Romano-British pottery

by Nancy Grace

Context (75), the stony layer above (59), contained mainly small worn sherds including four sherds of colour-coated ware and numerous fragments of BB type including two small rough bases 3.5 cm and 4.0 cm diameter and 5 rim sherds, one probably from a shallow dish or lid. One decorated sherd was a light brown fabric with a black coating and painted with four white stripes, there were also five sherds of a sandy orange fabric.

Context (93) was the stony layer above layer (94). This contained ten abraded body sherds comprising three red-brown coarse sandy fabric sherds (including a base fragment), three with an orange fine sandy fabric and four sherds with an orange coarse sandy fabric with a grey core.

### WHEEL RUTS

On the north side of the road, south of RCHM Shapwick 35/a89 and south-west of the hedge boundary, a dense concentration of cart track ruts appeared to follow the line of the hedge and turn to the north at the south-west corner of the field. The 1742 map (B/KL) shows a track crossing Shapwick Down and a track still existed here until the 1960s. Where pairs of ruts could be defined, the distance between the centres of each rut was 1.8 m. Another pair of ruts into the chalk were found on the south side of the Blandford Road at ST 95410309. These were aligned north-east to south-west and the rut centres were 1.42 m apart.

The ruts were between 0.4 m and 0.2 m wide and cut up to

0.1 m into the chalk. As with the other ruts a number of broken flints were found compacted into the chalk along their course. The early maps do not record a track in this position.

### AN EARTHWORK SURVEY IN HIGH WOOD

By Hazel Riley and Mark Corney (Fig. 14)

The earthworks in High Wood were first noted in 1988 (Papworth 1988, 142) and the following year RCHM were asked to provide a detailed large scale (1:1000) survey of the complex. Using a Wild TC2000 Total Stations system and taped offsets survey was completed in eight days, covering four hectares and recorded i) a sub-rectangular enclosure, ii) fragmentary field-system, iii) former gravel pits and iv) woodland banks.

The complex occupies a knoll of tertiary gravel overlying chalk at a height of 90 m OD and is situated 300 m E of the outer rampart of Badbury Rings (NGR, centre ST 96930310).

Enclosing an area of 0.5 ha. the sub-rectangular earthwork (Pamphill 95) is defined by a ditch 3-4 m wide and up to 0.8 m deep. On the W and S there is a well defined counterscarp, 3 m wide and 0.3 m high. No original entrance(s) could be located due to severe disturbance by later quarrying. The SW part of the interior, where later damage is minimal, has slight linear scarps on a common alignment with elements of a field system on the S. flank of the knoll implying a change in land use prior to construction of the enclosure. Surface finds over the SE angle of the enclosure included struck flint flakes and Romano-British pottery.

The most prominent feature in the wood is a deep linear cut, (Fig. 14, A-B) probably a gravel quarry, which has destroyed 30% of the interior of the enclosure. Further gravel pits were located at C and D. Although undated the proximity of the quarries to the Roman road Margary 4d, which passes to the SW,

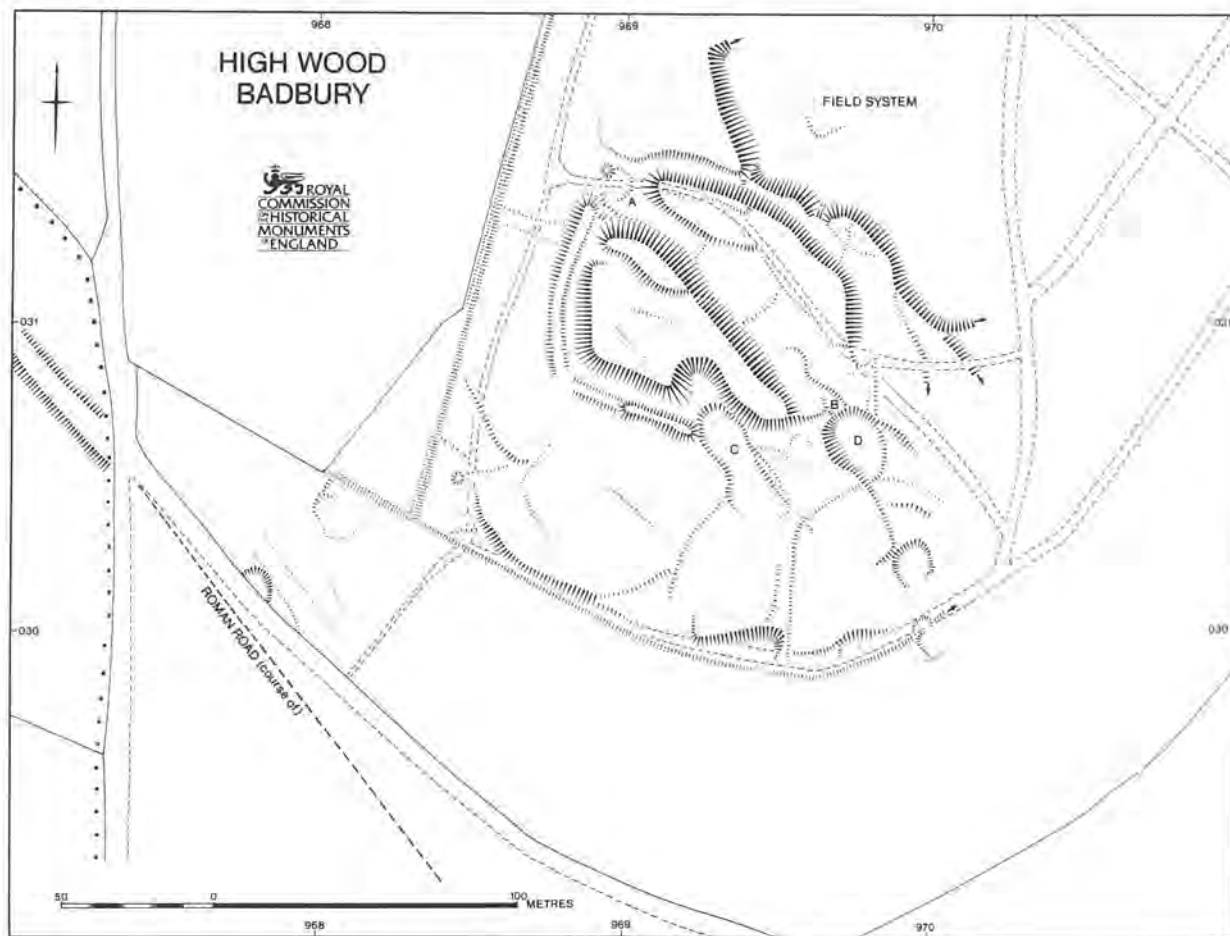


Figure 14 RCHM earthwork survey of the enclosure in High Wood

could suggest a function as a source of material for road metallurgy.

The form of the enclosure is broadly comparable with the 'Tombstone' or 'D' shaped variety, (Bowen 1990, 88-90, Fig. 46c), which on morphological grounds is best placed within the later prehistoric or early Romano-British period. Such a date would accord well with other known sites in the vicinity (RCHM 1975, 51-53; Bowen 1990, 42-45, area plan 1).

### The worked flint from High Wood

by Julian Richards

A small collection (23 pieces) of worked flint was recovered from across the enclosure (Pamphill 95). The material is both patinated and unpatinated, and it is clear that both gravel flint, presumably from the tertiary gravel capping, and chalk flint were utilized. The presence of blades, including one from a bi-polar core, together with a long end scraper, suggests the presence of activity dating to the Mesolithic or Early Neolithic period.

### LANDSCAPE DISCUSSION

The boundaries of the 3,000 hectares of the Kingston Lacy Estate surrounding Badbury Rings are likely to have been used as some form of landscape and social organisation in the prehistoric period. Particularly the rivers Stour and Allen which are the boundaries to the south and east respectively. These rivers converge at Wimborne and form a wedge of land with Badbury occupying the highest position at the centre. Prehistoric sites have been discovered along the rivers' flood plains and lie buried beneath alluvial deposits. The BP Purbeck to Southampton pipeline crossed the Estate (Addison 1989, 122) from south to north-east (Fig. 1), in 1988, and cut an Early Iron Age pit covered by alluvium on the Stour floodplain ST 95959915 and near the Allen, ST 98240205, the pipeline disturbed a group of six Late Neolithic pits.

The north Estate boundary follows a scarp top which is marked by the sites of barrows (Pamphill 78, 79, 80, 84) and further west where the Estate and Shapwick parish boundaries coincide, the hedgelines follow the contours via other barrow sites (Tarrant Rushton 11-13) southward to the Stour. The coincidence of barrows with surviving hedgelines may indicate an early origin for these boundaries.

Mollusc samples taken from the Barford Farm double ring ditch (Allen 1989, 49), the linear ditch Shapwick 35/a89 (Evans 1987, 76) and from the ring ditch Shapwick 42 (Wainwright this report) indicate an open landscape to the south of Badbury, from the Late Neolithic to the late or post-Roman period. Much of the primary woodland had probably been cleared from the Badbury area by the Bronze Age. Environmental evidence from the South Dorset Ridgeway (Woodward 1991) and Cranborne Chase (Barrett, Bradley and Green, 1991) supports the case for a general woodland clearance on the Dorset chalkland by this time. Certainly the density of Bronze Age sites around Badbury suggests a managed agricultural landscape.

This area contains the second largest block of linear ditches known within Dorset (Bowen 1990, 42). On excavation many linears have been dated to the later Bronze Age and are variously termed 'reaves' on Dartmoor, 'dykes' in Yorkshire and 'ranch boundaries' on the southern chalkland. Linear works are defined (*ibid.*, 10) as primarily boundaries or primarily roads consisting of a single ditch and bank or multiple parallel arrangements of banks and ditches. Around Badbury, linears are particularly clear on aerial photographs on the south side of the beech avenue but also exist to the north.

Bowen (1990, 11) in considering linears describes them by their association with other site types ie hill forts, ring ditches/round barrows, field systems and enclosures. In the following, site associations are considered for the Badbury area after additions to the list of sites within RCHM (1975) are described. These additions have been plotted from air photographs by RCHM and assigned RCHM site numbers (Fig. 15; Appendix 1).

### RING DITCHES/ROUND BARROWS

Groups of round barrows are concentrated on the chalkland spur which radiate from the high ground on which Badbury Rings is sited. The ring ditches/round barrows are the earliest visible sites and their relationship with earlier features in the area has only been established by excavation. The double ring ditch at Barford, for example, covered a pit of Late Neolithic date (Howard 1989, 31).

At present 101 ring ditches/round barrows are indicated from various sources. These include a number of additions to those listed in RCHM (1975; Appendix 1).

On the north edge of Pamphill parish RCHM 75, 76 and 77 form a linear group but about 50 m to the north-east CUAP AUP-39 shows an additional cluster of eight smaller ring ditches (Pamphill 97-104). This field is known as Saxons (1773 B/KL) or Deadmans (1846 W/TM) on early maps, names which may indicate the disturbance of burials during ploughing.

To the east and following the Estate boundary, a linear group of four sites occupy the scarp top north-east as far as the Bradford Barrow. These were boundary markers in the 1591 perambulation of the manor 'thence from barra to barra to the west barra there' (DCRO Woodward B/KL). A further three sites have been identified here (Pamphill 125-127).

The Bradford Barrow group is a large scattered spread of barrows occupying a chalk ridge aligned north to south. The northern ring ditches in the group lie beyond the Estate boundary (Pamphill 81-84) but a further fourteen ring ditches and earthworks lie to the south (Pamphill 85, 105-117). These are visible on aerial photographs CUAP ASN-22, AXO-38, NMR ST9804/3. The ridge curves to the south-west and a small cluster of four mounds forms the King Down group Pamphill 86-89.

The Badbury Rings group Shapwick 47-55 has been augmented by five sites found on aerial photographs: (NMR ST9502/1) Shapwick a75; a76; (Hunter Surveys HSLUK86027 3483) Shapwick 124 and documentary sources (Woodward B/KL; Crawford 1928) Shapwick 123; 125. The linear group occupies the north-west side of the hillfort.

The Park Lane group, Shapwick 59-61, 1,000 m to the south, has an additional seven ring ditches (Shapwick 110-116) which can be included within it (CUAP AXM-58; NMR ST9402/5). Other clustered groups of ring ditches are sited 300 m to the north (Shapwick a77-a80; NMR ST9502/8) and 300 m to the east (Shapwick 117-121; CUAP AXM-64) of 110-116. The group a77-80 lies beneath a spread of Romano-British occupation debris (Shapwick 32) and fieldwalking in 1988 recovered occasional Bronze Age sherds mixed with the Romano-British material. After the ploughing of February 1989, the ring ditches were visible on the ground and measured 13 m diameter and 1 m wide.

To the south and west of Shapwick parish, ring ditches are scattered singly or in pairs (Shapwick 97-108), although the Badbury Barrow group, Shapwick 40-44, forms a small cluster of sites.

A number of examples of barrows/ring ditches lying adjacent to linear features are clear on aerial photographs. Generally it is thought that the linears are later than the barrows because they appear to use barrows as boundary markers or turn to avoid barrow sites. The best example of this, around Badbury, is at Park Lane where a linear, probably a continuation of Shapwick a91, turns and partly encloses the cluster of ring ditches Shapwick 110-116. The air photographs (NMR 9402/6 and CUAP AXM58) show the linear turn sharply west and then south to avoid the group. A break in the ditch here allows access to the group, across the linear from the north.

The ring ditch Shapwick 56 may have been used as a boundary marker by linear Shapwick a91 as it passes immediately east of it (Plate 10). Similarly, in the Badbury Barrow group, NMR ST9403/1 shows a linear ditch curving towards barrows Shapwick 40 and 41. The ditch appears to split just south of the Blandford Road, with the eastern arm touching the south-west edge of the barrows' ditches.

These examples indicate a respect for barrow cemeteries in the



Figure 15 RCHM plot of archaeological sites in the Badbury area.

later Bronze Age and generally this respect is thought to continue through the Iron Age with hillforts such as Maiden Castle, Poundbury and Chalbury enclosing but not damaging earlier Bronze Age barrows. This is at variance with the earthwork evidence at Badbury where the hillfort defences have been built across part of the Badbury Rings group. The middle defensive ditch cuts through a probable barrow mound (Shapwick 122) and the outer rampart partly obscures another (Shapwick 55).

#### ENCLOSURES

In addition to the Crab Farm site (a86) a number of enclosures in the Badbury area appear to be of prehistoric date. The linear a91 forms the west side of two rectilinear enclosures (Shapwick 125; 126), approximately 100 m north-east of the cluster of seven ring ditches Shapwick 110-116 (NMR ST9402/6) with a third rectilinear enclosure, Shapwick 127, lying approximately 100 m north-east of these enclosures. They measure approximately 40 m square. A barrel-shaped enclosure Shapwick 36 (ST 95270153) on the south-west side of Park Lane was visible on the ground as a parch mark in 1975 and measured approximately 38 m square (Field ms. notes).

Most enclosures in the Badbury area have no visible associations with linears but a group of enclosures, Shapwick 128, may be aligned with ditch a91. The enclosures (Plate 10) were measured on the ground in February 1989 and were subsequently photographed from the air (Harding NT film 403). Ditch a91 lay 28 m west of the enclosures and measured 2 m wide at this point. Two metres to the west of it and running parallel was a second ditch 35 m long and 5 m wide which was also parallel with and matched the soil colour and width of the enclosure ditch to the east. The two largest enclosures measured 80 m east-west by 50 m and 35 m east-west by 47 m and were

linked by a corridor of land 5 m wide. The smaller of the enclosures on the east side was crossed by a hedge boundary with traces of further ditches visible beyond the hedge. That which appears to be the earliest enclosure of the group lies on the south side with the southern edge of the west enclosure apparently turning north and then west to follow the northern edge of the south enclosure.

The High Wood enclosure (Pamphill 95) which shares the same knoll as Badbury Rings has now been surveyed in detail by RCHM (Riley and Corney this report; Fig. 15). this survey indicates that the site overlies an earlier field system and a late prehistoric date is suggested for the site. In contrast, the scatter of worked flint recovered from across the enclosure suggests a Mesolithic or Early Neolithic date for occupation here (Richards this report). A spread of burnt flint is a feature this site shares with the Crab Farm enclosure a86.

Other enclosures lie in close proximity to the Bradford Barrow group of ring ditches and one ring ditch, Pamphill 113, shown on CUAP AXO-38, is used as part of a later ditched enclosure boundary. Romano-British occupation debris, Pamphill 71, has been found in the adjacent field to the south-east and the enclosure may date to this period. The form of this and other enclosures in the vicinity (shown on NMR ST9804/3) may indicate a prehistoric origin of settlement. Iron Age Romano-British continuity at sites such as Sweetbriar Drove (Pamphill 123, Maynard forthcoming) and Bradford Down (Pamphill 70, Field 1982) support this suggestion.

#### LINEAR DITCHES

The linear ditches, visible on the south side of the Blandford Road, may define a series of contemporary land units. They are



Plate 10 Aerial photograph showing soil marks on the south-east side of Badbury. Linear ditch RCHM Shapwick a91 crosses the photograph left to right passing close to ring ditch Shapwick 56. A cluster of enclosures Shapwick 126 are visible to the right of the photograph and the white shadows of field lynchets are also visible. Harding NT Film 403 Neg 25, February 1989.

spaced at 200-500 m intervals and are similarly aligned, taking an erratic north-south course from the high ground on which Badbury is sited south to the River Stour. However, they may have been constructed at various times as their plans exhibit different characteristics. For example, Shapwick a91 takes an irregular snaking course with sections of wider ditch, including a section of double ditch.

#### GENERAL CONCLUSIONS

Air photograph NT401 No 23 shows the linear a89 crossing a90 to overlie 124 and indicates the realignment of boundaries in the later Bronze Age. Ditches a90 and 124 are examples of the small flat bottomed V-shaped ditches. Similar ditches were cut by the radiocarbon-dated Middle Bronze Age sheep burial within the Crab Farm enclosure a86 and the phase I ditch (Gingell 1987, 66) cut by the phase II and III ditches at RCHM Shapwick 35/a89. These appear to be elements of a field system, of Early Bronze Age date, which was altered in the Middle Bronze Age. The molluscan evidence from Shapwick 35 (Evans in Gingell 1987, 76) indicates that an arable farming system suggested for phase I was replaced by periods of grassland and woodland regeneration in phase III.

The large scale of the ditch and bank of RCHM 35/a89 suggests a defensive function and two chance finds, a bronze palstave axe (Smith 1987, 123) and rapier (Crawford 1928, 60), within 300 m of the linear and 250 m from Badbury Rings, add to this argument. These are the only recorded examples of later Bronze Age weapons from the area and their discovery at Badbury adds to the evidence for a pre-Iron Age importance for the hill site.

The enclosure a86, 200 m to the south-east, may have been contemporary with the linear 35/a89 as both contain Middle Bronze Age pottery within their lower ditch fillings. The pottery evidence suggests a domestic function for a86 and comparisons have been made with Middle Bronze Age settlement enclosures (Tomalin this report). The compacted charcoal and chalk layers at the bottom of the outer ditch and the animal burials within the enclosure indicate an element of ritual as part of the use of the site.

Features constructed in the Iron Age were not identified, although a scattering of sherds in the ditch fillings and mixed with the Romano-British ploughsoil indicate activity in the area at this time. The finds beneath Lodge Farm ST 97430215 (Papworth 1987, 135) (Fig. 1) and the extensive settlement at Sweetbriar Drove ST 96800100 (Maynard forthcoming) and Bradford Down ST 97800423 (Field 1982, 71) together with Badbury Rings itself are evidence of the density of Late Bronze Age/Iron Age occupation in the area.

The shallow scooped ditches appear to be field boundaries covered by Romano-British deposits and may be of later prehistoric date. Some of these boundaries may have continued to be used in the Romano-British period, as seems to be the case with the ditch alignment (206) and possible hedge indicated by the root hollows (71)-(74), (76)-(82).

On an aerial photograph (NT film 403 neg 25; Plate 10) the lynchets of an early field system respect the line of linear a91 which itself respects the position of ring ditches. The implication being that a later Bronze Age linear laid out in relation to existing Early Bronze Age burial mounds is then used as a boundary for a field system.

Following the Romano-British period, settlement in the area appears to have migrated from the chalk and become concentrated either on the Reading Beds to the south-east, where settlements like Kingston and Cowgrove developed around Wimborne, or along the edges of the rivers, where villages such as Shapwick, Barford and Hogford developed on the banks of the Stour and Allen. Farmsteads were re-established on the chalkland in the 18th and 19th centuries when the common fields and pastures of Kingston Lacy and Shapwick were enclosed.

#### BIBLIOGRAPHY

- Addison, P., 1989, 'Observations on the Purbeck to Southampton Pipeline', *Dorset Proceedings* 111, 122.
- Addison, P., 1989, 'Excavation of Neolithic and Bronze Age Pits and a Section of a Roman Road on a Pipeline near Lodge Farm, Pamphill, Dorset', *Dorset Proceedings* 111, 15-29.
- Allen, M.J., 1989, 'The mollusc evidence', in Howard S., 1989, 'A double ring ditched Bronze Age barrow at Barford Farm, Pamphill', *Dorset Proceedings*, 111, 31-55.
- ApSimon A.M., 1962, 'The Bronze Age pottery' in P & ApSimon, A.M., Excavations at Shearplace Hill, Sydling St Nicholas, Dorset', *Proceedings of the Prehistoric Society*, 28, 307-321.
- Austen, Rev., J., 1846, 'Archaeological intelligence, primeval period', *Archaeological Journal* III, 348-352.
- Avery, D.M.E. and Close-Brooks, J., 1969, 'Shearplace Hill, Sydling St Nicholas, Dorset, House A. - a Suggested Reinterpretation', *Proceedings of the Prehistoric Society* 35, 345-51.
- Barrett, J.C., Bradley, R. and Green, M., 1991, *Landscape monuments and society; the prehistory of Cranborne Chase*, Oxbow, Oxford.
- Barrett, J.C., Bradley, R., and Hall, M., 1991, *Papers on the prehistoric archaeology of Cranborne Chase*, Oxbow, Oxford.
- Bowen, H.C., 1990, *The Archaeology of Bokerley Dyke*.
- Calkin, J.B., 1964, 'The Bournemouth area in the Middle and Late Bronze Age with the Deverel-Rimbury problem reconsidered', *Archaeological Journal* 119, 1-65.
- Cleal, R., 1989, 'The pottery' in Addison, P., 1989, 15-29.
- Crawford, O.G.S. and Keiller, A., 1928, *Wessex from the Air*, Oxford.
- Ellison, A.B., 1976, Pottery and settlements of the Later Bronze Age in southern England, University of Cambridge, Unpub. PhD thesis.
- Evans, J.G., 1987, 'The land mollusc assemblages' in Gingell, C.J., 1987.
- Fasham, P.J., 1987, *A banjo enclosure in Micheldever Wood, Hampshire*, Hampshire Field Club monograph 5.
- Field, N.H., 1982, The Iron Age and Romano-British Settlement on Bradford Down, Pamphill, Dorset, *Dorset Proceedings* 104, 71-92.
- Fock, J., 1966, *Metrische Untersuchungen an Metapodien einiger europäischer Rinderassen*, *Fakultat der Universität München*.
- Gingell, C.J., 1987, An Earthwork near Badbury Rings in Dorset, *Dorset Proceedings* 109, 65-78.
- Gingell, C.J., and Harding, P.A., 1979, 'A method of analysing the technology of flaking in Neolithic and Bronze Age flint assemblages', *Staringia*, 6 Nederlandse Geologische Vereniging, Maastricht, 73-6.
- Grigson, C., 1982A, 'Sex and age determination of some bones and teeth of domestic cattle: A review of the literature', in Wilson B., Grigson C. and Payne S. eds *Ageing and Sexing Animal Bones from Archaeological Sites* British Archaeological Reports, British Series 109, 7-23.
- Grigson, C., 1982B, Sexing Neolithic domestic cattle skulls and horn cores, in Wilson *et al.* (above).
- Guilbert, G., 1981, 'Double ring round houses and probable and possible in Prehistoric Britain', *Proceedings of the Prehistoric Society* 47, 299-317.
- Howard, S., 1989, 'A Double Ring Ditched, Bronze Age Barrow at Barford Farm, Pamphill', *Dorset Proceedings* 111, 31-55.
- Jewell, P.A. and Dimpleby, G.W., 1966, 'The experimental earthwork on Overton Down, Wiltshire, England', *Proceedings of the Prehistoric Society* 32, 313-342.
- Jones, R., Wall, S.M., Locker, A.M., Coy J. & Maltby M., 1981, Ancient Monuments Laboratory, DoE, Computer based Osteometry, data capture user manual (1), *AML Report No 3342*.

- Keen, L., and Papworth, M., 1987, 'Lodge Farm, Pamphill, interim report' *Dorset Proceedings* 109, 135.
- Locker, A.M., forthcoming, The Animal bones from the 1984 excavations of the Later Bronze Age midden at Potterne nr Devizes, Wilts.
- Matolcsi, J., 1970, Historische Erforschung der Körpergröss des Rindes auf Grund von ungarischen Knochenmaterial. *Zeitschrift f. Tierzucht. u. Zuchtungsbiol. Hamburg* 87, 89-137.
- Maynard, D., forthcoming, Excavation of a Late Bronze Age/Early Iron Age settlement at Sweetbriar Drove, Pamphill.
- Ohnuma, K. and Bergman, C., 1982, 'Experimental studies in the determination of flaking mode', *Bulletin of the Institute of Archaeology*, 19, 171-70.
- Papworth, M., 1988A, 'An enclosure in High Wood, Pamphill', *Dorset Proceedings* 110, 142-143.
- Papworth, M., 1988B, 'A Neolithic enclosure, Crab Farm, Shapwick, interim report', *Dorset Proceedings* 110, 141.
- Papworth, M., 1989, 'Crab Farm Neolithic enclosure, interim report', *Dorset Proceedings* 111, 105.
- Pearson, G. and Stuiver M., 1986, 'High-precision calibration of the radiocarbon time-scale, 500-2500 BC', *Radiocarbon*, 28, No 2B, 839-862.
- Piggott, S., 1939, 'The Badbury Barrow, Dorset and its Carved Stone', *Antiquaries Journal*, XIX, 291-299.
- Pitt-Rivers A., 1898, *Excavations in Cranborne Chase*, vol. 4. privately printed.
- RCHM, 1975, *Historical Monuments in the County of Dorset, East* vol. V H.M.S.O.
- Rahtz, P.A. and Apsimon, A.M., 1962, 'Excavations at Shearplace Hill, Sydling St Nicholas, Dorset', *Proceedings of the Prehistoric Society* 2, 289-328.
- Richards, J., 1990, *The Stonehenge Environs Project*, English Heritage Archaeological Report, 16.
- Stuiver, M. and Reimer, P.J., 1986, 'A computer program for radiocarbon age calibration', *Radiocarbon*, 28, No. 2B, 1022-1029.
- Sydenham, J., 1844, 'An account of the opening of some barrows in south Dorsetshire', *Archaeological Journal* 30, 327-338.
- Smith, D. & Papworth, M., 1987, 'A Palstave from Shapwick', *Dorset Proceedings* 109, 123.
- Teichert, M., 1975, 'Osteometrische Untersuchungen zur Berechnung der Widerristhöhe bei schafen'. In Clason, A. (ed), *Archaeozoological Studies*. Amsterdam, 51-69.
- Thurnam, J., 1871, 'On ancient British barrows especially those of Wiltshire and the adjoining counties (II round barrows)', *Archaeologia* 43, 285-544.
- Tomalin, D.J., 1983, British biconical urns; their character and chronology and their relationship with indigenous Early Bronze Age ceramics. Unpub. PhD Thesis. University of Southampton.
- Tomalin, D.J., 1988, 'Armorican vases à anses and their occurrence in Southern Britain', *Proceedings of the Prehistoric Society* 54, 203-222.
- Tomalin, D.J., 1989, 'The Late Neolithic and Bronze Age pottery from Barford Farm and its cultural implications', in Howard, S., 1989.
- Tomalin, D.J., 1992, 'The Late Biconical Urn and Deverel Rimbury domestic ceramic assemblage on Bishops Cannings Down, in Gingell, C., *The Marlborough Downs; a Later Bronze Age landscape and its origins*, Wiltshire Archaeological and natural History Society Monograph 1, 71-87, & fiche B10-B14, C1 & C2.
- Vatcher, F. de M. and H.L., 1965, 'An excavation of an earthwork near Badbury Rings, Dorset', *Dorset Proceedings*, 87, 101-102.
- Warne, C., 1866, *The Celtic Tumuli of Dorset*, London.
- Woodward, P.J., 1991, *The South Dorset Ridgeway Survey and Excavations 1977-84*, Dorset Natural History and Archaeological Society Monograph 8.
- Unpublished Sources*
- Cambridge University aerial photographs: AXM58; AXM64; ASN22; AXO38; AUP30.
- Field, N.H., 1975, Plot of crop marks south of Park Lane, Shapwick, National Trust S.M.R., Kingston Lacy.
- Harding, B., 1988-89, aerial photographs of Crab Farm and New Barn Farm, NT films 401 and 403, National Trust S.M.R., Kingston Lacy.
- Johnson, D.E., 1982, The excavation of the Roman crossroads at Batt's Bed, Wimborne, Wimborne Archaeological Group, unpublished report.
- National Monuments Record, aerial photographs: ST9804/3, ST9502/1; ST9402/5; ST9502/8; ST9403/1; ST9402/6.
- Ordnance Survey, 1888, 25 inches - 1 mile map XXV.14, National Trust S.M.R., Kingston Lacy.
- Ordnance Survey, 1954, Unidentified Earthwork (remains), N.V. Quinnell ST90SE43B.
- Dorset County Record Office
- DCRO/Inclosure 50; Inclosure map of Shapwick parish, 1813
- DCRO/ W/TM: Wimborne Tithe map, 1846
- DCRO/BKL: Bankes of Kingston Lacy Archive, William Woodward Survey of the Kingston Lacy Estate maps, 1773.
- Plan of the roads through Kingston Lacy and Badbury Warren, 1742.

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## APPENDIX I

**Addendum to the Inventory, Parishes of Shapwick and Pamphill**

The following inventory gives the location and brief description of monuments discovered in the parishes of Shapwick and Pamphill since the publication of the Royal Commission on Historic Monuments volumes on East Dorset, (RCHM 1975), and the Archaeology of Bokerley Dyle, (Bowen 1990). With the exception of Shapwick 122 and Pamphill 95 125-128, all monuments have been noted on aerial photographs as plough levelled features. Air photographs consulted are held at the National Trust Offices on the Kingston Lacy Estate. The inventory numbering system follows on from that previously published in the Royal Commission volumes referred to above.

All Grid References are prefixed ST.

**Round Barrows****Shapwick Parish**

No.	NGR	
122	96210296	Mound partly overlain by counterscarp of middle rampart of Badbury Rings hillfort. First noted by Crawford and Keiller, (1928, plate IV, p 60).

**Pamphill Parish**

125	97270411	earthwork in hedge boundary (Papworth 1988, 143)
126	977043	barrow shown as a boundary marker (DCRO BKL, 1773 map)
127	979044	barrow shown as a boundary marker (DCRO BKL, 1773 map)
128	96400193	earthwork in woodland, "one barrow" (BKL, 1742 map) (Papworth 1988, 143)

**Ring Ditches****Shapwick Parish**

97	93610355	
98	93990324	
99	94270328	
100	94140320	
101	93920259	
102	93930231	
103	94490235	
104	94500134	
105	95260138	
106	95290139	
107	95690130	
108	95700130	
110-116	95320177 (centre)	Group of 7 ring ditches in a clustered configuration
117-121	95900170	Group of 5 ring ditches, nos. 117-120 in linear configuration aligned NW-SE, with no. 121 approximately 30 m N of 119.
123	96140332	

**Pamphill Parish**

97-104	96500422 (centre)	Group of 8 ring ditches. The largest, no. 97, apparently a focal point for the remainder of the group which forms a regular concentric configuration.
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105	98230479	
106	98300478	
107-109	98500449	Group of 3 ring ditches.
110	98580437	
111	98560436	
112	98480433	
113	98520425	
114	98450419	
115	98410410	
116	98490395	
117	98440389	
118	97580237	
119	97580229	

**Shapwick Parish**

125	95460180	
126	95480185	
127	95550200	
128	95850215 (centre)	group of four enclosures (Plate 10).
95	96900310 (centre)	Earthwork enclosure and associated features within High Wood, see above
96	96540336	Rectangular ditched enclosure, open on NE side. The feature is set hard against the N side ditch of Roman Road Margary 4e and is probably related to the extensive Romano-British settlement previously recorded, (RCHM 1975, 52, no 73).
120	96900240 (centre)	Irregular polygonal enclosure of approximately 4.5 ha. Course of NE side uncertain. The ditched circuit is interrupted by at least three major gaps and considerable variation in the ditch width is evident. (Seen most clearly on Cambridge University air photograph (AUP - 42).
122	96730130	Sub-rectangular ditched enclosure of approximately 0.3 ha.
123	96780099	Sub-rectangular ditched enclosure of approximately 0.2 ha. A short length of double ditched trackway can be seen heading NW from the SW corner of the feature.124

**Linears and Trackways****Shapwick**

109	95890102	Double ditched trackway curving gently to the NE. Visible for a distance of 900 m.
	96200189	
124	95250295- 95520328	Ditch with traces of a bank on its E side. The ditch is parallel to Shapwick 90, 60 m to the E, and makes a junction with Shapwick 89 at 95250295, (RCHM 1990, Area Plan 1, p43).

**Pamphill**

121	96900105- 97020123	Double ditched trackway aligned SW-NE and visible for a total distance of 200 m. If the feature continues to the SW it will pass close to the SE side of enclosure Pamphill 123.
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# Bradford Abbas: A Field Survey of the Prehistory

incorporating the records and collection of the late C E Bean, Esq., FSA in the Dorset County Museum

M S ROSS

Shaftesbury and District Archaeological Group

## SUMMARY

*The recording of eight stone axe fragments, six from one field, at East Farm, Bradford Abbas, Dorset, prompted the suggestion that a causewayed enclosure might be situated on, or near, the Farm.*

*A study of the existing collection and records from East Farm, compiled by the late C E Bean, Esq., FSA and now in the Dorset County Museum, together with systematic fieldwalking collection across the site, was undertaken to identify patterns of artefact distribution, in an attempt to locate the putative enclosure.*

*From the evidence obtained, no Early Neolithic monument could be shown to be present but a pattern of prehistoric occupation from the Later Mesolithic through to the Earlier Bronze Age was demonstrated by the material from surface collection.*

'Although the study of antiquities has for centuries continued to be a favourite pursuit, ... it is interesting to note that worked flints by the hundred have been scattered about our fields, and yet it is but comparatively recently that they have been recognised as such; nay, on the contrary, forms, many of which are now recognised as being very elaborately worked, were attributed to accident ... we have still much to learn about these objects, and it has been on this account that our pockets for some years have been well stored with flint chips, flakes, arrowheads, etc; and in advising our members to pick up all the flints that give the remotest idea of having been worked, we feel sure of having introduced some of you to a source of surprise and pleasure which will not be unwelcome.'<sup>1</sup>

## INTRODUCTION

The choice of the study area at East Farm, Bradford Abbas, Dorset (ST 590155 Fig. 1), was dictated by the find of eight stone axes, collected by the late C.E. Bean and now in the Dorset County Museum. Of these, six came from the site of an Iron Age/Romano-British settlement (Fig. 2) and were suggested by Professor Richard Bradley as possibly indicating the presence of a ploughed-out causewayed enclosure. A programme of fieldwalking was, therefore, designed to cover this and the adjacent fields, both for comparison and to define further possible areas of prehistoric occupation.

East Farm lies on the Dorset/Somerset border, towards the western fringe of the Limestone belt extending south-west across England, with the underlying geology faulted on the Inferior Oolite/Yeovil Sands (Fig. 3). The surrounding fields form a small plateau which rises to a maximum height of 110 m OD in Fields (1) and (3), dropping to c. 75 m OD in Field (4). The area is drained by the River Yeo which meanders from the east, making an extended loop south of the village of Bradford Abbas and, in spectacular fashion, flows north against the regional dip of the rocks, eventually to join the River Parrett and discharge into the Bristol Channel (Wilson *et al.* 1971, 5). But only some 9.5 km to the south, a low ridge of Oxford Clay near Leigh, Dorset, forms the watershed separating the drainage systems of the Rivers Yeo and Stour (*ibid*) thereby opening a network of communication

<sup>1</sup> Professor J. Buckman, F.G.S., F.L.S., F.S.A., 'On Worked Flints' *Proceedings of the Dorset Natural History and Antiquarian Field Club*. Volume II, 1878, pp. 97-103

James Buckman (1814-1884), was formerly Curator and Resident Professor at Birmingham Philosophical Institute and Professor of Botany and Geology at the Royal Agricultural College, Cirencester, before retiring to East Farm, Bradford Abbas in 1863, which he farmed on scientific principles (Torrens 1976, 37). A silver cup on display in the Dorset County Museum, awarded for his prize crop of swedes at Sherborne Agricultural Society in 1865, bears witness to his achievements.

He was a friend of Charles Darwin and many other eminent naturalists of the last century and, as an authority on all aspects of Natural History, Archaeology and Agriculture, wrote widely on these subjects (*ibid.*), notably on the stratigraphy of the Jurassic series in the Bradford Abbas area (Stephen and Lee 1937-8, 216). He was largely responsible for founding the Dorset Natural History and Antiquarian Field Club in 1876, becoming the first Honorary Secretary and Editor (Lang 1961, 73). In his obituary notice, the President described Buckman as 'their indefatigable, genial and ever-lamented Secretary' (Mansel-Pleydell 1886, 4).

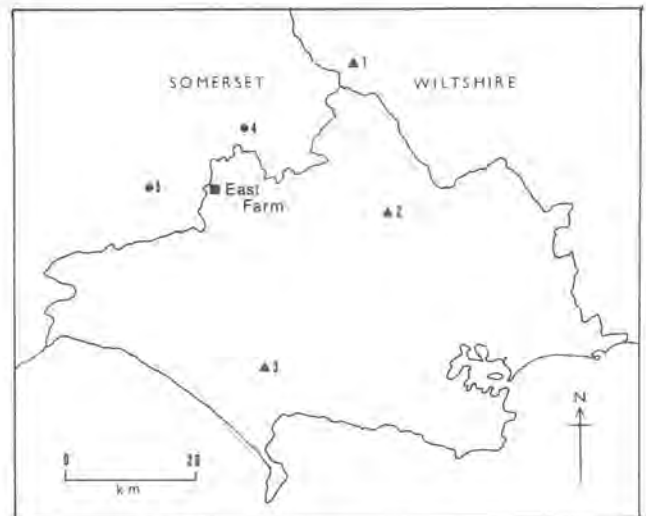


Fig. 1 Bradford Abbas: location map, also showing causewayed enclosures and unenclosed sites having stone axes:- 1. Whitesheet Hill; 2. Hambledon Hill; 3. Maiden Castle; 4. Cadbury Castle; 5. Ham Hill

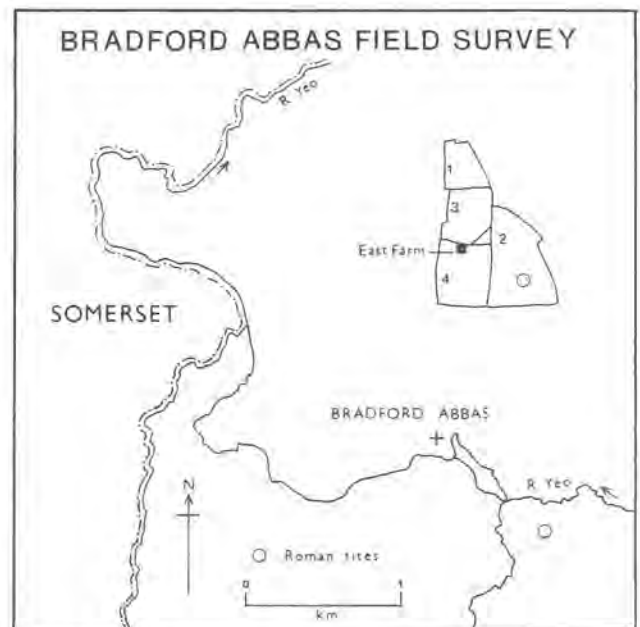


Fig. 2 Bradford Abbas: location map of East Farm and fields studied.

with extensive areas of Dorset and Somerset.

In this southern region, widespread Tertiary Head deposits cover part of the low-lying lands formed by the Fuller's Earth and Oxford Clays, giving way to the Chalk ridges of the Dorset Downs. However, a much more complicated geology exists to the north, where the Yeovil Sands escarpment runs parallel to the Inferior Oolite in the north-easterly direction. Continuing north, much faulting has produced a series of intricate ridges of high ground up to 198 m OD, extending to the hillfort of Cadbury Castle (Fig. 4). The source of the River Yeo comes from the spring line in these uplands at Seven Sisters Well. With the river at least 1 km south of the study area, an immediate water supply is lacking due to the Inferior Oolite losing its water to the underlying aquifer of the Yeovil Sands (*ibid.* 211).

The land at East Farm has suffered, probably over many centuries, from intensive farming practices, with resulting soil erosion and movement of surface material.

Soils over the study area appear to represent two types. The typical Brown Earths of the South Petherton Series cover the northern part of the study area in (1), the upper part of (2) and most of (3). These well-drained sandy soils lie over soft rock with a lime-free subsoil, but erosion has accounted for the differing field levels resulting in deposits of colluvial material on the footslopes and behind hedgebanks.

The remainder of the fields, consisting of the lower part of (2)

and (4), is covered by Brown Rendzinas of the Elmton 2 Series, which are shallow and well-drained, calcareous, loamy soils over limestone (Findlay *et al.* 1984), but it seems that much erosion may also have taken place to expose the flaggy limestone in the central part of (2). In this field, the sandy and stony soils have apparently intermingled.

There is scant evidence of the earlier prehistory of the region prior to the Iron Age. The upland area to the north-east of the study area has produced sporadic Neolithic finds, including many leaf-shaped arrowheads (Bean and Fowler Collections), and also a significant Neolithic assemblage from Cadbury Castle (Peter Bellamy, pers. comm.), a notable landmark in the area lying some 10 km north-east of East Farm.

Scattered Bronze Age barrows are the only other monuments noted, namely three or four round barrows at Feebarrow, West Coker, Somerset (Hall 1962, 91) some 6 km south-west of the study area and now no longer visible. Only 2 km to the north-east, a site, noted in a quarry at ST 610161, was identified as a Late Bronze Age cremation with an urn, ashes, bones and flint flakes (Farrar 1955, 148). A further 10 km to the north-east, a cluster of four and possibly two other round barrows were located at Sigwells and Charlton Horethorne, Somerset (Grinsell 1971, 95-6). Continuing on the south-west/north-east line of the scarp on which these barrows were sited and another 10 km to the north-east, a Bronze Age cist was recorded which contained a contracted burial and large Beaker pot was recorded near Wincanton, Somerset (Ellison and Pearson 1981, 223).

Fieldwalking in the past has produced a large body of archaeological material from East Farm, originally collected by Professor Buckman (Buckman 1878, 53). No artefacts survive from Buckman's collection, but the late C.E. Bean, whose collection over more than thirty years was given to the Dorset County Museum also worked at East Farm (Obituary 1983, 182-3). Much of this material has been attributed to field (2) at East Farm, and will be used where possible to enhance the present survey.

Steam ploughing was responsible for revealing the first evidence of Roman occupation at East Farm (Buckman 1878, 53), which Bean later located at ST 59301513, after finding large quantities of Roman material (Bean 1951, 77). In January 1954 he described an extended burial with scattered bones at ST 5917 1525, apparently uncovered during laying of a water pipe and in association with Iron Age and Roman pottery (Bean Archive and Diary Jan. 1954 and 7.3.54), and a 'granite celt small, in a ditch round building' (Diary 30.5.54). [No site reference is given and it presumably refers to the building described below]. Further Iron Age and samian pottery as well as coins and five 'Greenstone' axes, were uncovered by ploughing in 1955 (Farrar 1955, 146), but the latter in the absence of specific find-spots, are not thought to represent a hoard. Three years later, Bean carried out an excavation at ST 59331522, revealing a rectangular, stone-paved building. This measured 82 ft (25 m) by 24 ft (7 m) and was associated with Romano-British pottery and other items with coins of 3rd and 4th century AD date. A barbed-and-tanged arrowhead was also found. A complete Durotrigian pedestal bowl (Brailsford Type 2 1957, 118-9) was retrieved from the fill of a trench underneath (Farrar 1958, 98-9); this may be associated with a burial, as whole Durotrigian pots are rare outside funerary contexts (Mark Comey, pers. comm.) Available air photographs were examined initially for some indication of a causewayed enclosure and later to see if traces of a building with ditches, noted by Bean, were recorded but surprisingly nothing was seen (*ibid.*).

Artefacts from the excavation were almost entirely Iron Age and Romano-British sherds and stone fragments, with little flint and no Neolithic or Bronze Age pottery (Dr. Ann Woodward, pers. comm.) The collection as a whole comprised 56 boxes of mixed archaeological material, requiring detailed sorting, within which were very large amounts of Iron Age and Romano-British pottery. Among this, several kilograms of Early Iron Age, shell/chalk tempered sherds were recorded and would merit further research. Also within the collection were two late Iron

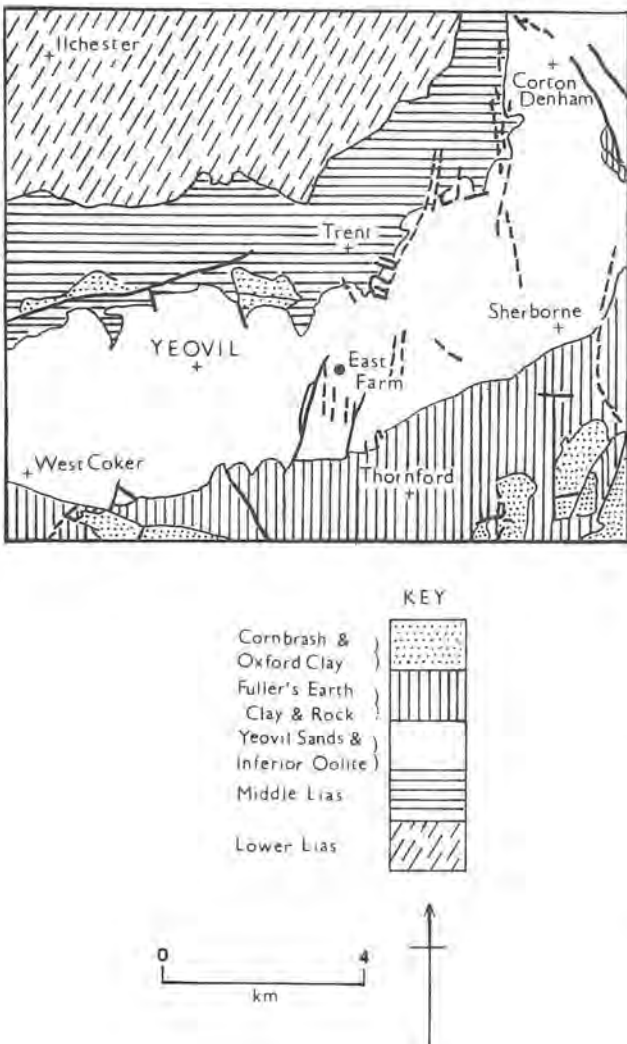


Fig. 3 Bradford Abbas: sketch-map of solid geology and the surrounding area showing folding and faulting (after Wilson *et al.* 1958, Fig. 3A).

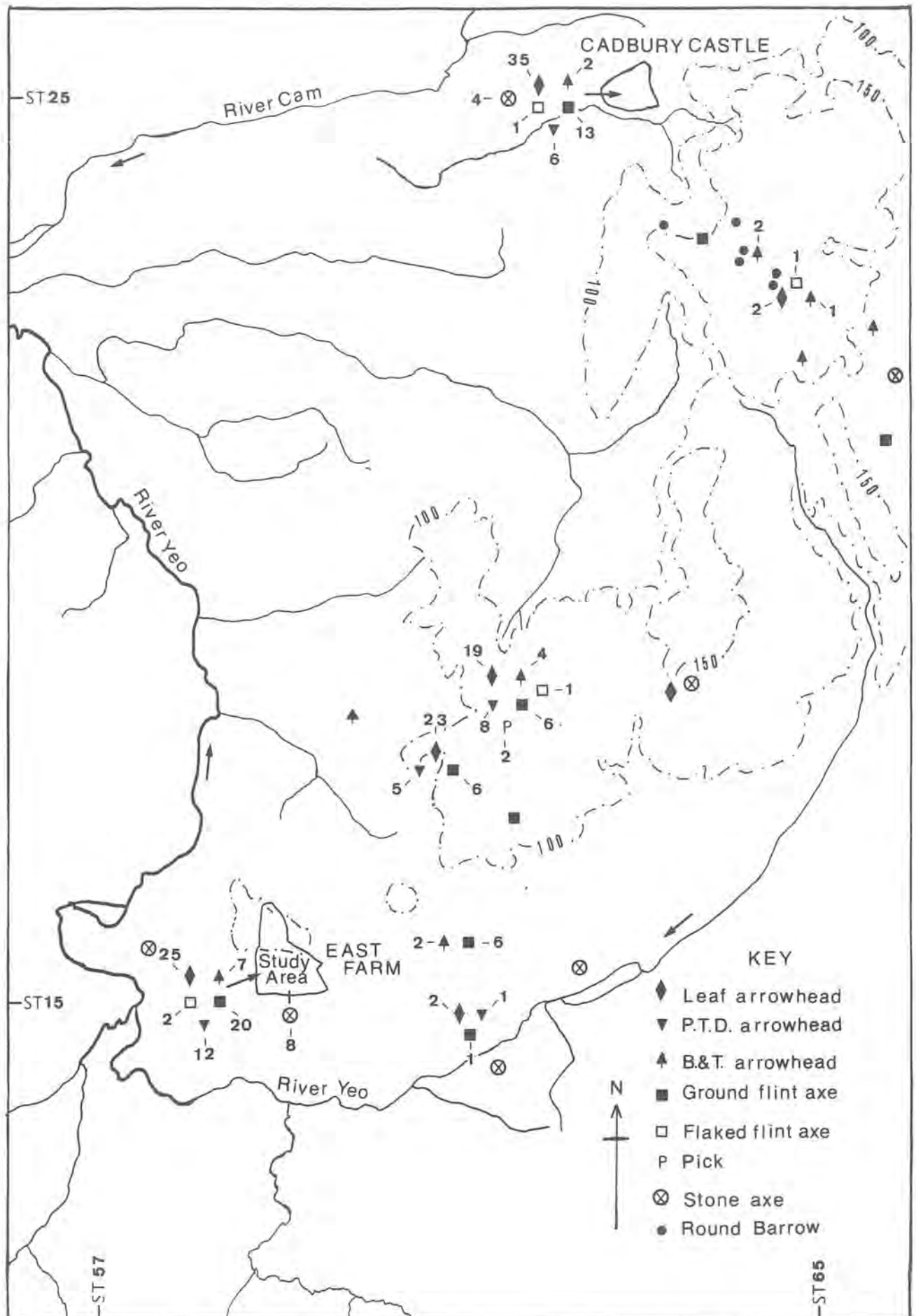


Fig. 4 Bradford Abbas; area to north and east, showing arrowhead, ground flint and stone axe distribution, with barrows.

Age Armorican rim fragments, identified by Lisa Brown (pers. comm.) No further work was undertaken on the pottery as it was outside the scope of this study.

In addition, selective field work had also been undertaken by the late Joseph Fowler, a geologist of Sherborne, notably on the Yeovil Sands escarpment, near Tuckers Cross, some 3 km north-east of the study area at c. ST 610177. His collection is similarly housed in the Dorset County Museum and contains several leaf-shaped and other arrowheads with fragments of ground flint axes. About 1 km further north-east at Charlock Hill, Sherborne (c. ST 61-17/18), fieldwalking was also undertaken by Bean who acquired leaf-shaped and other arrowheads and axes, and identified a Mesolithic site with good quality flint and elegant blades near the Sigwells Barrows at Charlton Horethorne, Somerset. This may be equated with that described by Wymer (1977, 245).

With this background in mind, it was thought that the following strategies should be adopted:-

1. Systematic fieldwalking centred on the East Farm site, to determine artefact scatters and establish some chronology and settlement sequence and, in so doing, to try to confirm or discount the presence of a causewayed enclosure.
2. The position of the study area overall should be considered within the perspective of a wider landscape.

#### THE SURVEY TECHNIQUE

The survey, which covered an area of 45.2 ha, was carried out using a National Grid-based site grid. This was constructed from offset compass bearings and measurements were paced. Fields are to be referred to by their field number only, shown thus (1), whereas those covered by Bean are given the field number shown on the County Map 1902, 1:2500, eg 192.

Initially a 10 x 10 m grid was selected in (1). Later, however, because of the difficulty of using this scale in large areas, it was decided that a 25 x 25 m grid would be more practical and this was effected in (2), (3) and (4). The distribution in (1) has had to be rationalised to conform to that in the other fields.

Within the 10 x 10 m grid and subsequently the 25 x 25 m grid, all surface lithic artefacts were collected. Romano-British pottery sherds occurring in (2) were not collected as this period did not form part of the project. However, a few shell-tempered sherds appeared anomalous and were removed. These were subsequently identified as belonging to the Early Iron Age (Elaine Morris, pers. comm.), and are apparently contemporaneous with much of the material in the Bean collection. Four Roman coins were also found in (2) and a fragment of a bronze palstave in (4).

The suitability for fieldwork was dependent on the farming cycle, the recommended time being at least three weeks after the completion of drilling (Martin Green, pers. comm.), by which time the crop had germinated. Because the work was carried out by the author alone and, in each field, necessarily over an extended period of up to four weeks, weather conditions were varied. Soil differences due to the underlying geology were noted as was extraneous material brought in during farming practices and the erection of electricity pylons.

#### THE FIELD SUMMARIES

##### (1) Dual-Carriageway East: 6.9 ha and part No. 193 (1902 1:2500 map)

The field slopes from 110 m at its southern end down to c. 95 m OD in the north-east corner, dropping slightly more to the east. The typical Brown Earth soils show evidence of erosion, ranging from very sandy in the upper part to more loamy on the lower ground.

A gas pipe-line had been laid north-west/south-east across the field some years previously.

After drilling for maize, fieldwalking was carried out in spring 1989 on a 10 x 10 m grid over a period of three weeks, in mostly dry conditions.

##### (2) Vicarage Oak: 20.6 ha and No. 192 (1902 1:2500 map)

This roughly triangular-shaped field slopes from 105 m OD in the north-west to c. 75 m OD in the south-east. A more level, ridged area in the lower central part at c. 90 m OD coincides with the known Iron Age/Romano-British site and the recorded find-spot(s) of six of the eight stone axes in the survey area (ST 593152). The Brown Rendzina soils are

variable, with areas of flaggy limestone on the surface and patches of very sandy soil, similar to the Brown Earths.

Although the upper part of the field had been pasture in 1959 (Bean Archive), the whole field was drilled for barley in autumn 1989 and field-walking took place using a 25 x 25 m grid in generally adverse weather conditions over a period of four weeks, in December 1989 - January 1990.

##### (3) Reservoir Field: 7.2 ha

This field lies on very sandy soil, probably Brown Earths, which could be seen to blow away in a stiff breeze. It slopes south from 110 m OD to 100 m OD.

Drilling for maize took place in spring 1990 and fieldwalking started when the crop was 5 - 7 cm high, some three weeks later. This was carried out on a 25 x 25 m grid in generally dry and sunny weather in May 1990 over a period of about ten days.

A reservoir had been built in the centre of the field in the past and, although disused, had obviously created some disturbance. The other two stone axes were found at the foot of this field (c. ST 589 155) but no details are recorded.

##### (4) Coombe: 10.5 ha

This lowest field at 90 m OD drops slightly north-east/south-west to c. 75 m OD, with a marked ridge to the east running north-south. The soils should be Brown Rendzinas but appear very light and sandy in the higher part of the field. Apart from a stony section in the centre, the soil became progressively more loamy and damp towards the lower part of the field, perhaps representing a colluvial deposit.

Wheat had been autumn-sown and fieldwalking took place in January 1991 on a 25 x 25 m grid. Weather conditions were generally wet with some frosty days.

#### Lithics

A total of 10,581 pieces of worked stone has been recovered from East Farm. This considerable body of lithic material was analysed in two stages:

**Stage 1** involved the compilation of a basic catalogue of the fieldwalking material by context, isolating and recording items which had technological or typological potential. This method of recording aimed to provide a means of locating areas of activity and settlement from the lithic distribution, and to help establish a broad chronological framework. The results of this stage are shown in Table 1.

**Stage 2** involved a more detailed examination of relevant artefacts for analysis of their type and function. No further analysis of flake material was undertaken, as it was felt to be inappropriate from such an unstratified collection. Cores were, however, rapidly assessed, as described below.

All material from the fieldwalking assemblage was catalogued in conjunction with Martin Green, while that in the Bean Collection in the Dorset County Museum, although unwashed, was felt to be in a suitable condition for preparation of a basic catalogue. Peter Woodward, Assistant Curator, provided assistance with identification when necessary.

#### Raw Material and Condition

The assemblage consisted almost entirely of flint, including a small quantity of Upper Greensand Chert and Portland Chert, amounting to 0.6% and 0.8% of the overall assemblage respectively (Table 2). Much of the material is heavily iron-stained and patinated, with the exception of that in (1), but it was apparent from the patination that much damage had occurred in antiquity.

The subangular flint with its typically heavy cortex and areas of conchoidal and hackly fractures is characteristic of river gravels, which derived from an eroding Upper Greensand/Chalk escarpment. A major source of raw material is likely to be the extensive Tertiary Head deposits only 1.5 km to the south, containing fragments of Upper Greensand Chert, Chalk and flint (Wilson *et al.* 1971, 197), although there were some residual nodules on the fields, and gravels from the terrace of the River Yeo to the east were possibly also exploited. A high proportion of the flint retains some degree of cortex, indicating the poor quality and small size of the raw material available.

The colour of the flint varies where patinated, from white and cream to dark and pale blue, and when fresh, in shades of black, brown, grey and fawn with frequent bands of mottled irregularities (Professor M. House, pers. comm.), in cream, fawn and grey.

Portland Chert is generally considered to have come from the Portland or even from the beds in the Vale of Wardour, but disparate sources have been suggested, including pebble beds of lydite found in southern England (Evans and Smith 1983, 79) and also in the 'Blackdown Facies' of the Upper Greensand in Devon (Edmonds *et al.*

Table 1: Total lithics from recent fieldwalking and the Bean Collection

	LOCATION	(1)	Bean 193	(2)	Bean 192	(3)	(4)	Bean 180	Bean 191	Bean 194	Bean 195	Bean No info.	TOTAL
TOTAL LITHICS	CHERT	33		20	26	22	20			4		21	146
	FLINT	1069	1	3620	1745	1480	1001	2	6	196	10	1297	10427
	FLAKES/ BLADES	860		3063	1317	1315	846		2	89	4	1088	8584
	RETOUCHED	108		59	64	53	32			15		33	364
	CORE MATERIAL	35		229	109	49	55			13	5	43	538
*	TOOLS	99	1	289	281	85	88	2	4	83	1	154	1087
TOOL ASSEMBLAGE	Microliths	2		2		2	1						7
	Microburins												1
	Leaf/ Arrowheads	3		6	6	4	3	2		1			25
	Transverse Arrowheads	1		6	1	1	3						12
	Barbed/Tanged A'heads	1		3	2	1							7
	Serrated flakes	2											2
	Ground Flint Axes	6		8	2	4	3						23
	Flaked Axes			2	1					1			4
	Picks				1								1
	Piercers	2		7	5		2			1	1	1	19
	Notched Flakes	4		1	1	5						2	13
	Knives	5		4	7	1	1						18
	Fabricators	2		9	5	4	9						29
	Hammerstones	1		5	4	2	3					7	22
	Scrapers*	70	1	236	246	60	63		4	377		144	901

\* See Table 3 for Classification

Table 2: Chert Artefacts in the Assemblage from recent Fieldwork, including the Bean Collection (Upper Greensand Chert with Portland Chert in parentheses)

Fields:	1	2	3	4	Other
Scrapers	2 (4)	2 (3)	1	3	(2)
Cores		2 (1)			
Leaf-shaped arrowheads			(1)		
Knife				1	
Piercer		1			
Retouched flakes	(3)	1 (4)	(4)	(2)	
Debitage	10 (14)	19 (13)	6 (10)	9 (5)	8 (15)
TOTAL	12 (21)	25 (21)	7 (15)	13 (7)	8 (17)

1969, 69). It is not realistic to give any provenance as its movement is considered to have taken place over long distances in southern England (Care 1982, 282).

Intermixed with this generally poor material is a small amount of High Down Chalk flint, recognisable by its thin cortex and smooth white patina, which occurred in five areas in (1) and (2). Two cores from a Clay-with-Flints deposit were also noted in (1) and (4), the nearest source for the raw material being some 10 km to the south.

### The Assemblage

The assemblage can be seen to be composed of a largely flake industry containing a small proportion of blades with chronologically mixed material, ranging from the Later Mesolithic to the Early Bronze Age. The overall distribution of flint and chert is shown in Fig. 5. Higher values within (1) and (3) cluster on the top of the ridge and decline as the land slopes steeply southwards into (4). Within (2) a pattern of more scattered,

higher values again shows some emphasis on the sloping ridge. The localised effects of other parts of field disturbance and areas of more extreme topography, make any more detailed discussion of the overall distribution inappropriate.

Figure 6 shows the distribution of all individually diagnostic pieces and Figure 7 the components of the fieldwalking assemblage by field. The distribution of individual categories of artefacts will be considered below.

### Microliths

Of the seven microliths collected, the three identified were a small patinated Type A1 and two geometric scalene triangles. Other pieces, potentially of Mesolithic date, included three blades and a solitary microburin, the waste product of microlith manufacture by the notch technique.

Distribution at East Farm occurs in all four fields but a cluster consisting of a microlith, a microburin and a microcore within some 100 m in (3) was thought to be significant.

### Arrowheads

#### Leaf-shaped Arrowheads

Out of the 16 of this type collected, nine were fragmentary, one just a tip in Portland Chert, but all could be confidently recognised as leaf-shaped. Classification (Green 1980, 68-72), where possible, showed types related to the raw material available and these are listed in the archive. All six in (2) were patinated due to the calcareous soil and had been damaged in antiquity. The Bean Collection also produced six arrowheads from (2) and three from other fields (Nos. 180 and 194), adjacent to the study area on the south and west.

#### Transverse Arrowheads

Of the eleven found, one was steeply-blunted on both sides and was patinated and iron-stained. Two chisel forms were identified. Of the remainder, two had been broken in antiquity, one was a rough-out and, with the others, could not be classified. A good specimen of Clark's type H38 oblique arrowhead (1934), came from the Bean Collection.

The three arrowheads identified above all came from (2), with the

remaining eight in other fields, of which three were in (4).

**Barbed-and-Tanged Arrowheads**

Out of the five collected, one patinated specimen was well-made, measuring 18 mm x 8 mm but was without barbs or tang. It had been broken in antiquity although the tang was a recent fracture. Two of the remaining four had barbs or tangs broken in use or manufacture, while

the other two were good examples with only slight damage, one a Conygar Hill type (Green 1980, 123). With this exception, the others were of Sutton type (*ibid.* 70-2). Of the two from the Bean Collection, one each was of Green Low and Sutton type (*ibid.* 122-3). (See Archive).

The distribution shows an arrowhead each in (1) and (3) but five altogether in (2). One was described by Bean from the Roman excavation (Farrar 1958, 98), where it was presumably residual.

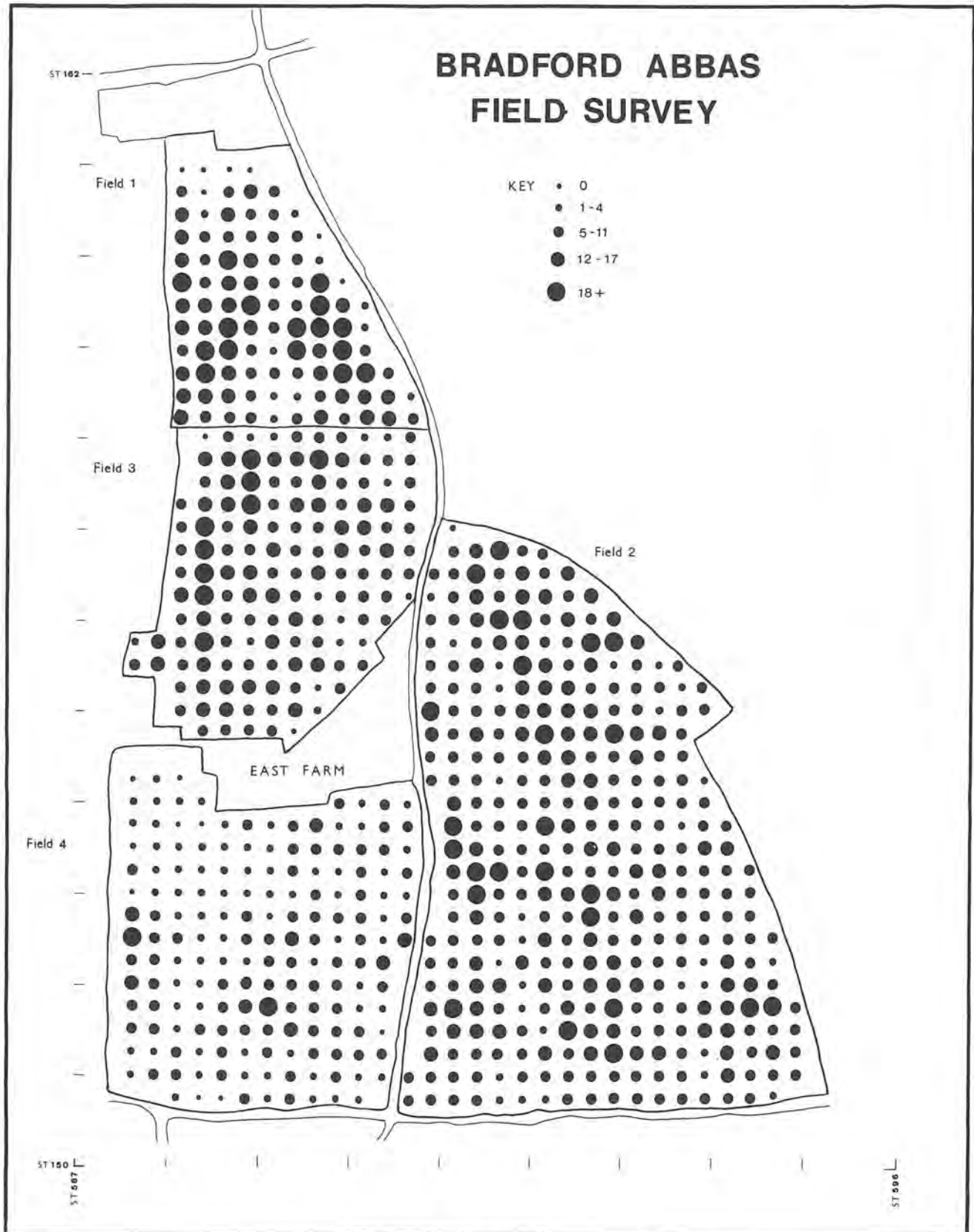


Fig. 5 East Farm: all flint distribution (by count).

*Serrated Blades and Flakes*

Two serrated blades were collected from (1), both exhibiting gloss, with one serrated flake from (2) in the Bean Collection.

*Ground Flint Axes*

Nineteen fragments and flakes in varying sizes were identified by their

traces of polish and striations, but all appeared to have been broken in antiquity. The size of these tools make it unlikely that material from local flint sources was used and that, therefore, complete or partially finished artefacts were brought in from outside sources. Only two fragments came from the Bean Collection in (2).

A fairly uniform distribution was noted. Two examples from (1) were

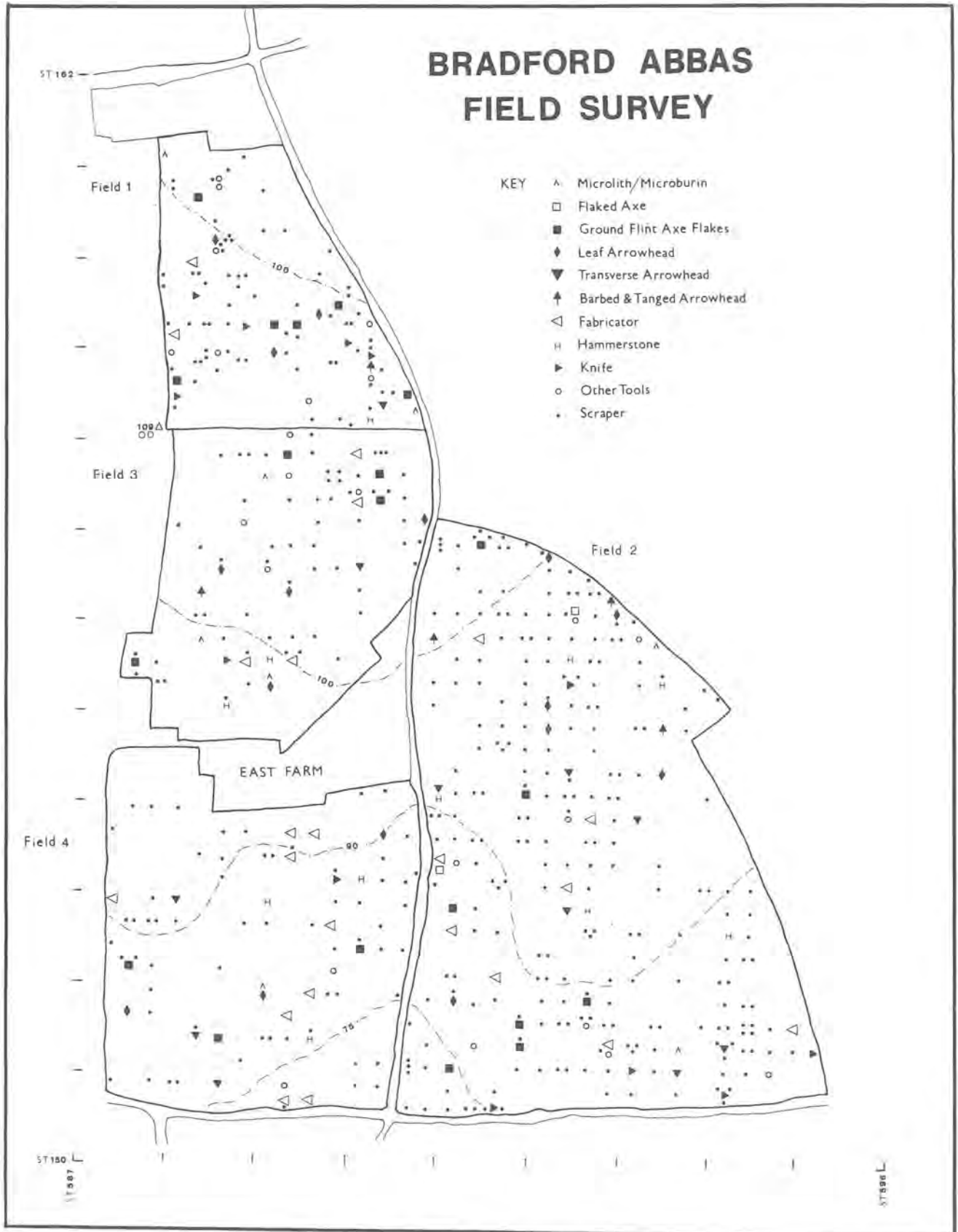


Fig. 6 East Farm: flint tool distribution (by count)

burnt and showed gloss from contact re-use.

#### Flaked Axes

Examples of this core tool were restricted to two iron-stained fragments. One was patinated with a rounded end, the other was worked to a fine point with retouch on one side. Two large fragments came from the Bean Collection, from (2) and from a field contiguous to the study area on the west (No. 194). Of these four, three came from field (2).

#### Picks

One example of this type of core tool came from (2) in the Bean Collection.

#### Piercers

All twelve piercers were made on variable-sized flakes with retouched distal tips. Two were exceptionally neat and elongated in fresh flint with retouch and utilisation all round, while an apparently Mesolithic flake had been used in one case. One other had traces of gloss on the ventral surface and all others were on cortical flakes.

Seven were collected in (2) and there were an additional five examples from the Bean Collection.

#### Fabricators

Apart from three fragments, the remaining nineteen fabricators were made on thick secondary flakes of blue/grey flint, roughly D-shaped in section. All exhibited considerable wear and abrasion on the distal end and sometimes round the sides, while one tip showed traces of gloss. A very neat, slender example with both sides and ends utilised was formed on a tertiary flake.

Distribution was general but notably (2) produced nine pieces with five from the Bean Collection and a further nine in (4).

#### Hammerstones

The eleven flint hammerstones were generally irregularly shaped, rough nodules of differing sizes, with considerable cortex. About half were patinated and mostly heavily iron-stained and much abraded. A cortical flake with a very worn edge had been used as a pounder, while a small oval flake was battered all round its extremity.

All were scattered in the four areas, with five in (2) and a further four from the Bean Collection.

#### Cores

Investigation of core material showed the majority of cores from the assemblage to be extremely rough and abraded, with the exception of five identified as Mesolithic, including one microcore (Martin Green, pers. comm.) and a smaller number of pyramidal and discoidal types which had platforms established for blade/flake production. Flint from clay-with-flints deposits was recognised from two particularly good

specimens. Weight varied from 200 g to 5 g or less and 36% were fragmentary.

Rejection was largely due to an unsatisfactory angle of percussion being reached, to hinge fractures caused by the generally poor quality flint, and by the use of primary cortical material.

Total cores from the study area are increased by 48% when those from the Bean Collection are included, but the combined percentage from (2) remains the same at 6% of the overall assemblage. It is noted that the number collected from (4) is nearly twice that of (1) and (2).

The large number of cores (236) in (2) made it impossible to show them on Fig. 6 in addition to the other artefacts, their distribution is relatively even over the whole field.

#### Scrapers (Table 3)

A total of 429 scrapers came from the fieldwalking assemblage. As indicators of human activity, they are the most common retouched tool on the majority of prehistoric sites and yet few attempts have been made to produce an objective classification which could be used to give some indication of chronology to unstratified groups, such as those from fieldwalking. Following the classification produced for the collection of over 2500 scrapers from the Stonehenge Environs Project (Riley 1990, 24, 225-7), an attempt was made to provide some sub-division of the 429 scrapers from East Farm by applying this method. As Riley states, this has been used to assess general chronological trends from surface collections in broad terms but could not be applied for dating individual scrapers (*ibid.* 227).

Analysis was based on the flake length/breadth ratio and position and type of retouch, the results of which are shown in Table 3. Comparisons can be made with data from the Stonehenge Environs Project (*ibid.* tables 126 and 127).

Although Classes 1 and 2 are not well represented, an Earlier Neolithic element within the scraper assemblage can be identified on the basis of Classes 3 and 5 (combined total of 28%). Even allowing for the possibility that the date range of Class 5 scrapers may extend into the Later Neolithic, an Earlier element still remains.

Class 4 scrapers seem to be a universally large part of assemblages of all periods, as shown here, and no attempt was made to sub-divide this group by blank thickness, suggested by Riley (*ibid.* 26), as a means of identifying a Later Neolithic element.

The definition of the Beaker period by Classes 6 and 7 thumb-nail scrapers is clearly underlined, in particular two fine and characteristic scale-flaked Beaker scrapers were noted by Martin Green (pers. comm.). However, no Late Bronze Age element for Classes 9 and 10 could be identified, as it was noticeable that crude material did not form part of the assemblage (*ibid.*) Numbers in Class 10 are undoubtedly due to the many broken and fragmentary specimens which could not be classified.

Four scrapers showed traces of gloss, seven were in Upper Greensand Chert, six in Portland Chert and distribution was relatively even over the

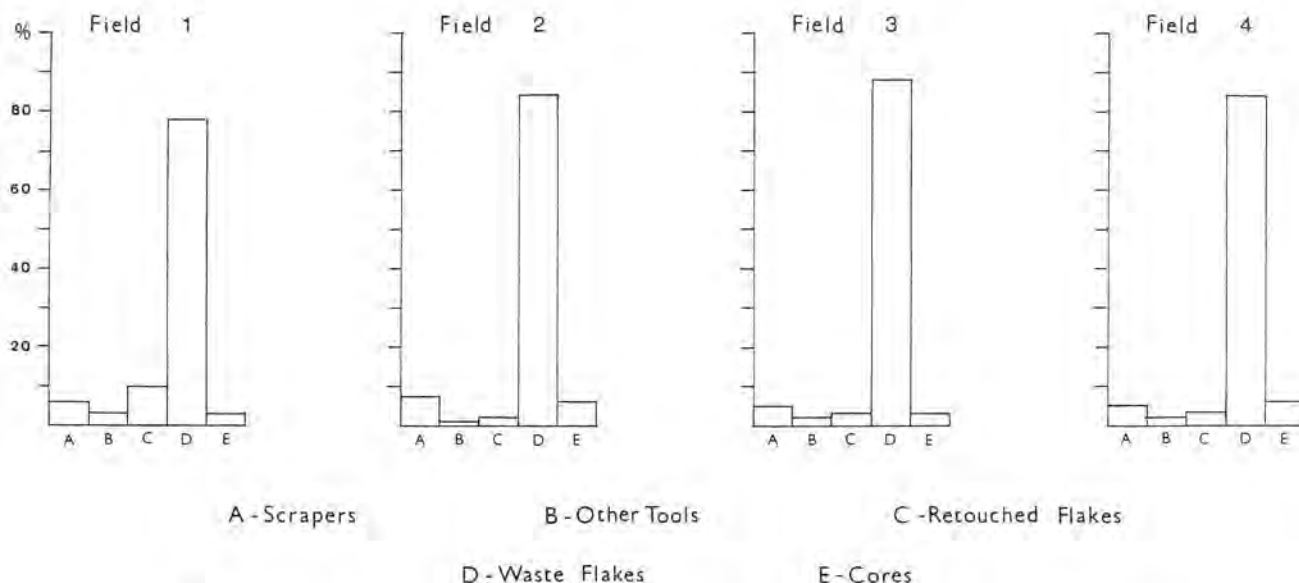


Fig. 7 East Farm: composition of the flint and chert assemblage from recent fieldwalking (by field).

whole of the study area. Those from the Bean Collection numbering 472 were not classified, but notably almost the same number as in the assemblage, came from (2) (Table 1).

#### Stone Axes (Bean Collection) (Table 4)

The eight stone axes from East Farm referred to above, are tabulated in Table 4 and their comparison with other sites is shown in Table 5.

They include three of 'Greenstone', an unidentified type which dominates the collections on all sites (Table 5), as well as one of the rare Group XVII type, associated with Earlier Neolithic sites (Roe and Edmonds 1991, 213), including Ham Hill (Smith 1990, 43) and Cadbury Castle (Peter Bellamy, pers. comm.). A Group VI (Langdale) axe is at the extreme range of its distribution.

## DISCUSSION

### The Mesolithic

Mesolithic activity within the study area is characterised by microliths which, from their type, suggest a date in the later part of the period. These, together with a small number of blades, four cores and a single scraper identified as of Mesolithic type (Martin Green, pers. comm.), and a microburin, suggest casual loss from hunting expeditions rather than a more permanent seasonally-occupied settlement site where larger quantities of flint knapping waste could have been expected.

Beyond the immediate study area, Mesolithic material from

Table 3: Scraper Classification (Riley 1990, 224-7)

Field No.	(1)		(2)		(3)		(4)		Total	%
	No.	%	No.	%	No.	%	No.	%		
1	1	1	1	1	0	0	0	0	2	0.5
2	0	0	0	0	2	3	0	0	2	0.5
3	10	14	40	17	8	13	6	9	64	15
4	23	33	66	28	17	28	20	32	126	28
5	13	19	29	13	6	10	6	9	54	13
6	4	6	3	1	1	2	3	5	11	3
7	4	6	33	14	12	20	10	16	59	14
8	1	1	14	6	4	7	2	3	21	5
9	0	0	3	1	0	0	1	2	4	1
10	14	20	47	20	10	17	15	24	86	20
TOTAL	70		236		60		63		429	100

Table 4

THE STONE AXES (Bean Collection DCM) Clough & Cummins 1979, Vol. 2)

All axes recorded are from East Farm, Bradford Abbas. (Ser. 107, 950-954 ST 593152; Ser. 1111 & 1116 ST 589155)

No. 22	Ser. 107	Axe frag.	*Greenstone	50 x 37 x 25 mm, unclassified
No. 70	Ser. 950	Axe frag.	Group I	45 x 40 x 25 mm, thick, round butt, surface rough
No. 71	Ser. 951	Axe frag.	*Greenstone	75 x 40 x 25 mm, thin round butt, surface rough
No. 72	Ser. 952	Axe frag.	Group VI	80 x 60 x 30 mm, thin round butt, ground smooth
No. 73	Ser. 953	Axe frag.	Group XVII	62 x 42 x 15 mm, thin round butt, quite smooth, almost whole
No. 74	Ser. 954	Axe frag.	*Greenstone	65 x 60 x 30 mm, thick round butt, quite smooth
No. 88	Ser. 1111	Axe frag.	Spotted slate	70 x 65 x 20 mm, thick round butt, slightly rough
No. 89	Ser. 1116	Axe frag.	Micaceous sandstone	42 x 40 x 20 mm, thin round butt, smooth

(Ser. 955 & 956 described as Misc. Pin Polisher (sandstone) and Perforated Hone (shale) are also listed)

\*Ungrouped 'Greenstones' (epidiorite) from unidentified source in Devon or Cornwall

Table 5: A Comparison of Stone Axes from Enclosed and Unenclosed sites in the Region (Clough & Cummins 1979, Vol. 2)

	I	Ila	IV	IVa	VI	VII	VIII	IX	XIII	XVI	XVII	Greenstone	Jadeite	Others	Total
East Farm	1				1						1	3		2	8
Hembury		1		4							1	6		4	16
Hambleton Hill	2		1		1		1			2	1	2	2	6	18
Hambleton											1	1		1	3
Stepleton enc.															
Maiden Castle+			1	6					1	1	2	4		2	17
Ham Hill	1		3							2		4		2	12
Hazard Hill			1	1				1		2	2	1		7	15
Cadbury Castle				1								*2		*1	4
TOTAL	4	1	6	12	2		1	1	1	7	8	23	2	25	93

\* Axes as yet unidentified

+ (Roe & Edmonds, 1991, Table 85)

the Bean Collection is thought to be that recorded at ST 6405 2365 (Wymer 1977, 245), in an area of good water supply and plentiful environmental resources, although there is no local flint deposit. This location lies on the most westerly of five roughly parallel north-south ridges, extending to the east, where Mesolithic occupation has previously been described on the Corallian escarpment (Ross 1987, 95-6). Further sites may lie on the intervening uplands, exemplified by a single A1 type microlith noted in the Bean Collection from Charlock Hill, Sherborne, c. ST 6180 and also Mesolithic flint (including 71 blade cores) recorded from Silverlake Farm, Sherborne, c. ST 616 155 in the Fowler Collection (Julie Gardiner, pers. comm.).

### The Earlier Neolithic

An Earlier Neolithic phase is represented by arrowheads of leaf form and by axes of both ground flint and stone. But no structure or Neolithic date which might indicate a causewayed enclosure was found.

In spite of the concern about their longevity of use, Green for example suggests that leaf-shaped arrowheads may be in use until the Bronze Age (Green 1980, 94). They are widely accepted in unstratified contexts as representing activity of Earlier Neolithic date (Gardiner 1984, 19-26; Woodward and Bellamy 1991, 26, table 4; Richards 1990, table 6 and Holgate 1988, 107). This suggested date seems to be borne out by their apparent association with enclosures such as Hambledon Hill (Mercer 1980), Crickley Hill (Dixon 1981, 145-7) and Maiden Castle (Sharples 1991, 255).

Ground flint axes are again often suggested as being largely an earlier Neolithic type-fossil (Woodward and Bellamy 1991, 26, table 4; Richards 1990, table 6) and this suggestion is reinforced by the stratified examples from the Stonehenge Environs Project, without exception recovered in association with plain Earlier Neolithic pottery (*ibid.* 45, 64).

Stone axes, of which the eight examples recovered by Bean provided the initial impetus for this project, demonstrate a chronology which spans the Neolithic. It is perhaps worth noting, however, that the grouping of the East Farm axes (Table 5), demonstrates similarity with those from the main causewayed enclosure at Hambledon Hill, dated by radiocarbon to the earlier fourth millennium BC (Mercer 1988, 95). This might indicate a trading relationship and is suggestive of a possible application of axes for agricultural use or even ritual deposits. Their very damaged state could be the result of subsequent ploughing and erosion.

Although a high percentage of blades within an assemblage is sometimes used as an indication of Earlier Neolithic date, analysis to determine such percentages is more appropriate to stratified assemblages and has not been carried out on the surface collection material from East Farm.

### Distribution

Fourteen of the twenty-five leaf-shaped arrowheads from East Farm were found on higher ground and show a distribution complementary to that of the ground flint axe fragments. In isolation, the arrowheads could be regarded as representing loss through hunting, but the association with other tool types may suggest more domestic activity. The grid reference given for the stone axes, suggests that they do not lie on the higher ground and are not directly associated with artefacts of a similar date.

The regional distribution includes two leaf-shaped arrowheads from Bradford Abbas (ST 581142), c. 1.5 km south-west of East Farm (Salisbury and South Wiltshire Museum) while considerable prehistoric activity has been recorded to the north-east of the study area, over the Jurassic escarpment, bounded by the River Yeo and its tributaries. Much of this Earlier Neolithic material comes from the Bean and Fowler Collection and includes two whole ground flint axes at ST 65762129 some 5 km north of East Farm and at ST 611147, some 3 km to the south-east. Analysis of the assemblage from Neolithic pits at Cadbury Castle has produced a similar collection (Figure 4) with

a typical Earlier Neolithic small blade industry (Peter Bellamy, pers. comm.) The wide range of implements there, 4.6% of the total (*ibid.*) can be compared with the 7.7% of the total fieldwalking assemblage from East Farm.

### The Later Neolithic (Table 6)

This period at East Farm is represented by transverse arrowheads and fabricators with scrapers of Class 4 type (28%, Table 3), providing additional evidence for activity. Of the twelve transverse arrowheads, only one came from the Bean Collection, perhaps demonstrating that they are less easily recognised from casual fieldwalking. They do, however, form 1.9% of the total tools.

Larger numbers of fabricators occur in (2) and (4), and as both these fields show a higher core percentage, their association suggests increased domestic activity with some emphasis on flint working.

Transverse arrowheads are also represented in the Bean and Fowler Collections outside the study area and at Cadbury Castle (Fig. 4), in each case with fewer numbers than the leaf-shaped forms, the former possibly due to collection bias. The relative proportion of transverse arrowheads to leaf-shaped types is contrary to results from both the South Dorset Ridgeway (Woodward 1991, tables 2 and 4) and from Cranborne Chase (Bradley *et al.* 1984, 94).

### The Early Bronze Age

Early Bronze Age activity can be identified on the basis of the seven barbed-and-tanged arrowheads, together with the typical thumb-nail scrapers (Classes 6 and 7, Table 3), which are consistently referred to in the literature as Beaker associated and form 3% and 14% respectively of the fieldwalking assemblage.

The distribution of most of the barbed-and-tanged arrowheads and the Early Bronze Age scrapers throughout the study area, shows considerable activity, although no settlement focus can be determined.

As outlined above, further specimens of barbed-and-tanged arrowheads came from the Bean and Fowler Collections and Cadbury Castle (Fig. 4).

The scattered Bronze Age barrows on the escarpment described above may have been for the burial of groups who lived in remote areas away from large cemeteries (Bradley 1984, 86) and would appear to fit into the pattern of discrete settlement in this part of Dorset and Somerset.

## CONCLUSION

The results of fieldwork have demonstrated a long period of successive occupation over some two millennia, of which the following is a summary:-

1. Sporadic Later Mesolithic activity identified by geometric microliths, which probably represented hunting expeditions and small-scale exploitation of the environment.

2. A period of Earlier Neolithic activity, represented by a considerable number of leaf-shaped arrowheads, as well as ground flint axe fragments and stone axes. These point to a period of occupation of unknown duration. It is thought that the stone axes might be contemporaneous with those from Hambledon Hill and also the collections from Ham Hill and Cadbury Castle.

There seems to be evidence for a modest, if transient, Earlier Neolithic settlement at East Farm with similar activity on the adjacent escarpment and the importance of this phase of activity is manifested by the presence of the stone axes.

3. Widespread Later Neolithic occupation is confirmed by flake debitage, scrapers, transverse arrowheads and fabricators, with a high tool variability in all fields.

4. Early Bronze Age activity is shown by the presence of barbed-and-tanged arrowheads and thumb-nail scrapers over the whole study area. No material of the Later Bronze Age was evident, but such material would have been difficult to identify within such an assemblage.

Table 6: Flint and Chert arrowhead variations between the study and local collections

Site Location	Collection Strategy	Arrowhead Category		
		Leaf	PTD	Barbed & Tanged
(1)	FW	3	1	1
(2)	FW	6	6	3
(2) (192) Bean Coll.	C	6	1	2
(3)	FW	4	1	1
(4)	FW	3	3	0
TOTAL (Study Area)		22	12	7
(180) Bean Coll.	C	2	0	0
(194) Bean Coll.	C	1	0	0
TOTAL East Farm)		25	12	7
Cadbury Castle P. Bellamy, pers. comm.	EX	35	6	2
Sherborne Charlock Hill Bean Coll.	C	19	8	4
Sherborne Tuckers Cross Fowler Coll.	C	23	5	0
Sherborne/other areas	C	5	1	8
TOTAL		82	20	14

EX - Excavation FW - Fieldwalking C - Casual Collection 192 - Field Number on 1902 map 1:2500

The value of this study is threefold; no previous work has been carried out in the area, it is not focused on monuments and the underlying geology is so varied. It also shows the research potential for the use of techniques such as geophysical survey, particularly in (1) and (2).

Attention is drawn, even on the small scale evidence here, to the 'interrelationship of upland and lowland' (Barrett 1991, 26), from which a comparison might be made between the low-lying river valley and clay lands with Head deposits south and east of Bradford Abbas and the irregular 'uplands' on the Jurassic escarpment to the north-east, with its abundant resources.

No clear reason emerges for the presence of the axes at East Farm. Their broken state might suggest that they were part of a domestic assemblage, but they may have been part of the exchange system of prestige goods in the south-west. To this end, the importance of the network of river systems as a means of communication and in providing resources, cannot be too highly stressed, giving access to the wetlands of Somerset and thereafter to Cornwall, to the River Stour in the east covering huge areas of Dorset and in the south to the River Frome with possible continental contacts. In consequence, the fieldwork at East Farm has revealed its hitherto unknown status and position within a wider perspective of prehistoric settlement.

This paper has been prepared to discuss the results which can be extracted from fieldwalking material, described by Dr. Frances Healy (Healy 1989, 52) as '... often thinly-spread, plough-damaged junk...' Dr. Healy's exhortation to those who deal with such material was to '... attack it brutally and crudely enough to make it talk...' It is hoped that this exhortation has been followed.

### The Archive

All finds from the assemblage at East Farm, Bradford Abbas (1989-1991) will be deposited in the Dorset County Museum by agreement with the Warden and Fellows of Winchester College. Maps and tables which are relevant to the study will also be deposited. Boxes will be stored and marked with these site references:- EF 89 (1); EF 90 (2); EF 90 (3); EF 91 (4). Archive contents will be recorded as follows:-

File 1: Detailed analysis of material from each field, including classification of scrapers, cores retouched flakes/blades,

ground stone axe fragments and arrowheads. Index.

### The C.E. Bean Collection, Dorset County Museum

Preliminary sorting of 56 boxes of mixed archaeological material from Bradford Abbas (Box Nos: P/EF/1-56), details of which are on file separately in the Dorset County Museum (DCM Accession No: 1986.99).

File 2: Listing of the relevant lithic material from the Bean Collection from Bradford Abbas (Box Nos: P/EF/1-56), including typology of arrowheads, ground stone axe fragments and stone axes, the latter with rough sketches and stored in Box No: P/EF/55.

Listing of material including arrowheads and ground stone axes from Charlock Hill, Sherborne (previously sorted by Andrew Young). DCM Accession No: 1986.63, Box No: P/CH/3/Bag 1: [1-27]; Bedmill, Sherborne, DCM Accession No: 1986.25: Box No: P/EB/3/Bags 1-7, marked 'Bedmill Misc.'; Charlton Horethorne, Somerset, DCM Accession No: 1986.66: Box Unmarked.

### The Joseph Fowler Collection, Dorset County Museum

Listing of arrowheads and ground stone axe fragments from Tuckers Cross, Sherborne and other areas, DCM Accession No: 1954.31, Box Nos. EM 53, EM 54, EM 55.

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## BIBLIOGRAPHY

- Barrett, J.C., Bradley, R.J. & Green, M., 1991, *Landscape, Monuments and Society: the prehistory of Cranborne Chase*.
- Bean, C.E., 1951, 'Archaeological Discoveries in Sherborne and District', *Dorset Proceedings*, Vol. 72, pp. 76-9.
- Bean, C.E., 1983, 'Obituary - Charles Edward Bean, 1892-1983', *Dorset Proceedings*, Vol. 105, pp. 182-3.
- Bradley, Richard, 1984, *The Social Foundations of Prehistoric Britain*.
- Bradley, R.J., Cleal, R.M.J., Gardiner, J.P., Green, M. & Bowden, M., 1984, 'Neolithic Sequence in Cranborne Chase' in Bradley, Richard and Gardiner, Julie, (ed.), *Neolithic Studies, a review of some current research*, British Archaeological Report (British Series), No 133, pp. 87-105.
- Brailsford, J.W., 1957, 'The Durotrigian Culture', *Dorset Proceedings*, Vol. 79, pp. 118-121.
- Buckman, J., 1878, 'On some diggings at East Farm, Bradford Abbas', *Dorset Proceedings*, Vol. II, pp. 53-8.
- Buckman, J., 1878, 'On Worked Flint', *Dorset Proceedings*, Vol. II, pp. 97-103.
- Care, V., 1982, 'The Collection and Distribution of Lithic Materials during the Mesolithic and Neolithic periods in Southern England', *Oxford Journal of Archaeology*, Vol. 1, No. 3, pp. 269-285.
- Clark, J.G.D., 1934, 'Derivative Forms of the *Petit Tranchet* in Britain', *Archaeological Journal*, Vol. 91, pp. 32-58.
- Clough, T.H.McK. & Cummins, W.A. (ed.), 1979, *Stone Axe Studies*, Council for British Archaeology (Research Report), No. 23.
- Dixon, P., 1981, 'Crickley Hill', *Current Archaeology*, No. 76, pp. 145-7.
- Edmonds, E.A., McKeown, M.C. & Williams, M., 1969, 'South-West England', *British Regional Geology*.
- Ellison, Ann & Pearson, Terry, 1981, *The Wincanton Bypass*.
- Evans, J.G. & Smith, I.F., 1983, 'Excavation at Cherhill, North Wiltshire, 1967', *Proceedings Prehistoric Society*, No. 49, pp. 43-117.
- Farrar, R.A.H., 1955, 'Archaeological Fieldwork in Dorset for 1955', *Dorset Proceedings*, Vol. 77, pp. 123-154.
- Farrar, R.A.H., 1958, (ed.), 'Archaeological Notes and News for 1958', *Dorset Proceedings*, Vol. 80, pp. 94-110.
- Findlay, D.C., Colborne, G.J.N., Cope, D.W., Harrod, T.R., Hogan, D.V. & Staines, S.J.I., 1984, *Soils and their use in South-West England*.
- Gardiner, Julie P., 1984, 'Lithic Distributions and Neolithic Settlement Patterns in Central Southern England' in Bradley, R.J., and Gardiner, J.P., (ed.), *Neolithic Studies, a review of some current research*, British Archaeological Report (British Series), No. 133, pp. 15-40.
- Green, H.S., 1980, *The Flint Arrowheads of the British Isles*, British Archaeological Report (British Series), No. 75, Pt. (i).
- Grinsell, L.V., 1971, 'Somerset Barrows Part II, North & East', *Proceedings of the Somerset Archaeological and Natural History Society*, Vol. 115, pp. 44-132.
- Hall, R., 1962, 'A West Coker Antiquary of 1848', *Proceedings of the Somerset Archaeological and Natural History Society*, Vol. 106, pp. 88-97.
- Healy, F.M.A., 1989, 'Exit, pursued by colleagues', *Lithics*, No. 10.
- Holgate, R., 1988, 'A Review of Neolithic Domestic Activity in Southern Britain', in Barrett, J.C. & Kinnes, I.A., (ed.), *The Archaeology of Context in the Neolithic and Bronze Age: Recent Trends*, pp. 104-112.
- Lang, W.D., 1961, 'The Buckmans, Father and Son', *Dorset Proceedings*, vol. 82, pp. 73-6.
- Mansel-Pleydell, J.C., 1886, 'In Memoriam, Professor James Buckman, F.G.S., F.L.S., F.S.A.', *Dorset Proceedings*, Vol. VII, pp. 2-4.
- Mercer, R.J., 1980, *Hambledon Hill: A Neolithic Landscape*.
- Mercer, R.J., 1988, 'Hambledon Hill, Dorset, England' in Burgess, C., Topping, P., Mordaunt, C., Maddison, M., (ed.), *Enclosures and Defence in the Neolithic of Western Europe*, British Archaeological Report (International Series) No. 403 (1), pp. 89-106.
- Richards, J.C., 1990, *The Stonehenge Environs Project*.
- Riley, Hazel, 1990, 'The Scraper assemblage and *petit tranchet* derivative arrowheads' in Richards, J.C., *The Stonehenge Environs Project*, pp. 225-8.
- Roe, F.E.S. & Edmonds, M.R., 1991, 'Foreign Stone: Axes' in Sharples, N.M., *Maiden Castle*, pp. 230-1.
- Ross, M.S., 1987, 'Kington Magna and surrounding areas: a fieldwalking survey of the prehistory (1979-1987)', *Dorset Proceedings*, Vol. 109, pp. 91-103.
- Sharples, N.M., 1991, *Maiden Castle*.
- Smith, G., 1990, 'Excavations at Ham Hill, 1983', *Proceedings of the Somerset Archaeological and Natural History Society*, Vol. 134, pp. 27-45.
- Stephen, L. & Lee, S., 1937-8, (ed.), *Dictionary of National Biography*, Vol. III.
- Torrens, H.S., 1976, 'The Sherborne School Museum and the Early Collections and Publications of the Dorset Natural History and Antiquarian Field Club', *Dorset Proceedings*, Vol. 98, pp. 32-42.
- Wilson, V., Welch, F.B.A., Robbie, J.A. & Green, G.W., 1971, 'Geology of the Country around Bridport and Yeovil', *Memoir of the Geological Survey of Great Britain*.
- Woodward, P.J., 1991, *The South Dorset Ridgeway Survey and Excavations, 1977-1984*, Dorset Natural History and Archaeological Society Monograph Series, No. 8.
- Woodward, P.J. & Bellamy, P.S., 1991, 'Artefact Distribution' in Sharples, N.M., *Maiden Castle*, pp. 21-34.
- Wymer, J.J., (ed.), *Gazetteer of Mesolithic sites in England and Wales*, Council for British Archaeology Research Report, No. 20.

## ABBREVIATIONS

Dorset Proceedings 1878, 1886 - Dorset Natural History and Antiquarian Field Club

Others - Dorset Natural History and Archaeological Society.

# An Inter-tidal Zone Romano-British Site on Brownsea Island

KEITH JARVIS

with specialist reports by  
S. Allen, R. Gale, S. Hamilton-Dyer, L.E. Haskins and M.A.B. Lyne.

and based on fieldwork by  
C. Bowen and I.P. Horsey.

## Summary

*Inter-tidal zone investigations revealed a third-/early fourth-century Roman sandy layer sealing an undated ditch containing 50 mm of acid valley bog peat. The pottery assemblage, which included a high proportion of containers, suggested a nearby settlement. Timber survived in the waterlogged conditions and included furniture fragments. The level of the site at -1.01 m is compared with modern Highest Astronomical Tide of +1.66 m and a rise in relative sea level is suggested.*

## Introduction

In March 1973 Mr A.T. Bromby, head warden of Brownsea Island for the National Trust, discovered a Romano-British site in the inter-tidal zone of the island (SZ 0318 8817 approximately; Figs. 1 and 2). Further examination of the site, guided by Mr Bromby, was conducted by Mr H.C. Bowen, at that time a member of the Wessex Committee of the National Trust, and Mr R.A.H. Farrar. Details were published by Mr Bowen in the *National Trust Year Book* for 1975/76 (Bowen 1976) and extracts from this report are published below. [Layer numbers have been added to clarify the discussion.]

'It appears to consist of a probably level layer of sandy material [layer 2], perhaps a foot thick, containing copious Romano-British pot-sherds and animal bones, notably ox long-bones, and flecks of charcoal. The area is covered by gritty sand, mud and gravel [layer 1] sloping seaward at about 5° to the point where the tidal rip in the main shipping channel into the Harbour is cutting into it. The exposed face can be seen only at the lowest level of spring tides. On discovering it, Mr Bromby hammered in two iron rods, 12 ft apart, flush with the surface of the sand. These have provided an initial yard-stick for the rate of erosion. After the first year the rods stood 9 ins above the surface... The position... is some 265 ft out from the present sea wall... The very preliminary investigation so far made involved taking levels from the surface of the eroded layer to the high tide marks which are clear, though not sharp, on the sea wall. The difference in level is about 4 ft. A sample was taken of the sandy layer [2] and submitted to Dr Helen Keely of the Ancient Monuments Laboratory, who kindly examined it and reported that there was no evidence for humus. Bones being exposed are soft and show no signs of rolling or abrasion. The pot-sherds, similarly, are very large and freshly exposed; most are quite free of acorn barnacles. ....

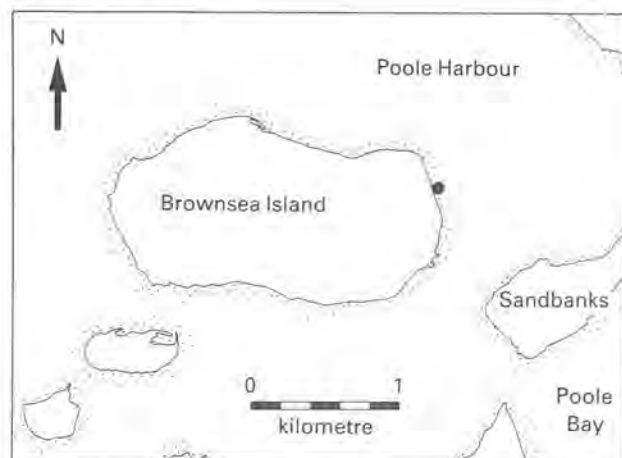


Figure 1. Location plan for Brownsea Island site.

The origin of the layers is uncertain. The material is rubbish apparently undisturbed from the time of deposition to the present. It is presumably, therefore in some sense on (or in a depression cut into) the old ground surface.'

The original extent of the site was recorded as an area of layer 2, 12 m long and 5 m wide located immediately adjacent and parallel to the equinox low tide line. In the period 1974-1978 this layer eroded to reveal a ditch on the same alignment (approximately north/south).

In 1978, the site was examined and sampled at the October equinox by Mr I.P. Horsey and Mr Bromby, when sample 1 was taken. On the basis of the 1978 visit, Mr Horsey, in 1979, recorded that pottery, wood and animal bone were found in a sandy layer (2) above a linear peat feature, probably a ditch, 30 m long and 0.75 m wide. A section 0.5 m wide across the ditch revealed that this peat layer (3) was up to 50 mm thick.

The author visited the site with Mr Bromby and Mr Horsey in July 1979 when it was under 200 mm of water. Sample 2 was taken at this time and the level established. This core sample through layer 3 subsequently revealed two more possible layers of grey peaty sand (4) and yellow/orange sand (5) which were not



Figure 2. Brownsea Island. View looking south in 1978 of sandy layer 2 with ditch 3 in background. Peg indicates erosion 1973-1978.

present in the 1978 section, but these could not be investigated as they were underwater.

The levels established that the base of sandy layer/surface of the ditch (2/3), as it survived, was at -1.01 m (Newlyn Ordnance Datum) which suggested that the base of the peat was at -1.06 m OD. The site was in the final stages of erosion and is now believed to be totally destroyed.

### Discussion

The stratigraphic sequence is discussed beginning with the earliest layers. No further comments on layers 4 and 5 are possible due to the circumstances of excavation.

#### The undated ditch (3)

The interpretation of the peat layer (3) is made difficult by conflicting evidence from the samples. The general sample (1) indicated mixed valley/salt marsh conditions, whilst the more detailed core sample (2) indicated valley conditions. However, these samples were taken at different times in different places, and sample 1 is likely to be from a higher level since it was taken nine months earlier and the site was eroding during this time. The most likely explanation is that the original upper levels of layer 3 indicated mixed or salt marsh peat conditions whilst the lower levels indicated freshwater valley bog conditions. Alternatively, the sandy lenses noted in sample 1 could imply a more complex depositional history. Whatever the full explanation, the environment of the ditch was clearly suitable for 50 mm of acid valley bog peat to accumulate at a date before the third century AD.

It is unclear whether sandy layer 2 was deposited directly on to the peat layer (3) without any erosion occurring. If this was the case, it would imply that the period of peat growth occurred shortly before the third century.

#### The sandy layer (2)

No features were recorded in layer 2 and the exact circumstances of its deposition are unclear and caution in interpretation, for both the site and sea-level changes, is necessary. An interpretation as a rubbish deposit in a sand dune area near the shore line which was inundated by a rise in sea level seems probable, especially as there is other evidence for sea level rise in southern England. The deposit could be interpreted as alluvium, but the nature of the finds, which include large sherds and small wood fragments, suggests that these have not been moved far from their original location. Other less likely possibilities include either dumping for Roman harbour works or lagoon infilling.

#### The type of Roman site indicated by the finds from layer 2

The finds from this layer include a pottery assemblage with many large storage vessels suggesting a nearby settlement site engaged in a specialist activity (see the pottery report by Lyne, below). The wooden finds (Allen below) include items that may be domestic or industrial, including furniture fragments, part of a vat, and a post. Some of the wood is burnt and suggests bonfire debris. A small sample of burnt bone included cattle and sheep butchery waste (Hamilton-Dyer below). Finds not available for study included many animal bones, including ox long-bones, and some Kimmeridge shale. The shale included a bowl fragment and several unworked pieces but no cores or bracelet fragments. The finds in Poole Museum also include one small featureless leather fragment, and three unworked pieces of leather 100 mm long were also found (A. Bromby, personal communication).

The evidence suggests a combined settlement and industrial site of the third and early fourth centuries AD, either on, or perhaps more likely, near to, sandy layer 2. This settlement may have been abandoned in the early fourth century due to a rise in sea level. The survival of organic material indicates that layer (2) became waterlogged soon after deposition and has remained so ever since.

Possible industries in this coastal location include butchery, salt production, pottery production, shipbuilding, fishing and

oyster culture. None of these industries completely fits the evidence. Butchery would usually produce other bone debris. Salt production would usually produce burnt sand and also briquetage unless metal vessels were used. Pottery production would produce wasters and similar evidence. The wood evidence does not include debris from ship-building and is of a general domestic and industrial nature. There is no direct evidence to suggest fishing. Oyster farming might be considered, as it is known to have been conducted in Poole Harbour (Winder 1992), and the containers could have been used for storage. If oyster shell debris was discarded away from the site this industry would be almost invisible in the archaeological record except for the containers used. Nevertheless, some shell debris would normally be expected.

#### Layer 1

This layer was noted by Mr Bowen as consisting of gritty sand, mud and gravel. The date of the layer is not known and might either represent alluvium of late Roman date or be of more recent origin.

#### Sea Level Implications in Poole Harbour

The site was situated adjacent to a marshy bay, now silted up, but very probably the main sheltered bay and settlement focus of the island in medieval and earlier times. Although near the harbour entrance, it is not directly exposed to gales in Poole Bay. Dune formation at nearby Studland is known to have been very dynamic in recent centuries (Canning and Maxted 1979). The site, and indeed the whole Poole area, is subject to a double tide.

The levels give an Ordnance datum of -1.01 m for the base of the sandy layer. The modern highest astronomical tide (HAT) is +1.66 m (Mr K. Birkmar, Poole Harbour Commissioners, personal communication) and modern MHWS (Mean High Water Spring) is +0.6 m (Newlyn datum). This suggests a rise in relative sea level since the third/early fourth century.

Although the site is not considered likely to be a settlement *in situ*, it is instructive to consider the calculations involved. Settlements need to be above the Highest Astronomical Tide (Waddelove and Waddelove 1990) and a minimum of at least 0.4 m needs to be added to obtain the Minimum Occupation Level (MOL). This would give a modern MOL of at least 2.06 m (1.66+0.4 m). As the site level was -1.01 m this would imply a relative sea level rise of at least 3.07 m.

If, however, the site indicated industrial activity or rubbish disposed of near the current Roman HAT, then the evidence would indicate, assuming the tidal range was similar, a minimum rise in sea level of 2.67 m (-1.01 m to 1.66 m) since the third/early fourth century.

#### Roman sea level changes in southern England

A review of sea level changes in England based on Roman archaeological evidence (Waddelove and Waddelove 1990, 266) concluded that there was consistent evidence, in spite of regional variation, to suggest a rise in HAT of over 3.66 m since the late first century AD. There was also consistent evidence to suggest the total rise consisted of a series of inundations, followed by regressions which lasted for enough time for the material to consolidate and the Roman authorities to have confidence to build on.

Excavations at Hengistbury Head (Cunliffe 1987, 6-13, fig.15) provide an interim sequence of dated layers representing a series of inundations suggesting a minimum change of HAT of 2.6 m (c. -1.0 to 1.66 m) in the late Iron age/early Roman period. The main peat deposit observed extended from c. 0.0 m to c. -0.95 m OD and was dated late Iron age 2 to early Roman. This is similar to the levels of -1.01 to -1.06 m OD for Brownsea Island.

#### The Implications for Poole Harbour

Since further work is still to take place on the nearby Hengistbury sequence it is too early for the implications for Poole harbour to be assessed fully. However, assuming the HAT was 2.6 m lower

than the modern HAT of 1.66 m, then the -1.0 m OD contour corresponds to the late Iron-age/early Roman HAT. Plotting this contour might suggest that Poole Harbour would be about one quarter of its present size and almost a system of creeks and rivers. The extent is similar to the mud flats exposed by the modern Lowest Astronomical Tide contour at -1.4 m OD shown on the Poole Harbour chart (Imray and Imray 1983). However, any prediction of the morphology of the harbour is dependant on factors which are difficult to assess, such as sedimentation rates, compaction of sediments under observed levels, growth of spits, and changes in tidal range (Heyworth and Kidson 1982, 97). Because of these uncertainties, it is only through the discovery and investigation of underwater and intertidal sites that more precise indications of the morphology of the harbour will be possible. Here, the importance of sites (such as Hamworthy) which have the potential to produce a dated sequence similar to Hengistbury is notable.

If the trend of the sea level evidence is confirmed, the implications for occupation around the harbour will have to be reassessed. Furzey Island, Green Island and the Green Island causeway would have to be viewed differently in a drier environment. The changes in settlement pattern (Cox and Hearne 1991, 231-2, fig. 91) would also need to be analysed to indicate any effects of sea level change.

## ARTEFACT AND ENVIRONMENTAL DATA

### The Pottery

M.A.B. LYNE

Some of this small assemblage was retrieved from a sandy layer in 1974, and represents material derived from that by marine erosion. The rest was recovered in 1978 and includes a high proportion of large, unabraded sherds. Rim sherds from a minimum of 48 vessels are present. The description and analysis below concentrates on the Roman material, which forms the greatest part of the assemblage, but the assemblage also included several small abraded, intrusive, medieval cooking pot sherds derived from the medieval occupation on Brownsea Island (Jarvis 1981, 134).

The Roman assemblage was analysed using the Estimated Vessel Equivalent method (EVE; Orton 1975), based on the cumulative rim sherd circumference percentage per vessel fabric and type. The accompanying Table 1 is divided into two parts. The first part gives EVEs for each coarseware fabric present, broken down into vessel classes and totalled in

the last column with a conversion of each total into a percentage of all coarse ware rims present in the assemblage. Each vessel column is also totalled up and its cumulative fabrics EVE also converted into a percentage of all coarse wares. The total coarseware EVE figure is then shown as a percentage of all pottery rims.

The second part of the table records the fine wares in a similar manner with their various percentages calculated as of all pottery rim present. These fine wares consist of fragments from two early third-century rouletted Moselkeramik folded beakers (Greene 1978, fig. 2, Nos.3-6), with a New Forest beaker base and body sherds in Fulford's purple colour-coated Fabric 1a (1975, 24). Not unexpectedly, the coarseware assemblage is totally dominated by handmade BB1 from the Poole Harbour area. Vessels in the black-fired, coarse-sanded fabric have a much wider distribution than the products of other Romano-British coarse pottery industries and are found, in varying quantities, throughout Roman-occupied Britain after c. AD 120. This phenomenon, and in particular the presence of large quantities of the fabric on northern military sites, has attracted research and resulted in the accumulation of a considerable body of literature on the ware. The most significant of such works to date are Farrar (1973), Peacock (1973) and Gillam (1970).

New Forest grey wares are very much a minority presence at Brownsea Island and account for nearly all of the remainder of the coarse wares. There is, however, one small abraded fragment from a lid-seated jar rim in a buff-grey, virtually sand-free fabric of unknown origin.

The pottery can be dated to the third century, although some early fourth-century material is also present. This fourth-century pottery includes a New Forest grey-ware bowl of Fulford's Type 9 (1975): a form dated by him to the period AD 300-350.

Out of the estimated 48 different vessels present, there is an unusually strong emphasis on pitchers, necked and neck-less storage jars and large bowls. These are represented by three, two, four and two examples respectively. Such vessel types were weakly represented in the BB1 repertoire; forming only a tiny element of the total output. This may explain why one of the large bowls and two of the storage-jars, on this site in the heart of the BB1 production area, were New Forest grey ware products. This abnormal assemblage make-up, featuring numbers of vessels suitable for storage of one kind or another, suggests that some kind of specialised activity was taking place on the site (Jarvis above).

As regards the rest of the pottery assemblage, jars outnumber combined bowls and dishes by about two to one. All of these jars are in BB1 fabric with the exception of a solitary New Forest grey ware jar with everted rim. This isolated New Forest jar appears, at first glance, to be of little significance but recent work by the author on third-century pottery assemblages from elsewhere in East Dorset and Wiltshire indicates that it may be one aspect of a more widespread and significant phenomenon.

Table 2 presents statistical analyses of pottery from a number of third

Table 1

Fabric	Jars		Bowls		Dishes		Beakers		Store jars		Others		Total	
	EVEs	%	EVEs	%	EVEs	%	EVEs	%	EVEs	%	EVEs	%	EVEs	%
BB1	2.57		0.81		0.55		0.05		0.48		1.48		5.94	93.1
New Forest Grey	0.14				0.06				0.16				0.36	5.6
Miscellaneous	0.08												0.08	1.3
Total Coarseware	2.79	43.7	0.87	13.6	0.55	8.6	0.05	0.8	0.64	10.0	1.48	23.3	6.38	89.6
Moselkeramik							0.71						0.71	10.4
New Forest 1a Purple colour-coat							Present				Present		Present	
Total all pot	2.79	39.4	0.87	12.3	0.55	7.8	0.76	10.7	0.64	9.0	1.48	20.8	7.09	

Table 2

Site	Total EVE	BB1 % of total	Jars %	BB1 %	Bowls	Dishes	BB1 %
Worgret, Kiln 46 <sup>(1)</sup>	3.01	100.0	63.5	100.0	25.6	11.0	100
Cleavel Point, Ower Bldg 707, constr <sup>(2)</sup>	6.46	100.0	33.7	100.0	40.0	26.3	100
Studland Pit H. <sup>(3)</sup>	4.29	100.0	50.9	100.0	39.5	9.6	100
Brownsea Island	6.38	93.1	66.2	92.1	20.7	13.1	95.8
Poole, Canford Heath White's Pit PM 39	6.55	87.0	57.7	69.3	34.1	8.2	100
Salisbury, Paul's Dene Estate	7.32	23.4	74.3	6.3	16.5	9.2	84.0
Downton Villa, all layers <sup>(4)</sup>	27.42	15.8	77.7	3.2	15.3	7.0	59.6

References: (1) Heame and Smith 1991 (2) Woodward 198 7, (3) Field 1966, (4) Rahtz 1963.

century and predominantly third-century site assemblages in the area. From left to right the seven columns show the total coarse ware EVE, the BB1 percentage of that EVE, jars as a percentage of combined jars, bowls and dishes, the BB1 percentage of jars and bowls as a percentage of the three vessel types, dishes in a similar manner and, lastly, the BB1 percentage of combined bowls and dishes.

From this table and current research by the author in the south-east of Britain it can be seen that the longer distance trading by the BB1 potters was heavily geared to the coarse-ware bowl and dish market. That in jars was considerably less effective north of Bokerly Dyke and east of the Hampshire and Wiltshire Avon. This BB1 emphasis on bowls and dishes was noted in the largely unstratified but mainly second-century Roman pottery assemblage from Hengistbury Head (Cunliffe 1987, 270). The author also noted that although bowl and dish forms by far outnumbered jars there, the reverse was usually true on military sites in the north of Britain (op.cit.321).

The explanation for this BB1 emphasis on bowl and dish trading in its southern markets may lie in the unwillingness or technological inability of its rivals to produce such forms on a large enough scale to compete. The other potteries were, however, geared to turning out large quantities of cooking-pots, capable of successfully competing with their black-burnished ware equivalents. This may account for the presence of a New Forest example in the Brownsea Island assemblage alongside the more easily explained storage jars and large necked-bowls from the same source. The predominance of cooking-pots in BB1 assemblages from military sites in the north can easily be explained by a shortage of other local alternatives in that region.

#### The Illustrated Pottery (Fig.3)

1. Lid-seated flagon neck in black-fired BB1 fabric. External rim diameter 80 mm.
2. Flagon neck in black-fired BB1. External rim diameter 60 mm.
3. Flanged-necked storage jar rim in black-fired BB1. External rim diameter 200 mm.
4. Smaller version of the above and in similar fabric. External rim diameter 170 mm.
5. Flanged neck-less storage jar rim in a very coarse BB1 variant fabric. External rim diameter 230 mm. Vessels of this type are very rare. There are examples from Ower (Woodward 1987, fig. 50.190), Brading and Colchester; both of the latter unpublished.
6. Rim from large everted-rim jar in BB1 fabric. External rim diameter uncertain.
7. Small neck-less storage jar in New Forest grey ware. External rim diameter 220 mm.
8. Larger and cruder version of the above and also in New Forest grey ware. External rim diameter uncertain.
9. Reeded-rim bowl in New Forest grey ware. Fulford's Type 9 dated by him c. AD 300-350. External rim diameter 320 mm.
10. Fragment from very large BB1 developed beaded-and-flanged bowl rim. Diameter uncertain, but well in excess of 300 mm.
11. Everted-rim cooking-pot of BB1 third-century type lacking a scored horizontal line along the upper edge of the obtuse-latticed girth band and dated to c. AD 220-300. External rim diameter 220 mm.
12. More bulbous third-century BB1 cooking-pot rim with better defined bead than No.11. External rim diameter 210 mm.
13. Rim from small incipient beaded-and-flanged bowl in BB1 fabric and dated c. AD 220-280. External rim diameter 150 mm.
14. Developed beaded-and-flanged bowl of later third-century BB1 type with burnished external linear arcading and datable to c. AD 270-300+. The use of burnished arcading on bowls declines after c. AD 300 and where used is often executed in a more slipshod manner. External rim diameter 200 mm.

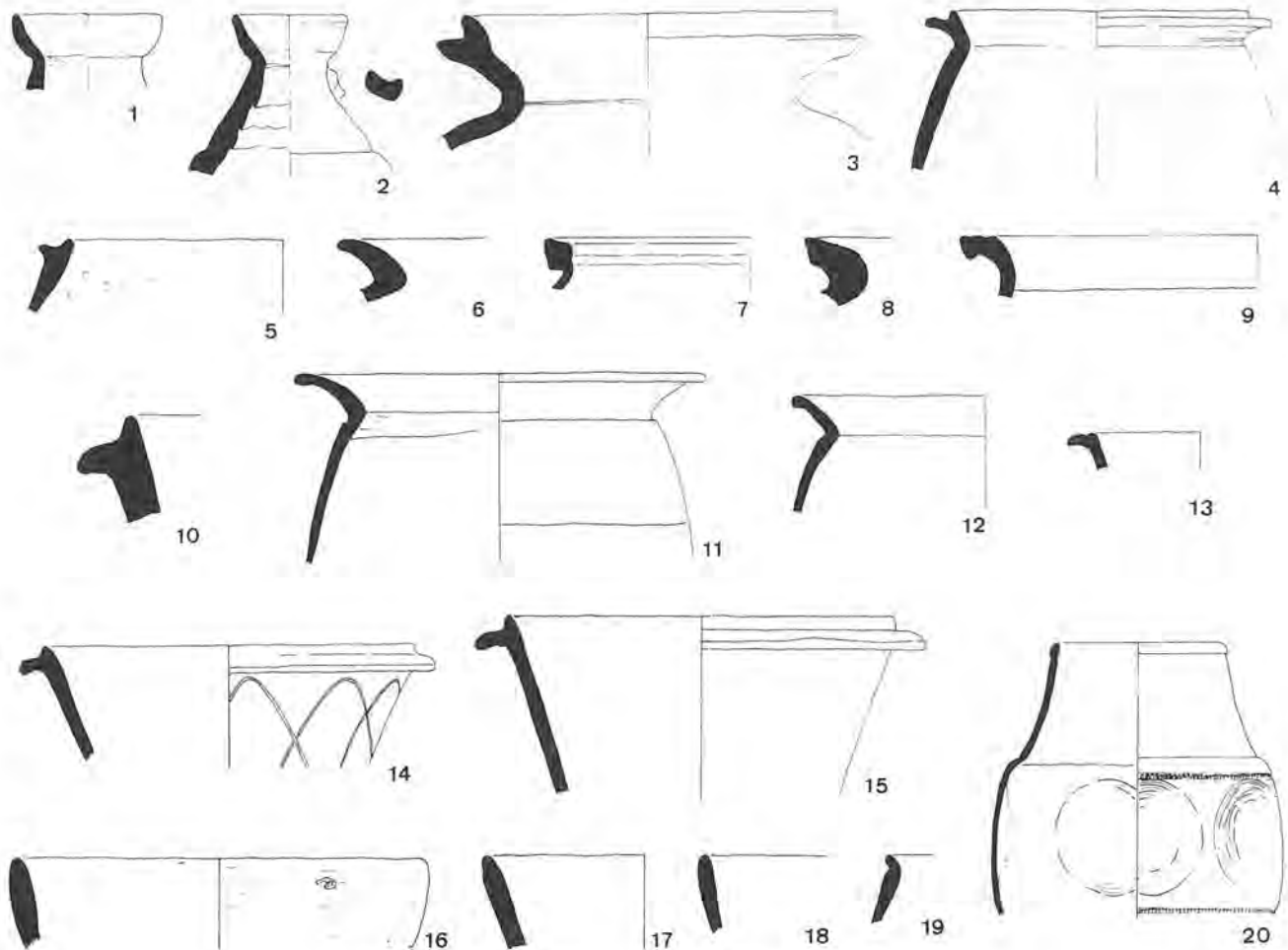


Figure 3. Brownsea Island. The Roman Pottery. Scale 1/4.

15. Developed beaded-and-flanged bowl in BB1 fabric and with ledge beneath the flange. This type is known in late third-century contexts but is more common during the early fourth century. The lack of external arcing would support the latter dating. External rim diameter 210 mm.
16. Coarse BB1 dish with external horizontal fettling and of third to fourth century date. The inclusions include a large 12 mm lump of shale. External rim diameter 220 mm.
17. BB1 dish with rim edge beading. The thick-walls, together with its small diameter, compared with depth suggests that it may come from near one end of an oval dish with handles (Woodward 1987, fig. 48.146).
18. BB1 dish of third to early fourth-century type. External rim diameter 260 mm.
19. Fragment from bead-rimmed BB1 beaker of third-century type. External rim diameter uncertain.
20. Early third-century rouletted Moselkeramik beaker in pale grey fabric with minute white inclusions and with metallic black colour-coat. External rim diameter 90 mm. There are body sherds from another vessel with narrower indentations.

## The Wood

S. ALLEN

with species identifications by R. GALE

The wood recovered is not apparently related to the working of structural timber, and is of a size and character which suggests a small structural assemblage obtained from dismantled furniture or similar. The tenon present on No. 5 suggests a small frame. The association with thin board fragments and what may be a decorative strip would support this supposition. It cannot be said with certainty that this was a piece of furniture and the fragments may be from more than one artefact. It is certainly not possible to reconstruct the original from these fragments but the object(s) were smashed and partially burnt before deposition. As such they may represent waste which has been brought to the site rather than items which were used there.

The illustrated wood (Fig. 4)

1. Offcut from small square cross section timber. Hewing marks on faces and saw marks on both ends. Box quartered. *Fraxinus* sp., ash.
2. Two joining fragments of a thin (decorative?) strip. Beaded long edge with parallel rib, other edge missing. One end a sawn bevel, the other broken. Small cut hole through face of larger piece. *Quercus* sp., oak.
3. Fragment of a thin (decorative?) strip, similar to No. 2 above, but not joining and partially charred. *Fraxinus* sp.
4. Corner of thin flat panel. Bevelled or broken edge; end hewn square. Other original end, edge and one face missing. *Quercus* sp.
5. Fragment of a piece of furniture? Cylindrical object, with square cross section tenon at one end, one half split away with other end missing. Cut from boxed wood. Pomoideae, a sub family of the family Rosaceae. This group includes *Crataegus* sp. (hawthorn), *Malus* sp. (apple), *Pyrus* sp. (pear), *Sorbus* sp. (rowan, whitebeam and wild service tree). These genera are anatomically very similar.
6. Fragment of stave from a coopered vessel? Stave with intact end and face cut to slightly reduce thickness. Both original edges, inner face and other end broken away and missing. *Fraxinus* sp.
7. Offcut from plank with part of a drilled hole present towards broken end, other end hewn. *Fraxinus* sp.
8. Peg, both ends broken. *Fraxinus* sp.

Not illustrated

9. Cylindrical fragment, highly abraded with only part of original surface and one end intact. Cut from boxed wood, Pomoideae group (See No.5).
10. Fragment of halved roundwood with one end charred. *Fraxinus* sp.
11. Split fragment of a similar offcut to No. 1 above. One end sawn. Striations on one side. Radially cleft oak (*Quercus* sp.)

Macroscopic examination of Nos 12-14 indicated ring porous species such as oak, ash and elm.

12. Fifteen fragments of thin board, non joining.

13. Sixteen abraded fragments and splinters, varying conversions.
14. Four larger abraded fragments, varying conversions.
15. Fragment of quartered roundwood, both ends missing. *Betula* sp., birch.
16. Split fragment from a similar artefact to Nos. 1 and 11 above. Both ends sawn. Tangentially cleft. *Acer* sp., maple.

## The Wood Species Identification

ROWENA GALE

Thin sections of the wood were taken in the transverse, tangential longitudinal and radial longitudinal planes and mounted in 50% glycerol on microscope slides. These were examined using a transmitted light microscope at magnifications of up to X400. The anatomical features were matched to authenticated reference material. Further samples were examined using a X20 hand lens and the features observed on the tangential surface suggested that these were ring porous woods such as *Quercus*, *Fraxinus* and *Ulmus* (elm).

The range of woods used for these artefacts included *Quercus* (oak), *Fraxinus* (ash), *Prunus* (cherry, blackthorn), *Betula* (birch), *Acer* (maple), and a member of the Pomoideae group (hawthorn, apple, pear, rowan, whitebeam, wild service tree). These genera are native to Britain. The inherent properties of these woods are varied and have been exploited for specific purposes from the Neolithic period (Keller 1866) until the present day (Edlin 1949). The variety of wood in this context suggests that the fragments may have originated from several artefacts as indicated in the wood report above.

### *Quercus* sp., oak (Fagaceae)

A strong, hard and durable wood, available in large dimensions. Mature trees provide timber that can be cleft or split, using wedges, radially along the broad rays and tangentially, following the early wood of the annual growth rings. The trees may also be coppiced to produce roundwood. Traditionally oak has been used for construction work (both indoors and outdoors), hurdles, boats, tool handles, furniture, bowls, vessels, basketwork, cooperage, agricultural equipment, carving and decorative work, charcoal and fuel.

### *Fraxinus* sp., ash (Oleaceae)

A pale-coloured wood available in large dimensions. Well grown trees can be cleft tangentially along the annual growth rings where the large springwood vessels weaken the structure. The wood is rather perishable and therefore not as suitable as oak for outdoor work. However, its great strength and resilience make it an ideal material to withstand the harsh treatment often levied to the handles of many tools. The Romans used ash to make beds (Aldred 1957) and it has traditionally been used for vessels, particularly bowls and dishes. The wood also makes excellent charcoal and fuel, and can be burnt green.

### *Prunus* sp., Cherry, blackthorn (Rosaceae)

Although wild cherry (*P. avium*) can grow to large dimensions the wood is not generally used in any great size. The wood of both cherry and blackthorn (*P. spinosa*) is strong, hard and even-grained and ideal for making small artifacts such as pins, clubs, cups and bowls. It is a rich, brown colour and has often been used for turnery.

### *Betula* sp., birch (Betulaceae)

Birch wood is rather soft and perishable but has been used to make small domestic items such as bowls, knife handles, ladles and clogs. It makes a poor wood fuel but excellent charcoal.

### *Acer* sp. maple (Aceraceae)

The pale-coloured wood of maple is hard, strong and even-grained. The latter property enables it to be drilled easily without splitting. Under certain conditions atypical growth occurs and the resulting wood can be very decorative; burr wood has been particularly sought after since pre-Roman times. (Meiggs 1982). The wood is non-toxic and tasteless and has had a traditional use for food containers.

### Subfamily Pomoideae, Rosaceae.

Members in this subfamily include *Crataegus* sp. (hawthorn), *Malus* sp. (apple), *Pyrus* sp. (pear), *Sorbus* sp. (rowan whitebeam and wild service tree). The wood from these genera is anatomically and structurally very similar. It is hard, strong and close-grained, and has traditionally been used to make small, hardwearing items such as tool and knife handles, cogs, boxes, pins, and bowls. It is also an excellent wood for turnery, carving and wood engraving.

**The Palaeobotanical Report**

L.E. HASKINS  
Report Date 1979  
Sample 1

Sample 1 comprises in general black wood and rootlet peat, and is distinctly stratified with sandy lenses.

<i>Honkenya peploides</i>	Seeds	Occasional
<i>Juncus squarrosus</i>	Seeds	Occasional
<i>Juncus articulatus</i>	Seeds	Frequent
<i>Juncus</i> spp.	Seeds	Occasional
<i>Carex</i> spp.	Nuts	Occasional
<i>Sphagnum papillosum</i>	Leaves	Rare
Unidentified (not <i>Phragmites</i> )	rootlets & rhizomes	Abundant
Charcoal	flakes	Common

Table 3: Plant macrofossil analysis of sample 1 (Layer 3)

<i>Fraxinus excelsior</i>	Wood	Frequent
<i>Calluna vulgaris</i>	Seeds & leaves	Abundant
<i>Erica cinerea</i>	Seeds	Occasional
<i>Erica tetralix</i>	Seeds & leaves	Common
<i>Triglochin maritima</i>	Carpets	Frequent
<i>Suaeda maritima</i>	Seeds	Common

Two distinct peat types seem to be represented: Acid valley bog peat indicated by *Calluna*, *Erica* sp., *Juncus squarrosus*, *J. articulatus* and *Sphagnum* sp.; and Salt marsh peat indicated by *Triglochin*, *Suaeda* and *Honkenya*. It is possible that the sample 1 describes a change from valley bog to salt marsh conditions and/or vice versa. Alternatively, the sample may merely be an amalgamation of transported peats from different origins.

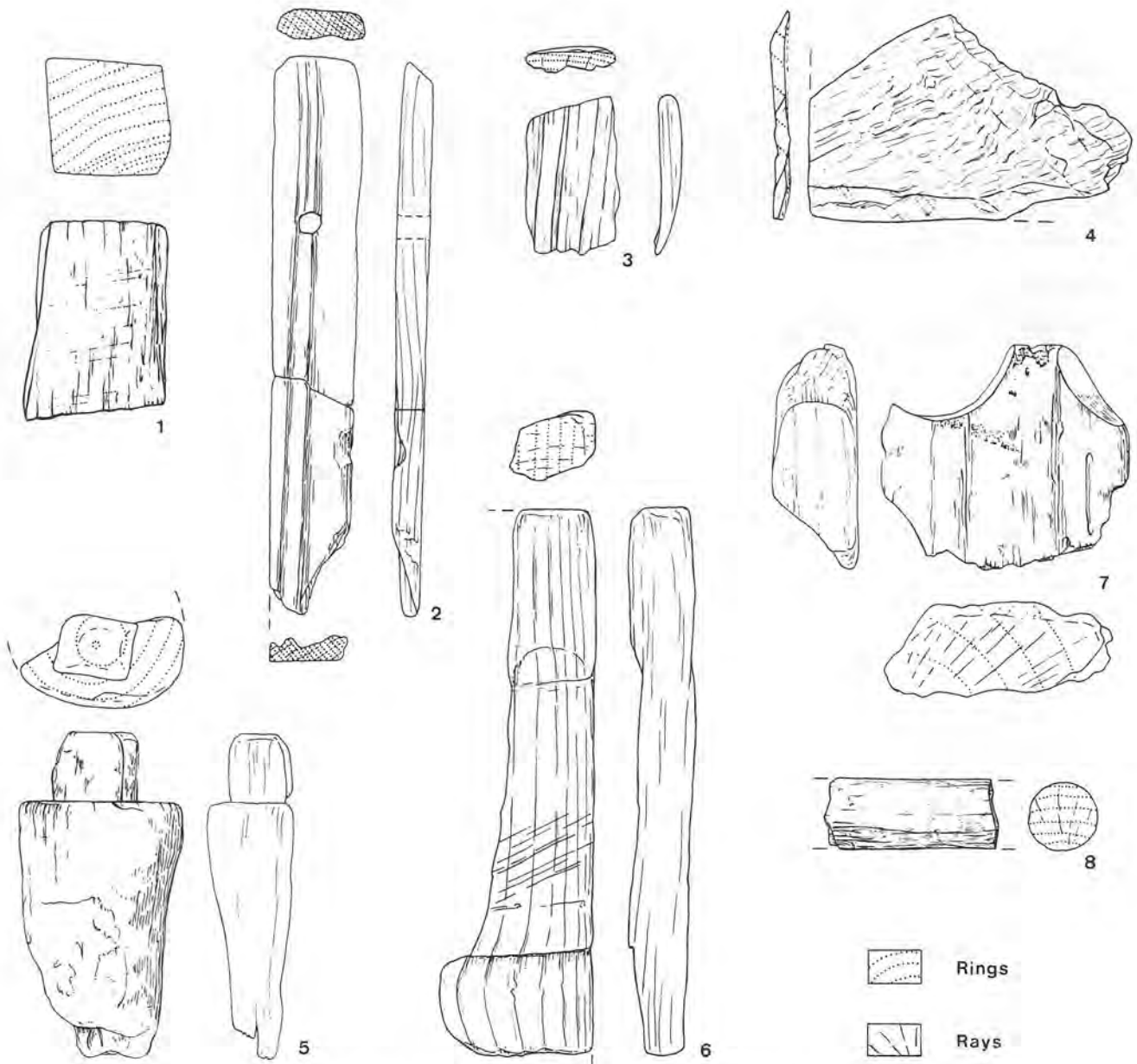


Figure 4. *Brownsea Island. The Wood. Scale 1/2.*

Table 4: Plant macrofossil analysis sample 2 ( Core Sample 2. (0=top).)

Depth	Description	Plant macrofossils	Frequency
0-50mm.	Grey/black sandy peat (layer 3)	Carex spp.	Occasional
		Juncus spp.	Occasional
		Calluna vulgaris	Frequent
		Sphagnum spp.	Frequent
50-120mm.	Grey peaty sand (layer 4)	Calluna Vulgaris	Occasional
120-200mm	Yellow/orange sand (layer 5)	Calluna Vulgaris	Occasional

This deposit appears to be associated with acid heath or bog. No macrofossils indicative of salt marsh conditions, as found in sample 1, were encountered.

### The Animal Bone

S. HAMILTON-DYER

The small quantity of faunal material consisted of several small fragments of burnt mammal bone. Cattle is represented by most of the left cuboid (ankle bone), a right scaphoid (wrist bone) and a rib fragment. Another rib fragment is probably of sheep and there is also a proximal fragment of sheep left metacarpus (foot bone). The remainder of the fragments are too small for further identification but included a tooth fragment and a piece of immature, unfused bone.

Although burnt, the bones are all well preserved, probably as a result of the waterlogged conditions in this intertidal zone. Burnt wood was also found in association with the bone and, although these small fragments are insufficient for further analysis, the interpretation of the material as bonfire debris is suggested. This would not seem, however, to be the disposal of table waste, as foot bones would normally be removed before the meat arrived at the kitchen. The appearance of cattle foot bones suggests dog gnawing and this deposit may perhaps be a general disposal of sweepings and other unwanted material from a settlement.

### REFERENCES

- Aldred, C., 1957, 'Furniture: to the end of the Roman Empire', in Singer C. et. al. (eds) *History of technology. II*, Oxford
- Arthur, P. and Marsh, G., 1978, *Early Fine Wares in Roman Britain*, Brit. Archaeol. Rep. 57, Oxford
- Bowen, H.C., 1976, 'A Romano-British Site off Brounsea Island', *National Trust Year Book 1975-6*, 42-43
- Canning, A.D. and Maxted, K.R., 1979, *Coastal Studies in Purbeck*
- Cox, P.W. and Hearne, C.M., 1991, *Redeemed from the Heath. The Archaeology of the Wytch Farm Oil Field 1987-1990*, Dorset Natur. Hist. Archaeol. Soc. Monograph 9
- Cunliffe, B.W., 1987, *Hengistbury Head, Dorset*, Oxford University

- Committee for Archaeology Monograph 13
- Detsicas A., 1973, (ed.) *Current Research in Romano-British Coarse Pottery*, Council for Brit. Archaeol. Res. Rep. 10
- Edlin, H.L., 1949, *Woodland Crafts in Britain*
- Farrar, R.A.H., 1973, 'The Techniques and Sources of Romano-British Black Burnished Ware', in Detsicas (ed.) 1973, 67-103
- Field, N.H., 1966, 'Romano-British Settlement at Studland Dorset. Final report on the Excavations, 1952-8', *Dorset Proceedings*, 87, 142
- Fulford, M.G., 1975, *New Forest Roman Pottery*, Brit. Archaeol. Rep. 17, Oxford
- Gillam, J.P., 1970, *Types of Roman coarse pottery vessels in northern Britain*, Newcastle-upon-Tyne
- Greene, K., 1978, 'Imported fine wares in Britain to A.D.250: A guide to identification', in Arthur and Marsh, 15-30
- Hearne, C.M. and Smith, R. J. C., 1991 'A Late Iron Age settlement and Black Burnished ware (BB1) production site at Worgret, near Wareham (1966-7)', *Dorset Proceedings* 113, 55-105
- Heyworth, A. and Kidson, C., 1982, 'Sea level changes in southwest England and Wales' *Proc. Geol. Assoc.* 93 (1), 91-112
- Horsley, I.P., 1979, 'Dorset Archaeology in 1979', *Dorset Proceedings* 101, 140
- Imray, L.N. and W., 1983, *Dorset, Poole Harbour. Chart Y23*
- Jarvis, K., 1981, 'A Medieval Cemetery on Brounsea Island', *Dorset Proceedings* 103, 134-136
- Keller, F., 1866, *The lake dwellings of Switzerland and other parts of Europe*
- Meiggs, R., 1962, *Trees and timber in the ancient Mediterranean world*, Oxford
- Orton, C.R., 1975, 'Quantitative pottery studies: some progress, problems and prospects', *Sci. Archaeol.*, 16, 30-35
- Peacock, D.P.S., 1973, 'The Black Burnished pottery industry in Dorset', in Detsicas (ed), 1973, 63-5
- Rahz, P.A., 1963, 'A Roman Villa at Downton', *Wiltshire Archaeol. and Natur. Hist. Mag.*, 58, 303-34
- Waddelove, A.C. and E., 1990, 'Archaeology and Research into Sea Level during the Roman Era. Towards a methodology based on Highest Astronomical Tide', *Britannia* 21, 253-266
- Winder, J.M., 1992, 'The Oysters' in Horsley, I. P., *Excavations in Poole 1973-83*, Dorset Natur. Hist. and Archaeol. Soc. Monograph 10
- Woodward, P.J. 1987, 'The Excavations of a Late Iron-Age settlement and Romano-British Industrial site at Ower, Dorset' in Sunter, N. and Woodward, P.J., *Romano-British Industries in Purbeck*, 44-124, *Dorset Natur. Hist. Archaeol. Soc. Monograph 106*

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Finds Location : Poole Museums. Site code PM 57.



# Two Mid-Saxon Grain-driers and Later Medieval Features at Chantry Fields, Gillingham, Dorset

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with contributions by:

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## ABSTRACT

*Investigations ahead of construction of a relief road around Gillingham, Dorset, revealed two large stone and clay ovens from which archaeomagnetic and radiocarbon dates of late 7th-early 8th century AD were obtained. Both had been altered at least three times and ash layers associated with the ovens produced a range of carbonised plant macrofossils. Quantities of iron slag were recovered from layers not directly associated with the ovens, but other material finds were scarce. The ovens were surrounded by a group of earthworks, dated in the main by pottery to the twelfth-thirteenth centuries AD.*

## INTRODUCTION

### Background to the investigations

The investigations took place in advance of the construction of a relief road around Gillingham, Dorset. Because of the historic importance of the town of Gillingham (Penn 1980; Keen 1984), Dorset County Council commissioned Wessex Archaeology in March 1989 to undertake an assessment of the archaeological implications of the proposed route of the road (Fig. 1). The route diverts from the B3081 at the eastern edge of the town at Newbury, the later medieval suburb, and passes across the meadows of Chantry Fields to the south and then northwards close to the presumed western edge of the medieval town. Due to access restrictions the archaeological assessment was carried out in two stages, in March 1989 (Smith 1989) and in October 1990 (Heaton 1990). Subsequently, excavations were carried out in Chantry Fields beginning in November 1990, with watching brief observations continuing until Easter 1991.

### Site location

Gillingham lies on low-lying Kimmeridge Clay at the junction of the Rivers Stour, Lodden and Shreen Water in north Dorset. To the north, west and east a dissected ridge of Greensand, Chalk and Cornbrash occupied by the towns of Mere, Zeals and Wincanton encircles the low ground at a distance of approximately 5.5km from Gillingham. Beyond, the ground rises sharply to 200m OD onto the Upper Chalk ridge of Keysley and White Sheet Downs, 134m above the town. To the south, the valley of the River Stour has cut an 8km wide swathe through the Chalk and Greensand ridge which opens out into the Blackmore Vale to the south.

Chantry Fields lies partly enclosed by a wide meander of the River Stour and is bisected by a footpath running south from Chantry Ford to the village of East Stour (Fig. 1). The land is essentially level at about 74m OD on a low terrace which drops down one metre on the north and east sides to the floodplain. The site of the excavations (ST 8059 2531) was restricted to one field west of the footpath, south of the River Stour. Subsequent watching brief observations were undertaken in the field to the east of the footpath, and other, assessment, trenches were excavated within the town itself.

### Archaeological and Historical Background

Penn's survey of the historic towns of Dorset (Penn 1980), and Keen's analysis of that development (Keen 1984), summarise what little is known about Gillingham. There was an extensive Romano-British settlement 800m west of the town at Coldharbour, which has been the subject of study by the Shaftesbury and District Archaeological Group (Moore and Ross 1989), and a probable sub-Roman Christian cemetery at Langham 2 miles (3.2km) further to the west (RCHME 1960), but there is

no evidence that either of these was related to the development of Gillingham. Two late Saxon carved stones found in the vicarage, and a reference to Gillingham for 1016 in the *Anglo-Saxon Chronicle*, suggest a pre-Conquest origin for the town, possibly centred around the church, with a 'significant population' and the strong probability of a pre-Conquest Royal presence by the ninth century. By Domesday (AD 1086) there were seven manors in the parish, one of them a Royal Manor. There was certainly a royal residence in Gillingham by the late eleventh century and a Royal Forest of seven thousand acres, founded in 1228, extending south-east from the town until extensive enclosure and deforestation in the early seventeenth century. From uncertain origins, the town developed during the Middle Ages into a manorial market centre of local importance with a suburb of thirteenth century origin at Newbury. However, following extensive fires and rebuilding in the post-medieval period the original character, and hence much of its history, remains obscure.

Chantry Fields was almost certainly part of the endowment of St Katherine's Chantry which was established in the early 1330s. Following the dissolution of the Chantries by Edward VI, its lands passed to Sherborne School and on a map of the Royal Forest published in 1624 (*ibid*) an enclosed field possibly referred to as 'Broad Croft' is shown in the position of the site. By 1841 the western half of Chantry Fields was in private ownership, those fields to the east of the footpath remaining the property of Sherborne School up to the present. There is no evidence to suggest they were anything other than permanent pasture during that period, and to the best of local knowledge, the area of the site has never been ploughed.

### Archaeological Assessment

The methodology and results of the assessment are reported in detail elsewhere (Heaton 1990); the pottery from the assessment has been incorporated within the assemblage of the main excavations, but it is pertinent to summarise the scope and results of the exercise here.

Following Penn's recommendations (Penn 1980) four areas (Fig. 1, A, B, C/D, E) were examined in machine excavated trenches. Archaeological features and datable artefacts were observed only in trench B1 (south of Cemetery Road): here a possible robbed wall footing was sealed by post-medieval pits, with small quantities of Romano-British, medieval and post-medieval pottery, but no other associated deposits (Smith 1989).

*Area F* (Fig. 1, F), not included in the original project design, was examined in October 1990 after Peter Cox (then working for the Trust for Wessex Archaeology) remarked on the presence of previously unrecorded earthworks in Chantry Fields. A revised

design was approved incorporating the excavation by hand, because vehicular access was not possible, of fifteen 1m x 1m test pits (Fig. 2). An earthwork survey was undertaken by the Royal Commission on Historical Monuments of England (RCHME) at the request of Wessex Archaeology (Fig. 2).

The test pits, (representing a 0.3% sample of the threatened area) revealed a low background distribution of medieval pottery

from subsoils along the entire proposed road corridor. Four test pits revealed archaeological features cut into the natural clay beneath up to 0.70m of topsoil and subsoil, and in two of these (53 and 65) the features corresponded to surviving earthworks. One test pit (71) revealed a compacted rubble deposit of mixed stone, and test pit 62, at the southern end of the corridor, revealed large quantities of fired-clay pieces. Other test pits in this area

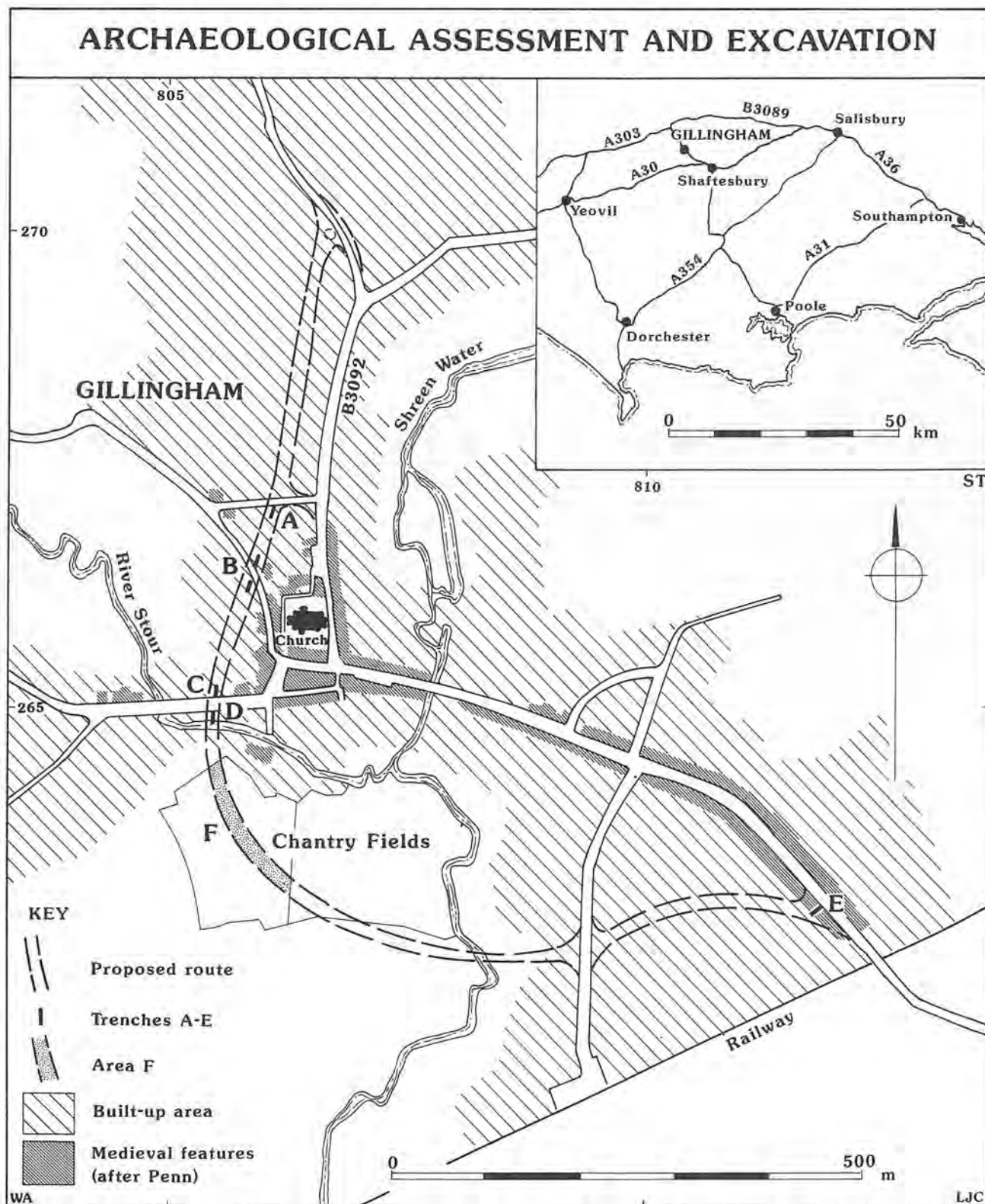


Figure 1. The assessment trenches A-E and Area F, Chantry Fields, Gillingham, Dorset. (Earthwork survey Crown Copyright, reproduced by kind permission of the Secretary and Commissioners of RCHME)

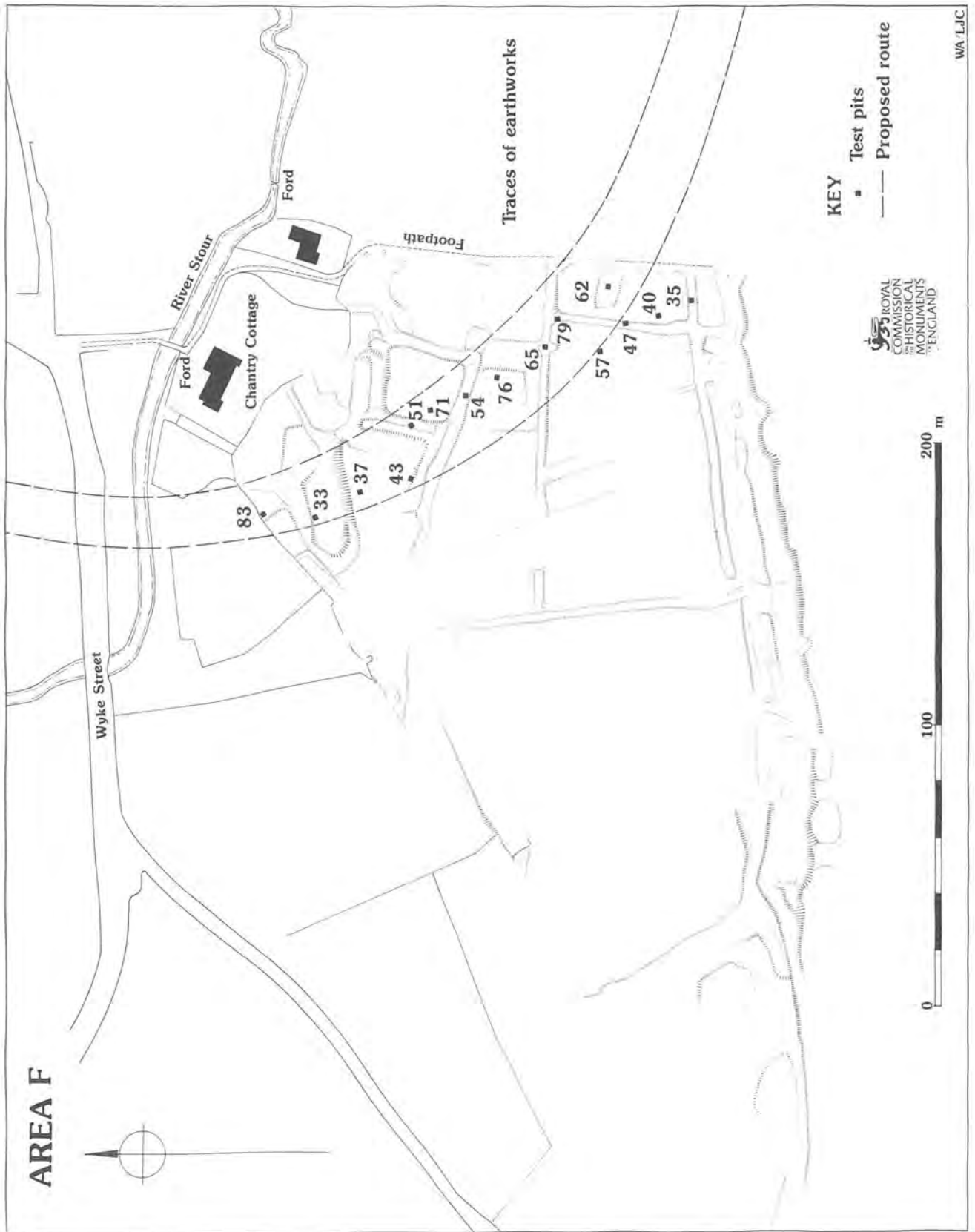


Figure 2. Chantry Fields: assessment test-pits and earthwork survey of Chantry Fields. (Earthwork survey Crown Copyright, reproduced by kind permission of the Secretary and Commissioners of RCHME)

produced small quantities of slag and fired-clay.

### The Earthworks

The earthworks within fields to the west of the footpath (area F) are best described by the RCHM(E) plan (Figs 2 and 3), but several points are worthy of emphasis.

The long southern boundary is defined by a possible hollow-way, which forks off at its western end, joined from both sides by a number of subsidiary features, some of which may be ponds or quarry pits. The area to the rear of Chantry Cottage at the north of the site is occupied by a number of overlapping amorphous hollows and terraces, reminiscent of quarrying, and the western part of the site is occupied by a series of simple linear boundaries. The eastern portion, ironically almost entirely within the proposed corridor, is occupied by a series of intersecting linear ditches defining a number of raised enclosures or platforms. The principal platform (Fig. 3, 1) was the most noticeable on the ground, defined by a total relief in excess of 1m and with evidence of re-cutting of the enclosing ditches (Fig. 3, 3) visible in plan. The smaller platform (Fig. 3, 2) at the southern end, although noticeable on the ground, was smoother in its contours and with a total relief of less than 0.5m. In plan, platform 2 was distinguished from the overall earthwork pattern by its smaller area and apparent lack of an enclosing ditch. Both platforms supported large, dense clumps of tall nettles, present elsewhere in the field only as small isolated patches. The field to the east of the footpath has been ploughed at least once within the last 10 years, and as a result only traces of earthworks are visible.

This area lay outside the immediate threat and has yet to be surveyed. The land adjacent to Wyke Street and Common Mead Lane is under housing.

### Assessment Summary

Together, the assessment and the survey demonstrated that areas immediately outside the medieval town have been severely disturbed and truncated by post-medieval and modern activity, and that only deeper features survive at sporadic locations. Outside the built-up area, however, to the south of the river in Chantry Fields, earthworks and deposits of at least an early medieval date survived in a relatively undisturbed condition. An industrial function for part of the site was suggested by the presence of fired-clay on one of the earthwork platforms. Following recommendations by the County Archaeological Officer and approval of a project design, full excavation of the threatened area within Chantry Fields began in early November 1990.

### THE EXCAVATION

#### Strategy and Methodology

The assessment demonstrated that features were sealed by up to 0.70m of topsoil and subsoil, and suggested that industrial structures existed. The excavation set out to investigate the nature and date of the features and associated earthworks and the fired-clay deposit.

All work, including topsoil storage, was restricted to the road corridor, thereby constraining the area of the excavation to a

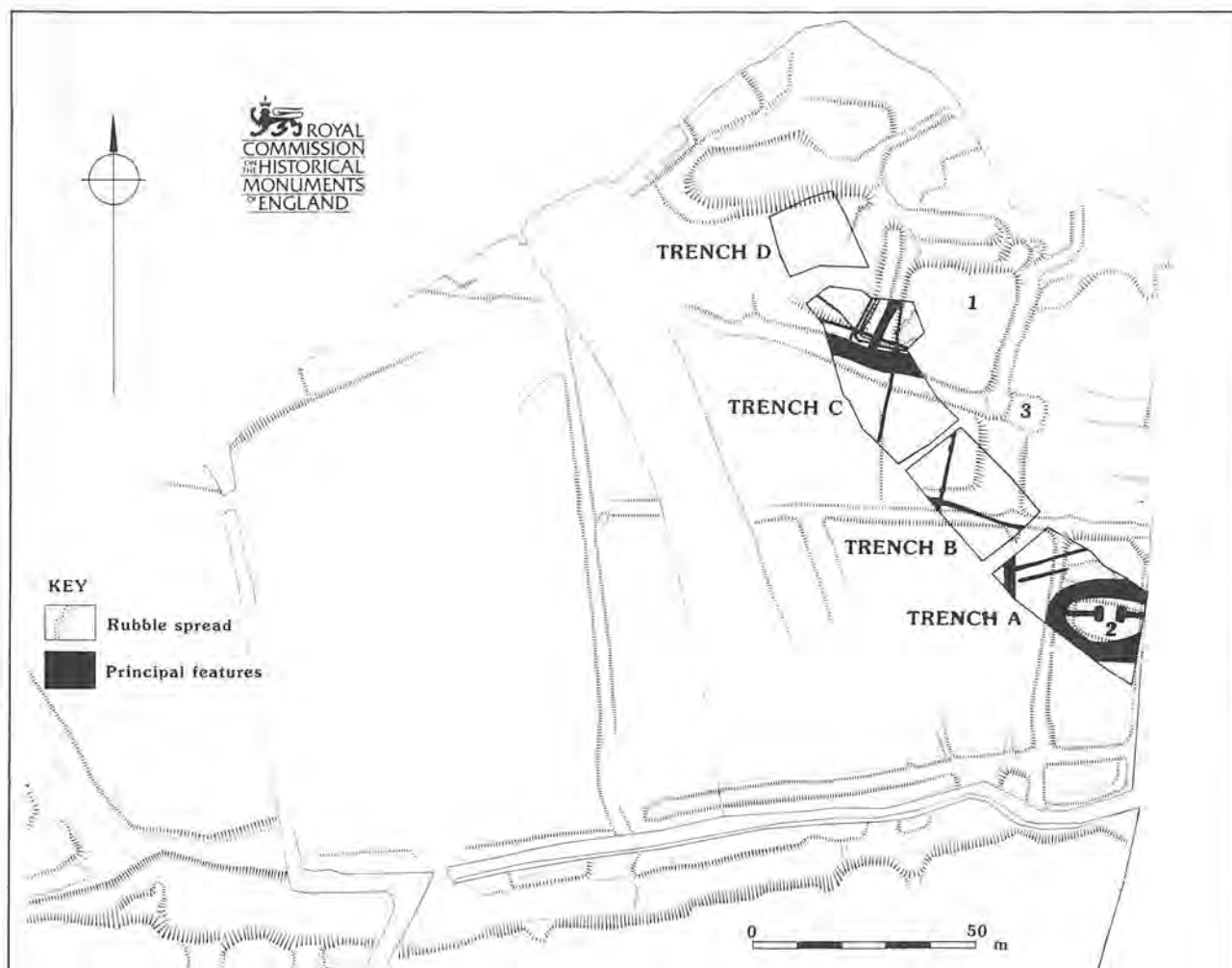


Figure 3. Chantry Fields: excavation trenches and principal features in relation to the earthworks. (Earthwork survey Crown Copyright, reproduced by kind permission of the Secretary and Commissioners of RCHME)

maximum width of 20m. In addition, a farm access across the north end of the field had to be maintained, further restricting the extent of the excavation. A 360° excavator was used to strip topsoil down to the top of identifiable archaeological deposits or the sandy-clay/gravel natural. Depths of between 0.30m and 0.70m were thus removed from an area 20m wide and 130m long divided into four trenches (Fig. 3, A-D) by two narrow baulks. The exposed surface was hand cleaned and all deposits recorded prior to excavation.

All linear features were examined in sample segments, nominally 1m wide but varying with respect to the size of the feature to ensure safe and practical working conditions. The fired-clay, stone and ash deposits proved to be largely *in-situ* and were examined in full. Soil samples were retained from all ash and charcoal layers.

### Documentary Research

A preliminary examination of records held at the Dorset County Record Office and Sherborne School was undertaken by members of the Shaftesbury and District Archaeological Group, Gillingham Local History Society and the Dorset Industrial Archaeology Society during the excavations. During preliminary post-excavation work, two late thirteenth century court rolls held at Dorset County Records Office were translated by John Chandler and searched for specific references to industrial activities in the area of the river. Details of all sources examined are available in archive.

### Summary of the sequence

Two groups of deposits, which cannot be related with any certainty, were uncovered and recorded during the excavation.

In Trench A the lowest archaeological deposits were the remains of two ovens constructed of stone and fired-clay, each of which was altered and re-used at least three times and finally sealed by two more ephemeral structures of uncertain function. A later ditch, visible as a small earthwork enclosure towards the south-east corner of Chantry Fields (Fig. 3, 2) enclosed both ovens and was filled with large quantities of ash and fired-clay, and was in turn sealed by a rubble spread. There was little apparent soil build-up between the ovens during the early stages of this development and little associated dating evidence. However, the ovens appear to have gone through essentially the same sequence of modifications, and on that basis they are assumed to have been contemporary. No artefactual dating evidence was recovered from the ovens, but archaeomagnetic and radiocarbon dates of late seventh-early eighth century AD were obtained from deposits within them. A group of three smaller ditches in the north-west corner of the trench appear to have been later features and, on the basis of their artefactual components, may be associated with ditch systems uncovered in Trenches B and C. The development of the ovens is illustrated in Figures 4-6.

Trenches B and C contained a number of ditches and gullies, some of which corresponded to features visible on the surface as earthworks, and a rubble spread, separated by two episodes of soil development. The varying widths and positions of these features are illustrated on Figures 10 and 11. The shallow depth of many of them and the broad similarities between their fills, made the accurate identification of stratigraphic relationships difficult. They are dated broadly to the twelfth-thirteenth centuries AD on the basis of associated ceramics. In Trench D no features other than modern drains were observed.

The stratigraphic and chronological sequence can be summarised as follows and the descriptions of the archaeological deposits are presented in the following order:

Phase 1: a-f: seventh-eighth century AD; The construction, use, development and abandonment of the ovens in Trench A.

Phase 2: seventh-twelfth century AD; Ditch 153 enclosing the ovens; possible contemporary features in Trench A.

Phase 3: a-g: twelfth-thirteenth century; The earthworks and other ditches, soil build-ups and rubble spreads in Trenches B and C.

Phase 4: a-c: Post-medieval; Soil layers and features.

The principal elements of each phase are described below in stratigraphic order. Summaries of the materials recovered, of which full descriptions are presented in relevant sections of this report, are presented in Tables 1 and 2.

## PHASE 1: CONSTRUCTION, USE AND DEVELOPMENT OF THE OVENS

### Phase 1a: The first stage of the ovens (Fig. 4, 1a)

#### *Oven 416*

The first stage of oven 416 comprised a rectangular, flat bottomed pit 5.75m x 2.20m by 0.40m deep, aligned N-S, with the internal edges revetted by a coursed stone lining (walls 163 and 168). A stone lined side passage (174) 0.90m wide and 0.40m deep formed of walls 165 and 298, opened into the mid-point of the east wall at right angles to it. There was no evidence for stone flooring. The internal dimensions between the stone faces of the main body of the oven were 5.60m x 1.80m and, for the side passage, 0.44m. In all walls, three courses of stonework survived, each between 0.10m and 0.15m deep with individual stones varying in length from 0.10m to 0.40m long and up to 0.30m wide. With the exception of one re-used piece of architectural stone (object 1318) incorporated in wall 168, none of the stone was dressed. Wall 163 included one fragment of Romano-British tile. Remnants of a blackened fired-clay rendering (473 and 474), 0.20m to 0.30m thick, survived in small patches adhering to the faces and in the joints of walls 163 and 165. The full length of the side passage 174 lay beyond the south edge of the trench, but apart from damage caused by later activity at the south-west end, the rest of the structure appeared complete.

#### *Deposits associated with the use of 416*

The internal faces of many of the lining stones were discoloured presumably through heating, particularly those on the east side adjacent to the side passage, though not those within the side passage itself. A thin layer of ash and blackened fired-clay pieces, approximately 0.05m thick, lay within the main body of the oven (layer 469) lapping against the internal stone faces. In the side passage, the upper surface of the underlying natural clay had been reddened and mixed with lenses of ash and reduced fired-clay (layer 417).

#### *Oven 280*

The first stage of oven 280 consisted of a rectangular flat bottomed pit aligned N-S, parallel to 416, 6.00m x 2.48m and 0.32m deep with an internal single faced coursed stone lining. A side passage (263), 3.60m x 0.30m wide and 0.40m deep, joined at right-angles to the west side of the main body of the oven and terminated in a sub-rectangular hollow 0.10m deeper than the passage. There was no evidence for stone flooring. The full internal dimensions of the stone linings survived only in the width of the side passage (0.80m). Of wall 182 only two courses of stonework survived but the southern wall of the side passage (186) survived to a height of three courses, each between 0.15m and 0.30m deep, with individual stones varying to a maximum of 0.40m long and 0.30m wide. The entire surviving length of wall 182 was rendered with a blackened fired-clay (layer 254), but this was not present in the side passage. Samples of this layer were taken for archaeomagnetic dating.

Although the full length of the side passage survived, the rest of the oven had been damaged by later activity and perhaps less than 30% of the original structure was present.

#### *Deposits associated with the use of oven 280*

The internal faces of wall 182 were discoloured, presumably from heat action, but the walls of the side passage displayed no such discolouration. There were no ash layers contemporary with this phase of use within the main body of the oven. However, there were four separate layers of charcoal, ash and fired-clay pieces (Fig. 8, layers 272, 268, 273 and 284) lying on the natural clay in the base of the side passage, sealed by layers of rubble infill.

*Infill within 280*

A single layer of rubble clay (layer 187) lay against wall 182 within the main body of the oven. Within the side passage (263) six separate layers of rubble and silty-clay containing fired-clay pieces (Fig. 8, layers 258 and 275) sealed the ash and charcoal associated with its use to a depth of 0.30m, and were cut by the construction of the second stage of the oven.

*Post-holes between the ovens*

There were seven post-holes within the small areas excavated between the ovens (features 239, 439 etc.) and of these, 428, 412 and 401 contained limestone packing stones. Because of the lack of soil build-up and stratigraphic relationships between the ovens during their development it

is not possible to assign these post-holes exactly to any particular phase of activity and they do not form any immediately apparent patterns.

**Phase 1b: The second stage of the ovens (Fig. 4, 1b)***Oven 416*

A narrower structure, 461, was inserted into the fired-clay debris of the first phase of oven 416. It comprised two 1.0m long parallel alignments of roughly faced limestone blocks, the same size as those employed in the original walls of 416, one course thick and closed at the north end. The gap between the internal faces was 0.50m. Any extension of this structure to the south had been removed by later activity, but the surviving components appeared to have been positioned centrally within the original

Table 1: Total finds, Trench A

Key: 1=Fe, 2=Cu Alloy, 3=Pb, 4=Slag, 5=Pottery, 6=Fired-clay, 7=Ceramic building material, 8=Worked stone, 9=Worked flint/chert, 10=Animal bone.

all quantities given as count/weight (g) except fired-clay which is given as count/weight (Kg)

Phase	1	2	3	4	5	6	7	8	9	10
Phase 1										
Oven 416										
1a	-	-	-	-	-	120/13.3	1/340	1/2870	-	-
1b	-	-	-	-	-	62/5.05	-	-	-	-
1c	-	-	-	-	-	68/1.55	-	1/100	-	5/10
1d	-	-	-	-	-	3736/137.76	-	-	-	-
Oven 280										
1a	-	-	-	-	-	1087/50.95	-	2/1102	-	-
1b	-	-	-	-	-	12/0.55	-	-	-	6/11
1c	-	-	-	-	-	28/1028	-	-	-	1/2
1d	-	-	-	34/8564	1/5	4034/156.52	-	-	-	55/52
Soil build-up										
1e	1/44	-	-	2/684	1/70	131/12.88	6/4871	-	-	29/189
Final structures										
1f	-	-	-	1/120	1/3	143/8.06	-	-	-	1/5
Phase 2										
Ditch 153	-	-	-	22/10389	3/27	2273/107.19	4/1064	-	1/5	73/594
Feature 438	-	-	-	4/130	-	17/0.76	2/136	-	-	-
Phase 3										
3a	-	-	-	1/474	-	36/1.36	-	-	-	-
3b	1/75	-	-	6/9435	3/25	74/7.82	5/2218	-	-	15/242
Phase 4										
4a	-	-	-	1/660	7/81	416/17.72	3/54	-	1/1	31/174

Table 2: Total finds, Trenches B and C

Key: 1=Fe, 2=Cu Alloy, 3=Pb, 4=Slag, 5=Pottery, 6=Fired-clay, 7=Ceramic building material, 8=Worked stone, 9=Worked flint/chert, 10=Animal bone.

all quantities given as count/weight (g) except fired-clay which is given as count/weight (Kg)

Phase	1	2	3	4	5	6	7	8	9	10
Phase 3										
3a	-	-	-	-	5/42	-	-	-	-	7/6
3b	1/58	-	-	-	3/12	-	-	-	3/12	-
3c	-	-	-	-	3/48	-	-	-	1/10	5/68
3d	-	-	-	1/2	40/391	-	-	-	3/146	76/562
3e	-	-	-	-	38/235	1/2	-	-	3/22	4/12
3f	2/235	-	-	8/33	58/505	-	1/2	-	16/169	71/1129
3g	-	-	-	1/220	15/103	-	-	-	3/50	6/95

oven, 0.80m from the north end. Assuming both ends were the same, it would have been 4.0m long. There was no evidence of a stone floor.

#### *Use of the second stage of oven 416*

There was no heat discolouration visible on the internal faces, but wall 461 did enclose two distinct deposits: a layer of black ashy clay (layer 463) containing charcoal and fired-clay lying on a slightly fire reddened natural clay, and above it a layer of yellow-brown loam containing charcoal and lumps of fired-clay (layer 462). Within the side passage, five separate layers of ash, charcoal, fired-clay and silt (layers 415, 414, 403, 404 and 299) with intervening slabs of limestone, and an accumulated depth of 0.30m, sealed the fire reddened surface associated with the first phase of use, and were cut by the construction of the third phase of the oven. The exact phase of use to which these deposits related could not be accurately ascertained. They could have been associated with the first phase of 416 but in the absence of any good stratigraphic relationships they have been associated with the latest possible phase. It is equally possible that some of these may, in fact, be the result of infill rather than use *per se*.

#### *Oven 280*

The second stage of oven 280 comprised a shallow oval stone lined pit (362) set into the base of a larger clay and stone retaining pit (453) which had cut into the floor and the walls of the first phase oven (Fig. 8).

The full dimensions of 453 did not survive later activity but an extrapolation of the surviving edges suggests an ovate, round bottomed pit 2.4m wide x 4.64m long and 0.27m deep, aligned with the first phase of 280 but positioned slightly to the west of the original structure, thereby completely removing the south-west portions of the earlier wall 182. Its upper edge was revetted by a single course of rough, stone retaining wall (wall 202) which survived only at the south-west corner. This wall had fragments of a fired-clay rendering (460) adhering to the inner face. The rest of this wall had been removed by later activity. The floor of this pit was lined with soft unfired yellow clay (266 and 223) forming a band 0.56m wide and 0.08m thick around the inside edge, sealing the fills of the side passage 263 and effectively blocking it. The centre of this stage of the oven was formed by a narrower elongated pit 1.0m wide x 3.0m long (extrapolated) and 0.10m



Plate 1. Chantry Fields: oven 280 from the south, components of Phases 1a-c visible.

deep below the base of pit (453), with sides and base lined with large limestone slabs (248, 249 and 271) up to 1.0m long.

#### *Deposits associated with the use of the second phase of oven 280*

The inner faces of all the limestone slabs were discoloured and badly cracked, particularly on the west side adjacent to the (blocked off) side passage. Here the fissures in the slabs were up to 0.02m wide with rounded and smoothed edges. On the east side of the structure, a 0.15m thick layer of heavily charcoal flecked silty clay containing fired-clay pieces (layer 211) sealed the raised yellow clay bedding (layer 223) outside the central stone lined pit.

#### **Phase 1c: third stage of the ovens (Fig. 5, 1c)**

##### *Oven 416*

A third stage oven, almost identical to the second stage of oven 280, was constructed within oven 416, cutting the narrow stone structure 461. It comprised a stone lined pit surrounded by a yellow clay and flag bedding, with a narrow linear stoke pit to the south.

The black fired-clay and ash layer (469) associated with the use of the first stage of the oven was sealed by the remnants of a 0.05m thick yellow clay layer (layer 465) forming a level band between 0.30m and 0.40m wide around the inside edge of the primary oven wall (168). Upon this was set the remnants of a single discontinuous course of small limestone flags (464) approximately 0.20m wide. The clay bedding was not present at the north end of the structure; here the flags rested directly on the underlying fired-clay and ash debris. On the east side, the clay and flags had been built up to height of 0.20m against and over the fills of the side passage (174) effectively blocking it. At the south end the clay and flags also slumped in towards the centre of the oven.

The clay and flag band encircled a narrow, slightly waisted, stone lined pit (446) 3.0m x 1.10m and 0.20m deep which had cut through the earlier stone structure 461. The pit was lined, base and sides, with limestone flags (451 and 432) up to 0.30m long and 0.05m thick. Along the sides they were set almost vertically but at the south end they were inclined at about 20° to the horizontal and extended out over the clay bedding as if to form a ramp. No flags were present at the north-east end of the pit even though its edges were clearly defined.

Outside the south end a series of small limestone slabs (435) set into yellow clay delineated an elliptical area approximately 1.0m long (N-S) and 0.6m wide adjoining the main structure. The line of this ephemeral structure was continued by a possible stoke hole (448) 1.60m wide and 0.20m deep. The full extent of this feature to the south had been removed by later activity but it was a minimum of 3.0m long and had been cut on the same alignment as the rest of the oven.

##### *Deposits associated with the use of third stage of oven 416*

There were four separate layers of charcoal and ash within this stage of the oven. The central flag base (451) was sealed by a thin layer of light brown-grey ash (452) less than 0.05m thick. This lay beneath a 0.20m thick layer of black ash (436) which filled the stone lined pit and lapped over the tops of the side lining stones to partially seal the outer flags (464). Above this, layer 246 formed a shallow horseshoe shaped deposit of light grey ash in a slight depression in the top of of ash layer 436 and, finally, above this sat layer 433, 0.15m thick maximum and lapping over the outer flags (464) on the eastern side, and with a level upper surface. Large quantities of fired-clay were recovered from these layers. There were no ash layers within either of the stokehole features 435 or 448.

##### *Oven 280*

The third stage construction of oven 280 entailed the narrowing and strengthening of the entrance at the south end with Greensand ashlar blocks set on a thin bed of yellow sand. On the west side of the oven, wall 264 comprised four small limestone blocks, approximately 0.10m thick set on a thin layer of yellow sand (269). The void between 264 and the face of the earlier wall was filled with a dump of brown silty clay (265). The opposing side was formed by wall 283; two courses of limestone blocks totalling 0.20m thick on a similar layer of yellow sand. The gap between these walls was 1.0m. The southern end of each wall was formed by a single large Green Sandstone ashlar block (objects 1306 and 1307) typically 0.50m long x 0.30m wide and 0.20m thick, each with a single roughly dressed face to the interior of the oven. The passage between the faces of the two ashlar blocks was a mere 0.56m, the whole structure forming a bottle-necked shape restriction attached to the southern end of the extant components of the second stage oven.

##### *Deposits associated with the use of the third stage of oven 280*

The internal, dressed faces of the 'bottle-neck' ashlars were both heavily heat discoloured. A thin layer of ashy clay (Fig. 8, layer 270) had settled

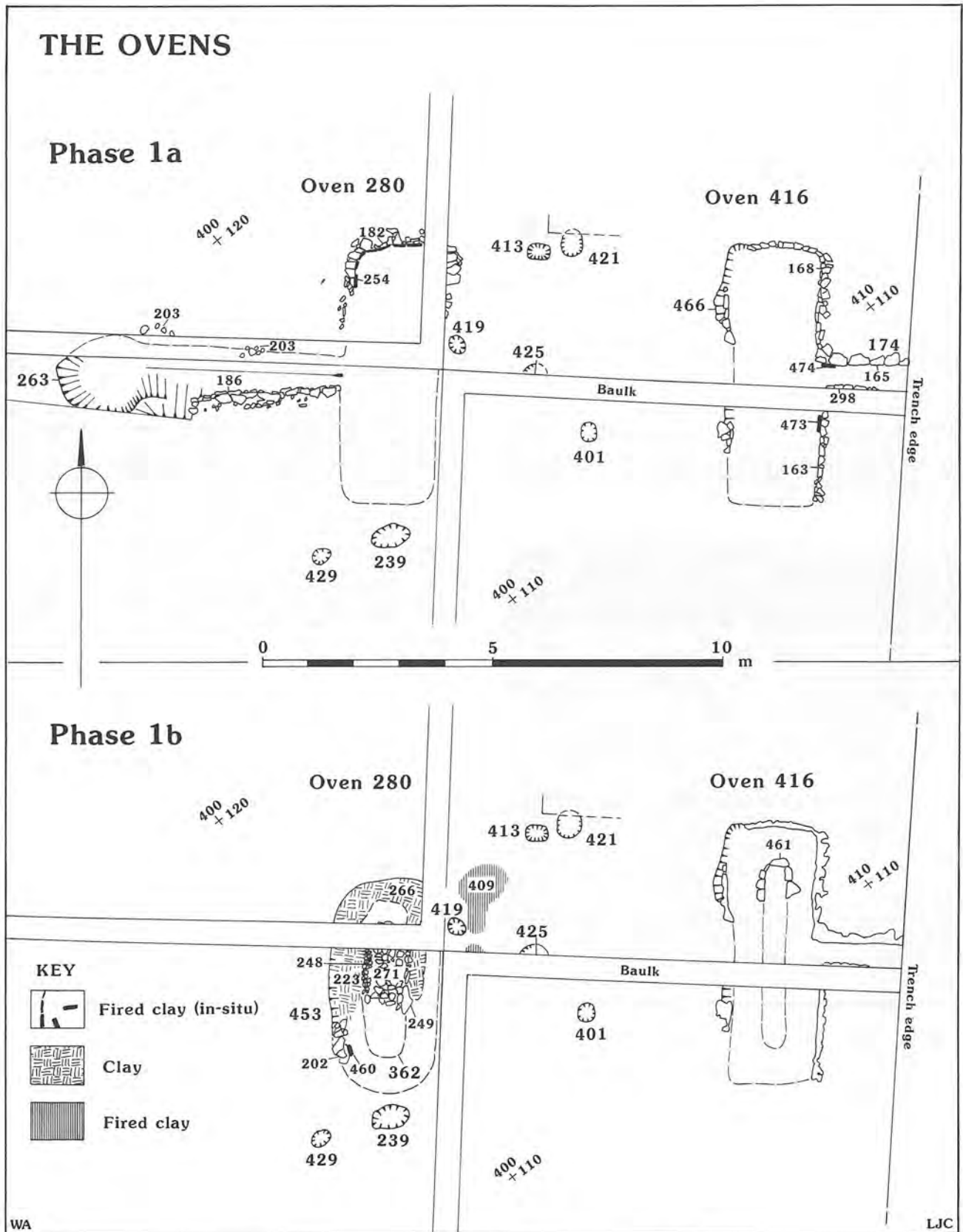


Figure 4. Chantry Fields: the ovens: plans of Phases 1a and 1b.

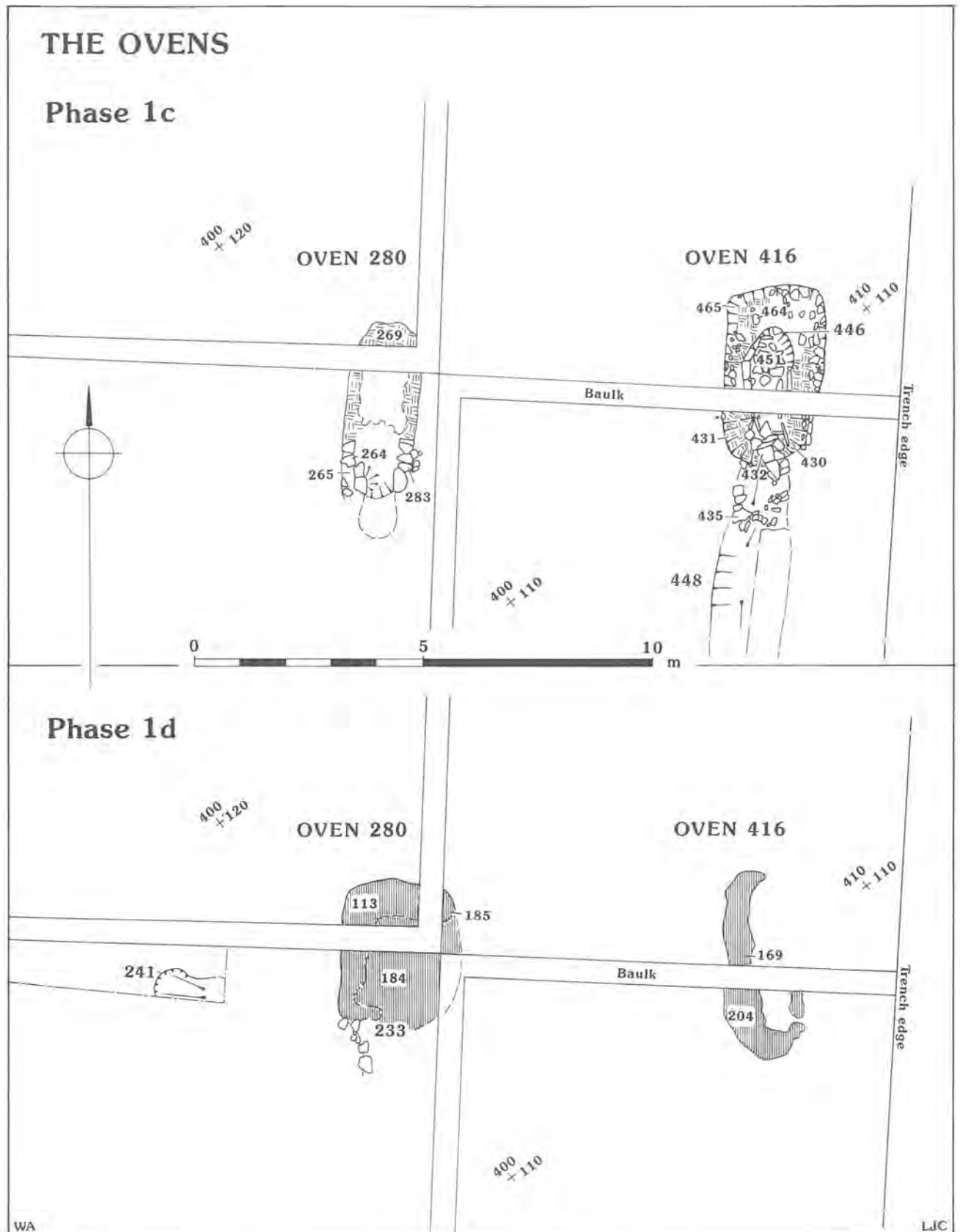


Figure 5. Chantry Fields: the ovens: plans of Phases 1c and 1d.

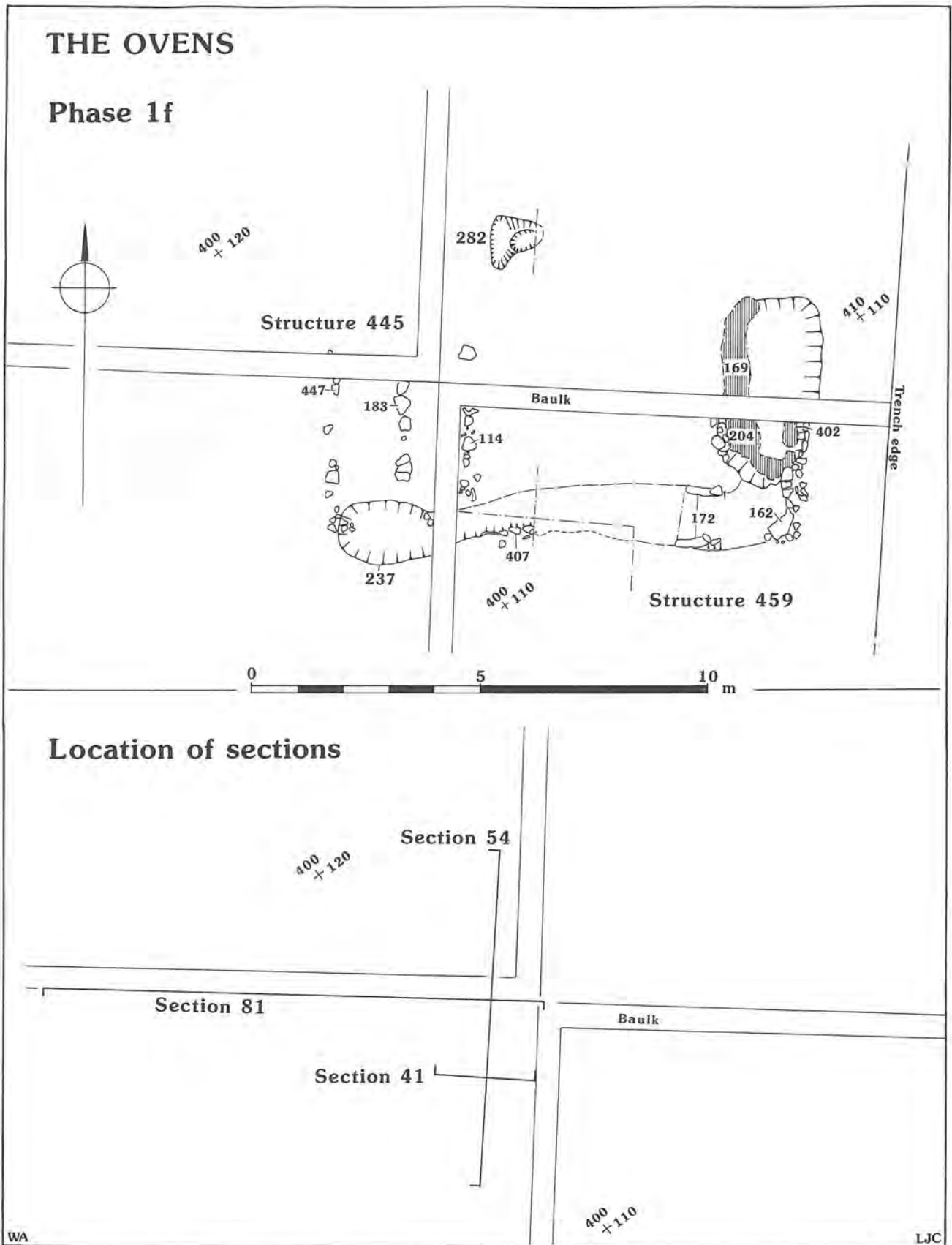


Figure 6. Chantry Fields: final structures: plan of Phase 1d, and locations of sections illustrated on Figures 8 and 9.

between the fissures of the fire cracked lining slabs, 271. This layer, and the slabs enclosing it at the centre of the main body of the oven were sealed beneath a 0.10m thick, domed deposit of beige, slightly sandy, ash (Fig. 8, layer 247). On the west side of the oven, a layer of black silty charcoal (Fig. 8, layer 251) lay against the entire length of flag lining 248, filling the fissures in it. There were, however, no ash layers against the ashlar blocks.

#### *Infill within third stage of both ovens*

The interior of oven 280 was filled to the tops of walls 264 and 283 by a single layer of ashy clay (Fig. 8, layer 250) which, despite the undulations beneath it, displayed a level upper surface. Within oven 416, the narrow stoke hole 448 was filled with a single layer of heavily charcoal flecked loam (layer 161).

#### *Phase 1d: Fourth stage of the ovens (Fig. 5, 1d)*

Both ovens were filled with large, well consolidated deposits of fired-clay pieces. In oven 280 this deposit filled a feature which appeared to have robbed out the uppermost stone components of the earlier stages of the oven.

#### *Oven 416*

The walls, and clay and stone linings within the west and south of oven 416, and the layers of ash and charcoal associated with them were sealed beneath a 0.25m thick layer of fired-clay (169 and 204), which formed an 0.80m wide band around and against the inside edge of the primary wall 168. At the north end it turned slightly but did not extend east for more than a few centimetres, and at the south end it turned across the possible stokehole 448 and lapped up against the inside face of primary wall 163. In section it appeared to be an *in situ* deposit which had slumped over into the centre of the oven.

As there were no ash layers associated with these layers, it is possible that they represent the collapse of the structure.

#### *Oven 280*

The west and north sides of the second stage of oven 280 and the ash layers within them were cut by a broad shallow pit (233), 3.0m long x 2.40m wide and 0.20m deep. This had cut away any surviving components of the original walls along the west side, but at the north end they survived outside the edges of this feature. It was filled with three distinct deposits (Fig. 8): a 0.10m thick layer (232) of sandy clay containing large quantities of charcoal and fired-clay, resting on the ashes and infill of the previous use. This was sealed by 113, a 0.10m thick, bright orange, compacted layer of abraded fired-clay pieces forming a 0.50m-0.80m wide band around the west, north and south sides of the oven. This layer was visible almost immediately after machine clearance and had a smooth and level upper surface. It was overlapped at its north-east end by a 0.80m wide spread of black fired-clay pieces (layer 185) which continued the line of layer 113 for another 1.0m to the east edge of the oven. Together, the fired-clay layers formed a shape reminiscent of a large square bracket open to the east, similar to the fired-clay layers in oven 416. In addition to a variety of other finds, these layers contained one sherd of Romano-British pottery. There were no ash layers associated with this stage of oven 280.

#### *Robbing of side passage 263*

The west end of side passage wall 186, and the layers of ash and infill lying against it, were cut by feature 241, a small sub-rectangular pit 0.15m deep containing lumps of slag, positioned directly over the wall. This feature was quite isolated and there appeared to have been no attempt to rob the rest of the wall.

#### **Phase 1e: Soil build-up between and over the ovens**

All the postholes situated between the ovens were filled with similar deposits of charcoal-flecked, dark brown or grey-brown silty-clay. These fills were sealed beneath layer 410 (Fig. 8, 410) which also sealed the fourth stages of both ovens, and so the postholes were unlikely to have remained extant beyond that episode of soil build-up. A small 0.10m thick spread of redeposited fired-clay (Fig. 4, 1b, layer 409) positioned adjacent to posthole 419 between the ovens, was also sealed by layer 410.

The area between the ovens was filled by a heterogeneous deposit of soil which partially overlapped the later stages of the ovens and sealed the postholes between them, and was sealed by two later structures, 459 and 445. Referred to generically as layer 410, it comprised thirteen similar layers and lenses of silty-clay with interdigitating spreads of fired-clay, charcoal and ash, to a depth of up to 0.30m. There were no features or structures within it, so it is assumed to have been deposited over a relatively short timespan. It is likely that some of the lower components of this build-up corresponded to earlier stages of the ovens, but without

stratigraphic relationships this cannot be definitely established.

Within oven 416, the fired-clay layers, including 169, were sealed by a 0.20m thick layer of loose ashy loam (layers 245 and 166) containing many rootlets and lenses of rubble, that filled the remaining depth of the oven and the side passage 174, to the top of the walls and was sealed by later rubble spreads. The relationship between these deposits and the soil build-up layer 410 was not established, but layers 166 and 245 were visible directly beneath machine clearance. In addition to a wide variety of finds, one sherd of medieval pottery (Fig. 12, 4) was recovered from layer 170.

#### **Phase 1f: Final structures (Fig. 6, 1f)**

##### *Structure 459*

Although badly damaged by later activity, structure 459 appears to have been radically different from the preceding ovens and, although apparently utilising those structures, disregarded their alignments. It consisted of an elongated, partially stone walled chamber 10m long and 1.40m wide, aligned E-W, cutting across the southern ends of ovens 416 and 280, with a shallow pit at its west end. Walls survived in three places. At the east end, wall 162; a 1.0m long single course of small limestone blocks with a roughly dressed face to the west, aligned N-S with a single large curved block at the south end. It abutted the earlier wall 163 and possibly cut the fired-clay layer 204. (The inclusion of wall 162 in this structure remains speculative; it could have been a simple narrowing of the south end of oven 416, as with walls 264 and 283 in oven 280, but in this context it would be difficult to account for the deliberate curving of the inside face of 162 which aligns perfectly with orthostat 172.)

Two metres to the west of wall 162, and aligned at right-angles to it, two limestone orthostats 172, set into the surface of layer 410, formed the remains of a short parallel sided passage 1.0m wide and 0.25m-0.30m deep. The robbed-out profile of at least one other orthostat, feature 442, was observed in section 1.0m to the west along the same alignment as 172, suggesting that the original chamber had been at least twice its surviving length.

Three metres further to the west a single course of small irregular and unfaced limestone blocks (wall 407) all less than 0.05m thick, defining the south edge of a 0.10m deep scoop 443, continued — in an albeit ephemeral manner — the alignment of the south side of the orthostat passage. There was no sign of a corresponding northern side to either this structure or the shallow scoop.

The shallow scoop, 443 at the base of wall 407 continued to the west and terminated in a 1.40m wide and 0.15m deep pit, 237.

##### *Deposits associated with the use of structure 459*

There were three layers within the structure which possibly pertained to its use. At the east end within chamber 172 there was a 0.10m thick layer of brown silty clay (468) adhering to the lower inside faces of the orthostats.

To the west, the north face of wall 407 was abutted by a thin spread of redeposited fired-clay (406) sealed beneath a layer of black charcoal (400), together totalling 0.10m thick.

##### *Infill within structure 459*

The cavity within the orthostat chamber 172 was partially filled with a 0.10m thick layer of yellow-brown silty-clay (467) which was sealed beneath later rubble layers. To the west, scoop 443 was filled with thin spread of limestone rubble (426) sandwiched between a layer of black silt (289) above it, containing much charcoal and fired-clay, and a yellow sandy-clay (297). The shallow pit 237 was filled with a single deposit of charcoal flecked dark grey-brown loamy clay (layer 196). A single sherd of medieval pottery was recovered from layer 289.

##### *Structure 445*

Structure 445 comprised three ephemeral walls; 447, 183 and 114, positioned parallel to each other above the remains of oven 280, and adjacent to the west end of structure 459. Their maximum length was 3.0m and all three walls consisted of single courses of undressed limestone blocks up to 0.40m wide. Wall 183 was set on a thin layer of yellow clay within a shallow linear foundation trench, the rest lay directly on the surface of the fired-clay layers 184 and 185. Curiously, wall 183 continued the alignment of the earlier wall 283 which at this level was almost entirely sealed beneath layer 184.

##### *Deposits associated with the use of structure 445*

There were no ash layers between or above these walls but individual stones within walls 447 and 183 were burnt on their eastern facing sides. The upper surface of the fired-clay layers 185, 113 and 184 upon which

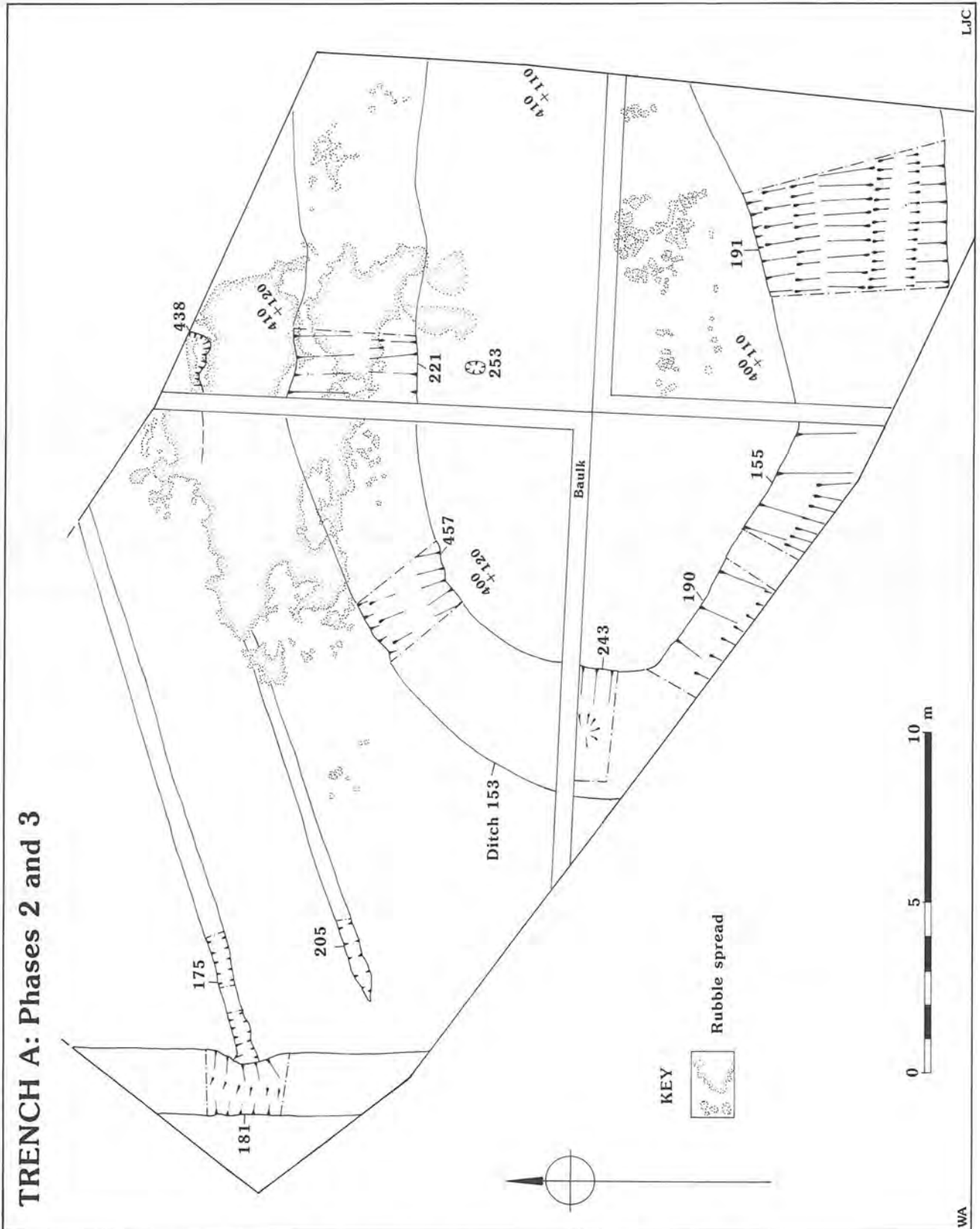


Figure 7. Chantry Fields: ditch 153, associated features and the rubble spreads.

they rested, was compacted and level and the fired-clay pieces themselves were considerably more abraded and root damaged than in other fired-clay deposits.

*Feature 282*

A small amorphous pit positioned 4m north-west of structure 445. Approximately 1m square in plan and 0.26m deep, it cut through the soil build-up (layer 410) and was sealed by later features and deposits described in Phase 2. It was filled with a single deposit (layer 276) of dark grey-brown silt loam.

**PHASE 2: DITCH 153 AND ASSOCIATED FEATURES**

*Ditch 153 (Fig. 7)*

The upper fill was visible immediately upon machine clearance and was numbered generically as layer 112. The profile and the lower fills were examined in six hand excavated segments (Fig. 7, 221, 457, 243, 190, 191 and 155) of varying widths, accounting for approximately 38.9% of the length of the ditch available within the trench. Ditch 153 cut components of the soil build-up layer 410, and its primary gravel fill in segment 155 extended northwards outside the edge of the ditch, sealing feature 237. Along most of its circuit the fill of 153 lay directly below the topsoil layers, but at the north end in the vicinity of segment 221 it was sealed by a series of rubble layers.

*The profile* (Fig. 8, 153) of the ditch varied in almost each segment excavated: in segment 457, a simple 2.5m wide and 0.50m deep broad 'U'-shape; in segment 221 a 3.60m wide and 0.70m deep broad 'V'-shape; and in segment 191 a 6.0m wide and 0.40m deep 'W' shaped profile suggesting a re-cut or intercut feature. In the latter case, however, the evidence for a re-cut visible in each section was contradictory and there were thus no definite indications that ditch 153 was anything other than a continuous feature.

*In plan* (Figs 3 and 7) the feature described a slightly modified 'U'-shape with its base to the west, 21m long E-W and 20m wide N-S, apparently respecting the position of the ovens. Within the trench, it enclosed an area of approximately 162 m<sup>2</sup>, but its full extent to the east lay outside the excavated area and was not observed in the later watching brief. The eccentric 'flattening' of the south-west side may have been the product of two intersecting ditches, as suggested by the double profile visible in the base of segment 191. However, the evidence visible in the sections of segments 191 and 243 remained equivocal, and the full profiles of segments 155 and 190 lay outside the area of the excavation.

All segments were filled with more or less homogenous deposits of black ashy loam containing large quantities of charcoal, fired-clay pieces and slag. Although layers were visible, there was no evidence of any clear horizon stabilisation common to all segments. The infilling of the ditch appears to have been a single event undertaken under constant conditions

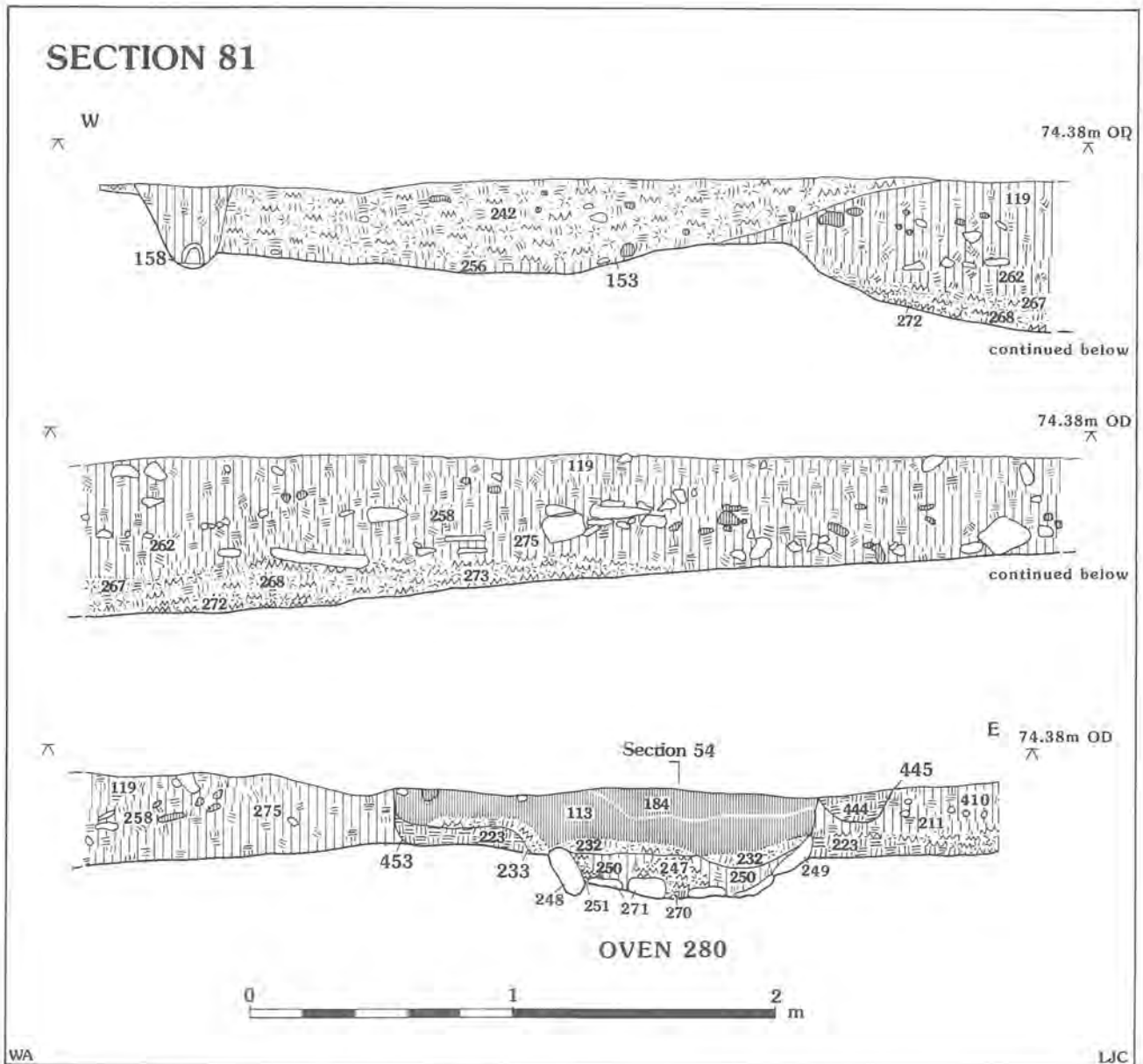


Figure 8. Chantry Fields; main east-west section through oven 280, 'side flue' 263 and ditch segment 243.

with some evidence of longitudinal tipping visible in reversed relationships apparent in the two sections of segment 191. The fills evident in the sections of segment 191 also suggest that the two features visible in plan and profile in the base of the ditch at this point were contemporary. There is no conclusive evidence of a re-cut at this point, and certainly not a re-cut following any infilling of the ditch.

Ditch 153 contained a wide variety of finds including two sherds of Romano-British pottery and one sherd of a post-medieval fabric. The small piece post-medieval pottery could be intrusive given the close proximity of these deposits to the present ground surface.

**Feature 438**

The later rubble spreads which sealed the fills of ditch segment 221 also sealed a shallow, flat-bottomed sub-rectangular hollow (438), situated approximately 3.0m north of segment 221 against the edge of the trench. It cut the soil build-up layer 410, and was filled with a single deposit of light brownish-yellow silty-clay (layer 439). The full extent of this feature lay outside the area of excavation.

**Feature 253**

Also sealed by the rubble spreads, was feature 253, a small 0.6m long,

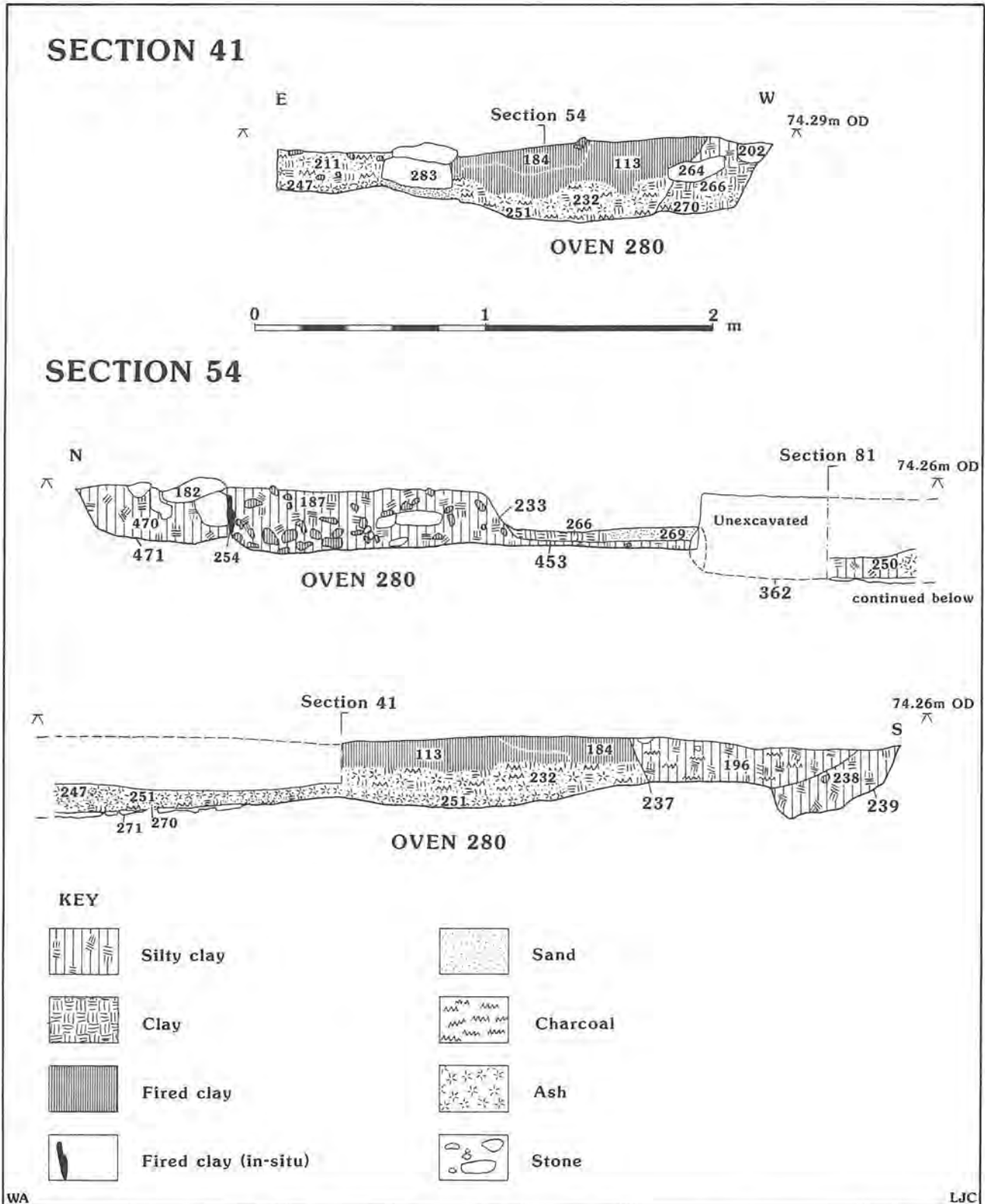


Figure 9. Chantry Fields: subsidiary east-west section, and north-south section through oven 280.

sub-round posthole situated 2m south of segment 221 within the enclosed area, cutting into the fills of the earlier feature 282 to a depth of 0.24m. It incorporated a number of limestone packing stones beneath a single fill of sterile dark-grey sandy-silt (layer 252).

### PHASE 3: DITCHES AND GULLYS, SOIL AND RUBBLE BUILD-UP LAYERS ACROSS THE ENTIRE SITE: TRENCH A

#### Phase 3a: Ditches 205, 175 and 181 (Fig. 7)

In Trench A three ditches were visible immediately beneath machine clearance in the north-west corner, isolated from the ovens by ditch 153. Ditch 181 ran N-S across the north-west corner of the trench for a length of 6.0m but its full extent lay outside the area of excavation. It had a well defined broad 'U'-shaped profile 2.0m wide and 0.4m deep with a slight ledge on the west edge suggestive of a re-cut but with no evidence in the section to support this. It was filled with a 0.35m thick layer of greyish-yellow clay-loam (layer 180) which contained fired-clay and slag, over a thin smear of sterile, grey gravelly-clay (layer 192).

*Ditches 175 and 205* were similar in profile and alignment, both 0.20m deep with a rounded base, aligned at approximately 80° to ditch 181 but not extending west of it. Their extensions to the east were not investigated, but as they did not cut into the rubble surface 200, they can be assumed to have been sealed by it. Both were filled with similar layers of gravelly-loam.

There were no stratigraphic relationship between 181 and 205, but 175 was cut by 181 and this relationship could be assumed to be shared. As neither extended beyond 181 it is likely that all three are related, possibly elements of a single boundary system.

There were no stratigraphic relationships between these ditches and the ovens, but the fills of two of the ditches did contain fired-clay, suggesting that this episode of infilling is unlikely to have been earlier than the adjacent industrial activity. Ditch 181 corresponded to an earthwork feature visible on the surface prior to excavation (Fig. 2) and would appear to be part of the earthwork system which extended across the entire field.

#### Phase 3b: Rubble spreads (Fig. 7)

##### *Layer 200*

The northern area of Trench A was dominated by an expanse of compacted rubble (layer 200) which, although essentially amorphous in plan, displayed two straight edges forming a north-east corner. It covered an area approximately 12.0m x 8.0m, partially sealing the upper fills of ditch 153 and subsiding slightly over them. The individual fragments of stone displayed a remarkable uniformity, the average piece being sub-rounded, 0.20m wide and 0.05m thick, and were tightly packed together. Layer 200 was examined in section in ditch segment 221. Here it was approximately 0.30m thick with a sporadic lower horizon (216) of smaller pieces averaging 0.05m in size, separated by lenses of dark grey-black silty-clay (layer 217). The majority of the stone, over 90%, was corallian limestone but there were a small number of pieces of Greensand, Portland limestone, Lower Purbeck limestone, Corallian oolitic limestone and Corallian sandstone.

The straight edges at the north-east corner were examined but comprised no other structural components and it is possible they were formed by retaining structures which have not survived. The entire spread appears to have been the result of a single episode of dumping, with some sorting during subsidence over the fills of ditch segment 221.

The small segment excavated through the rubble spread recovered a variety of finds including one iron knife blade (object 1106).

##### *Rubble spreads adjacent to oven 416*

Other, less extensive, spreads of rubble were present a few metres to the south in the vicinity of the ovens, sealing the soil infill layers within, but apparently respecting, the ovens.

Layer 167, which consisted of large smooth sandstone slabs typically up to 0.40m square and 0.10m thick, was restricted to the area to the east of oven 416, partially sealing the infilled orthostat chamber 172 and oven 416. The soil build-up layers to the east of oven 416 were partially sealed beneath a small rubble spread (layer 218) which extended to the edge of the trench, but appeared to respect the east edge of oven 416.

Further west, two parallel E-W alignments of rubble (layers 226 and 225), 1.40m apart, corresponded to the outer edges of structure 459 despite it being masked beneath 0.20m of soil.

This apparent relationship between rubble layers and earlier structures suggests that the rubble layers originally respected internal components of the ovens which have subsequently subsided.

A range of finds similar to layer 200 was recovered, including two sherds of medieval pottery and one fragment of a post-medieval fabric.

### PHASE 3: DITCHES AND GULLYS, SOIL AND RUBBLE BUILD-UP LAYERS ACROSS THE ENTIRE SITE: TRENCHES B AND C (Figs 10 and 11)

#### Phase 3a: Ditches 354 and 352

The stratigraphically lowest feature in Trenches B and C was ditch 354, which survived as a 0.20m deep truncated profile in the base of ditch 352, filled with a single layer of sterile grey clay-loam. It shared exactly the same alignment as ditch 352 which is therefore assumed to have been a re-cut of it. Together they formed a flat-bottomed, steep sided ditch 2.50m wide and 1.0m deep aligned SSW-NNE, that corresponded with the position of the surface ditch delineating the western edge of the principal earthwork platform '1' (Fig. 3, 1). The extent of 352 to the north lay outside the area of excavation, to the south it continued as ditch 340 giving a total observed length of 13m. It did not continue to the south of the later ditch 300 and has been assumed to have either terminated or turned beneath 300, causing the prominent kink in the alignment of ditch 300. Both 352 and 340 were filled with single layers of dark brown silt-loam which together contained a range of finds including medieval pottery.

#### Phase 3b: Ditch 341/357 and gully 358

The upper fill of ditch 340 was cut by ditch 341/357, a flat bottomed and steep sided feature 0.30m deep and approximately 0.60m-1.0m wide that ran NW-SE across the full width of the excavated area. Both segments were filled with a single layer of dark grey silt-loam. The continuation of 341/357 to the north-west was observed as an unexcavated feature of similar width with a noticeable deviation to the south, seven metres from the western edge of the trench. A narrow ledge cut into the west side of segment 357, not visible in 341, suggests that the full profile of the ditch may have been the result of at least one episode of re-cutting.

*Gully 358.* The fill of ditch 341/357 also filled gully 358, a narrow, rounded-profiled feature only 0.13m deep, aligned parallel to 341/357 immediately to the south of it. In view of the probable re-cutting and intercutting of ditch 341/357 and the shared fill, it seems likely that this feature was related to it.

In the unexcavated areas of the trench to the north-east, two linear features could be seen extending the alignment of 341 to the edge of the trench. It seems likely that these represent the continuations of gully 358 and the re-cut within 357.

#### Phase 3c: Ditches 360 and 337

*Ditch 360* was a 0.13m deep flat bottomed and steep sided ditch aligned parallel to 341/357, 2m to the west of segment 357. It appeared to turn slightly at its south end to run E-W beyond the area of excavation and its continuation to the north also fell outside the small areas of excavation. It was filled with a single sterile layer of yellowish brown silt-loam.

*Ditch 337.* The fill of ditch 341 was cut by ditch 337: a 0.20m deep, slightly rounded ditch approximately 0.75m wide running S-N for 18m across almost the full width of the excavated area. It continued to the north of the trench as ditch 356 adjacent to the east edge of ditch 354, and was observed as an unexcavated feature to the south of later ditch 300, sealed beneath subsoil layer 308. It was filled with a single layer of grey brown clay-loam.

#### Phase 3d: Layer 347

Ditches 352, 356 and 337 were sealed beneath layer 347, a layer of grey-brown clay-loam less than 0.10m thick. This covered the yellow sandy-clay natural within a slight hollow over the northern and eastern parts of the excavated area but did not extend as far as ditches 360, 358 and 357. It was examined in two box trenches, opened to examine underlying features at the north end of the excavated area, but from which a wide variety of finds types were recovered. Layer 347 was sealed beneath rubble spread 309 and four other ditches.

#### Phase 3e: Rubble spread 309, ditches 344, 346 and 307

*Rubble spread 309* lay directly on the surface of layer 347 in the north-east corner of the trench. It extended 5m west and 10m south-west from the north-east corner of the trench and had a slightly undulating base over the fills of underlying ditches, and a slightly domed upper surface beneath subsoil layer 308. Approximately 0.20m thick, it was composed of densely packed and slightly degraded pieces of stone of a variety of sizes — from large boulders up to 0.60m long to small pebbles — and types. Corallian limestone and sandstone, Upper Greensand, Purbeck and Portland limestones were present. Although none of the stone was definitely worked, some did exhibit straight flat surfaces so 309 could have been a dump of discarded building stone or the result of building collapse.

*Ditches 344 and 346:* two 0.10m deep flat bottomed ditches cutting through layer 347 to the west of the earlier ditch 354 and parallel to it. Ditch 344 had a shallow ledge cut along its western edge suggestive of at least one episode of recutting. Both features were filled with similar layers of grey-brown clay-loam. Both continued to the south-west as unexcavated features and apparently turned south through almost 90° adjacent to the later ditch 300, to run SE-NW towards ditch 360.

*Ditch 307/311.* Ditch 307/311 was isolated from the main concentration of features, 30m to the south in Trench B (Fig. 11). It was examined in two segments both displaying a steep sided and flat bottomed profile 0.25m deep. It was aligned SW-NE, approximately parallel to ditches 340 and 357, and although its full extent to the south-west lay beneath the unexcavated portions of subsoil 308, it was assumed to have extended

across the full width of the trench. Both segments contained a single layer of light grey brown silt-loam together containing 32 sherds of Romano-British pottery and one small fragment of fired-clay. In common with the majority of features in Trench C, this ditch did not correspond to any visible earthwork features although the presence of an albeit tiny fragment of fired-clay suggests that the infilling of this ditch is unlikely to have been earlier than the industrial activity in Trench A.

**Phase 3f: Subsoil layer 308**

*Layer 308* formed a single layer of brown silt-loam across the whole excavated area in Trenches B and C (Figs 10 and 11). It sealed all the aforementioned features and deposits and was cut by only two; ditches 300/329 and 314 both of which corresponded to visible earthwork features (Fig. 3). From a maximum thickness of 0.40m at the north end of the

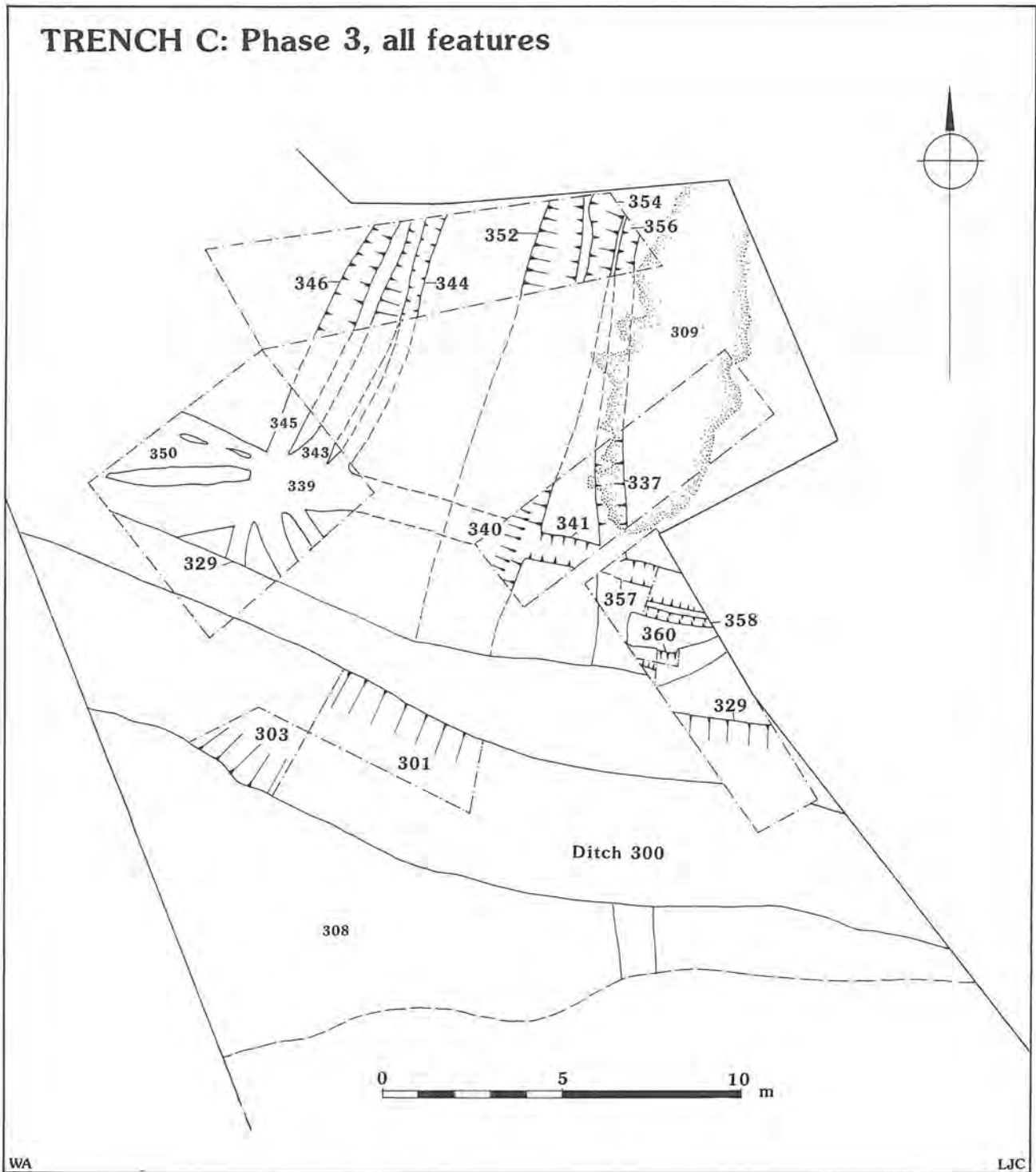


Figure 10. Chantry Fields: trench C: excavated segments of ditches.

excavated area it became progressively thinner to the south and did not extend as far as Trench A. Its southern boundary against an underlying layer of flint gravel corresponded exactly with feature 314 (Fig. 11), and its eastern, western and northern boundaries lay outside the area of excavation. Layer 308 was examined only in a number of box trenches opened to reveal underlying features (Figs 10 and 11) and in the hand excavated assessment trenches. Nonetheless, although much of layer 308 remained unexcavated it did produce a large proportion of the material finds from this area of the site including 47 sherds of medieval pottery and nine fragments of the post-medieval bowl illustrated in Figure 12.

#### Phase 3g: Ditch 300/329

The upper fills of ditches 300 and 329 were visible immediately upon machine clearance, forming a broad linear depression meandering NW-SE across the full width of Trench C. This feature was visible as a surface earthwork defining the south western edge of the principal platform '1' (Figs 3 and 4). Its earliest component was ditch 329, examined in a 2m wide box trench against the east edge of Trench C. Here it displayed fresh and unweathered steep sided, flat bottomed profile 1.10m deep and at least 2.50m wide cutting into the subsoil layer 308. It was filled with a number of broadly similar greyish brown clay-loam layers all tipping

gently in from the north east edge but there were no distinct horizons visible between them. The lowest of these (layer 328) was heavily gleyed and mineralised. The north-east edge of ditch 329 was visible as an unexcavated feature continuing north-west to the edge of the excavated area but the opposing edge had been cut away by ditch 300.

Ditch 300 was examined in two segments in which it displayed a profile similar to 329 but slightly rounded and less fresh in appearance, 4.0m wide and 1.0m deep, filled with similar, essentially indistinguishable, grey-brown clay-loams. A modern land drain (326) had exploited the depression caused by this feature, cutting down into its upper fills to a depth of 1.0m. Below this, the primary fill (layer 318), heavily gleyed and mineralised, remained uncontaminated and contained three sherds (54g) of medieval pottery.

The alignments of the two features were close enough to assume that 300 was a re-cut of 329.

#### PHASE 4: POST-MEDIEVAL DEPOSITS AND FEATURES

##### Phase 4a: Upper rubble deposits and features in Trenches A and B

The upper surface of rubble spread 200 lay beneath a series of 0.05m thick, discontinuous lenses of loam and rubble (layer 133) that extended

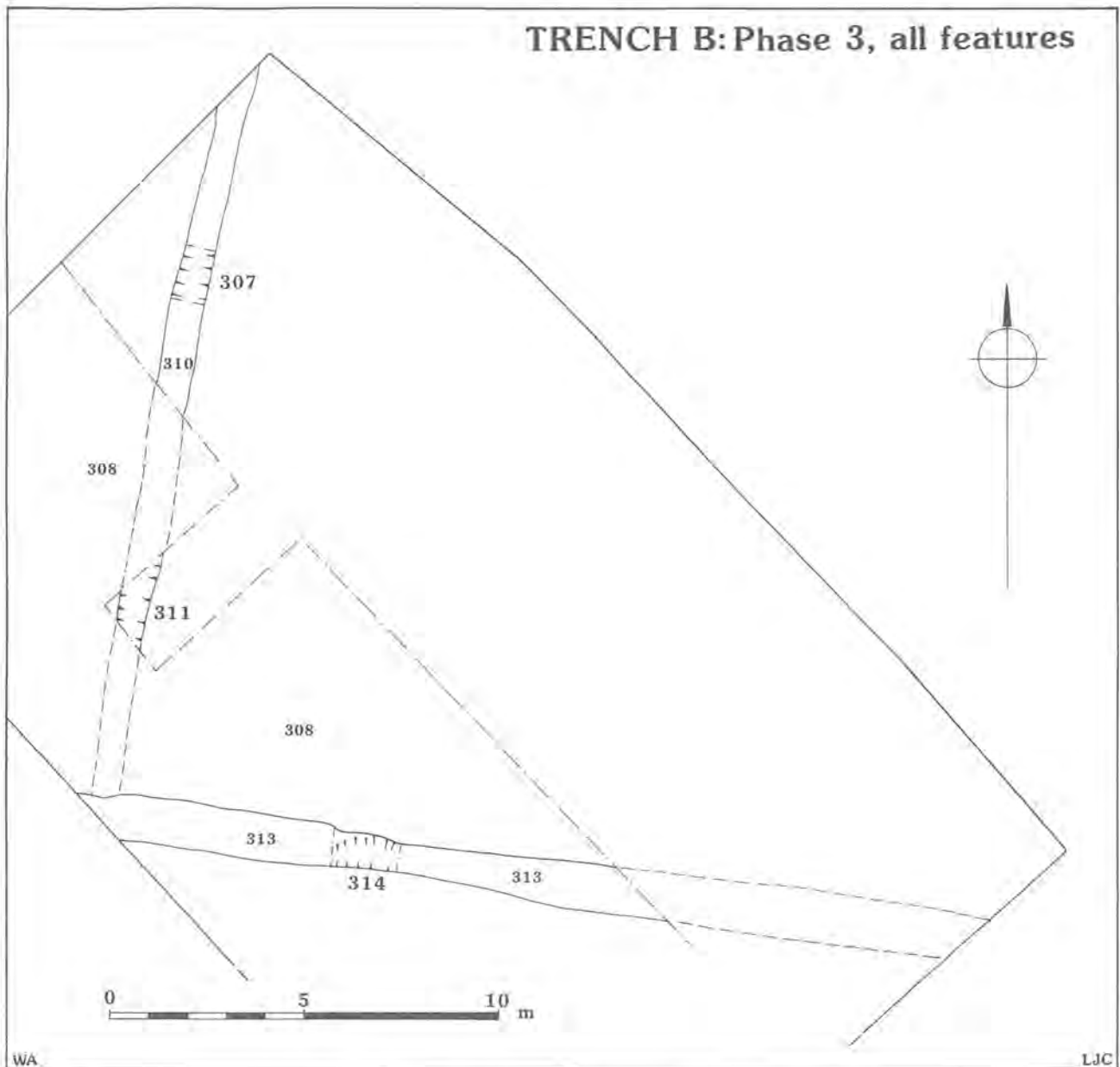


Figure 11. Chantry Fields: trench B: excavated segments of ditches.

in a narrow band across the south-east corner of 200. These deposits were much less consolidated than layer 200 and contained two sherds (56g) of post-medieval stoneware.

**Ditch 314.** (Fig. 11, 314) A shallow poorly defined feature displaying a broad 'V'-shaped profile 3.0m wide and only 0.13m deep, running NW-SE across the south end of Trench B, and possibly corresponding to a slight surface earthwork (Figs 2 and 3). The north-east edge of this feature cut into the subsoil layer 308, and its opposing edge appeared to coincide with the southern limit of 308 against the underlying clayey-gravel which extended as the natural base into Trench A. It was distinct from other features in these two trenches, not just by its shallow profile, but by having two distinct layers of compacted clayey-gravel which contained *inter alia* fragments of glass, clay-pipe and post-medieval pottery pressed into its base.

#### DATING

The *in-situ* fired-clay components of the two ovens, and the large quantities of charcoal contained by them, presented a good case for archaeomagnetic and radiocarbon dating to be applied to what was otherwise a poorly dated sequence. Ditch 153 was not considered suitable on the grounds of the large amounts of redeposited charcoal likely to have been contained by it.

#### Archaeomagnetic date

Sixteen samples were taken by the disc method from oven 280 by Dr A.J.Clark. Only three of these could be obtained from the small amount of genuinely *in-situ* fired-clay available in clay lining 254. The rest were taken from the burnt components of wall 182 most of which was sandstone, an exception being a shelly limestone (Corallian) block at the inner end of the side flue wall 186, from which two of the samples were obtained. The sandstone generally was strongly magnetised, especially at the southern end from which the hearth was presumably fired, while the limestone was weakly magnetic. Seven samples were

taken from stone lining 248, but one of these samples was not removed successfully so that the result is based on a total of 15 samples, from the first two stages of the oven, of which two outliers were excluded from the final result.

Measurement reference AJC-73.

Mean direction of thermomnant magnetisation:

Dec = 13.8°E; Inc = 75.4°; alpha-95 = 2.4°

Date of last firing: Eighth century AD

The date cannot be quoted in more precise terms because there is a shortage of calibration data for this part of the reference curve. The result is closely similar to one obtained from hearths at Shorts Garden, London (Clark pers. comm.), where an eighth century date was compatible with other dating evidence.

#### Radiocarbon date

Twelve grammes of clean wood charcoal extracted by flotation from layer 268, an ash layer from the primary use of oven 280, were submitted to the Scottish Universities Research and Reactor Centre at East Kilbride.

Reference: GU-2980 1360±50 BP

$\delta^{13}\text{C} = -25.7\text{‰}$

The error is quoted at the one sigma level of confidence (after Stuiver and Becker 1986). This calibrates to AD 641-680.

#### THE FINDS

##### Metalwork

Julie Lancley

##### Iron objects

Forty-four objects of iron were recovered from assessment and excavation contexts. Only the objects from medieval and earlier contexts (Phases 1-3) were examined in detail, and are discussed here; full details of all objects are available in archive. A further two pieces were extracted from slag samples by Dr Gerry McDonnell. Both were heavily corroded amorphous lumps and were not examined further.

A very limited range of artefacts was represented, comprising five nails, three knife blades, one horseshoe and two unidentifiable fragments, from soil and rubble layers in Trenches A and C. Two of the knife blades, both with whittle tangs and sloping shoulders, are complete, or nearly complete. The first, recovered from soil build-up layer 132 (Phase 1e), is very similar to an example from the Custom House, London, which is from a mid-to-late fourteenth century context (Cowgill, de Neergard and Griffiths 1987); its position on this site in a context associated with firmly dated 8th century structures is problematical. The second example, from rubble spread 200 (Phase 3), can be compared to a knife from a late twelfth century context at Billingsgate Lorry Park, London (*ibid*). The third knife blade fragment, from soil build-up layer 126 (Phase 3f) in Trench C is too small to determine the form.

The horseshoe, from soil build-up layer 127 (Phase 3f) in Trench C, has a wavy exterior outline characteristic of Norman types dating from the mid twelfth century (Clark 1986).

##### Copper alloy objects

Four fragments of copper alloy were recovered from the assessment and excavation contexts, comprising two buttons from the fills of ditch 300 in Trench C, a small, thin-walled, unidentified spherical object from soil build-up layer 142 (Phase 4a) in Trench A, and a pin head or stud end recovered from the topsoil of assesment test pit 40 (Fig. 2, 40). All are from post-medieval contexts.

##### Lead and lead alloy objects

One example of a perforated conical lead weight was recovered from the fill of ditch 153 (Phase 2). The date and precise function of the weight is uncertain.

##### The Slag

Gerry McDonnell

The purpose of the slag analysis was to characterise the slag, determine which process generated it, and whether the oven structures 280 and 416 were associated with ironworking.

##### Slag morphology

There was 57.701 kg of material classed as slag. This was divided into two main types as follows:

**Smelting Slag (SMELT).** The smelting slag occurred in two

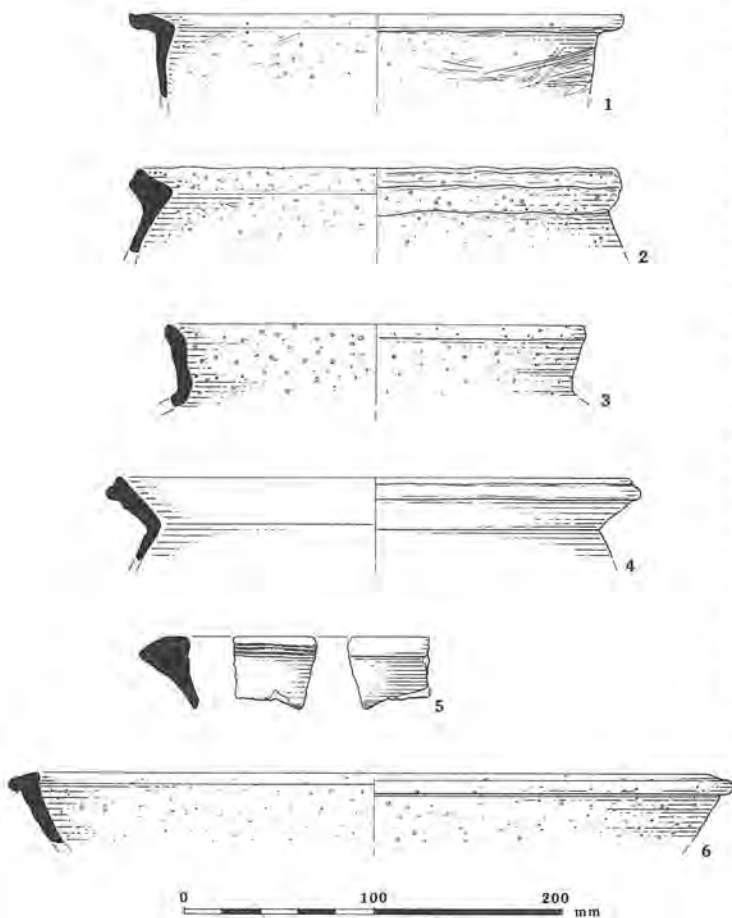


Figure 12. Chantry Fields: pottery from Chantry Fields. Scale 1:4

forms, furnace slag and slag cakes. Furnace slag was irregularly shaped pieces of smelting slag, ranging in weight from ten to hundreds of grammes. The slag cakes had some form, resulting from freezing either inside the furnace or in pits outside the furnace, the largest had maximum dimensions of 200 x 160 x 50mm. The commonest shape was sub-round in plan, convex base and straight sides, thus giving a sub-rectangular cross-section to the slag lumps. Both slags were characterised by the presence of large charcoal impressions, of the order of 30 x 20mm. The impressions were more common in the furnace slag. The slags also had flowed surfaces, although the characteristic ropy flowed surfaces of smelting tap slag were absent. A piece of smelting slag (object 1228, fill 260 of ditch 153) was taken for analysis. A section was cut from the sample, mounted in thermo-setting resin and polished to a one micron finish. It was examined using the optical microscope to determine the mineral texture and the scanning electron microscope to obtain bulk and phase analyses.

**Smithing Slag (SSL).** It is sometimes difficult to distinguish smelting slag from smithing slag. It is therefore practice to assume slag is smithing slag unless it can be shown, either by morphology or chemical/mineral composition, that it is smelting slag. Therefore pieces of slag which lacked flowed surfaces and large charcoal impressions were ascribed to smithing slag. It is highly probable that most of the smithing slag is smelting slag.

#### Distribution of the Slag

The total weights per stratigraphic phase are given in Table 3. The earliest occurrence of slag was in the infill of oven 280 in Phase 1a. The next deposit occurred in the backfill of the third stage of oven 280 and flue 263 in Phase 1c. There are small deposits in the subsequent soil build-up and infill of features in Phase 1e. The major deposits of smelting slag occur in the rubble layers in Phases 3b and 3d, the fills of ditch 153 in Phase 2 and the subsequent post-medieval soil build-ups in Phase 4a. The slags are all concentrated in the area around the ovens. None were recovered from

Table 3: Slag listed by phase

Phase	SMELT	SSL
1a	3550	350
1c	8090	80
1e	650	230
1f	120	
2	18080	2010
3a	250	320
3b	7900	400
3d		1
3e	90	
3f		810
3g	220	
3h		1130
4a	11810	1580
4b		30
Total	50760	6941

Table 4: Area and Phase analyses of slag object 1228

Phase	NaO	MgO	Al <sub>2</sub> O <sub>3</sub> K K	SiO <sub>2</sub> K	P <sub>2</sub> O <sub>5</sub> K K	S	K <sub>2</sub> O K	CaO	TiO <sub>2</sub> K	Cr <sub>2</sub> O <sub>3</sub> K K	MnO	FeO	CoO	NiO	CuO	Total
Area1	0.4	0.7	1.4	16.5	0.3	0.0	0.1	0.2	0.2	0.1	0.6	76.1	0.0	0.0	0.3	96.9
Area2	0.6	0.9	2.2	17.7	0.7	0.0	0.1	0.3	0.1	0.0	0.5	70.0	0.0	0.0	0.1	93.2
Area3	0.3	1.5	1.4	21.6	0.2	0.0	0.0	0.2	0.1	0.1	1.1	73.2	0.0	0.0	0.0	99.7
Area4	0.5	0.5	7.3	27.9	0.8	0.0	2.8	0.5	0.2	0.1	0.6	56.5	0.1	0.0	0.0	97.8
Area5	0.2	1.2	2.9	23.7	0.4	0.0	0.1	0.5	0.1	0.0	1.1	72.8	0.0	0.0	0.0	103.0
SIL	0.0	1.7	0.1	33.0	0.4	0.0	0.0	0.5	0.0	0.1	1.4	62.0	0.0	0.0	0.0	99.2
SIL	0.7	1.6	0.1	32.6	0.6	0.0	0.0	0.2	0.0	0.1	1.4	62.3	0.0	0.0	0.1	99.7
FEOX	0.1	0.1	0.4	0.2	0.0	0.0	0.1	0.0	0.2	0.0	0.2	46.7	0.2	0.0	0.0	48.2
FEOX	0.3	0.4	0.8	0.7	0.0	0.0	0.1	0.0	0.5	0.0	0.4	95.9	0.0	0.0	0.2	99.3

other excavation areas. There are no slag deposits pre-dating or contemporary with the actual construction of the ovens.

#### Discussion

**The Slag.** The majority has been identified as iron smelting slag. It is typical of slag that has cooled either within the furnace (furnace slag) or was raked into a pit in front of the furnace. This interpretation is derived from the slightly flowed texture and the presence of the large slag inclusion impressions. This type may be considered similar to some recovered from Millbrook, Sussex (Tebbut 1982) and Ramsbury, Wiltshire (Haslam 1980), both dated to the Middle Saxon Period. It also has some similarities to that found at the Late Iron Age site of North Cave, East Yorkshire (McDonnell 1988a) and the excavation of Saxon levels in Romsey (McDonnell 1988b). The Romsey smelting slag was in the form of blocks, *ie.* slag run into a pit beneath or in front of the furnace. This technology is thought to occur in restricted areas of England during the Early Saxon period.

The Gillingham smelting slag is therefore morphologically similar to slags recovered from Anglo-Saxon iron smelting sites.

The mineral texture of the analysed sample was globular iron oxide in massive silicate with very little glassy phase present. This indicates a relative slow cool. The bulk and phase analyses are given in Table 4. They show a fayalitic composition typical of most early ironworking slags (smithing and smelting). The most relevant data to note is the presence of significant amounts of manganese oxide. This indicates that the slag is a smelting slag rather than a smithing slag.

**The Ovens.** The ovens were substantial constructions, but had not been subjected to very high temperatures as indicated by the absence of vitrified surfaces. Vitrification normally occurs in the tuyère regions of hearths and furnaces. Its absence would suggest that the ovens were blown by natural draught rather than bellows.

#### Conclusions

The slag has been satisfactorily ascribed to the iron smelting process. There is no typical slag morphology for Saxon iron smelting slag, however the Gillingham morphology is similar to other examples of Saxon smelting slag, and lacks the characteristic tap slag morphology common in the Roman and medieval periods. The slags and the ovens cannot be directly associated and the ovens lack evidence for high temperature working.

#### The Pottery

Lorraine Mephram

A total of 476 sherds (5642g) was recovered from assessment and excavation. This total includes 62 sherds (1397g) from assessment Trench B1, and 71 sherds (576g) from test pits in Area F (Chantry Fields). The remainder was recovered from subsequent excavation in Chantry Fields. The majority of the assemblage is of early medieval date, with a small amount of later medieval and post-medieval material. However, there is also a small group of Romano-British sherds.

The assemblage has been analysed in accordance with the standard Wessex Archaeology recording system (Morris 1991). The pottery from assessment Trench B1 was scanned briefly, to ascertain the broad date range and types of pottery present. The remaining material, from Chantry Fields, was examined in more detail, within the framework of the stratigraphic phasing devised for the site. The pottery has been divided into 29 separate fabric types, which fall into four broad fabric groups: flint-gritted fabrics (Group F), grog-tempered fabrics (Group G), sandy fabrics (Group Q), and fabrics of known type or source (Group E).

In addition, within the Saxon and medieval phases of the site (Phases

1, 2, 3), details of vessel form, surface treatment and decoration have been recorded. It was hoped that detailed analysis of the material from these phases would help to elucidate the sequence of medieval activity on the site, and to test the contemporaneity, or otherwise, of features in different parts of the site. The post-medieval phase (Phase 4) has been examined in less detail, and only fabric types have been recorded.

The pottery from the main excavations is discussed by period below; total numbers and weights of fabrics by period are given in Table 5.

#### Romano-British

Four sherds of finewares were identified: two sherds from a New Forest colour-coated beaker of third/fourth century date; and two sherds of Oxfordshire ware, one from a colour-coated bead-rim bowl, also of third/fourth century date. The remaining pottery consists of coarsewares, both sandy and grog-tempered fabrics. Sherds of Black Burnished Ware from the Poole Harbour area were recognised, including the rim of a flanged bowl of third/fourth century date. Other fabrics are of unknown source. The sandy fabrics have been grouped broadly into unoxidised (fabric Q100) and oxidised (fabric Q101); no diagnostic sherds were recognised. The grog-tempered fabrics comprise one coarse fabric with quartz grains (fabric G100), and a finer, soapy fabric (G101), represented by a single sherd, probably from a carinated bowl of late first century type.

All Romano-British material occurred as residual sherds in later contexts.

#### Medieval

Nine fabrics have been identified as medieval:

E421. Laverstock-type glazed jug fabric; hard, moderately fine sandy; moderate (10-20%), fairly well sorted quartz grains <0.5mm; sparse (3-10%) red iron oxides. Wheelthrown; oxidised pale orange-pink.

F400. Hard, very coarse fabric; moderate, poorly-sorted subangular flint <3mm; sparse, poorly-sorted quartz grains <1mm; rare (1-3%) iron

oxides. Handmade; irregularly fired orange/dark grey.

F401. Soft, coarse fabric; sparse, poorly-sorted subangular flint <1.5mm; sparse, poorly-sorted quartz grains <1mm; rare fragments of degraded rock, possibly sandstone, <2mm; sparse iron oxides; rare mica. Handmade; firing as Q401.

Q400. Hard, very coarse fabric; common (20-30%), poorly-sorted quartz grains <2mm; rare iron oxides. Handmade; irregularly fired, pink-buff/dark grey.

Q401. Hard, coarse fabric; common, fairly well-sorted quartz grains <1mm. Handmade; irregularly fired, orange-buff/grey.

Q402. Hard, moderately coarse fabric; common, fairly well-sorted quartz grains <0.5mm; rare iron oxides. Handmade with wheel-finished rims; firing as Q401.

Q403. Hard, moderately fine fabric; moderate, well-sorted quartz grains <0.25mm; sparse black iron oxides. Wheelthrown; oxidised orange-buff, occasionally with unoxidised core.

Q404. Hard, moderately fine, micaceous fabric; rare quartz grains <1mm; rare fragments of burnt-out carbonaceous material <1mm; sparse mica; rare iron oxides. Handmade; irregularly fired, brown/grey.

Q405. Hard, moderately coarse fabric; moderate, poorly-sorted quartz grains <0.5mm; rare subangular flint <2mm; sparse burnt-out carbonaceous fragments <2mm; rare degraded rock fragments, as F401, <1mm; sparse iron oxides; rare mica. Handmade; firing as Q401.

Only one fabric is of known source: the Laverstock-type fabric (E421) represented by sherds of glazed jugs. The Laverstock kilns were producing glazed jugs from the late thirteenth century (Musty, Algar and Ewence 1969).

Some of the coarse sandy fabrics Q400, Q401 and Q402 may also derive from the same source. These three fabrics may be variations of the same fabric, with a wide range of coarseness. They are used for cookpots of both short- and long-necked type (Fig. 12; 1, 2, 4), and also, though rarely, for bowls (Fig. 12; 5, 6), and partially glazed jug/pitcher forms with strap or rod handles. Fabrics Q401 and Q402 are frequently scratchmarked, and Q402 is occasionally glazed. Very similar fabrics, also scratchmarked, have been found in large quantities in Salisbury, in thirteenth century and later contexts, where they have been assumed to be products of the Laverstock kilns or a similar nearby source (Mephram in prep. a).

Rim types from Gillingham are also comparable in form to examples from south-east Dorset, from the Poole Harbour area, where scratchmarked sandy wares are also found. They occur, for example, at Wareham, and a source in the Purbeck area has been suggested (Hinton and Hodges 1977), although recent chemical analysis has suggested that the scratchmarked wares from this area are more likely to be Laverstock products (Spoerry 1990).

Non-scratchmarked wares comparable to fabrics Q400-Q402 are found widely across Dorset and south Wiltshire, and chemical analysis has proved unable to distinguish discrete groups within this wide distribution, or to tie in assemblages from various sites to known or postulated sources such as the Purbeck area (Spoerry 1990). Cookpots and bowls comparable to the Gillingham examples have been found at Wareham, and also at Corfe Castle (RCHME 1960) and Christchurch (Davies 1983; Thomson 1983), with a broad date range of twelfth to fourteenth century. One sherd of fabric Q402 is decorated with an applied red slip stripe. Glazed jugs with iron-rich slip decoration have been recognised at Christchurch, where they are defined as 'Dorset red painted wares' (Davies 1983), and the example from Gillingham would appear to fall into the general south-east Dorset tradition of red-painted jugs in the later thirteenth/fourteenth century.

Another possible source for these sandy wares is the thirteenth century kiln at Hermitage, c.25km to the south-west of Gillingham, which produced sandy wares comparable in coarseness to fabric Q402, mainly in long-necked cookpot forms, though not scratchmarked (Field 1966). However, evidence from the early medieval settlement at Kington Magna, 8km to the south-west, suggests that most of the sandy wares in this area derive from a fairly local source, in the direction of Shaftesbury (Ross 1985).

The finer sandy fabrics Q403 and Q404 occur in very small quantities. Fabric Q403 is frequently glazed, and probably represents sherds from wheelthrown, glazed jugs, though there are no diagnostic sherds present. A similar fabric found at Kington Magna is dated to the fourteenth century (*ibid*). The micaceous fabric Q404 is comparable to fabrics found in Wiltshire, for example in early medieval contexts at Trowbridge (Mephram in prep. b), and this is supported by the occurrence in this fabric of a so-called 'West Country' dish, a type found widely in Wiltshire and the counties around the Bristol Channel in the thirteenth/fourteenth centuries, but not so frequently in Dorset (McCarthy and Brooks 1988).

Table 5: Pottery totals by fabric type (Chantry Fields)

	No. sherds	Weight	% of period
Romano-British			
Black Burnished	11	123g	27.5
Oxford ware	2	10g	2.2
New Forest	2	47g	10.5
Q100	33	178g	39.8
Q101	4	23g	5.2
G100	4	61g	13.7
G101	1	5g	1.1
Sub-total	57	447g	
Medieval			
Laverstock-type	4	30g	1.5
F400	40	379g	19.4
F401	46	268g	13.7
Q400	8	97g	4.9
Q401	26	177g	9.1
Q402	53	709g	36.3
Q403	8	39g	2.0
Q404	5	58g	3.0
Q405	24	197g	10.1
Sub-total	214	1954g	
Post-medieval			
Tudor Green	1	8g	0.4
red earthenwares	41	385g	20.9
Verwood-type	43	1173g	63.6
slipwares	2	8g	0.4
Staffs-type slipware	1	4g	0.2
Jackfield ware	1	4g	0.2
fine white wares	26	126g	6.9
creamware	14	63g	3.4
pearlware	4	18g	1.0
stonewares	10	55g	3.0
Sub-total	143	1844g	
TOTAL	414	4245g	

The coarse flint-gritted fabric F400 consists largely of sherds from a single vessel, a handmade cookpot with simple everted rim and sagging base. The simple rim form would suggest a very early medieval date, but such forms can be seen to have a longer currency in Dorset, and a date for this vessel in the same range as the coarse sandy wares would not be anomalous. Flint-gritted fabrics are common throughout Dorset in the early medieval period; they dominate the early medieval assemblage from Sherborne Castle (Harrison and Williams 1979), and very similar fabrics have been found at Milborne Port, between Sherborne and Gillingham, associated with twelfth/early thirteenth century tripod pitchers (Barnes, Richards and Tatler 1989). A source to the west of Sherborne, in the Ye valley area, has been suggested (Harrison and Williams 1979).

The coarse gritty fabric F401 and the sandy fabric Q405 both contain fragments of degraded rock, possibly sandstone. This might suggest a source on the Upper Greensand, which outcrops within 5km of Gillingham. Both fabrics are found only in cookpot forms, similar to those described for the sandy fabrics (Fig. 12, 3).

#### Post-medieval

The post-medieval pottery consists largely of coarse earthenwares, both Verwood-type wares from east Dorset, and red wares of unknown source. A single sherd of Tudor Green was recovered from a test pit topsoil during the assessment of Chantry Fields. Later post-medieval wares (seventeenth-eighteenth century) are represented by sherds of Staffordshire-type slipware, Jackfield ware, creamware, pearlware and tin-glazed earthenware, and two sherds of German stoneware, one from a Westerwald vessel, and the other from a bellarmine of Cologne/Frechen manufacture. Modern (nineteenth/twentieth century) fine white wares and stonewares are also present.

#### Trench B1

Of the 62 sherds recovered from assessment Trench B1, 33 (1152g) are post-medieval in date. These are largely earthenwares, both red wares and Verwood-type wares; tin-glazed earthenware, creamware and miscellaneous fine white wares are also represented. Medieval pottery accounted for a further 23 sherds (186g); this comprised early medieval fabrics comparable to those from Chantry Fields, together with a small amount of later medieval material in fine sandy fabrics, probably deriving from wheelthrown, glazed jugs. The remaining six sherds (59g) comprise Romano-British coarsewares, including five sherds of Black Burnished Ware (BB1).

#### Pottery by phase

The amount of pottery recovered from phases 1 and 2 is extremely limited. No pottery was recovered from the ovens themselves, and of the material deriving from other contexts in Phase 1, none within the date range of the archaeomagnetic and radiocarbon dates obtained from oven 280 was identified. Two Romano-British sherds recovered from the backfilling of oven 281/flue 263, and from soil build-up between the ovens, are very abraded and must be regarded as residual in these contexts. The only other pottery from Phase 1 contexts consists of two sherds of fabric Q402, recovered from contexts associated with the collapse and infill of oven 416 and flue 459.

Ditch fills belonging to Phase 2 produced only three sherds, two Romano-British and one post-medieval.

Phase 3 contexts in the area of the ovens produced similarly small amounts of pottery: six sherds of medieval pottery, all coarse sandy wares.

Ditch fills and soil accumulations to the north of the ovens, belonging to Phase 3, contained a much wider range of pottery, and in much larger quantities than the area to the south. Both flint-gritted fabrics (F400, F401), the finer sandy fabrics (Q403, Q404), and the two fabrics containing sandstone fragments (F401, Q405) were found only in this area in medieval contexts, although some were found in post-medieval contexts in the area of the ovens.

Over the whole of Chantry Fields, post-medieval contexts show signs of disturbance, with no coherent ceramic sequence; nineteenth/twentieth century types are present from the earliest contexts in this phase.

#### Discussion

The limitations of the pottery assemblage in ascertaining the sequence of activity on the site is well illustrated by the complete absence of any pottery contemporary with the use of the ovens. In view of the shallow depth of soil cover, it seems likely that the small amount of medieval pottery recovered from the backfill/collapse of the ovens, and the single sherd of post-medieval from the fill of ditch 153, are intrusive, and that all medieval pottery from the site relates to the earthworks rather than the ovens.

This early medieval assemblage from Gillingham has a broad date range of twelfth-fourteenth century. Within the context of early medieval pottery from the region, it can be seen that elements within the

Gillingham assemblage can be paralleled in several distinct areas. Parallels for both fabrics and forms can be found within assemblages from south Wiltshire, north-west Dorset, and south-east Dorset, and possible kiln sources exist in all these areas. It is also possible that more local, as yet unknown, sources were supplying Gillingham, especially given the fact that the local clay has been used by post-medieval brickworks (Moore and Ross 1989). However, this does not appear to be reflected in the predominance of any one fabric, or group of similar fabrics, in the medieval assemblage. The suggestion that pottery was reaching Gillingham from a number of widely distributed sources would agree with the general picture of pottery production in the late twelfth/thirteenth century as one of a few large industries whose distribution areas overlapped to a considerable extent (Vince 1981).

While no firm conclusions should be drawn on the basis of such a small assemblage, it may be significant to note the relative absence on the site of fine glazed wares. Only 10 sherds from the entire medieval assemblage are glazed. This cannot be explained entirely by patterns of distribution, since glazed wares generally had a wider distribution than cooking wares, and some of the glazed wares reaching Gillingham may have come from the same sources as the coarsewares, or at least from the same areas. It may instead be a reflection of status and/or function, influenced by the peripheral position of the site, on the outskirts of the early medieval town.

#### List of illustrated sherds (Fig. 12), Im10

1. Rim sherd of cookpot, fabric Q402. Handmade with wheel-finished rim; scratchmarked exterior. Context 133; Phase 4a.
2. Rim sherd of cookpot, fabric Q402. Handmade with wheel-finished rim. Context 136/142; Phase 4a.
3. Rim sherd of cookpot, fabric F401. Handmade. Context 127; Phase 3f.
4. Rim sherd of cookpot, fabric Q402. Handmade with wheel-finished rim. Context 170; Phase 1c.
5. Rim sherd of bowl, fabric Q402. Handmade with wheel-finished rim. Context 73; Phase 3f.
6. Rim sherd of bowl, fabric Q402. Handmade with wheel-finished rim. Context 126; Phase 3f.

#### The Fired-clay

Julie Lancley

The assessment trenches had indicated that large quantities of fired-clay might be present in Trench A, and that some pieces might bear the impressions of twigs and other, possibly structural, attributes. Early in the main excavations an extensive spread of fired-clay pieces was visible directly beneath the machine cleared layers in Trench A and subsequently large quantities were recovered from the total excavation of the two ovens and the partial excavation of other deposits. Subjective observations of variations in distribution, degree of oxidation, texture and form, and the possible association with the ovens, on site suggested that a more rigorous and objective analysis of the material was required. Here, the nature and distribution of the fired-clay assemblage is recorded, its relationship to the ovens assessed and the character of those structures elucidated, providing technical information pertaining to the function and use of the ovens.

The measurement of surviving twig impressions could be expected to show whether twigs of a particular size range were selected, as experimental work by the Somerset Levels project has demonstrated (Coles and Darrah 1977), while the more complex examples, with twig impressions in multiple orientations and layers, could give more detailed information on how the ovens were constructed.

Technological information might be extracted from the distribution of fragments exhibiting varying degrees of oxidation. The presence of unoxidised pieces found *in situ* in the interior of the stone structures had been noted, and it was suggested that degree of oxidation might be an indication of distance from this interior. Few examples were definitely *in situ*, and most were recovered from contexts relating to the collapse of the structures or from later ditch fills. The average size of fragments and degree of abrasion from various contexts might give some indication of the degree of reworking of these contexts.

Although some work has been carried out on structural fired-clay, notably at Danebury (Poole 1984), and experimental work has been undertaken by the Somerset Levels Project on the construction of hurdles using wattles (Coles and Darrah 1977), no known comparable analysis has been attempted on an assemblage of this sort.

#### Methodology

On site all fired-clay was recovered and recorded. The positions of all pieces bearing twig impressions or structural attributes of any sort

('featured' pieces) were recorded in three dimensions and those pieces retained for post-excavation analysis. All 'non-featured' pieces were simply recorded as bulk finds from individual layers and were discarded on site following counting and weighing. The total excavated assemblage comprised 13,378 pieces weighing 589,015g of which 858 (78,049g) were featured pieces.

In addition to fabric analysis, the following attributes of each 'featured' piece were recorded directly onto a dBase III+ database for numeric and statistical analysis:

X, Y and Z coordinates, weight, details of colour, degree of abrasion, number of visible surfaces, and the number, diameter and orientation of twig impressions. Where twig and other surfaces survived, and in a few cases where two surfaces survived, minimum thickness was recorded. For 'complex' fragments, *ie.* those with more than one level of twig impression, each level (up to three recorded) was recorded separately. This information is held in archive, together with a catalogue of full descriptions of the most complex pieces.

### Results

A representative selection of pieces are illustrated on Figure 13. The assemblage proved to be unsuitable for detailed statistical analysis because the bulk of it (54%) was concentrated in two single deposits in Phase 1c (Table 6). Other Phases contained less than 10% of this total, often as little as 1%. Meaningful distributions and statistical trends cannot be arrived at for assemblages as biased as this. However, some broad observations concerning the nature of the material are possible.

**Fabric:** Only one fabric was present. It is fine, ranging from moderately hard to friable. Quartz is the dominant inclusion, ranging from 5-15% in frequency. The quartz is moderately well sorted, generally up to 0.5mm in size but occasionally up to 1mm. Occasional linear voids up to 2mm in size indicate the inclusion of organic material, and particles of red iron oxide (0.5-1mm in size) are also present. Fragments of burnt flint are present in very rare examples.

The majority of the material (60% by weight and number) was oxidised throughout and only 3% unoxidised throughout. Non-oxidised interiors were present in 3.4% (by weight) of the material. There were no significant variations in this pattern between different stages of the ovens, or between the ovens and other deposits, for example ditch 153.

**Form:** The variation in average weights is displayed on Table 6. The diameters of the twig impressions show a fairly restricted range; 66% by number fall within the range 10-15mm, and a further 30% within the range 16-20mm. This certainly suggests that deliberate selection of timber of a certain size was taking place. There was no significant variation in average twig diameter between the different stages of the ovens.

Some examples have several twig impressions closely spaced with other impressions at right, or oblique angles, but all in the same plane, often with a slightly greater diameter (Fig. 13, 2 and 3). On analogy with evidence from Danebury (Poole 1984) and the Somerset Levels (Coles and Darrah 1977), the latter can be identified as the vertical sail with the former representing the horizontal rods, although it should be noted that

unlike Danebury, none of the twigs of any size appear to have been cleft or shaped in any way. However, there are very few examples from Gillingham where twig impressions were found in multiple orientations, and in most cases these multi-directional twigs are of very similar sizes, making it impossible to distinguish rods from sails, or even whether such a constructional technique was used throughout the structures.

'Complex' pieces (Fig. 13, 1-5) accounted for a relatively small proportion: 17% of the featured pieces and only 2.4% of the entire assemblage, and none were recovered from the first two stages (Phase 1a and 1b) of either oven. Only one example from Gillingham (Fig. 13, 5) shows any sign of actual interweaving of the horizontal and vertical components, although this may be a bias of the relatively small size of most of the pieces. However, such fragments were not recorded at Danebury, where the twig impressions occur as single layers and have been interpreted as deriving from walls of large rectangular structures, possibly of a domestic nature (Poole 1984).

Surfaces other than twig impressions were recorded on 86 pieces, representing approximately 10% of the 'featured' pieces and 0.6% of the entire assemblage. Sixty-seven of these were recovered from contexts directly associated with the ovens in Phase 1, and of these, 12 displayed two surfaces. One piece (Fig. 13, 6) had what appeared to be finger marks impressed into the surface, and another (Fig. 13, 7) had a right-angled rebate impressed into its surface as if formed by the corner of a rectangular structural member in the order of 30mm across. A minimum thickness between two surfaces was recorded on 43 pieces varying between 70mm and 6mm, with an average minimum thickness of 27mm, and 65% of these pieces were recovered from layers 113, 169 and 204 in Phase 1c. Very few of the fragments with wattle impressions also had evidence of surviving surfaces (34 examples), and attempts to gauge the original thickness of the clay structure, other than a likely minimum thickness of 70mm, have proved inconclusive. Surviving surfaces are more frequent (52 examples) on fragments with no wattle impressions, and these occurred principally in contexts of Phase 1, for example from the lining of structure 280 (context 245). The latter examples are all unoxidised, with one surviving flat surface. Other examples are flat and tile-like, with two parallel surfaces, and a few have two surfaces at right angles, either as a projecting corner or as a rebate. The rebated examples may have been formed by butting against a stone or squared timber, but all are oxidised, unlike the example from structure 280 described above.

The quantities of abraded pieces (summarised in Table 7) did vary significantly between different phases. Apart from a very high incidence in phase 1a (90% by weight), abraded pieces form increasingly larger proportions of the 'featured' assemblage during the development of the ovens and continue to do so into the post-medieval layers where all pieces were abraded.

### Discussion

While it has been found that the number of fragments of fired-clay individually recorded is not sufficient for the implementation of any detailed statistical analysis some general comments can be made.

The bulk of the fired-clay appears to represent a single episode of construction during Phase 1c, the third stage of the ovens. Despite later

Table 6: Total fired-clay

Phase	Total No	Total Wt	Mean No	Featured Wt	Featured No	Mean Wt
1a	1207	64280	53	10	752	75
1b	84	5805	69	1	45	45
1c	7856	294556	37	440	42027	95
1d	-	-	-	-	-	-
1e	364	24247	66	27	3814	141
1f	143	8062	56	9	1502	166
2	2290	107957	47	309	25896	83
3a	36	1360	37	-	-	-
3b	74	7820	105	4	449	112
3e	1	2	2	-	-	-
3f	8	100	12	-	-	-
3h	3	79	26	1	12	12
4a	1304	72217	55	54	3678	68
4c	5	120	24	-	-	-

structural alterations to the ovens, the fired-clay element seems to have remained essentially intact, becoming incorporated *en masse* into the final collapse and infilling. In addition, substantial quantities fell off the ovens during use and became incorporated in surrounding soil layers. There is no significant stratigraphic variation in any of the measured attributes to suggest otherwise. The number of abraded pieces increases steadily throughout the stratigraphic sequence but without a concomitant reduction in the average size of the pieces. This might suggest that the material is being abraded following deposition in the soil *in situ* through the normal soil mechanisms and not through constant reworking and redeposition.

The small quantities of *in situ* fired-clay adhering to the inside surfaces of both ovens indicate that the clay formed a lining of the stone components, and the right-angled rebates visible on some pieces suggest that this extended to some of the external surfaces, probably at the mouth of the ovens. The, sometimes multi-levelled, twig impressions preserved in the rest of the featured assemblage, indicate that the clay was supported by a robust wicker superstructure, formed of selected coppiced timber, above the stone components of the ovens. There is no evidence for wattles *per se*.

Clay is an excellent refractory material and this material does not appear to have undergone any preparation. Its survival as an archaeological deposit here is due entirely to partial firing, possibly enhanced by the inflammability of the shale content of Kimmeridge clay. It is highly likely that the total assemblage of fired-clay represents no more than 20% of the original clay structures (McDonnell pers comm.). Although the deposits in the ovens were almost totally excavated, the large amounts recovered from the 39% excavation of ditch 153 represent less than half of the material likely to be contained by that feature. A simple multiplication would suggest that ditch 153 may have contained a quantity of fired-clay weighing something in the region of 276,812g. The

Table 7: Featured pieces, distribution of abraded pieces

Phase	Abraded No	Abraded Wt	% of phase total by No	% of phase total by Wt
1a	9	391	90%	51%
1b	-	-	-	-
1c	302	2475	68%	58%
1d	-	-	-	-
1e	23	2068	74%	54%
1f	7	1284	84%	77%
2	309	25896	88%	78%
3b	3	449	100%	100%
3h	1	12	100%	100%
4a	53	3466	98%	94%

weight of fired-clay surviving in archaeological deposits, as opposed to that simply recovered, would be in the order of 865,827g. If Dr McDonnell is correct, the weight of all clay incorporated in the structures would have been approximately 4,329,135g. The density of the fired material (measured by water immersion) is approximately 2g/cm<sup>3</sup>, which gives an original total volume of clay of 2.2m<sup>3</sup>, or approximately 1m<sup>3</sup> per oven, minimum.

List of illustrated pieces (Fig. 13)

1. Large, completely oxidised fragment with multiple layers of wattle impressions, all orientated in the same direction. Obj. No. 1241, Context 204, Phase 1c.

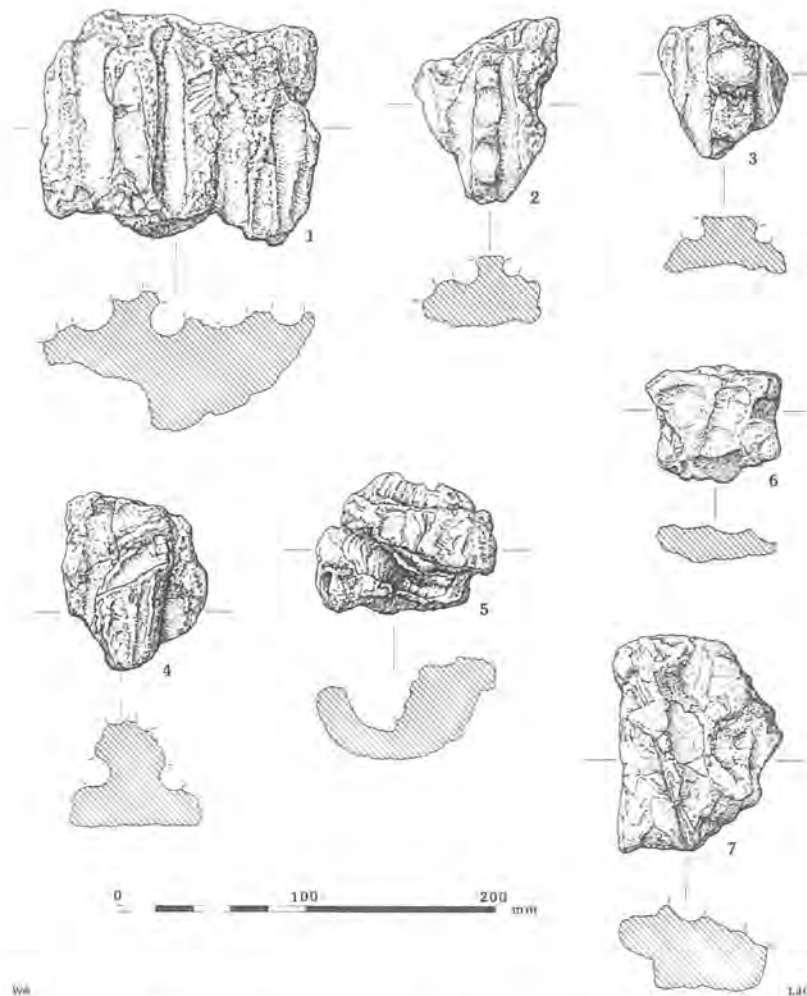


Figure 13. Chantry Fields: fired-clay, selected pieces. Scale 1:4

2. Completely oxidised fragment with two layers of wattle impressions, at right-angles. Moderately abraded. Obj. No. 1801, Context 199, Phase 2.
3. Incompletely oxidised fragment with two layers of wattle impressions, at right-angles; one set with larger mean diameter than the other. Obj. No. 1690, Context 169, Phase 1c.
4. Incompletely oxidised fragment with multiple layers of wattle impressions, one layer at an oblique angle to the others. Obj. No. 1599, Context 169, Phase 1c.
5. Incompletely oxidised fragment with two layers of wattle impressions, showing horizontal rods bent around a vertical sail. Obj. No. 1894, Context 154, Phase 2.
6. Completely oxidised fragment with one surviving surface, showing multiple impressions, probably finger marks. Obj. No. 1257, Context 188, Phase 1e.
7. Completely oxidised fragment with one wattle impression, and an approximately right-angled rebated 'corner', Obj. No. 1242, Context 204, Phase 1c.

### Ceramic Building Material

by Julie Lancley

A total of 156 fragments (14,653g) of ceramic building material was recovered. The material has been divided into categories (roof tile, glazed roof tile, brick, etc.) and quantified by context. Overall totals for medieval and earlier phases are given in Table 8. Complete dimensions, where present, have been recorded, as have the presence of peg holes, glaze and surface treatment. These details are available in archive.

Romano-British material has been defined on the basis of both form and fabric. Two basic forms were recognised: large bricks with a thickness range of 55-61mm; and tiles with a thickness range of 18-33mm. The bricks frequently exhibit curvilinear or multidirectional scoring on surviving surfaces, presumably to aid the attachment of mortar, and are possibly hypocaust bricks (Brodrick 1977). Finger-smearing is visible on both bricks and tiles. Both forms occur in poorly-wedged fabrics, with varying quantities of quartz, grog and ironstone, and occasional fragments of burnt flint. Undiagnostic fragments of ceramic building material in comparable fabrics have also been identified as Romano-British.

All the Romano-British material on the site was residual in later contexts. It is likely that this material, together with the pottery of the same date recovered from the site, may have originally derived from the nearby Romano-British settlement at Coldharbour, to the west of Gillingham, although little is reported from that site (Moore and Ross 1989). One piece was incorporated into the first stage structure of oven 416 and it is possible that some at least of the rest of the ceramic building material may also have been re-used in the construction of the ovens.

The remaining ceramic building material, consisting largely of roof tiles, some with peg holes, is less easy to date by form, but all fragments derive from post-medieval contexts on the site.

The majority of the material (62% by number and 44% by weight) was recovered from post-medieval contexts, and most of this (53% and 19% respectively) is roof tile.

### Worked Stone

by Julie Lancley

Ten pieces of worked stone were recovered. A sample of 33 unworked pieces representing the range of types present on the site was also retained for the purpose of identification.

Identification of stone type, worked and unworked, was undertaken by Dr B. Sellwood of the Postgraduate Institute for Sedimentology Research at Reading University. His comments have been incorporated into this report. Full details of identifications, dimensions and descriptions are available in archive.

Four sources of stone have been identified, three within a 10km radius of Gillingham, the other from outside this area. The Upper Greensand originates from the Mere/Zeals area, 4.5km north-west of Gillingham; and the Purbeck and Portland limestones from the Tisbury area, 10km north-east. A more locally accessible source of stone has also been exploited: the Corallian limestone and sandstone, found directly to the south and west of the town.

The non-local stone is Old Red Sandstone, originating from the Forest of Dean.

The worked assemblage comprised seven ashlar blocks, one whetstone, one fragment of roof tile and one architectural piece.

With the exception of one Purbeck Limestone block (object 1158) from a post-medieval soil build-up layer (layer 142, Phase 4a), the ashlar blocks were all Greensand and incorporated into the fabric of the ovens: one (object 3075) from the narrower second stage of oven 416 (Phase 1b), two (objects 1306 and 1307) forming the mouth of the narrower third stage (Phase 1c) of oven 280, three (objects 1301, 1302 and 1309) from the east end of structure 459. The fragment of whetstone was of Old Red Sandstone, recovered from a post-medieval soil build-up layer (Phase 4a, layer 160). The roof tile fragment, 0.07m thick with a peg hole 0.02m in diameter, of Purbeck Limestone, was a component of wall 202, the second stage of oven 280 (Phase 1b). The single architectural piece (object 1318), 0.28m x 0.18m x 0.08m deep with a flat base and a broad 'V'-shaped rebate with surface tool-pecking visible in its opposing face, was incorporated into the first stage wall (168) of oven 416.

The fragment of roof tile and the dressed architectural piece (object 1318) were almost certainly re-used in those contexts, but it is difficult to determine whether any of the other dressed pieces were worked specifically for the construction of the ovens, or if they too were re-used from other nearby structures. Bearing in mind the substantial but non-uniform size of the ashlar (see descriptions of the ovens) — typically 0.50m x 0.30m x 0.20m — and that the majority of the stone incorporated in the ovens was unworked and immediately local, the latter seems more likely. The Romano-British site at Coldharbour (*ibid*) would seem a likely source for architectural stone, but little of this nature is reported from the, albeit restricted, excavations at that site.

### Worked Flint and Chert

Philip Harding

Worked flint was recovered from 26 contexts from the assessment and excavations, all of which contained medieval pottery. There was also one piece of Portland Chert. The totals from each trench are given in Table 9.

The material was located principally in Trench C, a diffuse concentration located at the edge of terrace deposits belonging to the River Stour. Flint from these gravels, much of which is of poor quality, was exploited as the principal source of raw material; however, Portland Chert provides evidence that material was introduced to the site. The pieces are in mint condition although edge damage is apparent in most cases. Surfaces vary from stained to a mottled blue patina. An end scraper with a developed white patina is exceptional and may also have been introduced to the site.

The material includes one core flaked from alternate platforms and two miscellaneous fragments. There are also seven blades and bladelets, some of which indicate that they were deliberate products of blade technology. Additional features of the technology include platform abrasion, cresting and some use of soft hammer percussion.

The retouched pieces include two well-made end scrapers retouched on the distal end of blades and an end scraper made on the proximal end of a flake. There is also a flake with a truncated distal end and a partially truncated bladelet which may be a failed obliquely blunted point. This piece was probably retouched with the blank supported on an anvil. Additional evidence for both microlith manufacture and the use of an anvil is provided by a microburin from the distal end of a flake.

Despite being essentially irrelevant to a discussion of the rest of the

Table 8: Ceramic building material by category per phase

Phase	Roman		roof tile		glazed roof tile		brick		glazed brick		unspec.	
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
unstrat	1	130									2	4
1	7	5185g										
2	5	1022g	2	126g								
3	6	3528g									2	9g
4	3	680g	84	2865g	2	90	21	682g	1	92	20	240g
TOTAL	22	10545g	86	2991g	2	90g	21	682g	1	92g	24	253g

Table 9: Summary of all worked flint by trench

1 cores 2 core frags 3 flakes 4 broken flakes 5 burnt worked 6 retouched flakes  
7 scrapers 8 other tools 9 misc.

	1	2	3	4	5	6	7	8	9	Total
Test pits	-	3	3	-	-	-	-	-	-	6
A	-	-	2	3	1	-	1	-	-	7
B	-	-	1	-	-	-	-	-	-	1
C	2	2	11	6	-	1	2	1	2	27
Total	2	5	17	9	1	1	3	1	2	41

site, this small assemblage represents a previously unrecorded phase of activity at Gillingham. Despite its limited quantity and the associated medieval artefacts, there is no reason why it should not be regarded as a single industry. There is sufficient evidence to conclude that blades and bladelets were a deliberate end product which were then converted into a range of tools. These included scrapers and microliths, some of which were made using the microburin technique. This suggests that the assemblage represents material from a camp site occupied by Mesolithic groups who were exploiting the well drained gravels of the Stour valley.

#### ENVIRONMENTAL ANALYSES

Bulk soil samples were retained from Trench A only; from all ash layers within the ovens, from the soil layers and features between the ovens, from ditch 153 and from the overlying rubble and soil layers. The ditch fills in Trenches B and C were assessed subjectively on site to be environmentally sterile by Wessex Archaeology's Environmental Officer.

The environmental samples were sieved using the standard Wessex Archaeology flotation procedure. Not all samples produced environmental materials but of those that did, a number of the charcoal and plant macrofossil residues were selected to provide, without duplication, a representative sample through the stratigraphic sequence of Trench A. All phases (apart from 1d) of oven 280, Phases 1c and 1e of oven 416, the soil build-up layers and features between the ovens, ditch 153 and the overlying rubble and soil layers are represented.

#### Carbonised Plant Remains

J. Ede

A total of 16 processed residues were analysed for carbonised plant remains. Varying proportions of each residue were sorted by the writer and seed numbers multiplied up to give 100% equivalences. Seeds were identified using a binocular microscope up to X50 magnification. Nomenclature used follows Clapham, Tutin and Warburg (1952). The complete catalogue of identifications by context and phase is presented on Table 10 and further details are available in archive.

It should be borne in mind that the samples analysed came from a limited range of context types from a relatively restricted area of what is possibly a much larger site. It is therefore possible that the remains contained in these samples are not truly representative of activities occurring elsewhere on the site. This is particularly important when discussing the economy and crop processing status of the site as a whole.

Overall there was little difference in the range of cereal and weeds represented throughout Phases 1, 2 and 4 in Trench A. Wheat was the dominant cereal and of the weeds, grasses and legumes were most common and in the largest quantities. However, the cereal grains recovered from the ovens were highly processed compared to those from the fills of ditch 153. This may point to a chronological difference in the economy of the site, with importation of processed cereal (perhaps in trade) in the earlier phase changing in the later period to the growing and initial processing of cereal crops on site. It remains possible that the grain could also have been imported from elsewhere but in a less processed state than in the earlier period. Whether the winnowing and threshing, which removes the large bulk of the cereal crop, was carried out elsewhere on the site or whether the crop was bought in from elsewhere in a semi-processed state it is not possible to say. Lack of comparable studies from broadly contemporary sites in the area precludes wider discussion of the cereal assemblage.

The weed seeds were not very informative. They were all of plants commonly found in arable fields and on disturbed land with a variety of soil types and other environmental factors. The carbonised remains from the ovens represent almost completely cleaned grain with few accompanying weed seeds. The occurrence of hazelnut shells in the ovens may indicate either the use of nuts as a food source or of the use of hazel as a fuel.

The differences between the assemblages from the ovens and ditch 153 seem to indicate little residuality, implying both a wide chronological separation between those two episodes and a lack of mixing/reworking of the deposits contained by them.

#### Charcoal

Rowena Gale

Pieces less than 2mm in transverse section were not examined. Most of the fragments were in good condition although some showed structural deterioration. The larger fragments from each sample were fractured to expose a clean, flat transverse surface. These were sorted into groups based on the anatomical features visible using a X20 hand-lens. Representative samples from each group were selected for detailed examination. These were fractured to expose transverse, tangential longitudinal and radial longitudinal planes, supported in fine washed sand, and examined using an incident light-microscope at magnifications of up to X400. The anatomical features were matched to authenticated reference material. A summary of the species identified is presented below in Table 12.

Oven 280 yielded far more ash and charcoal than oven 416 and the comparative selection of wood fuel for the two ovens was only possible in their third stage (Phase 1c) of use. A wide range of woods were used during the first stage of oven 280 including maple, alder, hazel ash, cherry/blackthorn, oak, poplar/willow and members of the Pomoideae group (hawthorn, apple, pear, whitebeam). Oak appears to have been slightly dominant over the other species. The second stage varied from the first in that fewer species were represented (maple, hazel, elm, oak, and poplar/willow) and oak was far more dominant. By the third stage, a definite pattern of selection became evident in both ovens with oak predominating and the minimal presence of cherry/blackthorn, and the Pomoideae group. The predominance of oak was constant through to the final stages of infilling of both ovens but here there was also a range of the other species including maple, hazel, the Pomoideae group, cherry/blackthorn, poplar/willow (all seen at earlier phases of the site), with the addition of elder in oven 416. It was evident that much of the charred oak derived from fast-growing stem material with some pieces of more mature wood also present. Much of the ash, alder and hazel were also from stem material, but it was not possible to assess the age of the remainder of the charcoal in its fragmented state.

Charcoal from the later structure 459 was exclusively oak and mainly from fast-grown stem. Charcoal from soil in the area between the ovens 280 and 416 revealed the presence of species consistent with those associated with fuel from the ovens suggesting that the build-up of charcoal in this area may have been caused by deposits from the repeated clearance of debris from the ovens.

Charcoal from ditch 153 was also dominated by immature oak with some maple, ash, poplar/willow and members of the Pomoideae also present. The overlying soil and rubble layers (layer 142) produced a few fragments of oak, cherry/blackthorn, and the Pomoideae group.

#### Selection of wood

The most notable aspect of the species identified was the high proportion of fast-growing oak stems in almost every context. This indicated not only the specific selection of this taxon but also suggested that young stems were growing abundantly in the vicinity. Rods and poles from coppiced woodlands are known to have been used for construction in Britain since the fourth millennium BC (Coles and Orme 1982) and these must also have provided fuel supplies for both domestic and industrial purposes. The thermal capacity of oak wood is higher than many other British species and its efficiency as a fuel can be enhanced by its carbonisation prior to use. The high temperatures required for many industrial activities such as metal smelting could only have been sustained by the use of charcoal fuel. However, one can only speculate that the charcoal from the ovens at this site was derived from the remains of charcoal fuel, as opposed to wood fuel, by considering the possible function of the ovens. The anatomical structure of burnt wood does not differ from that of burnt charcoal.

#### The environment

The species identified were associated with man-made structures and probably represent the woods specifically chosen for fuelling industrial ovens over a period of time.

The identification of the species confirmed that certain trees and shrubs were growing in the vicinity of the ovens but this by no means gives a comprehensive picture of the woody vegetation of the contemporary environment. Indeed, some species such as elm and elder are represented by only one fragment of charcoal amongst many hundreds of others and may represent a more casual collection of fuel at some period. There would almost certainly have been other woody species

Table 10: Carbonised Seed Remains

	phase	1a	1a	1b	1c	1c	1c	1e	1e	1f	1f	1f	2	2	4a	
	sample	2020	2018	2009	2031	2016	2012	2022	2011	2029	2010	2014	2001	2033	2036	
	context	268	267	211	436	247	232	238	227	400	166	196	154	456	142	
	quantity (soil in litres)	10	10	10	6	10	10	10	10	3	10	10	10	10	7.5	10
	density (No. seeds per litre)	4	9	17	2	1	35	5	8	14	35	4	53	27	2	
BOTANICAL NAME	COMMON NAME	HABITAT														
<i>Triticum aestivocompactum</i>	bread/club wheat	CF	008	032	041	050	001	059	008	016	006	082	009	112	042	004
<i>Hordeum</i> sp.	barley TOTAL	CF	003	006	010	012		019			019	003	013	012	001	
<i>Hordeum</i> sp. hulled		Cf		003							002		003	002		
cf. <i>Hordeum</i> sp.		CF					001		002	001						
<i>Avena</i> sp.	oats	CF														
cf. <i>Avena</i> sp.		CF	001					004	002			002		002	002	
<i>Avena/Bromus</i> sp.		CF	001					010			003		018	001	001	
TOTAL ID. CEREAL GRAIN			013	038	051	062	002	092	012	017	008	106	012	145	058	005
<i>Bromus</i> sp.	brome grass	(CF)G			008									008		
cf. <i>Bromus</i> sp.			008	001	008						001	026	001	001		
cereal indet.	grain frags		012	047	075	058	002	147	034	047	022	175	027	338	114	007
TOTAL CEREAL GRAIN			025	085	126	120	004	239	046	064	030	281	039	483	172	012
WEEDS																
BRASSICACEAE																
<i>Brassica</i> sp	Cabbage,radish etc	CF(D)						001								
cf. <i>Brassica</i> sp.														001		
indet.												002				
CARYOPHYLLACEAE																
<i>Agrostemma githago</i>	corn cockle	Da			001								001	002	001	
CHENOPODIACEAE																
indet.					001									004	001	
COMPOSITAE																
<i>Anthemis cotula</i>	stinking mayweed	Dabh									001			001		
indet.														001		
CORYLACEAE																
<i>Corylus avellana</i>	hazel nut frags	FSW	001		014	001								007	001	
CYPERACEAE																
<i>Carex</i> sp.	sedges													001		
GRAMINEAE																
cf. <i>Arrhenatherum elatium ssp tuberosum</i>	onion couch grass	G	001													
indet.					007			007			002	008	001		007	001
LEGUMINOSAE																
<i>Vicia/Lathyrus</i> sp.	vetch/pea	GDaS			005	006						004	001			
<i>Pisum/Vicia</i> sp.	pea/bean	FC				002					002		001			
indet.			001		008	003	002	080	002	003		017		003	004	001
POLYGONACEAE																
cf. <i>Polygonum aviculare</i> agg.	knotgrass	Da													001	
<i>Polygonum</i> sp.					001											
<i>Rumex acetosella</i> agg.	sheeps sorrel	DaCG	001			001					002					
<i>Rumex</i> sp.	dock/sorrel	DaGSWM	001	001							001		001	003	005	001
indet.								002								
RUBIACEAE																
<i>Galium</i> sp.	bedstraws	D											002		001	
SCROPHULARIACEAE																
<i>Euphrasia/Odontites</i> sp.	eyebright/bartsia				003			006		008				011	003	
UMBELLIFERAE																
indet.														004		
weed seed nfi			003	000	004	000	000	015	004	001	004	010	000	009	009	000
WEED TOTAL incl. <i>Bromus</i> sp.			015	001	045	013	002	112	006	012	011	071	005	049	032	003
WEED DIVERSITY (ie,no. diff. types)			06	01	08	05	01	07	01	02	06	06	05	11	10	03

## HABITAT PREFERENCES: KEY

C = cultivated plant; D = disturbed ground; G = grassland; M = marsh; P = ponds,ditches,banks; S = scrub; W = woodland; F = food plant; a = disturbed land including arable; b = base rich; h = heavy soils; n = nitrogen/phosphate rich soils; w = wet/damp soils.

## NOTES ON CALCULATIONS:

Fragments of grain have not been made up to equivalent number of grains represented as this would not alter results significantly.

Cereal grain total does not include *Bromus*/cf. *Bromus* sp.. These are included in the weed seed total.

*Vicia/Lathyrus* sp. included as weed seeds although there is the possibility that these may have been either wild plants or cultivated for human food or animal fodder.

Samples 2016 and 2027 have not been included in this table because 2017 had no carbonised remains and 2027 was a very small sample (0.83 litres) and would not be representative of the contents of that context. This latter sample contained just one carbonised grain.

Weed seed total includes *Bromus* sp. and cf. *Bromus* sp. but not *Corylus avellana* fragments.

present, both shrubby and arborescent, which were not valued as potential fuel.

The abundance of oak suggests that oak woodlands were well established at the site before the first ovens were built. During the early phases of use a wider range of species was used for fuel but this quickly gave way to the more selective use of young oak.

Coppiced woodlands arise from the felling of immature trees. The resulting stumps regenerate fast growing stems which can subsequently be cut on a regular basis thereby providing a continuous supply of woody material. Many of the other woods identified, but present in far smaller quantities, also coppice easily and have been traditionally cultivated in this manner since prehistoric times (Edlin 1949). Ash, maple, poplar, willow, alder, and hazel are good examples, and ash rivals oak in performance as a fuel. The relative paucity of ash in the samples examined suggests that it was not such a common species in the area but perhaps grew sporadically within the oak woodland. The coppice woodland at this site may have originated from the felling of mixed woodlands of ash and maple dominated by oak, with an understorey of hazel. Hawthorn, apple, pear, and cherry may also have grown in the woodland.

Alder, willow, poplar and elm reflect the presence of damper soils in the river valley. Shrubber species such as elder, blackthorn, hazel, and

Table 11: Totals, Densities and Cereal to Chaff Proportions

PHASE	1a	1a	1b	1c	1c	1c	1e	1e	1f	1f	1f	2	2	4a
SAMPLE	2020	2018	2009	2031	2016	2012	2022	2011	2029	2010	2014	2001	2033	2036
QUANTITY	10	10	10	06	10	10	10	10	03	10	10	10	7.5	10
ID. CEREAL	013	038	051	062	002	092	012	017	008	106	012	145	058	005
TOT CEREAL	025	085	126	120	004	239	050	064	030	281	039	483	172	012
ID WEEDS	012	001	041	013	002	097	002	011	007	061	005	040	023	003
TOT WEEDS	015	001	045	013	002	112	006	012	011	071	005	049	032	003
TOT SEEDS	040	086	171	133	006	351	056	076	041	352	044	532	204	015
DENSITY SEEDS	4.0	8.6	17.1	22.2	0.6	35.1	5.6	7.6	13.7	35.2	4.4	53.2	27.2	1.5
CEREAL: WEEDS	1.7	85.0	2.8	9.2	2.0	2.1	8.3	5.3	2.7	4.0	7.8	9.9	5.4	4.0

:1

Table 12: Summary of identified species

Context	Sample	Phase	Ac	Al	Co	Fr	Pom	Pr	Qu	Sam	Sal	Ul
Oven 280												
268	2020	1a	-	28*	23*	3*	16	15	41*	-	4	-
267	2018	1a	8	-	10*	3*	43	41	76	-	20	-
211	2009	1b	17	-	8*	-	-	-	67*	-	8	1
251	2017	1c	-	-	-	-	1	1	125*	-	1	-
247	2016	1c	-	-	-	-	1	1	21*	-	-	-
232	2012	1e	-	-	-	-	6	1	249*	-	3	-
Oven 416												
417	2027	1a	insufficient material									
436	2031	1c	-	-	-	-	1	2	27*	-	1	-
166	2010	1e	6	-	7	-	6	8	136*	1	9	-
Area between ovens												
227	2011	1e	-	-	-	-	3	-	13*	-	-	-
196	2014	1f	6	-	-	-	10	1	157*	-	3	-
238	2022	1e	2	-	3*	3*	10	14	151*	-	-	-
Structure 459												
400	2029	1f	-	-	-	-	-	-	121*	-	-	-
Ditch 153												
456	2033	2	7	-	-	7*	20	-	47*	-	4	-
Post-medieval soil build-up												
142	2036	4a	-	-	-	1*	1	-	5*	-	-	-

\* = include fast grown stem material.

Abbreviations: Ac = Acer; Al = Alnus; Co = Corylus; Fr = Fraxinus; Pr = Prunus; Qu = Quercus; Sam = Sambucus; Sal = Salicaceae;

hawthorn, all common in marginal woodland, may also have grown in more open terrain or have colonised cleared or abandoned areas.

### Animal Bone

Michael J. Allen

A total of 327 fragments of animal bone recovered from contexts in Phases 1, 2 and 3 were examined. Bone from post-medieval contexts (70 fragments), and that recovered by flotation from ash samples taken from the ovens which largely comprised unidentifiable fragments, were not examined. Full details of the entire assemblage are available in archive.

Although the bone was reasonably well preserved and displayed relatively little erosion, over 84% of the assemblage comprised small, unabrased fragments which were not identified to species (Table 13), and only two fragments displayed complete measurable dimensions. A number of bones were burnt, many heavily, and a number of simple cut marks were noted.

The species identified were cattle, sheep/goat, pig and domestic fowl. In Phases 1 and 2, sheep was predominant and cattle poorly represented. The assemblage recovered from the Phase 3 ditches and soil layers was dominated by cattle. Pig was noticeable by its relative absence from all phases, except for one fragment in Phases 1 and 3.

The assemblages are too small to make any significant statements on

Table 13: Summary of Animal Bone by phase

Phase	1	2	3	3(Trench C)
Cattle	1	5	5	16
Sheep/goat	13	2	1	-
Pig	1	-	1	-
Domestic Fowl	-	1	2	-
Large Mammal	13	25	11	62
Small Mammal	27	1	5	5
Unident Mammal	46	51	1	28
TOTAL	101	85	26	111

site economy. Nevertheless some broad comments can be made although we cannot be sure how representative the material is as a whole. Certainly the fragmented, but relatively fresh, nature of the material indicates that cultural, rather than preservational, factors are responsible for the small assemblage. As it is evident that material probably represents casually discarded waste we cannot be certain whether it was locally farmed stock or animals bought in.

The predominance of sheep/goat in the material from the ovens might be taken to indicate access to open grazed pasture. The paucity of pig might suggest that pannage was not available or used and would confirm the hypothesis of the availability of pasture. The later medieval assemblages are predominantly cattle; animals which are happy browsing or grazing. The assemblages are poor, but not untypical of the early to late medieval period.

## DISCUSSION

The assessment was correct in indicating a good state of preservation. The seed and charcoal assemblages suggest there has been little reusability or mixing of the deposits, and the lack of reworking evident in the fired-clay assemblage would appear to support this. It is reasonable to assume that the, as yet, unexcavated areas of Chantry Fields survive in similar states.

The archaeomagnetic and radiocarbon dates of late seventh to early eighth century AD for the ovens are complementary. Although there is little pottery or other datable artefacts from the site, the small amount of post-medieval material recovered from the tops of the ovens and ditch 153 can be seen as intrusive given the proximity of these deposits to the present ground surface. The relatively small amount of twelfth-fourteenth century pottery and metalwork recovered from the ditches in Trench C indicate that these features, and the earthworks group as a whole, are later than, and completely unassociated with, the ovens. However, the relationship of ditch 153 to the ovens and the other earthwork features, and hence its date, remains unclear. It is distinguished from the rest of the earthworks by its size and form (Fig. 2 and Fig. 3, 2) and yet is stratigraphically later than the final stages of the ovens. Adjacent ditches in Trench A which did correspond to visible earthworks contained virtually no fired-clay or charcoal, quite at odds to the almost pure black ash fills of 153. The ditch was not seen to the east of the footpath during watching brief observations and so must either return under the footpath or diverge suddenly away north and south from the line of the new road. It must be seen as an intermediary episode between the ovens and the earthworks.

### The Ovens

Despite early assumptions on site, there is little definite evidence that these structures were involved in any stage of iron production. They are both certainly too large to be smelting hearths, and neither show signs of the degree of vitrification or *in situ* slag deposits produced by that process. The later stages of both (Phase 1b-1d) are comparable in size to structures interpreted as smithing hearths elsewhere (Tebbutt 1982), but, though the early stages of the ovens contained some slag, the large quantities necessary to corroborate this assumption were all retrieved from layers stratigraphically much later than even the final collapse of both ovens. The ovens, particularly the first stages, are similar to the

small number of known ore-roasting ovens (Crossley 1981). The lack of vitrification evident in them, and the proximity to a source of iron-rich water-logged clay, perhaps makes this interpretation more tenable. Poor quality ores, such as 'bog ores' of the sort that would have been available in the forested, waterlogged clays in the immediate vicinity of the site (McDonnell pers comm.) would require roasting to 'improve' them (Tylecote 1986) and make them more manageable. In this context, the twig impressions in the fired-clay need not be seen as structural, but merely the remains of the charcoal with which the clay would have been mixed.

However, the presence of cleaned and sorted grain in the ash layers of all stages of use, suggests that a solely industrial interpretation is an unsatisfactory one. Saxon ovens at Christchurch, Hampshire (Thomson, Barton and Jarvis 1983), of similar overall dimensions to the later stages of the Gillingham ovens, contained slag and fragments of furnace lining as well as carbonised cereal grains, but here the metal-working debris was considered to be a residual deposit in structures interpreted as being, most likely, corn-driers or malting ovens. However, despite a lack of concrete association between the ovens and the slag deposits at Gillingham, it remains a tantalising probability that remains of early or later medieval iron working are present in the immediate vicinity of Chantry Fields.

The first stages of both ovens bear some resemblance to later medieval corn driers from sites such as Collfryn, Powys (Britnell 1984); large stone-lined chambers enclosing approximately 12m<sup>2</sup>, presumably supporting some form of above-ground structure, served by elegant stone lined passages or flues. The function of the fired-clay, other than as a simple refractory lining, is problematic and unparalleled within the context of grain driers. It is unlikely to have formed a weight bearing component of the structure, despite a wicker framework, and there is no evidence to suggest that the stone walls (lined by clay) extended above the ground surface. The clay and wicker could have formed clamp-type roofs, and the calculated 1m<sup>3</sup> of clay available for each oven allows considerable flexibility in postulating the form of such structures. However, structures of that form are more normally interpreted as ovens, and the later stages of both do bear more resemblance to Romano-British and Saxon ovens/hearths. The partially scorched flag linings indicate that these ovens were intended to be kept clean.

The large amounts of clay that remained unfired around the perimeters of the later stages of both ovens (Fig. 5, Phase 1c, layers 269 and 465) suggest that these layers were shielded from heat by other, since removed, components. Possibly they formed the base or footings for a clay and wicker structure abutting the first stage walls.

The original form and function of the final structures 459 and 445 remain unclear. The seeds and charcoal from 459 suggest a different function, and there is some hint that 459, at least, originally comprised an upstanding component which has not survived.

Although the obvious redesigning and rebuilding of the ovens suggests a change of function, none of the environmental evidence corroborates this indisputably; the charcoal species identified in ash samples taken from the ovens do show that coppiced oak rapidly became preferred as a fuel source, but the grain assemblage does not imply that this change of fuel corresponds to a change of use. Experimental work on Romano-British corn driers (Reynolds and Langley 1979) and comparisons of grain assemblages from a variety of such structures (Van der Veen 1989), have indicated that the more robust, and undoubtedly more efficient, antecedents of the Chantry Fields ovens, fulfilled a range of grain-processing functions, but not the actual drying of large quantities of damp grain. It is likely, therefore, that the Chantry Fields ovens were made available for a variety of purposes that required controlled heat.

An interpretation of the ovens has to be advanced, one which takes into account the obvious changes evident in the

development of the structures over what was presumably a relatively short space of time. Initially, a pair of identical grain driers/malting ovens or ore-roasting ovens was constructed, rapidly utilised and converted to covered ovens. However, due to their size and arrangement and the relative absence of associated domestic materials, these cannot be seen simply as having performed a domestic function.

### The earthworks

The earthworks are even more enigmatic than the ovens. Clearly many of the smaller linear features can be dismissed as simple land divisions which, as in features 344 and 346 in Trench C (Fig. 10), were re-established more than once. Despite the initial expectations of Platform 1 (Figs 2 and 3, 1) and the dump of mixed (building?) stone on its western edge (layer 309) there was no evidence of any structure. It is possible that such remains lay to the east of the narrow trench allowed during the excavation, but more artefactual or environmental evidence of domestic activity would be expected in the adjacent ditches in Trench C. Indeed, the complete uniformity of the fills of these features suggests that little has changed at Chantry Fields since they were initially laid out. Documentary searches drew a complete blank with respect to industrial or domestic activity in Chantry Fields, despite copious references to minor manorial affairs for the rest of the town and its satellite tithings. The ditches delineating Platform 1 were substantial and, like the ovens, cannot be ascribed a simply domestic function because of the relative lack of the large quantities of material that would be expected adjacent to such a site. It is possible that remains of a substantial habitation survive outside the present road corridor.

### Environmental Evidence

The limited range of environmental evidence suggests that the ovens were constructed in already cleared woodland, close to ready supplies of a wide range of partially coppiced timber, principally oak. The absence of pig bones from all phases of the site could suggest that the immediate area was not under pannage.

Although conclusions should not be arrived at on the basis of negative evidence, the overall scarcity and limited range of bones together with the structural evidence could suggest a non-domestic function for the site during the life of the ovens at least. The seed evidence for grain production on site in the late seventh to early eighth century is equivocal, but certainly the heavy clay soils still present would have been unsuitable then for arable production without the benefits of modern agro-technology. Suffice it to say, that the extensive clay woodlands of this part of the south-west, which lingered on in part as a Royal Hunting forest until the seventeenth century, had already been subjected to woodland management for some time by the late seventh/early eighth century.

### Regional context of the site

Without wishing to make more of the small amount of data than it warrants, it is important to realise that the Chantry Fields excavations are a significant addition to the small body of archaeological data on mid Saxon secular life in this part of the country. Indeed, there is a dearth of excavation and survey data on mid Saxon settlement for the county as a whole (Welch 1985). Although the chalk and limestone uplands of southern England are dotted with the magnificent posthole plans of Saxon halls and sunken featured buildings (*Grubenhäuser*), and Gillingham itself is surrounded by Saxon ecclesiastical sites, there is little with which to compare the structural evidence at Chantry Fields closer than Hamwih (Southampton). Although documentary research, particularly by Keen (Keen 1984), has clearly established the importance of Dorset towns such as Dorchester and Gillingham as population and administrative centres during the pre-Conquest centuries, hard archaeological evidence to support the literature remains elusive.

Much of what little is known has been deduced from documentary and landscape studies, most recently by Keen (*ibid*

and Barker (Barker 1984) who, between them, have established that there was considerably more activity in this area during the mid Saxon period than the scarce archaeological data suggests. Keen's analysis of the development of Dorset towns emphasises the importance of monastic houses and/or royal residences in providing the focus for later settlement development and expansion during the ninth and tenth centuries, and that 'the most influential characteristics for this growth were a royal or ecclesiastical interest because of the political, administrative, or economic roles that interest would initiate' (Keen 1984).

Barker's study of the landscapes of the south-west and the writings of Bishop Aldelm of Malmesbury and, later, Sherborne (AD 604-709/10) has suggested that there is evidence of 'an aristocratic Latin milieu in the West Country of the mid seventh century ... known to have maintained some luxury trading contacts with the Mediterranean', and that this 'milieu' existed within an established settlement hierarchy which formed the basis and means for the exchange of tribute and service, within the area known to compilers of the *Anglo-Saxon Chronicle* as *Selwoodshire* (Barker 1984).

Both authors agree, therefore, that the social, economic and settlement development in this area of the mid Saxon south was being driven from above, but hard evidence for aristocratic/ecclesiastical patronage, or, indeed, for the settlements themselves, has been notably lacking. The Chantry Fields excavation may go some way towards redressing that imbalance. The scenarios postulated by both Keen and Barker could have provided the economic and social infra-structure necessary for the provision of structures of the size, complexity and specialisation of the Chantry Fields ovens during the late seventh century. It would be foolish to suggest that the ovens are evidence for any *direct* aristocratic or ecclesiastical influence, but they cannot be seen as having performed a simply domestic function or functions and there is, as yet, no hard evidence for a manorial presence on the site. They could be seen as providing evidence for the existence of a social hierarchy supported by an established exchange network based on either trade and/or tribute, and not necessarily based around the established hinterlands of entrepôts like Hamwih — someone paid for their construction, use and maintenance.

As ever, a fuller understanding of the nature of the site and its context, particularly the earthworks and the environmental evidence possibly contained by them, will be possible only with further investigation of the potentially high quality archaeological deposits in the rest of Chantry Fields (Heaton 1991; Cox forthcoming).

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All records are presently held by Wessex Archaeology at Old Sarum under the archive code W301, but it is intended that all materials will be deposited with the Dorset County Museum following the publication of this report.

## BIBLIOGRAPHY

- Barker, K., 1984 'Institution and Landscape in Early Medieval Wessex: Aldelm of Malmesbury, Sherborne and Selwoodshire', *Proceedings of the Dorset Natural History and Archaeology Society*, 106 (1984), 33-4.
- Barnes, I., Richards, J. C., and Tatler, S., 1989 'Church Street, Milborne Port, Somerset; archaeological assessment', (Wessex Archaeology Report W329.)
- Britnell, W., 1984 'A 15th century corn-drying kiln from Collfryn, Llansantffraid Deuddwr, Powys', *Medieval Archaeology*, 28 (1984), 190-3.
- Brodribb, G., 1977 *Roman Brick and Tile*.
- Clapham, A. R., Tutin, T. G., and Warburg, E. F., 1952 *Flora of the British Isles*.
- Clark, J., 1986 *Medieval Horseshoes*, Finds Res. Group 700-1700, Datasheet 4. (Coventry 1986).
- Coles, L. M., and Darrah, R. J., 1977 'Experimental investigations in hurdle-making', *Somerset Levels Papers*, 3 (1977), 32-8.
- Coles, J. M., and Orme, B. J., 1982 *Prehistory of the Somerset Levels*.
- Cowgill, J., de Neergaard, M., and Griffiths, N., 1987 'Knives and scabbards'. *Medieval Finds from Excavations in London*: 1 fig. 58, no. 60.
- Crossley, D. W., 1981, 'Medieval iron smelting', in Crossley, E. D. (Ed) *Medieval Industry* (London, Council for British Archaeology Research Report 40 (1981), 29-41.
- Davies, S. M., 1983 'Excavations at Christchurch, Dorset, 1981-83', *Proceedings of the Dorset Natural History and Archaeology Society*, 105 (1983), 21-56.
- Edlin, H. L., 1949 *Woodland crafts in Britain*.
- Field, N. H., 1966 'A thirteenth century kiln at Hermitage, Dorset', *Proceedings of the Dorset Natural History and Archaeology Society*, 88 (1966), 161-75.
- Harrison, B. P., and Williams, D. F., 1979 'Sherborne Old Castle, Dorset: medieval pottery fabrics', *Proceedings of the Dorset Natural History and Archaeology Society*, 101 (1979), 91-102.
- Haslam, J., 1980 'A Middle Saxon iron smelting site at Ramsbury, Wiltshire', *Medieval Archaeology*, 24 (1980), 1-68.
- Heaton, M. J., 1990 *Gillingham Relief Road, Gillingham, Dorset: Archaeological Assessment*, Wessex Archaeology Report W301, Wessex Archaeology.
- Heaton, M.J., 1992 'Recent work at Chantry Fields, Gillingham', *Proceedings of the Dorset Natural History and Archeological Society*, 113 (1991), 190-2.
- Hinton, D. A., and Hodges, R., 1977 'Excavations in Wareham, 1974-5', *Proceedings of the Dorset Natural History and Archaeology Society* 99 (1977), 42-83.
- Keen, L. J., 1984 'The towns of Dorset', in J. Haslam (ed.), *Anglo-Saxon Towns in Southern England*, 203-47.
- McCarthy, M. R., and Brooks, C. M., 1988 *Medieval Pottery in Britain AD 900-1600*.
- McDonnell, J. G., 1988a *The Ironworking Slags from North Cave, North Humberstone*, (Ancient Monuments Laboratory Report 91/88).
- McDonnell, J. G., 1988b *The Ironworking residues from Romsey, Hampshire*, (Ancient Monuments Laboratory Report 72/88).
- Mephram, L. N., in prep. a 'The pottery', in Hawkes, J. W., *Excavations in Salisbury 1984-1989*.
- Mephram, L. N., in prep. b 'The pottery' in Graham, A. H., *Excavations at Trowbridge*.
- Moore, W. F., and Ross, M. S., 1989 'The Romano-British settlement, Common Mead Lane, Gillingham, Dorset', *Proceedings of the Dorset Natural History and Archaeology Society*, 111 (1989), 57-70.
- Morris, E. L., 1991 *Guidelines for the analysis of pottery*, (Wessex Archaeology Manual 4).
- Musty, J. W. G., Algar, D. J., and Ewence, P. F., 1969 'The medieval pottery kilns at Laverstock, near Salisbury, Wiltshire', *Archaeologia*, 102 (1969), 83-150.
- Penn, K. J., 1980 *Historic Towns in Dorset* (Dorset Natural History and Archaeology Society, Monograph Series, 1), 65-9.
- Poole, C., 1984 'The structural use of daub, clay and timber', in Cunliffe, B. W., *Danebury: an Iron Age Hillfort in Hampshire. Vol. 1: The excavations 1969-1978: the site* (Council for British Archaeology Research Report 52).
- Royal Commission on the Historical Monuments of England, 1960 'Excavations in the West Bailey at Corfe Castle', *Medieval Archaeology*, 4 (1960), 29-55, fig 9, 17.
- Royal Commission on the Historical Monuments of England, 1960 *Dorset Volume IV* (1960), 35-6.
- Reynolds, P. J., and Langley, J. K., 1979 'Romano-British corn-drying oven: an experiment', *The Archaeological Journal* 136, 27-42.
- Ross, M. S., 1985 'Kington Magna: a parish survey', *Proceedings of the Dorset Natural History and Archaeology Society*, 107 (1985), 23-46.
- Smith, Roland, 1989 'Gillingham Relief Road', *Proceedings of the Dorset Natural History and Archaeology Society*, 111 (1989), 111.
- Spoerry, P. S., 1990 'Ceramic production in Dorset and the surrounding region', *Medieval Ceramics*, 14 (1990), 3-17.
- Stuiver, M., and Becker, M., 1986 *Radiocarbon*, 28 (1986), 863-910.
- Tebbutt, C. F., 1982 'A Middle-Saxon iron-smelting site at Millbrook, Ashdown Forest, Sussex', *Sussex Archaeological Collections*, 120 (1982), 19-36.
- Thomson, R. G., Barton, K. J., and Jarvis, K. S., 1983 'The pottery', in K. S. Jarvis, *Excavations in Christchurch 1969-80*, (Dorset Natural History and Archaeology Society, Monograph Series, 5), 53-68. (Dorchester)
- Tylecote, R. F., 1986 *Prehistory of Metallurgy in the British Isles*.
- Van der Veen, M., 1989 'Charred grain assemblages from Roman-period corn driers in Britain', *The Archaeological Journal* 146 (1989), 302-319.
- Vince, A. G., 1981 'The medieval pottery in southern England: 10th to 13th centuries', in H. Howard, and E. Morris, (eds.), *Production and Distribution: a ceramic viewpoint* (British Archaeological Reports 120), 309-22.
- Welch, M. G., 1985 'Rural Settlement Patterns in the Early and Middle Anglo-Saxon Periods', *Landscape History*, 7, 13-25.

# Excavations at the Waitrose Supermarket Site, Chantry Fields, Gillingham, Dorset 1991-2

PETER W. COX  
AC archaeology

## SUMMARY

*Excavations in advance of the new Waitrose supermarket complex at Gillingham, Dorset revealed a sequence of ditched enclosures and boundaries dating to the thirteenth and fourteenth centuries. The site lies on the fringe of an area above the floodplain of the river Stour where extensive earthworks exist which once may have formed part of a sub-urban Medieval settlement and associated fields south of the river adjacent to a ford crossing.*

## INTRODUCTION

This report contains the results of an excavation undertaken between December 1991 and February 1992 in advance of the construction of a new Waitrose supermarket on land known locally as Chantry Fields, Gillingham, Dorset. The work was commissioned by Messrs Kiafield Management Ltd, on behalf of Waitrose, and carried out by AC archaeology, under the direction of Peter Cox.

### Site Location

The site lies outside the modern town of Gillingham, on land south of the confluence of the river Stour and Shreen Water, centred on ST 806263. At this point there is a well-defined river terrace above the floodplain of the Stour. The area investigated lies wholly above the floodplain, on Kimmeridge Clay at a height of around 72m above OD. The development of this land represents infilling between the recently completed relief road to the south and the river Stour.

### Archaeological background

Land south of the confluence of the river Stour and Shreen Water has traditionally been considered as lying outside the Medieval town of Gillingham. In Penn's survey of the town (1980), the area is not considered to lie within the later suburbs, which developed to the east of the town at Newbury. The presence of two late Medieval cottages south of Chantry Ford and the discovery of a complex of earthworks extending over at least 5.5 hectares indicates that extensive utilisation of the area may have occurred in the past.

Previous archaeological investigation of the site had been undertaken during 1991 and consisted of an earthwork survey, carried out by the Royal Commission on Historic Monuments, and an evaluation by geophysical survey and trial trenching by Wessex Archaeology (report in archive).

The site lies within 50 m of an area excavated in Chantry Fields during 1990 in advance of the construction of the Gillingham relief road (Heaton, this volume). This work revealed clay ovens, dated by radiocarbon and archaeomagnetic techniques



Plate 1 View of site from south towards Chantry ford and Medieval town centre

to the late seventh to early eighth century AD. Later earthworks and subsoil features on the site were suggested, by ceramic associations, to post-date the twelfth to thirteenth centuries. No direct association could be established between earthworks recorded on the Waitrose site, and those investigated during the relief road excavations, but they may represent a continuation of at least one phase of the latter complex.

The broad conclusions from the evaluation of the supermarket site were that the north-west portion of the new development area (mostly within the area of the car park) contained a significant concentration of archaeological features, including traces of ill-defined hollows and terraces, terminating on the east side by a river terrace above the floodplain of the river Stour. Two significant magnetic anomalies were recorded by magnetometer survey.

## THE EXCAVATION

### Excavation strategy

On the advice of the County Archaeological Officer, an area of approximately 1300 m<sup>2</sup> was identified for topsoil stripping and further archaeological investigation (Fig. 1). This was carried out initially using a drott excavator, while final clearance of overburden was undertaken by mini-digger and manual hoeing / shovel clearing. This soil removal and subsequent excavation of archaeological features was carried out in phases to meet programmed releases of land for construction, progressing from north to south across the site.

Generally, up to 0.5 m of topsoil and subsoil was removed by mechanical excavator to reveal features cut into the underlying yellow - yellow grey clay. No deposits of gravel or alluvium were revealed on the site.

The approach to the recording and excavation of specific features consisted of the requirement to:

- establish a detailed plan of all archaeological features to determine the major sequence of enclosures and linear features and their association with recorded earthworks and excavated features to the west;
- excavate and record sufficient portions of the major features to establish the dates of individual phases of occupation and the nature of activities across the site;
- excavate a sufficient proportion of discrete features to interpret evidence for structural remains and the nature and date of occupation of the site.

All records were made using the AC *archaeology* recording system and comprise written, graphic and photographic records. The site archive will be deposited with Dorset County Museum under the site reference AC 43.

### Summary of site phasing

Five phases of activity have been defined on the site based on the stratigraphic sequence of linear and enclosure ditches recorded on the site. The analysis of Medieval ceramic finds was unable to show clear chronological divisions between any of the Medieval phases, although broad indications are discussed below. The phased deposits are shown on Fig. 2. All discrete features, other than those clearly of post-Medieval date have been termed Unphased Medieval.

The phase sequence may be summarised as follows;

Phase 1: field boundary ditches

Phase 2: settlement enclosures

Phase 3: field / settlement boundaries

Unphased Medieval occupation

Phase 4: Post-Medieval and Modern agricultural and miscellaneous activity

#### Phase 1

The earliest stratigraphic elements are represented by a series of parallel ditches (89, 183, 185, 189) running west to east across the site. Ditch 89 survived to a maximum depth of 0.7 m and was sealed by an extensive

subsoil spread, containing a high proportion of animal bone and filling a shallow depression of up to 3.5 m wide. The ditch probably runs further to the west, through the adjacent evaluation trench, where deeper subsoil was recorded. The eastward extent could not be ascertained within the excavated area, east of the later Phase 3 ditch 29. Approximately 15% of ditch 89 was excavated. Ditches 183, 185 and 189 survived as less substantial features, generally less than 0.4 m deep. Only the larger ditch 189 could be traced in the evaluation trench to the east. Approximately 7% of the total length of Phase 1 features was excavated. Only small quantities of pottery were recovered from the Phase 1 deposits, in total six sherds (33 g), of which two sherds were Romano-British in date and four Medieval (21 g).

#### Phase 2

A group of deposits, generally to the south and south-east of the site, have distinctive forms and fills and are considered to be broadly contemporaneous. The Phase 2 ditches are up to 0.7 m wide and generally less than 0.25 m deep. Each length of ditch examined contained similar fills consisting of light grey loamy clay with deposits of iron staining towards the base and sides of the features and evidence of gleying.

By comparison with the deeper excavated features on the site the Phase 2 ditch fills are likely to be the primary fills of deeper ditches which have been much eroded, presumably by later ploughing or settlement activities. The major components of the ditches appear to form a series of rectangular enclosures (shown on Fig. 2 as Enclosures A-C), but other shorter lengths of ditch with similar orientation and character are included in this phase.

Approximately 25% of the total length of the Phase 2 ditches was excavated. Small quantities of Medieval pottery were recovered, totalling 15 sherds (107 g).

#### Phase 3

Two parallel sets of double linear ditches (77/169 and 29/30) aligned north to south run across the excavated area. In each case the pairs of ditches appear to represent a smaller early ditch (169 and 29), later merged with, or re-cut by a larger ditch on the same alignment (ditch 77 and 30). An additional, short length of ditch (99), may also be contemporaneous.

The largest of the Phase 3 ditches (77 and 30) are, by comparison with all other features on the site, of considerable size. Ditch 77 was up to 2.5 m wide and 0.95 m deep. The lower fills revealed evidence for gleying in the form of mottling and iron staining. An intermittent spread of limestone rubble lying on the natural clay ran parallel with the east side of the ditch and was observed, in the excavated sections, to tip into the lower levels of the ditch fill. Included in this rubble spread was a substantial lump of tap slag. This rubble deposit is considered to represent the vestiges of a bank which had been either eroded or ploughed into the partially backfilled ditch.

Ditch 30 was of similar proportions being approximately 2.6 m wide and 0.7 m deep. It also showed evidence for gleying throughout its lower fills, but did not exhibit evidence for associated bank. This pair of ditches do, however, run on the same alignment as one of the earthworks recorded on the site, with a bank to the west.

It is noteworthy that none of the Phase 3 ditches were observed to cut through Phase 2 enclosures. Furthermore the symmetry apparent between the west side of enclosure A and ditches 29/30 and between the west side of enclosures B and C and ditch 77/169 may indicate that the linear ditches may respect former boundaries. While it is possible that the smaller ditches are contemporaneous with the Phase 2 enclosures the surviving bank traces alongside ditch 77 indicates that the plough-reduction of the enclosure ditches must have occurred before the cutting of ditch 77.

Approximately 9.5 m (15%) of the total length of the Phase 3 ditches were excavated. The pottery recovered from Phase 3 features represents the single largest phase group from the site and includes one sherd of Romano-British date. Medieval pottery amounted to a total of 540 sherds (6986 g). This Medieval group includes jugs of fourteenth-century date. One sherd of Post-Medieval pottery was recovered from the upper fill of ditch 77.

#### Unphased Medieval

Twenty five discrete features, likely to be small pits or postholes of probable Medieval date, have not been designated to individual phases. The majority of the features are contained within areas defined by the Phase 2 enclosures, but not necessarily contemporaneous. Most of the features are shallow, rarely more than 0.2 m deep and contain loamy clay fills, one (pit 173) contained a high proportion of small charcoal flecks. Only two sherds of Medieval pottery were recovered from the group.

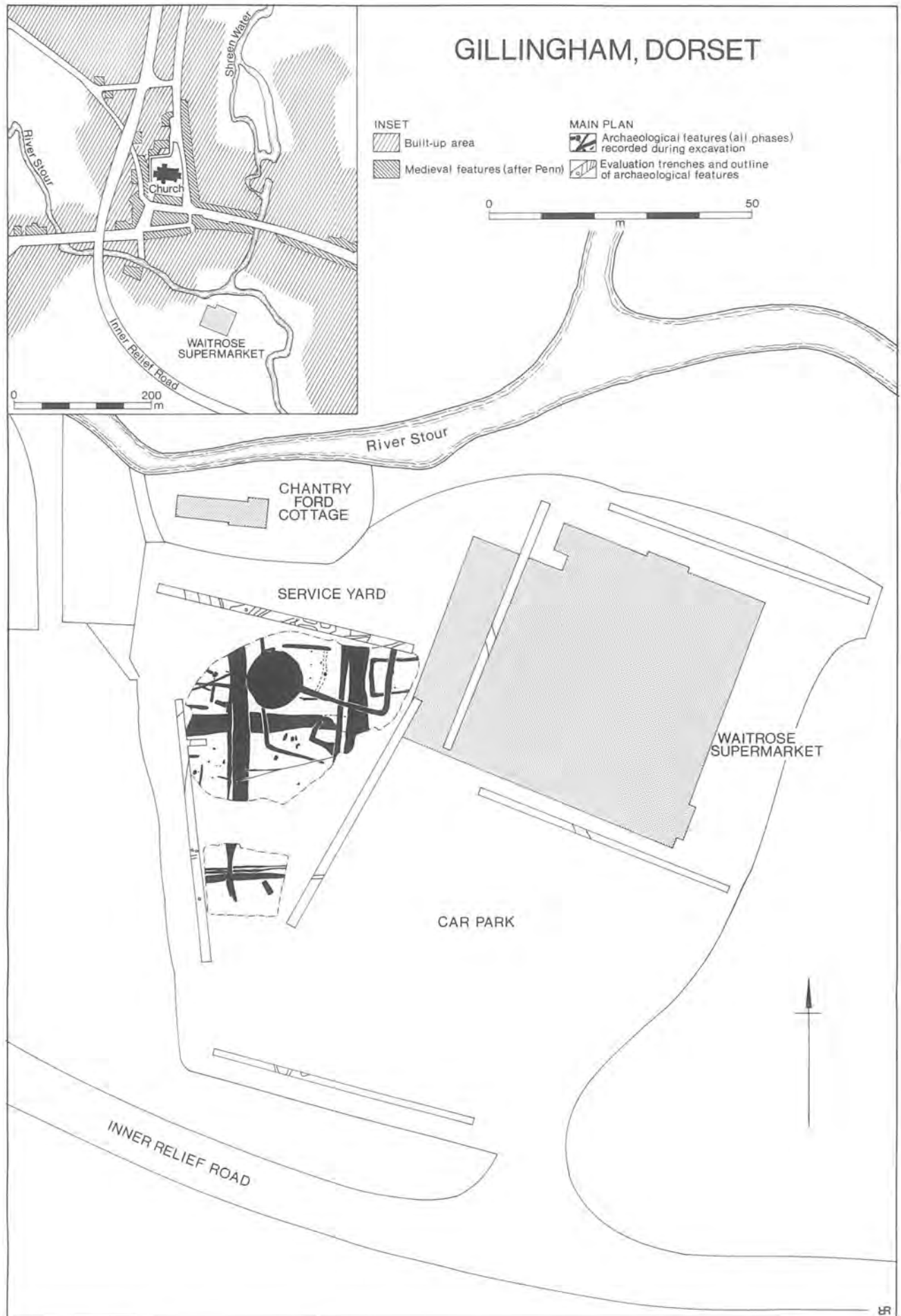


Fig. 1 Waitrose supermarket site; location of evaluation trenches and excavated area showing all features

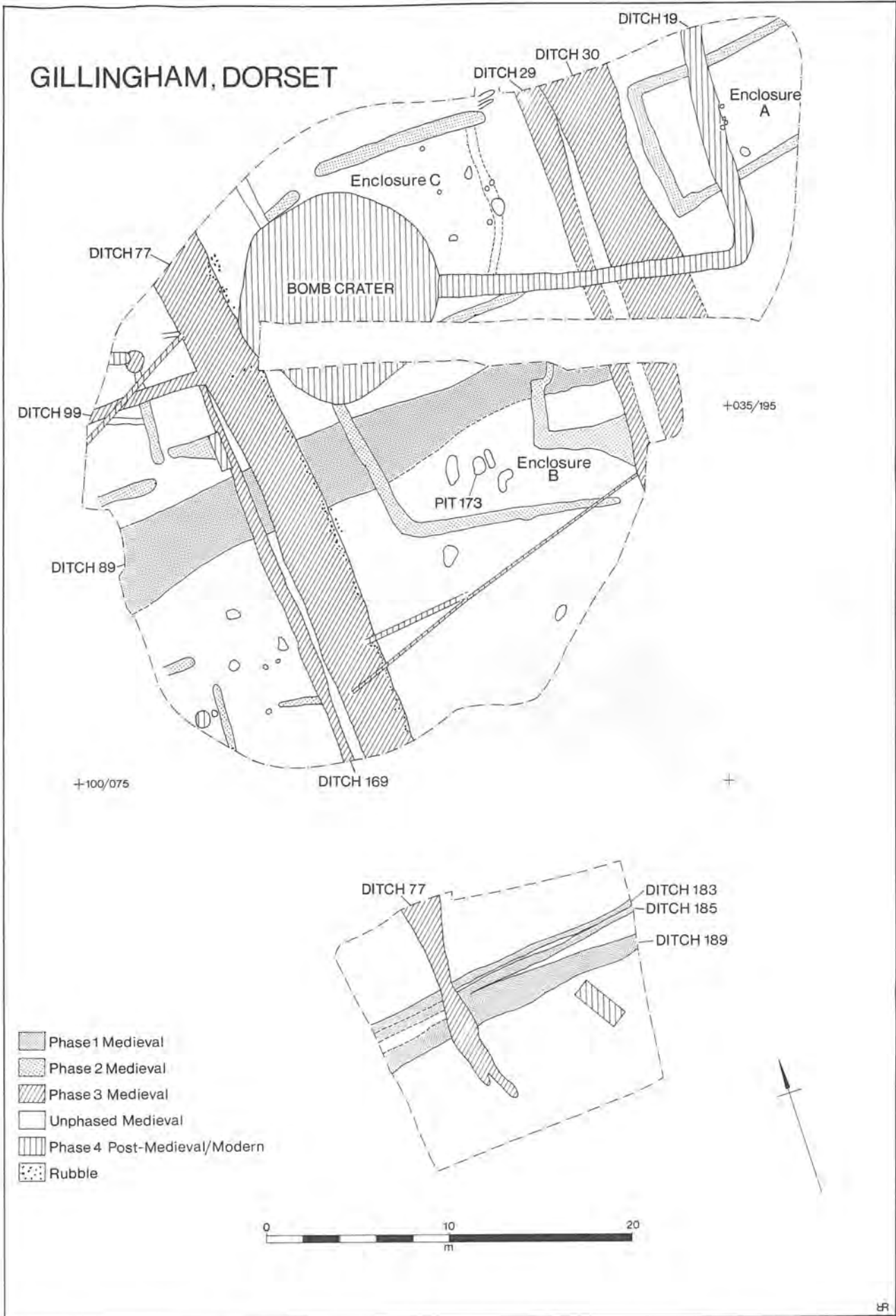


Fig. 2 Waitrose supermarket site; phase plan of all archaeological features

**Phase 4**

All discrete features were excavated by half-sectioning, representing 50% of the total.

A number of features are of post-Medieval or modern date. Portions of three sides of an enclosure (D) are formed by ditch 19, which is probably post-Medieval in date. A near circular feature, detected by geophysical survey was filled with a mixture of brick rubble and modern debris. It is said locally to have been caused by a stray bomb dropped during the Second World War. This feature was not further investigated.

**THE FINDS****The pottery**

by John Hawkes

**Introduction**

A total of 713 sherds weighing 8274 g was recovered from the excavations. All pottery was sorted into fabric groups on the basis of visible inclusions, counted and weighed (Table 1). Due to the fragmentary state of much of the material no attempt was made to produce a detailed vessel type series, although typologies for rims, handles and decorated sherds were produced and broad categories of vessel identified (eg jar/cooking pot, bowl/pan, jug/pitcher etc). These details are held in archive.

**Romano-British**

Two Romano-British fabrics were identified: Fabric 8, a soft, fine orange sandy ware, possibly an abraded colour-coat, although no surfaces survived; and Fabric 9, a fine micaceous grey sandy ware with very sparse quartz inclusions.

All the Romano-British sherds were recovered from later (Medieval) contexts. Residual Romano-British pottery was also recorded from Wessex Archaeology's excavations at Chantry Fields (immediately to the west of the present site) where it comprised over 10% of the assemblage total by weight (Mephams, in Heaton this volume). Neither excavation produced any evidence for features of Romano-British date, and the low quantity of pottery from the AC43 site suggests little activity of that date in this area.

**Medieval**

Eight Medieval fabrics were recorded:

- Fabr 1. Abundant, reasonably well-sorted fine quartz sands. Sometimes slightly micaceous. Usually fired to a dark orange or orange-brown, occasionally with a reduced grey core.
- Fabr 2. Abundant, well-sorted fine quartz sands, usually non-micaceous. Distinctive white to buff-grey firing.
- Fabr 3. Medium or hard fabric. Moderate fine-medium micaceous quartz sands with sparse flint up to 2mm. Irregularly fired to dark brown or dark grey.

- Fabr 4. Medium or soft fabric. Moderate fine non-micaceous sands with sparse or moderate flints up to 1mm. Irregularly fired to buff or orange.
- Fabr 5. Medium or hard fabric. Abundant, well-sorted quartz up to 1mm. Fired to dark orange-brown.
- Fabr 6. Hard fabric. Moderate fine to medium quartz sands, well-sorted, with abundant red clay pellets up to 2mm. Fired to dark orange-brown.
- Fabr 7. Soft to medium fabric. Abundant coarse angular quartz sands with sparse flint and occasional other rock inclusions. Irregularly fired from dark buff through to dark brown/grey.
- Fabr 10. Laverstock or Laverstock-type ware. Hard fabric, moderate fine quartz grains and sands. Fired to buff white or pinkish white.

Fabric 1 incorporates the range of fabrics separated in the Wessex Archaeology report as fabrics Q400, Q401 and Q402: Mephams (in Heaton this volume) notes that these divisions may be variations of the same fabric, and certainly the continuum in inclusion size, density and sorting evident in the AC43 assemblage would make any sub-division of Fabric 1 somewhat arbitrary. Mephams has also noted that the fabric is commonly found in thirteenth-century and later contexts in Salisbury (Mephams in Hawkes forthcoming), and that it may originate from the Laverstock kilns.

Almost 38 per cent by weight of the Fabric 1 assemblage was recorded as scratchmarked; the true figure may be somewhat higher due to the difficulty of recognising deliberate scratchmarking amongst very small sherds and the likelihood that only the upper part of jars/cooking pots were treated in this fashion. Chemical analysis of selected, contemporary scratchmarked assemblages from north Dorset would strengthen the possibilities of a Laverstock origin (Spoerry 1990).

Based on rim type variation at least 24 separate vessels in Fabric 1 were present, most of which were either certainly or probably jars or cooking pots (illustrated examples Fig. 3 nos 1 - 3; the full range of rim form variations is in archive), although pans and bowls (eg Fig. 3 nos 6 and 8) are also represented. Data for estimated vessel equivalents (EVE) are held in archive, but are misleading due to the fragmented state of many of the rims. None of the sherds were glazed, and a large number were heavily sooted, particularly around the base and the lower part of the pot. One oval-sectioned handle (not illustrated) from Phase 3 ditch contexts 103 and 104 suggests the possibility that other vessel forms may also have been present in small quantities.

The jug/pitcher component of the assemblage was to be found almost entirely within Fabric 2. The fabric was visually similar to Fabric 1 but was distinctively fired to a white or off-white colour. Forms comprised round-bodied, everted-rim vessels, probably pitchers, with a wide variety of rim types (a selection only are illustrated; Fig. 3 nos 10 - 13) and jugs with upright, slightly externally-thickened rims (eg Fig. 3 nos 14 - 15). Bases (flat-bottomed with thumb-impressed sides; none illustrated) and strap-handles (two illustrated, Fig. 3 nos 12 and 13, one unillustrated with

	Phase 1	Phase 2	Phase 3	Phase 4	Medieval Unphased	Unstrat	Total
<b>Romano-British</b>							
Fabric 8	1/1	-	1/1	2/3	-	-	4/5
Fabric 9	1/11	-	-	-	-	-	1/11
Sub-Total.	2/12	-	1/1	2/3	-	-	5/16
<b>Medieval</b>							
Fabric 1	1/3	9/26	387/4699	24/93	-	59/482	480/5303
Fabric 2	-	5/79	121/1624	10/83	-	12/98	148/1884
Fabric 3	-	-	6/70	12/157	-	-	18/227
Fabric 4	-	-	4/19	-	-	-	4/19
Fabric 5	3/18	1/2	4/27	-	-	-	8/47
Fabric 6	-	-	6/413	1/9	-	-	7/422
Fabric 7	-	-	11/109	6/72	2/3	12/102	31/286
Fabric 10	-	-	1/25	-	-	1/13	2/38
Sub-Total	4/21	15/107	540/6986	53/414	2/3	84/695	698/8226
<b>Post-Medieval</b>							
Fabric 11	-	-	1/3	2/14	-	7/15	10/32
Sub-Total	-	-	1/3	2/14	-	7/15	10/32
Overall Total	6/33	15/107	542/6990	57/431	2/3	91/710	713/8274

Table 1: Pottery by phase expressed as number/weight in g.

thumb-sized depressions) were rare.

Forty-five sherds with vertical red-painted motifs were recorded, although the true number is likely to have been considerably larger as abraded surfaces meant that, on some of those examples, the decoration was barely visible. Glazing occurred, usually sparse or patchy, but again surface damage may have led to the under-representation of both the number of glazed sherds and the general extent of glazing on individual vessels. Although it proved impossible to reconstruct substantial profiles, differential firing usually allowed decorated sherds to be grouped and often assigned to rims. From this exercise it was clear that both everted- and upright-rimmed jug/pitcher groupings included red-painted vessels (see Fig. 3, nos 13 and 15). Rim variation suggests at least 11 separate jugs/pitchers to have been represented in Fabric 2, which would be consistent with the numbers indicated from grouping of decorated body sherds alone.

Five distinctive sherds from the same wide-bodied vessel were decorated with vertical applied and thumbed strips between rouletted lattices (Fig. 3 no. 10).

The Fabric 2 vessel forms and painted motifs are consistent with the red-painted ware tradition of south-east Dorset and the Poole Harbour area in the later thirteenth or fourteenth century (Jarvis 1983, 53-68). Jugs from a different source are indicated by the two sherds in Fabric 10 (including Fig. 3 no. 16), which are of Laverstock type.

The groupings described above comprised almost eighty-eight per cent of the Medieval assemblage by weight. Other fabrics were identified containing very prominent rounded quartz inclusions (Fabric 5), abundant clay pellets (Fabric 6), or flint and other inclusions (Fabrics 3, 4 and 7). A wide variety of vessel types was recorded (some of which are illustrated in Fig. 3). The origins of these fabrics is unknown, although possible sources might include the Hermitage kilns near Cerne Abbas (Field 1966), some 25km to the south-west, or from more local centres in the Gillingham / Shaftesbury area (*cf* Ross 1985).

#### Illustrated Sherds (Fig 3)

1. Everted-rim, scratchmarked cooking pot. Fabric 1 / Unstrat. Context 61/FSN513.
2. Everted-rim, scratchmarked cooking pot. Fabric 1 / Phase 3 Context 132/FSN534.
3. Everted-rim jar or cooking pot. Fabric 1 / Phase 3 Context 104 / FSN545.
4. Everted-rim jar or cooking pot. Fabric 7 / Phase 4 Context 54 / FSN508.
5. Hooked-rim bowl or jar. Fabric 5 / Phase 3 Context 104 / FSN537.
6. Decorated flanged bowl. Fabric 1 / Phase 3 Context 38 / FSN517.
7. Decorated jar. Fabric 1 / Phase 3 Context 38 / FSN519.
8. Decorated bowl or pan. Fabric 1 / Phase 3 Context 132 / FSN533.
9. Bowl or pan. Fabric 6 / Phase 3 Context 103 / FSN522.
10. Decorated jug or pitcher. Fabric 2 / Phase 2 Context 85 / FSN504.
11. Jar or pitcher. Fabric 2 / Phase 3 Context 104 / FSN540.
12. Pitcher. Fabric 2 / Phase 3 Context 62 / FSN510.
13. Decorated pitcher. Fabric 2 / Phase 3 Context 40 / FSN521.
14. Jug. Fabric 2 / Phase 3 Context 62 / FSN509.
15. Decorated jug. Fabric 2 / Phase 3 Context 104 / FSN539.
16. Decorated jug. Fabric 10 / Phase 3 Context 38 / FSN539.

#### Post-Medieval

Unstratified post-Medieval pottery or material from obviously recent features was not collected, and the assemblage as examined therefore comprises only sherds intrusive in the upper fills of earlier features. These have been quantified in archive, but no analysis has been undertaken. All the sherds collected were earthenwares, most lead glazed, and from the Verwood kilns.

#### Discussion

Although the the red-painted wares and the well-finished rims of the majority of the coarse fabrics would be consistent with an early fourteenth-century date, the sparsely flint-gritted wares suggest the

presence of earlier material. Those fabrics (Fabrics 3, 4 and 7) are visually similar to much of the twelfth- or early thirteenth-century assemblages in north Dorset such as at Kington Magna (M. Ross *pers comm*).

There is little evidence for any chronological difference between the excavated phases. The relative proportions of the distinctive Dorset red-painted wares are likely to be the best chronological indicator, but their absence from Phase 1 and low quantities in Phase 2 are unlikely to be significant given the small sample size in both these groups.

In terms of the origin of the pottery, there is an apparent dichotomy between coarse wares, for which a Wiltshire (Laverstock) source would seem likely, and the jug component, the decorative motifs on which are alien to the Laverstock tradition and more in keeping with a south Dorset source. However, it is possible that there is a significant, more local component amongst the jar and cooking pot fabrics, particularly in the earlier (twelfth- to thirteenth-century) material and elements of the non-scratchmarked component of the Fabric 1 assemblage, including the larger jars or pans with thumbed applied strips (Fig 3, nos 7 and 8).

In terms of fabric, the composition of the AC43 Medieval assemblage is similar to the pottery from contemporary or near-contemporary phases on Wessex Archaeology's Area F immediately to the west. More detailed comparisons between the two assemblages show a much higher proportion of red-painted wares from AC43, which could be due to chronological differences or may result from different functional areas. The comparatively high sherd size from AC43 Phase 3 might indicate a closer proximity to settlement or other activity.

#### The worked stone

by Julian Richards

A total of 50 pieces of worked flint and chert were recovered from topsoil contexts and subsoil features of medieval or later date. The majority of the pieces are dulled, although there are a few fresh pieces. Cortication is very varied, with some pieces exhibiting a pale milky surface colouration and others an ochreous staining. Raw material is both flint, which appears to be small nodules with rolled exterior surfaces (presumably derived from gravels) and cherts, the latter a mixture of Greensand and Kimmeridge Clay cherts.

There is little that can be said with any certainty about an essentially unstratified assemblage of this size. The assemblage certainly contains a mesolithic element, represented by a blade core from context 1 (topsoil, northern zone) and by 13 whole and fragmentary blades, including one of chert. A microlith was also recovered from Context 1. Elements of the remaining material may also be of a similarly early date although the unsystematic nature of some flake cores points to a later (?Bronze Age) technology. Two tools from context 180 (topsoil, southern zone), a borer and a scraper, are both made on much earlier corticated flakes, the still fresh and uncorticated retouch on the scraper cutting through a milky white cortication. The nature of both of these retouched pieces suggests a Bronze Age date.

#### Other Finds

Small quantities of modern (post-1750) bottle glass, coal, fragments of brick, a clay pipe stem, hone stone fragment, button cover and a very worn coin, probably a halfpenny of George III (1760 - 1820), were recovered from unstratified contexts or top fills of features. They are quantified in archive but are not considered further in this report.

#### Burnt and Fired Clay

Burnt and fired clay fragments were recovered from the excavation as shown on Table 2.

Phase	Context	Number	Weight g.	Comments
1	82	2	26	
2	108	4	2	Fragments Only
3	104	1	16	
U/S	1	4	104	
U/S	80	3	82	Single Wattle Impression
	Total	14	230g	

Table 2: Occurrence, by phase, of burnt and fired clay

#### Metal Objects

A total of six iron objects were recovered from the site; four nails from topsoil contexts and two unidentifiable fragments, one from ditch 19 (Phase 4) and one from ditch 71 (Phase 2).

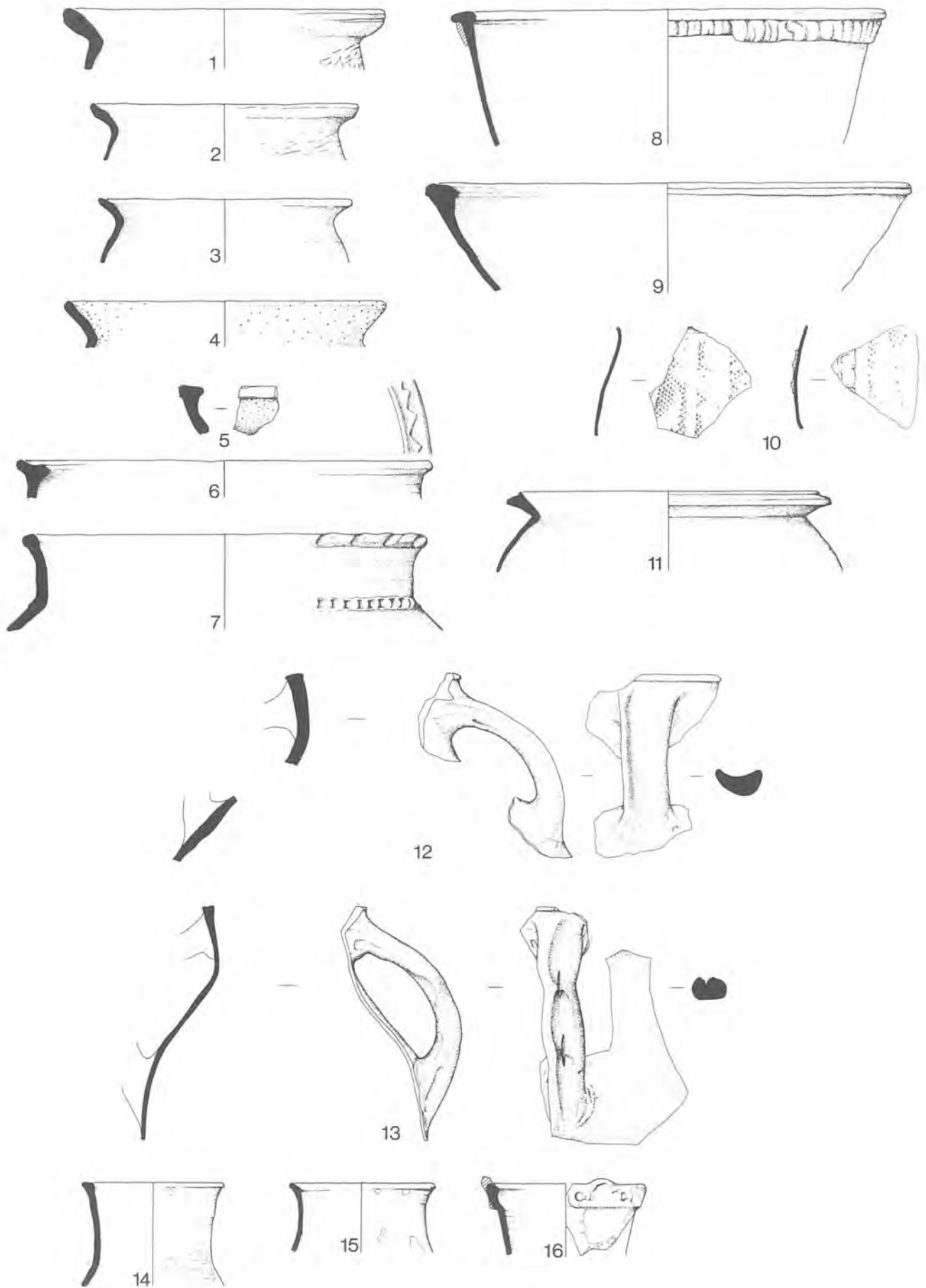


Fig. 3: Medieval pottery at Gillingham.  $\frac{1}{4}$  life size

*Ferrous metalworking residues*

Slag was recovered from a number of contexts, mostly feature fills, across the site and is summarised on Table 3. The material included tap slag, furnace lining and clinker, none of which was associated with structures.

Phase	Context	Number	Weight g.
1	82	2	118
	84	2	7
2	59	3	32
	83	1	2
	85	1	48
3	104	1	18
	168	2	5900
	200	1	2
4	37	1	11
	54	2	44
U/S	61	3	274
	80	3	125
	81	1	13
	134	2	202
	Total	25	6796

Table 3: Occurrence, by phase and context, of metalworking residues

**The animal bone**

by Mary Iles, Centre for Human Ecology and Palaeoeconomy, Department of Archaeology, University of Southampton

A small collection of bone, largely from phase 1 to 3 ditch deposits was examined by the Centre for Human Ecology and Palaeoeconomy, University of Southampton. The collection comprised 193 individual bones, of which 49 (25.5%) were identifiable to species. The remaining 143 bones (74.5%) were unidentified, 109 of which were fragments.

The species present were: cattle (28 bones), pig (2), sheep/goat (10), horse (7), dog (1) and bird (1).

Of the 109 unidentified fragments, 84 were from upper ditch fills and may have been affected by plough damage and reworked by flooding or water movement across the site. A full list of bones, by context is held in the project archive.

**DISCUSSION**

The archaeological evidence from the excavations in advance of the Waitrose supermarket indicates a long period of occupation within the vicinity of the site. The common occurrence of prehistoric worked flint is not in itself indicative of local settlement as much of the material may be derived from further upstream and re-deposited in flood deposits. No features could be defined as being prehistoric in date.

Similarly, the occurrence of occasional Romano-British pottery is probably related to settlement within 800 metres at Common Mead Lane (Moore and Ross, 1990). It is not unreasonable to assume that the lower terraces of the Stour around the site were utilised for pasture during the Roman period. Although no new evidence has been discovered which can be related to the early Medieval ovens discovered to the west of the site, the small quantities of slag found on the site may have derived from that area.

The sequence of deposits revealed in the excavations

indicates an intensive use of the area possibly for enclosed fields and settlement, probably during the thirteenth and fourteenth centuries. The Phase 1 ditches appear to represent major boundaries, perhaps providing drainage for field parcels adjacent to the floodplain. The Phase 2 enclosures may result from small enclosures, perhaps for single buildings. There is some conflict in the evidence from the Phase 3 ditches, for although they too appear to represent significant land divisions the density of finds recovered is more appropriate to an area where settlement, not agriculture, was the primary function. On balance though, the combination of small earthwork enclosures and the subsoil evidence for settlement activity provides important new evidence for the development of the Medieval town of Gillingham to the south of the river Stour. The available documented history of the area has been adequately summarised elsewhere (Heaton, this volume) and reveals that the area was included in an endowment of St Katherine's Chantry in the early 1330's. The intensity of use of this site and the volume of Medieval finds from the thirteenth and fourteenth century may indicate that even after this grant the area retained a sub-urban function, linked to the town by the ford.

**ACKNOWLEDGEMENTS**

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The excavation team comprised Jackie Dodd, John Valentin, Stephen Legg, Jemma Metcalfe-Gibson, Andy Fulton, Anna Thomas and Phil Bennett all of whom experienced the dubious pleasures of digging on Kimmeridge Clay in a particularly wet winter! In addition to work credited to individuals in text, Jo Mills examined and commented on the burnt clay, metalwork and metalworking residues. Pottery drawings are by Mark Corney and plans by Robert Read. I am also grateful to Dorset County Council for allowing access to the report on the Relief Road excavations, prior to publication.

- Field, N. H., 1966, 'A thirteenth century kiln at Hermitage, Dorset', *Proceedings of the Dorset Natural History and Archaeological Society*, 88, 161-175
- Heaton, M. J., this volume, 'Two mid-Saxon grain-driers and later Medieval features at Chantry Fields, Gillingham, Dorset'
- Mepham, L., in Hawkes, J. W., 'Excavations in Salisbury 1984-89', in preparation
- Moore, W. F. and Ross, M. S., 1990, 'The Romano-British Settlement, Common Mead Lane, Gillingham, Dorset', *Proceedings of the Dorset Natural History and Archaeological Society*, 111, 57-70.
- Penn, K. J., 1980, 'Historic towns in Dorset', Dorset Natural History and Archaeological Society, Monograph Series no. 1
- Ross, M. S., 1985, 'Kington Magna: a parish survey', *Proceedings of the Dorset Natural History and Archaeological Society*, 107, 23-46
- Sperry, P. S., 1990, 'Ceramic production in Dorset and the surrounding region', *Medieval Ceramics* 14, 3-17

# Excavations at 29 High Street: Wimborne Minster, Dorset 1990

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with contributions by J. Ede and L.N. Mepham

## Summary

*Excavation of the interior of 29 High Street, Wimborne Minster, took place in the autumn of 1990 in advance of renovation work on the 17th-century property. Despite severe truncation of the floor levels features of 12th-13th-century date were located, including a well, a pit and a possible early boundary ditch. Post-medieval features excavated included a well and some post-holes/pits. In addition to the excavations a survey was carried out of the standing fabric of the building including a timber box-framed bay end.*

## INTRODUCTION

The property now known as 29 High Street is located in the centre of the medieval town near to the north-eastern corner of the boundaries of Wimborne Minster precinct (Fig. 1). The building is part of a larger structure, being the south wing of 'The Priest's House', 'a substantial town house of the early 17th century, with 18th-century additions' (RCHM 1975, 88-89). East Dorset District Council (EDDC) acquired the lease of number 29 for use as the local Tourist Information Office, with the upper floors to be used for storage by the town museum which occupies the remaining parts of the Priest's House. The poor condition of this part of the building and the need to improve the museum's facilities necessitated complete renovation, including considerable structural repairs. These works took place over the winter of 1990/91. As the ground floor of number 29 was to be disturbed during this work English Heritage had requested that EDDC ensure a full archaeological investigation be carried out prior to the start of the renovations. It was also requested that structural details of the standing fabric should be recorded, especially the east bay of the building which is of timber-framed construction.

## The Priest's House

The evidence for the development of the Priest's House has been summarised elsewhere (RCHM 1975, 88-89). A two-storey building with attics, it is considered to have originated in the early 17th century, a central ground-floor hall with a chamber above, and two opposed cross-wings, later modifications having added an extra room to the west of the hall, along the street frontage. In 1983 renewal of the timber floor within this room (now the Front Gallery of the Priest's House Museum) exposed evidence for an earlier building, probably of 15th-century date, overlying late medieval cobbling (Field 1983). The scale of investigations in 1983 precluded any firm conclusions as to the nature of the medieval activity or the form of the earlier building.

Much of The Priest's House is constructed of stone rubble and knapped flint, but timber framing in the east bay of the south wing is exposed at ground floor level on the south wall of Room A (Fig. 2). Sketches of the external elevation (now masked by adjoining buildings) had shown the framing of this bay to be almost complete, and, as part of the archaeological works during renovation, areas of plaster were selectively removed from the upper floors of the south wall of number 29 to enable a measured



Plate 1:- 29 High Street from the West: Pre-Renovation.

survey of the internal elevation to be made (Fig. 3). The box-frame timber construction of this wall indicates that it was built during the 16th or 17th century, having jointed posts and arch-bracing below the first-floor bressumer (obscured) and a surviving rafter to one side which has a slightly widened foot, and so would appear to confirm the date assigned to this building by the RCHM. However no directly comparable frames were illustrated in Wimborne, Poole, or other local towns by the RCHM, and no attempt has yet been made to establish a sequence of timber framing in Dorset. The dating of the Priest's House wall might become more precise when such a work becomes available.

The brickwork infilling the timber framing may be contemporary as by the 17th century brick was widely used in 'superior secular buildings' (RCHM 1975, xxiv). However, the possibility exists that here it is an 18th- or 19th-century addition replacing wattle and daub panels.

Reconstructed sections across the building are held in archive.

EXCAVATIONS

The excavations took place over a three-week period during October 1990. The entire ground floor of the main building (Room A) and the first room of the range of extensions to its rear

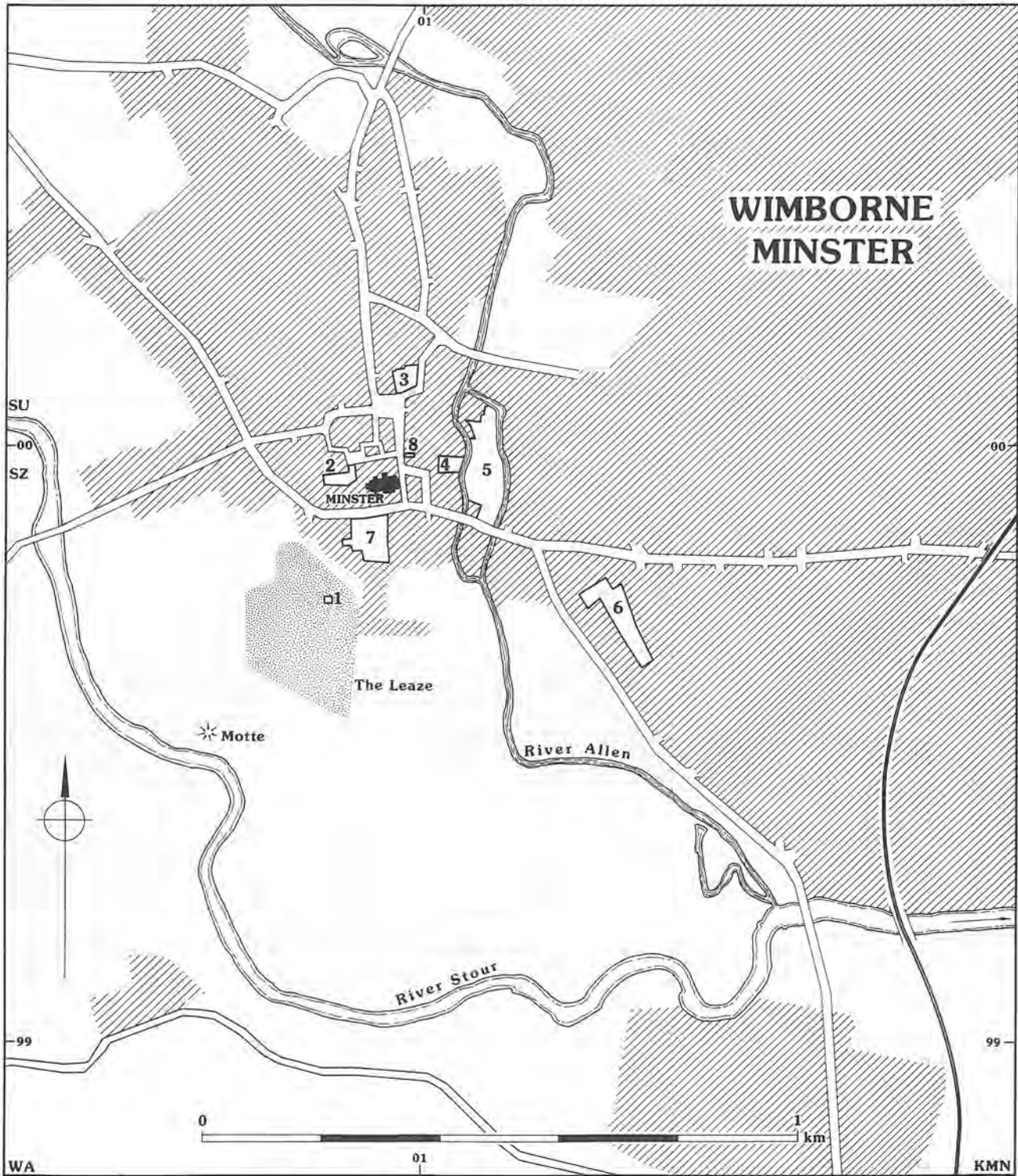


Figure 1:- Excavations in Wimborne Minster: 1 The Leaze, 2 Minster/Cornmarket, 3 Crown Hotel, 4 County Library, 5 Shopping Centre, 6 South of St Catherine's Chapel, 7 King Street, 8 No. 29 High Street.

(Room B) were investigated archaeologically (Fig. 2). The main area within Room A was roughly rectangular, 7.6m east-west by 4m north-south, widening to 6m at its western end. Room A had a modern timber suspended floor which was removed prior to the excavations, all surfaces below this being cleaned by hand. All archaeological features encountered within this area were investigated and recorded using Wessex Archaeology's standard recording system. All features were excavated to a depth of at least 0.70m and only the two wells were not bottomed. Room B was cleaned and recorded but due to the practicalities of working in what had become a thoroughfare for the contractors, excavation of features was not possible.

It was evident that the interior levels had been substantially reduced over most of the area examined. Two localised patches of clay, contexts 74 and 75 immediately overlying the natural gravels in Room B, were all that survived of previous floor levels, but these contained no finds and could not be related to any other features. Truncation was even more severe in Room A, where the gravel surface was 0.20m lower than that in Room B, and no floor layers, occupation debris, internal divisions, or other

features associated with the standing building survived. The elimination of this part of the archaeological record had included the complete removal from the ground floor of a substantial chimney/fireplace associated with the 17th-18th-century building.

#### MEDIEVAL

All the features assigned to the medieval period produced pottery of a 12th-/13th-century date together with iron slag, fired clay and quantities of burnt material. The similarity of the fills and associated finds would suggest that these features are all broadly contemporaneous, although few stratigraphic relationships were present.

#### Ditch 22

Ditch 22, aligned east-west, ran across the full length of Room A, continuing into Room B as a dark soil mark, context 73. It was not examined by excavation within Room B as it ran adjacent to and beneath the north wall. Within Room A the ditch was approximately 1.50m wide along its entire length but its depth, its profile, and the nature of its fills were more irregular. At its western end it was 0.56m deep with moderately concave sides and a rounded base, whereas at its eastern end it was 0.80m deep with steep straight sides and a rounded base; one section

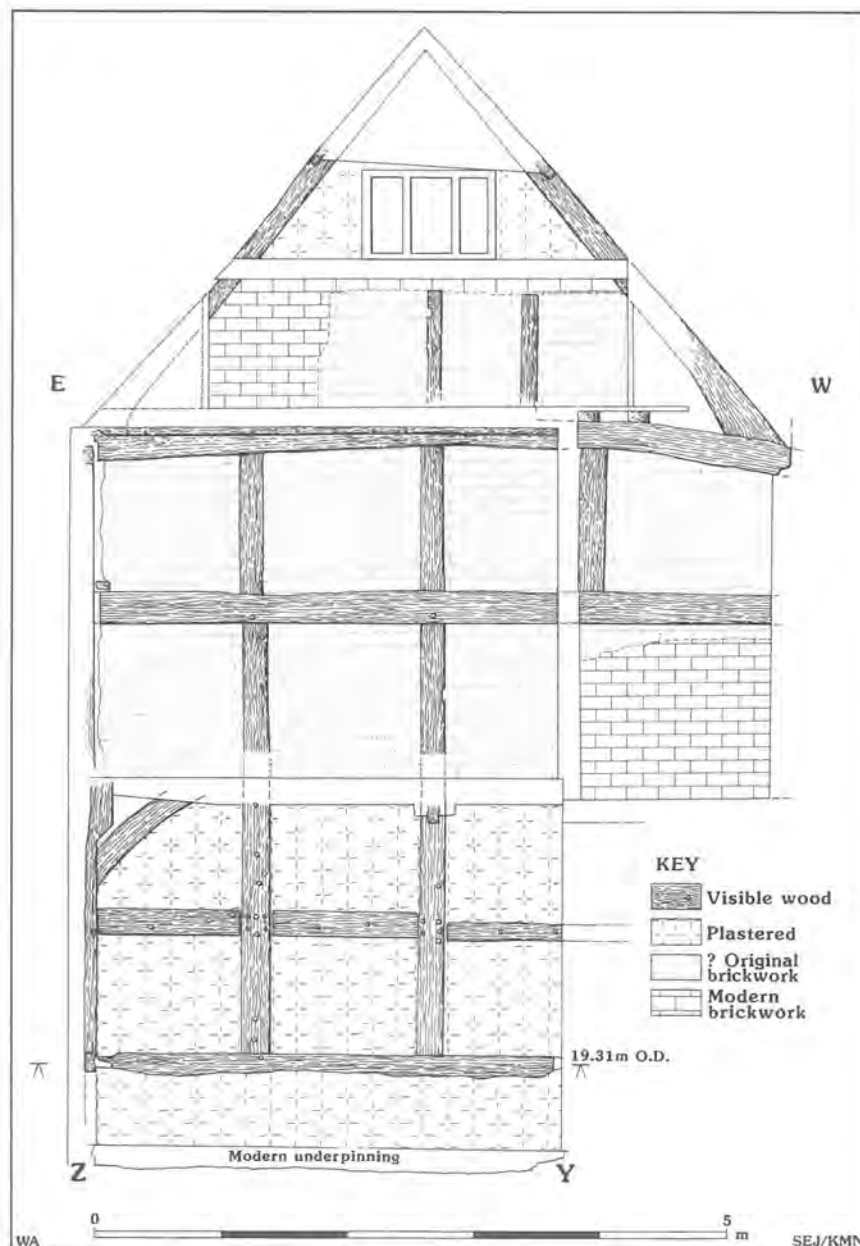


Figure 2:- 29 High Street: East Bay- Composite Internal Elevation.

is reproduced here (Fig. 4, located on Fig. 2; other section drawings held in archive). The nature of the fills changed more abruptly approximately 1.50m-2.50m from the eastern end of the room. Along its western end the top fills were of dark silty loams with much charcoal and a few coarse inclusions, the primary fills being comprised of more sandy material with large amounts of flint gravel. At the eastern end the ditch was filled with sandy gravelly layers apart from one thin black layer, charcoal- filled silty loam, approximately half-way down its depth.

**Well 63**

A well was situated to the south of Ditch 22, but no clear relationship between the two was obvious because of levels of truncation. The eastern side of the well was not seen in Room B, since the area in which it should

have occurred had been disturbed by the current renovation work and by a water pipe and electric cables. The well pit had a diameter of 1.80m with steep to vertical sides and was only excavated to a depth of 1.00m, the bottom not being reached. The well itself was poorly constructed of unworked blocks of sandstone, limestone and nodules of flint, and had either collapsed or been demolished so that only a small section on the southern side survived as a standing wall. This small section was enough to indicate that the well had a diameter of approximately 0.90m.

**Pits 38 and 39**

Pits 38 and 39 were found on the extreme southern side of the room only partially laying within the room so that their true shape and dimensions were not determined. It was clear in section that Pit 38 was cut by Pit 39,

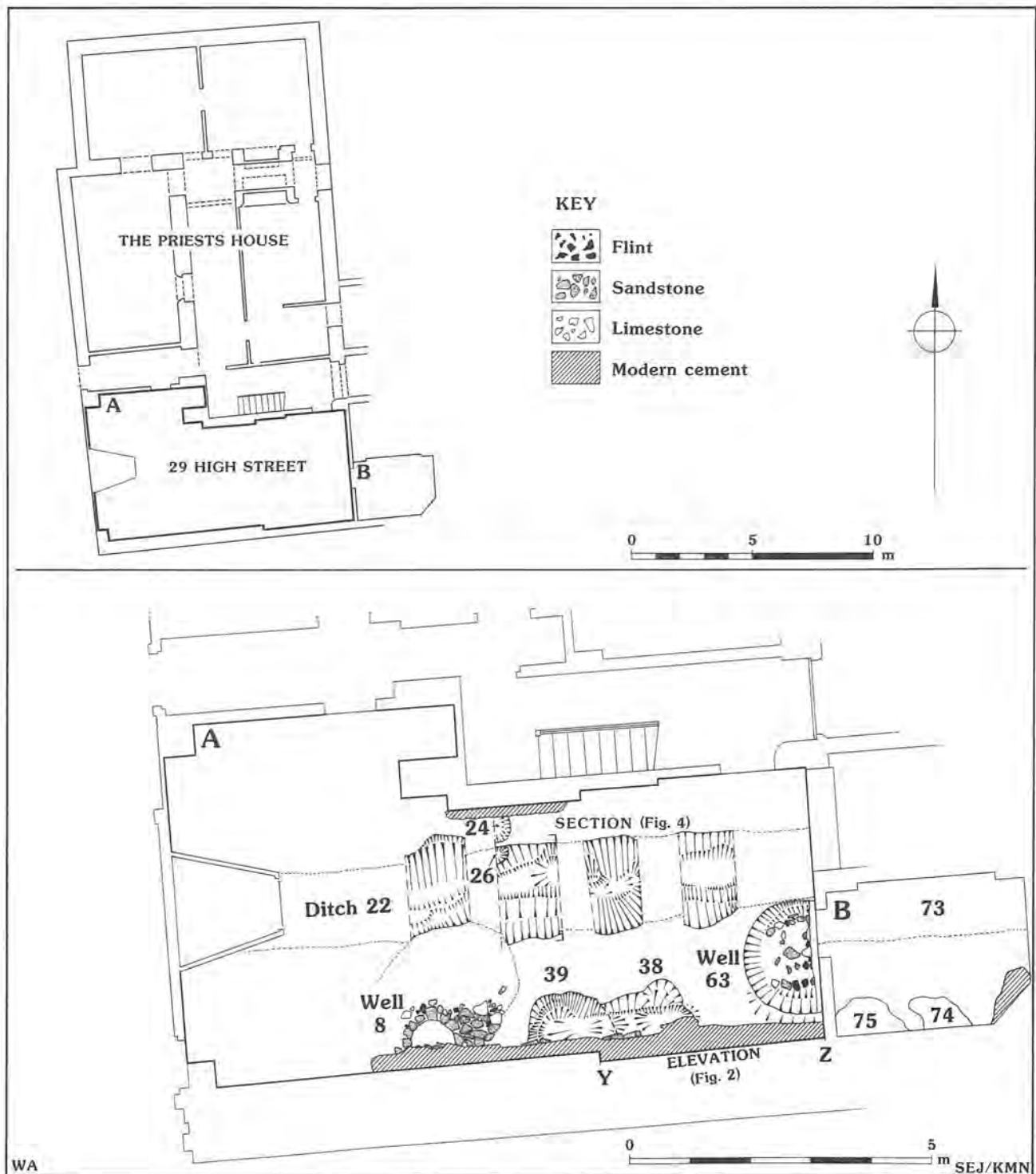


Figure 3:- 29 High Street: Excavated Areas.

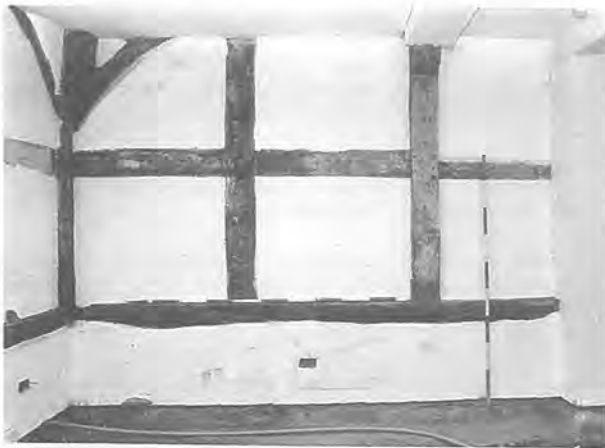


Plate 2:- 29 High Street: Elevation of East Bay: Ground Floor.

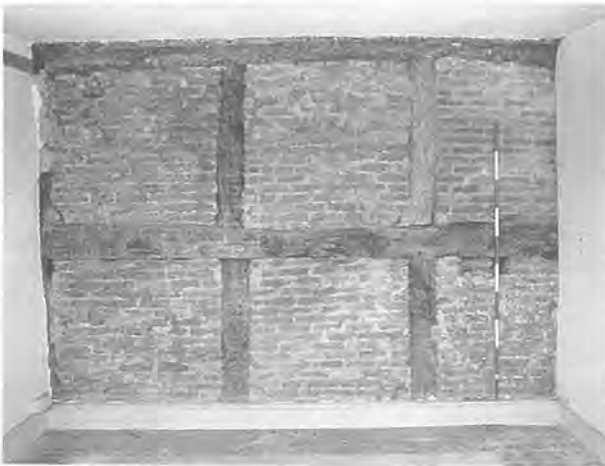


Plate 3:- 29 High Street: Elevation of East Bay: First Floor.



Plate 4:- 29 High Street: Ditch 22 from the West.

but their fills were of similar material, dark silty loams with a substantial amount of charcoal in 38, and the ceramic finds from them suggest that they belong to roughly the same period.

## POST-MEDIEVAL

### Well 8

The largest of the post-medieval features was a well pit. This was situated on the south-western edge of the room lying half under the southern wall of the building. The pit itself appeared to be sub-square although this was far from clear as it had been backfilled with natural gravel with only very occasional charcoal flecks and sandstone blocks to differentiate it from the surrounding material. The well itself was constructed of large sandstone blocks with finely worked faces (concave in appearance) and had a diameter of 0.70m. The pit was again excavated to a depth of 1.00m and the bottom was not reached. The fill of the well was fairly homogeneous, large amounts of brick in it suggesting that it had been deliberately backfilled.

### Pit 42

A D-shaped pit, context 42, was found cutting Ditch 22 (therefore not shown on Fig. 2). It was 0.40m long, 0.25m wide and 0.33m deep with vertical sides and a flat base. Its fills were comprised of grey brown silty sands and yellow brown silty sands with flint gravel. These produced a great quantity of shell, fish bones and pottery of 15th-/16th-century date.

### Stone-Setting 10

Set into the top of Pit 38 (therefore not shown on Fig. 2) was a stone setting, context 10, which comprised a number of sandstone blocks one course high and wide set in a square pattern. In between the stones were two horizontal layers of almost pure clay, one of which (context 14) contained an almost complete pottery vessel (see below). This setting ran out of the trench towards the building's southern wall but unfortunately the relationship between the feature and the wall could not be made out due to the presence of modern concrete underpinning.

### Post-Holes 24, 26, and 48

Three other undated features were found of which at least two cut Ditch 22. These all appeared to be post-holes, although definition was difficult as they had been greatly truncated. Post-hole 24 was a small sub-rectangular feature 0.60m in length and 0.28m deep with steep sides and a concave base, its fills comprised of mid grey sandy loams with flint gravel. Post-hole 26 was oval in shape 0.30m long, 0.23m wide and 0.20m deep with steep sides and a concave base, its fill was mid grey sandy gravel. This feature appeared to cut the northern edge of Ditch 22. Post-hole 48 was a circular cut with steep concave sides and a concave base, it was 0.45m in diameter and 0.20m deep, its fill was dark grey sandy loam.

## THE FINDS

by L.N. Mephram

### THE POTTERY

The pottery assemblage comprises 125 sherds (2661g). Apart from a single Romano-British sherd, all are of medieval or post-medieval date.

The pottery was sorted into fourteen separate fabric types on the basis of the range and coarseness of the inclusions present, using a binocular

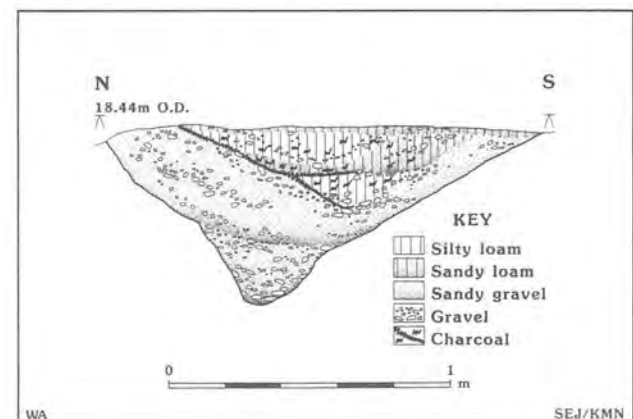


Figure 4:- 29 High Street: Section across Ditch 22.

microscope (x20 magnification). These fourteen fabric types fall into three broad fabric groups based on the dominant inclusion: Group C (calcareous inclusions); Group Q (quartz inclusions), and Group E ('established' wares, i.e. those of known type or source).

The assemblage has been fully quantified by fabric type within each context, and details of vessel form, surface treatment and decoration, where present, have also been recorded. Details are held in archive. Fabrics and forms are discussed below. Fabric totals by type are given in Table 1.

### Fabrics and Forms

A single body sherd of Romano-British date was recovered, in a moderately coarse, unoxidised sandy fabric (Q100). This coarseware fabric is of unknown source.

Six fabric types are of early medieval date:

C400. Hard, vesicular fabric; rare (1-3%), poorly-sorted crushed shelly limestone fragments <2mm, and moderate (10-20%) voids of the same shape and dimensions, representing leached limestone; moderate, poorly-sorted quartz grains <1mm; rare iron oxides. Irregular firing: unoxidised grey-brown with patchily oxidised surfaces. Handmade.

Q400. Hard, very coarse fabric; moderate, poorly-sorted quartz grains <2mm; rare subangular flint <3mm; rare iron oxides. Irregular firing: unoxidised grey-black with patchily oxidised internal surfaces; 'pimply' surface appearance and slightly soapy feel. Handmade; cookpots.

Fabric type	No. sherds	Weight	% of total
C400	15	175g	6.58
Q100	1	8g	0.30
Q400	26	328g	12.33
Q401	11	186g	6.00
Q402	29	670g	25.18
Q403	16	209g	7.85
Q404	1	14g	0.53
Q405	13	430g	16.16
Q406	3	36g	1.35
Q407	1	3g	0.11
Q408	1	488g	18.34
Tudor Green	1	1g	0.03
Verwood-type	6	103g	3.87g
Stoneware	1	10g	10.38
Total	125	2661g	

TABLE 1: 29 High Street: Pottery totals by fabric

	Ditch 22		Well 63		Pit 39		Pit 42		Well 8		Stone 10		Other	
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
C400	13	167g											2	8g
Q100	1	8g												
Q400	22	247g	3	74g	1	7g								
Q401	3	15g			6	158g							2	13g
Q402	4	83g	25	587g									1	10g
Q403	12	190g	2	7g			1	2g					1	14g
Q404														
Q405							13	430g						
Q406													3	36g
Q407													1	3g
Q408											1	488g		
T. Green							1	1g						
Verwood													6	103g
Stoneware										1	10g			
TOTAL	55	710g	30	668g	7	165g	15	433g	1	10g	1	488g	16	187g

TABLE 2: 29 High Street: Pottery totals by context

Q401. Hard, coarse fabric; moderate, poorly-sorted quartz grains <2mm; rare iron oxides; rare mica. Firing as C400: surfaces generally smoothed. Handmade.

Q402. Hard, very coarse fabric; common (20-30%), poorly-sorted quartz grains <1.5mm; rare iron oxides. Firing as Q400: 'pimply' surface appearance. Handmade; cookpots, pitchers.

Q403. Hard, moderately coarse fabric; common, poorly-sorted quartz grains <1mm; rare iron oxides. Firing as Q400: possibly a finer version of Q402. Handmade; bowls.

Q404. Hard, moderately fine fabric; common, fairly well-sorted iron-stained quartz grains <0.5mm; rare black iron oxides. Oxidised pale salmon pink with grey core. Handmade; glazed jugs. Possibly a Laverstock product.

The range of vessel types represented in these fabrics is very limited. The majority of recognisable vessels are cookpots (thirteen examples), with rims in two main forms: either almost upright and squared (Fig. 5, 1); or flaring, with a 'two-stepped' profile (Fig. 5, 2). Examples of finger-impressed decoration are present on both rim forms. There are two examples of convex-sided bowls, both in fabric Q403, (Fig. 5, 3), and a single strap handle in fabric Q402, from a jug/pitcher of unknown form.

The distribution of fabric types by feature is given in Table 2. This shows that the majority of this group of fabric types was recovered from three features: Ditch 22, Well 63 and Pit 39. None of these features demonstrates any convincing ceramic sequence, although it can be noted that fabric Q401 occurs only in the uppermost fill of Ditch 22. Otherwise both coarse and finer elements within this group occur together in the same contexts.

General parallels for these fabric types and vessel forms can be found in several south-east Dorset assemblages with a broad date range of 12th/14th-century, e.g. Christchurch, Poole and Wareham (Davies 1983; Thomson *et al.* 1983; Jarvis 1992; Hinton and Hodges 1977), as well as Wimborne Minster (Draper 1983). The lack of the distinctive bifid cookpot rims found in 13th-/14th-century contexts at Poole, together with the complete absence of any of the glazed jugs of a similar date found at Poole and in other assemblages, would seem to indicate a date toward the beginning of this range, probably no later than the 13th century. The two bowls, which occur in the slightly finer fabric Q403, may represent a slightly later development, reflecting the expansion of the range of vessel forms noted in the 13th-/14th-century, as for example at Poole and Christchurch (Jarvis 1992; Davies 1983), although this suggestion is not supported by the stratigraphic data. The single sherd of fabric Q404, possibly from a Laverstock-type glazed jug, would also fall within this later date range of 13th-/14th-century (see Musty *et al.* 1969).

Five fabrics are of late medieval/early post-medieval date:

Q405. Hard, fine fabric; rare quartz grains <0.5mm; rare grog/clay pellets <2mm; rare black and red iron oxides; rare mica. Oxidised orange-red. Wheelthrown; handled cookpot/cauldron.

Q406. Very hard, fine fabric; no visible inclusions apart from rare iron oxides and mica. Oxidised orange-red with grey core. Wheelthrown.

Q407. Hard, moderately fine fabric; moderate, fairly well-sorted quartz grains <0.5mm; rare iron oxides. Oxidised salmon pink. Wheelthrown. Possibly an early Verwood product.

Q408. Hard, moderately fine fabric; moderate, fairly well-sorted iron stained quartz grains <0.5mm; rare iron oxides and mica. Oxidised orange-salmon pink with grey core. Handmade; salt/condiment dish.

E454. Tudor Green ware; very fine white fabric with no inclusions visible under microscope. Wheelthrown; dark green glaze.

These five fabric types represent isolated sherds or single vessels only. Fabric Q405 comprises sherds of a partially glazed Dutch-type cauldron or pipkin (Fig. 5, 4), recovered from Pit 42. Such vessels were imported in quantity in the late medieval and early post-medieval period, and were widely copied in local fabrics. Examples of both Dutch vessels and local imitations are known from Southampton, and are often indistinguishable (Platt and Coleman-Smith 1975). The example from Wimborne, with its globular profile and rounded handles, is likely to be of 15th-16th-century date. This date is supported by its association with a single sherd of 'Tudor Green' ware, which is generally dated to the later 15th-century (Holling 1977).

Fabric Q408 is also represented by a single vessel: a divided dish with two compartments and an overhanging 'hooded' cover (Fig. 5, 5), recovered from a layer within stone-setting 10. The fabric of this vessel, particularly the firing colour, would suggest that it is a product of one of the kilns in the Verwood area, possibly Horton, although as yet no parallels for the vessel form have been found (P. Copeland-Griffiths pers. comm.). A date in the 15th-/16th-century can be suggested, on the basis of the mottled green glaze, and the thumbled decoration around the base. The function of the vessel is still uncertain, although use as a salt or condiment dish seems most likely.

Fabric Q407 resembles, in colouring and inclusion types, the post-medieval earthenwares produced by the Verwood kilns, although in a slightly coarser version, and may be as fabric Q408, a late medieval or early post-medieval product of these kilns. Kilns excavated in the Verwood area have provided evidence of pottery production from the

mid-17th century, although documentary evidence suggests that kilns were in operation in the area from at least the 14th-century (Algar *et al.* 1987).

#### Discussion

The pottery assemblage appears to reflect two main periods of activity on the site. The early medieval material can be dated broadly to the 12th-/14th-century, with the emphasis on the earlier part of this period. There is nothing to suggest that this group represents anything other than fairly local production, probably centred around the Poole Harbour area, although a single sherd of possible Laverstock ware would derive from a more distant source. A second period of activity, represented by only a small group of sherds and vessels, can be dated broadly to the 15th-/16th-century. Although local fabric types are still present, wider influences can be seen in the presence of Tudor Green ware from Surrey and the Dutch-type cookpot.

#### List of illustrated sherds

1. Rim sherd from cookpot, in very coarse sandy fabric (Q402). Finger-impressed decoration. Context 36.
2. Rim sherd from cookpot, in very coarse sandy fabric (Q402). Finger-impressed decoration. Context 61.
3. Convex sided bowl with sagging base, in moderately coarse sandy fabric (Q403). Context 34.
4. Rim and handle from cauldron or pipkin, in fine oxidised fabric (Q405). External surface partially glazed; rilling on shoulder. Context 43.
5. Salt or condiment dish in moderately fine oxidised fabric (Q408). Surfaces patchily glazed with mottled green glaze; base thumbled. Context 14.

#### THE SLAG

A total of twelve pieces of slag (2326g) was recovered. The slag was examined by Dr Gerry McDonnell (Ancient Monuments Laboratory), whose comments are summarised here. The most significant fragments derive from context 65, filling Ditch 22. These pieces contain large charcoal impressions, and are almost certainly furnace residue left at the end of smelting. The slag cannot be dated morphologically, although the

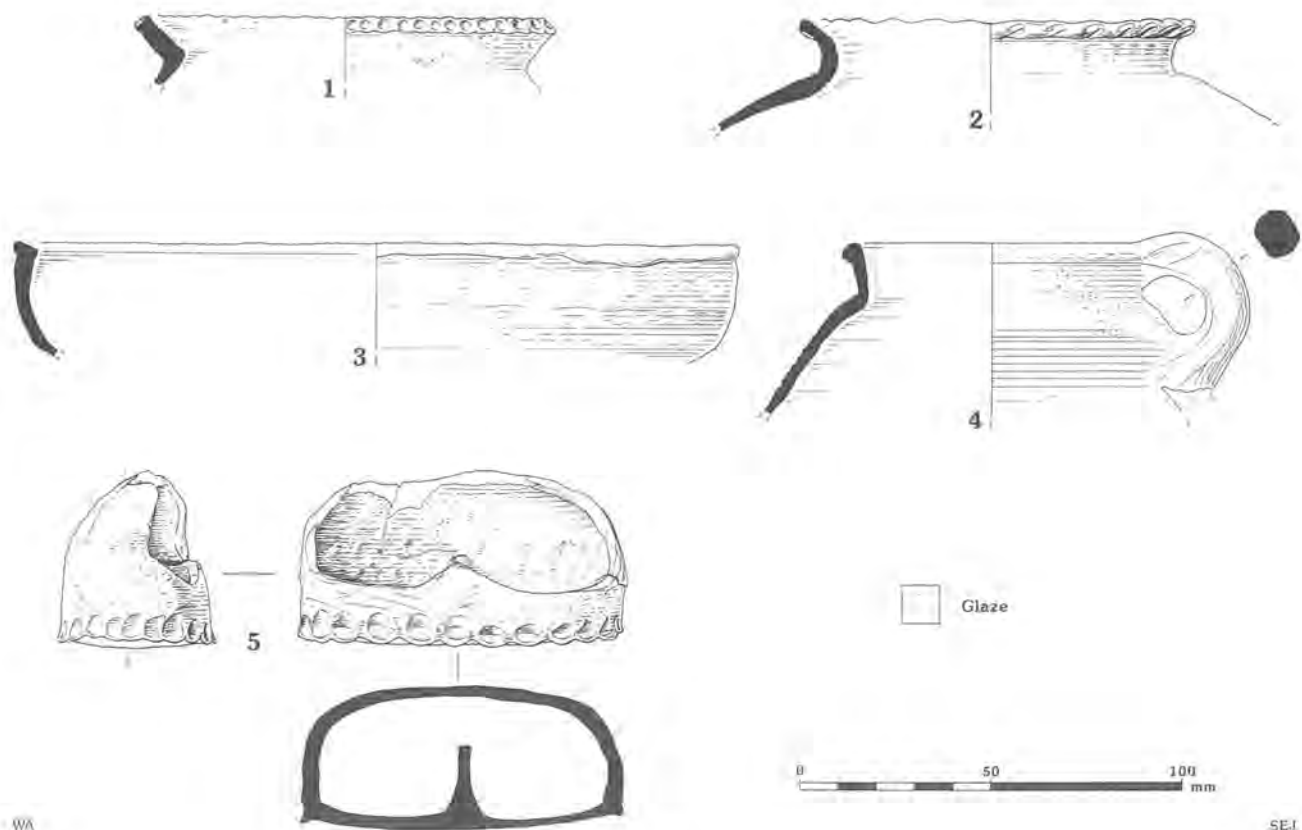


Figure 5:- 29 High Street: Pottery.

TABLE 3: Identified seeds

		SAMPLE	701	702	703	704	705	706	707	710
		CONTEXT	004	043	011	013	012	020	036	041
		SECTION			A	A	A	A	C	D
		LITRES	15	15	30	15	15	15	15	15
		DENSITY	5	3	35	212	143	4	10	35
BOTANICAL NAME	COMMON NAME	HABITAT								
<i>Triticum aestivocompactum</i>	bread club wheat	CF	23	7	261	694	256	7	29	29
<i>Hordeum</i> sp.	barley	CF		1	23	12	33	1	4	
<i>Hordeum</i> sp. hulled		CF			1					
cf. <i>Hordeum</i> sp.		CF		1	28	105	83			4
cf. <i>Secale cereale</i>	rye	CF		1	2					
<i>Avena</i> sp.	oats	CF			1					
cf. <i>Avena</i> sp.		CF				40	12		1	
<i>Avena/Bromus</i> sp.		CF			263	40	177	2		14
TOTAL ID. CEREAL GRAIN			23	12	389	891	561	10	34	58
<i>Bromus</i> sp.	brome grass	(CF)G					5		5	8
cf. <i>Bromus</i> sp.					12	36	13		3	2
cereal indet.	grain frags.		40+	22+	368+	1270+	881+	30+	71+	154+
TOTAL CEREAL GRAIN			63	34	757	2161	1442	40	105	212
CHAFF										
<i>Triticum</i> sp.	spikelet fork			1	11	289	6			175
<i>Hordeum</i> sp.	spikelet fork				6	16	1			
cf. <i>Hordeum</i> sp.	spikelet fork				1	6			1	
<i>Secale cereale</i>	spikelet fork			1					1	17
<i>Avena fatua/ludoviciana</i>	abscission scar					16	2			
<i>Avena</i> sp.	abscission scar					8	1			
<i>Avena</i> sp.	awn frag.									
Indet.	spikelet fork					21			8	19
Indet.	rachis frags.				1				8	4
Indet.	culm node					56	8			4
Indet.	embryo				2		8			
Indet.	chaff frags.				3		11			9
TOTAL CHAFF (not awn/rachis/chaff/embryo)			0	2	18	412	18	0	10	215
WEEDS										
CARYOPHYLLACEAE										
<i>Stellaria</i> sp.	chickweed	Da			2	8	2			
<i>Agrostemma githago</i>	corn cockle	Da				4,4t	2		1t	
indet.									1	
COMPOSITAE										
<i>Anthemis cotula</i>	stinking mayweed	Dabh	8	1	170	276	485	8	9	60
cf. <i>Anthemis cotula</i>							42			
<i>Cirsium/Carduus</i> sp.	thistles				1	4	15			
indet.							1			
CORYLACEAE										
<i>Corylus avellana</i>	hazel	FSW			1	1	1			1
GRAMINAE										
<i>Arrhenatherum elatius</i> ssp. <i>tuberosum</i>	onion couch grass	G					1			
indet.			2		3	16	3		4	3
LEGUMINOSAE										
<i>Vicia/Lathyrus</i> sp.	vetch/pea		3	1	56	171	69	6	5	15
<i>Pisum/Vicia</i> sp.	pea/bean	FC	1							
indet.									1	
POLYGONACEAE										
<i>Rumex acetosella</i> agg.	sheeps sorrel	DaCG			1		2			
<i>Rumex</i> sp.	dock/sorrel	DaCG								1
SCROPHULARIACEAE										
<i>Euphrasia/Odontites</i> sp.	Eyebright/Bartsia									4
UMBELLIFERAE										
indet.						4	1			
weed seed head capsule frag.					1		4			
weed seed nfi					19	13	14			4
twiggy bit					2	73	4			

## HABITAT REFERENCES: KEY

C = cultivated plant; D = disturbed ground; G = grassland; M = marsh; P = ponds, ditches, banks; s = scrub; W = woodland; F = food plant; a = disturbed land including arable; b = base rich; h = heavy soils; n = nitrogen/phosphate rich soils; w = wet/damp soils

## NOTES ON CALCULATIONS:

Fragments of grain have not been made up to equivalent number of grains represented as this would not alter results significantly.

Cereal grain total does not include *Bromus*/cf. *Bromus* sp. These are included in the weed seed total.

Chaff total does not include rachis frags., embryos, bits, awn frags.

*Vicia/Lathyrus* sp. included as weed seeds although there is the possibility that these may have been either wild plants or cultivated for human food or animal fodder.

absence of tap slag might normally suggest a pre-medieval date, perhaps late Saxon. The occurrence of such material in a post-Conquest deposit would suggest an *ad hoc* or very temporary smelting operation.

#### THE METALWORK

The iron objects recovered comprise four nails, one from pit 43, one from well pit 63, one from stone setting 10 and one unstratified, and one sheet fragment from pit 43. The copper-alloy objects comprise one pin fragment and one lace-tag both from well pit 59, and one thimble and one protractor, both unstratified. One iron nail was found in association with early medieval pottery in well pit 63; otherwise all the objects appear to be of late medieval or later date. Further details are in archive.

#### THE FIRED CLAY

The fired clay comprises twenty-nine fragments (350g), most of which came from ditch 22 with a few fragments from pit 42 and well pit 8. All of this material was in a very similar fine sandy fabric with rare flint inclusions. A few of the fragments have visible surfaces, and may well be of structural origin, although there are no wattle impressions present. In all cases where the fired clay was found in association with pottery, the latter is of early medieval date.

#### THE CERAMIC BUILDING MATERIAL

The ceramic building material comprises twenty-three fragments (827g). Some peg tiles are recognisable, otherwise the majority of the building material consists of indeterminate fragments, probably brick. All are apparently from handmade pieces, and approximately half occurs in a very badly-wedged, salmon-pink fabric.

### ENVIRONMENTAL REMAINS

#### PLANT MACROFOSSILS

by J. Ede

A total of ten bulk samples was taken, eight from the fill of Ditch 22 (samples 703 - 710 inclusive), one from Pit 39 (sample 701), and one from the fill of post-medieval Pit 30 (sample 702). Between 13 and 15 litres of each sample were pre-soaked in water with small quantities of hydrogen peroxide added to three samples from the ditch to aid disaggregation. The samples were floated with the flots collected in 0.5mm nylon mesh and the residues passed through 1mm mesh. The residues were subsequently washed through a nest of sieves (5.6mm, 2mm, and 1mm). The 5.6mm fraction was fully sorted for both artefacts and ecofacts by eye. The 2mm fraction was sorted for samples 701 - 706 and 708; the 2mm fractions from 707, 709 and 710 are retained unsorted in archive. Only a small proportion of the 1mm fractions were sorted: identifiable bone and plant remains were extracted from 50% of the 1mm fraction of sample 708, and 10% of the 1mm fraction of samples 707 and 708 using a x10 - x30 stereo-binocular microscope.

The species represented are shown on Table 3; proportions of various identifiable cereal grains are given in Table 4. Although quantities differed, there was no significant variation in the composition of the assemblages from the different medieval samples. The preponderance of cereal grain implies that a large percentage of the carbonised remains can be explained by the accidental burning of clean, prime grain. There is also a small element of chaff and weed seeds which may have been introduced during the processing of the grain or been residual within partially cleaned

SAMPLE	703	704	705	706	707	710
<b>Grain</b>						
<i>Triticum aestivocompactum</i>	67	78	46	70	85	69
<i>Hordeum</i> + cf. <i>Hordeum</i> sp.	16	13	21	10	12	7
<i>Avena</i> sp. + <i>Avens/Bromus</i> sp.	16	9	33	20	3	24
<b>Chaff</b>						
<i>Triticum</i> sp.	61	79	33			81
<i>Hordeum</i> sp.	33	6	6			
<i>Secale cereale</i>						8
<i>Avena</i> sp.		6	17			

TABLE 4: Representation of cereals based on percentage of identifiable cereal grain or percentage of defined chaff items

grain. The lack of variety in the weed seeds is noteworthy: *Vicia/Lathyrus* sp. elements may represent plants grown purposely for human or animal consumption, but *Anthemis cotula* is almost certainly a weed of cultivation. It is commonly found on heavy, damp calcareous clay soils such as might be encountered on the nearby alluvial floodplains. The restricted range of weeds suggests that the cereal assemblage originated from only one soil type, and very possibly from the (presumably accidental) burning of one consignment.

Although specifically sought, there was no evidence to suggest the presence of a contemporaneous hedge alongside the ditch.

#### DISCUSSION

A full account of the historical and archaeological background to the town can be found in Woodward (1983), with a more detailed discussion of the historical and topographic evidence in Taylor (1968), Barker (1980), Penn (1980), Blair (1983) and Keen (1983).

The most extensive excavations in Wimborne are those carried out on an abandoned part of the medieval town, The Leaze, (Field 1973). Other small-scale excavations were undertaken in more central locations close to the present excavations (Fig. 1): six small excavations and watching briefs in advance of redevelopments between 1975 and 1983 were located within 200m of the Minster (Woodward 1983 and Graham 1984). In common with the present excavations some of these sites have produced Romano-British finds in residual contexts, but otherwise there is scant evidence for pre-Norman Conquest settlement, with no identification of early medieval buildings, monastic activity or the town defences. It is unlikely that the Domesday settlement was either large or dense (Darby and Finn 1967).

Nevertheless, the obvious absence of a 12th- to early 13th-century frontage building in this part of the High Street is perhaps surprising. The course of Ditch 22 continues the alignment of Cook Row from the opposite side of the High Street and it is tempting to consider the possibility that this represents an eastern extension of the northern boundary of the Minster precinct, perhaps running as far east as the River Allen. Such an arrangement would have prevented the High Street acting as a thoroughfare, however, and a somewhat more substantial boundary might have been expected.

It is clear from the artefactual and environmental data retrieved from the 12th-/13th-century features that agricultural and small-scale industrial activity was taking place if not actually on the site then very close by at this time. This included the processing of crops cultivated on the flood plain of the River Stour, a short distance from the town centre, and the smelting of iron.

Whatever the nature of the 12th-/early 13th-century settlement, it is clear from Field's (1983) observations that the Priest's House site was occupied by a building on or near to the High Street frontage by the later medieval period. The plan of that structure and its relationship to later phases of the Priest's House were not forthcoming from those small trenches, and the development of the building could not be clarified from the present excavations due to the truncation of the relevant deposits.

The occurrence of a well below the southern wall of the building is further evidence that the front bay of this house post-dates its timber-framed rear bay. It would seem likely that the front bay was added at the same time that the middle section of the Priest's House was expanded to the street front in the 18th century.

None of the features are related to the present structure and are therefore of no use in determining the date of construction of the Priest's House. The timber framing in the south wall helps to confirm the RCHM date, although further work is required on the development of this construction technique in Dorset before the date can be stated with any degree of precision.

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Mr D. Richards of EDDC and the main contractor, Mr M. Yarrow and his staff, is gratefully acknowledged. The curator of the Priests House museum Mr S. Price was of considerable help when sorting out the structural details of the building. The project was managed by J.W. Hawkes and the fieldwork undertaken by D. Coe. The field drawings were by S.E. James and the report illustrations are by K. Nichols and S.E. James. The site archive (Wessex Archaeology ref. W398) and artefacts are housed at the Priest's House Museum, Wimborne under the accession number 1991.1.

## REFERENCES

- Algar, D., Light, A., and Trehane, P., 1979 *The Verwood and District Potteries*, Ringwood.
- Barker, K., 1980 'Early Ecclesiastical Settlement in Dorset: A Note on the Topography of Sherborne, Beaminster and Wimborne Minster', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 102, 107-112.
- Blair, J., 1983 'Wimborne Minster-The Early Development of the Town', in 'Proceedings of the summer meeting of the Royal Archaeological Institute at Weymouth in 1983' *Archaeological Journal* 140, 37-38.
- Darby, H.C., and Finn, R.W., 1967 *The Domesday Geography of South-West England*, Cambridge.
- Davies, S.M., 1983 'Excavations at Christchurch, Dorset, 1981-83' *Proc. Dorset Natur. Hist. Archaeol. Soc.* 105, 21-56.
- Draper, J., 1983 'The Medieval and Post-Medieval Pottery' in Woodward, P.J., 'Wimborne Minster, Dorset - Excavations in the Town centre 1975-80' *Proc. Dorset Natur. Hist. Archaeol. Soc.* 105, 66-9.
- Field, N.H., 1973 'The Leaze, Wimborne - An excavation in a Deserted Medieval Quarter of the Town' *Proc. Dorset Natur. Hist. Archaeol. Soc.* 94, 49-62.
- Field, N.H., 1983 'Priest's House Museum, Wimborne: Discoveries in the Front Gallery, February 1983' Unpublished typescript, copy with this excavation archive.
- Graham, A.H., 1984 'Wimborne Minster, Dorset-Excavations in the Town Centre 1983' *Proc. Dorset Natur. Hist. Archaeol. Soc.* 106, 77-86.
- Hinton, D.A., and Hodges, R., 1977 'Excavations in Wareham, 1974-5' *Proc. Dorset Natur. Hist. Archaeol. Soc.* 99, 42-83.
- Holling, F.W., 1977 'Reflections on Tudor Green', *Post-Medieval Archaeol.* 11, 61-6.
- Jarvis, K.S., 1992 'The pottery' in Horsey, I.H., *Excavations at Poole 1969-81* Dorset Natural History and Archaeological Society Monograph, Dorchester. 62-127
- Keen, L., 1983 'The Towns of Dorset' in Haslam, J., (ed) *The Anglo-Saxon Towns of Southern England*, 203-247.
- Musty, J., Algar, D.J., and Ewence, P.F., 1969 'The Medieval kilns at Laverstock, near Salisbury, Wiltshire', *Archaeologia* 102, 83-150
- Penn, K.J., 1980 *Historic Towns in Dorset* Dorset Natural History and Archaeological Society Monograph 1, Dorchester, 121-127.
- Platt, C., and Coleman-Smith, R., 1975 *Excavations in Medieval Southampton 1953-1969. Vol. 2: The Finds*, Leicester.
- RCHM, 1975 *An Inventory of Historical Monuments in the County of Dorset-East Dorset* Vol V, 77-92.
- Taylor, C.C., 1968 'Wimborne Minster' *Proc. Dorset Natur. Hist. Archaeol. Soc.* 89, 168-170.
- Thomson, R.G., Barton, K.J. and Jarvis, K.S., 1983 'The pottery' in Jarvis, K.S., *Excavations in Christchurch 1969-1980*, 53-68 Dorset Natural History and Archaeological Society Monograph 5, Dorchester.
- Woodward, P.J., 1983 'Wimborne Minster, Dorset-Excavations in the Town Centre 1975-80' *Proc. Dorset Natur. Hist. Archaeol. Soc.* 105, 57-74.

# Excavations at the Former Site of the Wimborne Model Town, 1991

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AC archaeology

With contributions by Derek Bunting, Royston Clark, John Hawkes,  
Julian Richards and Ann Woodward

## ABSTRACT

A small-scale excavation was undertaken in an area occupying some of the highest land of the medieval town, to the north west of the Minster, in a plot of land previously occupied until the 1980s by the Wimborne Model Town. Unstratified prehistoric finds consisted of worked flint and a single sherd of Bronze Age pottery. A single sherd of possible Saxon pottery was recovered in a later pit. A small group of medieval and early post-medieval features was recorded, including rubbish pits and possible boundary ditches. A generally low density of medieval finds was retrieved, indicating that the area was not intensively occupied during the medieval period.

## INTRODUCTION

### Site location

The Model Town occupied some 1,600 m<sup>2</sup> within a walled plot south of West Row Passage, Wimborne (Fig. 1). The site lies approximately 100 m north west of the Minster at 21.23 m OD, in an area which rises to form some of the highest land in the town. By comparison, present ground level at the east end of the Minster is approximately 19 m OD.

Within the site the land surface slopes gently down to the east and south, but an abrupt change in level occurs to the north east where the ground has been cut away (to 20.08 m) by terracing. A similarly sharp change in level is apparent outside the east boundary of the site where the back yard of the White Hart public house has been terraced into the natural rise in ground level. Parts of the Model Town landscape survived, including the floor plan of the model Minster, gravel access paths and shrubbery. The Model Town was moved to a site on King Street in 1989.

The underlying subsoil on the site was a light yellow-brown silty clay of alluvial origin. Gravel was only evident in the terraced north east corner of the site.

### Archaeological background

Previous archaeological excavations in the town in advance of development have concentrated on locations on or behind medieval street frontages or areas immediately adjacent to the present precinct of the Minster (Woodward 1984, Graham 1984, Coe and Hawkes 1991, Hull *et al.* 1991, Jones 1991). Much of this earlier work has also attempted to establish the presence of a putative Saxon ecclesiastical precinct within the town as suggested by Penn (1980) and Blair (1983). Only from south of the Minster (Graham 1984, site WKS 83) has probable late Saxon pottery been recovered, and even this was from later deposits. A detailed discussion of the possible locations of this precinct is contained in Woodward (*ibid.*).

Earlier trial trenching to the south east of the Model Town site had been undertaken to examine the nature of the rising ground on which the present site lies (Woodward 1984, Area I trenches A-D), and also to investigate suggested circuits for the early Medieval settlement. That area proved largely devoid of Medieval features and the identified soil accumulations were suggested to have been derived from agricultural activity. The present excavations, located off West Row behind the major frontages of West Street and King Street, were primarily aimed at further investigating the evidence for the utilisation of this elevated area of the town by identifying any early land division or boundaries.

## THE EXCAVATIONS

The excavation was undertaken during May 1991 for the Dorset Archaeological Committee. It was carried out under a brief specified by the Dorset Archaeological Committee and agreed with the site's owners, Stanborough Homes. The number, size and location of trenches on the site (Plate 1) was primarily constrained by the proposed locations of dwellings to be constructed on the site. The excavations were directed by Peter Cox of AC archaeology with assistance from members of the East Dorset Antiquarian Society.

Three trenches were excavated: A and B east-west across the site and C north-south in the northern sector only. Topsoil and modern footings were removed by JCB mini-digger and all subsequent excavation was undertaken by hand.

In trenches A and B, and the south section of trench C a distinct sequence of soil accumulation could be identified. The north section of trench C and the east end of B were largely disturbed by modern building foundations. The general character of the soil overburden was as follows:

- 1) a dark grey-black humic topsoil (context 1), varying in depth from 0.4-0.6 m (maximum depth in Trench A). This deposit graded into
- 2) a dark grey-brown silty loam subsoil. This deposit was most evident in trench A (context 33) where it occurred to depth of 0.2-0.3 m. In trenches B and C the division between the topsoil and this lower sub-soil (41) was less well-pronounced, but could, in places be defined to a depth of c. 0.2 m. In all trenches this deposit graded into
- 3) a light yellow-brown silty clay natural.



Figure 1 Former Model Town: site location and position of 1983 excavations (WKS 83)

### The earliest features (Fig. 2)

A series of pits ditches and gulleys were identified across the site. These features were cut into the underlying natural and generally were filled with a light or mid grey-brown silty loam. All features contained a very low density of finds (Table 1), but those discussed below and shown on Figure 2 contain predominantly medieval pottery or no finds at all.

#### Trench A

The definition of features in this area was partly obscured by the presence of the upper subsoil layer (33). This deposit was removed as a clearance spit before the upper edge definition of features was clear.

Some relationships were apparent between individual pits and ditches, for example pit 77 cuts pit 76, ditch 73 cuts pit 72, and an ill-defined ditch 84 cuts pit 83. However, the total pottery counts from individual features were low and it therefore has not been possible to discern discrete depositional episodes between features. While it is possible to suggest that the majority of features are 12th-14th century in date, the presence of 16th-18th century pottery in pits 82, 90, 77 and 83 indicates that some features, at least, are post-medieval in date. There is no firm evidence to suggest that any of the excavated features were of Saxon or earlier date.

The continuation of ditch 73 was traced into Trench B and may form

a property boundary contemporaneous with at least some of the medieval occupation of the site. The large pit (82) at the west end of the trench showed a more complex sequence than was recorded elsewhere on the site. Its basal fill, layer 60 contained a great density of animal bone (see Clark, this report). Much of the bone was of duck or goose. The upper fill, layer 74 included a dense deposit of oyster shells with some animal bone. While this pit contained the only possible Saxon sherd from the site, the predominance of post-medieval pottery means that the feature is of a later date.

#### Trench B

The sharper division between topsoil and natural in this trench generally allowed an easier definition of earlier features. However, the presence of a substantial number of later, post-medieval features prevented the definition of many full dimensions of these earlier deposits.

A slightly curving gully, 88, had a stepped sloping base and was tapered in plan. This feature contained no medieval finds and may be prehistoric in date. A single sherd of Bronze Age pottery was recovered from context 93, ditch 73 and is therefore residual. The upper levels of ditch 73 were largely removed by a large post-medieval trench and only the lower  $\pm 0.3$  m could be recorded, hence the apparent narrowing of the feature in Fig. 2. A short length of a shallow ditch (44) could be traced

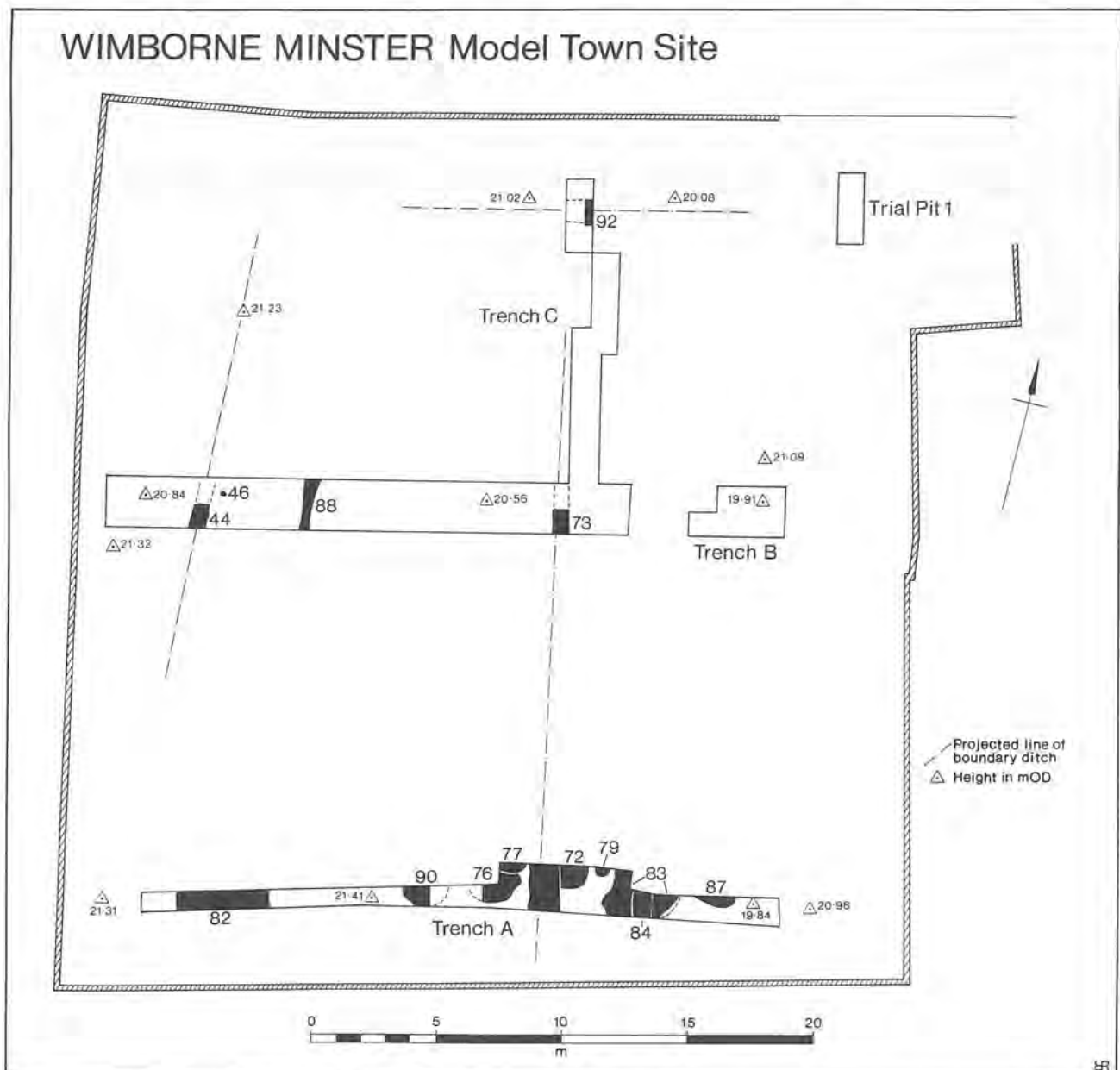


Figure 2 Location of trenches and the medieval and late medieval / post-medieval features. Later post-medieval features are not shown

Feature No	Context No	medieval pottery	late/p-Med pottery	worked flint	slate tile	ceramic b/tile	animal bone	shell	slag
82	81	3	-	65	-	144	-	1	-
	74	-	102	-	-	-	1134	} 5kg	-
	60	194	119	29	-	1	1055		-
90	89	1	-	-	-	-	1		-
	75	83	12	-	-	134	10	1	-
77	58	55	-	75	1	101	28	-	109
	50	24	-	181	1	25	23	-	15
83	61	211	15	146	35	144	430	52	75
76	65	9	-	41	-	-	201	-	-
72	48	1	-	-	-	-	56	2	18
73	51	-	-	-	-	-	1	-	1
	52	46	-	-	-	8	1042	-	68
	93	10	-	7	-	-	-	-	3
79	59	-	-	-	-	-	9	-	-
84	80	136	-	28	27	168	19	-	11
87	66	12	-	1	10	-	77	1	19
44	13	71	-	87	-	1	-	-	28
46	15	6	-	-	-	-	-	-	-
88	70	-	-	124	-	-	20	-	47
	69	-	-	145	-	-	69	-	15
92	91	-	-	38	-	-	166	-	-

Table 1: Occurrence, by weight (in g), of selected artefact types from the earliest features



Plate 1 Trench A; excavated medieval and late medieval/post-medieval pits at rear of site, looking west

toward the west end of the trench. The orientation is uncertain, but this may run parallel with the possible boundary ditch 73.

#### *Trench C*

The presence of several 19th-century building foundations and terracing at the northern end of the trench did not allow the definition of any density of earlier features. A single ditch, 92, was observed at the extreme northern end of the trench, but was reduced by terracing. A machine-excavated trench (Trial Pit 1, Fig. 2) approximately 10 m to the east of Trench C failed to identify the continuation of this feature into the underlying gravel.

#### *Later features*

A total of 18 clay- or soil-filled features, clearly of post-medieval or modern date, existed across the site, all of which pre-dated the construction of the Model Town. The colour of the soil fills in these later features was noticeably darker than the earlier features discussed above. All were sample excavated. These have not been shown on Figure 2.

The density of the later features generally increased towards the north of the site, and this was particularly marked in Trench B where a series of parallel trenches, up to 0.6 m deep and 7.6 m in length may be associated with the use of the site for vegetable gardens. Two large rectangular pits, 0.6 - 0.7 m deep, 2.4 m long, and at least 0.8 m wide, contained complete horse skeletons. Each was backfilled with a mixture of clay with some black soil. One pit (feature 43) was fully excavated and its backfilling (11) contained post-medieval pottery and clay pipes dating to the late 17th and 18th century. The horse skeleton from pit 43 was removed from site, but was not examined with the other animal bones from the site and has now been discarded.

Brick wall footings, likely to date to the 19th or 20th century, were present to the north of Trench C and at the east end of Trench B where a cellar was evident.

## THE FINDS

Only a limited range of material from a restricted number of stratified contexts was recovered. Within this report emphasis has been placed on objects of intrinsic importance or classes of material useful for assessing the date of features. A quantification of all finds may be found in the site archive.

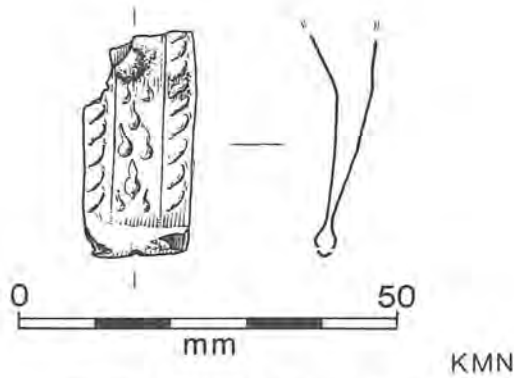


Figure 3 Copper alloy object. Scale 1:1

**Copper alloy object (Fig. 3)**

A copper alloy object recovered from layer 33 in Trench A may be a belt plate and is probably later medieval in date.

**Prehistoric pottery**

*Ann Woodward*

A single, undecorated sherd (12 g) of heavily flint-gritted pottery from context 93 (ditch 73, Trench B) is probably Bronze Age in date.

**Medieval and post-medieval pottery**

*John Hawkes*

A small quantity (179 sherds; 1,965 g) of medieval and late medieval/early post-medieval pottery was recovered from the site. Of this total approximately 46% by count occurred in later, post-medieval contexts. The remaining 96 sherds (1,110 g), from features which were stratigraphically of medieval or early post-medieval date, have been recorded in detail and are discussed here.

**Fabric types**

The material has been examined macroscopically and compared with fabric descriptions established for previous excavations within the town. For the bulk of the material, the division into coarser and finer, given by Draper (Fabrics A and B in Woodward 1984), seems to provide a more suitable summary of the pottery than the specific and detailed fabric series established by Poulsen in Graham (1985). The following fabrics have been identified on the site and a concordance of fabrics between the reports attempted:

Fabric 1: Corresponds with Poulsen's description for her Fabric A (Graham 1985, 81), suggested as possibly late Saxon.

Fabric 2: The coarse element of Draper's quartz-tempered group, Fabric A (Woodward 1984, 66) and corresponding to Poulsen's Fabric H. Usually occurs as cooking pots or coarse jars.

Fabric 3: The finer element of the quartz-tempered group; the equivalent of Draper's Fabric B and, probably, Poulsen's Fabric I. Includes cooking pots and jars, but also some pitchers/jugs.

Fabric 4: Fine sandy wares (finer version of Fabric 3), apparently jug or pitcher fabrics. Fragmentary and single sherds within medieval contexts could be further sub-divided. The range presumably incorporates Poulsen's Fabrics J, K, M, and N. There is no Tudor Green ware. Fabric 4 would also probably include some finer elements of Draper's Fabric B.

Fabric 5: Late or post-medieval sandy wares.

Fabric 6: Stoneware (17th - 18th century).

The occurrence of pottery fabrics types is shown on Table 2. A detailed quantification of fabric by context is available in the site archive. The single occurrence of a possible Saxon fabric type was from a later context.

**Vessel types**

The few diagnostic sherds (13 rims) available from the material analysed does not allow a detailed discussion of the relative occurrence of individual forms. A selection of types is illustrated in Fig. 4.

**Comment**

The low density of medieval pottery occurring on the site and the small range of diagnostic fabric or form types does not allow any confidence in dating specific features.

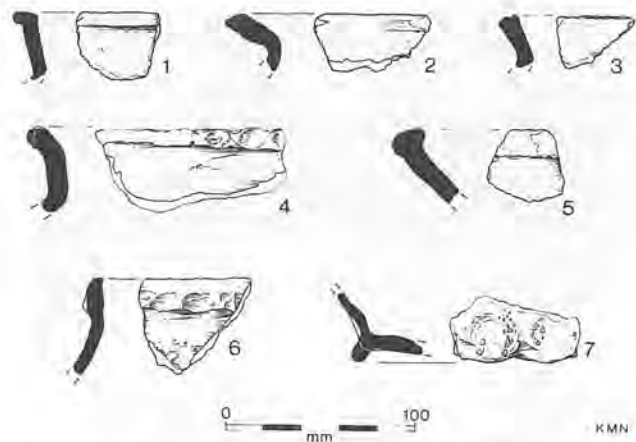


Figure 4 medieval pottery. Scale 1:4

Feature No.	Context No.	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Fabric 6	Total
82	81	-	-	1/3g	-	-	-	1/3g
	74	-	-	-	-	1/102g	-	1/102g
	60	1/38g	8/112g	5/44g	-	1/80g	1/39g	16/313g
90	89	-	-	2/1g	-	-	-	2/1g
	75	-	9/51g	2/6g	3/26g	1/11g	1/1g	16/95g
77	58	-	3/18g	2/29g	1/5g	1/3g	-	7/55g
	50	-	3/11g	3/13g	-	-	-	6/24g
83	61	-	4/110g	9/88g	1/13g	1/15g	-	15/226g
76	65	-	1/9g	-	-	-	-	1/9g
72	48	-	-	1/1g	-	-	-	1/1g
73	52	-	2/46g	-	-	-	-	2/46g
	93	-	2/4g	-	1/6g	-	-	3/10g
84	80	-	5/44g	5/25g	2/67g	-	-	12/136g
87	66	-	-	1/12g	-	-	-	1/12g
44	13	-	9/59g	2/12g	-	-	-	11/71g
46	15	-	-	1/6g	-	-	-	1/6g
<b>TOTALS</b>		1/38g	46/464g	34/240g	8/117g	5/211	2/40g	96/1110g

Table 2: Occurrence, by sherd count and weight, of medieval and post-medieval pottery fabrics in selected features

*Illustrated medieval pottery* (Fig. 4)

- 1 Flat-topped, necked-and-everted jar/cook pot rim, 12th-13th century. Fabric 2. Context 52, ditch 73.
- 2 Everted rim jar/cook pot with flattened rim, 12th-14th century. Fabric 2. Context 60, pit 82.
- 3 Everted rim jar with groove on top of rim. Fabric 3. Context 61, pit 83
- 4 Finger-tipped, everted rim jar, ?13th century. Fabric 2. Context 61, pit 83.
- 5 Inturned (hammerhead) rim bowl. Fabric 2. Context 60, pit 82.
- 6 Jug rim with translucent splash glaze, late 13th-15th century. Fabric 3. Context 60, pit 82.
- 7 Thumbed base with splash glaze, ?13th century. Fabric 3. Context 61, pit 83.

**The clay tobacco pipes***Derek Bunting*

A small quantity of clay pipe bowls and stems was recovered from post-medieval contexts. Ten bowls or bowl fragments are described in the following catalogue. The typology and dating of the bowls is based on types established by Oswald (1975).

- Context 1: Type S10. Long, curved bowl with flared heel. Knife-trimmed. Initials IP on base. *c.* 1690-1710. It has been suggested by Watkins (1966) that the maker's initials IP may belong to John Paul of Merriott, Somerset. Oswald suggests that IP could be John Parish of Wareham, but also John Pitcher of Taunton falls within this dating period.
- Context 2: Two bowls; one probable type S10, broken at base. Curved bowl, thin walled with milling at lip. Single letter H on back of bowl. Possibly Shaftesbury *c.* 1660-1680. Second bowl broken at lip and base. Smaller, more rounded bowl with thick walls milled at lip. Lip not parallel to stem. Probably *c.* 1640-1650.
- Context 3: Possible type S10, as only base of bowl remaining. Round, flared heel with initials IP on base. *c.* 1690-1710.
- Context 4: Long, curved bowl with flared lip, small round heel, thin walled and knife-trimmed. Initials IP on base. Lip of bowl parallel to stem. *c.* 1690-1710.
- Context 11: Two bowls and one decorated stem fragment; one type S3 bowl broken at lip, some milling remaining. Rounded, flared heel with initials IH on base. May be John Hockaday from Somerset, dated to *c.* 1650-1660. Second bowl broken with only part of back and heel remaining. Thick walls

Feature No.	Context No.	Animal Species	Comments
82	74	cattle, dog & horse	cattle or horse skull frags
	60	duck & ?goose, cattle & sheep	large no. of bird bones
90	89	sheep	
	75	unidentifiable frags	
77	58	cattle	
	50	cattle	
83	61	cattle, chicken & sheep	cattle bone butchered
	76	65	cattle
72	48	cattle & sheep	skull frags
73	51	sheep	
	52	cattle & sheep	99% cattle, including young animals
79	59	sheep	
84	80	cattle tooth	
87	66	sheep & cattle	
88	70	cattle	
	69	horse tooth	
92	91	cattle & sheep	

Table 3: Animal species list by feature and context

possibly similar date to above. A piece of highly decorated stem has no maker's marks. Similar decorated types are common during the first half of the 18th century, and therefore later than the bowls from this context.

Context 30: Two probable type S10 bowls, both with round, flared heels with the initials IP on the base. *c.* 1690-1710.

Context 31: Base only of bowl with large flat, slightly stepped heel. Unmarked. Probably type S1. *c.* 1620-1660

**The struck flint***Julian Richards*

A total of 72 pieces of struck flint was recovered: 9 cores/core fragments, 62 flakes/broken flakes and 1 tool.

The condition of the material was generally fresh and unpatinated and the raw material in all cases appears to be gravel flint. It is clear that this collection includes some prehistoric material, represented by two blades, a borer and elements of the flake and core assemblage. Mixed in with this, however, are at least six flakes from wall flint knapping, struck with metal hammers and exhibiting a characteristic crushed platform.

The struck flints indicate activity in the area, potentially from the Neolithic onwards.

**The animal bone***Royston Clark*

The examination of animal bone from the site was limited to those contexts classified above as the earliest features and shown on Figure 2.

In view of the uncertainty of dating and the generally low level of animal bone recovered from the earliest features (see Table 1 above) only identification to species has been attempted. Within this group, 17 contexts contained animal bone, most of which are medieval in date. The general condition of the bone was very good and it is possible to identify butchery traces and evidence of tooth marks associated with gnawing (probably by dogs). The bulk of the mammal bone assemblage consisted of cattle bones, with a smaller proportion of sheep. Horse and dog were also present in very small numbers. One context (Pit 82, layer 60) produced a large assemblage of bird bones. This context is discussed in detail below.

The species listed in Table 3 indicate that apart from pit 82 (context 60), cattle are the most common animal in the assemblage. Despite the relatively small quantities, the assemblage is typical of residue associated with animal (particularly cattle) butchery found in urban medieval deposits. There is very clear evidence for butchery practices associated with dismemberment of long bones. These include heavy chop-marks to the articular ends of femora and humeri. Metapodials were also split, possibly for bone marrow. The sheep bones show little similar evidence for such processing.

It is noteworthy that those features which are certainly post-medieval in date (77, 82, 83 and 90) display a greater variety of species than the remaining, probable medieval, features. This characteristic has been noted from other faunal assemblages within the town. The horse skeleton recovered from post-medieval feature 43 was not examined by the author.

*Pit 82*

The post-medieval pit, 82 (contexts 60 and 74), produced the most interesting collection of bone material. Context 74 contained two femurs, one from a large dog and the other from a horse. A large quantity of skull material was also present. This was probably cattle bone, but other further comparative work would confirm this.

Context 60 produced a group consisting almost entirely of bird bones. This material has been tentatively identified as belonging to duck or, possibly, goose. Considering Wimborne's proximity to two large rivers, such material is hardly surprising.

**CONCLUSIONS**

Despite the limitations of both the extent of the excavations and the small quantity of finds, this investigation provides important additional evidence upon which future work in the town may build.

Compared to other investigations in the town, the recovery of 66 pieces of worked flint represents a relatively high frequency of prehistoric lithic material. A total of 21 pieces was recovered from the more extensive excavations in the town in 1978-79 (Woodward 1984, 66, Index 20). This and the single sherd of Bronze Age pottery indicates that prehistoric occupation in the area is likely. Furthermore, the presence of such material on the spur of land between the floodplains of the rivers Stour and Allen

indicates an additional potential for this part of the town in future investigations.

The absence of stratified Saxon material and the low density of medieval finds indicates that the area was not adjacent to any early street frontage or where any intensity of occupation might have been focused. Furthermore, the difficulty in defining the upper levels of some of the medieval features may result from the presence of an homogeneous ? agricultural soil (33 and 41) across at least part of the site before the creation of property boundaries and pits. The two possible boundary ditches assist in defining an element of the medieval urban landscape and indicate that the area examined was at the rear of properties, presumably fronting onto the line of West Row Passage. The dating of individual features from ceramic evidence can only attribute the medieval activity on the site broadly to the 13th and 14th century. Thus this area can be assumed to be on the periphery of any early urban centre and perhaps beyond any circuit that may have defined its limits.

#### THE ARCHIVE

The written, photographic and finds archive for this excavation (site code AC7) has been deposited with The Priest's House Museum, Wimborne (Accession number 1991.3).

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#### BIBLIOGRAPHY

- Blair J., 1983 'Wimborne Minster - the early development of the town', in 'Proceedings of the Summer Meeting of the Royal Archaeological Institute at Weymouth in 1983', *Arch. J.* 140 (1983), 37 - 38
- Coe D. and Hawkes J. W., 1991 '29 High Street, Wimborne Minster', *Proc. Dorset Nat. Hist. Archaeol. Soc.* 112 (1990), 128
- Graham A. H., 1985 'Wimborne Minster, Dorset - Excavations in the Town Centre 1983', *Proc. Dorset Nat. Hist. Archaeol. Soc.* 106 (1984), 77 - 86
- Hull J., Membrely S., Percival J. & Waterhouse R., 1991 'Wimborne Minster', *Proc. Dorset Nat. Hist. Archaeol. Soc.* 112 (1990), 122
- Jones A., 1991 'Deans Court, Wimborne', *Proc. Dorset Nat. Hist. Archaeol. Soc.* 112 (1990), 122 - 123
- Oswald, A., 1975 *Clay Pipes for the Archaeologist*. Brit Archaeol. Rep. 14 (Oxford)
- Penn K. J., 1980 *Historic Towns of Dorset*. Dorset Nat. Hist. Archaeol. Soc. Monograph 1, 121 - 127
- Watkins, E., 1967 'Clay Tobacco pipes found in Dorset', *Proc. Dorset Nat. Hist. Archaeol. Soc.* 88 (1966), 216 - 233
- Woodward, P. J., 1984 'Wimborne Minster, Dorset - Excavations in the Town Centre 1975 - 80', *Proc. Dorset Nat. Hist. Archaeol. Soc.* 105 (1983), 57 - 74

# Henry Durden and his Collection

IAN LONGWORTH AND CATHY HAITH

Henry Durden's life spanned almost the entirety of the nineteenth century, for he was born in 1807 and died in 1892.<sup>1</sup> Durden (Plate 1) was very much a Dorset man. He succeeded his uncle in a grocery business in Blandford and appears to have spent his entire life in that town. In politics he was a Conservative and a vice president of the Dorchester Conservative Club. He was a member of the Town Council for nearly 50 years, a magistrate, twice an alderman and four times mayor, in 1845, 1863, 1874 and 1880. He was in short the epitome of a local worthy, being also chairman of the Gas Company and of the Dorchester Steam Laundry, a trustee of the Church charities and almshouses, and a member of the Burial Board, the Dorset County Hospital, School and other committees. He was also a vice President of the Dorchester Cricket Club and a champion rose grower, winning first prize for roses at the Blandford Floricultural and Horticultural Society in 1871.<sup>2</sup>

He does not, however, appear to have had much taste for travel and none for publication, for though he was to become an avid collector of Dorset antiquities, and engaged in excavation, he published not a single word. As a member of the British Archaeological Association, he limited his activities to occasionally exhibiting objects at meetings, such as a mould for casting lead bullets<sup>3</sup>, or part of a Roman bronze vessel<sup>4</sup>. Charles Roach Smith, the celebrated London antiquary, who played a significant part in securing Durden's collection for the British Museum, records that Durden also sent drawings of material from Hod Hill to the Warwick Congress in 1847<sup>5</sup>, and he was on the general committee for the annual meeting of the society held in

1. An obituary appears in the *Dorset County Chronicle and Somersetshire Gazette* for 28th January 1892. Memorials appear in the *Dorset Natural History and F A C* (1892) vol. XIII and in George Payne's *Catalogue of the Museum of Local Antiquities collected by Mr Henry Durden of Blandford, Dorsetshire* (LEWES 1892)  
2. *Blandford Express and General Advertiser* for 26 August 1871. The authors are indebted to Miss Jennifer Stewart for this reference.

3. *JBAA* 1848, vol. III, 65

4. *Ibid.* 1864, vol XX, 202-3, pl. 9 fig. 4.

5. C Roach Smith 1883, *Retrospections - Social and Archaeological*, vol. I, London.



Plate 1 Henry Durden of Blandford from the frontispiece of George Payne's catalogue of 1892.

Weymouth in 1871<sup>6</sup>. Though meeting occasionally with men possessed of a similar antiquarian interest like Dr William Wake Smart of Cranborne, Charles Warne of Milborne St Andrew, William Shipp of Blandford, and Charles Hall of Ansty, he was clearly not a very out-going man. He and his collection were virtually unknown outside the county till Roach Smith came to Dorset to visit his close friend Charles Warne and saw Durden's collection in Blandford, recording the fact in his occasional publication *Collectanea Antiqua*.<sup>7</sup>

Roach Smith viewed Durden's collection on at least two occasions, in the summer of 1865, and in the autumn of 1880. A letter dated August 16th, 1865, entitled '*Antiquarian Researches, part of the result of a recent excursion*' published in the *Gentleman's Magazine*<sup>8</sup>, describes how he had taken advantage of 'a favourable opportunity of examining at leisure most of the recent discoveries made at Hod Hill, and now preserved with many other valuable local antiquities in the museum of Mr Durden at Blandford ...'<sup>9</sup>. This is presumably the visit to which he refers in his biographical note on Charles Warne, where he writes:

'In company with Mr Charles Moore Jessop, (now Dr), I visited him [Warne], when he resided at Milbourne St Andrews near Blandford in Dorsetshire, and then and there I added to my list of friends, Mr Henry Durden, yet living, Mr William Shipp, and Mr Charles Hall. Mr Sydenham, who belonged to this group of Dorsetshire worthies, I previously knew, when editor of a newspaper at Greenwich. Mr Jessop and I walked from Salisbury, and found the four about to be our hosts, waiting for us at Woodyates Inn, which is upon the line of the Roman road from Silchester to Exeter ... We visited Hod Hill, which has furnished such valuable remains to Mr Durden's Museum, and saw the perfect Roman camp upon its summit, since in part, if not wholly, ploughed up! We inspected other earthworks (oppida), and passed a long evening with Mr Charles Hall at Ansty, an important part of his hospitable entertainment being local antiquities, and some rare coins of Carausius.'<sup>10</sup> Smith returned in October 1880. In a letter to J O Halliwell Phillipps he writes: 'I go tomorrow, (a friend with me), to Cranbourne to see Dr Wake Smart and Brockley Dyke [sic]. Then to Blandford to see Durden's museum of local antiquities. Then to Arretton I. W. to sleep ...'<sup>11</sup>

Durden, however, stands in marked contrast to Warne, the author of a string of articles and notes to many of the leading learned journals of the day, and of major works like the *Celtic Tumuli of Dorset* published in 1866 and *Ancient Dorset* which he published some six years later. Warne was reader-friendly. As Roach Smith put it, 'The reader may sit by his fireside and travel with the author to the lofty and complicated ramparts of Maiden Castle, of Eggar-Dun, and similar stupendous earthworks; walk along the remarkable boundary dykes, and Roman roads, without the labour and exhaustion which personal survey entails upon all but practised pedestrians.'<sup>12</sup> Durden in contrast was uncommunicative and perhaps difficult for Warne was to record in his introduction to his *Celtic Tumuli* that he could not 'but regret that my work does not include an account of the fine series of urns in the collection of Mr Durden of Blandford, and which were found in Dorset; but trust that the facts connected with their discovery will be elsewhere placed on record, by which an obligation will be well performed and a most valuable addition

6. *JBAA* 1872, vol. XXVIII, 83-4.

7. C Roach Smith 1868 'Roman remains discovered on Hod Hill, Dorsetshire', *Collectanea Antiqua* vol. VI, 1-17.

8. C Roach Smith 1865 'Antiquarian Researches' *Gentleman's Magazine* new series vol. XIX, July-December 1865, 297-303.

9. *Ibid.* 299.

10. Roach Smith 1883 *op. cit.*, 85.

11. Roach Smith to Halliwell-Phillips 17th October 1880. *Edinburgh University Library Letters of Authors* 250/8. The authors are indebted to Dr Michael Rhodes of the Museum of London for this reference. This visit is also referred to in Roach Smith 1891 *Retrospections - Social and Archaeological*, vol. III, 180.

12. Roach Smith 1883 *op. cit.*, 54.

made to this branch of our local history.<sup>13</sup>

Roach Smith was clearly concerned about the future of the Durden collection and expressed his disquiet on a number of occasions.<sup>14</sup> Though Durden kept a few manuscript notebooks, the collection remained unpublished, and Roach Smith feared that the antiquities would be dispersed upon Durden's death, a fate which appears to have befallen his coin cabinet, auctioned by Sotheby, Wilkinson and Hodge on 20th-22nd December 1892. An annotated copy of the sale catalogue lists a dozen purchasers who bought individual lots.<sup>15</sup> Smith considered Durden's collection to be 'of national importance' and urged that it should be 'secured for the county or for one of the Metropolitan Museums'.<sup>16</sup> He advised Durden to commission a printed catalogue of its contents,<sup>17</sup> suggesting that the work be carried out by his close friend and colleague, George Payne, the Kentish antiquary, who published a brief survey of the collection in 1891, and a printed catalogue in 1892.<sup>18</sup> Durden died while the work was at the press and Payne was able to add a memorial to him in the preface.

At least in the sphere of antiquities, the more important collections being formed in the nineteenth century can be seen very much as barometers of their time with regard to taste and intellectual awareness. Regrettably Henry Durden was to leave little in the way of commentary as to why he collected or what came to fuel an urge which was to persist through much of his adult life. To give insight into this collector the collection itself must be studied together with the few manuscript accounts which survive of his activities in the field.

The catalogue which George Payne put together in 1892 consisted of some 1483 entries but this was by no means an exhaustive statement of the collections. Payne was to act as intermediary between the Durden family and the British Museum in the sale of the collection and a series of letters and other documents preserved in the Department of Medieval and Later Antiquities chronicle the protracted negotiations. In the event those items bought by the British Museum from John Durden, Henry's son, in two tranches in September 1892 and June 1893 amounted to 1796 and 472 objects respectively but these did not include either duplicate material<sup>19</sup> or certain other sections considered to be already well represented in the British Museum's own collections. Under the terms of Durden's will his collection was to be left in equal shares to his son John and his daughter Mary Moore and sold; to be offered first to the British Museum at a price to be set by the legatees. Failing that the collection was then to be offered to General Pitt-Rivers or to the Dorset County Museum. The collection was originally offered at £1,500. Augustus Franks, Keeper of the relevant Department in the British Museum, no doubt mindful, as indeed Keepers are to this very day, of the need to safeguard the public purse, recommended purchase in two installments at a total of £900 and after further judicious weeding the final price paid was reduced to £876.

The main bulk of the collection came from Dorset but Durden had added a small collection of Irish antiquities purchased from Dr Cotton and Danish antiquities obtained from Mr Bryce Wright together with what seems a more idiosyncratic choice, a small series of arrowheads and an axehead from the valley of the Mississippi. Even an avid local collector could be moved to add some exotic items for contrast and comparison. More importantly Durden also acquired a collection of Anglo-Saxon antiquities from Kent.

This Anglo-Saxon material, all supposedly from Wye or Crundale Downs, amounted to some fifty-four items, which according to Payne, Durden had obtained from a Mr Drax.<sup>20</sup> Mr Drax, who died in 1887, was in fact, John Samuel Wanley Sawbridge Erle-Drax, of Charborough Park, Dorset, MP for

Wareham 1859-65 and 1868-80. His family came from Olantigh near Wye, and he married Jane-Francis, the daughter of Richard Erle-Drax Grosvenor in 1827, assuming the name of Erle-Drax on the death of her brother a year later.<sup>21</sup> This explains how a small cache of Kentish antiquities ended up in a private collection in Dorset. A note in the *Gentleman's Magazine* for July 1858 states: 'During repairs of the high road leading from Wye to Dover at the foot of the hill, a grave was laid open containing the skeleton of a man with the umbo of a shield, a sword, a glass drinking cup, and some smaller objects. The Reverend L B Larking lost no time in obtaining the remains for the Kent Archaeological Society, and on their part he liberally rewarded the finder. Now it is reported that the lord of the manor puts in a claim! ...'<sup>22</sup> Larking, the vicar of Ryarsh and Burham in Kent, was the founder of the society and its first Honorary Secretary. The shield boss and the glass vessel from this grave, but not the sword, together with an iron spearhead and some bronze tweezers were exhibited at the first annual meeting held at Canterbury on 30th July 1858 'by permission of J Sawbridge-Drax, whose property they are as Lord of the manor of Wye'.<sup>23</sup> Larking also exhibited an iron spearhead from a grave at Wye from his own excavations with Roach Smith two months earlier. He succeeded in obtaining the glass vessel, spearhead and tweezers for the Museum at Maidstone, for they are listed in the catalogue prepared by George Payne,<sup>24</sup> but no other finds belonging to Drax were ever exhibited at meetings or published in *Archaeologia Cantiana*, so perhaps the difference of opinion relating to the ownership of the finds meant that subsequent discoveries were kept quiet. This episode graphically illustrates one of the great archaeological debates of the later nineteenth

20. Letter from Charles Read of the British Museum to John Durden, June 14th, 1893. Department of Medieval and Later Antiquities, British Museum.

21. J Burke 1834-8 *A Genealogical and Heraldic History of the Commoners of Great Britain and Ireland*, vol. IV, reprinted Baltimore 1977, 207-11; F Boase 1892, *Modern English Biography*, vol. I, 995, Truro.

22. Anon 1858 'Anglo-Saxon Antiquities' *Gentleman's Magazine* new series vol. V, July-December 1858, 65.

23. *Arch. Cant.* vol. I, 1858, lxi.

24. G Payne 1892a *Catalogue of the Kent Archaeological Society's Collections at Maidstone*, London, 18 no. 267; 32 no. 514.



Plate 2 Carved sandstone slab from the barrow Shapwick 6a (The Badbury Barrow). Height of slab: 58 cm (courtesy of the Trustees of the British Museum).

13. *Celtic Tumuli* 1866 Preface.

14. E.g. Roach Smith 1891 *op. cit.*, 54.

15. *Catalogue of the valuable collections of Greek, Roman, English and Foreign Coins and Medals, the properties of the late Henry Durden Esq. of Blandford, Dorset and others which will be sold by auction by Sotheby, Wilkinson and Hodge, 20-22 December 1892*, London.

16. Roach Smith 1883 *op. cit.*, 51.

17. *Ibid.* 1891 *op. cit.*, 54.

18. G Payne 1891 'Mr Henry Durden's Collection at Blandford, Dorset' *JBAA* vol. XLVII, 60-3. G Payne 1892 *op. cit.*

19. A few items found their way to the Pitt Rivers Collection in Farnham and are now in Salisbury Museum. Information kindly supplied by Miss Clare Conybeare.

century in microcosm; on the one hand antiquarians such as Roach Smith, Larking and Payne were anxious to see the foundation of public museums and the publication of private collections, whilst landowners like Erle-Drax considered antiquities found on their land to be personal property to be retained or disposed of at will. Some indication that both Payne and Roach Smith suspected that Durden knew more about the find circumstances of the material from Kent in his collection than he was prepared to admit comes from a comment by the latter in his third volume of *Retrospections*. Discussing private museums and Durden's in particular he wrote: 'What was not to

be expected, there are some unpublished and rare remains from the *Wye and Crundel [sic] Downs in Kent, engravings of which would materially and scientifically add to those in Archaeologia Cantiana. They were discovered many years since; but how they reached Blandford Mr Durden alone can tell.*<sup>25</sup>

In his paper on Durden's collection read to the British Archaeological Association in January 1891, written shortly after his visit to Blandford to catalogue the collection, Payne stated that all the Anglo-Saxon objects had been found 'in graves

25. Roach Smith 1891 *op. cit.*, 183

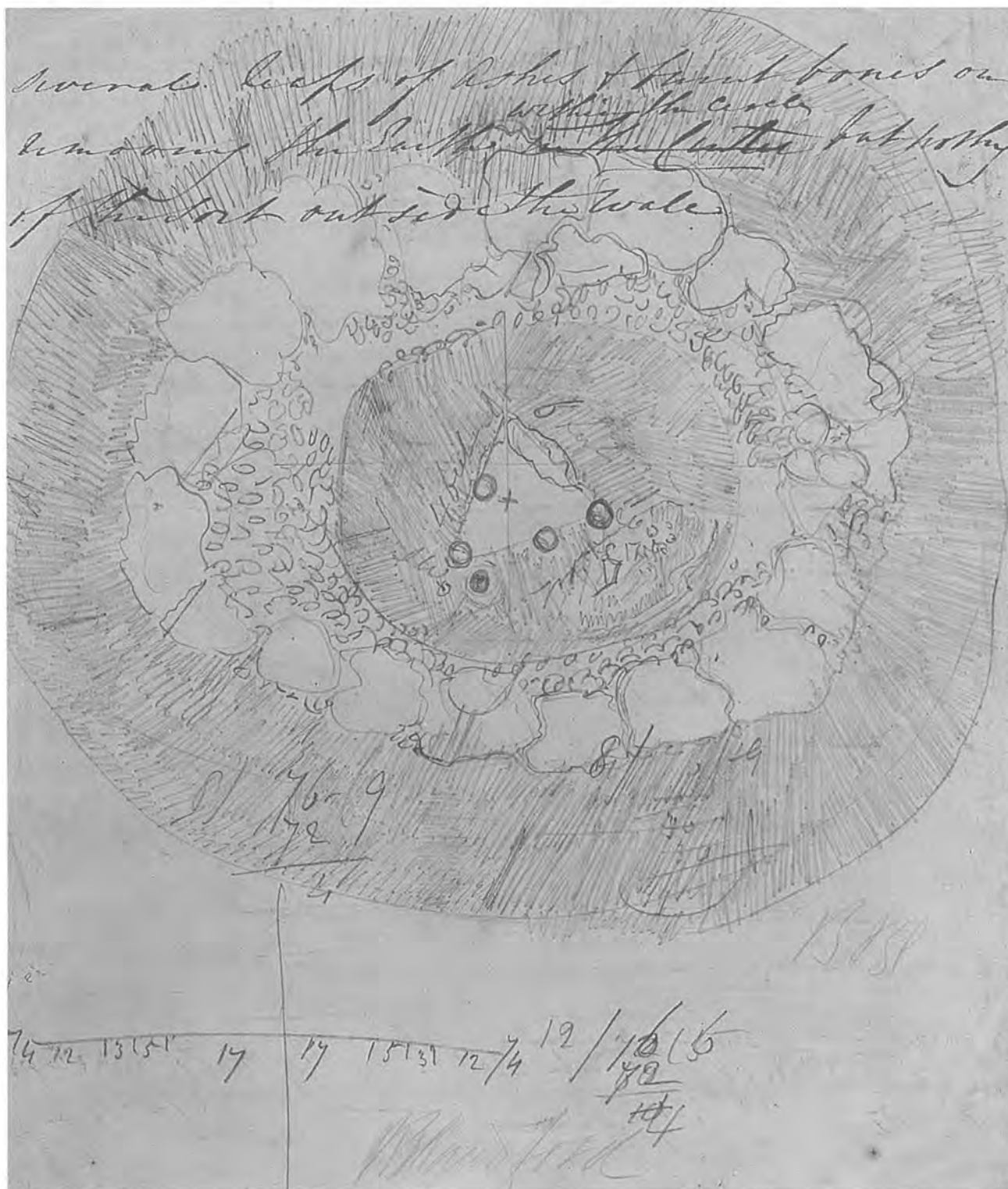


Plate 3 Plan of the barrow Shapwick 6a (The Badbury Barrow) showing the disposition of the last deposits to be discovered (courtesy of the Trustees of the British Museum).

opened, in 1858, on Wye or Crundale Downs in Kent.<sup>26</sup> The 1892 catalogue lists the first eighteen objects as coming from Wye, with the remainder from Crundale, and says that they were all found in 1858.<sup>27</sup> However, by the time they were exhibited at the Society of Antiquaries in March 1893,<sup>28</sup> it was stated that 'they were discovered in 1858 and later', and a footnote records that confusion in Durden's notes raised the possibility that some of the objects were from Sarre.

It appears that Payne compiled his catalogue without the benefit of the manuscript notebook subsequently acquired by the British Museum, which lists the finds in more detail, and their alleged associations, together with the dates on which they were found. There are seven graves recorded from Wye found between November 1858 and December 1859, which yielded objects of seventh century date, including three gold pendants and a glass vessel, and a rich female grave found either on Wye or Crundale [sic] Downs on October 4th 1862 contained garnet inlaid jewellery. The finest object in this group is the Crundale buckle, silver-gilt, inlaid with garnet, decorated with Style II animal ornament in filigree, bearing a fish appliqué at the centre. This was found on August 2nd, 1861 with a second silver-gilt and garnet buckle and 'an iron sword, 34 inches long, the handle was beautifully ornamented with thin gold leaf, but unfortunately from neglect fell to pieces'.<sup>29</sup> The pommel from this sword was subsequently acquired by the Museum from another source in 1894, but the owner was unable to provide any details of its

history.<sup>30</sup> The information recorded with these antiquities suggests that there were once excavation records which have now been lost.

Numbers 26-45 in the notebook have no grave associations. The objects date mainly from the sixth century and include beads, various brooches and belt fittings and the famous silver quoit brooch with two doves. All are listed as coming from several graves in the Saxon cemetery at Sarr [sic], near Bridge, in the summer of 1868.

A rich grave was found at Sarre in 1860<sup>31</sup>, and 274 graves were excavated by John Brent in 1863 and 1864, and published in *Archaeologia Cantiana*, although he did not think that he had excavated the whole of the cemetery. It is possible that this group of antiquities are later finds from the site as Meaney records that other relics were found nearby<sup>32</sup>, but a brief glance at the map shows that Sarre is nowhere near Bridge. The most suitable candidate for this would be the cemetery at Bifrons, first discovered in 1866, and excavated by T Godfrey Faussett in 1867<sup>33</sup>. All this material however was acquired by Maidstone Museum. The date ascribed to the Sarre finds, 1868, would appear to be more suitable for Bifrons, which also has other Quoit Brooch style pieces<sup>34</sup>, but in the absence of further documentation this attribution remains speculative.

The Anglo-Saxon material apart, Durden is best known as an avid collector of local material. In his collection we find a wide

30. The sword was purchased from a Mr Wyatt of Ryde, Isle of Wight. It was supposedly 'found in a barrow some 28 years ago with an urn that forms part of the Durden collection purchased by the Museum'.

31. L Webster and J Backhouse 1991 *The Making of England: Anglo-Saxon Art and Culture AD 600-900*, 48-50.

32. A Meaney 1964 *A Gazetteer of Anglo-Saxon Burial Sites*, London.

33. *Ibid.* 109-10.

34. V Evison 1965 *The Fifth Century Invasions South of the Thames*, London, Pls. 11a and 12a.

26. Payne 1891 *op. cit.*, 62.

27. *Ibid.* 1892 *op. cit.*, 54-56.

28. *PSA* 1893, 2nd series, vol. XIV, 314-5.

29. Durden notebook, Department of Medieval and Later Antiquities, British Museum, 67.



Plate 4 Bronze Age Collared Urn and Food Vessels from the barrow Shapwick 6a (The Badbury Barrow). Height of Collared Urn: 25.7 cm (courtesy of the Trustees of the British Museum).

spread of objects from Palaeoliths, Neolithic flint and stone axes, arrowheads and other flint tools, to a fairly miscellaneous collection of Medieval odds and ends including finger rings, seals, purse mounts, keys and brooches. But the real importance of the collection lies in the later prehistoric and Roman antiquities, some of which were excavated by Durden himself.

Between 1839 and 1883, sometimes in the company of other antiquarians like William Shipp, Durden opened a number of barrows in the Blandford region notably in the parishes of Bere Regis, Blandford St Mary, Bloxworth, Gussage St Michael, Langton Long Blandford, Milborne, Shapwick, Sturminster Marshall, Tarrant Keynston and Wareham St Martin. A passage from the preamble to the manuscript notes which survive, introducing these barrow digging exploits, tells of the emotional state of mind of those taking part in the work. Of the many earthworks, Durden records:-

'These surrounding vestiges of British and Roman labour at once attests this to have been a district of some importance and the numerous adjoining Barrows speaks too plainly to be controverted, that its population, even before the Roman invasion was by no means inconsiderable; we may likewise firmly presume that this locality has been the scene of some of those obstinate and bloody conflicts which the insatiable ambition of

Rome inflicted during his predatory visits from time to time upon our early ancestors in as much as it is attested by Stukeley and Sir Richard Colt Hoare that in most cases where Roman and British earthworks are contiguous or intermixed, in all probability the exterminating hand of the Romans had achieved a victory and taken possession of the encampment previously occupied by the ancient Britons; these struggles for possession we may imagine were always desperate.'

'Desperate' as it happens is a word which comes readily to mind as one reads through the manuscript notes of the excavations. It must be remembered, however, that barrow excavation at this period was primarily carried out for the extraction of objects for the collector's cabinet and the notebooks kept by Durden and his associates are no worse than those of many of his contemporaries. Though there is little sense of chronology, there is a willingness to make empirical judgements based on observed data. No metal in the graves for example coupled with crude pottery suggested a remoteness in age from the Roman period. Colt Hoare's *Ancient Wiltshire*, published in 1812-19, had been read and also alas Stukeley, for statements in the notes like '*we have reason to believe they [i.e. the barrows] were resorted to, on certain religious festivities by the Druids when they kindled their holy fires*' must be laid at his door. In



Plate 5 Bronze Age Collared Urn from Bloxworth Down. Height: 48 cm (courtesy of the Trustees of the British Museum).

keeping with the age there is wonderment at the skeletal remains discovered. Along with the usual remarks about the miraculous preservation of the teeth can be noted such observations as *the phrenological development of these skulls indicated high moral character and possessed a far greater portion of intellectual faculty than could be expected in men of that early period.* Along with whimsey went a desire to be seen tackling the mounds following the best practice of the day. The plan generally adopted by antiquaries we are told was the *'cutting of sections on the south side about six feet wide'*. Transverse trenches followed east and west and if rewarding each quadrant might then be examined. Perhaps to put Durden's contribution into perspective we can look at a site which both he and one of his contemporaries, Mr (later Rev.) John Austen of Ensbury managed to examine, apparently at the same time. Interestingly, only in one version, which appears to be the earliest account, does Durden refer to Austen's work.

The *'Badbury Barrow'* cannot now be identified with any great certainty, but was one of a group of round barrows in the Parish of Shapwick lying about five miles north west of Wimborne near the hillfort of Badbury Rings.<sup>35</sup> It came first to notice when on November 1st 1845 John Austen, hearing that a barrow was being quarried for sandstone and flints, visited the site to find that about two thirds had already been removed. The barrow had been of considerable size for even after years of ploughing and in the quarried state that Austen now found it, the mound was still some nine feet high and had a diameter of 62 feet. It had clearly been constructed in several stages with a central core of sandstone surrounded by a ring of flints revetted on the outside by sandstone blocks and capped, in whole or in part, with chalk.

Austen wrote an account of what he had excavated for the *Archaeological Journal* in 1846<sup>36</sup> in his capacity as local secretary for Dorset to the then recently formed British Archaeological Institute. No plans or sections accompany this account but he illustrated five of the pots recovered. The account was re-published some twenty years later by Charles Warne in his *Celtic Tumuli of Dorset* again accompanied by sketches of five pots but of these only three are the same as those originally illustrated by Austen.<sup>37</sup>

Austen's account of his own excavations is not easy to follow and is inconsistent. He appears to record at least seventeen interments confined perhaps to the area of the central cairn including eight inhumations, seven cremations and two where the deposits are ambiguously described or where a pot was found but no burial is mentioned. In addition he records that one Collared Urn had been found by the original labourer removing the stones and flints from the barrow and noted that the same labourer had also found many other pieces of pot during his quarrying.

Three days later Durden visited the site. In the various manuscript accounts preserved in the British Museum he records that he *'was much surprised and pained at what he saw. Had the barrow been properly examined by an experienced person of antiquarian taste it should have proved one of the richest and most interesting ever I opened. Of course in the hands of an uneducated labourer the greater part of the barrow was in a mutilated condition.'* By the time Durden had reached the site the barrow was said to stand seven feet high and to have grown to 75 feet in diameter but Durden describes its general construction in very similar terms to Austen. That by the time of Durden's visit Austen had not exhausted the central area is clear from the fact that Durden records that in the space of two hours he had discovered seven interments set within a triangular area 5' x 4' x 3' in extent. However in the earlier version it is clear that these discoveries were in fact made by Austen. This account reads: *'Mr Austin came to the barrow soon after we arrived and in about 3 hours succeeded in finding seven interments within the space of a few feet near the centre.'* Durden was to make a further visit to the site again a few days later and then noticed a large block of sandstone at the centre measuring 6" x 4' x 15" which had been

carved with the shapes of daggers and metal axes (Plate 2). These he took to be moulds for casting weapons and tools and proceeded to search in vain for the upper stone which he felt must once have existed to complete the moulds. In this he was of course mistaken, as Stuart Piggott was to point out nearly a century later,<sup>38</sup> for the carvings are simply that - rare examples in Britain of the depiction of metal implements on stone similar to but by no means exactly replicated on the sarsens of Stonehenge.<sup>39</sup>

Durden then had a sharp eye for the unusual object but as far as the interments go his descriptions are no better than those of Austen. This did not prevent him recording in his notes that *'I am satisfied had the floor of the Barrow and earth within the circle been carefully examined a greater number of interments might have been found than in any Barrow opened before.'* Clearly Mr Durden did not think that Mr Austen was much of an antiquarian fieldworker and later drafts make no mention of his activities on the site. Austen likewise appears to have found it unnecessary to mention Durden's presence in his published account. We may surmise that a certain coolness may have existed between the two. What Durden produced and Austen did not was a plan (Plate 3).

In terms of field notes Durden and Austen describe the construction of the barrow to a similar standard. Austen describes more of the interments but to no higher standard than those which Durden mentions. Durden however drew a plan and discovered the carved slab which Austen had missed. No artefacts from the barrow survive in Durden's collection other than the slab chopped down for easy transport so it is likely that all the objects recovered passed into the hands of Austen. Significantly of the

38. *Ant. J.* 1939 XIX, 291-9.

39. R J C Atkinson 1956 *Stonehenge* 31 pl XII.



Plate 6 Pair of bone tweezers together with beads of amber and faience associated with the Bloxworth Urn. Length of tweezers: 5.5 cm (courtesy of the Trustees of the British Museum).

35. L V Grinsell 1959 *Dorset Barrows* 130: Shapwick 6a; *Royal Commission on the Historical Monuments of England, DORSET V EAST*, 1975, 63; ? no. 40 or 41.

36. *Arch. J.* III 1846, 348-52

37. *Celtic Tumuli* 1866 part III, 52 no. 85.

twelve pottery vessels known to have been discovered through Austen's own records only three have actually survived - a Collared Urn and two Food Vessels - now preserved in the British Museum (Plate 4). Yet these had to be re-identified in this century,<sup>40</sup> for when purchased in 1922 from Lt. Col. Austen, John Austen's son, all had lost their original documentation.

It must also be admitted that the quality of much of the recording made by Durden, where it survives, leaves many doubts and uncertainties in its wake. A further example will suffice to make this point. In September 1854, Durden had had the opportunity to examine three of the barrows which survived on Bloxworth Down. From the first he extracted two Urns - a Collared Urn and a lugged Bipartite Urn. From the second came a Wessex Biconical Urn and by October he was tackling the third. This was a disc barrow in which he found near the centre an inverted urn set into a chalk cut pit. This urn he describes as being 19 ins high and of 'rude construction, no ornament whatever'. Amongst the bones were 'part of a pair of bone tweezers' and '20 jet and shell beads'.

The only vessel 19 inches high from Bloxworth in the collection is a Collared Urn yet it is strange that Durden should have described it as having no ornament since it is clearly decorated on the collar with a lattice pattern in twisted cord (Plate 5). Of the 20 beads recorded in the manuscript account, Payne mentions only 12 in the published catalogue. Though faience was perhaps understandably mistaken for shell, it is surprising that the remaining beads were taken for jet for they are of amber. Warne,<sup>41</sup> using Shipp's notes of the same excavation, does better recording '8 dark amber beads of an oval form and six or eight beads, two-thirds of an inch in length of about the size of an ordinary tobacco pipe, made with some white composition'. This bout of accuracy is however somewhat marred by describing the tweezers as being 'twenty one inches and a half long', when they actually measure two and a half (Plate 6).

Though the records left by the nineteenth century antiquaries are often in this way ambiguous and inadequate by modern standards, they cannot simply be ignored. Lacking detailed field

drawings we are often left with those artefacts which now survive, the brief descriptive notes which may have been made at the time and, if we are lucky, a few additional sketches made of pieces which caught the antiquarian eye but have failed to survive the ravages of time since their discovery. Systematic recording of information was hardly known. This was a time when notes were jotted down not so much on the back of envelopes as anything that came to hand. Durden in this respect was no exception. Thus a note of flint celts found at Stourpaine in 1887 and gravel digging for ballast for the Railway bringing to light many implements was scribbled on the back of an appeal for all good conservatives of the Blandford parish to support the Hon Evelyn Ashly, a unionist candidate, against Mr Gladstone and his separatist policy.

For Durden the collector, the 'Badbury Barrow' had been unrewarding, but we may feel sure that if the objects recovered had passed to Durden, not Austen, many more would have survived, for Durden clearly looked after the antiquities in his care. In this way important chance discoveries like the hoard of bronze twisted torques found at Tarrant Monkton came to be preserved for posterity.<sup>42</sup> Originally six torques were discovered, five remained with Durden and survived, the sixth may have gone either to Mr Hall of Ansty, one of his antiquarian contemporaries, or to Mr Gibson, steward to Baron Hambro then living at Milton Abbey, and is now lost. Certainly the collection of Bronze Age pottery which he came to amass was second only to that assembled by Charles Warne now housed in the Society's museum in Dorchester, as representative of the Bronze Age ceramics of Dorset. Durden's collection lacks little to complete the range: here are Food Vessels, Collared Urns, an Accessory Cup, Wessex Biconical urns, urns of the South Western Series, Bucket, and Globular forms all to delight the eye and fire the imagination. As such it remains a key collection for our understanding of the Bronze Age in the south west.

Of equal importance was Durden's interest in the native Iron

40. By Stuart Pigott *op. cit.*

41. *Celtic Tumuli* 1866 part II, 13.

42. S M Pearce 1983 *The Bronze Age Metalwork of South Western Britain* BAR 120, 483. The MS notes with the Durden collection show that this find, made in October 1857, consisted of 6 bronze torques. Warne in *Ancient Dorset* 1872 Appendix 332 states that these were in Durden's museum but Durden's notes clearly state that he possessed only five of them.



Plate 7 The Hamworthy stone mill, formerly thought to be of Roman date but now shown to be of Sardinian origin. Diameter of upper stone: 60 cm; of lower: 62 cm (courtesy of the Trustees of the British Museum).

Age and Roman antiquities of Dorset. This part of the collection was clearly extended by purchase and by payment to labourers to excavate chosen locations. One such item of interest is a stone mill found about 1850 at Hamworthy just outside Poole (Plate 7). This comprises an upper and lower stone and has until now always been taken to be of Niedermendig Lava from the Rhineland and to be of Roman date. Recent research, however, has shown the stone to have come from Sardinia and the mill as likely to have been of quite recent import.<sup>43</sup> Other objects collected came from sites as varied as 'Hambledon Hill', 'Hod Hill', 'the Roman Villa on Barton Hill to the north of Blandford', 'the Rev. C. D. Saunders' garden in Tarrant Hinton', 'the Rev. A. Huxtable's Hill Farm at Sutton Waldron', 'Charlton Down', 'Spettisbury', 'Jordan Hill near Weymouth' and numerous other locations in the immediate neighbourhood of Blandford as well as a few more distant parts of Dorset, Hampshire and beyond. But of these the most significant portion comes from Hod.

The Iron Age hillfort of Hod Hill covers some 55½ acres and has within it a Roman Fort set into its north west corner. For earlier antiquaries and indeed for some more recent commentators, Hod Hill encapsulated those dramatic times when

43. O Williams Thorpe and R S Thorpe 1988 *Archaeometry* 30.2, 275-89.

our heroic ancient British forebears fought for their very existence against the might of Rome. The neat Roman fort set within the more sprawling hillfort seemed to underline the inevitability of defeat for the freedom-loving tribesmen by the well-disciplined Roman fighting machine.

Durden seems to have started to collect objects from the site from about 1841 but most were extracted after the site had been first ploughed in 1858. There appears to have been no systematic approach to this collection and little in the way of notes were made other than recording the date of discovery and occasionally the rough position in relation to the earthwork eg 'found within the Roman work'. More precise details as to the context of a find are rarely recorded. Durden himself must have been distinctly pleased however that Roach Smith on looking at his collection from Hod Hill had observed 'There has never been brought together a collection of antiquities of a more specific and well determined description. These antiquities possess the rare advantage of being unmixed with matters gathered here and there, without reference to origin, time or locality and they fortunately include coins which in most cases reduce speculation to certainty.' That he employed workmen to work over the site seems certain and there can be no doubt that much evidence was lost but that loss had already begun with the act of ploughing.



Plate 8 Iron sword with bronze handle fittings from Hod Hill. Roman. Mid first century AD. Width of crowned mount: 6.8 cm (courtesy of the Trustees of the British Museum).



Plate 9 Iron dagger sheath inlaid with silver wire and embellished with red enamel from Hod Hill. Roman. Mid first century AD. Length 15.3 cm (courtesy of the Trustees of the British Museum).

Boyd Dawkins who came to explore the site in 1897 took a less charitable view, roundly condemning Durden for his actions. 'Nearly the whole of the area of both fortresses', he wrote,<sup>44</sup> 'had been ransacked by Mr Durden during the last fifty years, and the rich harvest which he obtained of Roman and Pre-Roman age has now for the most part found its home in the British Museum, without any record as to the precise circumstances of each discovery.' It is not certain whether it was the incorporation of the material into the British Museum or the fact that it lacked detailed provenance, which caused him most grief! It was left to John Brailsford, the first Keeper of Prehistoric and Romano-British Antiquities, to study this collection and try to assess its true significance.

Brailsford published the Durden material from Hod Hill in 1962<sup>45</sup> but the importance of the site, its collections and the need to provide a context and story into which the finds could be placed had already been pressed by the late Christopher Hawkes while still an Assistant Keeper at the Museum. The outcome was an agreement that an excavation should be mounted, directed by Sir Ian Richmond - the first excavation ever to be undertaken in England by the British Museum.

Most of the Durden objects had come from the part of the site under plough in the latter half of the nineteenth century. This was the western half of the hill - the Roman fort, the space between the fort and the southern rampart of the hillfort and a strip between the northern and southern ramparts extending for about 100 yards outside the outermost eastern ditch of the Roman fort. The collection reflects this cross-section being strong in Roman military equipment with a relatively small proportion clearly of Early Iron Age date. It must be said that this part of the collection

is very ill recorded, many of the objects being assigned to Hod by inference on the grounds that the bulk of the collection is known to come from the site, while no other site in the area to which Durden had access is likely to have yielded objects of this type in such quantity. The extent of the collection, among the largest from any military site in Britain, is probably due to the fact that the Roman fort was abandoned by legionary and auxiliary cavalry after a short period of occupation spanning the years AD 43-51, following a major fire. Many items which otherwise would have been removed were simply left abandoned.<sup>46</sup>

Iron rarely survives well from the Roman period but Durden was able to recover a wide range of tools and weapons from the site. Amongst the latter is a splendid mid first century AD sword with crowned hilt guard (Pl. 8). Professor Manning has argued convincingly that this is a Roman sword to which Celtic fittings have been added, reminding us that the Roman soldier of the period almost certainly had to buy his own equipment.<sup>47</sup> Some personal choice in the way a sword was embellished may well have been acceptable.

Amongst the equipment<sup>48</sup> carried by a first century soldier was a dagger of distinctive form with waisted blade and central midrib, the handle having an expansion midway down and again at the top to form a pommel. But it is the sheaths in which the daggers were carried which particularly catch the eye. In one from Hod the front plate had been decorated with inlaid metal - an alloy of copper and zinc - which would have picked out the pattern in yellow. X-rays show an eight-pointed star in one of the

46. Sir I Richmond 1968 *Hod Hill Vol 2 Excavations carried out between 1951 and 1958 for the Trustees of the British Museum*.

47. W H Manning 1985 *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum*, 149-152.

48. For a full discussion of the iron weapons and tools from Hod Hill see Manning 1985 *op. cit.*

44. *Arch. J.* 1900 LVII, 57.

45. *Hod Hill Vol I Antiquities from Hod Hill in the Durden Collection* 1962.

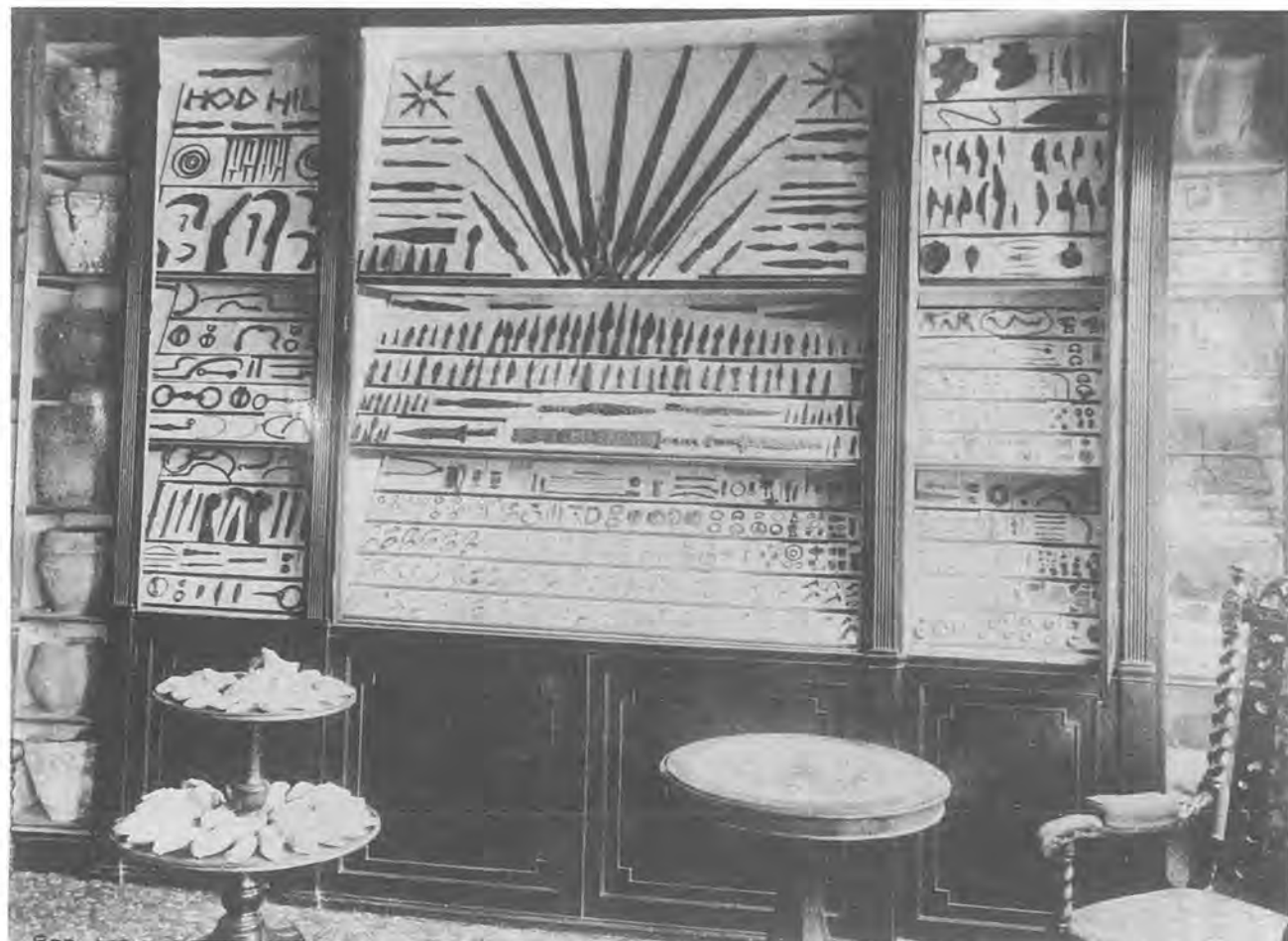


Plate 10 Part of Henry Durden's collection as displayed in his home in Blandford (a photograph hanging in the Society's museum and reproduced by kind permission of the Society).

panels inlaid with red enamel and other fragments of enamel show that much of the decoration was embellished in this way. Another sheath plate has an intricate inlaid geometric design made with red enamel and silver wire which only came to light when the piece was being conserved (Plate 9). Hod also yielded one of the richest collections of pila, spearheads, catapult bolts and arrowheads so far recovered from a first century site.

The richness of Durden's collection from Hod also illuminates many other aspects of the life of the fort. The hammer heads and punches of the metal worker; the adzes, draw knives, saws, chisels and gouges of the wood worker; picks, reaping hooks, leather working tools are all here together with harness: snaffle-bits and spurs. Of more clearly native origin are a group of currency bars of a type later to be found during excavations in one of the Early Iron Age huts, and amongst objects of bronze, are two splendid tankard handles in native style and a group of inlaid Roman belt plates.

While accepting that much information has obviously been lost through Durden's inability or lack of inclination to record details as to where individual finds were made, it would be only fair to record that we owe the preservation of many of the finds from Hod and in particular much of the ironwork, to Durden for this would have been unlikely to have survived once incorporated into the plough soil in the mid nineteenth century. These objects helped to demonstrate the importance and richness of the site and in turn stimulated modern research and excavation - a role which many another nineteenth century collection was to play in other parts of the country.

Compared with some of his contemporaries Durden was only a minor figure on the antiquarian stage. He did not travel, nor did

he publish. He was therefore known to very few. What he has left behind in terms of manuscript notes does not suggest much originality of thought or depth of perception. Yet as a collector, or rather as an accumulator, for once acquired he does not seem to have disposed of items, he was to ensure that much which might otherwise have been lost to posterity has survived to be studied and researched by successive generations. Durden at the end was to fall victim to the influenza epidemic which was then wreaking havoc through much of Dorset in the winter of 1891/2. How much his collection meant to him can be gauged from the fact that, as Mr Bankes, the then Honorary Secretary of the society<sup>49</sup> was to report, Durden had had his bed removed to his museum so that he could die amidst his treasures (Plate 10). Yet at his death neither Wake Smart nor George Payne to whom the task devolved could find much to say of the man, hoping only that his collection would stay together either in Dorset or in the National Museum. That hope at least was realized and it is hoped that this paper, coming a century after his death on January 20th 1892, will be acceptable as a further, though belated, epitaph to his memory.

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49. *Dorset County Chronicle and Somersetshire Gazette* 21.1.1892 and *Western Gazette* 22.1.1892

# THE BUILDING STONES OF DORSET.

## Part 1. The Western parishes - Upper Greensand Chert and Lower Lias.

JO THOMAS

### Introduction.

Dorset is well-known throughout England for the supply of Portland freestone for public buildings, Purbeck marble for church monuments and other Purbeck limestones for paving. From a Dorset perspective however there are many other building stones available.

The varied geology of the county is reflected closely in the vernacular buildings. Many parishes used a parish quarry where the tenants had the right to draw stone as required. For church building good quality stone may have been carried from further afield.

The majority of the stones used in Dorset are limestones of Jurassic age (190 - 136 mya). They are often rich in fossils, though for building purposes the presence of large fossils makes poor quality stone. The lime of the limestones appears in two forms; a fine-grained powdery form known as micrite and a crystalline form known as sparite. In some of the limestones ooliths are present, usually in a micrite cement. The best quality freestones (stone which can be easily sawn) are the Portland, Todber and Sherborne oolitic limestones. Portland and Sherborne have a micrite cement, while the best bed at Todber has a sparite cement. At Bothenhampton the Forest Marble, a sparite-cemented shelly limestone, can also be cut into large square blocks and has often been carried several miles to be used as foundations. Some massive beds in the Inferior Oolite quarries are cut as ashlar (sawn rectangular blocks fitted together with fine jointing) for better quality buildings, though they are rarely used outside their native parish. Most vernacular buildings use roughly broken blocks known as rubble.

The remaining Jurassic limestones are used as rubble in both vernacular and ecclesiastic buildings. In addition, Cretaceous Upper Greensand sandstone and chert, Chalk block and flint have been used within the area of their outcrop. In the south east of the county, Tertiary heathstones of several kinds appear in many older buildings, often mixed with Purbeck limestones, Upper Greensand, or flint.

All of the limestones have been used for mortar, or for liming the fields. The soft sands of the Bridport Sands and the Foxmould of the Upper Greensand have also been used for mortar. Limestones, Chalk, chert and flint gravel have been used for roadstone.

The limestones of Portland and Purbeck have been extensively documented. An introduction to the lesser-known building stones of West Dorset has been published (Thomas 1990). The purpose of this further series of papers is to record the quarries in greater detail.

It is proposed to record the use of the various building stones parish by parish so that this basic geological information can be easily correlated with other types of records. In many villages and towns several stones have been used, some quarried within the parish, some brought from elsewhere. In addition bricks have been made on site, or brought from further afield. In the latter part of the 20th century, almost all building has relied on imports of brick from outside Dorset though a small amount of stone, local or imported, is still being used.

Information on the location of quarries has been gathered from:

a) Tithe maps drawn about 1840. In the majority of parishes only the field name has given an indication of a quarry or pit. Those which did not subsequently appear on the Ordnance Survey maps of c. 1890 are presumed to have been ploughed up or filled in by that time.

b) Ordnance Survey maps published c. 1890, 1901, 1931 and 1968. 6":1 mile, or 1:10,000.

c) Geological literature. (see Thomas & Ensom 1989).

The quarries have been numbered on the maps, and the relevant information set out as follows:

Name (if known); stone quarried; source of information e.g. Tithe map, earliest Ordnance Survey map.

Although most quarries still appear on 1:10,000 OS maps published c. 1968, many have since been filled with rubbish, ploughed in, or built over. The Dorset Environmental Records Centre has geological details of the majority of sites where the beds of stone are still visible. The author would welcome any knowledge of further quarries which have not been identified in this report.

Information on dates of buildings has been obtained from the Historic Buildings Lists held by the Planning Department of Dorset County Council with the kind assistance of Peter Brachi and Simon Ludgate, and from the present owners.

Identification of the stone used in buildings is entirely the author's own responsibility.

In the first of this series of papers it is proposed to describe those parishes in which Upper Greensand chert has been quarried for use both in buildings and for roadstone. Since several of these parishes also provide Lower Lias limestones and clays, information on these beds will be included.

### UPPER GREENSAND CHERT.

In the most westerly parishes of Dorset the prominent features of the landscape are the large flat-topped hills capped by the Chert Beds of the Upper Greensand, and the Drift derived from them during the Pleistocene. The hills surround the Vale of Marshwood as isolated outcrops, all of them quarried in small pits at various times over the past 700 years. The chert has been used as interior rubble or as facing in all the villages of the Vale as well as those on the higher ground. The largest number of quarries was on Hardown Hill at Morecombelake but others could be found on Lamberts Castle, Coneys Castle, Pilsdon Pen, Blackdown and north of Thorncombe village. The thickness of the Chert Beds is c. 9m (30ft) at both Hardown and Lamberts Castle. The size of the larger pieces of chert ranges from 20 cm (8") diameter at Hardown to 45 cm (18") at Thorncombe. Chert was also picked from the fields within the Vale as the Upper Greensand has always been subject to landslipping because of its overstep of the clay-rich beds of the Lower and Middle Lias. This landslipping is most clearly seen at Black Ven but occurs throughout the district.

Chert is a weatherproof but brittle material similar to flint and is used in a random mix with other stones in load-bearing walls with quoins of a stronger stone. Where it can be seen alone as at Catherston Leweston it is only a facing. The exterior surface of the 'cobs' is a light tan in colour, but where the 'cobs' are knapped to produce a flat face the interior colours are a grey or blue.

In West Dorset the lowest bed of the Upper Greensand is a soft glauconitic sand known as Foxmould. This sand was mixed with lime for use in mortar. Near Lyme Regis large doggers (Cowstones) occur within the Foxmould and were used for building the early harbour walls at the Cobb.

### LOWER LIAS LIMESTONES & CLAYS.

Lower Lias limestones and clays can be seen in magnificent cliff sections from Lyme Regis to Golden Cap. They also outcrop in the Vale of Marshwood where the low lying ground is often waterlogged.

Blue Lias limestone has been used as rubble for building in several areas of West Dorset but the good quality stone used for paving is thought to have come from Somerset. The Blue Lias

quarried at Lyme Regis is of poor quality and many buildings have been tiled or rendered. However, it has also been used as a raw material for mortar and plaster. In several villages cobbles from the beach are used in a random mix with chert in the walls of older houses or in boundary walls.

Lower Lias clays have all been used for pottery or bricks on a small scale since the beginning of the 18th century with a substantial brickworks at Marshwood during the 19th century.

### Parishes Of West Dorset Using Upper Greensand Chert As A Building Stone.

#### BETTISCOMBE PARISH. Figure 1

The small parish of Bettiscombe lies south west of Pilsdon Pen on the Middle and Lower Lias. The northern part of the parish has been subject to much landslipping as the Middle Lias silts slip over the Green Ammonite Beds. A spring at the 145m (c. 470ft) contour is within the Middle Lias below the Thorncombe Sands. This supplies water for the house and farm and is the only pure water spring in the Vale of Marshwood (M. Pinney pers. comm.). It is thought to have been the reason for the original settlement in 1100 by monks from Frampton monastery.

#### Buildings

Bettiscombe Manor is a brick-built house of the early 18th century. The bricks are laid in a distinctive chequerboard pattern of vitrified headers and deep red stretchers. Building work was undertaken in three stages, commencing in 1698 (M. Pinney pers. comm.), using a different size of brick in each stage. The stables were burnt down and rebuilt, in the late 18th century, with bricks from Mutton Street. The quoins of the house are

Ham Hill stone, and the 18th century roof was of Cornish green slate with stone tiles of Forest Marble siltstone, probably from Bothenhampton, as the lower two courses. Welsh grey slate replaced the Cornish green in the 19th century but the 1987 restoration planned to return the roof to its original slate.

Parts of the structure are medieval and restoration work in 1987 uncovered cruck timbers in the roof. The oldest wall, possibly of this date, has been built of Inferior Oolite including some Red Beds thought to be from Broadwindsor and chert from the Upper Greensand. Chert is plentiful as debris in the fields having slipped from the Chert Drift and Chert Beds on Pilsdon Pen. An archway in this wall was bricked up in 1754 during the building of the brick house. Siltstone doggers from the Thorncombe Sands have been used for foundation courses. (Thomas 1989). Most of the house is floored with Blue Lias flagstones thought to come from Somerset.

A 17th century cottage east of the Manor is also built of chert as is the barn to the north built in 1838 (M. Pinney).

The church, old Rectory and cottages also use Chert, Inferior Oolite, and local brick.

#### Quarries Figure 1.

6. A disused gravel pit is marked below the Marshwood road on OS 1890.

#### Claypits Figure 1.

7. Ballchurch. Green Ammonite Beds. (Michael Pinney pers. comm.).
8. Kennet Mead. Landslip of Eype Clay and other Middle Lias clays and silts (Michael Pinney pers. comm.). Late 17th, early 18th century brick kiln.

Bricks were made from these clays during the 18th century and were used not only for the house and farm buildings at Bettiscombe but also for a lace factory in Lyme Regis.



Fig. 1 Marshwood, Bettiscombe and Pilsdon. The Marshwood Brickworks (5) manufactured bricks using Belemnite Marls clay during the 19th century. Quarries are numbered. The location of those marked by an open circle is approximate as they refer to field names on tithe maps.

**Source Of Materials**

Inferior Oolite	-	Grange Quarry, Burstock.
Ham Hill Stone	-	Ham Hill, nr. Yeovil, Somerset.
Chert	-	landslip debris, Pilsdon Pen or Hardown Hill in 19th century.
Brick clay	-	Eype Clay in landslip.
	-	Green Ammonite Beds below landslip and in Ballchurch.
	-	Belemnite Marls at Mutton Street, Marshwood.

**CATHERSTON LEWESTON PARISH. Figure 2.**

The small complex of buildings is set on the Middle Lias, though the farmland is underlain by the Lower Lias clays.

**Buildings.**

Church built 1857 with cherts from Hardown Hill, Morcombelake, all light grey, with dressings and interior of Bath stone. Manor built by John le Wadham in 16th century, enlarged 1887, using Inferior Oolite and Ham Hill stone. Old wall and barn to east are constructed of chert and blue limestone beach pebbles. Late 16th century porch of Beer stone.

**Quarries. None.****CHARMOUTH PARISH. Figure 2.**

The parish is underlain by the limestones and clays of the Lower Lias with Upper Greensand chert on either side of the Char valley. Both Black Ven and Stonebarrow suffer from landslipping.

**Buildings.**

Most of the building material used in Charmouth has come from the beach pebbles of Upper Greensand chert or the various Lower Lias limestone bands. The chert pieces are up to 30 cm (12") square, the limestone pebbles tend to be flat and thinner. The Manor House and Queen's Arms hotel date from the 16th century; the George hotel is early 17th century and other houses were built in the 17th or 18th century. Most of the 19th century houses are brick and rendered but the village school has a facing of chert.

The parish church was rebuilt in 1836 with a foundation plinth of Forest Marble from Bothenhampton, a core of local rubble from the beach and a facing of chert from Morcombelake. Beer stone and Ham Hill stone have been used around doors and windows.

Charmouth Cement Mill was built in the 1850's of beach pebbles and was only working for 17 years. It was leased from 1863 and royalties charged on 'cement, unmanufactured stone, manganese, bricks, tiles' etc. In 1867 a sale catalogue (DRO/D447/35) includes the manorial mineral

rights including 'brick-earth, cement-stone, blue lias stone, mundick [sic], copperas, manganese etc.' but it was probably not worked again. This was about the time that the manufacture of Portland cement started.

The limestone was brought by horse and cart, or in baskets carried by two women. As there are no ledges of Blue Lias at Charmouth they collected loose stones from the beach for the raw material but this was soon exhausted which would account for the short life of the mill. The limestone was burnt and then crushed by the 2 grinding stones of imported granite which were run by a steam engine. There were two lime kilns at the back of the mill. The women also carried away the cement which weighed 40 lbs a basket and were paid 3 pence per basket. (precised from DRO/D447/7).

**Quarries. Figure 2.**

11. Two fields known as Pit Close (8) and Pit Mead (28). Black Ven Marls. Tithe map 1841.

**LYME REGIS PARISH. Figure 2.**

The hills which enclose the centre of the town are of Upper Greensand overlying Lower Lias limestones and clays. Although cliff sections have been subject to dramatic landslipping houses have been built close to the cliff or even on slipped areas.

Upper Greensand chert has been quarried from the hill above Lyme Regis mostly for use as roadstone.

**Buildings.**

In Lyme Regis the Blue Lias limestones have been used for building since the 12th century but they weather badly and many buildings have been faced with slate or rendered. The stones may have been gathered as loose material on the beach (known as Shinglestone lime) or quarried from the cliffs and sea ledges.

Buildings which use Blue Lias include the parish church, parts of which date from the 12th, 13th and 15th century and the bridge in Bridge Street dating from the 14th century. Hutchins (1774) recorded 200 houses 'of blue rag-stone, not very durable, and covered with blue slate'. The use of the Lias limestones continued into the 19th century when the Royal Lion, the Borough offices and the bonded warehouse were built in 1830-40.

The buildings accounts for Mapperton Rectory, 1699-1701 (Machin 1983), show that limestone from Uplyme (Devon) was used for plaster. During the 18th century the limestones were used as raw material for stucco or interior plasterwork. A map of 1796 shows a limekiln immediately north of the Cobb.

Sea quarrying increased in importance by 1800-1810. The stoneboatmen quarried the ledges at low tide bringing the stone to the Cobb for ballast, infilling, or as raw material for stucco. The stoneboats,

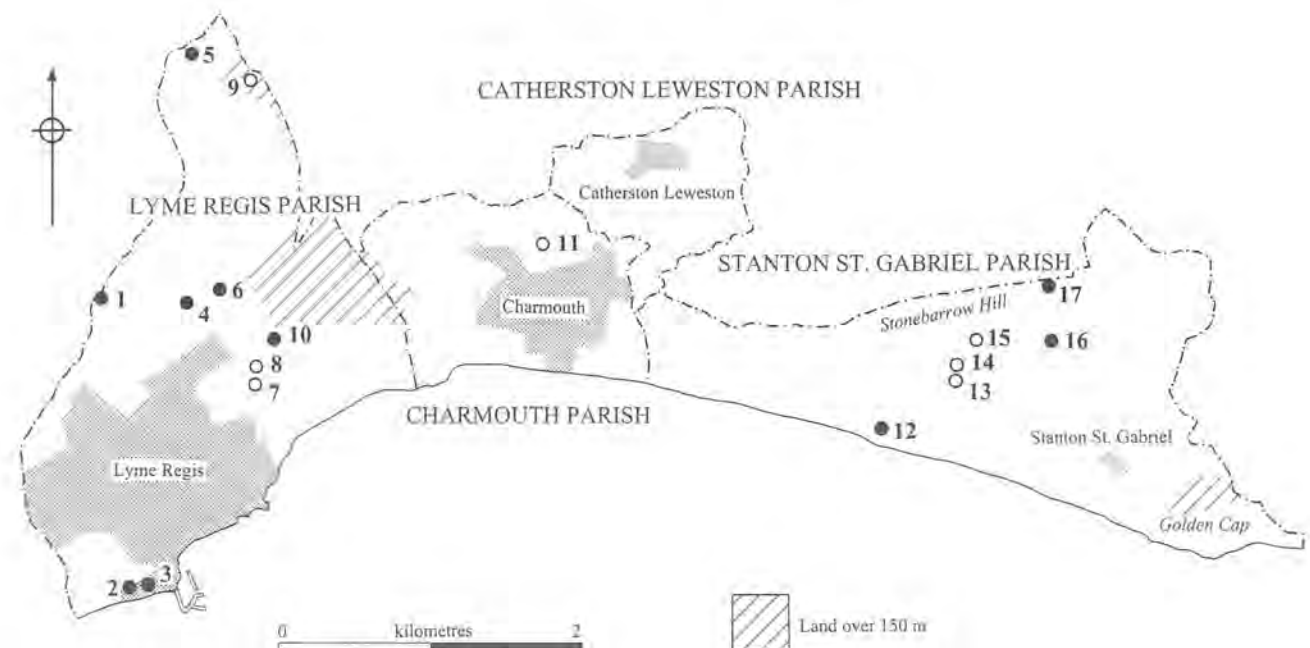


Fig. 2 Lyme Regis, Charmouth, Catherston Leweston and Stanton St. Gabriel. In these southern parishes both chert and Blue Lias have been used for building.

based on the Portland lerret, (a wide beamed, flat bottomed, double ended boat about 6m (20ft) long) were in use until the 1920's. From 1850 to 1914 there was a cement factory on Monmouth Beach, west of the Cobb, as the limestones in the cliff were found to be a useful base for hydraulic cement (quick drying in marine conditions). (Wilson *et al.* 1958, 208). The cement was made from fired and pounded limestone chuted down from the cliff above. There was also a brickyard on the site until 1895 (Fowles, 1982). In addition to the local brick, Bettiscombe bricks were used for a lace factory built by the Pinney family in the 18th century (M. Pinney pers. comm.) It is therefore probable that Bettiscombe or Mutton Street bricks from the Lower and Middle Lias clays of the Marshwood Vale may have been used for other buildings. So many buildings have been rendered or merely colour washed in recent years that this is difficult to ascertain.

The Cobb, which was first built in the reign of Edward I, was constructed of 'Cowstones' from the Upper Greensand which were gathered from the beach. In 1750 the oak piles for the Cobb were replaced by stone taken from the ledges, with disastrous results (DRO/D447/8). Initially the stones were uncemented, but constant damage by the sea and repeated repairs meant that by 1774 they were relaid in mortar and cement (Hutchins 1774). Repairs in 1792-5 used Cowstones in the interior with a capstone of Portland limestone. After destruction by a gale in 1817 repairs were of Portland stone. The reconstruction following the great storm of 23rd November 1824 again used Portland stone.

Some chert has been used for building and in January 1872 the *Dorset County Chronicle* (17, 79, 7) recorded that a new church (St. Pancras) was being built of local 'flint' at Roosdown (sic) in Lyme Regis.

#### Quarries. Figure 2.

1. Lower Lias. OS 1891 (old quarry).
2. Monmouth Beach. Lower Lias. OS 1891 (cement works).
3. Lower Lias. OS 1891 (brick kiln).
4. Lower Lias. OS 1968.
5. Marl Pit. Lower Lias. Tithe 1841 (549).
6. Dragons Hill. Upper Greensand. OS 1930.
7. Brickfield. Lower Lias. Tithe 1841 (596).
8. Brickfield. Lower Lias. Tithe 1841 (598).
9. Gravel Pit, Lyme Hill. Upper Greensand. Tithe 1841 (559).
10. Gravel Pit. Upper Greensand. OS 1888. Tithe apportionment 1911.

DRO/D447/7 & DRO/D447/8. Pavey Record Collection. Compiled by WD Lang and RWJ Pavey. Details of cement working and other industries in Lyme Regis and Charmouth.

#### MARSHWOOD PARISH. Figure 1.

The village of Marshwood is situated on the Greensand ridge on the north western side of Marshwood Vale but the parish stretches across the vale to Bowood south of Broadwindsor. Chert Beds have been quarried on Lamberts Castle and at The Devil's Three Jumps at Birdsmoorgate.

16th, 17th & 18th century buildings are mainly of chert, either quarried or gathered from the fields, with some blue limestone which may be Blue Lias from the beach, but is more probably Belemnite Stone from small pits dug in the Vale itself. The stones are said to be bonded by clay from the fields. The chert in the fields has been brought by landslip from the surrounding hills such as Pilsdon Pen, Lamberts Castle and Coney's Castle where Chert Drift caps the Chert Beds of the Upper Greensand.

The Mutton Street brickworks used the Belemnite Marls of the Lower Lias. Bricks were made here in the late 17th and 18th century. They can be distinguished from Bettiscombe bricks of similar date because they were laid only as stretchers, and were not vitrified (M. Pinney pers. comm.). By 1890 The Marshwood Brick and Tile works is shown on this site.

#### Buildings.

Marshwood Castle (built 1205-64) is no longer visible, but Hutchins (1774) states there were remains consisting of a basement storey of a building about 40 ft by 20 ft internally, the walls of rubble work about 10 ft in thickness. Rev. R.G. Bartelot (1945) wrote that in 1892 he found a cobble stone trackway 'which runs due east from what was the Castle entrance for a considerable distance, and then turns due south along the narrow lane which is also paved with stone. This lane runs up to the main Bridport road above Chideock and crosses the road and continues southward to an ancient stone quarry. It is evident to my mind that from this quarry the stones were carried along that very same paved road for the building of the Castle.' This seems to reach Langdon Hill and Upper

Greensand.

Buildings in the parish from 1400 onwards are built of chert or the local brick. Dunster Farm has used cob. Iron was smelted in the lower field at Tanyard Farm.

#### Quarries. Figure 1.

1. Lamberts Castle. Upper Greensand. OS 1890 (old sand pit, old gravel pit and gravel pit, working south from road). Used for gravel 20th c, by Pass estate. (Wilson *et al.* 1958, 153)
2. Lamberts Castle. Middle Lias. OS 1904.
3. Lower Lias. OS 1968, 1985.
4. Birdsmoorgate. Upper Greensand, Chert Beds. Devil's Three Jumps. (Paynes Down). OS 1890, 1904. (Wilson *et al.* 1958, 153)
5. Marshwood Brick & Tile Works. Lower Lias, Belemnite Marls and Stone. OS 1890 - buildings shown; 1904 (pit). DRO/D15/P10 Estate map of John Tatchell Bullen, 1852, "Bricky'd" pencilled in. (Trueman & Williams 1925, 712, 737-8; Lang & Spath 1926, 155; Lang 1932, 111; Wilson *et al.* 1958, 29).

#### PILSDON PARISH. Figure 1

The parish of Pilsdon is dominated by Pilsdon Pen, which is capped by the Chert Beds of the Upper Greensand. (Wilson *et al.* 1958, 146, 153.) There are gravel pits on the hill providing chert, but Inferior Oolite for building would have come from Burstock or Broadwindsor.

#### Buildings.

St. Mary's church (1830) has walls faced with Inferior Oolite and chert. Ham Hill stone has been used for the inner doorway, but Inferior Oolite for the porch.

The mid 17th century Manor house is built of Inferior Oolite, with a Ham Hill front. The garden walls are of chert, and the stable block of Inferior Oolite.

#### Quarries. Figure 1.

9. Pilsdon Pen. Two gravel pits in Chert Drift, the southern on OS 1890, northern on OS 1903. (A third pit is in Broadwindsor parish.)
10. Cockpit Hill. Junction Bed. OS 1903.

#### STANTON ST. GABRIEL PARISH. Figure 2.

The parish of Stanton St. Gabriel includes the spectacular cliff sections from Stonebarrow Hill to Golden Cap, both hills being capped by the Chert Beds of the Upper Greensand. The small pits in the Greensand were used for roadstone (George Elliott, National Trust Warden, pers. comm.) The remainder of the parish is farmland on the Middle Lias sands and clays some of which were used for brickmaking.

The farm buildings are of chert, and Lias limestone; brick; the 14th century chapel almost entirely of chert, though windows and doorway include Beer stone and a yellow shelly sandstone from Salcombe near Beer. The Beer stone would have been brought by sea. Roof tiles were originally of Forest Marble siltstone though glazed ceramic tiles were used later. Now a ruin, one medieval window and one Elizabethan window remain.

#### Quarries. Figure 2.

12. ?Green Ammonite Beds. OS 1888 (old limekiln).
13. Pitlands Plot, Gabriels Farm. Middle Lias, Eype Clay. Tithe 1840 (83).
14. Great Pitlands, Gabriels Farm. Middle Lias, Eype Clay. Tithe 1840 (46).15.
16. Chert Beds, Upper Greensand. (George Elliot, NT).17.

#### THORNCOMBE PARISH. Figure 3.

The village is built on a plateau of the Upper Greensand Chert Beds. The river Synderford has carved a valley into the Middle Lias to the east on the line of NW-SE faults leaving Thorncombe Hill and Blackdown dominant. The Middle Lias also crops out from below the Greensand above the river Axe on the northern boundary of the parish. The extensive thick spreads of gravel in the valley of the Axe are thought to be periglacial outwash rather than the terrace gravels associated with changing sea levels during the Pleistocene and more recent weathering processes. The Chert beds of the Upper Greensand have unusually large pieces of chert (<45 cm (18") diameter) dark to light grey in colour, embedded in a white sandstone which is overlain further north by the Eggardon Grit. At Snowdon Hill near Chard the grit is c. 3m (9ft) thick (Chard History Group 1970)

### Buildings.

In Thorncombe village the buildings from the 16th to the 19th century use the local chert and its surrounding or overlying sandstone. Some buildings include Inferior Oolite which could have come from quarries in Drimpton. Others are wholly or partly local brick.

Industrial buildings include mid 18th century Thorncombe Mill (known as Chaffeigh Factory) which made woollen cloth, working until 1850. This has Greensand quoins with chert rubble walls and brick window surrounds. Shedrick Mill, built of chert, was working until 1914.

At Forde Abbey the 12th century dormitory and refectory is built of chert, white Greensand and Ham Hill stone. The early part of chapel is also chert, white Greensand and Ham but the 17th century face of the chapel is entirely Ham. The 16th century refectory, cloister and gate tower have Ham Hill on the south front, but white Greensand and chert on north side. Windows above the cloister are 17th century and Ham Hill stone. Stone tiles on the western archway. The bricks of the wall near the long pond may be of local manufacture. The stables are of white Greensand, Inferior Oolite, chert, and Ham. The Greensand is often used for quoins or arches notably the low arch over the sewer in the 12th century dormitory. 18th century ha-ha is built of Ham and white Greensand with chert. The weathered surface of the ha-ha has formed a thick crust over both Ham and Greensand.

The White Greensand is believed to come from the Chard area, (Chard History Group 1970) but Upper Greensand chert pits at Thorncombe may have been similar. They are now completely overgrown, or infilled.

continues, moving along outcrop.) The gravels of the Chard area may be periglacial outwash, rather than river gravels laid down by the River Axe. Gravel pits in the valley of the Axe have been used for several centuries and many stone Palaeolithic axes have been found during hand working. The pits are still in use for roadstone.

4. Forde Abbey Farm. Middle Lias. (Young 1972, 237). Brickworks and claypit. OS 1890, 1931 (building only 1968).
- 5 & 6. Higher Rough Pits. Upper Greensand Chert. OS 1890 (old quarry); 1931; 1968.
- 7 & 8. Lower Rough Pits. Upper Greensand Chert. OS 1890 (old quarry); 1931; 1968.
9. Upper Greensand Chert. OS 1931.
- 10.11 Millers Pits. Upper Greensand Chert. OS 1890 (old gravel pits); & 12 1931; 1968.
13. Upper Greensand Chert. OS 1890 (old quarry); 1931; 1968.
14. Upper Greensand Chert. OS 1890 (old quarry); 1968.
15. Upper Greensand Chert. OS 1931.
16. Middle Lias, Eype Clay. OS 1890, 1931, 1986. Brickworks, Shedrick Bridge. Pit still visible 1989, east of stream. Brickworks were west of stream. (Wilson *et al.* 1958, 45; Young 1972, 237).
17. Upper Greensand. Chaffeigh Farm (built 17th c). OS 1931.

### Quarries. Figure 3.

1. Broom gravel pits. Quaternary gravel. SSSI.
2. Westford Farm gravel pits. Quaternary gravel.
3. Chard Junction. Quaternary gravel. OS 1931, 1968. (Work

### BROADWINDSOR. Figure 3.

Most of the buildings and quarries in Broadwindsor parish are of Inferior Oolite and therefore a full description will be included in an article concerning that Formation. However, the western end of the parish at Blackdown has quarries in the Chert Beds of the Upper Greensand.

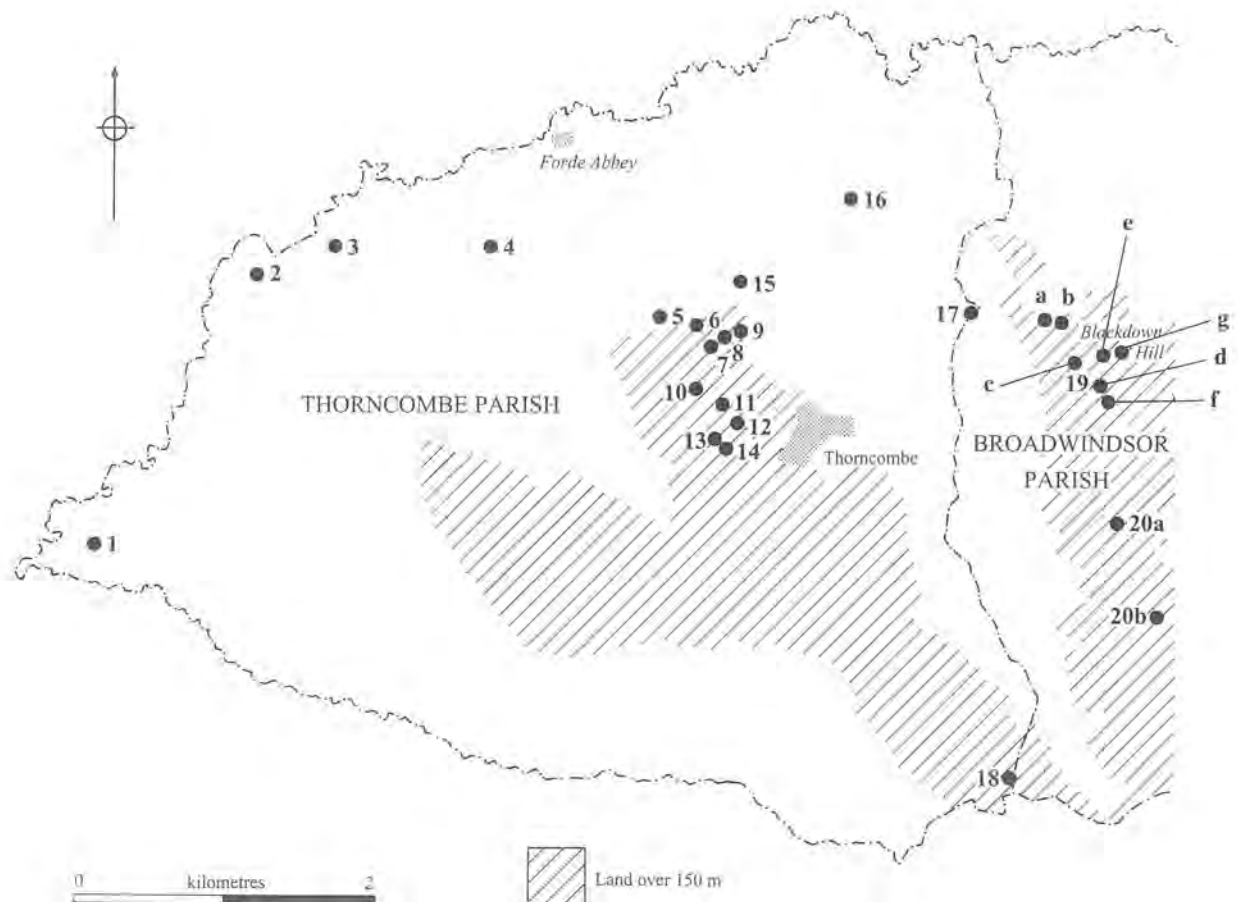


Fig. 3 Thorncombe and Blackdown (part of Broadwindsor). The rivers Axe and Blackwater form the northern and southern boundaries of the parish. Geologically, Blackdown has more in common with Thorncombe than its own parish of Broadwindsor.

Geologically, Blackdown Hill has more in common with the neighbouring parish of Thorncombe, and it is therefore included in the same figure (figure 3)

18. Birdsmoorgate. Upper Greensand, Chert Beds. OS map 1890.
19. a-g. Blackdown Hill. Upper Greensand, chert & sand. (Wilson *et al.* 1958, 153)
  - a) OS 1890, old sand pit.
  - b) OS 1890.
  - c) OS 1930, 1968, 1984, (not 1890).
  - d) OS 1890 (gravel), 1968 larger, spread north.
  - e) OS 1968 (chert) not 1890
  - f) OS 1930, 1968 (chert).
  - g) OS 1890 (old sand pit) & 1930.

Many pits here were used for sand or gravel for mortar or roadbuilding, and may also have provided the chert used for foundations or boundary walls in the parish.

20. a & b. Coles Cross. Upper Greensand chert. OS 1903, 1968. (Wilson *et al.* 1958, 153).

Wilson *et al.* 1958, 153 also refers to quarrying on Lewesdon, Blagdon and Conegar hills in the Chert Drift or Chert Beds.

#### WHITCHURCH CANONICORUM PARISH. Figure 4.

The parish of Whitchurch Canonicorum stretches from Lamberts Castle in the north to Hardown Hill in the south and includes part of the Marshwood Vale. The Vale is on the Lower Lias with many streams and lush vegetation. Drinkable water is only available from springs on the upper hill slopes under the Greensand and it remained a thickly wooded area in the Middle Ages. The Lower Lias clays have been used for brickmaking in the Vale and there are several clay pits at Abbots Wootton Farm. The blue limestone used as rubble in local buildings may be from the beach at Charmouth or from pits in the Belemnite Stone.

South of the village the Middle Lias sands are overlain by the Bridport Sands and capped at Hardown Hill by Gault and Upper Greensand with a considerable thickness of Chert Beds and some Chert Drift.

Lamberts Castle has an Iron Age hill fort constructed from the Chert Drift and there are pits on top which have been used for centuries for road gravel and rubble for building. The many landslips around the hills have taken chert down into the clay fields of the Vale where it has been gathered for both uses. The chert at Hardown Hill is of better quality and has been used since medieval times for buildings and for roadstone being carried as far as Axminster for this purpose since the 16th century. On both hills the chert beds are c. 9m (30 ft) thick (Wilson *et al.* 1958).

#### Buildings.

The church of St. Candida in Whitchurch has chert, Inferior Oolite, Forest Marble, Ham Hill stone and Beer stone as well as Roman ceramic tiles in the Norman and medieval walls. In 1822 chert was used for the south vestry.

In 1836 chert from Hardown was used for facing Charmouth church. In 1857 carefully selected pale blue chert from the same source was used for facing Catherston Leweston church.

The present building at Abbots Wootton farm using chert, Inferior Oolite and blue limestone dates from the 15th century, but incorporates earlier materials. In 1848 cottages were built at Lower Abbots Wootton Farm using chert (DRO/D104/P1). Other domestic buildings are mainly 17th and 19th century using chert with some blue limestone. Bricks used during the 18th & 19th century probably came from the Marshwood Brick & Tile Works at Mutton Street using Belemnite Marls.

The school was built in 1840 and was faced with chert and with Ham Hill stone at the edge of the roof (DRO/D209/64). Recent additions are also faced with chert.

#### Quarries. Figure 4.

Fifteen pits have been worked in the Upper Greensand chert beds, often topped by chert drift, on Hardown Hill. A Terrier of 1769 shows a quarry

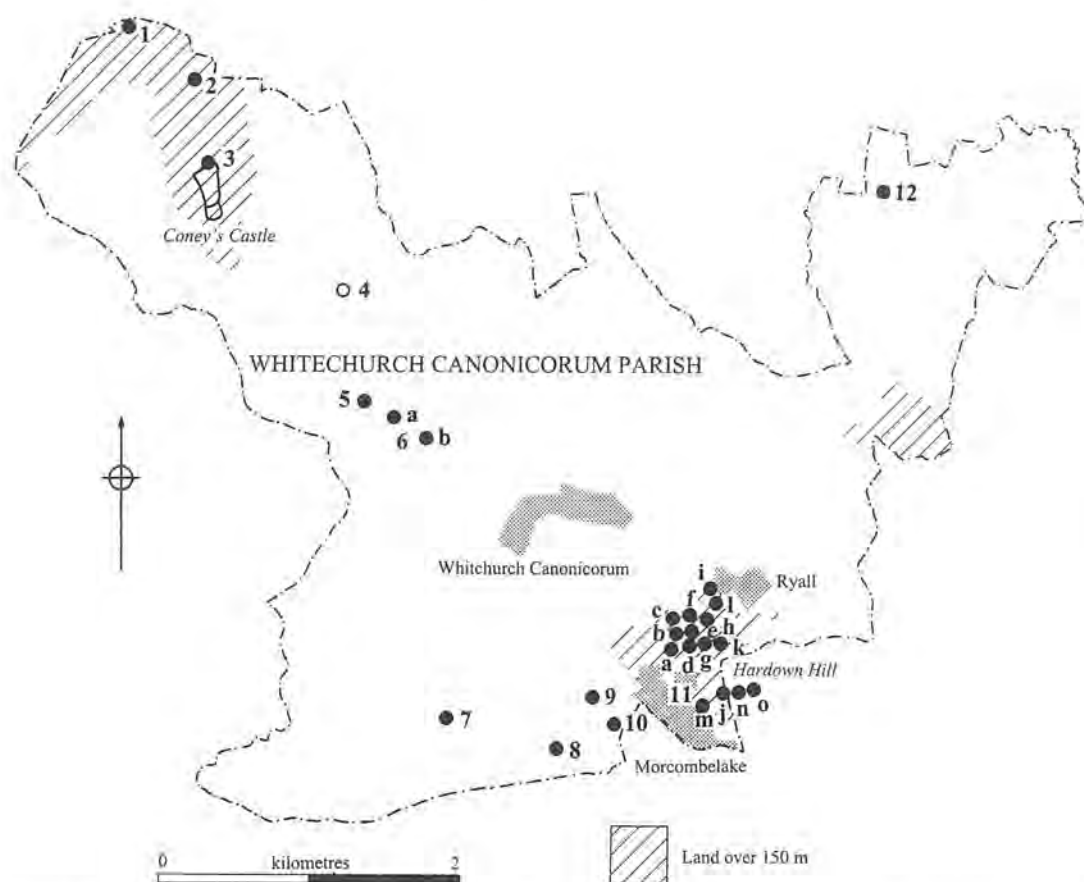


Fig. 4 Whitchurch Canonicorum. The pits on Hardown Hill have been in work since medieval times and have provided chert for building and roadstone over a wide area of West Dorset.

on the eastern edge. The tithe map of 1844 shows an extensive quarry at High Bullen, Hardown, which was at that time common land. Most of the hill is now National Trust land and the pits are overgrown. The one pit still open is privately owned and the chert is used for restoration.

The stones are often up to 20 cm (8") in diameter and were split for building using a small hammer with a long handle - the 'Hardown hammer'. An iron bar with three claws was used to hold the stones, known as cobs, which were hung in hessian sacks. These were made wet before breaking up the cobs to stop the pieces going into the workman's eyes. On Hardown the tenants had the right to two cartloads of hoggin (flint, sand and clay) for the roads. A roadman in charge of a given length of road would dig, crack the cobs and mend the roads. For building a ton of stone, lime and sand would be one day's work (G. Elliott pers. comm.).

Four pits occur in the Belemnite Marls. There is one pit in the Green Ammonite Beds and one in the Down Cliff Sands.

1. High View Pit, Fishpond Bottom. Chert Beds, UGS, and Chert Drift. In use 1980's for roadmaking but not marked on any OS map and therefore possibly not in use before 1960's.
2. Nags Head. Upper Greensand. OS 1890 (old sand pit).
3. Coney's Castle. Upper Greensand, Chert Beds or Chert Drift. OS 1890, 1904, 1968. Pit in use early 20th century for roadmaking. (Wilson *et al.* 1958, 153. 12 ft of cherty gravel, and 4ft 6ins. of Chert Beds).
4. Abbotts Wootton Farm. Belemnite Marls. OS 1930.
5. Abbotts Wootton Farm. Green Ammonite Beds. OS 1890 (old clay pit); 1968.
- 6a & b. Abbotts Wootton. Belemnite Marls. OS 1890 (old clay pit): 1930, 1968.
7. Stonebarrow Hill Landslip. OS 1890 (old gravel pit).
8. Upper Greensand. OS 1890 (old sand pit).

9. Morecombelake. Downcliff Sands, Middle Lias. OS 1930.
10. Ship Lane. Chert Beds, UGS. Roadman's cottage. OS 1890, visible as indentation in road only.
11. a - o HARDOWN HILL, Chert Beds, Upper Greensand. Johnny Vizer's Pits, medieval in origin. (j, m, n, o). (Wilson *et al.* 1958, 152). a - l (except h, j, k) marked on OS maps 1890 and 1930; j, k, m, n, o marked on all maps including earliest 1" maps and OS 1960 and 1987; d and h marked on Tithe map 1844. n, o are in Chideock parish. An 1852 map of the estates of John Tatchell Bullen shows a quarry on Hardown. (DRO/D15/P10)
12. Belemnite Marls. OS 1930.

#### WOOTTON FITZPAINE PARISH. Figure. 5.

Wootton Fitzpaine village is built in a valley on the Lower Lias with the Upper Greensand ridge of Coney's Castle and Lamberts Castle to the north and north west. The Middle Lias crops out on the hills to north and south of the village. A NW-SE fault runs between the two sections of the village. Belemnite Marls occupy much of the flat ground but a thick covering of gravel masks the outcrop.

The most common building material is chert, probably picked from the fields, but Blue Lias and Inferior Oolite are also used in the 16th and 17th century houses.

#### Buildings.

The vernacular buildings in Wootton Fitzpaine are built of chert, Inferior Oolite and Blue Lias rubble. The church, remodelled in 1871-2 with an exterior facing of chert, has reused material from the original 12th century building. Monkton Wyld church was built in 1848 of chert and blue lias mortar with dressings of Caen stone (Hutchins 1863, 266).

The 18th century Tempest House is built of cherts from the garden and was enlarged early in the 19th century. Water pits in the cellar, which

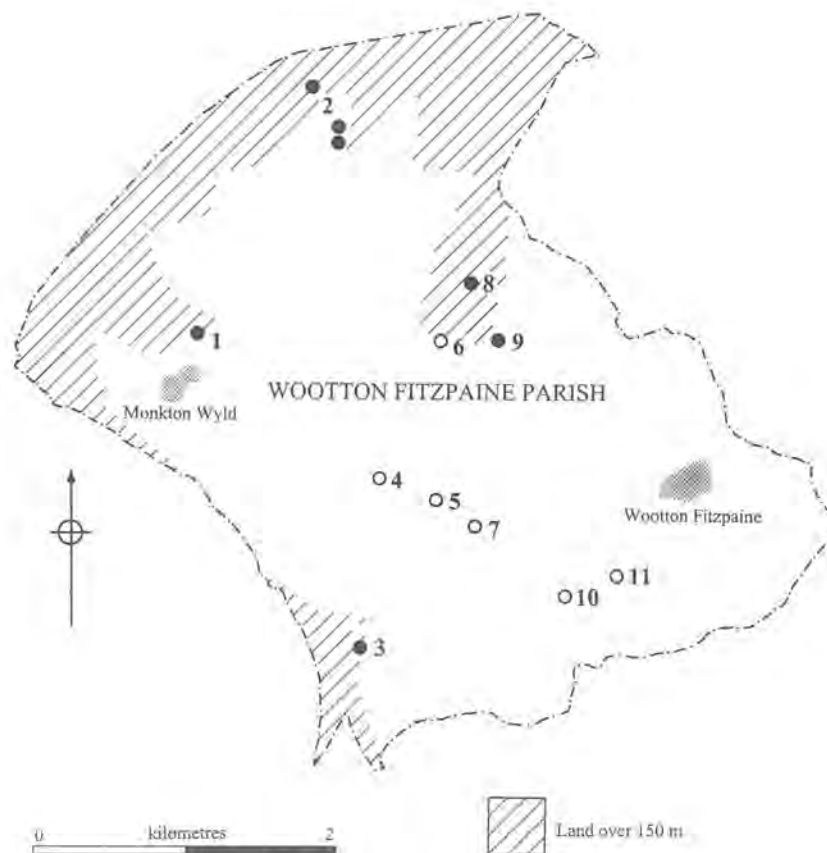


Fig. 5 Wootton Fitzpaine.

is in the Greensand, fill up in rainy seasons.

**Quarries.** Figure 5.

1. Clay with flints. OS 1904 (gravel pit).
- 2a, b & c. Wyld Warren. Upper Greensand. OS 1890 (a & c disused).
3. Upper Greensand. OS 1930.
4. Pit Close. Lower Lias. Tithe 1842 (304).
5. Pit Copse. Lower Lias. Tithe 1842 (282).
6. Limepit Close. Chalk. Tithe 1842 (459).
7. Pit Orchard. Lower Lias. Tithe 1842 (275).
8. Wootton Hill. Upper Greensand. OS 1890, 1904. Gravel pit.
9. Upper Greensand. OS 1904.
10. Pit Close, Westover Farm. Lower Lias. Tithe 1842 (131) 11.
11. Green Pit. Lower Lias. Tithe 1842(122).

**Bibliography.**

Bartelot, R.G., 1945, The vanished medieval castles of Dorset. *Dorset Proceedings*, Vol. 66, 70-75.  
 Chard History Group, 1970, *Chard. A geological survey*. Pubn. 3.  
 Fowles, J., 1982, *A short history of Lyme Regis*.

Hutchins, J., 1774, *History and antiquities of the county of Dorset*. 1st edn. 1863 3rd edn. vol. II.  
 Lang, W.D., 1932, 'The Lower Lias of Charmouth and the Vale of Marshwood', *Proc. Geol. Assoc.* Vol.43, 97-126.  
 Lang, W.D., & Spath, L.F., 1926, 'The Black Marl of Black Ven and Stonebarrow', in *The Lias of the Dorset coast*, *Q.J. geol. Soc. Lond.* Vol.82, 144-87.  
 Machin, R., 1983, *The buildings accounts of Mapperton Rectory 1699-1701*. Dorset Record Society.  
 Thomas, J., 1989, 'An unexpected foundation stone'. *Dorset Proceedings*, Vol.110, 168.  
 Thomas, J., 1990, The lesser known building materials of West Dorset. *Proc. Geol. Assoc.* Vol.101, (4), 289-301.  
 Thomas, J., & Ensom, P.C., 1989, *Bibliography & index of Dorset geology*. Dorset Nat. Hist & Arch Soc.  
 Trueman, A.E., & Williams, D.M., 1925, Studies in the ammonites of the family Echioceratidae. *Trans. R. Soc. Edinburgh* 53, 699-739.  
 Wilson, V., Welch F.B.A., Robbie, J.A., & Green, G.W., 1958: *Geology of the country around Bridport & Yeovil*. Mem. geol. Surv. UK.  
 Young, D., 1972, 'Brickmaking in Dorset', *Dorset Proceedings*. Vol.93, 213-42.

# Taxonomy and palaeoecology of the Portlandian (Upper Jurassic) pleurotomariid gastropod *Bathrotomaria rugata* (Benett, 1831) from southern England

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## Abstract

The Portlandian (Upper Jurassic) archaeogastropod *Bathrotomaria rugata* (Benett, 1831) is described for the first time, using the long lost but newly discovered, only figured syntype. By comparison with other fossil and Recent pleurotomariids the normal primitive internal organisation is inferred. Analysis of the facies in which the species occurs suggests that it lived epifaunally in shallow marine environments, and may have fed partly or wholly on algae.

## INTRODUCTION

Despite the relative abundance and diversity of gastropods in shallow water marine facies of the Portland Sand and Portland Stone (Portlandian, Upper Jurassic) of southern England few publications, old or new have concerned their taxonomy, and work on their palaeoecology or palaeobiology has been virtually non-existent. *Bathrotomaria rugata* (Benett) is perhaps the most widespread gastropod in the English Portland Sand and Stone, but surprisingly has never been described, although it is figured six times. Spamer *et al.* (1989) documented and figured many of Etheldred Benett's (1831) type specimens, subsequent to their rediscovery at the Academy of Natural Sciences in Philadelphia. These relocated and now photographically figured types include Benett's figured type of *Trochus rugatus* (= *Bathrotomaria rugata*). This specimen is fully described and refigured below. This important specimen is treated as a syntype in agreement with Spamer *et al.* (1989) because it cannot be known how many specimens Benett possessed when she first figured the species. Recent studies of additional material from Buckinghamshire, Oxfordshire, Wiltshire and Dorset have allowed a formal description of the species, and enabled palaeoecology and palaeobiology of the species to be discussed.

## SYSTEMATIC DESCRIPTIONS

(The suprageneric classification follows Cox, 1960; the stratigraphic nomenclature is that of Wimbledon, 1980 which is used throughout this paper).

Class GASTROPODA Cuvier, 1797

Subclass PROSOBRANCHIA Milne Edwards, 1848

Order ARCHAEOGASTROPODA Thiele, 1925

Suborder PLEUROTOMARIINA Cox and Knight, 1960

Superfamily PLEUROTOMARIACEA Swainson, 1840

Family PLEUROTOMARIIDAE Swainson, 1840

Genus BATHROTOMARIA Cox, 1956

*Type species, Trochus reticulatus* J. Sowerby, 1821; by original designation.

*Generic diagnosis (from Cox 1956), 'High-turbinate to sub-lenticular, anomphalous to broadly phaneromphalous. Whorls angular, with broad, flattened ramp and steep, often vertical side. Selenizone prominent, at ramp angle. Ornament weak, of spiral threads often cancelled by collabral threads'.*

*Pleurotomaria* DeFrance differs from *Bathrotomaria* in possession of a selenizone near mid-whorl, but not necessarily coincident with a ramp angle, which may or may not be present. The ornament in *Pleurotomaria* tends to be more tuberculate (Cox, 1960 provided a full description).

*Bathrotomaria rugata* (Benett, 1831)

V\* 1831 *Trochus rugatus* Benett; p. 6, pl. 16, upper right hand figure.

. 1860 *Pleurotomaria rugata* (Benett); Damon pl. 8, fig. 6.

. 1864 *Pleurotomaria rugata* (Benett); Damon pl. 8, fig. 6.

. 1866 *Pleurotomaria rugata* (Benett); De Loriol & Pellat p. 38

. 1880 *Pleurotomaria rugata* (Benett); Damon pl. 8, fig. 6.

. 1888 *Pleurotomaria rugata* (Benett); Damon pl. 8, fig. 6.

V\* 1989 *Trochus rugatus* Benett; Spamer *et al.* pl. 12, fig. 2.

Merely stratigraphic occurrences of the species are mentioned in numerous stratigraphical/palaeontological works; these include Fitton (1836), Phillips (1871), Blake (1880), Damon (1884), Woodward (1895), Arkell (1935; 1947), and Townson (1971).

## Originally figured syntype

Academy of Natural Sciences of Philadelphia collection, ANSP 65710 (Fig. 1 A-E) 'Portland Beds, Tisbury'. Benett paid particular attention to a large quarry at Chicks Grove (ST962297), 1.5 kms east of Tisbury in the Vale of Wardour, Wiltshire. Her stratigraphic section of this exposure was subsequently published by Sowerby (1816), and closely matches the sequence of strata more recently recorded by Wimbledon (1976), and still well exposed. Benett must have collected or acquired the figured syntype from this locality, or one of the few other quarries in this area of Tisbury which are all now infilled or overgrown. The preservational mode closely matches that of fossils found in beds 27-30 of Wimbledon (1976), which broadly correspond to beds 6-8 of Benett's section. These comprise the greater part of the Ragstone Beds of Wimbledon (1980). Likewise the sediment infilling the syntype is closely comparable to the lithologies of Wimbledon's beds 27-30. These beds at Chicks Grove quarry (currently providing the only good exposure of the Ragstone Beds in the Chicks Grove area) have failed to produce any new toptype material; however quarrymen at this site report that such large gastropods are found in the 'Spangle' (beds 29 and 30 of Wimbledon, 1976) from time to time. From their verbal descriptions these must be large trochiform gastropods, and can only be *Bathrotomaria rugata*. Revised geographic/stratigraphic data from the figured syntype thus becomes: [Ragstone Beds (*kerberus* Zone)], Portland Beds [Stone], Tisbury [(c. ST9429), Vale of Wardour, Wiltshire].

Abbreviations for collections are as follows, and are used throughout this paper.

ANSP=Academy of Natural Sciences of Philadelphia

BMNH=Department of Palaeontology, British Museum (Natural History)

BRSMG=Bristol City Museum and Art Gallery

AYBCM=Buckinghamshire County Museum

DORCM=Dorset County Museum

OUM=Oxford University Museum

BGS=British Geological Survey

DM=Devizes Museum

JDR=Author's collection (donated to BRSMG)

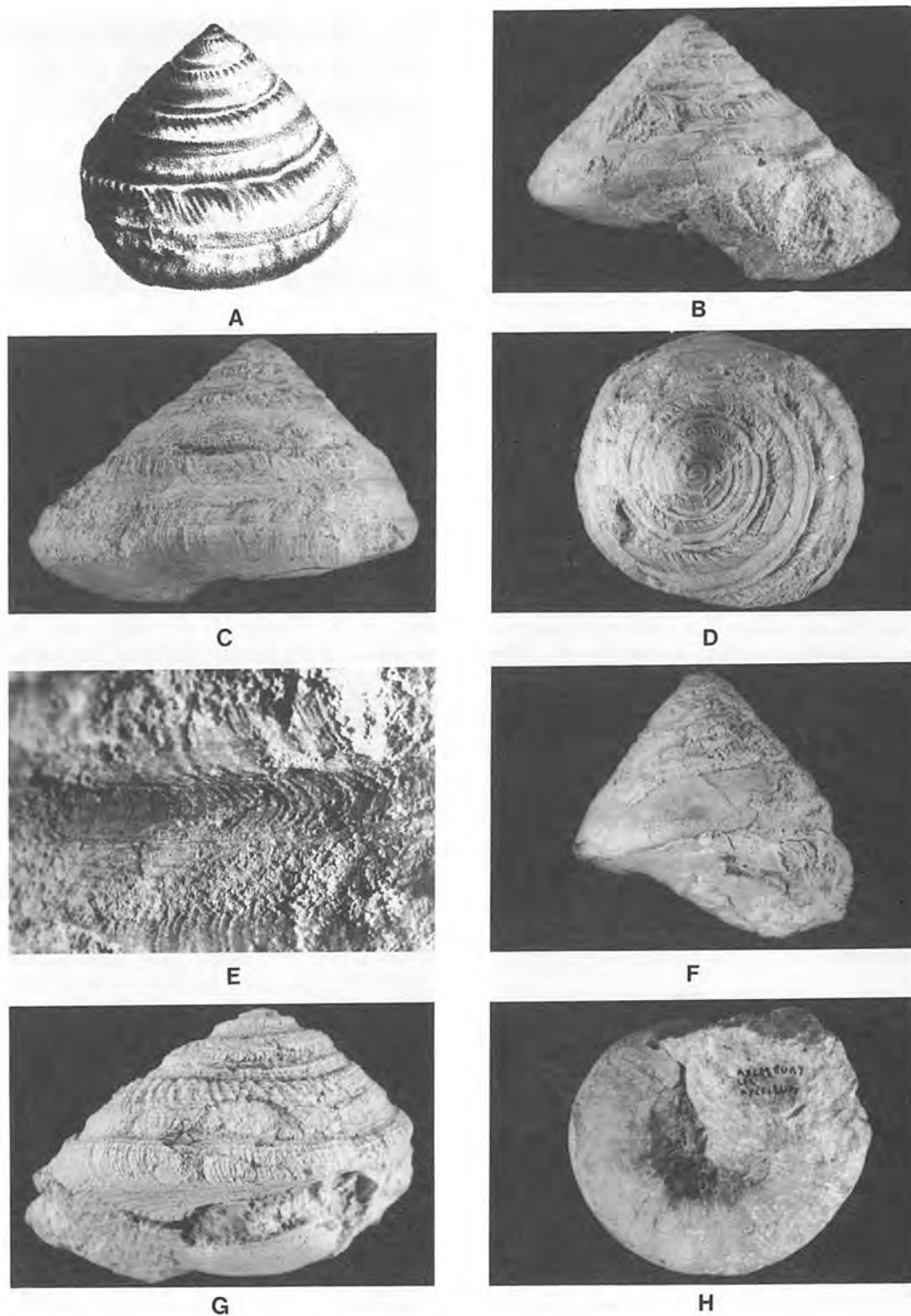


Figure 1. *Bathrotomaria rugata* Benett from the Portland Beds of southern Enland.  
 A - Illustration of the figured syntype ("*Trochus rugatus*"), Benett (1831, p.6, pl.16).  
 B,C,D,E - *Bathrotomaria rugata* (Benett, 1831). ANSP 65710, Ragstone Beds (*kerberus* Zone), Tisbury, Vale of Wardour, Wiltshire; figured syntype. B-apertural view, x 0.85. C-lateral view, x 0.85. D-apical view, x 0.78. E-selenizone on basal whorl, x 2.7. Figured Benett, 1831, p.6, pl.16; Spamer et al 1989, pl.12, fig. 2.  
 F - *Bathrotomaria rugata* (Benett, 1831). AYBCM 121.20, Creamy Limestones (*kerberus* Zone), Haddenham Station, Buckinghamshire. Apertural view, x 0.6.  
 G - *Bathrotomaria rugata* (Benett, 1831). BMNH G.34976, Basal Shell Bed, (*kerberus* Zone), west coast of Isle of Portland, Dorset, Lateral view, x 2.4.  
 H - *Bathrotomaria rugata* (Benett, 1831). AYBCM 245.12 (sample of 24 specimens), Aylesbury Limestone, (*okusensis* up to *kerberus* Zone), Aylesbury, Buckinghamshire, Basal view, x 0.5.

All specimens coated with ammonium chloride except in E and H.

### Topotypes from the Tisbury area

BMNH 36191, 'Portland Stone, Tisbury, Wiltshire'; BMNH J. Morris collection GG9470, GG9471, 'Portland Stone Tisbury, Wiltshire'; BMNH W. Cunnington collection 24809 (two specimens), 'Portland Stone, Tisbury, Wiltshire'; BRSMG J. Channing Pearce collection, two un-numbered specimens, 'Portland Beds, Tisbury, Wiltshire' and DM 1699, 'Portlandian, Tisbury, Wiltshire'.

The topotypes retain varying amounts of calcite shell replacement, and are for the most part similarly preserved to the figured syntype. It is thus tentatively suggested that the topotypes similarly originated in the Ragstone Beds of the Tisbury area. Revised geographic/stratigraphic details for all topotypes are as follows: ?Ragstone Beds (*kerberus* Zone), Portland Stone, Tisbury (c. ST9429), Vale of Wardour, Wiltshire.

### Material from higher horizons in the Tisbury area

BGS GSM18451, 43695, 118448-118450, 'Portland Oolite, Wockley Quarry, near Tisbury'. These specimens retain varying amounts of calcite shell replacement, and are infilled with buff-coloured soft biomicrite, easily distinguishable from the arenaceous matrices of the figured syntype and topotypes which are probably from a lower horizon (see above). Wockley quarry (ST956287), only exposed strata as low as the Wockley Micritic Member (*kerberus* up to *anguiformis* Zone) of Wimbledon (1980) (Hudleston, 1881 referred to these strata as the Chalky Series, and Andrews & Jukes-Brown, 1894, p. 49 provided a detailed section). The Wockley Micritic Member is characterised by biomicrites and cherty biomicrites (see Wimbledon, 1976, who at first referred to this unit as the non-Ragstone portion of the Wockley Member). It is still well exposed at Chicks Grove quarry (beds 31-33 of Wimbledon, 1976). Woodward (1895, p. 206, 207) recorded *Pleurotomaria rugata* [*Bathrotomaria rugata*] from chalky limestones of the Chalky Series [Wockley Micritic Member] of Wockley (bed 3 of his account), and it thus seems likely that all these BGS specimens are from the Wockley Micritic Member of Wockley quarry, probably from bed 3 of Woodward (1895, p. 207). Revised geographic/stratigraphic details are as follows: [Wockley Micritic Member (*kerberus* up to *anguiformis* Zone)], Portland Oolite [Stone], Wockley quarry [(ST954288), Vale of Wardour, Wiltshire.]

### Additional material from other localities

OUM Townson collection, box L1284, no. 3, unregistered, 'Black Dolomite Beds, Portland Sand Formation, Grove Cliff, Isle of Portland' [West Weare Sandstones (*glaucolithus* up to *okusensis* Zones), Portland Sand, Grove Cliff, Isle of Portland, Dorset (SY704721)]; BMNH R. H. Cunnington collection G34976, G34977, 'Basal Shell Bed, Portlandian, *pseudogigas* Zone, Portland Stone, West coast of Isle of Portland' [Basal Shell Bed (*kerberus* Zone), Portland Stone, west coast of Isle of Portland (SY683726-679212)]; JDR888, Shrimp Bed (*anguiformis* and/or possibly up to *oppressus* Zone), Portland Stone, Winspit quarries, Isle of Purbeck, Dorset (SY978762); OUM W. J. Arkell collection, fourteen un-numbered specimens, 'Portland Limestone, Okus Quarry, Swindon' [Cockly Bed (*okusensis* up to *kerberus* Zone), Portland Stone, Okus quarry, Swindon, Wiltshire (SU148836)]; OUM J48025, 'Portland Oolite, Shotover' [Glauconic Beds or Rubbly Limestones (*glaucolithus* up to *kerberus* Zone), Portland Sand or Portland Stone, Shotover Hill, Oxfordshire (SP5606)]; AYBCM John Lee collection 2062 (three specimens), 'Lower Portland Pebble Bed, Hartwell' [Upper Lydite Bed (*glaucolithus* Zone), Portland Sand, Hartwell, Buckinghamshire (SP7912)]; AYBCM 245. 12 (twenty-four specimens), 'Portlandian, Aylesbury' [Aylesbury Limestone (*okusensis* up to *kerberus* Zone), Portland Stone, Aylesbury, Buckinghamshire]; AYBCM 121.20, 'Portland Stone, Haddenham Station' [Creamy Limestones (*kerberus*

Zone), Portland Stone, Haddenham Station, Buckinghamshire (SP730086)].

### Description of figured syntype

The specimen is well-preserved mainly as a cast (in the sense of Challinor, 1928) in pale calcite mosaic, with approximately 95% of the shell replacement intact (Fig. 1 A-D). This is infilled with buff-coloured calcite-cemented bioclast sand, containing abundant quartz grains and rare glauconite. The specimen is of medium size, trochiform, diameter 65mm, height 54mm, apical angle approximately 85°. Whorls are bordered abapically by a strong rounded carina, adjoined adapically by a flat band, below the selenizone. The selenizone is wide and raised (Fig. 1, E) and coincides with a convex angulation on the whorl surface which is less distinct on the earlier whorls (Fig. 1 B,C). The selenizone is separated from the suture by a gently inclined slightly concave ramp, bordered adapically by a rounded shoulder and impressed suture. The base is convex and umbilicate. The peristome is not preserved on the syntype, and the incompletely preserved apertural slit now only penetrates 10% of the basal whorl. The selenizone bears prominent closely-spaced lunulae, intersected by faint spiral ridges (Fig. 1,E). The abapical carina and flat band bear continuous fine opisthocline growth lines, levelling out beneath sharply demarcated base of selenizone. These lines are crossed by fine spiral ridges, giving rise to a cancellate pattern (Fig. 1 B,C). The ramp bears fine to coarse prosocline growth lines, intersected by approximately 12 faint spiral ridges (see Fig. 1 B,C).

### Description of species (based on all available material)

Moderately large (diameter of largest specimens from Aylesbury Limestone of Aylesbury, Buckinghamshire c. 105mm), trochiform apical angle variable, approximately 75° in some mature specimens (Fig. 1, F) to around 95° in immature individuals (Fig. 1, G). Whorl is bordered abapically by a relatively flat narrow band inclined at a moderately acute angle to the axis on later whorls (Fig. 1, B). The selenizone is wide, cord-like and raised (Fig. 1, E) and coincides with a convex angulation on the whorl surface, which becomes progressively more sharply demarcated on later whorls (Fig. 1 B,C). Above the selenizone a slightly concave ramp occurs, bordered adapically by a rounded shoulder and impressed suture. The base is convex, with a relatively wide umbilicus (Fig. 1, H). The aperture is sub-elliptical in shape, with a slightly flared peristome visible in some individuals (Fig. 1, H) which are taken to have reached maturity. The full apertural slit penetrates approximately 20% of the body whorl. The selenizone bears prominent closely-spaced lunulae, intersected by faint spiral ridges. The abapical carina and flat band bear fine opisthocline growth lines, levelling out adapically, beneath sharply-demarcated base of selenizone. These lines are crossed by fine spiral ridges, giving rise to a cancellate pattern. The ramp bears fine to coarse prosocline growth lines, thickening on the shoulder, and crossed by fine spiral ridges (Fig. 1 B,C,D,G). The base bears fine growth lines of varying regularity and strength, intersected by up to about 20 weak spiral ridges, which generally lose their prominence on later whorls (Fig. 1 G,H). Details of protoconch are unknown.

### Remarks

The position of the selenizone and nature of the ornament indicates that this gastropod is a species of *Bathrotomaria* (see above for description).

Small-scale fractures in the shell of the figured syntype indicate that this specimen has been slightly crushed. Comparison with large specimens from the Aylesbury Limestone of Aylesbury, Buckinghamshire indicates that although a nearly complete shell, the figured syntype may be a young or stunted individual. The

topotypes and material from higher horizons in the Tisbury area are mainly preserved as calcite casts, however much of the other material (notably larger individuals, especially those from the Cockly Bed of Swindon and the Aylesbury Limestone of Aylesbury) are slightly distorted internal moulds (in the sense of Challinor, 1928), preserved in biomicrite. These lack apical whorls, and bear varying amounts of external ornament, which has either been impressed onto the surfaces by compaction, or preserved as patches of friable calcite, which have replaced original shell material. Nevertheless, all agree with the syntype in shell sculpture and form.

De Loriol & Pellat (1866) described a species which they named as *Pleurotomaria rozeti* de Loriol, from the Tour Croi [Tour de Croi Nodule Bed, *pallasioides* and/or *rotunda* Zone, Upper Kimmeridgian, see Townson and Wimbledon, 1979] from north of Wimereux, in the Bas Boulonnais, France. De Loriol and Pellat's figure is of a medium-sized trochiform gastropod, preserved largely as an internal mould. De Loriol and Pellat distinguished this species from *Pleurotomaria rugata* by its more depressed form, and greater apical angle ( $116^\circ$  as opposed to c.  $75-90^\circ$  for *Bathrotomaria rugata*). Blake (1880) recorded this French species from the Shell Bed (unit 9) at the base of the flinty series of the Isle of Portland [Basal Shell Bed, *kerberus* Zone] together with *Pleurotomaria rugata*. In the Damon collection of the Dorset County Museum there is a specimen labelled as *Pleurotomaria rozeti* (DORCM G7238), from the Isle of Portland. Much of the specimen shows calcite shell replacement infilled by a micrite lithology which is highly reminiscent of the biomicrite which constitutes most of the Basal Shell Bed. This specimen is here regarded as an immature *Bathrotomaria rugata* with a large apical angle (cf. Fig. 1, G), perhaps partly due to crushing. Blake's record may similarly refer to such relatively small specimens of *Bathrotomaria rugata* with high apical angle values.

#### Known range and distribution

Material in museum collections, together with field investigations and a review of literature indicates that *Bathrotomaria rugata* occurs in the following lithological units.

##### Dorset

A single specimen from the West Weare Sandstones (*glaucolithus* up to *okusensis* Zone) of the Isle of Portland occurs in the collections of the Oxford University Museum (see list of additional material). Blake (1880) also recorded *Pleurotomaria rugata* [*Bathrotomaria rugata*] from the suprajacent Flinty Series [Cherty Beds, *okusensis* up to *anguiformis* Zone] of the Dorset coast. The species occurs in the Basal Shell Bed (*kerberus* Zone) of the Isle of Portland (see Cox, 1925 and below). Townson (1971) records *Pleurotomaria* [*sic*] from sediments associated with oyster-algal patch reefs in the Freestone Beds [Portland Freestone Member] of the Isle of Portland, for instance. This record undoubtedly refers to *Bathrotomaria rugata*. The highest stratigraphic occurrence in Dorset is the Shrimp Bed (*anguiformis* and/or possibly up to *oppressus* Zone) of Winspit, Isle of Purbeck (see list of additional material).

##### Wiltshire, Vale of Wardour

Reid (1903, p.8) recorded *Pleurotomaria rugata* [*Bathrotomaria rugata*] from the Lower Portland Beds [broadly equivalent to the Wardour Member (*albani* up to *glaucolithus* Zone)] of the Vale of Wardour. No specimens from strata below the Ragstone Beds (*kerberus* Zone) have been encountered by the author, and Reid's record must be considered as tentative. The figured syntype, topotypes and material from Wockley Quarry (see above) are probably from the Ragstone Beds and Wockley Micritic Member (*kerberus* up to *anguiformis* Zone).

##### Wiltshire, Swindon

Numerous specimens from the Cockly Bed (*okusensis* up to *kerberus* Zone) occur in museum collections (see list of additional material).

##### Oxfordshire

A single specimen from the Glauconitic Beds or Rubbly Limestones (*glaucolithus* up to *kerberus* Zone) of Shotover Hill near Oxford exists in the collections of the Oxford University Museum (see list of additional material, also Pocock (1908), who recorded *Pleurotomaria rugata* from rubbly glauconitic limestones [Glauconitic Beds to Rubbly Limestones] at the western end of Shotover Hill).

##### Buckinghamshire

The species occurs in the Upper Lydite Bed (*glaucolithus* Zone); see list of additional material. A single unregistered and unlabelled specimen from the Glauconitic Beds (*glaucolithus* Zone) of Buckinghamshire occurs in the collections of the Buckinghamshire County Museum. The species is common in the Aylesbury Limestone (*okusensis* up to *kerberus* Zone; see list of additional material and notes below) and also occurs in the Creamy Limestones (*kerberus* Zone; see list of additional material). Arkell (1942) mistakenly recorded *Pleurotomaria rugata* [*Bathrotomaria rugata*] from the 'Pectinatus Sandstone' [Shotover Grit Sands, *pectinatus* Zone, Upper Kimmeridgian, see Cope, 1980] of Littleworth brick pit, Wheatley, Oxfordshire (SP596055). Inspection of a specimen collected by Arkell, and now in the collections of the BMNH (G61030), with other material from the Shotover Grit Sands of Wheatley (BMNH G67728), and a specimen from this horizon at Shotover, 3 kms west of Wheatley (Oxford University Museum J26093; see Arkell, 1947 for details of the old Shotover brick and sand pits), shows that this pleurotomariid is close to or conspecific with the Oxfordian-Kimmeridgian type species *Bathrotomaria reticulata* (J. Sowerby). This restricts the known stratigraphic range of *Bathrotomaria rugata* to Portlandian, *glaucolithus* or *albani* up to *anguiformis* or *oppressus* Zone.

#### Abundance

*Bathrotomaria rugata* is most abundant in relatively fine-grained carbonate lithologies. Cox (1925) recorded the species as abundant in the Basal Shell Bed (*kerberus* Zone) of the Isle of Portland, Dorset. Field investigations on the Isle of Portland have confirmed that the species is quite common in the Basal Shell Bed; the surfaces of a large fallen boulder from the unit (c. 3x2x5 m) at (SY683728) showed two small specimens, and a surface of a fallen slab (c. 3x6 m) at (SY682724) showed a single small specimen.

In recent years, building excavations in Aylesbury, Buckinghamshire, at Walton Street (SP822134) and Buckingham Street (SP819139) have exposed a few metres of the Aylesbury Limestone (*okusensis* up to *kerberus* Zone). Distribution of *Bathrotomaria rugata* in the Aylesbury Limestone does not appear to be particularly uniform; for instance large excavations at Walton Street during 1981 and shallow trenches adjacent to Buckingham Street in 1978 each yielded several individuals. In 1988, a deep relatively large exposure approximately 100m from the earlier Buckingham Street site failed to produce any specimens, however.

#### PALAEOBIOLOGY AND PALAEOECOLOGY

The lithological units in which *Bathrotomaria rugata* appears to be especially abundant include the Basal Shell Bed (*kerberus* Zone) of Portland, Dorset, the Cockly Bed (*okusensis* up to *kerberus* Zone) of Swindon, Wiltshire, and the Aylesbury Limestone (*okusensis* up to *kerberus* Zone) of Buckinghamshire. These units and others in which *Bathrotomaria rugata* occurs (notably various levels of the Portland Stone) include rich biotas of large bivalves,

ammonites and other gastropods, frequently with less conspicuous bryozoans, serpulids, sponges and algae. Despite the scarcity of brachiopods, corals, nautiloids, belemnites and echinoderms, normal or near-normal marine conditions undoubtedly prevailed. The occurrence of these assemblages in sediments including massive shelly micrites indicates warm-water photic conditions (see Townson, 1971; 1975 for facies interpretation, and Enos, 1983, also Inden & Moore, 1983 for details of analogous Recent shallow-marine micritic facies).

Living members of the Pleurotomariidae are taken to be the most primitive extant gastropods, and in Recent oceans represent "living fossils" (Hickman, 1984). In contrast to their diversity and abundance in ancient seas, Recent forms are sporadic and rare and confined to deep water (Linsley, 1981). Nevertheless, despite these obvious differences in habitats, Recent and ancient pleurotomariids share in common the possession of an apertural slit, and similar overall shell shapes. The apertural slit in particular, indicates that pleurotomariid soft part morphologies and configurations have hardly changed through time. Biological investigations of Recent specimens show that pleurotomariids are unique, in that whilst having lost the bilaterally symmetrical shells inferred for ancestral gastropods (Linsley, 1981) various soft parts still retain a primitive paired configuration absent in more advanced gastropods (Hickman, 1984). The pleurotomariid apertural slit represents an apertural re-entrant (Linsley, 1977), functioning as an exhalant pathway, drawing waste currents away from the head. This feature is a consequence of a primitive paired gill configuration, each gill bearing two rows of filaments (the bipectinate condition, common to most archaeogastropods, see Hickman, 1984). Recent pleurotomariids and trochiform marine gastropods in general possess sturdy unstreamlined shells, and are exclusively epifaunal, as undoubtedly were Mesozoic forms such as *Bathrotomaria rugata*. Yonge's (1947) suggestion that bipectinate gills are poorly-equipped to deal with suspended sediment was disputed by Gilinsky (1984), who suggested that other poorly-understood factors are probably responsible for the almost total exclusion of archaeogastropods from infaunal habitats.

Recent pleurotomariids live below the level of primary photic plant production and are consequently carnivorous "grazers" feeding on sessile organisms such as sponges, hydroids and gorgonians. Linsley (1978) suggested that ancient pleurotomariids were slow-moving grazers, scavengers or deposit-feeders, with inferred carnivorous forms feeding on such sessile organisms. Jurassic pleurotomariids tend to be most abundant in shallow water carbonates, such as parts of the Portland Stone of southern England (for instance the Aylesbury Limestone of Buckinghamshire, see notes above). Whilst scavenging or carnivorous feeding modes may have been adopted, it is perhaps more feasible that Jurassic forms such as *Bathrotomaria rugata* fed at least partly on algae, possibly in an analogous manner to the morphologically similar trochid archaeogastropods which are abundant in Recent shallow seas. It is worth noting that modern trochids appear to occupy similar niches to those formerly inhabited by pleurotomariids in the Jurassic; see Taylor & Reid (1984) for instance, who document trochids from shallow-water coralling substrates in the Sudanese Red Sea, where they graze largely on blue-green algae.

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## References

- Andrews, W.R. & Jukes-Brown, A.J. 1894. 'The Purbeck Beds of the Vale of Wardour,' *Quarterly Journal of the Geological Society of London* **50**, 44-71.
- Arkell, W.J. 1935. 'The Portland Beds of the Dorset Mainland', *Proceedings of the Geologists' Association* **46**, 301-347.
- Arkell, W.J. 1942. 'Stratigraphy and structures east of Oxford', *Quarterly Journal of the Geological Society of London* **98**, 187-204.
- Arkell, W.J. 1947. *The Geology of Oxford*. Oxford.
- Benett, E. 1831. *A Catalogue of the Organic Remains of the County of Wilts.*, Warminster.
- Blake, J.F. 1880. 'On the Portland Rocks of England,' *Quarterly Journal of the Geological Society of London* **36**, 189-236.
- Challinor, J. 1928. 'The Terms "Cast" and "Mould" in Palaeontology', *Geological Magazine* **65**, 410-411.
- Cope, J. C. W. 1980. 'Kimmeridgian Correlation Chart'. In *A correlation of Jurassic rocks in the British Isles Part Two: Middle and Upper Jurassic* (ed. J.C.W. Cope), pp. 85-93. *Special Report of the Geological Society of London* **15**.
- Cox, L. R. 1925. 'The fauna of the Basal Shell Bed of the Portland Stone, Isle of Portland', *Proceedings of the Dorset Natural History and Antiquarian Field Club* **46**, 113-172.
- Cox, L.R. 1956. 'A new genus of Mesozoic Pleurotomariidae'. *Proceedings of the Malacological Society of London* **32**, 79.
- Cox, L.R. 1960. 'Gastropoda', In *Treatise on Invertebrate Palaeontology, part I* (ed. R.C. Moore), pp. 1-351. Lawrence: Geological Society of America and University of Kansas Press.
- Damon, R. F. 1860. *Supplement to the Geology of Weymouth, Portland and Coast of Dorset*, 1st ed. London.
- Damon, R. F. 1864. *Supplement to the Geology of Weymouth, Portland and Coast of Dorset*, 1st ed. 2nd issue London.
- Damon, R. F. 1880. *Supplement to the Geology of Weymouth, Portland and Coast of Dorset*, 2nd ed. London.
- Damon, R. F. 1884. *Geology of Weymouth, Portland and Coast of Dorset*, new edition. London.
- Damon, R. F. 1888. *Supplement to the Geology of Weymouth, Portland and Coast of Dorset*, new edition. London.
- De Loriol, P. and Pellat, E. 1866. 'Monographie Paléontologique et Géologique de l'étage Portlandien des environs de Boulogne-Sur-Mer', *Mémoires de la Société de Physique et d'Histoire Naturelle de Genève* **19**, 1-200, pls, i-xi.
- Enos, P. 1983. 'Shelf Environment'; In *Carbonate Depositional Environments* (eds. P.A. Scholle, D.G. Bebout & C.H. Moore), Tulsa.
- Fitton, W.H. 1836. 'Observations on some of the strata between the Chalk and the Oxford Oolite, in the South-east of England', *Transactions of the Geological Society of London Serial 2* **4**, 103-388.
- Gilinsky, N. L. 1984. 'Does archaeogastropod respiration fail in turbid water?' *Paleobiology* **10**, 459-468.
- Hickman, C. S. 1984. 'Pleurotomaria: Pedigreed Perseverance?', In *Living Fossils* (eds. N. Eldredge & S.M. Stanley) New York.
- Hudleston, W. H. 1881. 'On the geology of the Vale of Wardour.' *Proceedings of the Geologists' Association* **7**, 161-185.
- Inden, R. F. and Moore, C. H. 1983. 'Beach Environment', In *Carbonate Depositional Environments* (eds. P.A. Scholle, D.G. Bebout & C.H. Moore) Tulsa.
- Linsley, R. M. 1977. 'Some "laws" of gastropod shell form', *Paleobiology* **3**, 196-206.

- Linsley, R. M., 1978. 'Locomotion rates and shell form in the Gastropoda', *Malacologia* **17**, 193-206.
- Linsley, R. M. 1981. Shell Form and the Evolution of Gastropods. *American Scientist* **66**, 77-86.
- Phillips, J. 1871. *Geology of Oxford and the Valley of the Thames*. Oxford.
- Pocock, T. I. 1908. *The Geology of the country around Oxford*. Memoirs of the Geological Survey of Great Britain.
- Reid, C. 1903. *The Geology of the country around Salisbury*. Memoirs of the Geological Survey of Great Britain.
- Spamer, E. E., Bogan, A. E. and Torrens, H. S. 1989. 'Recovery of the Etheldred Bennett Collection of fossils, Mostly from Jurassic-Cretaceous Strata of Wiltshire, England, Analysis of the Taxonomic Nomenclature of Bennett (1831), and Notes and Figures of Type Specimens Contained in the Collection', *Proceedings of the Academy of Natural Sciences of Philadelphia* **141**, 115-180.
- Sowerby, J. 1816. 'Amonites [*sic*] giganteus', In *The Mineral Conchology of Great Britain*, **2** part 22, 55-59. London: privately published.
- Taylor, J. D. and Reid, D. G. 1984. 'The abundance and trophic classification of molluscs upon coral reefs in the Sudanese Red Sea', *Journal of Natural History* **18**, 175-209.
- Townson, W. G. 1971. *Facies analysis of the Portland Beds*. D. Phil. thesis (unpubl.), University of Oxford.
- Townson, W. G. 1975. 'Lithostratigraphy and deposition of the type Portlandian', *Quarterly Journal of the Geological Society of London* **131**, 619-638.
- Townson, W. G. and Wimbleton, W. A. 1979. 'The Portlandian strata of the Bas Boulonnais, France', *Proceedings of the Geologists' Association* **90**, 81-91.
- Wimbleton, W. A. 1976. 'The Portland Beds (Upper Jurassic) of Wiltshire', *Wiltshire Archaeological and Natural History magazine* **71**, 3-11.
- Wimbleton, W. A. 1980. 'Portlandian correlation Chart', In *A correlation of Jurassic rocks in the British Isles Part Two: Middle and Upper Jurassic* (ed. J.C.W. Cope), pp. 85-93. *Special report of the Geological Society of London* **15**.
- Woodward, H. B. 1895. *The Jurassic rocks of Britain, 5. The Middle and Upper Oolitic rocks of England (Yorkshire excepted)*. Memoirs of the Geological Survey of Great Britain.
- Yonge, C. M. 1947. 'The pallial organs in the aspidobranch Gastropoda and their evolution throughout the Mollusca', *Philosophical Transactions of the Royal Society* **232 B**, 443-518.

# A provisional checklist of fossil insects from the Purbeck Beds of Dorset

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## ABSTRACT

Over 120 species of insects are known from the Dorset Purbeck; the fauna is listed and a selection is illustrated photographically.

## INTRODUCTION

The Purbeck Beds (Purbeck Limestone Formation) are predominantly non-marine sediments, with well-developed limestone beds, and currently considered to be of Lower Cretaceous (Berriasian) age (Allen and Wimbledon, 1991). Insect fossils were first described from the Purbeck Beds of Dorset by Westwood (1854), mainly from Durlston Bay, near Swanage, but also a few from Ridgway, near Dorchester. More descriptions followed, principally by Scudder (1886). Many of these fossils were subsequently discussed in the international scientific literature, but there is no comprehensive recent work on the fauna.

The species checklist below tries to put the diverse insect fauna in a modern taxonomic framework. It is based on an interim literature survey, prepared on the occasion of a Geologists' Association field trip to Purbeck in August, 1992. No doubt the list will be amended with more detailed systematic work and as imprecise old records are checked against collections. Due to inevitable taxonomic changes, many nineteenth century records are given with an original figure reference, and further information may be found on Odonata in Jarzembowski (1991b), Orthoptera in Zeuner (1939), and psyllid Hemiptera (Homoptera) in Bekker-Migdisova (1985).

Many Purbeck species remain to be described, e.g. it is estimated that there are some 250 different kinds of Coleoptera present (Mr R. Coram, personal communication). Even fewer

species have been described from the succeeding Wealden Beds of southern England where the entomofauna was little known prior to 1978. However, some tentative comparison of the faunas may be useful in the context of faunal continuity. Coleoptera is the most abundant order in the Weald Clay with Diptera, Odonata, Hymenoptera, Neuroptera and Trichoptera relatively uncommon; insects with forewings modified for protection (elytra/tegmina) are the four most common orders present (Coleoptera, Blattodea, Hemiptera and orthopteroids; Auclay Brickworks: Jarzembowski, 1991a). A similar pattern is suggested by a simple tally based on the checklist below, except that Blattodea appear to be less dominant than in the Weald Clay. However, taxonomic work on Wealden Blattodea has only just commenced by Mr A. Ross (University of Brighton). New fieldwork should increase the Purbeck fauna, e.g. Mr A. Mitchell (Kent Geologists' Group) has recently found a Snakefly (order Raphidioptera) in the Lower Purbeck of Durlston Bay. Also, other insectiferous localities in Purbeck need study.

## Abbreviations

LP, Lower Purbeck. MP, Middle Purbeck Beds, (round brackets indicate extended ranges according to Woodward (1895)). DB Durlston Bay, near Swanage. J'87 Jarzembowski (1987). Sc'86 Scudder (1886). W'54 Westwood (1854). I, In specimen registration numbers, Natural History Museum, London. TIN, ditto, Priest's House Museum, Wimborne.

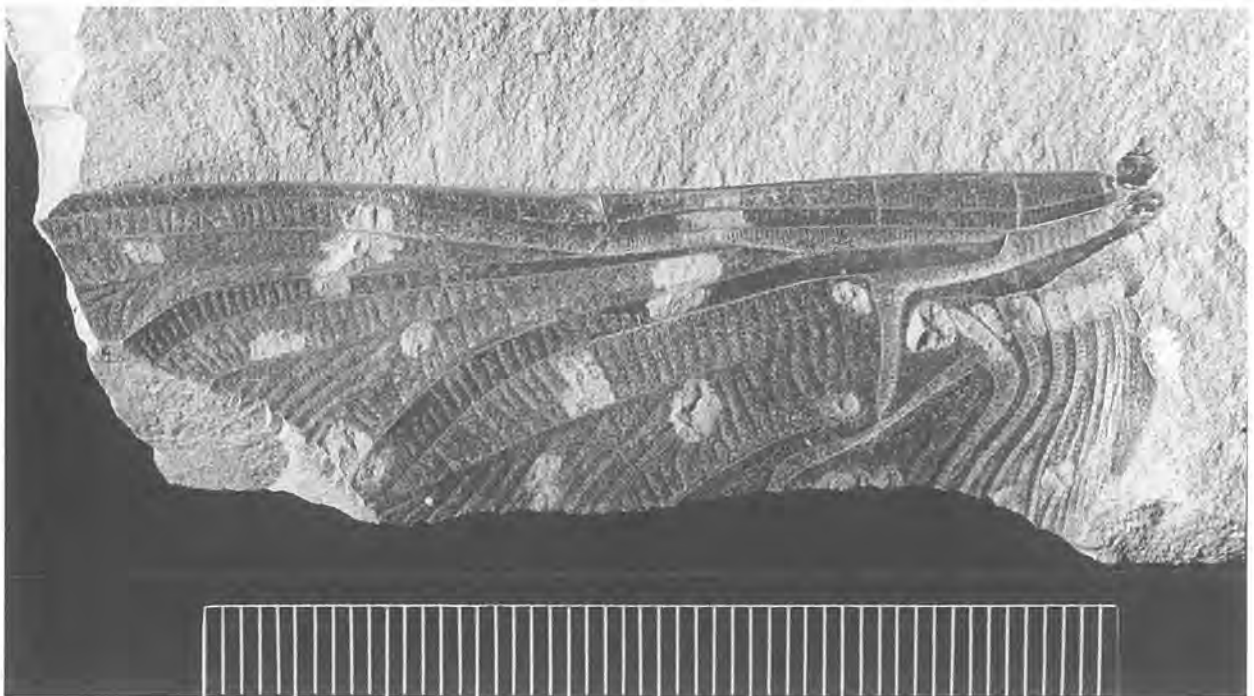


Figure 1. Hindwing of Odonata: Aeschnidiida, Middle Purbeck, Durlston Bay, collection Mr R. Coram. TIN 1316. Scale in mm.

CHECKLIST

**Order Odonata**

(Dragonflies in the broad sense)

'Suborder Anisozygoptera

(Dragondamselflies)'

?*Tarsophlebia* sp.

MP DB

Suborder Anisoptera

(Dragonflies in the strict sense)

Figure 1.

*Aeschnidium bubas* Westwood

LP(-MP) DB W'54: pl. 15, fig. 5.

*Agrionidium aetna* Westwood

LP(-MP) DB W'54: pl. 18, fig. 39.

?*Cymatophlebia agrias* (Westwood)

LP(-MP) DB W'54: pl. 15, fig. 4.

*Cymatophlebiopsis pseudobubas* Handlirsch

LP DB

*Mesogomphus* sp.

LP Fossil Forest, nr Lulworth.

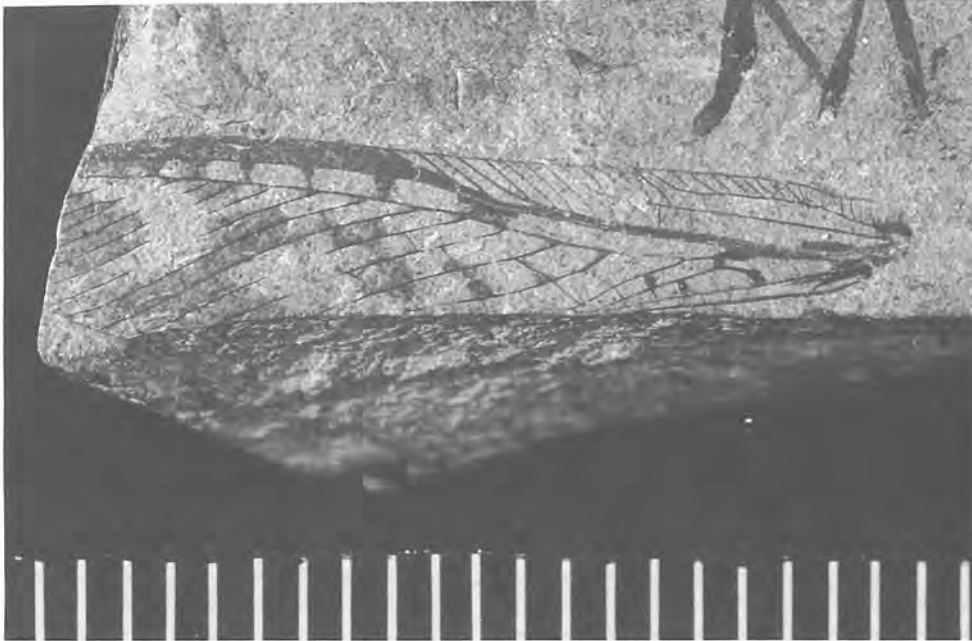


Figure 2. Forewing of *Panorpidium tessellatum* Westwood (Orthoptera: Elcanidae) Middle Purbeck, Durlston Bay, holotype, I. 3982, collection Rev. P.B. Brodie. Scale in mm.

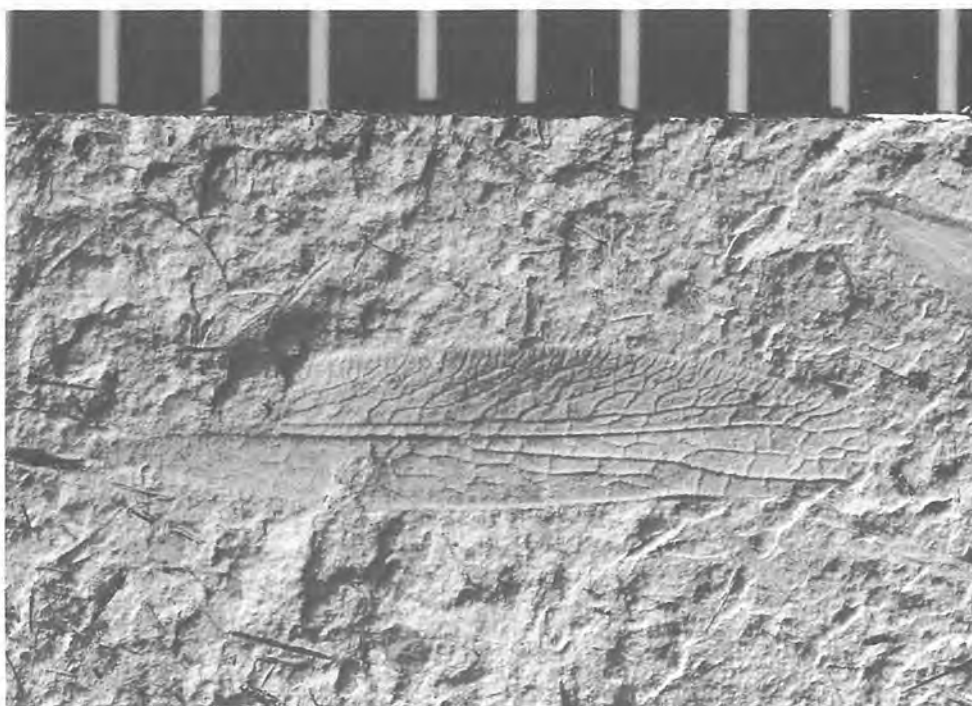


Figure 3. Forewing of *Raphidium brephos* Westwood (Phasmatodea: family uncertain), Lower Purbeck, Durlston Bay, holotype, I. 12509, collection Rev. P.B. Brodie. Scale in mm.

**Order Blattodea**

(Cockroaches)

- Artitocoblatta gossi* (Scudder)  
[?DB] Sc'86: pl. 46, fig. 15.  
*Blattidium molossus* Westwood  
(LP-)MP DB W'54: pl. 15, fig. 26.  
*Diechoblattina ungeri* (Giebel)  
LP DB W'54: pl. 17, fig. 13.  
*Diechoblattina wallacei* Scudder  
[apparently from DB] Sc'86: pl. 48, fig. 1.  
*Durdlestoneia antiqua* (Giebel)  
LP(-MP) DB W'54: pl. 17, fig. 10.  
*?Mesoblattina ?anceps* (Giebel)  
(LP-)MP DB W'54: pl. 15, fig. 22.  
*?Mesoblattina ?elongata* (Giebel)  
(LP-)MP DB W'54: pl. 15, fig. 23.  
*?Mesoblattina exigua* (Scudder)  
LP DB W'54: pl. 18, fig. 38.  
*?Mesoblattina mclachlani* (Scudder)  
LP DB W'54: pl. 18, fig. 35.  
*?Mesoblattina ?minima* (Scudder)  
MP Dorset W'54: pl. 15, fig. 14.  
*?Mesoblattina ?murchisoni* (Giebel)  
LP(-MP) DB W'54: pl. 18, fig. 43.  
*?Mesoblattina ramificata* (Giebel)  
(LP-)MP DB W'54: pl. 15, fig. 20.  
*?Mesoblattina ?recta* (Giebel)  
(LP-MP, Dorset). [Described from Wiltshire].  
*?Mesoblattina* sp.  
MP DB W'54: pl. 15, fig. 19.  
*?Mesoblattina ?symyris* Westwood  
LP(-MP) DB W'54: pl. 18, fig. 34.  
*?Mesoblattina ?westwoodi* (Scudder)  
LP DB W'54: pl. 18, fig. 28.  
*Rithma purbeccensis* Giebel  
LP(-MP) DB W'54: pl. 18, fig. 32.  
*Rithma westwoodi* Giebel  
LP(-MP) DB W'54: pl. 18, fig. 22.

**Order Orthoptera**

(Grasshoppers &amp; Crickets)

- 'Elcana' beyrichi* (Giebel)  
LP DB W'54: pl. 17, fig. 12.  
*'Elcana' westwoodi* Handlirsch  
LP DB W'54: pl. 18, fig. 37.  
*Ensiferorum nogaus* (Westwood)

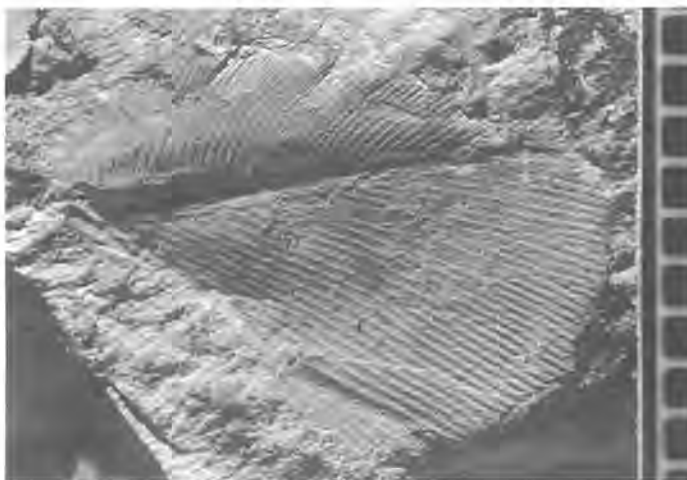


Figure 4. Forewing of *Pterinoblattina penna* Scudder (Neuroptera: Brongniartiellidae), [Lower Purbeck,] Durdlestone Bay, holotype, I. 12324, collection Rev. P.B. Brodie. Scale in mm.

- LP(-MP) DB W'54: pl. 18, fig. 23.  
*Libellulum kaupii* Westwood  
LP(-MP) DB W'54: pl. 17, fig. 21.  
*Mesogryllus achelous* (Westwood)  
LP(-MP) DB W'54: pl. 18, fig. 26.  
*Panorpidium tessellatum* Westwood  
(LP-)MP DB Figure 2.  
*Procyrtophyllites britannicus* Zeuner  
Swanage.  
*Protogryllus dobertinensis* (Geinitz)  
?MP DB.  
*Protogryllus minor* (Bode)  
LP DB.  
*Termitidium ignotum* Westwood  
(LP-)MP DB W'54: pl. 15, fig. 16.  
*Zalmona brodiei* Giebel  
LP DB.

**\*Order Phasmatodea**

(Stick insects)'

- Chresmodula westwoodi* Handlirsch  
LP(-MP) DB W'54: pl. 18, fig. 33?  
*Gryllidium oweni* Westwood  
LP(-MP) DB W'54: pl. 17, fig. 19.  
*Raphidium brephos* Westwood  
LP (-MP) DB Figure 3.

**Order Hemiptera**

(True Bugs)

Suborder Homoptera

(Leaf &amp; Plant Hoppers, 'Cicadas', Jumping Plant Lice, Coleorrhyncha)

- Aphidulum pusillum* Handlirsch  
Swanage.  
*Cercopidium mimas* Westwood  
LP(-MP) DB W'54: pl. 15, fig. 3.  
*Cercopidium schaefferi* Westwood  
LP(-MP) DB W'54: pl. 18, fig. 5.  
*Cicadellium dipsas* Westwood  
(LP-)MP DB W'54: pl. 15, fig. 6.  
*Cicadellium psocus* Westwood  
(LP-)MP DB W'54: pl. 15, fig. 18.  
*Cyllonium boisduvalianum* Westwood  
LP(-MP) DB W'54: pl. 17, fig. 17.  
*Cyllonium hewitsonianum* Westwood  
LP(-MP) DB W'54: pl. 18, fig. 27.  
*'Homopteron' hahnii* (Westwood)  
LP(-MP) DB W'54: pl. 18, fig. 3.  
*Homopterulum signoretti* (Westwood)  
LP(-MP) DB W'54: pl. 18, fig. 36.  
*Homopterulum telesphorus* (Westwood)  
(LP-)MP DB W'54: pl. 15, fig. 14 (2 stars).  
*Mesopsyllidium purbeckensis* Bekker-Migdisova ms  
name Swanage.

Suborder Heteroptera

(Bugs in the strict sense)

- Anacoloptera trigonalis* (Giebel)  
LP(-MP) DB W'54: pl. 18, fig. 4.  
*Cimicidium dallasii* Westwood  
LP(-MP) DB W'54: pl. 17, fig. 15.  
*Dimeropterum westwoodi* Handlirsch  
LP DB W'54: pl. 18, fig. 29.  
*'Lygaeites' priscus* Giebel  
LP(-MP) DB W'54: pl. 18, fig. 11.  
*Nepidium stolones* Westwood  
LP(-MP) Ridgway W'54: pl. 18, fig. 9.  
*Sylacocoris furcatus* (Giebel)  
LP(-MP) DB W'54: pl. 17, fig. 14.

**Order Neuroptera**

(Lacewings) Figure 4.

- Osmylopsis duplicata* (Giebel)  
LP(-MP) DB W'54: pl. 18, fig. 42.  
*Pterinoblattina pluma* (Giebel)  
MP DB W'54: pl. 15, fig. 14 (dagger).  
*Sialium sipylus* Westwood  
LP(-MP) DB W'54: pl. 18, fig. 24.

**Order Coleoptera**

(Beetles) Figure 5.

- Agrilium cyllabacus* Westwood  
LP(-MP) DB W'54: pl. 16, fig. 32.  
*Agrilium cyllarus* Westwood  
LP(-MP) DB W'54: pl. 16, fig. 29.  
*Agrilium stomphax* Westwood  
LP(-MP) DB W'54: pl. 16, fig. 23.  
*Agrilium strombus* Westwood  
LP DB W'54: pl. 16, fig. 6.  
*Bothroptera westwoodi* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 12.



Figure 5. Coleoptera: ?Byturidae, Middle Purbeck, Durlston Bay, In. 64640, collection Ms J.B.E. Jarzembowski, determined by Dr R.A. Crowson, University of Glasgow. 5.5mm long.

- Buprestium gorgus* Westwood  
LP(-)MP DB W'54: pl. 15, fig. 7.  
*Carabidium dejeanianum* Westwood  
LP(-MP) DB W'54: pl. 18, fig. 1.  
*Coleopteron beyrichi* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 16.  
*Ctenicerium blissus* Westwood  
LP(-MP) DB W'54: pl. 16, fig. 36.  
*Ctenicerium dardanus* (Westwood)  
LP(-MP) DB W'54: pl. 16, fig. 38.  
*Ctenicerium gigas* Handlirsch  
LP(-MP) DB W'54: pl. 16, fig. 22.  
*Ctenicerium hylastes* Westwood  
LP(-MP) DB W'54: pl. 16, fig. 37.  
*Ctenicerium stygnus* (Westwood)  
LP DB W'54: pl. 16, fig. 11.  
*Ctenicerium valgus* (Westwood)  
LP(-MP) DB W'54: pl. 16, fig. 31.  
*Curculium syrithus* Westwood  
LP(-MP) DB W'54: pl. 14, fig. 3.  
*Diaperidium mithrax* Westwood  
MP DB W'54: pl. 15, fig. 8 (right).  
*Diatarastus westwoodi* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 30.  
*Elaterium pronaeus* Westwood  
LP(-MP) DB W'54: pl. 14, fig. 1.  
*Epomenus rugosus* Handlirsch  
LP DB W'54: pl. 16, fig. 14.  
*Halticophana westwoodi* Handlirsch  
LP DB W'54: pl. 18, fig. 12.  
*Harpalidium anactus* Westwood  
LP(-MP)DB W'54: pl. 14, fig. 20.  
*Harpalomimes burmeisteri* (Giebel)  
LP(-MP) DB W'54: pl. 14, fig. 14.  
*?Helopidium dubium* Handlirsch  
LP DB W'54: pl. 16, fig. 27.  
*?Helopidium dunkeri* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 26.  
*Helopidium ncoridas* Westwood  
LP DB W'54: pl. 16, fig. 13.  
*?Helopidium rugosum* Handlirsch  
LP DB W'54: pl. 17, fig. 1.  
*Helopium agabus* Westwood  
LP(-MP) DB W'54: pl. 14, fig. 2.  
*Hydroporopsis neptuni* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 28.  
*Ironicus nothrus* (Westwood)  
LP(-MP) DB W'54: pl. 17, fig. 3.  
*Kelidus bolbus* (Westwood)  
LP(-MP) DB W'54: pl. 17, fig. 5.  
*Lamiophanes schroeteri* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 18.  
*Metagrillium westwoodi* Handlirsch  
LP DB W'54: pl. 16, fig. 1.  
*Micrelaterium triopas* (Westwood)  
LP(-MP) DB W'54: pl. 16, fig. 4.  
*Pachycoleon woodlei* (Westwood)  
LP(-MP) DB W'54: pl. 14, fig. 11.  
*Pantodapus ewaldi* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 21.  
*Pantodapus knorri* (Giebel)  
LP(-MP) DB W'54: pl. 16, fig. 20.  
*?Pantodapus westwoodi* Handlirsch  
LP DB W'54: pl. 14, fig. 18.  
*Parabuprestium pseudocarabus* Handlirsch  
LP DB W'54: pl. 16, fig. 10.  
*Parabuprestium teleas* (Westwood)  
LP(-MP) DB W'54: pl. 14, fig. 19.  
*Paragrillium barypus* (Westwood)

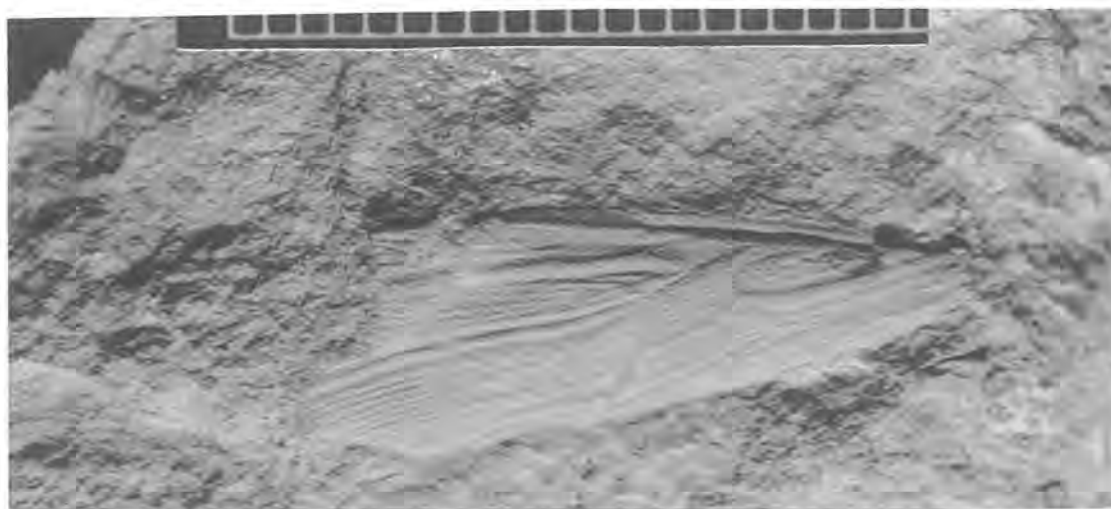


Figure 6. Forewing of *Myrmicium heerii* Westwood (Hymenoptera: Myrmiciidae), Lower Purbeck, Durlston Bay, holotype, I. 3990 (6024), Rev. P.B. Brodie collection. Scale in mm.

LP(-MP) DB W'54: pl. 16, fig. 5.  
*Prionophana antiqua* (Giebel)  
 LP(-MP) DB W'54: pl. 16, fig. 19.  
 ?*Prophasis dubia* (Giebel)  
 LP(-MP) DB W'54: pl. 16, fig. 24.  
*Prophasis ignota* (Giebel)  
 LP(-MP) DB W'54: pl. 16, fig. 15.  
*Prosthenostictus ungeri* (Giebel)  
 LP(-MP) DB W'54: pl. 14, fig. 15.  
*Pseudocymindis antiqua* (Giebel)  
 (L-MP, Dorset). [Described from Wiltshire.]  
*Pseudus purbeccensis* Handlirsch  
 LP DB W'54: pl. 16, fig. 7.  
 ?*Semiglobus chrysolmelinus* Handlirsch  
 LP DB W'54: pl. 17, fig. 2.  
*Semiglobus jurassicus* Handlirsch  
 LP DB W'54: pl. 16, fig. 8.  
 ?*Semiglobus neptuni* (Giebel)  
 LP(-MP) DB W'54: pl. 16, fig. 9.  
*Telephorium abgarus* Westwood  
 LP(-MP) DB W'54: pl. 17, fig. 4.  
 ?*Tentyridium dilatatum* Handlirsch  
 LP DB W'54: pl. 16, fig. 17.  
*Tentyridium peleus* Westwood  
 LP(-MP) DB W'54: pl. 14, fig. 21.  
*Zygadenia tuberculata* (Giebel)  
 LP(-MP) DB W'54: pl. 16, fig. 33.

#### Order Diptera (True Flies)

*Cecidomium grandaevum* Westwood  
 (LP-)MP DB W'54: pl. 15, fig. 21.  
*Corethrium pertinax* Westwood  
 LP(-MP) DB W'54: pl. 15, fig. 2.  
*Pleciomyia pachygaster* Handlirsch  
 [MP DB] J'87: figs 12.1, 2.  
*Simulidium priscum* Westwood  
 (LP-)MP DB W'54: pl. 15, fig. 15.  
*Thiras westwoodi* Giebel  
 LP(-MP) DB W'54: pl. 18, fig. 20.

#### Order Trichoptera (Caddisflies)

*Pararchitaulius purbeckianus* (Handlirsch)  
 MP DB W'54: pl. 15, fig. 14 (circled point).

*Paratrichopteridium pytho* (Westwood)  
 LP(-MP) DB W'54: pl. 18, fig. 31.

#### Order Hymenoptera (Wasps)

*Myrmicium heerii* Westwood  
 LP(-MP) DB Figure 6.  
 [*Formicium brodiei* Westwood  
 is not a Mesozoic fossil (J'87)]

#### ACKNOWLEDGEMENTS

Thanks to Prof. M. House (University of Southampton) for his encouragement. This is Postgraduate Research Institute for Sedimentology, University of Reading contribution No. 263.

#### REFERENCES

- NB. These include only selected references on Purbeck fossil insects.
- Allen, P., and Wimbledon, W.A., 1991, 'Correlation of NW European Purbeck-Wealden (nonmarine Lower Cretaceous) as seen from the English type-areas', *Cret. Res.*, Vol. 12, pp. 511-526.
- Bekker-Migdisova, E.E., 1985, 'Iskopaemye nasekomye psillo-morfy', [Fossil psyllomorph insects], *Trudy paleont. Inst.*, Vol. 206, pp. 1-92, pls 1-16.
- Jarzewowski, E.A. 1987, *Early Cretaceous insects from southern England*. Unpublished PhD thesis, University of Reading.
- Jarzewowski, E.A. 1991a, 'The Weald Clay of the Weald: report of 1988/89 field meetings. New insects from the Weald Clay of the Weald'. *Proc. Geol. Assoc.*, Vol. 102, pp. 83-108.
- Jarzewowski, E.A., 1991b, 'Fossil dragonflies', in Prendergast, E.D.V., *The dragonflies of Dorset*, pp. 59-62, 70-1.
- Scudder, S.H., 1886, 'A review of Mesozoic cockroaches', *Mem. Boston Soc. Nat. Hist.*, Vol. 3, pp. 439-485, pls 46-8.
- Westwood, J.O., 1854, 'Contributions to fossil entomology', *Q. Jl geol. Soc. Lond.*, Vol. 10, pp. 378-396, pls 14-18.
- Woodward, H.B., 1895, 'The Jurassic rocks of Britain, V. Middle and Upper Oolitic rocks of England (Yorkshire excepted)', *Mem. geol. Surv. U.K.*
- Zeuner, F.E., 1939, *Fossil Orthoptera Ensifera*, xiii + 321 pp., 80 pls.



# Type-section of the Purbeck Limestone Group, Durlston Bay, Swanage, Dorset.

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## Abstract

*A detailed bed-by-bed description is given of the Purbeck Limestone Group in its type-section of Durlston Bay, Swanage, Dorset. This augments, and slightly updates the annotated stratigraphic log of Clements 1969. Particular attention is given to the distribution of the gastropod and ostracod faunas. The lithostratigraphic and biostratigraphic divisions of the sequence are briefly discussed.*

## 1. Introduction:

Durlston Bay is on the south side of the pleasant seaside town of Swanage which is at the eastern end of the Isle of Purbeck in Dorset (fig. 1), and has long been regarded as the type-section of the Purbeck Beds (Purbeck Limestone Group). Sylvester-Bradley (1962), for example, formally proposed it as the type section of the 'Purbeckian stage'. This is the thickest well-exposed section of the Purbeck Group in the country, and although the upper

boundary (with the overlying Wealden Group) is not seen, and the lower boundary (with the Portland Group) is confused by faulting and is isolated from the main part of the section, and in spite of the depredations of recent coastal defence work, there is much to be said for retaining this as the type-section of the Purbeck Group or Purbeckian facies, even though it has long since become unfashionable to speak in terms of the Purbeckian Stage.

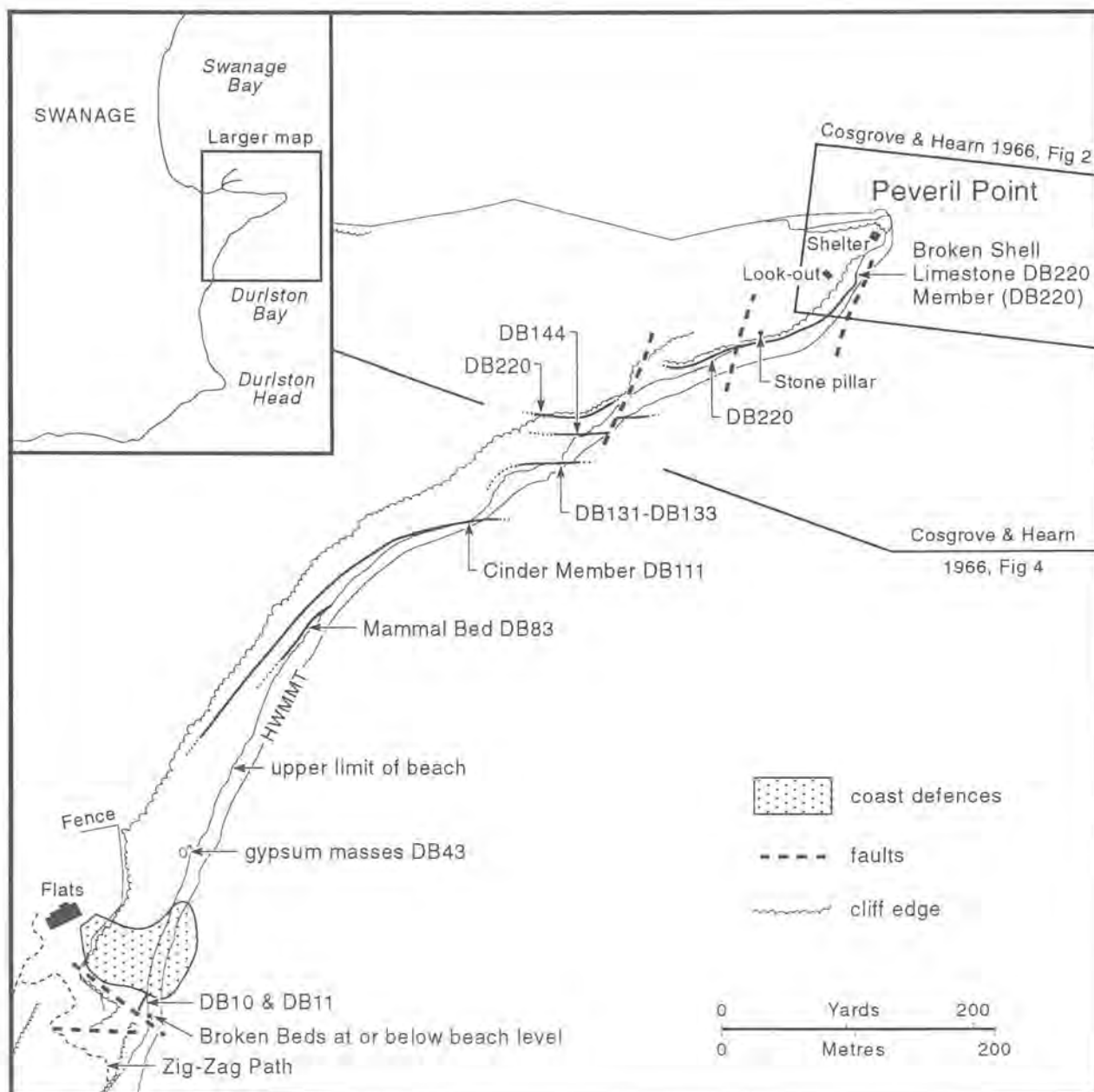


Figure 1: Sketch map of the northern half of Durlston Bay. Location map shown on insert.

The earliest published description of the section is that by Webster (1826), but this is little more than a list (with thicknesses) of quarrymen's terms for the stones worked in part of the upper half of the sequence. Apart from this there exist four previous published measured sections for the Purbeck Limestone Group of Durlston Bay. These are by Austen (1852), Fisher (1856), Bristow (1857), and Bristow in Damon (1884). Fisher's (1856) section is largely after Austen (1852), although he introduced some of his own modifications in the lower part of the sequence. In general, Fisher's section is the better of the two. The version of Bristow's section appearing in Damon (1884) is a tabulation of the data given by Bristow in 1857, with the introduction of bed numbers. Unfortunately, at the same time, a number of typographical and interpretative errors were introduced; thicknesses changed, beds apparently repeated, etc.. Some of the details of all this are given in Clements (1973, Appendix 2).

Since these sections were variously inadequate for the purposes of the author's research (Clements 1973), a new detailed section was made at that time. To date, only an earlier version of the annotated stratigraphic log given here as fig. 2. has been generally available (Clements 1969). In spite of the latter publication's uncertain status, the bed numbers and other data in the log have been widely used (see for example El-Shahat and West 1983, Melville and Freshney 1982, House 1989, and Nunn 1992). For this reason, it seems appropriate to publish in minimally revised version the full detailed bed-by-bed account of the section that was previously only available in the author's thesis (Clements 1973). The extra petrographical information given for part of the sequence in El-Shahat and West (1983) is not incorporated here.

**2. Lithostratigraphy:**

Following Townson (1975, and see also Melville and Freshney 1982, and Morter 1984) the strata considered here, are regarded as a lithostratigraphic Group - the Purbeck Limestone Group, although other authors (e.g. El-Shahat and West 1983, Ensom 1985, Allen and Wimbledon 1991) have treated them as a Formation.

By tradition these beds have been divided into Lower, Middle, and Upper divisions. These divisions are not simple lithostratigraphic units, since they rely in part at least on biostratigraphical considerations for their definition (see below). The Upper/Middle boundary in particular, is difficult to recognise in purely lithostratigraphic terms (see for example Ensom 1985). Although the terms do not conform to modern usage, 'Lower', 'Middle', and 'Upper' retain a useful informal role, and this is how they are used here.

Townson (1975, and see also Melville and Freshney 1982, and Morter 1984) divide the Group into the Durlston Formation above and the Lulworth Formation below. This is a formalisation of the terms proposed by Casey (1963). It should be remembered that Casey's divisions reflected his views as to the position of the Jurassic/Cretaceous boundary in the sequence. The palaeontological evidence for this has been challenged (Wimbledon and Hunt 1983), and indeed the position of the System boundary in the sequence remains very uncertain (Allen and Wimbledon 1991). Unfortunately, the boundary between these Formations does not even correspond to any change in the general petrological and biological character of the strata. Such a change does occur, but at the base of the 'Middle' Purbeck (base of the Marly Freshwater Member (see below)), although Brown (1964) puts the petrological break at the top of the Marly Freshwater Member.

Following the lead of Ensom (1985), the minor lithostratigraphical divisions of Bristow (1857) and Bristow in Damon (1884) have been formalised as Members (see table 1), although, as discussed later, some of the boundaries have been modified.

Some of the more important individually named beds have been identified in the description. Unless otherwise stated these

are after Bristow in Damon (1884). For a fuller listings of these minor named units, the earlier literature should be consulted; particularly Webster 1826, Fisher 1856, Bristow in Damon 1884, and see also El-Shahat and West 1983).

**Purbeck Limestone Group**

**Durlston Formation**

- Upper "Cypris" Clays and Shales Member
- Unio Member
- Broken Shell Limestone Member
- Chief Beef Member
- Corbula Member
- Scallop Member
- Intermarine Member
- Cinder Member

**Lulworth Formation**

- Cherty Freshwater Member
- Marly Freshwater Member
- Soft Cockle Member
- Hard Cockle Member
- "Cypris" Freestones Member
- Broken Beds Member and basal beds

Table 1: Lithostratigraphic divisions of the Purbeck Limestone Group.

INFORMAL DIVISIONS OF GROUP	AS USED HERE	ANDERSON 1971	ANDERSON 1985
"UPPER"			
		<i>Cypridea setina</i> Zone	
	DB220 DB219b	DB220 DB219b	DB206 or lower ? - ? - ?
"MIDDLE"			
		<i>Cypridea vidrana</i> Zone	
	DB143 DB142	c. DB145 c. DB144b	c. DB138 c. DB137
(CINDER MEMBER) (DB111)			
		<i>Cypridea granulosa fasciculata</i> Zone	
	DB97 DB86	c. DB97 c. DB96	<i>Cypridea granulosa</i> Zone
	DB75a DB74	c. DB75a c. DB74	
"LOWER"			
		<i>Cypridea dunkeri</i> Zone	
	DB72a DB71		

Table 2: Ostracod zonal schemes for the Purbeck Group, expressed in terms of the Durlston Bay succession.

**3. Biostratigraphy:**

The first serious attempts at the use of ostracods for stratigraphical correlation were made using the Purbeck Group. Lyell (1855) and Jones (1885) both used ostracods to characterise their Lower, Middle and Upper divisions of the Group. References to the earlier literature are contained in Sylvester-Bradley (1949), and Anderson (1958, and 1971). In more recent years, five important zonal schemes have been produced by Anderson (1940), Sylvester-Bradley (1949), Anderson (1958), Anderson (1971) and Anderson (1985) respectively. Both of the latter two schemes are expressed in terms of Anderson's so-called "faunicycles", and are no where closely related to the actual rock sequence at Durlston Bay. Thus

although Anderson's 1971 scheme is the one preferred here (see table 2), the boundaries shown on fig. 2 (and discussed later) are those determined by the author. Anderson (1985) introduced, without discussion, a number of significant changes to the 1971 scheme. Firstly the lower boundaries of both the *Cypridea setina* and *C. vidrana* Zones are significantly lowered. Secondly, the *C. granulosa fasciculata* and *C. granulosa granulosa* Zones are united into a single *C. granulosa* Zone. The latter is particularly unfortunate in that the *C. granulosa fasciculata*/*C. granulosa granulosa* boundary is one of the more easily recognised (in Dorset at least), and probably one of the more stratigraphically significant and useful. Some indication of these differences is also given in table 2 and fig. 2.

#### 4. The Section:

##### 4.1 Preamble:

The detailed bed-by-bed description given here refers to the section exposed in the northern half of Durlston Bay (i.e. between Peveril Point (Grid Ref.: SY040 786) and the Zig-Zag Path (Grid Ref.: SY035 780). Fig. 1 shows the location, and a simple plan of the section. Nunn (1992) gives a detailed plan and cliff profile of the section, showing the distribution of the more important beds, etc.. Fig. 2 is an annotated semigraphic stratigraphic log, giving an "erosional" profile for ease of use. It differs but little from that given by Clements 1969.

The description is largely based on observations made in the field during the period Autumn 1963 to Spring 1965. Additional observations were made in 1966, 1983, and 1992, and these are included as appropriate. Data obtained from the laboratory study of the samples and specimens collected are incorporated. For those beds where laboratory data are not available, the descriptions given are quoted directly from field notes. This is indicated by quotation marks, and the date of the observation is given in brackets. Some data have been used from published sources, and this is indicated where appropriate. Thicknesses are given in metres and millimetres, and for the most part are conversions of measurements originally made in feet and inches.

The lists of gastropod and ostracod taxa given at the end of bed descriptions, are based largely on material picked from residues of samples prepared by micropalaeontological techniques. Data obtained by examination of sample surfaces have been incorporated. This is indicated where appropriate in the case of the ostracod lists. The numbers given after each fossil name refer to the total number of specimens recovered. For gastropods, this figure gives a reasonable measure of both the relative and absolute abundance of a particular species within the sample. In the case of the ostracods, the figure gives a reasonable measure of the relative abundance of a species within the sample (as compared with other ostracod species), but only a crude measure of absolute abundance. The symbol '+' after a number of specimens indicates an indeterminate or undetermined number in excess of the given number. When more than 100 specimens of a gastropod species were recovered from a particular horizon, this is normally given as '100+'. Only the Gastropoda, Ostracoda, and Foraminifera are detailed in these lists. The following taxa of Gastropoda and Ostracoda have been distinguished:

##### GASTROPODA:

*Theodoxus(?) fisheri* Arkell 1941  
*Viviparus*. The three species recorded by Arkell (1941) are not distinguished here. See also Huckriede (1967).  
*Valvata helicelloides* Huckriede 1967  
*Hydrobia*. Arkell (1941) recognised two species, not distinguished here, see also Huckriede (1967).  
*Procerithium*. No species are distinguished. Following Huckriede (1967) this generic assignment includes forms Arkell (1941) placed in *Pachychilus*.  
*Peverilia perisphincta* Arkell 1941  
*Paraglauconia strombiformis* (Schlotheim 1820)  
*Promathilda microbinaria* Arkell 1941  
*Lymnaea websteri* Arkell 1941  
*Physa bristovii* (Forbes MS) Phillips 1855  
*Planorbis fisheri* (Forbes MS) Arkell 1941  
*Proauricula jaccardi* (de Loriol 1865). Generic assignment *fide* Huckriede (1967)  
*Ellobium durlstonense* Arkell 1941  
*Ptychostylus harpaeformis* (Koch and Dunker 1837)

##### OSTRACODA:

*Lycoperocypris(?)*. Includes forms assigned to small species of *Eoparacypris* by Anderson (1985).  
*Mantelliana purbeckensis* (Forbes 1855)

*Mongolianella(?)* sp. A. Probably equivalent to *Eoparacypris macroselina* Anderson 1971 (see Anderson 1985).  
*Cypridea tumescens* (Anderson 1939)  
*Cypridea* aff. *tumescens* aff. *granulosa*. Some specimens showing similarities to both these species, could not be definitely placed in either.  
*Cypridea granulosa granulosa* (Sowerby 1836). Recorded as *C. granulosa s.s.*  
*Cypridea granulosa fasciculata* (Forbes 1855)  
*Cypridea granulosa* aff. *fasciculata*. Specimens showing features of both of the two above subspecies.  
*Cypridea posticalis* Jones 1885  
*Cypridea dunkeri* Jones 1885, *fide* Barker 1966.  
*Cypridea setina* (Anderson 1939)  
*Cypridea menevensis* Group. *Fide* Wolburg (1959), includes all specimens/species in which the right valve overlaps the left, other than those assigned to *C. dunkeri*.  
*Cypridea* (LV>RV). This group includes a large variety of forms, not otherwise delimited, which have normal (left over right) valve overlap, and mainly simple ornament.  
*Damonella pygmaea* (Anderson 1941)  
*Damonella buchaniana* Anderson 1966  
*Damonella ellipsoidea* (Wolburg 1962)  
*Rhinocypris jurassica* (Martin 1940)  
*Scabriculocypris trapezoides* Anderson 1941  
*Darwinula oblonga* (Roemer 1839)  
*Darwinula leguminella* (Forbes 1855)  
*Fabanella boloniensis* (Jones 1882)  
*Galliaecytheridea postsinuata* (Wolburg 1962)  
*Palaeocytheridella*  
*Schuleridea* cf. *mediocaudata parallela* Donze 1964  
*Macrodentina* (*Dictyocythere*). No species distinguished here.  
*Monoceratina(?)*  
*'Cytheropteron'* sp. A  
*'Cytheropteron'* sp. B. Both this and the previous species are equivalent to species assigned to *Procytheropteron* by Anderson (1985).  
*Orthonotacythere*. No species distinguished.  
*Stenestroemia fragilis* (Martin 1940)  
*Stenestroemia decipiens* (Anderson 1941)  
*Dicrorhygma* sp. A  
*Dicrorhygma* sp. B  
*Theriosynoecum forbesii* (Jones 1885) *fide* Barker 1966.  
*Theriosynoecum striata* (Martin 1940) *fide* Pinto and Sanguinetti 1962  
*Timiriasevia punctata* Clements 1973  
*Protocythere(?)* sp. A

The Purbeck Beds have a moderate northerly dip, such that proceeding from Peveril Point towards the Zig-Zag path, successively older beds are encountered, and this is the order in which the beds are described.

##### 4.2 The bed-by-bed description:

Bed Number		Thickness metres
UPPER 'CYPRIS' CLAYS AND SHALES MEMBER:		
DB246	'Bed 93 Sands, clays, and shales.....' (Bristow in Damon (1884)). Not seen.	1.22
DB245	'Bed 92 Clay full of <i>Paludina carinifera</i> .' (Bristow in Damon 1884)). Not seen.	0.30
DB244(c)	Upper Purbeck Marble (beds DB244(a)-(c)) (= Blue Marble (Cosgrove and Hearn 1966)) Well-bedded, fawn, <i>Viviparus</i> biomicrite, with scattered micrite intraclasts. Bedding lamination poor, occasional more clayey horizons occur. Flakes of unidentified green mineral, usually replacing shell fragments. Sample of middle of bed:- Gastropoda: <i>Viviparus</i> 100+ Ostracoda: <i>Cypridea menevensis</i> gp. 13; <i>Timiriasevia punctata</i> 11; <i>Rhinocypris jurassica</i> 10; <i>Darwinula oblonga</i> 1; <i>D. ?leguminella?</i> 2. sample of base of bed:- Gastropoda: <i>Viviparus</i> 100+; <i>Theodoxus (?) fisheri</i> 1. Ostracoda: <i>Cypridea menevensis</i> gp. 48; <i>C. setina</i> 3; <i>C. sp. indet.</i> 5; <i>Timiriasevia punctata</i> . 24; <i>Rhinocypris jurassica</i>	0.76

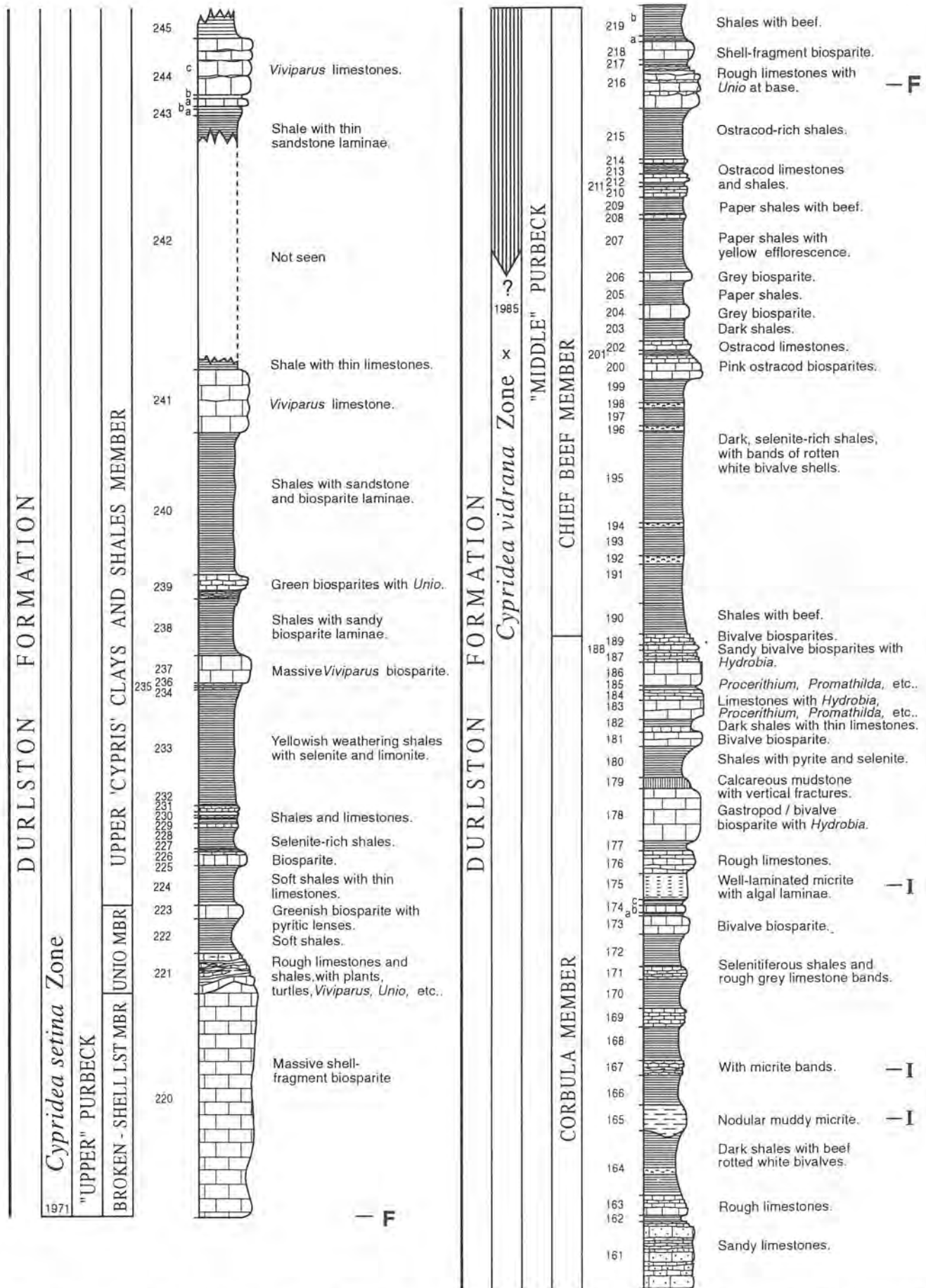
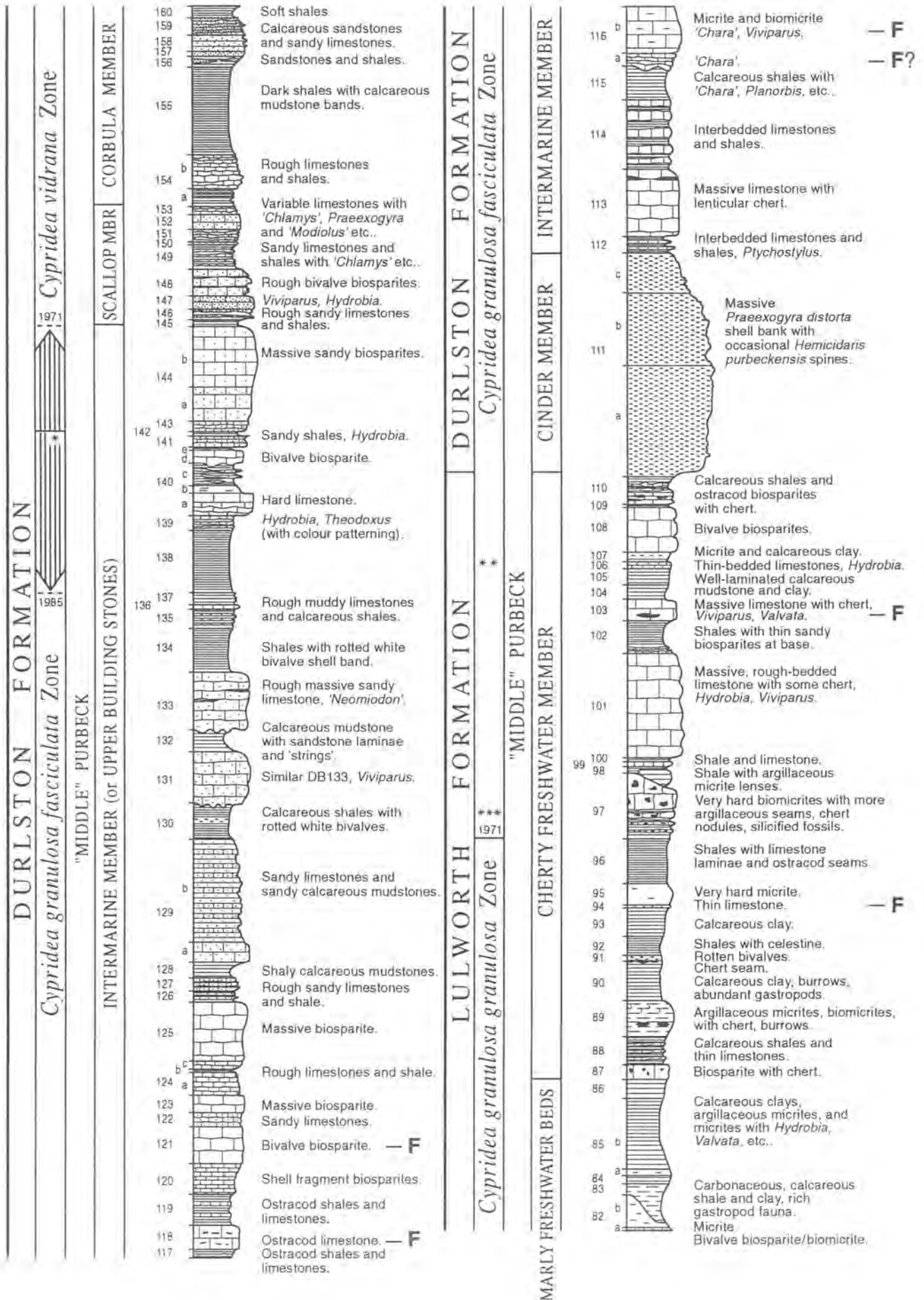


Figure 2: Annotated cumulative semigraphic log of the type-section of the Purbeck Limestone Group between Peveril Point and the Zig-Zag Path, Durlston Bay. (continues next three pages)



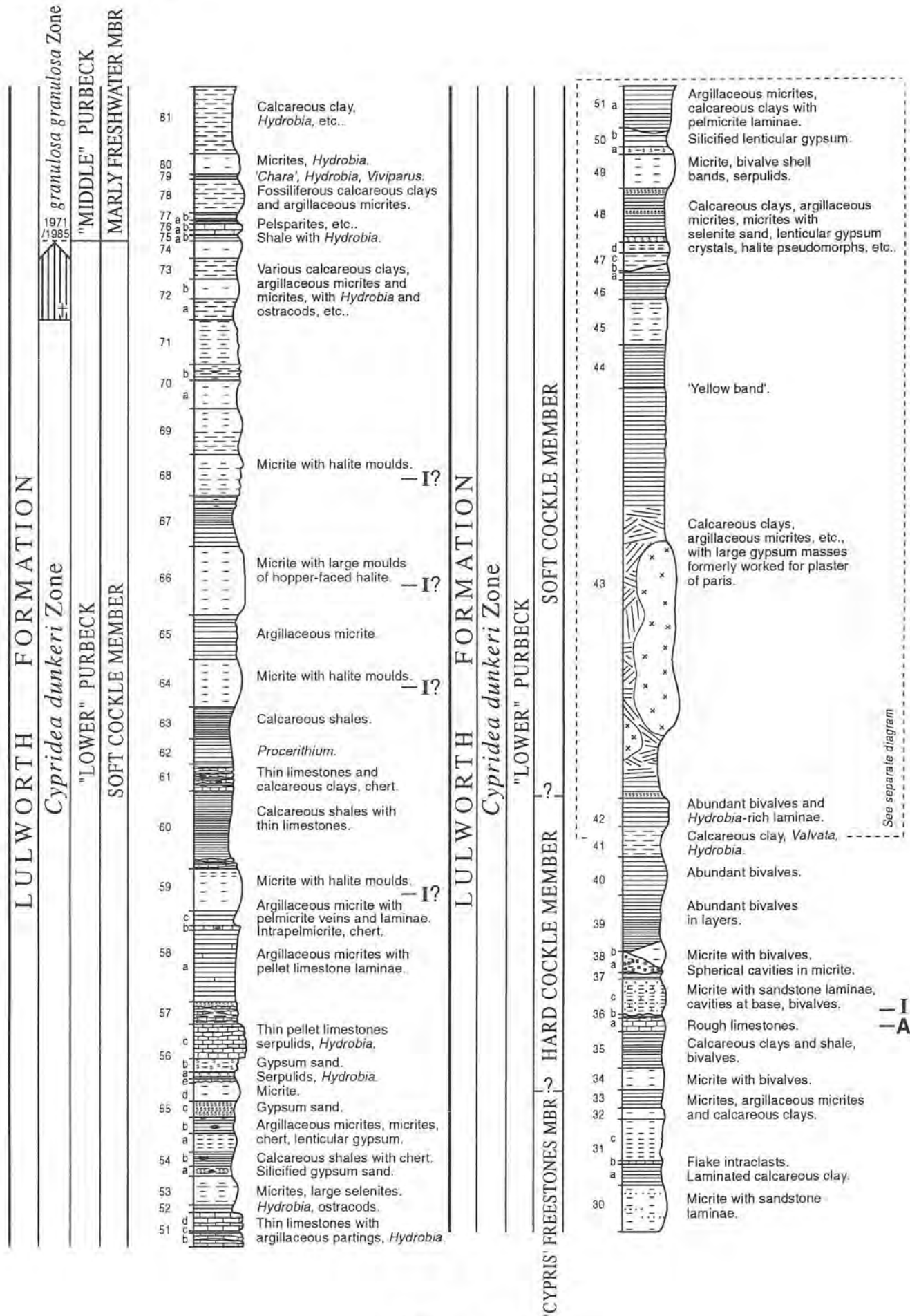


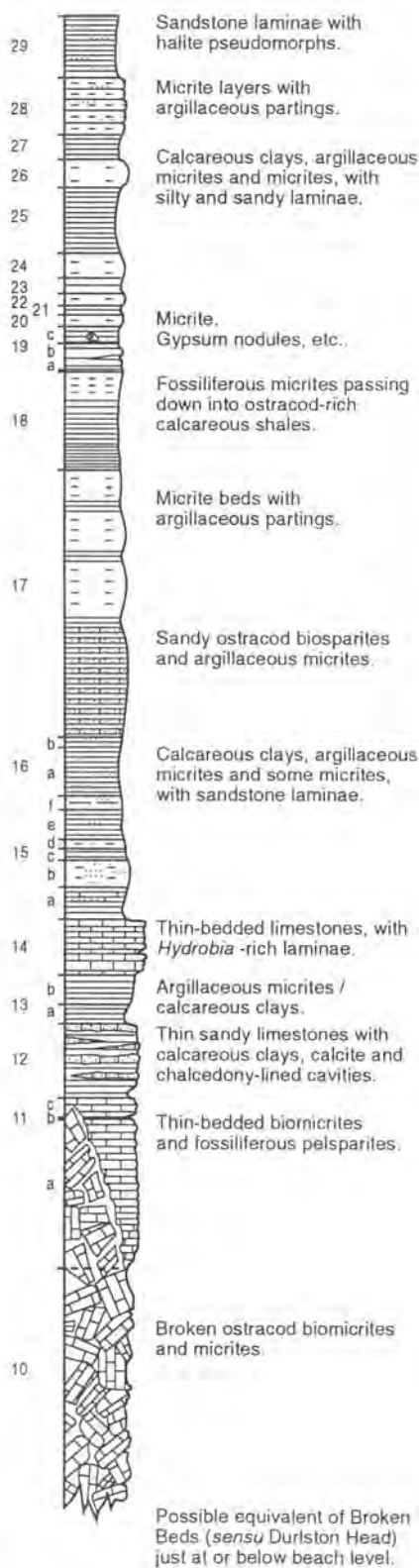
Figure 2: continued.

LULWORTH FORMATION

*Cypridea dunkeri* Zone

"LOWER" PURBECK

BROKEN BEDS MEMBER ~ CYPRIS' FREESTONES MEMBER



- F** footprints
- I** insects
- A** *Archaeoniscus*
- Shale, calcareous shale
- Clay, calcareous clay (well-laminated)
- Clay, calcareous clay (poorly laminated)
- Argillaceous micrite (well-laminated)
- Argillaceous micrite (poorly laminated)
- Micrites (well-laminated)
- Micrites (poorly laminated)
- Limestones other than micrites (thinly bedded)
- Limestones other than micrites (roughly bedded)
- Limestones other than micrites (massive)
- Sandstone
- Sandy
- Chert
- Massive gypsum
- Gypsum 'sand'
- Spherical hollows

Combinations of symbols are used

- X Lowest record of *Cypridea setina*
- + Highest record of *C. granulosa fasciculata*
- \*\* Lowest definite record of *C. granulosa fasciculata*
- +++ Lowest record of *C. granulosa aff. fasciculata*
- † Lowest definite record of *C. granulosa s.s.*

NAMED BEDS

- DB 244 – Upper Purbeck Marble
- DB 241 – Lower Purbeck Marble
- DB 221 (top) – Crocodile Bed
- DB 183 – Toad's-Eye Limestone
- DB 97 – Flint Bed or Cherty Freshwater Bed
- DB 83 – Mammal Bed

	17; <i>Darwinula leguminella</i> 2; <i>D. oblonga</i> 1; <i>Fabianella boloniensis</i> 1.					
DB244(b)	Fairly well-laminated, yellow/grey calcareous clay, with abundant gastropods: a softer development of the bed above. Sample:- Gastropoda: <i>Viviparus</i> 100+; <i>Theodoxus</i> (?) <i>fisheri</i> 13; ? <i>Planorbis fisheri</i> ? 1. Ostracoda: <i>Cypridea menevensis</i> gp. 24; <i>C. setina</i> 1; <i>C. (LV&gt;RV)</i> 1; <i>Timiriasevia punctata</i> 14; <i>Rhinocypris jurassica</i> 10; <i>Darwinula oblonga</i> 2, <i>D. leguminella</i> 1.	0.038				
DB244(a)	" <i>Viviparus</i> Limestone" (1963)	0.11		DB238	Grey/green calcareous, shaly clay with occasional sandy biosparite laminae. Sample of top 0.15m of bed:- Gastropoda: <i>Viviparus</i> 87; <i>Theodoxus</i> (?) <i>fisheri</i> 1. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 13; <i>C. setina</i> 5; <i>Rhinocypris jurassica</i> 10; <i>Timiriasevia</i> 4; <i>Darwinula oblonga</i> 2; <i>D. leguminella</i> 1. Sample below previous one:- Gastropoda: ? <i>Viviparus</i> ? few. Ostracoda: <i>Cypridea(LV&gt;RV)</i> 11; <i>C. setina</i> 3; <i>Timiriasevia punctata</i> 2.	0.76
DB243(b)	"Well-laminated shale" (1963)	0.012				
DB243(a)	Rather soft, poorly laminated, grey/green calcareous clay to clayey biomicrite, weathers yellow. Abundant gastropods; bivalves. Sample :- Gastropoda: <i>Viviparus</i> 100+. Ostracoda: <i>Cypridea menevensis</i> gp. 12; <i>C. (LV&gt;RV)</i> 2; <i>Rhinocypris jurassica</i> 14; <i>Darwinula oblonga</i> 3; <i>D. leguminella</i> 3; <i>Timiriasevia punctata</i> 3. Second sample :- Gastropoda: <i>Viviparus</i> 100+; <i>Theodoxus</i> (?) <i>fisheri</i> 14; <i>Physa bristovii</i> 6; <i>Planorbis fisheri</i> 1. Ostracoda: <i>Rhinocypris jurassica</i> 27; <i>Cypridea menevensis</i> gp. 23; <i>C. setina</i> 1; <i>C. (LV&gt;RV)</i> 1; <i>Timiriasevia punctata</i> 17; <i>Darwinula oblonga</i> 3; <i>D. leguminella</i> 2; <i>D.?sp. juv.?</i> 1; <i>Theriosynoecum striata</i> 2.	0.08-0.10				
DB242 (top)	Iron-stained, calcareous shale to shaly micrite, with thin sandstone laminae. Sample :- Gastropoda: <i>Viviparus</i> few; ? <i>Theodoxus</i> (?) <i>fisheri</i> ? 1. Ostracoda: <i>Rhinocypris jurassica</i> 40; <i>Cypridea menevensis</i> gp. 24; <i>C. setina</i> 6; <i>Timiriasevia punctata</i> 24; <i>Darwinula oblonga</i> 12; <i>D. leguminella</i> 1; <i>Theriosynoecum striata</i> 1.	0.30	(seen)	DB237	Medium grey, massive <i>Viviparus</i> biosparite. Sample :- Gastropoda: <i>Viviparus</i> 100+; ? <i>Theodoxus</i> (?) <i>fisheri</i> ? 2 Ostracoda: <i>Cypridea (LV&gt;RV)</i> 6.	0.38
gap	(See note below)	c.2.90		DB236	Intermittent, fine-grained, thinly bedded, cream ostracod biosparite. Ostracod carapaces, fine-grained shell fragments, abundant <i>Viviparus</i> . Sample:- Gastropoda: <i>Viviparus</i> 100+; <i>Theodoxus</i> (?) <i>fisheri</i> 7. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 25; <i>C. setina</i> 3; <i>Darwinula leguminella</i> 11; <i>D. oblonga</i> 8; <i>Theriosynoecum striata</i> 14; <i>Mongolianella</i> sp. A 3; ? <i>Palaeocytheridella</i> ? 1; indet. 5.	0-0.012
DB242 (base)	"Shale with thin limestones" (1963)	0.15		DB235	Calcareous shale with some ostracod-rich bands forming biomicrite and biosparite laminae. Sample:- Gastropoda: <i>Viviparus</i> 100+; <i>Theodoxus</i> (?) <i>fisheri</i> 13; <i>Planorbis fisheri</i> 1. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 68; <i>C. setina</i> 11; <i>Darwinula oblonga</i> 13; <i>D. leguminella</i> 6; <i>Theriosynoecum striata</i> 16; <i>Timiriasevia punctata</i> 1; ? <i>Damonella ellipsoidea</i> ? 1; indet. 1.	0.018
	[A complete section of Bed 242 was not measured. Bristow (in Damon 1884, p.201) records 11 feet [3.35m] of fossiliferous shales, clays and thin limestones. Cosgrove and Hearn (1966), from measurements made on the foreshore around Peveril Point suggest a thickness which is of the same order.]			DB234	Grey biosparite, weathers brown (limonite - with some associated selenite). Good, but rather rough bedding lamination. Abundant ostracods, <i>Viviparus</i> shell fragments. Sample:- Gastropoda: <i>Viviparus</i> 100+. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 25; <i>C. setina</i> 4; <i>Darwinula leguminella</i> 13; <i>D. oblonga</i> 4; <i>Theriosynoecum striata</i> 10; <i>Rhinocypris jurassica</i> 2; <i>Timiriasevia punctata</i> 1.	0.05
DB241	<b>Lower Purbeck Marble (= Red Marble</b> (Cosgrove and Hearn 1966)): Rather massive, greenish <i>Viviparus</i> biomicrite, weathering brownish. Has rather rough and poorly developed bedding lamination. The shells are largely fragmentary. Sample:- Gastropoda: <i>Viviparus</i> 100+. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 24; <i>C. setina</i> 6; <i>C. menevensis</i> gp 1; <i>Darwinula leguminella</i> 11; <i>D. oblonga</i> 1; <i>Timiriasevia punctata</i> 6; <i>Theriosynoecum striata</i> 5; <i>Rhinocypris jurassica</i> 2; indet. 1.	0.81		DB233	Slightly calcareous, greenish-grey shales, with much selenite, limonite, and limonite/selenite lumps. Weathers yellowish. Sample:- Gastropoda: <i>Viviparus</i> 4; <i>Theodoxus</i> (?) <i>fisheri</i> 1. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 12; <i>C. setina</i> 10; <i>Darwinula oblonga</i> 6; <i>Rhinocypris jurassica</i> 5; <i>Theriosynoecum striata</i> 1.	1.52
DB240	Grey shales with thin shell-limestones (6-12mm thick), and with laminae of sandy biosparites and calcareous sandstones. Some " <i>Unio</i> " occur at the base. Sample above following sample:- Gastropoda: <i>Viviparus</i> 8. Ostracoda: <i>Rhinocypris jurassica</i> 25; <i>Cypridea (LV&gt;RV)</i> 17; <i>C. setina</i> 4; <i>C. menevensis</i> gp. 1; <i>Darwinula oblonga</i> 7; <i>D. leguminella</i> 1; <i>Theriosynoecum striata</i> 2. Sample 0.30m above base of bed:- Gastropoda: <i>Viviparus</i> 100+; <i>Planorbis fisheri</i> 30. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 14; <i>C. setina</i> 4; <i>C. menevensis</i> gp. 3; <i>Theriosynoecum striata</i> 9; <i>Darwinula oblonga</i> 6; <i>D. leguminella</i> 3. Sample immediately below previous sample:- Gastropoda: <i>Viviparus</i> 100+. Ostracoda: <i>Theriosynoecum striata</i> 19; <i>Darwinula leguminella</i> 13; <i>D. oblonga</i> 6; <i>Cypridea menevensis</i> gp. 9; <i>C. setina</i> 5; <i>Rhinocypris jurassica</i> 3; indet. 3. Sample near base of bed:- Gastropoda: <i>Viviparus</i> 100+. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 17; <i>C. setina</i> 6; <i>C. menevensis</i> gp. 1; <i>Darwinula leguminella</i> 7; <i>D. oblonga</i> 4; <i>Theriosynoecum striata</i> 6; <i>Timiriasevia punctata</i> 3; <i>Mantelliana purbeckensis</i> 1; indet. 2.	1.91		DB232	Medium grey biosparite, massive, but showing good bedding lamination. Mostly shell fragments, but ostracods abundant. Sample:- Gastropoda: none. Ostracoda: <i>Darwinula leguminella</i> 15; <i>Cypridea (LV&gt;RV)</i> 8; <i>C. menevensis</i> gp. 2; <i>C. setina</i> 1; <i>Rhinocypris jurassica</i> 1; indet. 2; <i>Theriosynoecum striata</i> occurs.	0.06
				DB231	Broken, grey shales, weathering yellowish, with some selenite. Very abundant ostracods (carapaces and juveniles). Sometimes concentrated into rather limonitic, poorly cemented laminae - often with associated "micro-beef". Sample:- Gastropoda: none. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 10; <i>C. menevensis</i> gp. 8; <i>C. setina</i> 6; <i>Mongolianella</i> sp. A 12; <i>Rhinocypris jurassica</i> 2.	0.038
				DB230	Grey ostracod biosparite, rather massive, with poor bedding lamination, often disturbed. Show lens-like form. <i>Cypridea</i> overwhelming predominant, very largely carapaces. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 28; <i>C. menevensis</i> gp. 9; <i>C. spp. indet.</i> includes juveniles of previous two spp. 16; <i>C. setina</i> 14; <i>Rhinocypris jurassica</i> 21; <i>Mongolianella</i> sp. A 10; <i>Timiriasevia punctata</i> 8;	0.025
DB239	<b>Unio Bed:</b> Thinly bedded, green biosparites with thin shales. The limestones show rough and rather poor bedding lamination. They are iron-stained, and	0.30				



DB216	Rough, thinly bedded (12-100mm), medium grey shell-fragment biosparites with argillaceous biosparites and very calcareous shales interbedded. Weathers lighter grey, and becomes brown-stained. Good, but irregular bedding lamination. Much granular secondary calcite, pyrite replacing shell material, selenite coatings. Scattered pink, micrite intraclasts. 'Furoid' markings, footprints. Shell fragments - ostracod and bivalve. Rotted 'Neomiodon' and 'Unio' at base. Sample:- Gastropoda: <i>Viviparus</i> 12. Ostracoda: none. Second sample:- Gastropoda: <i>Planorbis fisheri</i> 2. Ostracoda: <i>Cypridea menevensis</i> gp. 22; <i>C. (LV&gt;RV)</i> 2; <i>C. setina</i> 1; <i>Theriosynoecum striata</i> 12; <i>Timiriasevia punctata</i> 4; <i>Darwinula oblonga</i> 3; <i>D. leguminella</i> 1; <i>Rhinocypris jurassica</i> 2; indet. 3.	0.56	well-laminated ostracod limestone with much selenite and limonite. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 13; <i>C. setina</i> 2; <i>C. (LV&gt;RV)</i> 2; <i>C. sp. indet.</i> 4; <i>Darwinula leguminella</i> 6; <i>D. oblonga</i> 1; ? <i>Mantelliana</i> sp.? 1; indet. 2.
DB215	Medium grey, finely laminated shales, with abundant ostracods, and flattened, rotted bivalves. Scattered gastropods. Much selenite, limonite and limonite/selenite. Sample:- Gastropoda: <i>Planorbis fisheri</i> 4; <i>Viviparus</i> 3. Ostracoda: <i>Cypridea menevensis</i> gp. 20; <i>C. (LV&gt;RV)</i> 1; <i>C. sp. indet.</i> 11; <i>Theriosynoecum striata</i> 11; <i>Darwinula oblonga</i> 8; <i>D. leguminella</i> 1; <i>Rhinocypris jurassica</i> 5. Second sample:- Gastropoda: <i>Viviparus</i> 23; <i>Planorbis fisheri</i> 11. Ostracoda: <i>Cypridea menevensis</i> gp. 38; <i>Theriosynoecum striata</i> 25; <i>Darwinula oblonga</i> 12; <i>D. leguminella</i> 6; <i>Rhinocypris jurassica</i> 10.	0.69	DB207 Dark-grey paper shales with yellow efflorescence. Much selenite/limonite. Thin, white siltstone laminae. Sample near top of bed:- Gastropoda: none. Ostracoda: <i>Cypridea</i> sp. indet. 4; <i>Theriosynoecum striata</i> 1; <i>Darwinula leguminella</i> 1; indet. 1.
DB214	Light grey, weathering cream, ostracod biosparite grading into very argillaceous ostracod limestone. Shows good, but rough, bedding lamination. Disseminated pyrite/limonite occurs in layers, with associated selenite. Fish and plant fragments common. Scattered bivalves. Pink micrite intraclasts. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 25; <i>Darwinula leguminella</i> 12; <i>D. oblonga</i> 11; <i>Theriosynoecum striata</i> juv. 1; indet. 1.	0.025	DB206 Fairly massive, grey, bivalve shell-fragment biosparite. Much of the greyiness is caused by pyritisation of the shell material. One surface with abundant ostracods has a rather selenitic appearance. Vertical burrows. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 5.
DB213	Grey, ostracod shales, with thin (6mm) ostracod biosparites. Pyrite, selenite/limonite, and beef. One large micritic faecal pellet (?). Sample:- Gastropoda: <i>Planorbis fisheri</i> 2. Ostracoda: <i>Cypridea menevensis</i> gp. 21; <i>Theriosynoecum striata</i> 20; <i>Mongolianella</i> sp. A 6; <i>Darwinula oblonga</i> 3; <i>D. leguminella</i> 3; <i>Rhinocypris jurassica</i> 1.	0.15	DB205 Decalcified paper shales, weathering brown, with much selenite and selenite/limonite, etc.. Bands rich in rotted white shells. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 15; <i>Darwinula oblonga</i> 4; <i>D. leguminella</i> 2; <i>Rhinocypris jurassica</i> 3.
DB212	Light grey, ostracod biomicrite; ostracods - carapaces and fragments - to a certain extent concentrated into bands. Scattered limonite/pyrite lumps, and pink micrite intraclasts. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 30; <i>C. sp. indet.</i> 2; <i>Darwinula oblonga</i> 13; <i>D. leguminella</i> 9; <i>Theriosynoecum striata</i> 9; <i>Rhinocypris jurassica</i> 5; indet. 3.	0.09	DB204 Light grey, massive, bivalve fragment biosparite, showing vertical burrows. Poor bivalves. Abundant ostracods on one surface associated with a limonite/selenite coating. Sample:- Gastropoda: none. Ostracoda: <i>Macrodentina (Dictyocythere)</i> abundant; <i>Darwinula leguminella</i> common.
DB211	Rough, medium-grey calcareous shales with much beef, abundant ostracods, and selenitic/limonite laminae. Thin ostracod biosparite laminae. Pale pink micrite intraclasts. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 9; <i>Theriosynoecum striata</i> 8; <i>Darwinula oblonga</i> 4; <i>Rhinocypris jurassica</i> 3.	0.06	DB203 Dark grey shale, with much selenite and selenite/limonite. Sample:- Gastropoda: none. Ostracoda: only as indet. casts, include ? <i>Rhinocypris</i> ?
DB210	Light grey, muddy ostracod biosparite, with the ostracods concentrated into bands. Bedding lamination fairly well-developed. Sample:- Gastropoda: none. Ostracoda: <i>Darwinula leguminella</i> 5; <i>D. oblonga</i> 2; <i>Cypridea ?menevensis</i> gp? 4; <i>Rhinocypris jurassica</i> 2; <i>Fabarella boloniensis</i> 1; ? <i>Theriosynoecum striata</i> ? 1.	0.11	DB202 Rather rough, laminated, muddy limestones grading into ostracod biosparites. Ostracods show mixture of "fresh-water" and "marine" types, but tend to occur separately. Scattered bivalves and gastropods. Sample:- Gastropoda: <i>Viviparus</i> 26. Ostracoda: <i>Macrodentina (Dictyocythere)</i> 33; <i>Darwinula leguminella</i> 23; <i>Cypridea menevensis</i> gp. 16; <i>Rhinocypris jurassica</i> 3.
DB209	Medium-grey paper shales with beef. Abundant poorly preserved ostracods, and white, rotted bivalve shell fragments. Abundant selenite/limonite etc. Thin limonite-stained siltstone laminae with ostracod casts. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 3; <i>C. sp. indet.</i> 4; <i>Darwinula oblonga</i> 7; <i>Rhinocypris jurassica</i> 1; indet. 1.	0.27	DB201 Hard ostracod shale grades into muddy ostracod limestone. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 8; <i>C. setina</i> 1; <i>Macrodentina (Dictyocythere)</i> 9; <i>Darwinula leguminella</i> 8; <i>Fabarella boloniensis</i> 4; <i>Orthonotacythere</i> 1.
DB208	Thin, bivalve biosparites with white matrix and dark shells, showing disturbed bedding lamination, and many pyrite/limonite grains. Also,	0.038	DB200 Thinly bedded, pale grey/pink ostracod biosparite, becoming more massive downwards. Scattered bivalves and gastropods. Much brown staining with small lumps of limonite/pyrite. Sample:- Gastropoda: <i>Viviparus</i> 3. Ostracoda: <i>Cypridea menevensis</i> gp. 6 (abundant <i>Cypridea</i> on hand specimens); <i>Darwinula leguminella</i> 2.
			DB199 Dark grey shales, with much selenite, limonite staining, and limonite/pyrite lumps. Scattered poorly preserved ostracods, and bivalve casts. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 4; <i>C. (LV&gt;RV)</i> 1.
			DB198 Rotted white bivalve shell band, with a shaly matrix. Scattered gastropods. Much selenite, limonite/pyrite, and beef. Ostracods heavily coated with secondary calcite. Sample:- Gastropoda: <i>Viviparus</i> 3. Ostracoda: <i>Cypridea (?LV&gt;RV?)</i> 4; <i>Rhinocypris jurassica</i> 2; <i>Darwinula oblonga</i> 1.
			DB197 Dark grey shales with abundant selenite, selenite/limonite, limonite shale etc. Scattered white siltstone laminae. Rotted white bivalve shell fragments abundant. Scattered poorly preserved ostracods. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea</i> sp. indet. 6; <i>Rhinocypris jurassica</i> 1.
			DB196 Whitish, rotten bivalve shells in a shaly matrix. Much selenite. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea</i> sp. indet. 8.
			DB195 Dark shales with beef in the middle. Much selenite and selenite/limonite. Whitish siltstone laminae common. Ostracods poor, largely as casts. Sample:- Gastropoda: none. Ostracoda: very poor moulds: ? <i>Cypridea</i> sp. indet? 3; <i>Darwinula</i> sp. indet. 1.

DB194	White, rotted bivalve shells and fragments, with very little shaly matrix. Much limonite/pyrite, selenite, and selenite/limonite, as veins, coatings etc. Some pyritisation of bivalve shells, Ostracods quite common. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea ?menevensis</i> gp.? 13; <i>Darwinula leguminella</i> 2; <i>Macrodentina (Dictyocythere)</i> 1; ? <i>Fabanella boloniensis</i> ? 1; indet. 1.	0.05		limestones. Sample:- Gastropoda: none. Ostracoda: <i>Darwinula leguminella</i> 1; <i>Rhinocypris jurassica</i> 1.		
			DB180	Dark shales with much pyrite and selenite, etc.. Scattered bivalve fragments. Sample:- Gastropoda: <i>Ptychostylus harpaeformis</i> 1. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 15; <i>Orthonotacythere</i> 1.	0.43	
DB193	Dark shales with much selenite and selenite/limonite. Ostracods common, but poor, with secondary calcite ("microbeef") coatings. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea</i> sp. indet. 14 (plus moulds on shale).	c.0.38		Greenish grey, hard, muddy micrite ("marlstone") with pronounced vertical jointing. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 16; ? <i>Damonella pygmaea</i> ? 3; <i>Darwinula oblonga</i> 1; indet. 2.	0.13	
DB192	White, rotted bivalve shells and fragments, with very little shale matrix. Some limonite/pyrite, and selenite. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 2; <i>Cypridea menevensis</i> gp. 1; ? <i>Darwinula leguminella</i> ? 2.	0.10		DB178	Well-bedded, pinkish cream, gastropod/bivalve biosparite, containing shell "sand", and scattered quartz sand grains. Thin creamy micrite seams occur (shot with limonite granules), particularly at the base. <i>Hydrobia</i> extremely abundant. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Procerithium</i> 3+; <i>Theodoxus(?) fisheri</i> 3; <i>Paraglauconia strombiformis</i> 2; indet. 3. Ostracoda: <i>Fabanella boloniensis</i> 12; <i>Macrodentina (Dictyocythere)</i> 7; <i>Stenestroemia fragilis</i> 1; indet. 6.	0.67
DB191	Dark shales with much selenite and scattered white, rotted bivalve shells. A seam of beef at the base. Sample:- Gastropoda: none. Ostracoda: none.	c.0.53		DB177	Grey, ostracod shales, with selenite and selenite/limonite. Sample:- Gastropoda: <i>Hydrobia</i> 2; Ostracoda: <i>Macrodentina (Dictyocythere)</i> 17; <i>Cypridea (LV&gt;RV)</i> 8.	0.17
DB190	Soft "sandy" looking shale, full of ostracods coated with secondary calcite. Selenite and selenite/limonite. Common small algal(?) nodules. Sample:- Gastropoda: <i>Hydrobia</i> 7. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 12; <i>C. menevensis</i> gp. 5; <i>Darwinula leguminella</i> 3; <i>D oblonga</i> 1.	c.0.46		DB176	Light, grey, rough looking, rather massive and muddy biomicrite. Bivalves abundant (including <i>Praeexogyra(?)</i> and "Modiolus"), but poorly preserved, with scattered pyrite/limonite. Sample:- Gastropoda: <i>Viviparus</i> few; ? <i>Ptychostylus harpaeformis</i> ? few; <i>Hydrobia</i> very few. Ostracoda: <i>Macrodentina (Dictyocythere)</i> 59.	0.25
CORBULA MEMBER:						
DB189 & 188	Very rough, thinly bedded (6-12mm), hard light-grey, bivalve biosparites grading into muddy limestones (DB189), with a 65mm more massive bed of the same type at the base (DB188). Scattered sand grains, some glauconite(?), shale wisps, and much secondary calcite. Sample:- Gastropoda: <i>Hydrobia</i> 48. Ostracoda: <i>Cypridea menevensis</i> gp. 1; <i>C. sp.</i> indet. 2; <i>Darwinula oblonga</i> (and ? <i>leguminella</i> ?) 2; <i>Orthonotacythere</i> 1; <i>Timiriasevia punctata</i> 1.	c.0.16		DB175	Light creamy-grey micrite, with thin pelmicrite laminae (rather obscure, small, rounded pellets). The bedding lamination is very fine and even. Also grey algal nodules and laminae, having a flinty appearance, and lobate upper surfaces. Some small well-developed 'fucoids'. Insects. Some more clayey bands, and becoming generally shaly towards the base. Sample:- Gastropoda: <i>Hydrobia</i> 2. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 1; <i>Darwinula oblonga</i> 1; <i>Macrodentina (Dictyocythere)</i> 1; indet. 2.	0.36
DB187 & 186	Thin (6-12mm) rough, grey, muddy, sandy biosparites (DB187) grading down into about 0.30m of irregular, massive, creamy pink bivalve biosparites (DB186), which contain scattered to common sand grains. Thin micrite seams in the massive portion, particularly towards the middle. Many pyrite/limonite granules throughout. Abundant, rich fauna of well-preserved gastropods and bivalves (including <i>Praeexogyra(?)</i> ). Sample:- Gastropoda: <i>Hydrobia</i> 120; <i>Procerithium</i> 35; <i>Promathilda microbinaria</i> 12; <i>Ellobium ?durlstonense?</i> 1; indet. 21. Ostracoda: ? <i>Stenestroemia fragilis?</i> 1; ? <i>Damonella pygmaea?</i> 1.	0.46		DB174(c)	'Gypsiferous shale' (1963).	0.09
			DB174(b)	Medium grey, hard, rather muddy biomicrite, massive with very disturbed bedding lamination. Granular secondary calcite. Abundant ostracods. Bivalves common. Much pyrite/limonite. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea (LV&gt;RV)</i> 25; <i>C. menevensis</i> gp. 1; <i>Rhinocypris jurassica</i> 8; <i>Macrodentina (Dictyocythere)</i> 1; indet. 2.	0.06	
			DB174(a)	'Dark gypsiferous shale' (1963).	0.06	
			DB173	Creamy pink, coarse, massive bivalve biosparite. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea</i> sp. indet. 3.	0.20	
DB185	Shales with beef, much selenite and limonite/selenite, etc.. Sample:- Gastropoda: none. Ostracoda: none.	0.05		DB172	Soft grey shales with selenite and selenite/limonite, and thin siltstone laminae. Casts of bivalves and ostracods. Some secondary calcite. Sample:- Gastropoda: none. Ostracoda: none.	c.0.46
DB184 & 183	Very similar to DB187 and DB186. Rough thinly bedded limestones (DB184) grading down into a more massive, pinkish biosparite and biomicrite (DB183, = <b>Toad's Eye</b> of Fisher 1856), with a micrite seam in the middle, and containing abundant, well-preserved bivalves and gastropods. Scattered sand grains. One poorly preserved ostracod found. Sample:- Gastropoda: <i>Procerithium</i> 46; <i>Hydrobia</i> 29+; <i>Promathilda microbinaria</i> 9; <i>Ellobium durlstonense</i> 1. Ostracoda: indet. 1.	0.36		DB171	Thinly bedded, rough, medium-grey, bivalve biosparites, grading into muddy shell limestones and muddy micrites. Silty-looking secondary calcite matrix. Much pyrite/limonite along fractures. Sample:- Gastropoda: <i>Hydrobia</i> 2; indet. 2. Ostracoda: <i>Cypridea menevensis</i> gp. 1; <i>C. (LV&gt;RV)</i> 1; <i>C. sp.</i> indet. 2; <i>Theriosynoecum ?striata?</i> 1; <i>Rhinocypris jurassica</i> 1; <i>Macrodentina (Dictyocythere)</i> juv. 1; indet. 1.	0.41- 0.15
DB182	Dark shales with thin limestone laminae, and a thin limestone at the base. Some beef, much selenite, selenite/limonite, etc. Poorly preserved bivalves abundant. Ostracods common. Sample:- Gastropoda: <i>Hydrobia</i> 10+. Ostracoda: <i>Macrodentina (Dictyocythere)</i> 51; <i>Cypridea (LV&gt;RV)</i> 36; <i>C. menevensis</i> gp. 1.	0.19		DB170	Soft grey shales with yellow efflorescence, much selenite, and occasional silty laminae. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea</i> sp. indet. 6.	0.18- 0.38
DB181	Rather rough and massive, medium grey, bivalve biosparite grading into rather silty looking muddy	0.18		DB169	Thinly bedded, roughly laminated, grey, muddy limestone - approaching a biosparite, with saccharoidal secondary calcite. Abundant poorly preserved bivalves. Variable lime content. Sample:- Gastropoda: <i>Hydrobia</i> 5. Ostracoda: <i>Rhinocypris jurassica</i> 3; <i>Macrodentina (Dictyocythere)</i> 3; ? <i>Cypridea menevensis</i> gp.? 1; <i>C. sp.</i> indet. 1; <i>Darwinula leguminella</i> 1; ? <i>Theriosynoecum</i>	0.20

	<i>forbesii</i> juv.? 1; indet. 5.			
DB 168	Soft grey shale with yellow efflorescence and much selenite and selenite/limonite, etc.. Beef and secondary calcite. Sample:- Gastropoda: none. Ostracoda: none. Foraminifera: various unidentified agglutinated forms 76.	0.46		to the bedding are sinusoidal fractures which give the rock a rough appearance. Sandstone lenses. Mineralisation - mostly pyrite - along the fractures. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 1; <i>C. sp.</i> indet. 1; indet. 3.
DB167	Hard, light grey biosparite, with much sand-sized, indeterminate shell material and occasional sand grains. Micrite bands towards the base, with one 25mm thick in middle which yields insects. Sample:- Gastropoda: <i>Hydrobia</i> 9. Ostracoda: ? <i>Stenestroemia fragilis</i> ? 1; indet. 1.	0.18	DB157	Mottled grey, fairly-massive calcareous sandstone, with disturbed bedding indicated by thin discontinuous muddy micrite seams. The cement is sparry calcite. Much pyrite/limonite. Bivalves common. Sample:- Gastropoda: indet. fragment(?) 1. Ostracoda: <i>Cypridea</i> (LV>RV) 5; <i>Orthonotacythere</i> 5; <i>Rhinocypris jurassica</i> 1; ? <i>Stenestroemia fragilis</i> juv.? 1; indet. 3.
DB166	Dark shales, with much pyrite/limonite, selenite, etc., rotted white bivalve shell fragments. A 0.05m band of rotted white bivalve shells and fragments occurs. Ostracods common, gastropods fairly common. Algal(?) nodules. Sample:- Gastropoda: <i>Hydrobia</i> 85; ? <i>Viviparus</i> ? 5; <i>Ptychostylus harpaeformis</i> 1. Ostracoda: <i>Cypridea</i> (LV>RV) 33; <i>Rhinocypris jurassica</i> 13; <i>Darwinula oblonga</i> 12; D ? <i>leguminella</i> ? 1; <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 10; <i>Orthonotacythere</i> 7.	0.41	DB156	'Thin bedded sandstones, irregularly separated by shales' (1963).
			DB155	Dark shales with light grey calcareous mudstone bands. Much pyrite/limonite, and selenite. Ostracods abundant. Common poorly preserved bivalves. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea menevensis</i> gp. 25; <i>C.</i> (LV>RV) 7; <i>C. sp.</i> indet. juvs. of previous two species 9; <i>Orthonotacythere</i> 34; <i>Rhinocypris jurassica</i> 11; "Cytheropteron" sp. B 3; <i>Macrodentina</i> ( <i>Dictyocythere</i> ) juv. 1; <i>Darwinula oblonga</i> 1; indet. 1;
DB165	Light grey, hard, micrite, with a pseudo-nodular appearance. Weathers cream. A few scattered bivalves. Insects. Sample:- Gastropoda: none. Ostracoda: <i>Stenestroemia fragilis</i> 1.	0.30- 0.38	DB154	Thin, rough bedded, medium grey bivalve biosparites, interbedded with shales. The bed grades down into shales. The bivalves in the limestones are much distorted and give a rough bedding lamination. In the limestones, scattered sand grains, much secondary calcite, and much of the shell material is rotted white. Much pyrite/limonite and selenite in the shales, and this forms part of the cement in the limestones. Sample:- Gastropoda: none. Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 6; <i>Orthonotacythere</i> 3; <i>Cypridea</i> (LV>RV) 1; <i>C. sp.</i> indet. 1; <i>Rhinocypris jurassica</i> 1; <i>Theriosynoecum striata</i> juv. 1; <i>Dicrorygma fragilis</i> juv. 1; indet. 1. Foraminifera: <i>Eoguttulina</i> sp. 1.
DB164	Dark shales with beef. Selenite and pyrite/limonite. Ostracods common, heavily coated in secondary calcite. Rotted white bivalve shell fragments. About 0.30m above the base a 0.05-0.08m band of rotted white shells, in places cemented to a poor limestone. Sample:- Gastropoda: ? <i>Ptychostylus harpaeformis</i> ? 1. Ostracoda: <i>Cypridea</i> (LV>RV) 18; <i>Orthonotacythere</i> 2.	0.86		
DB163	Medium grey, rough, thinly bedded, muddy shell limestones, grading into biosparites. More massive towards the base. Abundant quite well-preserved bivalves, with much secondary calcite. Wisp-like laminae of shale. Pyrite nodules, and much selenite. Ostracods abundant. Sample:- Gastropoda: <i>Theodoxus</i> (?) <i>fisheri</i> 10; <i>Hydrobia</i> 1. Ostracoda: <i>Orthonotacythere</i> 65; <i>Cypridea</i> (LV>RV) 13; <i>Stenestroemia fragilis</i> 4; <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 3; <i>Darwinula leguminella</i> 1; <i>Theriosynoecum striata</i> juv. 1; indet. 1.	0.21- 0.23		
DB162	Dark shales, with varying carbonate content, giving thin muddy limestone laminae. Much pyrite and pyrite/limonite/selenite. Much secondary calcite, particularly coating the common ostracods. Sample:- Gastropoda: none. Ostracoda: <i>Orthonotacythere</i> 46; <i>Cypridea</i> (LV>RV) 32; <i>Darwinula leguminella</i> 2.	0.10		
DB161	Essentially light grey, sandy, muddy limestones, in three massive bands, separated by two more rubbly bands. Lithologies vary from sandy calcareous clays, and sandy micrites, to sandy biosparites with some muddy and calcareous sandstones. Bedding lamination very disturbed. Worn bivalve shell fragments abundant throughout. Some well-preserved bivalves. Sample:- Gastropoda: <i>Theodoxus</i> (?) <i>fisheri</i> 1; indet. 1. Ostracoda: <i>Orthonotacythere</i> 10; <i>Cypridea</i> (?LV>RV?) 2.	0.86		
DB160	Soft grey shales with yellow efflorescence. Contains abundant selenite and selenite/limonite. Very thin siltstone laminae. Bivalve casts. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea</i> (LV>RV) 11; <i>C. sp.</i> indet. 1.	0.15	DB152	Pink/grey, to creamy pink, quite sandy bivalve biosparites and calcareous bivalve-rich sandstones, with subsidiary muddy micrites and biosparites, forming a massive bed. Gastropods common. Ostracods abundant. Bivalves are very abundant and well-preserved and include "Corbula". Sample:- Gastropoda: <i>Hydrobia</i> 37; <i>Procerithium</i> 11; <i>Peperilia perisphincta</i> 7; <i>Theodoxus</i> (?) <i>fisheri</i> 1; ? <i>Viviparus</i> ? 1. Ostracoda: <i>Lycoperocypris</i> (?) 25; <i>Stenestroemia fragilis</i> 18; <i>Cypridea</i> (LV>RV) 1; <i>Theriosynoecum forbesii</i> juv. 1; ? <i>Damonella buchaniana</i> ? 1; <i>Orthonotacythere</i> 1; ? <i>Timiriasevia punctata</i> ? 1; 'Cytheropteron' sp. indet. 1; indet. 2.
DB159	Light grey, shelly, muddy, calcareous sandstone, and sandy biosparite intergrading. Thinly and roughly bedded, showing rather poor and rough bedding lamination. Pyrite, selenite, secondary calcite (including beef). Poorly preserved bivalves. Sample:- Gastropoda: none. Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 45; <i>Cypridea menevensis</i> gp. 1; <i>C.</i> (LV>RV) 1; <i>C. sp.</i> indet. 5; <i>Orthonotacythere</i> 2; <i>Darwinula oblonga</i> 1; <i>Theriosynoecum striata</i> juv. 1.	0.23	DB151	Rough, thinly bedded, medium-grey, sandy muddy biosparites, and sandy calcareous mudstones. Bedding lamination rough and poor. Pyrite common. Abundant bivalves include "Chlamys", <i>Praeexogyra</i> , "Modiolus". Sample:- Gastropoda: <i>Hydrobia</i> 1. Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 14; <i>Cypridea menevensis</i> gp. 3; <i>C. sp.</i> indet. 3; <i>Orthonotacythere</i> 2.
DB158	Light grey, muddy micrite, with very thin sandstone laminae which mark out the bedding. Perpendicular	0.23	DB150	Medium grey (slightly pink), sandy, ostracod biosparite with abundant small bivalves. Glauconite. Much pyrite/limonite, and selenite. The bed is notably persistent for its thickness. Sample:- Gastropoda: <i>Hydrobia</i> 7. Ostracoda:

## SCALLOP MEMBER:

	<i>Lycoperocypris</i> (?) 30; <i>Stenestroemia fragilis</i> 27; <i>Cypridea</i> (?LV>RV?) 4; <i>C. menevensis</i> gp. 1; <i>Theriosynoecum striata</i> juv. 2; <i>T. forbesii</i> juv. 1; <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 2; <i>Rhinocypris jurassica</i> 1; indet. 4. Foraminifera: <i>Eoguttulina</i> 1.	
DB149	Medium grey, rough, sandy biosparite and calcareous, sandy mudstones, roughly and thinly bedded, interbedded with thin shales. Much glauconite. Bivalves common, including <i>Praeexogyra</i> and " <i>Chlamys</i> ". Very similar to DB151. 25mm ferruginous band at base. Sample:- Gastropoda: <i>Hydrobia</i> 1. Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 1; <i>Lycoperocypris</i> (?) 1; indet. 1.	0.33
DB148	Rough, blue-grey, muddy, sandy bivalve biosparites, and bivalve-rich, calcareous, sandy mudstones. Dark shells in a light matrix common. Rough, poor bedding lamination. A more calcareous development of the bed above. Much pyrite/limonite. Sample:- Gastropoda: <i>Hydrobia</i> 1; <i>Ptychostylus harpaeformis</i> 1. Ostracoda: <i>Cypridea</i> (LV>RV) 2; <i>C. menevensis</i> gp. 1.	0.36
DB147	Massive, pinky-cream, sandy to very sandy (with glauconite), bivalve biosparite. Abundant gastropods, mainly concentrated into one band. Well preserved small bivalves. Sample:- <i>Viviparus</i> 16; <i>Hydrobia</i> 5; ? <i>Theodoxus</i> (?) <i>fisheri</i> ? 1. Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 2 on hand specimen. Second sample, primarily for <i>Viviparus</i> :- Gastropoda: <i>Viviparus</i> 100+; <i>Hydrobia</i> 11; <i>Theodoxus</i> (?) <i>fisheri</i> 2; indet. 2. Ostracoda: <i>Cypridea</i> ? <i>menevensis</i> gp.? 1; <i>Cypridea</i> sp. 2 on hand specimen.	0.18
DB146	Rubby, medium-grey, muddy, rather sandy limestones. Ranging from calcareous shales, to calcareous mudstones to partially cemented biosparites, with abundant poorly preserved bivalves and fragments throughout. Bedding lamination poor, rough. Gastropods, poorly preserved, uncommon. Ostracods common. Weathers to give a rather porous looking rock. Some glauconite. Sample:- Gastropoda: <i>Hydrobia</i> 3; <i>Viviparus</i> 2. Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 4; <i>Cypridea</i> (LV>RV) 1; <i>C. menevensis</i> gp. 1; C. sp. indet. 1; ? <i>Darwinula leguminella</i> ? 1; indet. 1. Ostracods were assessed common in the hand specimen, and both <i>Cypridea</i> and <i>Macrodentina</i> ( <i>Dictyocythere</i> ) were seen.	0.15
INTERMARINE MEMBER (or UPPER BUILDING STONES):		
DB145	Purplish-grey, finely-laminated shale with abundant thin calcareous laminae. Much selenite, and some limonite/selenite. Microsedimentary structures. Sample:- Gastropoda: none. Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 2; <i>Orthonotacythere</i> 2; <i>Scabriculocypris trapezoides</i> 2.	0.10
	<b>Leaning or Laning Vein</b> (= beds DB144 to DB141):	
DB144(b) & (a)	Rather massive, even bedded, cream biosparite, predominantly coarse sand-sized shell fragments and scattered sand grains, with scattered well-preserved bivalves and gastropods (DB144(b)). The bottom 0.46m (DB144(a)) still massive, but shows better bedding lamination; coarse sand-sized shell fragment, sandy to very sandy, biosparite, with none of the well-preserved shells. Softer, marly seams occur throughout; these are rather sandier. Sample of top of DB144:- Gastropoda: <i>Viviparus</i> 16; <i>Theodoxus</i> (?) <i>fisheri</i> 4; <i>Hydrobia</i> 1. Ostracoda: <i>Cypridea</i> (LV>RV) 5; <i>Stenestroemia fragilis</i> 3; <i>Lycoperocypris</i> (?) 3; <i>Darwinula leguminella</i> 1; <i>Schuleridea mediocaudata parallela</i> 1; indet. 2. Ostracods were assessed common on the hand specimen, both <i>Cypridea</i> and <i>Lycoperocypris</i> (?) were seen the	1.27
	latter being quite abundant. Sample of bottom of DB144:- Gastropoda: <i>Hydrobia</i> 1. Ostracoda: <i>Cypridea</i> (LV>RV) 6; " <i>Cytheropteron</i> " sp. B 6; indet. 2. Ostracods were assessed very abundant on hand specimen, both <i>Cypridea</i> and " <i>Cytheropteron</i> " were seen.	
DB143	Rather rough, medium-grey, muddy sandy biosparite, with sand-sized shell fragments and abundant ostracods. Bivalves common. More argillaceous horizons occur. Quite good bedding lamination. Sample:- Gastropoda: indet. 1. Ostracoda: <i>Cytheropteron</i> sp. B 6; <i>Orthonotacythere</i> 5; <i>Cypridea</i> sp. juv. indet. 3; indet. 2. <i>Cypridea</i> , <i>Orthonotacythere</i> , and " <i>Cytheropteron</i> " were all common on the hand specimen.	0.13
DB142	Somewhat sandy, medium-grey, calcareous shales, with thin, rough, muddy limestone laminae. Much selenite. Very fossiliferous; common bivalves and " <i>Chara</i> " fragments, abundant gastropods and ostracods. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Theodoxus</i> (?) <i>fisheri</i> 3. Ostracoda: <i>Orthonotacythere</i> 57; <i>Cypridea</i> (LV>RV) 50; <i>C. granulosa fasciculata</i> 3; " <i>Cytheropteron</i> " sp. B 18; <i>Fabanella boloniensis</i> 3	0.065
DB141	Rough, cream to creamy brown, sandy muddy biosparite, with thin irregular wisps of calcareous clays. Bedding lamination good but irregular. Mostly sand-sized shell fragments, with bivalves and ostracods. Sample:- Gastropoda: <i>Hydrobia</i> 3; ? <i>Theodoxus</i> (?) <i>fisheri</i> ? 2. Ostracoda: " <i>Cytheropteron</i> " sp. B 28; <i>Cypridea</i> (LV>RV) 11; <i>Orthonotacythere</i> 6; indet. 2.	c.0.15
DB140(e)	'Shale/marl parting' (1992).	0.05
DB140(d)	'Bivalve biosparite' (1992).	0.12-0.20
DB140(c)	'Dark grey shale with thin limestones' (1992).	0.21-0.30
DB140(b)	'Buff blocky marl' (1992).	0.12
DB140(a)	<b>Royal Limestone</b> (Webster 1826): 'Hard limestone. Rough bivalve biosparite in basal half. Top half more massive, finer, more compact biosparite.' (1992).	0.30
	[The beach level exposures of DB144-DB141, and DB133, are adjacent but separated by a fault (the Slipway Fault of Nunn 1992). As a result, the intervening portion of the section has to be studied in the rather poor and overgrown exposures further up the cliff, and in intermittent exposures on the foreshore. Bristow (in Damon 1884) apparently missed this fault. Fisher (1856) notes a small fault with a downthrow of seven feet (= 2.13 metres) at this point in the section, and his section at this point is correspondingly easier to correlate with mine.]	
DB139	Thin, light grey, muddy, sandy, biosparites, interbedded with shales. The limestones show good bedding lamination and oscillation ripple marks. Mostly sand-sized shell fragments in the limestones. Abundant bivalves, gastropods and ostracods. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Theodoxus</i> (?) <i>fisheri</i> 14 (with colour patterning). Ostracoda: <i>Macrodentina</i> ( <i>Dictyocythere</i> ) 36; <i>Orthonotacythere</i> 22; <i>Cypridea</i> (LV>RV) 16; <i>C. menevensis</i> gp. 1; ? <i>Damonella ellipsoidea</i> ? 5; <i>Dicrorygma</i> sp. B 4; " <i>Cytheropteron</i> " sp. B 2; <i>Theriosynoecum striata</i> 2; <i>Darwinula leguminella</i> 1; indet. 7.	0.18 (seen)
	[Since the full thickness between beds DB138 and DB140(a) has not been measured in one section, the thickness of DB139 may be greater than the 0.18m given (which was measured before exposures of DB140 were seen); however the excess is likely to be small at most.]	
DB138	Dark crumbly shales, full of shell material, with thin muddy limestones and pinkish biosparites containing bivalves. The bed is rather more calcareous towards the middle. Some selenite and selenite/limonite. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Theodoxus</i> (?) <i>fisheri</i> 1. Ostracoda:	0.86

	<p><i>Macrodentina</i> (<i>Dictyocythere</i>) 50; <i>Orthonotacythere</i> 17; <i>Cypridea</i> (LV&gt;RV) 11; <i>C. granulosa fasciculata</i> 2; <i>Darwinula oblonga</i> 7; <i>D. leguminella</i> 1; <i>Damonella ellipsoidea</i> 7; <i>Lycoperocypris</i>(?) 7; <i>Dicrorrygma</i> sp. B. 5; <i>Schuleridea mediocaudata parallela</i> 4; <i>Mantelliana ?purbeckensis?</i> 2.</p>		DB130	Medium-grey, rather shaly, calcareous mudstone, with abundant rotted shell fragments throughout, and white rotted shell bands, and sandy shell fragment bands. <i>Praeexogyra</i> . Sample:- Gastropoda: <i>Hydrobia</i> 14; <i>Valvata helicelloides</i> 6. Ostracoda: <i>Cypridea granulosa fasciculata</i> 18; <i>C. (LV&gt;RV)</i> 4; <i>Theriosynoecum striata</i> 17; <i>Stenestroemia fragilis</i> 8; <i>Orthonotacythere</i> 8; <i>Darwinula leguminella</i> 6; <i>D. oblonga</i> 2; <i>Rhinocypris jurassica</i> 1; <i>Damonella ellipsoidea</i> 1.	0.48-0.43
DB137	Dark-grey shale, packed with grit-sized shell fragments - giving the appearance of a muddy limestone. Bivalve shells etc., poorly preserved, rotted white. Much limonite/pyrite, selenite, etc. Sample:- Gastropoda: <i>Viviparus</i> 100+. Ostracoda: <i>Cypridea granulosa fasciculata</i> 14; <i>Theriosynoecum striata</i> 11; <i>Darwinula oblonga</i> 1; <i>D. leguminella</i> 1.	0.15	DB129(b) & (a)	Medium-grey, sandy calcareous mudstones, abundant ostracods, sand-sized shell fragments and rotted, white shells. Grade into sandy muddy biosparites. Shelly sandstone, and rotted white shell and shell fragment bands. Generally rather soft with the bottom 0.25m (DB 129(a)), and thin seams throughout, better cemented. Scattered pink micrite intraclasts. Fairly even bedding lamination. Top few centimetres of DB129(b) yield "Chara" including stem fragments. Sample:- Gastropoda: <i>Viviparus</i> 5. Ostracoda: <i>Theriosynoecum striata</i> 31; <i>Darwinula leguminella</i> 12; <i>Cypridea granulosa fasciculata</i> 7; <i>C. menevensis</i> gp.1; <i>Lycoperocypris</i> (?) 1.	1.63
DB136	Medium-grey, speckled white, rough muddy limestones. Grit-sized shell fragments in a muddy sparite (grading into shaly) matrix. Much of the shell is rotted white. Bedding lamination is marked but uneven. Ostracods abundant. Sample:- Gastropoda: <i>Hydrobia</i> 2. Ostracoda: <i>Cypridea granulosa fasciculata</i> 4. This species was abundant on the hand specimen and one <i>Darwinula leguminella</i> was seen.	0.065	DB128	Light-grey, rather shaly, calcareous mudstone or muddy micrite, with very even bedding lamination. Abundant, thin (up to 2 mm), very even, continuous sandy laminae. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Ptychostylus harpaeformis</i> 3; <i>Viviparus?</i> 2. Ostracoda: <i>Cypridea granulosa fasciculata</i> 36; <i>C. (LV&gt;RV)</i> 3; <i>Stenestroemia fragilis</i> 36; <i>?Dicrorrygma?</i> sp. 1; <i>Lycoperocypris</i> (?) 20; <i>Orthonotacythere</i> 6; <i>Damonella ?ellipsoidea?</i> 5; <i>Darwinula leguminella</i> 3; <i>Rhinocypris jurassica</i> 3; <i>?Macrodentina (Dictyocythere)?</i> 1; indet. 1.	0.23
DB135	Soft, greenish-grey shales with a "sandy" (selenite-rich) appearance. More calcareous and bivalve rich bands. Weathering gives a rusty - limonite - appearance. Abundant selenite, selenite/limonite, limonitic shale, etc.. Sample:- Gastropoda: <i>Hydrobia</i> 12. Ostracoda: <i>Cypridea granulosa fasciculata</i> 7; <i>C. (LV&gt;RV)</i> 6; <i>C. sp. indet. juvs. of above two species.</i> 6; <i>Macrodentina (Dictyocythere)</i> 1; <i>Darwinula sp.</i> was also recorded.	0.27	DB127 & DB126	Light-grey to cream, thin-bedded, sandy, muddy, calcarenite biosparites, interbedded with calcareous mudstones and muddy micrites. Abundant bivalves (including 'Corbula' and <i>Praeexogyra</i> ), and gastropods. The bottom 0.18m (DB126) are rather more shaly. Sample:- Gastropoda: <i>Hydrobia</i> 52; <i>Viviparus</i> 50; <i>Ptychostylus harpaeformis</i> 18; <i>?Valvata helicelloides?</i> 1. Ostracoda: <i>Cypridea granulosa fasciculata</i> 19; <i>C. menevensis</i> gp. 1; <i>Theriosynoecum striata</i> 10; <i>Darwinula leguminella</i> 6; <i>Lycoperocypris</i> (?) 4; <i>Rhinocypris jurassica</i> 1; <i>Fabianella boloniensis</i> 1; <i>Stenestroemia fragilis</i> 1; <i>S. decipiens</i> 1; <i>Orthonotacythere</i> 1. Second sample (selection of bivalves):- Gastropoda: none. Ostracoda: <i>Cypridea granulosa fasciculata</i> 3; <i>Darwinula oblonga</i> 1; <i>D. leguminella</i> 1; <i>Theriosynoecum striata</i> juv. 1; <i>T. forbesii</i> juv. 1; <i>Rhinocypris jurassica</i> 1; <i>?Damonella pygmaea?</i> 1.	0.33
DB134	Dark-grey shales, with white rotted bivalve shell band. Abundant selenite, selenite/limonite, etc.. Some beef. Sample:- Gastropoda: <i>Hydrobia</i> 1. Ostracoda: <i>Cypridea granulosa fasciculata</i> 39; <i>Darwinula oblonga</i> 5; <i>?Damonella ellipsoidea?</i> 1; indet. 2.	0.61	DB125	Massive, light creamy-grey to cream biosparite, with white shells. Good bedding lamination. Sample:- Gastropoda: <i>Viviparus</i> 19; <i>Hydrobia</i> 1. Ostracoda: <i>Cypridea granulosa fasciculata</i> 11; <i>C. sp. juv. indet. 1</i> ; indet. 1.	0.79
DB133	<b>Red Rag:</b> Medium-grey, mottled with creamy brown, coarse, bivalve biosparite. Rather rough and massive. Varying content of sand grains throughout, with more clayey and sandy laminae, and discontinuous shale bands. False bedded in part. ' <i>Neomiodon</i> ' particularly well preserved in the shaly beds. Other bivalves include ' <i>Unio</i> ', <i>Praeexogyra</i> (?), <i>Isognomon</i> , ' <i>Chlamys</i> ', etc.. Top surface and top 20-30mm yield bones, coprolites, and plant debris including leaves. Basal surface covered with hemispherical pockets into the bed below. Sample:- Gastropoda: <i>Viviparus</i> 3; <i>Ptychostylus harpaeformis</i> 1. Ostracoda: <i>Cypridea ?menevensis</i> gp.? 1.	0.74-0.79	DB124(c)	Creamy-brown, fairly rough "shaly" biosparite/micrite, showing good bedding lamination. Rather sandy. Sample:- Gastropoda: <i>Hydrobia</i> 75. Ostracoda: <i>Rhinocypris jurassica</i> 14; <i>Cypridea granulosa fasciculata</i> 8; <i>C. (LV&gt;RV)</i> 3; <i>C. sp. juv. indet. 1</i> ; <i>Darwinula leguminella</i> 5; <i>Stenestroemia fragilis</i> 1.	0.09
DB132	Fairly hard, light-grey, laminated calcareous mudstone. Sandy, ostracod and bivalve shell fragment laminae. Sandy laminae, and sand strings parallel to the bedding. <i>Praeexogyra</i> fragments. Sample:- Gastropoda: <i>Hydrobia</i> 16; <i>Viviparus</i> 2. Ostracoda: <i>Stenestroemia fragilis</i> 29; <i>Orthonotacythere</i> 20; <i>Theriosynoecum striata</i> 10; <i>Cypridea granulosa fasciculata</i> 8; <i>Darwinula leguminella</i> 8; <i>Lycoperocypris</i> (?) 3; <i>Rhinocypris jurassica</i> 1; <i>Mantelliana ?purbeckensis?</i> 1; <i>?Damonella pygmaea?</i> 1.	0.30-0.25	DB124(b)	Medium-grey, calcareous shale, with abundant ostracods. Slight decalcification. Some selenite and pyrite/limonite. Sample:- Gastropoda: <i>Viviparus</i> 7. Ostracoda: <i>Cypridea granulosa fasciculata</i> 21; <i>C. (LV&gt;RV)</i> 8; <i>C. menevensis</i> gp. 5; <i>Damonella ellipsoidea</i> 16; <i>Rhinocypris jurassica</i> 9; <i>Darwinula oblonga</i> 5; <i>D. leguminella</i> 3; <i>Theriosynoecum striata</i> juv..	0.05
DB131	<b>Under Rag:</b> Similar general appearance to DB133. Rough, medium-grey, very sandy, muddy limestones, which grade into very sandy, calcareous mudstones full of grit-sized shell fragments, and into sandy biosparites with brown sparite cement. Abundant bivalves and gastropods (notably abundant <i>Viviparus</i> ). Has a pocketed base similar to DB133. Sample:- Gastropoda: <i>Viviparus</i> 63; <i>?Theodoxus(?) fisheri?</i> 1; indet. 1. Ostracoda: <i>Cypridea sp. indet.</i> 8; <i>Darwinula leguminella</i> 2; <i>D. ?oblonga?</i> 3; <i>Lycoperocypris</i> (?) 3; <i>Stenestroemia fragilis</i> 2; <i>Dicrorrygma</i> sp. B 2; <i>Theriosynoecum striata</i> juv. 1; <i>Rhinocypris jurassica</i> 1; <i>Macrodentina (Dictyocythere)</i> 1; indet. 13.	0.69-0.76	DB124(a)	Light-grey, rough bedded limestones, weathering creamy-brown. Bivalve biosparites, sand-sized shell fragment biosparites. Some micritic developments. Scattered sand grains. Sample:- Gastropoda: <i>?Viviparus?</i> 2; <i>?Hydrobia?</i> 1. Ostracoda: <i>Cypridea granulosa fasciculata</i> 3; <i>C. (LV&gt;RV)</i> 2; <i>Rhinocypris jurassica</i> 2; <i>Darwinula oblonga</i> 1;	0.30



	<i>fasciculata</i> 3; <i>Darwinula leguminella</i> 1. Ostracods are fairly common on the hand specimen.				
DB107	Cream coloured, quite hard well-laminated micrites grading down into softer, rather shaly, argillaceous micrites at the base. Thin seams of ostracod biosparite/biomicroites, and pelsparite/pelmicroites. Bivalves quite common. Ostracods abundant. Sample of softer material at base:- Gastropoda: <i>Hydrobia</i> 5. Ostracoda: <i>Stenestroemia fragilis</i> 20; <i>Dicrorygma</i> sp. indet. 1; <i>Cypridea granulosa fasciculata</i> 14; <i>Orthonotacythere</i> 12; <i>Darwinula leguminella</i> 5; <i>Rhinocypris jurassica</i> 4; ? <i>Damonella pygmaea</i> ? 2; <i>D. ellipsoidea</i> 1; <i>Theriosynoecum striata</i> juv. 1; indet. 1.	0.14			biosparites and biomicroites, with lesser biopelsparites and micrites. Some chert in places. Shell fragments in a micrite/sparite matrix with abundant well-preserved bivalves; gastropods common. Sample:- Gastropoda: <i>Hydrobia</i> 16; <i>Viviparus</i> 12; <i>Ptychostylus harpaeformis</i> 6; <i>Theodoxus(?) fisheri</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 11; <i>Stenestroemia fragilis</i> 1; indet. 1.
			DB100	'Gypsiferous shale' (1963).	0.057
			DB99	Medium-grey, muddy biosparite/micrite. Weathers creamy-brown - much iron staining. Bedding lamination poor. Abundant "Chara", abundant well-preserved bivalves and fragments (showing partial, white, beekitisation). Scattered well-preserved gastropods. Sample:- Gastropoda: <i>Theodoxus(?) fisheri</i> 3; <i>Ptychostylus harpaeformis</i> 3; <i>Hydrobia</i> 2. Ostracoda: scattered <i>Cypridea</i> sp. indet. were seen on the hand specimen.	0.057
DB106	Thin bedded, rather rough, creamy grey/brown biosparites, with lesser biomicroites and micrites. The shell material largely sand-sized; bivalve fragments, ostracods, etc. Bivalves common; gastropods abundant - tending to be concentrated into layers. Faecal pellets, 'Chara', and occasional sand grains. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Viviparus</i> 8; <i>Valvata helicelloides</i> 6; <i>Theodoxus(?) fisheri</i> 1; <i>Ptychostylus harpaeformis</i> 1. Ostracoda: <i>Cypridea granulosa fasciculata</i> 18; <i>Orthonotacythere</i> 11; <i>Darwinula leguminella</i> 5; <i>Fabanella boloniensis</i> 2; <i>Rhinocypris jurassica</i> 1; <i>Damonella pygmaea</i> 1; indet. 4.	0.08			
			DB98	Dark shale (0.09m thick). Lenses of blocky, firm to quite hard, argillaceous micrite (up to 0.20m thick) in places replace the shale, and fit into irregularities of the bed below; very fossiliferous with abundant gastropods, ostracods, and bivalves ("Unio"). The calcite in the matrix is in places silt-sized. Sample of the micrite:- Gastropoda: <i>Planorbis fisheri</i> 29; <i>Viviparus</i> 20; <i>Valvata helicelloides</i> 7; <i>Hydrobia</i> 4. Ostracoda: <i>Cypridea posticalis</i> 3; <i>C. tumescens</i> 3; <i>C. granulosa</i> s.s. 2; <i>Theriosynoecum forbesii</i> 5; <i>Darwinula oblonga</i> 3. Sample of specimen fossils from micrite:- Gastropoda: <i>Viviparus</i> 52; <i>Planorbis fisheri</i> 17; <i>Physa bristovii</i> 1; <i>Valvata helicelloides</i> 1; <i>Proauricula jaccardi</i> 1. Ostracoda: <i>Theriosynoecum forbesii</i> 36; <i>Cypridea tumescens</i> 11; <i>Darwinula oblonga</i> 2; <i>D. leguminella</i> 1; <i>Orthonotacythere</i> 2; <i>Fabanella boloniensis</i> 1; indet. 7.	0.09-0.20
DB105	Medium-grey, (weathering light-grey), evenly, and quite well laminated, calcareous mudstone. Silt-sized calcareous fragments, ostracods and ostracod fragments, in a muddy matrix. Ostracods abundant, poor, somewhat decalcified, and sometimes concentrated into seams. Sample:- Gastropoda: none. Ostracoda: ? <i>Mantelliana purbeckensis</i> ? 8; ? <i>Stenestroemia fragilis</i> ? 6; ? <i>Damonella pygmaea</i> ? 5; ? <i>Fabanella boloniensis</i> ? 1; indet. 3. All the above ostracods were very poorly preserved; ostracods were abundant on the hand specimen.	0.24			
			DB97	<b>Flint Bed (or Cherty Freshwater Bed s.s. (auct.)):</b> Beds of hard, 'flinty', massive creamy-white biomicroite, separated by softer more argillaceous seams, which become more dominant towards the base. Abundant irregular chert nodules, and very abundant selectively silicified fossils (particularly gastropods and ostracods) occur in the biomicroites which also have obscure bedding lamination. "Chara", sponge spicules, etc.. Sample:- Gastropoda: <i>Valvata helicelloides</i> 707; <i>Hydrobia</i> 37; <i>Physa bristovii</i> 6; <i>Planorbis fisheri</i> 3; <i>Viviparus</i> 1. Ostracoda: <i>Cypridea tumescens</i> 14; <i>C. granulosa</i> aff. <i>fasciculata</i> 10; <i>Theriosynoecum forbesii</i> 7; <i>Darwinula leguminella</i> 5.	0.84
DB104	Medium-grey, firm, fairly well-laminated calcareous clays, with abundant crushed and rather poor ostracods, and scattered rotted white bivalve shell fragments. Sample:- Gastropoda: <i>Hydrobia</i> 33; <i>Valvata helicelloides</i> 14; ? <i>Viviparus</i> ? 2. Ostracoda: <i>Rhinocypris jurassica</i> 25; <i>Cypridea granulosa</i> aff. <i>fasciculata</i> 20; <i>C.(LV&gt;RV)</i> 1; <i>Mantelliana purbeckensis</i> 3; <i>Scabriculocypris trapezoides</i> 1; indet. 1.	0.19			
DB103	Medium-grey, massive, very hard biomicroites, with lesser biosparites. Bedding lamination poor, indicated by occasional micrite bands. Weathers creamy brown. Lens-shaped chert nodules near the base. Abundant ostracods and gastropods, scattered bivalves. Footprints on base. Sample:- Gastropoda: <i>Viviparus</i> 71; <i>Valvata helicelloides</i> 55. Ostracoda: <i>Cypridea granulosa</i> aff. <i>fasciculata</i> 9; <i>Theriosynoecum forbesii</i> 6; <i>Darwinula leguminella</i> 2; <i>Rhinocypris jurassica</i> 1; ? <i>Damonella pygmaea</i> ? 1; indet. 1. The following abundances were seen on the hand specimen: <i>Theriosynoecum forbesii</i> - very abundant; <i>Cypridea granulosa</i> gp. - abundant; <i>C. tumescens</i> - abundant; <i>Darwinula leguminella</i> - common.	0.25			
			DB96	Medium-grey, firm shales, interlaminated with bivalve biosparites, and creamy grey micrites. Contains horizons packed with ostracods, others with white bivalve shells (some beekite). Very well developed and quite even bedding lamination. Sample:- Gastropoda: ? <i>Valvata helicelloides</i> ? 1. Ostracoda: <i>Cypridea granulosa</i> s.s. 18; <i>Darwinula leguminella</i> 11; <i>Theriosynoecum forbesii</i> 10; ? <i>Damonella pygmaea</i> ? 1; indet. 3.	0.61
			DB95	Very hard, brittle, light-grey fossiliferous micrite, with a tendency to a subconchoidal fracture. Bedding lamination obscure. Scattered gastropods, abundant ostracods. Sample:- Gastropoda: <i>Viviparus</i> 6. Ostracoda: <i>Darwinula leguminella</i> 4; <i>Cypridea granulosa</i> s.s. 1; <i>Stenestroemia ?decipiens</i> ? 1; indet. 1. Ostracods were abundant on the hand specimen, and included <i>Cypridea</i> sp., <i>Darwinula leguminella</i> , <i>Theriosynoecum</i> sp., and indet. smooth forms.	0.28
DB102	Medium-grey shales with rotted white bivalve and gastropod shells, in places packed with poorly preserved and partially decalcified ostracods and fragments. Much altered pyrite. 'Chara' common, bones, coprolites. Thin, brown/grey sandy ostracod biosparites, with bivalves occur at the base; they have quite well-developed bedding lamination, contain shale wisps, and grade into ostracod shales. Sample:- Gastropoda: <i>Planorbis fisheri</i> 176; <i>Valvata helicelloides</i> 163; <i>Physa bristovii</i> 86; <i>Hydrobia</i> 58; <i>Proauricula jaccardi</i> 7; <i>Ptychostylus harpaeformis</i> 2. Ostracoda: <i>Cypridea granulosa</i> aff. <i>fasciculata</i> 10; <i>Mantelliana purbeckensis</i> 3; <i>Darwinula leguminella</i> 3; <i>Damonella pygmaea</i> 3; indet. 3.	c.0.46			
			DB94	Rather rough, medium-grey, bivalve biosparite. grades above and below into muddy biomicroite. Ostracods abundant; gastropods common. Footprints on base. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Theodoxus(?) fisheri</i> 2. Ostracoda: <i>Fabanella boloniensis</i> 38; <i>Orthonotacythere</i> 28; <i>Lycoperocypris(?)</i> 13; <i>Cypridea posticalis</i> 4; <i>C. granulosa</i> s.s. 3; <i>C. dunkeri</i> 1; <i>C.(LV&gt;RV)</i> 1; <i>Mantelliana purbeckensis</i> 4; <i>Damonella ellipsoidea</i>	0.025
DB101	Cream weathering, rough bedded, rather massive	1.40			

	1; <i>Theriosynoecum forbesii</i> juv. 1; indet. 1.				
DB93	Light grey/green calcareous clay, with rotted white shells. Abundant poorly preserved ostracods. Much limonite. Sample:- Gastropoda: <i>Hydrobia</i> 8; <i>?Viviparus?</i> 4; <i>Theodoxus(?) fisheri</i> 2; <i>?Valvata helicelloides?</i> 1. Ostracoda: <i>Cypridea posticalis</i> 23; <i>C. tumescens</i> 5; <i>C. dunkeri</i> 3; <i>C. sp.</i> indet. 2; <i>Theriosynoecum forbesii</i> 15; <i>Rhinocypris jurassica</i> 13; <i>Damonella ellipsoidea</i> 6; <i>Darwinula leguminella</i> 3; <i>D. oblonga</i> 1; <i>Fabanella boloniensis</i> 2; <i>Orthonotacythere</i> 1.	0.38	MARLY FRESHWATER MEMBER:		
DB92	Dark grey/green shale, with much beef-like, pale blue, fibrous celestine. Much pyrite/limonite, some selenite. Ostracods common, scattered gastropod and bivalve fragments. Sample:- Gastropoda: <i>Viviparus</i> 20. Ostracoda: <i>Cypridea</i> aff. <i>tumescens</i> aff. <i>granulosa</i> 21; <i>C. posticalis</i> 4; <i>Darwinula oblonga</i> 15; <i>D. leguminella</i> 6; <i>Damonella ellipsoidea</i> 2; <i>D. buchaniana</i> 1; <i>Rhinocypris jurassica</i> 2; indet. 2	0.25	DB86	Soft, well-laminated, light/medium grey, calcareous clay/argillaceous micrite, with rotted white shell fragments. Thin bands packed with ostracods and other shelly debris, one of which contains flat, well-rounded, calcareous clay pellets up to 25mm in diameter. Somewhat brown-stained. Gastropods very abundant. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Valvata helicelloides</i> 1. Ostracoda: <i>Cypridea granulosa</i> s.s. 23; <i>C. dunkeri</i> 1; <i>Damonella pygmaea</i> 11; <i>Scabriculocypris trapezoides</i> 7; <i>Darwinula leguminella</i> 7; <i>?Mantelliana purbeckensis?</i> 5; <i>Fabanella boloniensis</i> 1; indet. 1.	0.25
DB91	Rotten white bivalve shells and fragments, and dark grey ostracods in a light-grey calcareous shaly matrix. The bivalve shells show some silicification. Sample:- Gastropoda: <i>Viviparus</i> 6; <i>Hydrobia</i> 6; <i>Ptychostylus harpaeformis</i> 4; <i>Valvata helicelloides</i> 3. Ostracoda: <i>Cypridea posticalis</i> 13; <i>C. dunkeri</i> 12; <i>Theriosynoecum forbesii</i> 17; <i>Darwinula oblonga</i> 6; <i>D. leguminella</i> 2; <i>Lycoperocypris(?)</i> 1.	0.05-0.08	DB85(b)	Soft, medium grey, quite well-laminated calcareous clay/argillaceous micrite grading down into harder argillaceous micrite. Ostracods common. Gastropods very common. Much rotted white shell material. Contains intraclasts of a similar material. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Valvata helicelloides</i> 6. Ostracoda: <i>Cypridea tumescens</i> 11; <i>C. dunkeri</i> 10; <i>C. granulosa</i> s.s. 7; <i>Scabriculocypris trapezoides</i> 19; <i>Rhinocypris jurassica</i> 8; <i>Mantelliana purbeckensis</i> 7; <i>Darwinula leguminella</i> 5; <i>Damonella pygmaea</i> 4; indet. 2.	0.94
DB90	Firm, light-grey, well-laminated, calcareous clay, with rotten, white shell fragments, and abundant fine sand-sized fragments giving a gritty feel to the rock. Dark shaly laminae occur, which material also fills large oblique burrows. Gastropods abundant. 'Chara' common. Some silicification of shell material. Separated from DB91 by a line of chert nodules. Sample:- Gastropoda: <i>Valvata helicelloides</i> 132; <i>Hydrobia</i> 60; <i>Planorbis fisheri</i> 19; <i>Viviparus</i> 11; <i>Physa bristovii</i> 1; <i>?Theodoxus(?) fisheri?</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 23; <i>Cypridea dunkeri</i> 9; <i>C. granulosa</i> s.s. 4; <i>C. posticalis</i> 2; <i>C. tumescens</i> 1; <i>Scabriculocypris trapezoides</i> 10; <i>Fabanella boloniensis</i> 7; <i>Darwinula leguminella</i> 5; <i>?Damonella pygmaea?</i> 4; <i>Theriosynoecum forbesii</i> 2; <i>Rhinocypris jurassica</i> 1.	0.56	DB85(a)	Firm to quite hard, ostracod-rich micrite, with well-preserved bivalves. Gastropods common. Faecal pellets and micrite nodules. Sample:- Gastropoda: <i>Valvata helicelloides</i> 19; <i>Hydrobia</i> 10; <i>Planorbis fisheri</i> 4. Ostracoda: <i>Cypridea granulosa</i> s.s. 12; <i>Orthonotacythere</i> 2; <i>?Rhinocypris jurassica?</i> 1.	0.08
DB89	Very firm to hard, light creamy-grey calcareous clays/argillaceous micrites, with subsidiary biomicrites. Rather rough, blocky appearance, with a gritty feel due to very abundant ostracod carapaces. Chert nodules. Weathers brownish. Thin softer marl partings, and bright green clay laminae. Large burrows (as in DB90) seen. The bed is more of a shelly limestone towards the top. It grades down into the bed below. Gastropods very abundant. Sample:- Gastropoda: <i>Valvata helicelloides</i> 315; <i>Viviparus</i> 173; <i>Hydrobia</i> 160; <i>Physa bristovii</i> 29; <i>Planorbis fisheri</i> 21; <i>Theodoxus(?) fisheri</i> 2. Ostracoda: <i>Cypridea granulosa</i> s.s. 21; <i>C. tumescens</i> 20; <i>C. dunkeri</i> 9; <i>C. posticalis</i> 1; <i>Theriosynoecum forbesii</i> 26; <i>Darwinula leguminella</i> 19; <i>Scabriculocypris trapezoides</i> 5; <i>Damonella pygmaea</i> 3; <i>D. buchaniana</i> 1.	0.46	DB84	Well-laminated, light grey, ostracod-rich, argillaceous micrite, with numerous white shell fragments - bivalves and gastropods. Sample:- Gastropoda: <i>Valvata helicelloides</i> 99; <i>Hydrobia</i> 69; <i>Physa bristovii</i> - few. Ostracoda: <i>Fabanella boloniensis</i> 24; <i>Cypridea granulosa</i> s.s. 14; <i>C. dunkeri</i> 4; <i>C. tumescens</i> 2; <i>Mantelliana purbeckensis</i> 4.	0.11
DB88	Soft, medium-grey, ostracod-rich, calcareous shales, with much selenite/limonite, with thin (up to 12mm) ostracod biosparites and biomicrites, silicified in part. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea granulosa</i> s.s. 14; <i>C. dunkeri</i> 10; <i>Darwinula leguminella</i> 6; <i>Scabriculocypris trapezoides</i> 4; <i>Theriosynoecum forbesii</i> 2; <i>Damonella pygmaea</i> 1; indet. 4.	0.38	DB83	<b>Mammal Bed (auctt.):</b> Dark-grey, shelly, carbonaceous, calcareous clay and shale. Rests on an irregular surface of, and in part grades into the bed below. Gastropods very abundant. Ostracods common. Some silicification. Sample:- Gastropoda: <i>Valvata helicelloides</i> 386; <i>Hydrobia</i> 164; <i>Planorbis fisheri</i> 82; <i>Physa bristovii</i> 36. Ostracoda: <i>Cypridea tumescens</i> 48; <i>C. dunkeri</i> 17; <i>C. granulosa</i> s.s. 10; <i>Scabriculocypris trapezoides</i> 21; <i>Damonella pygmaea</i> 6; <i>Mantelliana purbeckensis</i> 5; <i>Theriosynoecum forbesii</i> 2; <i>Darwinula leguminella</i> 1; <i>Fabanella boloniensis</i> 1; <i>Dicrorrygma</i> sp. indet. 1.	0.48-0.14
DB87	Hard, light grey-brown biosparite with many cream micrite intraclasts. Varies from ostracod-rich to bivalve-rich. Scattered gastropods. Some chert nodules and silicification. Sample:- Gastropoda: <i>Hydrobia</i> 4; <i>Valvata helicelloides</i> 2. Ostracoda: <i>Rhinocypris jurassica</i> 4; <i>Cypridea granulosa</i> s.s. 2; indet. 11. The ostracods were largely <i>Cypridea</i> on the hand specimen.	0.23-0.19	DB82(b)	Hard, light-grey, structureless fossiliferous micrite, with scattered angular dark shale intraclasts - particularly towards the top of the bed. Abundant, poor, often white bivalve shells and fragments. Sample:- Gastropoda: <i>Hydrobia</i> 14; <i>Valvata helicelloides</i> 5; <i>Planorbis fisheri</i> 1. Ostracoda: <i>Cypridea granulosa</i> s.s. 17; <i>Scabriculocypris trapezoides</i> 3; <i>Darwinula leguminella</i> 1.	0.30
			DB82(a)	Hard, light-grey bivalve biosparite/biomicrite. Small irregular pellets common. Large, micritic, rather flat and sub-rounded intraclasts occur. Sample:- Gastropoda: <i>Hydrobia</i> 38; <i>Valvata helicelloides</i> 12; <i>Planorbis fisheri</i> 1; indet. 1. Ostracoda: <i>Cypridea granulosa</i> s.s. 18; <i>C. dunkeri</i> 1; <i>?Mantelliana</i> sp. juv.? 1; indet. 1.	0.05
			DB81	Firm, light-grey argillaceous micrite/calcareous clay, with some lamination. Paler dendritic markings. Ostracods common, gastropods quite abundant. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Valvata helicelloides</i> 31; <i>Viviparus</i> 1. Ostracoda: <i>Cypridea dunkeri</i> 15; <i>C. granulosa</i> s.s. 6; <i>C. tumescens</i> 5; <i>Scabriculocypris trapezoides</i> 9; <i>Mantelliana purbeckensis</i> 3; <i>Fabanella boloniensis</i> 3.	0.91
			DB80	Light creamy-brown and light-grey, fossiliferous micrites. Rather massive, with poor bedding	0.28

	lamination, indicated by laminae rich in fossils and pellets. The micrite bands are separated by bands of softer, more argillaceous, better laminated material. Gastropods abundant. Sample of harder bands:- Gastropoda: <i>Hydrobia</i> 31+. Ostracoda: <i>Cypridea granulosa</i> s.s. 29; <i>C. tumescens</i> 1; <i>Scabriculocypris trapezoides</i> 22; <i>Mantelliana purbeckensis</i> 8; <i>Darwinula leguminella</i> 1; <i>Fabanella boloniensis</i> 1. Sample of softer bands:- Gastropoda: <i>Hydrobia</i> 32. Ostracoda: <i>Cypridea granulosa</i> s.s. 8; <i>C. tumescens</i> 6; <i>C. dunkeri</i> 1; <i>Scabriculocypris trapezoides</i> 6; <i>Darwinula leguminella</i> 2; <i>Fabanella boloniensis</i> 1; <i>Mantelliana purbeckensis</i> 1; indet. 4.	
DB79	Soft, creamy brown/grey, laminated calcareous clay. "Chara" very abundant. Ostracods and gastropods abundant. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Viviparus</i> 9; <i>Theodoxus(?) fisheri</i> 3; <i>Valvata helicelloides</i> 2; <i>Physa bristovii</i> 1. Ostracoda: <i>Cypridea tumescens</i> 18; <i>C. dunkeri</i> 15; <i>C. granulosa</i> s.s. 10; <i>Scabriculocypris trapezoides</i> 12; <i>Darwinula leguminella</i> 4; <i>Fabanella boloniensis</i> 3; <i>Mantelliana purbeckensis</i> 2; <i>Theriosynoecum forbesii</i> 1; <i>Damonella pygmaea</i> 1; <i>Stenestroemia? decipiens?</i> 1; indet. 3.	0.08
DB78	Hard, poorly laminated, light creamy-brown/grey slightly argillaceous micrite. Bedding lamination poor and disturbed, indicated by ostracod-rich laminae. Sample:- Gastropoda: <i>Hydrobia</i> 12. Ostracoda: <i>Scabriculocypris trapezoides</i> 12; <i>Cypridea granulosa</i> s.s. 4; <i>C. tumescens</i> 1; <i>Damonella pygmaea</i> 2; <i>Darwinula leguminella</i> 1; <i>Mantelliana purbeckensis</i> 1; indet. 1.	0.43
DB77(b) & (a)	Fairly soft, creamy-brown, very finely laminated calcareous clays (DB77(b) = 0.10m), grades down into (DB77(a) = 0.05m) soft grey and brown calcareous shales with shell rich bands. Rotted bivalve shells concentrated into layers. Sample of DB77 as a whole:- Gastropoda: <i>Hydrobia</i> 100+; <i>Viviparus?</i> 2; <i>Valvata helicelloides?</i> 1. Ostracoda: <i>Cypridea granulosa</i> s.s. 39; <i>C. dunkeri</i> 1; <i>Scabriculocypris trapezoides</i> 12; <i>Darwinula leguminella</i> 5; <i>Damonella pygmaea</i> 4; <i>Fabanella boloniensis</i> 2; <i>Orthonotacythere</i> 1. Sample of DB77(a) only:- Gastropoda: <i>Hydrobia</i> 57. Ostracoda: <i>Orthonotacythere</i> 33; <i>Scabriculocypris trapezoides</i> 19; <i>Cypridea granulosa</i> s.s. 18; <i>C. tumescens</i> 1; <i>Fabanella boloniensis</i> 10; <i>Mantelliana purbeckensis</i> 9; <i>Damonella pygmaea</i> 4; <i>Darwinula leguminella</i> 2.	0.15
DB76(b)	Hard, rather massive, light-grey (brown-tinged), intraclast-bearing biopelosparite, with discontinuous and eroded layers of fossiliferous, pellet-bearing micrite. The intraclasts are irregular and poorly rounded, mostly of micrite, but some of chert. Sample:- Gastropoda: <i>Hydrobia</i> 73. Ostracoda: <i>Orthonotacythere</i> 53; <i>Cypridea granulosa</i> s.s. 44; <i>Fabanella boloniensis</i> 9; <i>Scabriculocypris trapezoides</i> 3; <i>Mantelliana purbeckensis</i> 2; <i>Damonella pygmaea</i> 1.	0.08
DB76(a)	Softer than DB76(b). Quite massive, light-grey/cream-brown, fossiliferous, intraclast-bearing, pelosparites, pelmicrites and more argillaceous micrite layers. Disturbed bedding lamination. Sample:- Gastropoda: <i>Hydrobia</i> 28; <i>Valvata helicelloides</i> 1. Ostracoda: <i>Cypridea granulosa</i> s.s. 12; <i>C. dunkeri</i> 1; <i>Scabriculocypris trapezoides</i> 6; <i>Fabanella boloniensis</i> 4; <i>Mantelliana purbeckensis</i> 3; <i>Orthonotacythere</i> 1; <i>Schuleridea?</i> 1; indet. 1.	0.05
DB75(b) & (a)	25mm dark brown shale (DB75(b)) grades down into 75mm creamy grey, fairly soft, laminated, calcareous clays with thin (6mm) brown, more shaly bands, (DB75(a)). Sample:- Gastropoda: <i>Hydrobia</i> 40. Ostracoda: <i>Cypridea granulosa</i> s.s. 17; <i>C. dunkeri</i> 1; <i>Fabanella boloniensis</i> 12; <i>Scabriculocypris trapezoides</i> 5; <i>Mantelliana purbeckensis</i> 2.	0.10
	SOFT COCKLE MEMBER:	
DB74	Hard to very firm, light cream/grey (in places mottled), fossiliferous micrite, rather massive with much disturbed bedding lamination. Sample:- Gastropoda: <i>Hydrobia</i> 8; <i>Valvata helicelloides</i> 1; <i>Viviparus?</i> 1. Ostracoda: <i>Cypridea granulosa</i> s.s. 9; <i>Scabriculocypris trapezoides</i> 9; <i>Darwinula leguminella</i> 6; <i>Mantelliana purbeckensis</i> 2; <i>Fabanella boloniensis</i> juv. 1; indet. 5.	0.23
DB73	Fairly firm, light creamy-grey, mottled, argillaceous micrite/calcareous clay. Blocky to poorly laminated. Sample:- Gastropoda: <i>Hydrobia</i> 3. Ostracoda: <i>Cypridea granulosa</i> s.s. 18; <i>C. dunkeri</i> 4; <i>Mantelliana purbeckensis</i> 12; <i>Scabriculocypris trapezoides</i> 3; indet. 2.	0.30
DB72(b)	Hard to very hard, light creamy-grey, massive micrite. Virtually structureless, with very faint signs of disturbed bedding lamination. Sample:- Gastropoda: <i>Hydrobia</i> 2. Ostracoda: <i>Cypridea granulosa</i> s.s. 1; <i>Darwinula leguminella</i> 1; <i>Scabriculocypris trapezoides</i> 1; <i>Fabanella boloniensis?</i> 1; indet. 1.	0.25
DB72(a)	Firm to hard, mottled light-grey, argillaceous micrite. Blocky and rather structureless, breaks into rounded lumps. Sample:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 33; <i>Cypridea granulosa</i> s.s. 4; <i>C. dunkeri</i> 1; <i>C. tumescens</i> 1; <i>Scabriculocypris trapezoides</i> 2; <i>Rhinocypris jurassica</i> 1; <i>Fabanella boloniensis</i> 1; <i>Damonella pygmaea</i> 1; indet. 1.	0.28
DB71	Firm, light bluish grey, rather massive marl with small creamy markings. Has a mottled appearance in places. Some lighter, harder bands. Sample:- Gastropoda: <i>Hydrobia</i> 14. Ostracoda: <i>Mantelliana purbeckensis</i> 19; <i>M. ?sp. juv.?</i> 7; <i>Cypridea</i> aff. <i>tumescens</i> aff. <i>granulosa</i> 18; <i>C. dunkeri</i> 4; <i>Rhinocypris jurassica</i> 5; <i>Scabriculocypris trapezoides</i> 3; <i>Fabanella boloniensis</i> 2; <i>Darwinula leguminella</i> 1.	0.61
DB70(b)	Medium-grey, calcareous clay/argillaceous micrite, with hard, cream micrite bands. These latter are concentrated towards the base, where they are separated by ostracod-rich shaly, calcareous clay layers and layers of pellet, intraclast and fossil rich micrite. Sample:- Gastropoda: <i>Hydrobia</i> 6. Ostracoda: <i>Cypridea</i> aff. <i>tumescens</i> aff. <i>granulosa</i> 18; <i>Cypridea dunkeri</i> 10; <i>Mantelliana purbeckensis</i> 21; <i>Scabriculocypris trapezoides</i> 6; <i>Fabanella boloniensis</i> 3; <i>Macrodentina (Dictyocythere)</i> 1; indet. 1.	0.25
DB70(a)	Firm to quite hard, light creamy-grey to cream micrites. Massive, no apparent bedding lamination, mottled from some penecontemporaneous brecciation. Small mineralised cavities and vertical tubes. One surface of intraclast bearing biomicrite. Sample:- Gastropoda: <i>Hydrobia</i> 2. Ostracoda: <i>Mantelliana purbeckensis</i> 23; <i>Scabriculocypris trapezoides</i> 9; <i>Cypridea</i> aff. <i>tumescens</i> aff. <i>granulosa</i> 1; <i>Fabanella boloniensis</i> 1; <i>Orthonotacythere</i> 1; indet. 1.	c.0.36
DB69	"Hard marls grading down into softer marls" (1963, not exposed in 1964).	0.61 (est.)
DB68	Hard to very hard, massive micrites, with conchoidal fracture. Contains many small to quite large, empty, external moulds of halite crystals, with hopper laminae remaining, in part secondarily mineralised. Bedding lamination poor, much disturbed. Seen for 0.38m in 1964. Sample:- Gastropoda: none. Ostracoda: none.	0.56 (seen in 1963)
DB67	"4 inches [0.25m] of fawn, hard marls with grey shale/marl, grades down into grey shales, marls at base." (1963, not exposed 1964).	0.66
DB66	Very hard, light cream micrite, with abundant large to very large empty moulds of hopper halite crystals, with the growth laminae well-preserved. The crystals get smaller towards the base. Very poor	0.91

	bedding lamination, largely destroyed. Some secondary mineralisation in the moulds, etc. Sample:- Gastropoda: none. Ostracoda: none.							
DB65	Light-grey, firm to quite hard, banded micrite/argillaceous micrites, quite well laminated and with quite well-developed bedding lamination. Faecal pellet laminae, and some laminae packed with fine-grained carbonaceous fragments. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea dunkeri</i> 2; <i>Scabriculocypris trapezoides</i> 1.	c.0.61						
			DB58(a)		Soft to firm, medium-grey, well-laminated calcareous clays/argillaceous micrites, with hard bands up to 25mm thick (usually 6-12mm), very rich in faecal pellets, which in places are pelmicrites and pelsparites. These laminae preserve halite pseudomorphs on both surfaces. Sample:- Gastropoda: <i>Hydrobia</i> 2; <i>Valvata helicelloides</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 26; <i>Scabriculocypris trapezoides</i> 19; <i>Fabanella boloniensis</i> 2.	0.97		
DB64	Hard, thin-bedded, light creamy-grey micrites. Poorly laminated; bedding lamination poor, somewhat disturbed. Small to medium sized empty halite moulds common. Sample:- Gastropoda: none. Ostracoda: none.	c.0.61						
DB63	Medium grey calcareous shales with much selenite and gypsum "sand". Sample:- Gastropoda: <i>Hydrobia</i> 1; <i>Planorbis fisheri</i> 1. Ostracoda: <i>Fabanella boloniensis</i> 11; <i>Cypridea ?granulosa</i> s.s.? 2; <i>Scabriculocypris trapezoides</i> 2; <i>Rhinocypris jurassica</i> 1; indet. 11.	0.46	DB57		Thin bands of light creamy grey (weathers yellowish), very hard pelsparites and pelmicrites separated by soft calcareous clay bands. Halite pseudomorphs in relief on upper and lower limestone surfaces. The faecal pellets show some preferred orientation. Serpulid fragments abundant in places. Bedding lamination good and indicating current activity. Gypsum "sand" at the top of the bed. Bed grades into the bed below. Sample:- Gastropoda: <i>Hydrobia</i> 2; <i>Procerithium</i> 1. Ostracoda: <i>Fabanella boloniensis</i> 24; <i>Orthonotacythere</i> 3; <i>Cypridea dunkeri</i> 1; <i>C. tumescens</i> 1.	c.0.30		
DB62	Firm to quite hard, fairly well-laminated, medium grey, calcareous mudstone/argillaceous micrite, with good even bedding lamination marked out by light coloured, fossiliferous (ostracod-rich) and pelletiferous laminae. Rather more ostracod-rich towards the top. Sample of top of bed:- Gastropoda: <i>Procerithium</i> 26; <i>Valvata helicelloides</i> 1. Ostracoda: <i>Fabanella boloniensis</i> 17; <i>Mantelliana purbeckensis</i> 9.	0.36			Fairly thinly and irregularly bedded, fossiliferous pelsparites and some pelmicrites, separated by thin argillaceous laminae and wisps. One 0.05m bed of limestone in the middle. Some contorted bedding lamination. Grades into the bed below. Serpulids abundant, bivalves common, some gastropods. Some halite pseudomorphs. Sample:- Gastropoda: <i>Hydrobia</i> 17; <i>Procerithium</i> 3. Ostracoda: <i>Fabanella boloniensis</i> 2; <i>Darwinula leguminella</i> 1.	0.46		
DB61	A complex bed of medium-grey, calcareous clays and interbedded thin (mostly c.12mm, but up to 25mm) limestones, which become dominant at the base. The limestones are variously, algal mat micrites, with lobed upper surfaces; argillaceous micrites and micrites packed with faecal pellets, intraclasts (algal micrite etc.), serpulid worm tubes, and poorly preserved bivalves, etc. The limestones are partially silicified, with poor irregular chert nodules developing. Gypsum "sand" seams occur, and silicified lenticular gypsum crystals. Laminae of fine calcareous sandstone-siltstone occur. Sample:- Gastropoda: <i>Hydrobia</i> 3; <i>Valvata helicelloides</i> 1. Ostracoda: none.	0.36	DB56(b)		"Soft marl, with hard marl bands, much gypsum sand" (1964)	0.18		
			DB56(a)		Irregular bed of soft, dark grey, quite well-laminated calcareous clay, with white bleached bands, in two beds separated by gypsum "sand"-rich marl. Sample:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 1.	0.10 (max)		
DB60	Medium-grey, firm, calcareous, evenly laminated, ostracod shales with thin rotten white bivalve-rich laminae with near the base, thin (up to 25mm), blue/grey pelmicrites (faecal pellets) containing abundant intraclasts of thin plate-like micrite, and more nodular-looking algal micrite. These limestones have ripple-marked surfaces. Sample main part of bed:- Gastropoda: <i>Planorbis fisheri</i> 2. Ostracoda: <i>Mantelliana purbeckensis</i> 38; <i>Scabriculocypris trapezoides</i> 24; <i>Fabanella boloniensis</i> juv. 2. Sample of limestones at base:- Gastropoda: <i>Hydrobia</i> 10. Ostracoda: <i>Mantelliana purbeckensis</i> 19; <i>Scabriculocypris trapezoides</i> 7; <i>Cypridea dunkeri</i> 3; <i>C. tumescens</i> 1; <i>Theriosynoecum forbesii</i> 2; <i>Fabanella boloniensis</i> 1; indet. 1.	1.07	DB55(e)		Light-grey, weathers cream and orange/brown stained, hard biosparite/biomicrite grading into pelmicrite. Serpulids abundant, gastropods quite abundant - the shell material shows preferential (white) silicification. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Valvata helicelloides</i> 7; <i>Viviparus</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 13; <i>Fabanella boloniensis</i> 6; indet. 3.	0.012-0.025		
			DB55(d)		Very hard, light creamy-grey, structureless micrite (with very fine pellets), showing a flint-like conchoidal fracture; fairly massive. Sample:- Gastropoda: none. Ostracoda: none.	0.25		
			DB55(c)		"Soft gypsum sand" (1964)	0.23		
			DB55(b)		Hard micrite (25mm) at the top, with mottled light-grey and buff, soft, well-laminated calcareous clay/argillaceous micrite with hard laminae below. Irregular, lens-like chert nodules of silicified lenticular gypsum crystals arranged parallel to the bedding. Sample:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 2; indet. 1.	0.20		
DB59	Hard, massive, creamy-white micrite, with common empty halite moulds, which are often partially secondarily mineralised. Bedding lamination very poor. The bed is better laminated towards the top. Sample:- Gastropoda: none. Ostracoda: none.	0.56	DB55(a)		Very hard, light-grey, laminated micrite. Good, even bedding lamination indicated by lighter laminae rich in moulds after lenticular gypsum crystals. Irregular cavities occur, some probably after nodules of lenticular gypsum crystals. A cream/yellow "marl" flake horizon occurs, in a lenticular gypsum crystal mould matrix. Sample:- Gastropoda: none. Ostracoda: none.	0.23		
DB58(c)	Very largely fairly firm, well-laminated, medium-grey argillaceous micrite/calcareous clay, with very good bedding lamination. Often rich in rather poorly preserved ostracods. Faecal pelmicrites occur as veins and laminae, the latter with halite pseudomorphs. Hard indistinct algal micrite laminae. Irregular cavities (after gypsum nodules (?)) lined with calcite occur. Sample:- Gastropoda: <i>Hydrobia</i> - few. Ostracoda: <i>Scabriculocypris trapezoides</i> 30; <i>Mantelliana purbeckensis</i> 8; indet. 1.	0.20	DB54(b)		Dark-grey, calcareous shales with abundant small secondary selenite crystals, and lens-like irregular chert nodules of silicified lenticular gypsum crystals arranged parallel to the bedding. Sample:- Gastropoda: none. Ostracoda: <i>Fabanella boloniensis</i> 1.	0.23		
DB58(b)	Very hard, brownish-grey, faecal pellet rich, intramicrite and pelmicrite. Intraclasts of micrite flakes, algal micrite lumps and flakes. Crystal-lined	0.032	DB54(a)		Fairly soft, light-green/grey (weathers brown),	0.15		

poorly laminated, argillaceous micrite/calcareous clay. Much silicified gypsum "sand", and small lens-shaped chert nodules of lenticular gypsum crystals. Little selenite. Bands of gypsum "sand".  
 Sample:- Gastropoda: none. Ostracoda: *Fabanella boloniensis* 27.

[DB54(b) and DB54(a) are variable in thickness at the expense of one another.]

DB53 Bands of firm to hard, light-grey (weathers cream) micrites, separated by darker grey, softer more argillaceous bands. The good bedding lamination of the micrites is marked by harder laminae which weather out. Large well-formed untwinned selenite crystals were found. Grades into DB52. Sample:- Gastropoda: none. Ostracoda: *Cypridea granulosa* 0.36

s.s.? 3; indet. 1.  
 DB52 Firm, medium-grey, well-laminated calcareous clay, with good bedding lamination marked by micritic and pelmicritic laminae. Some of the micritic laminae contain moulds of lenticular gypsum crystals. Ostracods abundant in the clays, other fossils are common in the micritic laminae. Sample:- Gastropoda: *Hydrobia* 100+. Ostracoda: *Fabanella boloniensis* 37; *Mantelliana purbeckensis* 22; *Scabriculocypris trapezoides* 13; *Cypridea dunkeri* 2; *C. ?tumescens?* 2; *Lycoperocypris(?)* 2. 0.10

DB51(d) Two beds (DB51(d) (=0.23m) and DB51(b) & (c) & (b) (=0.20m)) of thin irregular, discontinuous limestone bands, with softer more argillaceous partings, separated by a 25mm band (DB51(c)) of soft, medium grey, (weathers creamy brown), laminated 0.46

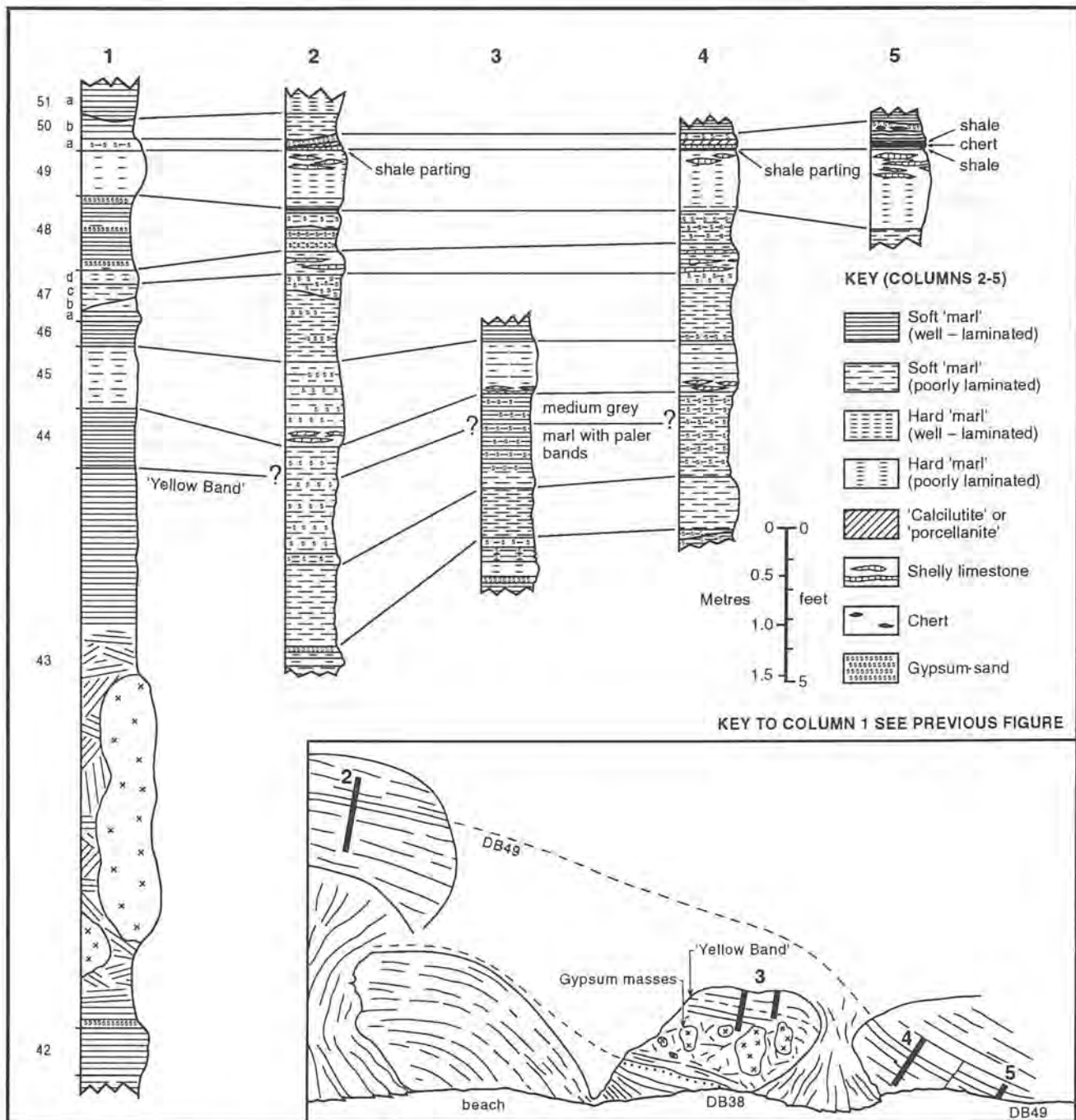


Figure 3: Annotated partial sections of beds in the "Lower" Purbeck Limestone Group. Column 1 is as shown in fig.2 (which see for key to this column) and as described in the text. Columns 2 to 5 are based on more recent measurements; their correlation with column 1 and mutual correlations are shown. The location of these latter columns is shown on the inset sketch of the base of the cliffs.



	<i>Mantelliana purbeckensis</i> 1; <i>Stenestroemia decipiens</i> 1; indet. 1.			<i>dunkeri</i> 1; <i>Mantelliana</i> sp. indet. (fragment) 1; indet. 4.	
DB36(c)	Hard, massive to laminated, light grey micrites, with well-developed and even bedding lamination, marked by thin, discontinuous sandstone laminae, and sandy pelmicrite and bivalve biosparite laminae and bands. Poorly preserved bivalves and much plant debris, insects. Small irregular and lens-shaped cavities, particularly at the base, possibly after gypsum nodules. Sample:- Gastropoda: <i>Hydrobia</i> 2. Ostracoda: <i>Fabanella boloniensis</i> 5; <i>Mantelliana purbeckensis</i> 1.	0.46	DB30	Hard, light creamy-grey, massive and blocky micrite, with better laminated developments. Bedding lamination indicated by fine-grained sandstone laminae. Sample:- Gastropoda: <i>Hydrobia</i> 1. Ostracoda: none.	c.0.61
			DB29	Fairly soft to firm, medium-grey, fairly well-laminated calcareous clay/argillaceous micrite. Many fine grained sandstone laminae, some with halite pseudomorphs. Sample:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 6; <i>Scabriculocypris trapezoides</i> 1; indet. 1.	c.0.61
DB36(b)	Soft, light creamy-grey, well-laminated calcareous clay. Thin sandstone laminae. Sample:- Gastropoda: <i>Hydrobia</i> 36; <i>Valvata helicelloides</i> 6; ? <i>Lymnaea websteri</i> ? 1. Ostracoda: <i>Fabanella boloniensis</i> 62; <i>Orthonotacythere</i> 16; <i>Lycoperocypris</i> (?) 6; <i>Mantelliana purbeckensis</i> 4; <i>Cypridea ?tumescens</i> ? 2.	0.025	DB28	Light creamy-grey to creamy-brown, hard to very hard micrite bands, separated by softer, laminated, more argillaceous partings. The micrites are thinly bedded and are quite well and evenly laminated, and show good bedding lamination marked by sandy, sandy pelmicrite and pelmicrite laminae. In the latter the pellets are external moulds. Some lenticular gypsum (?) crystal moulds, and much plant debris. Irregular calcite-lined cavities (after gypsum nodules) occur associated with disruption of the bedding, pseudobrecciation and intramicrite. Sample:- Gastropoda: none. Ostracoda: <i>Lycoperocypris</i> (?) 1; <i>Fabanella boloniensis</i> 1; indet. 1.	0.51
DB36(a)	Rough, hard limestone. Light creamy-grey, very hard micrites, pelmicrites, and biomicrites. This is partially fractured and the cavities filled with biosparite containing ostracods, gastropods and bivalves. Rather massive, shows good lamination, and some softer, better-laminated micrites occur. Irregular algal structures. Many calcite-lined cavities after gypsum nodules. Some silicification. <i>Archaeoniscus</i> Sample:- Gastropoda: <i>Hydrobia</i> 41; <i>Valvata helicelloides</i> 7. Ostracoda: <i>Fabanella boloniensis</i> 18; <i>Mantelliana purbeckensis</i> 6; <i>Lycoperocypris</i> (?) 3.	0.18	DB27	Fairly firm, well-laminated, medium blue/grey calcareous clay with much selenite, with thin, lighter-coloured more silty laminae. Sample:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 6; <i>Lycoperocypris</i> (?) 2; <i>Cypridea dunkeri</i> 1; <i>Scabriculocypris trapezoides</i> 1; <i>Fabanella boloniensis</i> 1; indet. 4.	0.25
DB35	Firm, very well-laminated calcareous clay, with abundant ostracods and poor bivalves, concentrated into laminae. In the middle of the bed the calcareous clay is softer, darker, and more shaly, and is rich in ostracods and shell fragments, and contains some selenite. Sample of top of bed:- Gastropoda: <i>Valvata helicelloides</i> 2. Ostracoda: <i>Fabanella boloniensis</i> 44; <i>Lycoperocypris</i> (?) 19; <i>Mantelliana purbeckensis</i> 7; <i>Scabriculocypris trapezoides</i> 1. Sample of softer middle of bed:- Gastropoda: <i>Hydrobia</i> 1; <i>Valvata helicelloides</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 42; <i>Fabanella boloniensis</i> 25; <i>Lycoperocypris</i> (?) 9.	0.48	DB26	Hard, light creamy-grey, rather blocky micrite, with bedding lamination well shown by laminae rich in faecal pellets, plant fragments, and fine silt-sized quartz (?) grains. Sample:- Gastropoda: none. Ostracoda: <i>Fabanella boloniensis</i> 1.	0.25
			DB25	Fairly firm, light blue/grey, laminated, but fairly blocky, calcareous clay, with thin laminae rich in silt/fine sand, faecal pellets and plant debris. Much selenite. Sample:- Gastropoda: <i>Hydrobia</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 10; <i>Cypridea</i> aff. <i>tumescens</i> aff. <i>granulosa</i> 4; <i>C. dunkeri</i> 1; <i>Scabriculocypris trapezoides</i> 3; <i>Stenestroemia decipiens</i> 3; <i>Fabanella boloniensis</i> 1.	0.61
DB34	Hard, light-grey (with thick creamy brown weathering zone), massive and rather fractured looking micrite. Scattered poor bivalves. Sample:- Gastropoda: none. Ostracoda: none.	0.30	DB24	Hard to very hard, light grey, quite massive micrite. Weathers creamy-grey with brown staining. Quite good bedding lamination marked by silty and pellet-rich laminae. Many cavities after nodular gypsum, often concentrated along bedding planes. Much selenite in cavities and along fracture surfaces. Sample:- Gastropoda: none. Ostracoda: none.	0.23
'CYPRIS' FREESTONES MEMBER(?):					
DB33	Firm, medium-grey, well-laminated calcareous clay, with abundant poorly preserved ostracods and some selenite. Sample:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 22; <i>Damonella buchaniensis</i> 2; ? <i>D. pygmaea</i> ? 1.	0.25	DB23	Soft to firm, medium- to light-grey, well- to fairly well-laminated, calcareous clay to argillaceous micrite. Much selenite. Many thin sandstone laminae. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea ?tumescens</i> ? 2; ? <i>Damonella ellipsoidea</i> ? 1; ? <i>Lycoperocypris</i> (?)? 1.	0.13
DB32	Distinctive, very firm to hard, light-grey (weathering creamy-white), blocky micrite. Thin silty laminae. Sample:- Gastropoda: <i>Hydrobia</i> 1. Ostracoda: indet. 1.	0.11	DB22	Very hard, compact, massive, medium-grey micrite, with conchoidal fracture. Bedding lamination poor; scattered silty, pellet-rich, plant fragment rich laminae. Calcite-lined cavities after gypsum nodules occur. Sample:- Gastropoda: none. Ostracoda: indet. 1.	0.13
DB31(c)	Fairly hard, well and evenly laminated micrite with a rather silty feel. Rather more massive towards the top. Abundant carbonaceous fragments. Much selenite coating on fractures, etc.. Fine sandstone laminae. Sample: Gastropoda: <i>Valvata helicelloides</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 10; indet. 1.	0.56	DB21	Soft, medium-grey, calcareous clay, poorly laminated, weathers pale brownish grey. Much selenite, apparently in layers. Sample:- Gastropoda: none. Ostracoda: none.	0.08
DB31(b)	Distinctive. Closely packed, medium-grey micrite and some algal mat intraclast flakes, loosely cemented with micrite (?). Highly brown-stained along fractures. Sample:- Gastropoda: none. Ostracoda: none.	0.025	DB20	Very hard, light-grey, massive micrite, with a conchoidal fracture, and quite common selenite- and calcite-lined cavities after gypsum nodules. Virtually structureless, but occasional laminae of very fine detritus. Sample:- Gastropoda: none. Ostracoda: none.	0.10
DB31(a)	Firm, light-grey, quite well-laminated calcareous clay. Much broken. Contains some selenite, some quartz sand, and some gypsum pseudomorphs. Sample:- Gastropoda: none. Ostracoda: <i>Cypridea</i>	0.30	DB19(c)	Soft, medium grey, calcareous clay - much broken, with very abundant selenite and large hand	0.18

	specimen sized gypsum masses. Thin calcite beef and some celestine(?) occur. Ostracods very poorly preserved. Sample:- Gastropoda: none. Ostracoda: indet. 8.				
DB19(b)	Firm, light-grey (weathers cream) calcareous clays/argillaceous micrite - rather broken. Medium-grey, shaly intercalations, and harder fractured and broken micrite bands. Much selenite occurs as crystals and coatings on fracture surfaces. Scattered indeterminate ostracods. Sample:- Gastropoda: none. Ostracoda: indet. 2.	0.23			
DB19(a)	"Harder marl band" (1964).	0.025			
DB18	Firm to hard, light creamy-grey, quite well laminated, micrite, fossiliferous with abundant poor bivalve casts in layers. Towards the base this passes into medium-grey, soft, crumbly calcareous shales, packed with poorly preserved, squashed ostracods, and containing much selenite. Sample of upper part of bed:- Gastropoda: <i>Hydrobia</i> 100; <i>Valvata helicelloides</i> 2. Ostracoda: <i>Mantelliana purbeckensis</i> 36; <i>Stenestroemia fragilis</i> 24; <i>Lycoperocypris</i> (?) 15. Sample of shales at base of bed:- Gastropoda: <i>Hydrobia</i> 37. Ostracoda: <i>Mantelliana purbeckensis</i> 48; <i>Fababella boloniensis</i> 3; indet. 4.	0.91			
DB17	The top half of this bed consists of very hard light-to medium-grey, rather massive micrite bands (0.30-0.45m thick) separated by laminated softer, more argillaceous layers (c.0.08m thick). The hard micrites show penecontemporaneous brecciation, with a matrix of fine-grained calcareous sandstone, with pellet and intraclast bearing developments. The bottom half of the bed is better laminated, consisting of thin (c.12mm) layers of laminated, sandy ostracod biosparites with softer, argillaceous micrite partings. Both show good bedding lamination. Sample 0.61m from top of bed:- Gastropoda: none. Ostracoda: none. Sample 0.46m from base of bed:- Gastropoda: <i>Hydrobia</i> 21; <i>Valvata helicelloides</i> 1. Ostracoda: <i>Mantelliana purbeckensis</i> 17; <i>Fababella boloniensis</i> 8. Ostracods extremely abundant. [The two samples were collected from two separate exposures of what was deduced to be one bed.]	c.2.44			
DB16(b)	Fairly soft to very hard, light-grey clay to micrite. Rather broken-looking, with poor lamination. Weathers cream and brown. Thin sandstone laminae with halite pseudomorphs. Sample:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 2; <i>Fababella boloniensis</i> 2; <i>Lycoperocypris</i> (?) 1; indet. 4.	0.08			
DB16(a)	Fairly firm, light creamy-grey, poorly-laminated and rather blocky calcareous clay/argillaceous micrite, with bedding lamination picked out by thin sandstone laminae with halite pseudomorphs. Much selenite. Sample:- Gastropoda: none. Ostracoda: <i>Fababella boloniensis</i> 4; <i>Mantelliana purbeckensis</i> 4; <i>Scabriculocypris trapezoides</i> 2; indet. 7.	0.46			
DB15(f) & (e) & (d) & (c)	"f. Fairly soft buff/brown marls, fairly blocky, weathers yellow. Grades down into: "e Soft dark grey/brown shaly marl. "d Light grey blocky marl. "c Dark grey/brown shaly marl." (1964) A sample representing all of these subdivisions, consisted of variously laminated light-grey and cream, fairly firm to firm argillaceous micrites/calcareous clays, mostly with good bedding lamination. Thin sandstone laminae. It yielded:- Gastropoda: none. Ostracoda: <i>Fababella boloniensis</i> 10; <i>Mantelliana purbeckensis</i> 3; indet. 4.	0.13 0.28 0.08 0.10			
DB15(b)	Firm to quite hard, creamy blocky micrite showing good bedding lamination, picked out by numerous and discontinuous detritus-rich (sand grains, pellets, etc.), iron-stained laminae and seams up to 6mm thick. Some crystal-lined cavities. Sample:- Gastropoda: none. Ostracoda: <i>Fababella boloniensis</i> 18; <i>Mantelliana purbeckensis</i> 5;	0.25			
			DB15(a)	indet. 5. Mostly soft, medium-grey, laminated calcareous clay, with thin seams and bands of harder, paler material, consisting in part of calcareous sandstones, and crumbly limestones with quartz-filled cavities. Weathers yellow/brown. Sample:- Gastropoda: <i>Hydrobia</i> 2. Ostracoda: <i>Fababella boloniensis</i> 16; <i>Scabriculocypris trapezoides</i> 3; indet. 1.	0.30
			DB14	Thin-bedded, hard, greyish-brown limestones, with thin softer argillaceous micrite partings. The limestones consist largely of sand-sized shell fragments, some quartz sand grains, fine irregular pelley fragments, and some micritic flakes, in a rather sparitic cement. Some micrite laminae, and some algal micrite. Good bedding lamination with indications of ripple bedding. Many irregular, calcite-lined cavities. Occasional laminae rich in gastropods. Sample:- Gastropoda: <i>Hydrobia</i> 39; <i>Valvata helicelloides</i> 8. Ostracoda: <i>Fababella boloniensis</i> 3; <i>Mantelliana purbeckensis</i> 2.	0.51
			DB13(b)	"Hard shaly, grey-brown marl" (1964).	0.28
			DB13(a)	Quite hard, pale grey/brown, blocky to quite well laminated argillaceous micrite/calcareous clay. Very smooth feel, with occasional layers rich in poorly preserved ostracods and bivalves, together with biomicrite and pelmicrite laminae. Sample:- Gastropoda: <i>Hydrobia</i> 19. Ostracoda: <i>Fababella boloniensis</i> 38; <i>Mantelliana purbeckensis</i> 24.	0.18
			DB12	Quite, hard, well-laminated, argillaceous micrite, with thin (up to 0.05m) ripple bedded, sparite cemented calcarenites and calcareous sandstones. One prominent 0.05m band of this at the top of the bed, and another, with numerous irregular, calcite-, and white chalcedony-lined cavities towards the middle of the bed. Halite pseudomorphs common. The bottom of the bed consists of fairly soft, medium-grey (weathering brown), well-laminated calcareous clay, with whitish seams and laminae of poorly cemented calcite sand. Sample of higher part of bed:- Gastropoda: none. Ostracoda: <i>Mantelliana purbeckensis</i> 8; <i>Fababella boloniensis</i> 2; <i>Macrodentina (Dictyocythere)</i> 1. Sample of base of bed:- Gastropoda: <i>Hydrobia</i> 3; ? <i>Valvata helicelloides</i> ? 1. Ostracoda: <i>Mantelliana purbeckensis</i> 34; <i>Scabriculocypris trapezoides</i> 20; <i>Cypridea dunkeri</i> 2; <i>C. aff. tumescens aff. granulosa</i> 1; <i>Rhinocypris jurassica</i> 2; <i>Fababella boloniensis</i> 1; indet. 19.	c.0.69
			DB11(c)	"Thin-bedded, well-laminated limestones, contains ostracods" (1964).	0.15
			DB11(b)	"Shale parting" (1964).	0.05
			DB11(a)	Hard, thin-bedded, and quite well-laminated, pale creamy-brown/grey biomicrites, and fossiliferous pelisparites (small irregular pellets). Show ripple bedding, and good bedding lamination. Abundant ostracods. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Valvata helicelloides</i> 11. Ostracoda: <i>Mantelliana purbeckensis</i> 38; <i>Scabriculocypris trapezoides</i> 21; " <i>Cytheropteron</i> " sp. A 17; <i>Fababella boloniensis</i> 1.	1.37
			DB10	Essentially the same lithologies as DB11, consisting of brownish, ripple bedded ostracod biomicrites, and micrites. Sample:- Gastropoda: <i>Hydrobia</i> 100+; <i>Valvata helicelloides</i> 7. Ostracoda: <i>Mantelliana purbeckensis</i> 26; <i>Scabriculocypris trapezoides</i> 4; <i>Fababella boloniensis</i> 1; indet. 1.	2.13
			<b>BROKEN BEDS MEMBER:</b> At or below beach level: 'partially decalcified breccia'.		

### 5. Discussion:

The two faults just to the north of the Zig-Zag Path terminate the northern part of the Durlston Bay section as described here, by bringing down successively younger beds to beach level. Just to the south of the southernmost fault, beds from the upper half of the 'Middle' Purbeck Group again appear at beach level. Exposures in the southern part of the Bay are for the most part rather poor, and difficult to follow, although the Cinder Member (equivalent to DB111 in the above description) again forms a prominent reef, and the 'Middle' Purbeck Group below this are well displayed. However, in the vicinity of Durlston Head (Grid Ref.: SY036 773) good cliff exposures reappear, and the lowest beds of the Purbeck Group are seen resting on the Portland Limestone Formation of the Portland Group. The exact relationships are somewhat confused by a complicated set of faults. West (1960) has described the succession and relationships of these beds, and the reader is referred to his account for details. West (1975) gave a new version of the log of the lowest Purbeck Group beds, with new bed numbers, and with new sedimentological information. However, the two versions are

difficult to relate to one another in detail. According to West's (1960) section (here reproduced as fig.4) some 28 feet (=8.5 metres) of strata separate the top of the Portland Limestone Formation from a prominent four foot (1.2 metres) bed of limestone, which he regards as the basal unit of the "Cypris" Freestones Member.

There has been some doubt about the stratigraphical relationship between the basal Purbeck Group seen at Durlston Head and the lowest beds seen in the northern part of the Durlston Bay section. Bed DB10, described above, has been regarded as equivalent to the Broken Beds Member at Durlston Head (see Arkell, 1947, p.138), but the limestone fragments are large and retain all their original lithological characteristics, and are quite unlike the evaporite-replacive limestones of the Broken Beds Member at Durlston Head (see West 1975). In addition, the limestones of DB10 are of typical 'Cypris' Freestones Member lithology. For one short period when the main fieldwork for this study was being done, there was a small exposure at the base of the cliff, just north of the northerly of the two Zig-Zag Path faults and below bed DB10, which more closely resembled the 'partially decalcified breccia' described by West (1960, p.394)

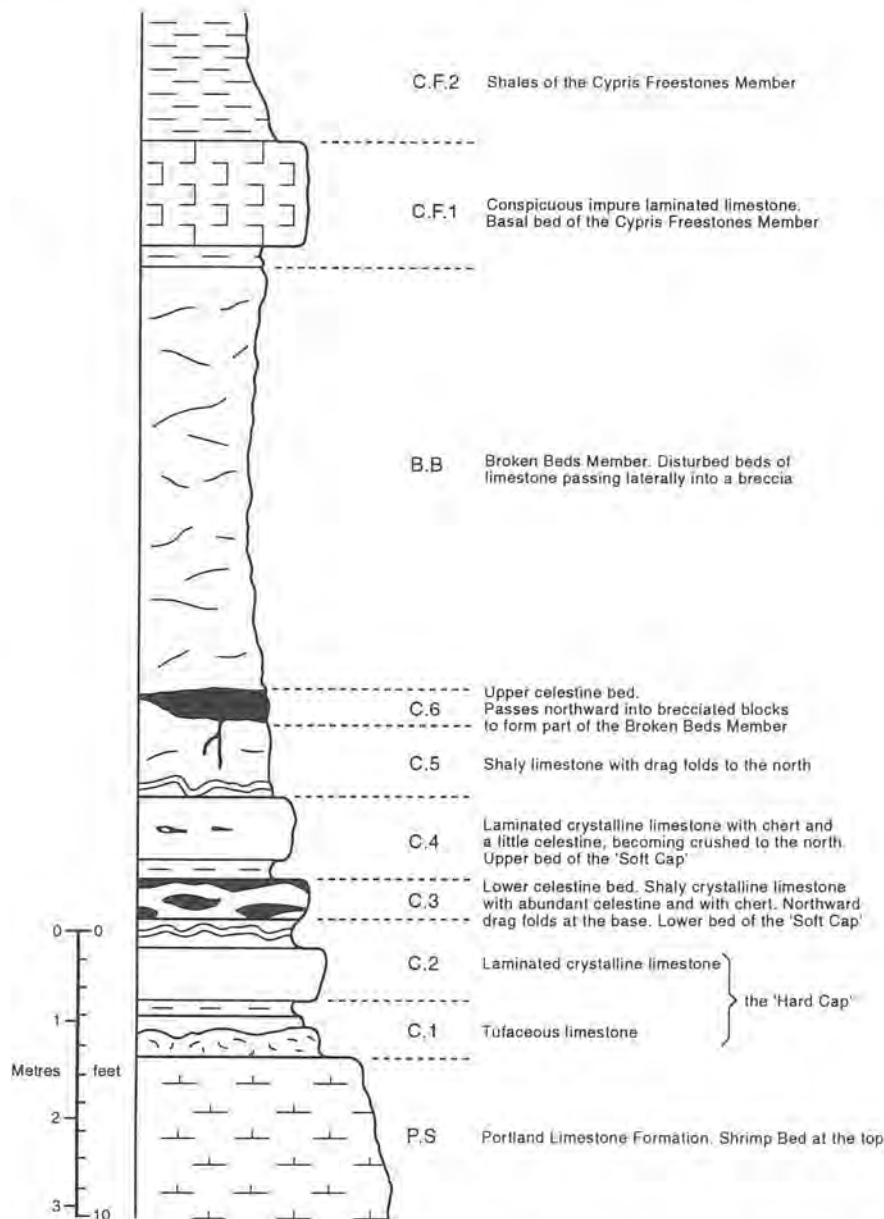


Figure 4: Annotated vertical section of the basal beds of the Purbeck Group at Durlston Head. (Redrawn from West, 1960, fig.1, p.393).

from the Broken Beds Member of Durlston Head. It seems certain that DB10 (as well as DB11, etc.) should be placed in the 'Cypris' Freestones Member, and that the true equivalents of the Durlston Head Broken Beds Member occur at and below beach level at this point. It is therefore expected that a further 8.5 metres of strata lie between DB10 and the top of the Portland Group.

The section in the immediate vicinity of Peveril Point is complicated by a series of intense folds and minor faults. A detailed account of the structural geology of this part of the section is given by Cosgrove and Hearn (1966). From the point of view of the section seen in the cliffs, and described above, the beds up to and including DB241 are relatively undisturbed and can be followed with ease. However, the higher beds can only be seen where they are highly disturbed, and are difficult to relate to the rest of the section. Further, there is the possibility of confusing the two main *Viviparus* limestones (beds DB241 and DB244, which are equivalent to Cosgrove and Hearn's Red and Blue Marbles respectively). There are indeed lithological differences, as is shown in the description, and differences in the composition of the *Cypridea* faunas between the two horizons can be used as a further check.

In the main body of the description, some reference is made to the difficulties encountered in establishing a satisfactory 'Lower' Purbeck Group succession in Durlston Bay, and in particular that portion of the section between DB49 and DB43 inclusive proved particularly difficult. The description given above is based on samples and measurements taken in Spring 1964. However, during the Spring of 1966, further measurements and observations were made on this part of the section, and are here given in the form of annotated partial sections in fig. 3. In this diagram a sketch of the cliff face is given to show the general location of these various partial sections, and the correlation of the various beds with the units recognised in the main section is given. It is clear from these partial sections that there is considerable lateral variation in both facies and thickness of the various units, a feature adding to the complexity of this part of the section.

Using the author's original imperial measurements, the cumulative thickness of the beds DB10 to DB244 inclusive is 359 feet 1 inch equivalent to 109.7 metres. This figure includes an estimate of the thickness of bed DB242. If one allows 5 feet (=1.5 metres) for the Purbeck Group above DB244 (from Bristow in Damon (1884)) and 28 feet (=8.5 metres) for the beds below DB10 (see previous discussion), the total thickness becomes 392 feet 1 inch or 119.8 metres, which compares with 387+ feet (=118.0+ metres) obtained from Bristow's measurements (Anderson 1958).

The ostracod zonal scheme has been discussed above. The actual limits shown in fig. 2 (see also table 2) are based on the author's work. Discrepancies with Anderson 1971 and 1985 respectively are also shown.

The base of the *Cypridea setina* Zone is taken to correspond to the base of DB220 (the Broken Shell Limestone Member), which is the start of the main part of the range of *C. setina*. Scattered occurrences of the zonal index occur down to DB201 in the Chief Beef Member, and this may correspond to Anderson's (1985) lowered limit. The boundary adopted here corresponds to that of Anderson (1971).

The top of the *C. granulosa fasciculata* Zone is taken to be the highest occurrence of the index subspecies, i.e. bed DB142. Anderson's 1971 and 1985 are slightly higher and lower respectively. The base of this Zone is taken at the base of DB97, the bed in which *C. granulosa* aff. *fasciculata* first appears, and this seems to correspond to Anderson's (1971) boundary.

The lowest definite record of *C. granulosa granulosa* is in bed DB72a, and this horizon is taken as the base of the Zone for which this subspecies is the index. This limit is somewhat lower than that taken by Anderson 1971 and (presumably) 1985, and is below where the 'Lower'/'Middle' Purbeck Group boundary is taken.

The position of the 'Lower'/'Middle' and 'Middle'/'Upper' Purbeck Group boundaries are shown in fig. 2. The higher of the two is non-controversial. However, Fisher (1856), Strahan (1898), and Arkell (1933, 1947, 1956) have placed the 'Lower'/'Middle' Purbeck Group boundary at the base of the Mammal Bed (bed DB83). There are no good faunal or lithological reasons for placing the boundary here, it is merely convenient in that DB83 is readily recognisable in the field in Durlston Bay (although not elsewhere). It would seem better to place this junction at a lower level to accommodate both lithological and faunal features of the succession, and it seems wise to choose the base of the Marly Freshwater Member (base of bed DB75a) as is given in Bristow's section in Damon (1884), rather than the present known lower limit of *Cypridea granulosa granulosa* (bed DB72a). Brown (1964) suggested there are petrographic reasons for drawing the boundary at the base of the Cherty Freshwater Member, and he included the Marly Freshwater Member with the Soft Cockle Member in the 'Lower' Purbeck. Bristow (1857) also did this.

The division of the succession into Members is based on Bristow in Damon (1884). In Bristow's description, the Hard Cockle Member probably correspond to the author's beds DB30 to DB38b inclusive. The higher limits used here (beds DB34 to DB42 inclusive), although left doubtful, better reflect the distribution of the fossils. Similarly, the upper limit of the Scallop Member given here is probably rather higher than that intended by Bristow (*op cit.*). It seems that beds DB152 and DB153 (the top beds of the Scallop Member as here defined) are equivalent to Bristow's beds 59 and 60 (pars) respectively, which are the basal beds of his Corbula Member. The two sections are difficult to correlate at this point. The occurrence of '*Chlamys*' and '*Praeexogyra*' in DB153 is justification for this move.

## 6. Acknowledgments:

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## 7. References:

- Allen, P., and Wimbledon, W.A., 1991, 'Correlation of NW European Purbeck-Wealden (nonmarine Lower Cretaceous) as seen from the English type-areas', *Cretaceous Research*, Vol. 12, pp.511-526.
- Anderson, F.W., 1940, 'Ostracod zones in the Wealden and Purbeck Beds', *Advnt. Sci., Lond.*, Vol. 1(2), p.259.
- Anderson, F.W., 1958, in Wilson, V., Welch, F.B.A., Robbie, J.A., and Green, G.W., *Geology of the country around Bridport and Yeovil*, Mem. geol. Surv. GB, HMSO, pp.118-120.
- Anderson, F.W., 1962, 'Correlation of the Upper Purbeck Beds of England and the German Wealden', *Liverpool and Manchester geol. J.*, Vol. 3, pp.21-32.
- Anderson, F.W., 1971, in Anderson, F.W., and Bazley, R.A.B., 'The Purbeck Beds of the Weald (England)', *Bull. geol. Surv. GB*, Vol. 34, pp.1-74.
- Anderson, F.W., 1985, 'Ostracod faunas of the Purbeck and Wealden', *J. Micropalaeont.*, Vol. 4, pp.1-68.
- Arkell, W.J., 1933, *The Jurassic System in Great Britain*, Oxford, xii, 681pp., 41pl.
- Arkell, W.J., 1941, 'The gastropods of the Purbeck Beds', *Q.Jl. geol. Soc. Lond.*, Vol.97, pp.79-128.
- Arkell, W.J., 1947, *The geology of the country around Weymouth, Swanage, Corfe and Lulworth*, Mem. geol. Surv. GB, xii, 386pp., 19pl.
- Arkell, W.J., 1956, *The Jurassic geology of the world*, Edinburgh.
- Austen, J.H., 1852, *A guide to the geology of the Isle of Purbeck, and the south-west coast of Hampshire*, Blandford, 20pp.
- Barker, D., 1966, 'Ostracoda from the Portland and Purbeck Beds of the Aylesbury district', *Bull. Br. Mus. nat. Hist., Geol.*, Vol. 11(9), pp.459-487.
- Bristow, H.W., 1857, 'Comparative vertical sections of the Purbeck strata of Dorsetshire no.1', *Geol. Surv. GB, Vertical Sections no.22.*
- Brown, P.R., 1964, 'Petrography and origin of some Upper Jurassic beds

- from Dorset, England', *J. Sediment. Petrol.*, Vol. 34, pp.254-269.
- Casey, R., 1963, 'The dawn of the Cretaceous period in Britain', *Bull. S. E. Un. Scient. Socs.*, Vol. 117, pp.1-15.
- Clements, R.G., 1969, *Annotated cumulative section of the Purbeck Beds between Peveril Point and the Zig-Zag Path, Durlston Bay, in Torrens, H.S., ed., International Field Symposium on the British Jurassic, Excursion No.1, Guide for Dorset and south Somerset, University of Keele, A35.*
- Clements, R.G., 1973, *A study of certain non-marine Gastropoda from the Purbeck Beds of England*, unpublished PhD Thesis, University of Hull, 601pp.
- Cosgrove, M.E., and Hearn, E.W., 1966, 'Structures in the Upper Purbeck Beds at Peveril Point, Swanage, Dorset', *Geol. Mag.*, Vol 103(6), pp.498-507.
- Damon, R., 1884, *Geology of Weymouth, Portland, and the coast of Dorsetshire, from Swanage to Bridport-on-Sea; with natural history and archaeological notes. New and enlarged edition.* E. Stanford, London, xii, 250pp.
- El-Shahat, A., and West, I.M., 1983, 'Early and late lithification of aragonitic bivalve beds in the Purbeck Formation (Upper Jurassic - Lower Cretaceous) of southern England', *Sediment. Geol.*, Vol. 35, pp.15-41.
- Ensom, P.C., 1985, 'An annotated section of the Purbeck Limestone Formation at Worbarrow Tout, Dorset', *Dorset Proceedings*, Vol. 106, pp87-91.
- Fisher, O., 1856, 'On the Purbeck strata of Dorsetshire', *Trans. Cambridge Phil. Soc.*, Vol. 9, pp.555-581.
- House, M.R., 1989, *Geology of the Dorset Coast*, Geol. Assoc. Guide, x, 162pp.
- Huckriede, R., 1967, 'Molluskenfaunen mit limnischen und brackischen Elementen aus Jura, Serpulit und Wealden NW-Deutschlands und ihre palaeogeographische Bedeutung', *Beih. geol. Jb.*, Vol. 67, 263pp.
- Jones, T.R., 1885, 'On the Ostracoda of the Purbeck Formation; with notes on the Wealden species', *Q. Jl. geol. Soc. Lond.*, Vol. 50, pp.156-168.
- Lyell, C., 1855, *Manual of Elementary Geology*, 5th Edition, London.
- Melville, R.V., and Freshney, E.C., 1982, *The Hampshire Basin and adjoining areas*, Inst. geol. Scis., HMSO, 146pp.
- Morter, A.A., 1984, 'Purbeck-Wealden Beds Mollusca and their relationship to ostracod biostratigraphy, stratigraphical correlation and palaeoecology in the Weald and adjacent areas', *Proc. Geol. Assoc.*, Vol. 95, pp.217-234.
- Nunn, J.F., 1992, 'A geological map of Purbeck Beds in the northern part of Durlston Bay', *Dorset Proceedings*, Vol.113, pp.145-148.
- Pinto, I.D., and Sanguinetti, Y.I., 1962, 'A complete revision of the genera *Bisulcocypris* and *Theriosynoeum* (Ostracoda) with the world geographical and stratigraphical distribution', *Bolm. Esc. Geol. Uni. Porto Alegre, Publ. Esp.*, Vol. 4, pp.1-165.
- Strahan, A., 1898, *The geology of the Isle of Purbeck and Weymouth*, Mem. geol. Surv. Engl. and Wales, xi, 278pp, 11pl.
- Sylvester-Bradley, P.C., 1949, 'The ostracod genus *Cypridea* and the zones of the Upper and Middle Purbeckian', *Proc. Geol. Assoc.*, Vol. 60, pp.125-153.
- Sylvester-Bradley, P.C., 1962, 'Type sections of Bathonian, Portlandian and Purbeckian Stages, and the problem of the Jurassic-Cretaceous boundary', *Colloque du Jurassique, Luxembourg*, pp.259-263.
- Townson, W.G., 1975, 'Lithostratigraphy and deposition of the type Portlandian', *Jl. geol. Soc. Lond.*, Vol. 131(6), pp.619-638.
- Webster, T., 1826, 'Observations on the Purbeck and Portland beds', *Trans. geol. Soc. Lond.*, Series 2, Vol. 2(1), pp.37-44.
- West, I.M., 1960, 'On the occurrence of celestine in the Caps and Broken Beds at Durlston Head, Dorset', *Proc. Geol. Assoc.*, Vol. 71(4), pp.391-401.
- West, I.M., 1975, 'Evaporites and associated sediments of the basal Purbeck Formation (Upper Jurassic) of Dorset', *Proc. Geol. Assoc.*, Vol. 86(2), pp.205-225.
- Wimbledon, W.A., and Hunt, C.O., 1983, 'The Portland-Purbeck junction (Portlandian-Berriasian) in the Weald, and correlation of latest Jurassic - early Cretaceous rocks in southern England', *Geol. Mag.*, Vol. 120(3), pp.267-280.
- Wolburg, J., 1959, 'Die Cyprideen des nw-deutschen Wealden', *Senckenberg. leth.*, Vol. 40, pp.223-315.



# Recent work of the British Geological Survey in Dorset

C.R.BRISTOW

## Abstract

A summary is given of recent publications, technical reports, and unpublished reports on the geology of parts of Dorset by the British Geological Survey.

## INTRODUCTION

Since 1969, Dorset has had a complete cover of New Series geological maps at the 1" or 1:50 000 scale (Figure 1) (Wincanton (297), Yeovil (312), Shaftesbury (313), Ringwood (314), Sidmouth (326), Bridport (327), Dorchester (328), Bournemouth (329), Fleet and Weymouth (341 and 342) and Swanage (343)). With the exception of the Bridport and Yeovil sheets, all the mapping for the above sheets by Survey Officers<sup>1</sup> was originally carried out over 100 years ago, some of it only at the One-inch-to-one-mile scale. For many areas, the maps are not sufficiently detailed or accurate for the standards of today.

Since 1985, over 50% of the County has been resurveyed by officers of the British Geological Survey (BGS) at the 1:10 000 scale (Figure 1). In addition, the field mapping has been supported by palaeontological collecting, by cored boreholes (Figure 2), by downhole geophysical logging (Table 3), by geophysical surveys in the field, an interpretation of oil-company seismic data, and an engineering study of the landslips of the Shaftesbury area. Temporary sections have played an important part in data collection (Figure 2). All these disciplines have been used to produce detailed lithostratigraphical and biostratigraphical sequences, and new structural interpretations for the newly surveyed areas of Dorset.

<sup>1</sup> More recent work by non-BGS staff, notably W.J.Arkell, M.R.House and B.H.Mottram has been incorporated in the Wincanton (297) and Weymouth (342) sheets.

The object of this account is to publicise the extent of the new BGS 1:10 000 and 1:50 000 geological maps, the Open-file reports, memoirs, borehole records (including geophysical logs), unpublished data holdings (Appendix 2) and the palaeontological collections relevant to Dorset. Dissemination of the information has taken various forms: black and white dyeline copies at the 1:10 000 scale of the geological maps are available for the whole area. Open-file reports which describe the detailed geology of individual sheets, or groups of sheets, are also available for the recently surveyed area (Figure 3, Appendix 1). New 1:50 000 geological sheets and their accompanying memoirs for the Bournemouth and Shaftesbury districts were published respectively in 1992 and 1993. Several short papers have appeared in the *Dorset Proceedings* (Bristow and others, 1989; Bristow and Cox, 1991; Bristow and Owen, 1991; Bristow and others, 1992) and elsewhere (Evans and Chadwick, 1992).

## MAIN FINDINGS

### Stratigraphy.

The formations recently mapped in Dorset range from the Lower Jurassic Bridport Sands to the Upper Eocene Headon Beds. Short resumés of the important stratigraphical findings are given below:

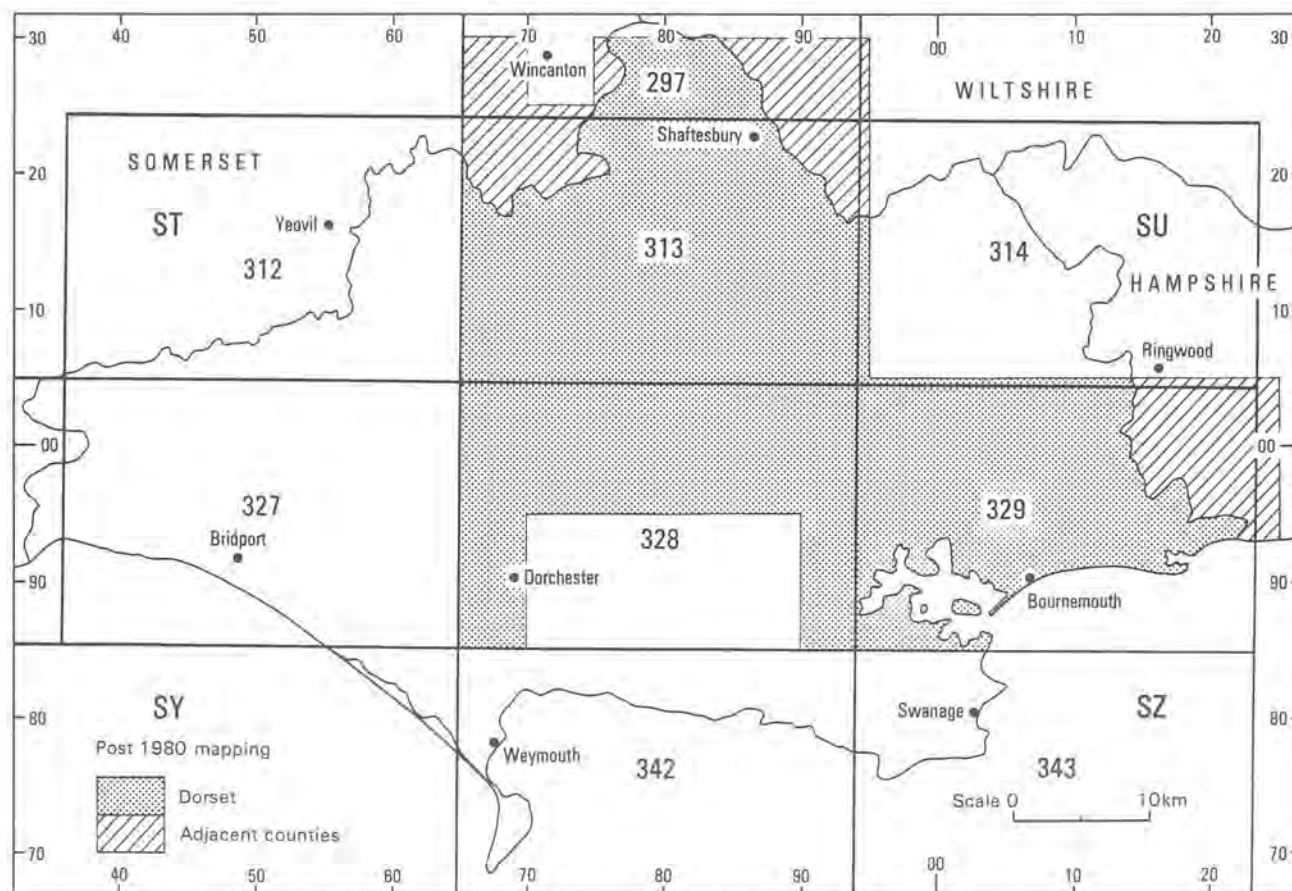


Figure 1. Showing location of 1:50,000 geological sheet boundaries and areas of recent geological survey.

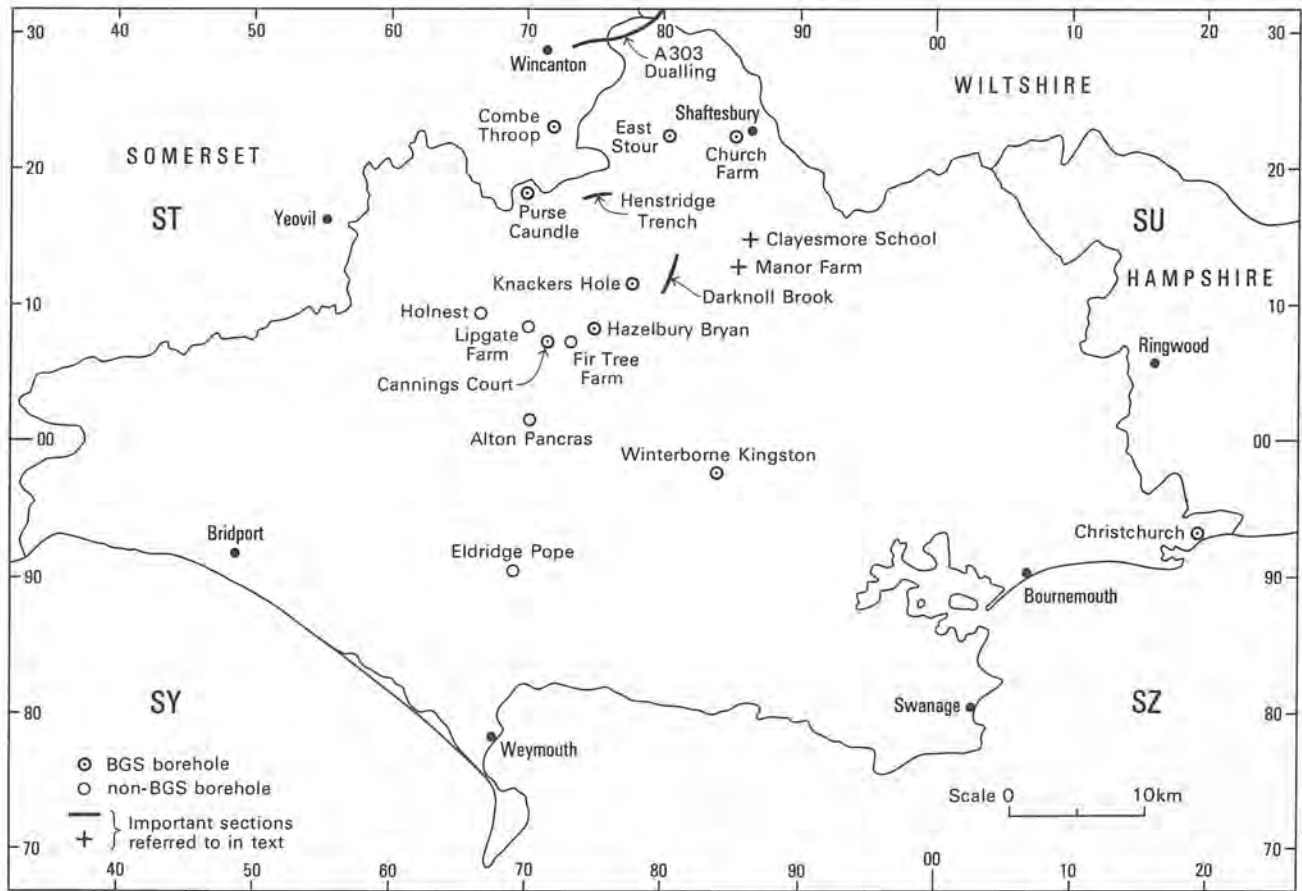


Figure 2. Location of BGS boreholes, geophysically logged non-BGS boreholes and important temporary sections. (see also table 3)

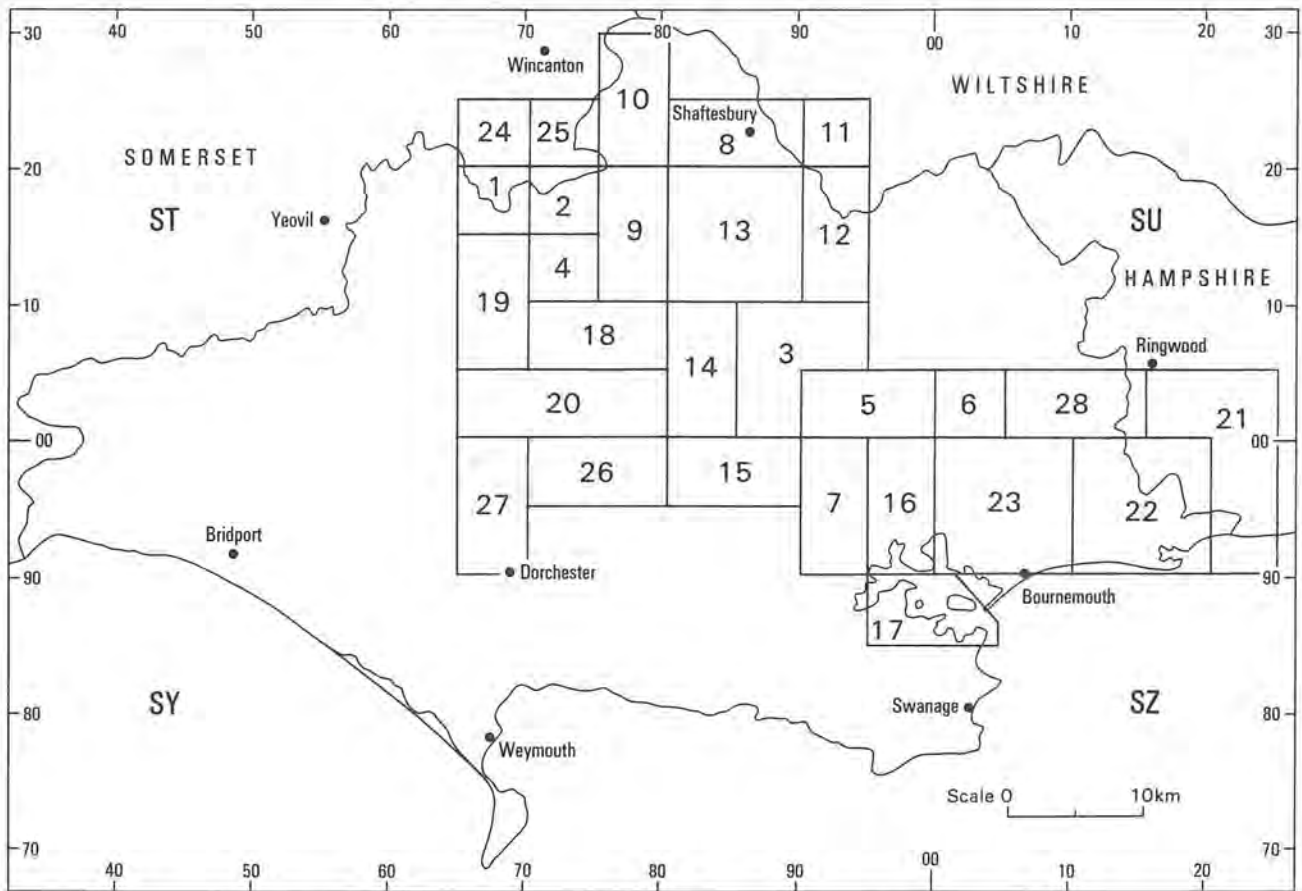


Figure 3. Location map of Open-file reports (1-28) listed in Appendix 1.

*Inferior Oolite.* The Purse Caundle Borehole (ST 70121826) proved the thickest (44m) known sequence of Inferior Oolite in Dorset. Detailed lithostratigraphical sequences were established (Barton and others, 1993).

*Fuller's Earth.* The Purse Caundle and Winterborne Kingston boreholes provide good cored sections through this formation (Barton and others, 1993; Penn, 1982)

*Frome Clay.* This mudstone formation, the lateral equivalent of part of the Great Oolite Group so well developed in the Cotswolds, was separated off from the 'Upper Fuller's Earth' of the old Shaftesbury map. The *Wattonensis* Beds at the base were mapped across most of the Shaftesbury district.

*Forest Marble.* The Boueti Bed at the base has been proved almost everywhere in north Dorset by extensive augering.

*Kellaways Beds.* These beds have been separated off from the 'Oxford Clay' of the old Shaftesbury map and mapped for the first time in Dorset. Important data on this formation have been

obtained from the BGS Combe Throop Borehole (ST 7260 2350), the Dorset County Council Borehole (ST 66470972) at Holnest, and from temporary sections (73201998 - 72781986 - 72601996 - 72741970) near Henstridge (Barton, 1990) and from near Yarlinton (71753050 - 72633055) in Somerset (Bristow and others, 1993b).

*Oxford Clay.* The Lower Oxford Clay has been separated from the Middle and Upper Oxford Clay and divided into a lower, grey, shelly mudstone (Mohuns Park Mudstone) and an upper bituminous mudstone (Temple Lane Mudstone). Important data on this formation have been obtained from the Combe Throop and Holnest boreholes, the temporary section at Yarlinton (Bristow and others, 1993b), and along the pipeline from Stalbridge to Marnhull (Bristow and others, 1989).

*Corallian Group.* Detailed subdivisions, based partly on Wright (1981), have been recognised and mapped across the whole of northern Dorset. These subdivisions have been correlated with the south Dorset succession (Table 1; Bristow and others, 1993a). The

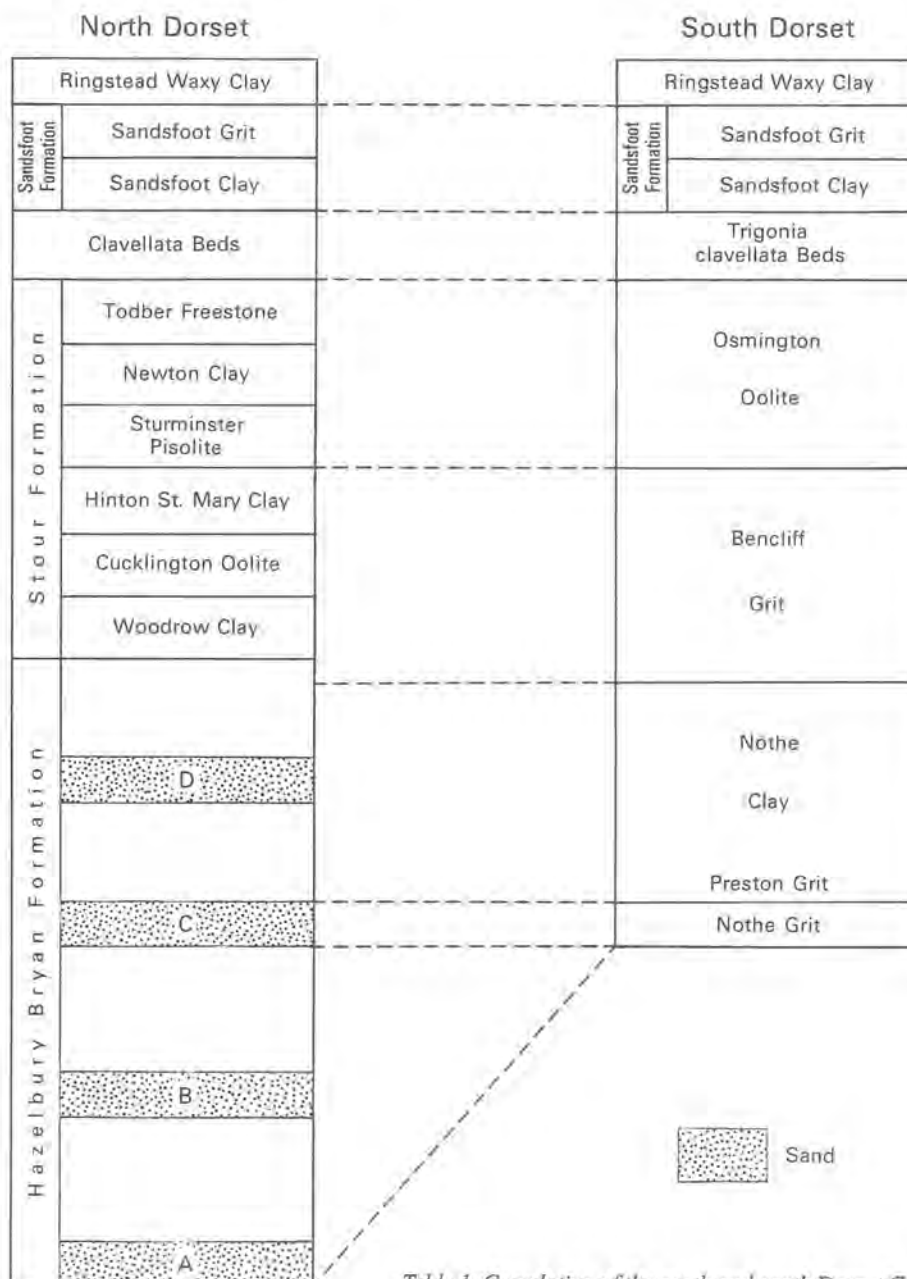


Table 1. Correlation of the north and south Dorset Corallian Group successions.

cored BGS boreholes at Cannings Court (ST 71870734), Hazelbury Bryan (ST 75150810) and East Stour (ST 80132297) were drilled specifically to give information about this group.

**Kimmeridge Clay.** The BGS Knackers Hole Borehole (ST 77911188) and temporary sections along the A303 dualling between Wincanton and Mere (Bristow and others, 1992) have thrown much new light on the Corallian Group/Kimmeridge Clay boundary. Sections along the Darknoll Brook provided discontinuous sections through the upper part of the Lower Kimmeridge Clay and basal part of the Upper Kimmeridge Clay (Bristow and Cox, 1991).

**Gault.** A temporary section (ST 86701708) at Fontmell Magna (Bristow and Owen, 1991) and the BGS Church Farm No.2 Borehole (ST 85522223), Shaftesbury, have provided the only recent data on the Gault of the Shaftesbury area.

**Upper Greensand.** This formation has been subdivided into a four-fold ascending sequence of Cann Sand, Shaftesbury Sandstone, Boyne Hollow Chert and Melbury Sandstone. The last member has yielded a rich Lower Cenomanian *carcitanensis* Subzone fauna at several localities (particularly at Clayesmore School (ST 86421487), Iwerne Minster, and Manor Farm (ST 85651296), Iwerne Courtney (Bristow, 1992; Bristow and others, 1993).

**Chalk.** A combination of lithostratigraphy, feature mapping and

biostratigraphy have resulted in a nine-fold subdivision of the Chalk (Table 2). Extensive palaeontological collections have been made throughout the sequence; material collected by the late S.C.A. Holmes during the 1930s and donated to BGS, together with material in DORCM, has been reexamined.

**London Clay.** The 'Reading Beds' of the Bournemouth area are now regarded as the red-stained, basal member of the London Clay and have been renamed the West Park Farm Member (Bristow and others, 1992). Persistent mappable sands higher in the London Clay in the Bournemouth area thin and die out westwards across the northern edge of the Dorchester Sheet. At depth, a laminated, glauconitic and micaceous sand and silt has been recognised in boreholes across much of southern Dorset. It has been named the Christchurch Member from the Christchurch Borehole where it is particularly well developed.

**'Bagshot Beds'.** The Bagshot Beds in the Bournemouth area have been subdivided into a lower Poole Formation, and an upper Branksome Sand. Thick mappable clays within the Poole Formation (in ascending sequence: Creekmoor, Oakdale, Broadstone and Parkstone clays) have yielded marine dinoflagellates (Harland *in* Bristow and others, 1992). Some of these clays include workable ball clays.

**Barton Group.** This group has been subdivided in ascending sequence into Boscombe Sand, Barton Clay, Chama Sand and Becton Sand.

STAGES	Macrofossil Zones	Traditional S. England Chalk Subdivisions	Subdivisions in the Dorchester Area
CAMPANIAN	<i>Belemnitella mucronata</i>		Portsdown
	<i>Goniatolithus quadrata</i>		Spetisbury
	<i>Offaster pilula</i>		Tarrant
SANTONIAN	<i>Marsupites testudinarius</i>	UPPER	Blandford
	<i>Urtacrinus socialis</i>		
CONIACIAN	<i>Micraster coranguinum</i>	Top Rock	Lewes
	<i>Micraster cortestudinarium</i>		
TURONIAN	<i>Sternotaxis plana</i>	Chalk Rock	New Pit
	<i>Terebratulina lata</i>	Spurious Chalk Rock	
	<i>Mytiloides labiatus</i>		
CENOMANIAN	<i>Neocardioceras juddii</i>	Melbourn Rock	Holywell (Melbourn Rock)
	<i>Meloniceras gestinianum</i>	Plenus Moris	
	<i>Calycoceras guerangeri</i>	Grèy Chalk	Zig Zag
	<i>Acanthoceras jukesbrownei</i>		
	<i>Acanthoceras rhodomagense</i>	Chalk Marl	West Melbury
	<i>Mantelliceras dixoni</i>		
<i>Mantelliceras mantelli</i>	Glauconitic Marl		
ALBIAN	<i>Stoliczkaia dispar</i>	Upper Greensand (pars)	Upper Greensand

Table 2. Chrono- and lithostratigraphy of the Chalk of the Dorchester area.

*Clay-with-flints.* This unit is far more extensive in the Shaftesbury and Dorchester areas than shown on the original geological maps. They probably have an important effect on the recharging of the Chalk aquifer.

*Landslips.* Large landslips have been mapped in two principal situations: in the Upper Oxford Clay and Hazelbury Bryan Formation, and in the Gault and lower part of the Upper Greensand. The latter are particularly well developed around Shaftesbury.

### Structure

In the Shaftesbury area, the major structures are dominated by dextral, strike-slip, wrench faults (Poyntington and Henstridge faults), which cut earlier major east-west faults (Coker, Merriot Hardington and Cranborne faults). There are many splinter faults associated with the faults, particularly the wrench faults. In the Dorchester area, major faults (some with throws up to 100m) have been recognised for the first time in the Upper Chalk - these are important for compartmentalising the Chalk aquifer and controlling water flow within the Chalk.

Depth-converted maps, based on oil-company seismic data, have been constructed for the top of the Basement, White Lias, Inferior Oolite, Cornbrash and Corallian Group in the Shaftesbury area. Those for the Basement and Inferior Oolite are included on the 1:50 000 Shaftesbury map face.

Evans and Chadwick (1993) discuss the nature of the basement/cover relationship in the Shaftesbury district.

### Palaeontology

A vast amount of palaeontological data (both macro- and microfaunal and palynological) has been collected during the recent surveys. These, together with a reexamination of older collections, have resulted in much new biostratigraphical information. Much of this data has been written into internal reports (Appendix 2) and subsequently incorporated into Open-file reports (Appendix 1) and memoirs.

### Engineering geology

Huge and spectacular landslips affecting the Gault/Upper Greensand have been recognised and mapped for the first time around Shaftesbury and from there north-eastwards towards Tisbury. Those around Shaftesbury have been investigated in detail, including the drilling of three cored boreholes (Church Farm Nos.1-3).

### Geophysical logging

Various wire-line logs have been run down the BGS-drilled holes, several Wessex Water Company holes, the Dorset County Holnest Borehole and the Eldridge Pope Brewery Borehole (see Table 3). These have proved extremely useful as they allow sub-surface correlation across the County with other, both BGS and non-BGS, geophysically logged boreholes.

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### REFERENCES

- BARTON, C M. 1990. Geology of the Stalbridge district (Dorset and Somerset). 1:10 000 sheet ST71NW. *British Geological Survey Technical Report, WA/90/21*.
- BARTON, C M, IVIMEY-COOK, H C, LOTT, G K and TAYLOR, R T. 1992. The Purse Caundle Borehole, Dorset: Stratigraphy and sedimentology of the Inferior Oolite and Fuller's Earth in the Sherborne area of the Wessex Basin. *British Geological Survey Research Report SA 92/01* (in press).
- BRISTOW, C.R.1992. Geology of Sheet ST81 (Shillingstone), Dorset. *British Geological Survey Technical Report WA/91/03*.
- BRISTOW, C R and COX, B M. 1991. The Kimmeridge Clay of the Darknoll Brook, Okeford Fitzpaine, Dorset. *Dorset Proceedings*, Vol. 112, 99-103.

NAME	GRID		DRILLED FOR	Cal	GR	BHCS	SP	PR	NN	FE	Res	CBL	T	Dip	Strat. range
	REFERENCE														
Alton Pancras	ST 7019 0177		Wessex Water		x										LCK-UGS
Cannings Court	ST 7187 0734		BGS		x			x							TCIB-HB
Christchurch	SZ 2002 9301		BGS	x	x	x	x		x	x	x		x	x	BC-RB
Combe Throop	ST 7260 2350		BGS	x	x				x		x				MOx-C-FM
East Stour	ST 8013 2297		BGS		x	x	x								TCIB-HB
Eldridge Pope Brewery	ST 6923 9014		Private	x	x		x		x	x	x		x		UCK-Gault
Fir Tree Farm	ST 7360 0710		Private		x				x						LKC-TCIB
Hazelbury Bryan	ST 7515 0810		BGS		x			x							SFG-HB
Holnest	ST 6647 0972		Dorset CC/BGS	x	x		x			x	x				MOx-C-FM
Knackers Hole	ST 7791 1188		BGS	x	x				x	x	x	x			LKC-CkO
Lippgate Farm	ST 7037 0826		Private		x										UOx-C-LOx-C
Purse Caundle	ST 7012 1826		BGS	x	x				x		x				FC-BdS
Stubhampton	ST 9146 1413		Wessex Water		x										UCK-UGS
Winterborne Kingston	SY 8470 9796		BGS	x	x	x	x		x	x				x	UCK-AyB

### Abbreviations

#### Geophysical

BHCS	Borehole Compensated Sonic
Cal	Caliper
CBL	Cement bond log
Dip	Dipmeter
FE	Focussed electric
GR	Gamma ray
NN	Neutron
PR	Point resistance
Res	Resistivity
SP	Spontaneous potential
T	Temperature

#### Stratigraphical

AyB	Aylesbeare Mudstone	LOx-C	Lower Oxford Clay
BC	Barton Clay	MOx-C	Middle Oxford Clay
BdS	Bridport Sands	RB	Reading Beds
CkO	Cucklington Oolite	SFG	Sandsfoot Grit
FC	Frome Clay	TCIB	Clavellata Beds
FM	Forest Marble	UCK	Upper Chalk
HB	Hazelbury Bryan Formation	UGS	Upper Greensand
LCK	Lower Chalk	UOx-C	Upper Oxford Clay
LKC	Lower Kimmeridge Clay		

Table 3. BGS boreholes and geophysically non-BGS boreholes (see also Figure 2)

- BRISTOW, C R, COX, B M and WILKINSON, I P. 1989. A section through the Oxford Clay in North Dorset with notes on the Holnest and King's Stag Brickpits and the Winterborne Kingston Borehole. *Dorset Proceedings*, Vol.110, 137-140.
- BRISTOW, C R, COX, B M, WOODS, M A, PRUDDEN, H C, SOLE, D, EDMUNDS, M and CALLOMOM, J H. 1992. The geology of the A303 trunk road between Wincanton, Somerset and Mere, Wiltshire. *Dorset Proceedings* Vol. 113 139-143
- BRISTOW, C R, BARTON, C M, FRESHNEY, E C, WOOD, C J, EVANS, D J, COX, B M, IVIMEY-COOK, H and TAYLOR, R T. 1993a. Geology of the country around Shaftesbury. *Memoir of the British Geological Survey*, Sheet 313 (England and Wales).
- BRISTOW, C.R., COX, B.M., PRUDDEN, H.C. CALLOMON, J.H. and PAGE, K.N. 1993b. Temporary sections in the Oxford Clay near Charlton Musgrove and at Wincanton, Somerset. *Proceedings of the Somerset Archaeological and Natural History Society for 1992*, Vol. 136 (in press).
- BRISTOW, C R and OWEN, H G. 1991. A temporary section in the Gault at Fontmell Magna in north Dorset. *Dorset Proceedings*, Vol. 112, 95-97.
- BRISTOW, C.R., FRESHNEY, E.C. AND PENN, I.E. 1992. Geology of the country around Bournemouth. *Memoir of the British Geological Survey*, Sheet 329 (England and Wales).
- EVANS, D.J. and CHADWICK, R.A. 1993. Basement-cover relationships in the Shaftesbury area of the Wessex Basin, Southern England. *Proceedings of the Geologists' Association*, Vol. 104 (in press).
- PENN, I E. 1982. Middle Jurassic stratigraphy and correlation of the Winterborne Kingston borehole, Dorset. Pp. 53-76 in *The Winterborne Kingston borehole, Dorset, England*.
- RHYS, G H, LOTT, G K and CALVER, M A (editors). *Report of the Institute of Geological Sciences*, No.81/3.
- WRIGHT, J K. 1981. The Corallian rocks of north Dorset. *Proceedings of the Geologists' Association*, Vol. 92, pp.17-32.
9. BRISTOW, C R. 1989b. Geology of Sheets ST71NE and SE (Marnhull - Sturminster Newton, Dorset). *British Geological Survey Technical Report*, WA/89/59 (£15).
10. BRISTOW, C R. 1990a. Geology of Sheets ST72NE and SE (West Stour-Cucklington district, Dorset). *British Geological Survey Technical Report*, WA/90/48 (£14).
11. BRISTOW, C R. 1990b. Geology of Sheet ST92SW (Berwick St John district, Wiltshire). *British Geological Survey Technical Report*, WA/90/49 (£9).
12. BRISTOW, C R. 1991. Geology of the Tollard Royal - Tarrant Hinton district. *British Geological Survey Technical Report*, WA/91/20 (£9).
13. BRISTOW, C R. 1992a. Geology of Sheet ST81 (Shillingstone), Dorset. *British Geological Survey Technical Report* WA/91/03 (£20).
14. BRISTOW, C.R. 1992b. Geology of Sheet ST80NW and SW (Turnworth-Milton Abbas, Dorset). *British Geological Survey Technical Report*, WA/92/20 (£9).
15. BRISTOW, C.R. 1992c. Geology of sheets SY89NW and SW (Milborne St Andrew and Winterborne Kingston, Dorset). *British Geological Survey Technical Report* (in press)
16. BRISTOW, C.R. and FRESHNEY, E.C. 1986. *Geology of Sheets SY99NE and SE and parts of SY99NW and SW (Corfe Mullen-Lytchett Minster, Dorset)*. Exeter: British Geological Survey Report WA/86/4 (£49).
- BRISTOW, C.R. and FRESHNEY, E.C. 1986. *Geology of the Poole-Bournemouth area*. Exeter: British Geological Survey. Report WA/86/5. (Summary of reports 16, 21 and 22)(£29).
17. BRISTOW, C.R. and FRESHNEY, E.C. 1987. *Geology of Sheet 98NE and parts of SY98NW, SW, SE and SZ08NW and NE (Arne-Wytch Farm, Dorset)*. Report WA/87/28 (£14).
18. FRESHNEY, E C. 1990. Geology of Sheets ST70NW and NE (Mappowder - Woolland, Dorset). *British Geological Survey Technical Report*, WA/90/51 (£15).
19. FRESHNEY, E.C. 1992a. Geology of the Bishop's Caundle-Glanvilles Wootton district, Dorset. *British Geological Survey Technical Report* WA/92
20. FRESHNEY, E.C. 1992b. Geology of the Cerne Abbas-Milton Abbas district, Dorset. *British Geological Survey Technical Report* (in press).
21. FRESHNEY, E.C. and BRISTOW, C.R. 1987. *Geology of sheets SU10SE, 20SW, SZ29NW and SW (Ringwood - Barton on Sea)*. Exeter: British Geological Survey. Report WA/87/24 (£18).
22. FRESHNEY, E.C., BRISTOW, C.R. and WILLIAMS, B.J. 1984. *Geology of Sheet SZ19 (Hurn-Christchurch, Dorset and Hants)*. Exeter: British Geological Survey Report WA/84/9 (£43).
23. FRESHNEY, E.C., BRISTOW, C.R. and WILLIAMS, B.J. 1985. *Geology of Sheet SZ09 (Bournemouth-Poole-Wimborne, Dorset)*. Exeter: British Geological Survey Report WA/85/1 (£61).
24. TAYLOR, R T. 1990. Geology of the Charlton Horethorne district (Somerset and Dorset). 1:10 000 sheet ST62SE. *British Geological Survey Technical Report*, WA/89/69 (£16).
25. TAYLOR, R T. 1991. Geology of the Templecombe district (Somerset). 1:10 000 sheet ST72SW. *British Geological Survey Technical Report*, WA/91/31 (£15).
26. WESTHEAD, R.K. 1992a. Geology of the Dewlish-Piddlehinton district (Dorset). *British Geological Survey Technical Report* WA/92/35 (£9).
27. WESTHEAD, R.K. 1992b. Geology of the Godmanstone-Dorchester (north) district (Dorset). *British Geological Survey Technical Report* WA/92/36 (£9).
28. WILLIAMS, B.J. 1987. *Geology of sheets SU00SE and SU10SW (West Moors-St Leonards, Dorset)*. Exeter: British Geological Survey Report WA/87/23 (£9).

## APPENDIX 1.

Open-file reports covering Dorset (see Figure 3). The cost of the reports is given in brackets; VAT and postage and packaging is excluded. Copies of these reports are available from:

British Geological Survey, 30 Pennsylvania Road, Exeter EX4 6BX  
British Geological Survey, Keyworth, Nottingham NG12 5GG  
Dorset County Museum

- BARTON, C M. 1989. Geology of the Milborne Port District (Somerset and Dorset). 1:10 000 sheet ST61NE. *British Geological Survey Technical Report*, WA/89/60 (£9).
- BARTON, C M. 1990. Geology of the Stalbridge district (Dorset and Somerset). 1:10 000 sheet ST71NW. *British Geological Survey Technical Report*, WA/90/21 (£9).
- BARTON, C.M. 1992. Geology of the Blandford Forum district (Dorset). *British Geological Survey Technical Report*, WA/91/81 (£9).
- BARTON, C M and FRESHNEY, E C. 1991. Geology of the Lydlinch district (Dorset). 1:10 000 sheet ST71SW. *British Geological Survey Technical Report*, WA/90/22 (£9).
- BRISTOW, C R. 1987a. *Geology of Sheets ST 90 SW and SE (Shapwick-Pamphill, Dorset)*. Exeter: British Geological Survey (£11).
- BRISTOW, C.R. 1987b. *Geology of Sheet SU00SW (Wimborne, Dorset)*. Exeter, British Geological Survey, Report WA/87/4 (£9).
- BRISTOW, C.R. 1987c. *Geology of sheets SY99NW and SW (Morden and Morden Heath, Dorset)*. Exeter: British Geological Survey Report WA/87/28 (£14).
- BRISTOW, C R. 1989a. Geology of the East Stour - Shaftesbury district (Dorset). *British Geological Survey Technical Report*, WA/89/58 (£17).

## APPENDIX 2

- Unpublished BGS reports relevant to the Shaftesbury area. Enquiries concerning these reports should be addressed to Dr B. Owens, British Geological Survey, Keyworth, Nottingham NG12 5GG.
- Bloodworth, A.J. 1990. Mineralogy and petrography of borehole samples taken from landslipped Gault clay, Shaftesbury, Dorset. Report WG/90/36.
- Clayton, A R and Morigi A N. 1982. A preliminary study of the sand and gravel deposits of the STOUR VALLEY, DORSET, and adjacent areas (1:25 000 sheets ST 71, 72, 80, 81, 90, 91 and parts of SU 00, 01, SY 89, 99 and SZ 09). Industrial Minerals Assessment Unit.
- Cox, B.M. 1986. Shapwick No.1 Borehole (B.P. Development Ltd). 1" Sheet 329 Bournemouth ST 94284 01342. PD 86/210.
- Cox, B M. 1987. Preliminary notes on the Oxford Clay localities of Sheet 313 (Shaftesbury). Report PD/1987/139.
- Cox, B M. 1988. 1" Sheet 313 (Shaftesbury) Kellaways Beds and Oxford Clay Localities. Report No. WH/88/14R.
- Cox, B M. 1988. Shaftesbury Sheet (313) Kimmeridge Clay localities. Report WH/88/54R.
- Cox, B M. 1989. Shaftesbury Sheet (313) Kimmeridge Clay localities (2). Report WH/89/95R.
- Cox, B M. 1989. Shaftesbury (313). Oxford Clay and Kimmeridge Clay localities: New and additional information. Report WH/89/96R.
- Cox, B M. 1989. Shaftesbury Sheet (313): Kellaways Beds (Formation) localities. Report WH/89/103R.
- Cox, B M. 1989. Dorchester Sheet (328). Kimmeridge Clay localities near Ansty, Dorset. Report WH/89/218R.
- Cox, B M. 1989. Shaftesbury Sheet (313): Kellaways Beds (Formation) of Henstridge Pipeline trench, Somerset. Report WH/89/265R.
- Cox, B M. 1989. Shaftesbury Sheet (313). Additional material from the Kimmeridge Clay of Darknoll Stream, Okeford Fitzpaine, Dorset. Report WH/89/271R.
- Cox, B M. 1989. Shaftesbury Sheet (313): Oxford Clay localities on 1:10 000 sheets ST60NE and ST61SE. Report WH/89/453R.
- Cox, B M. 1989. Shaftesbury Sheet (313) Corallian Group localities on 1:10 000 sheets ST60NE and ST70NW. Report WH/89/454R.
- Cox, B M. 1989. Shaftesbury Sheet (313), East Stour Borehole, East Stour, Dorset. Report WH/89/458R.
- Cox, B M. 1989. Shaftesbury Sheet (313) Canning's Court Borehole, Pulham, Dorset. Report WH/89/474R.
- Cox, B M. 1990. Shaftesbury Sheet (313): Kimmeridge Clay at Twyford Brook, Compton Abbas, Dorset. Report WH/90/21R.
- Cox, B M. 1990. Wincanton Sheet (297): Kimmeridge Clay of the Gillingham Brickpit and nearby localities, Dorset. Report WH/90/100R.
- Cox, B M. 1990. Corallian sections at Kingsmead Tunnel, west of Gillingham, Dorset. Report WH/90/302R.
- Cox, B M. 1990. Sturminster Newton railway cutting, Sturminster Newton, Dorset. Report WH/90/371R.
- Cox, B M. 1990. Corallian sections south of Sturminster Newton, Dorset, including Broad Oak Lane. Report WH/90/400R.
- Cox, B M. 1991. Additional Kimmeridge Clay localities on 1:10000 sheets ST 70 SW and ST 70 SE. Report WH/91/156R.
- Cox, B M. 1991. Kimmeridge Clay of U4 samples from the Bedchester and Child Okeford boreholes, Dorset. Report WH/91/157R.
- Cox, B M. 1991. Knackers Hole Borehole, Newton, Dorset. Report WH/91/232R.
- Cox, B M. 1991. Macrofauna and age determination of a section in the Hazlebury Bryan Formation on 1:10 000 Sheet ST72NW. Report WH/91/253R.
- Cox, B M. 1991. Combe Throop Borehole, Combe Throop, Somerset: Oxford Clay. Report PD/91/290.
- Cox, B M. 1991. Combe Throop Borehole, Combe Throop, Somerset: Kellaways Beds. Report PD/91/316.
- Dunham, K.C. 1947. Specimen of Upper Greensand, immediately above [sic] the Chalk, from borehole at Stubhampton, Shaftesbury, depth 460ft. *Petrological Report XXXI*, No.445.
- Gostelow, T P. 1991. Geological processes and their effect on the engineering behaviour of the Gault/UGS: an example from Shaftesbury, Dorset. Report WN/91/9.
- Graham, D K. 1983. Palaeontological Report on a sample of alluvium from R. Stour, Little Canford, 1.65km NE of Canford Magna Church. 1" Sheet 329 SZ09NW SZ0435 9990. PDL 83/46.
- Graham, D K. 1985. Palaeontological Report on the macrofaunas from two localities in the River Stour, Dorset. 1" Sheet 329 SY99NE. PDL 85/17.
- Graham, D K. 1987. Palaeontological Report on a sample of Head from 370m at 225 deg. from Chapel in Sturminster Newton Cemetery. 1" Sheet 313 ST7844 1328. PD87/363.
- Harland, R. 1977. Dinoflagellate Cyst Analysis of Samples taken in relation to the revision of the Hampshire Basin Regional Guide. PDL 77/42.
- Harland, R. 1979. Dinoflagellate Cyst Analysis of a Borehole at Beacon Heath, Upton, Dorset [1" Sheet 329]. PDL 79/161.
- Harland, R. 1979. Dinoflagellate Cyst Analysis of a Borehole [Rempstone] at Wych Farm, Corfe Castle, Dorset [1" Sheet 329]. PDL 79/269.
- Harland, R. Hampshire Basin Project. Dinoflagellate Cyst Analysis of IMAU Short Boreholes (1" 329). PDL 80/282.
- Harland, R. 1980. Dinoflagellate cyst analysis of IMAU short boreholes [1" sheet 330]. PDL 80/283.
- Harland, R. 1980. Dinoflagellate cyst analysis of IMAU short boreholes from the Wessex Project (I) [1" sheet 314]. PDL 80/319.
- Harland, R. 1980. Hampshire Basin Project. Dinoflagellate Cyst Analysis of IMAU Short Boreholes from the Wessex Project (II) (1" Sheet 314). PDL 80/324.
- Harland, R. 1981. Dinoflagellate cyst analysis of the Christchurch Borehole [1" sheet 329]. PDL 81/140.
- Harland, R. 1984. Bournemouth-Poole D of E Contract. Dinoflagellate Cyst Analysis of samples for the Bournemouth-Poole area 1" Sheet 329-II. PDL 84/25.
- Harland, R. 1984. Bournemouth-Poole D of E contract. Dinoflagellate cyst analysis of samples from the Bournemouth-Poole area 1" Sheet 329 - III. PDL 84/26.
- Harland, R. 1984. Bournemouth-Poole D. of E. contract. Dinoflagellate Cyst Analysis of samples from the Bournemouth-Poole area - 1" Sheet 329 - IV. PDL 84/37.
- Harland, R. 1984. Bournemouth-Poole D. of E. contract. Dinoflagellate Cysts Analysis of Samples from the Bournemouth-Poole Area, 1" Sheet 329 - V. PDL 84/155.
- Harland, R. 1985. Bournemouth-Poole D. of E. contract. Dinoflagellate cyst analysis of samples from the Bournemouth-Poole area 1" sheet 329-VI. PDL 85/33.
- Harland, R. 1985. Bournemouth-Poole D of E contract. Dinoflagellate Cyst Analysis of samples from the Bournemouth-Poole area. 1" Sheet 329 - VII. PDL 85/34.
- Harland, R. 1986. Bournemouth-Poole D of E contract. Dinoflagellate Cyst Analysis of Samples from the Bournemouth-Poole Area [1" Sheet 329] - VIII. PDL 86/5.
- Harland, R. 1986. Bournemouth-Poole D of E contract. Dinoflagellate Cyst Analysis of a Single Sample from Corfe Mullen, Dorset, Bournemouth-Poole Area [1" Sheet 329]. PDL 86/89.
- Harland, R. 1987. Dinoflagellate Cyst Analysis of samples from the Bournemouth-Poole Area [1" sheet 329] - IX. PDL 85/57.
- Harland, R. 1992. Dinoflagellate Cyst Analysis of Three Samples from Tatchell's Quarry, near Wareham [1" Sheet 328]. Report WH/92/58R.
- Hughes, M J. 1981. Hampshire Basin Project. Tertiary calcareous micropalaeontology: smaller foraminifera from Beacon Heath BH, 1" 329. PDL 81/248.
- Hughes, M.J. 1981. Hampshire Basin Project. Tertiary calcareous micropalaeontology: smaller foraminifera from Rempstone BH, 1" 329. PDL 81/252.
- Hughes, M J. 1983. Tertiary micropalaeontology: microfossils of various localities of London Clay/Bournemouth Group from the Bournemouth Sheet (1" 329). PDL 83/298.
- Hughes, M J. 1984. Tertiary micropalaeontology: microfossils of various boreholes near Hengistbury Head and Stanpit Marsh, Bournemouth Sheet (1" 329). PDL 84/1.
- Hughes, M J. 1984. Tertiary micropalaeontology: microfossils of borehole CM No.6 near Canford Magna, Bournemouth Sheet (1" 329). PDL 84/12.
- Hughes, M J. 1984. Tertiary micropalaeontology: microfossils of borehole CM No.4, near Canford Magna, Bournemouth Sheet (1" 329). PDL 84/13.
- Hughes, M J. 1984. Tertiary micropalaeontology: microfossils of borehole CM No.3, near Canford Magna, Bournemouth Sheet (1" 329). PDL 84/14.
- Hughes, M J. 1984. Tertiary micropalaeontology: microfossils of various boreholes near Canford Magna, Bournemouth Sheet (1" 329). PDL 84/15.
- Hughes, M.J. 1984. Tertiary micropalaeontology: foraminifera of various London Clay localities on Bournemouth Sheet (1" 329). PDL 84/268.
- Ivimey-Cook, H C. 1987. Inferior Oolite fossils from Miller's Hill, Milborne Wick, Somerset. PD/87/399.
- Ivimey-Cook, H C. 1988. Upper Inferior Oolite and Great Oolite fossils from 1" Sheet 313 (Shaftesbury). PD 88/16.
- Ivimey-Cook, H C. 1988. Inferior Oolite and early Bathonian fossils from Sheet 313, Shaftesbury. PD/88/17.
- Ivimey-Cook, H C. 1988. Further Middle Jurassic fossils from Sheet 313, Shaftesbury. Report WH/88/198R.

- Ivimey-Cook, H C. 1988. The Great Oolite of the Stowell Borehole, Templecombe, Somerset, with notes on some nearby boreholes. WH/88/199R.
- Ivimey-Cook, H. 1989. Further Middle Jurassic fossils from 1" Sheet 313 (Shaftesbury). Report WH/89/14.
- Ivimey-Cook, H C. 1989. Biostratigraphy of the Osborne Borehole, Sheet 313 (Shaftesbury). Report WH/89/146R.
- Ivimey-Cook, H C. 1989. The Bajocian, Aalenian and Toarcian strata in the Stowell Borehole, Templecombe, Somerset. WH/89/175R.
- Ivimey-Cook, H C. 1989. Specimens from the Inferior Oolite and basal Bathonian of Poyntington Hill and the Milborne Port area, Somerset. Report WH/89/199R.
- Ivimey-Cook, H. 1989. Inferior Oolite fossils from a borehole at Bradley Head, Milborne Wick, Sherborne. WH/89/202R.
- Ivimey-Cook, H C. 1989. Further Bajocian fossils from southeast Somerset, Sheet 297, Wincanton. WH/89/205R.
- Ivimey-Cook, H C. 1989. Further Aalenian, Bajocian and Bathonian fossils from southeast Somerset, Sheet 313, Shaftesbury. WH/89/206R.
- Ivimey-Cook, H C. 1989. Further Bajocian fossils from the Inferior Oolite of southeast Somerset, Sheet 296, Glastonbury. WH/89/207R.
- Ivimey-Cook, H C. 1990. The Forest Marble (Bathonian) of the Henstridge Boreholes, southeast Somerset. Report WH/90/52R.
- Ivimey-Cook, H C. 1990. The Biostratigraphy of the Purse Caundle Borehole. 1" Sheet 313, Shaftesbury. Report WH/90/224R.
- Ivimey-Cook, H C. 1991. The Middle Jurassic (Cornbrash and Forest Marble) of the Combe Throop Borehole; 1" 313, Shaftesbury. WH/91/301.
- Lott, G K. 1991. Clay mineral stratigraphy of the Upper Jurassic cored sequences from the Shaftesbury Sheet, North Dorset. Report WH/91/5.
- Lott, G K. 1991. Sedimentological studies of the Aalenian to Bathonian sediments of the Purse Caundle borehole, Dorset. Report WH/91/59R.
- Lott, G K. 1991. Thin section petrographical descriptions of Corallian sediments from the North Dorset area. Report WH/91/194R.
- Owens, B. 1980. Palynological report on samples from Wytch Farm X14 Borehole. 1" Sheet 329, PDL 80/333.
- Owens, B. 1980. Palynological report on samples from Marchwood & Wytch Farm No X14 Boreholes. 1" Sheet 315 and 329, PDL 80/337.
- Royles, C P and Self, S J with contributions by J D Cornwell and R T Taylor. 1989. Geophysical field surveys in the Shaftesbury district. Regional Geophysics Research Group Project Note Series PN/89/1.
- Royles, C P and Self, S J with contribution by J D Cornwell. 1991. Geophysical field surveys in the Shaftesbury district 1989/90. Regional Geophysics Group Project Note 91/06.
- Wilkinson, I.P. 1980. Calcareous micropalaeontology of three samples from the British Gas Well F16 (NGR SZ 01043 85742). PDL 80/367.
- Wilkinson, I.P. 1981. Calcareous micropalaeontology of the British Gas Well F16 (SZ 01043 85742). PDL 81/005.
- Wilkinson, I P. 1987. Upper Jurassic calcareous microfauna from a number of sites on the Shaftesbury Sheet. PD87/247.
- Wilkinson, I P. 1987. Calcareous microfaunas from a suite of Upper Jurassic samples for the Shaftesbury Sheet. PD87/389.
- Wilkinson, I P. 1988. The calcareous micropalaeontology of the ?Lower Greensand on the Shaftesbury Sheet. WH88/80R.
- Wilkinson, I P. 1988. Calcareous microfauna from the Oxford Clay around Shaftesbury. Report WH88/174R.
- Wilkinson, I P. 1989. The calcareous Micropalaeontology of the Kimmeridge Clay of the Shaftesbury Sheet. Report WH/89/251R.
- Wilkinson, I P. 1989. Calcareous Micropalaeontology of the Gault at Buckland Newton (1" 313). Report WH/89/252R.
- Wilkinson, I P. 1989. The calcareous micropalaeontology of a suite of Corallian samples from the Shaftesbury Sheet. Report WH/89/433R.
- Wilkinson, I.P. 1990. Calcareous microfaunas from the Corallian Hazelbury Bryan Formation of the Shaftesbury Sheet. Report WH/90/12R.
- Wilkinson, I P. 1990. Calcareous microfaunas from the Callovian of the Shaftesbury Sheet. Report WH/90/53R.
- Wilkinson, I P. 1990. The calcareous micropalaeontology of Caundle Marsh, Dorset. Report WH90/129R.
- Wilkinson, I P. 1990. Calcareous microfossils from the Middle Jurassic of the Shaftesbury Sheet. Report WH/90/342R.
- Wilkinson, I P. 1990. Calcareous microfaunas from the Campanian of Launceston Down (Ringwood Sheet). Report No. WH90/361R.
- Wilkinson, I P. 1990. Calcareous microfaunas from the Campanian of Keynston (Shaftesbury Sheet). Report WH/90/362R.
- Wilkinson, I P. 1990. Calcareous microfaunas from the Campanian of the Shaftesbury Sheet. Report WH/90/364R.
- Wilkinson, I P. 1990. Calcareous microfaunas from the Campanian near Thorncombe & Charlton Marshall (Dorchester Sheet). Report WH/90/365R.
- Wilkinson, I P. 1990. Calcareous microfaunas from the Campanian of the Tarrant Rawson Pit (Ringwood Sheet). Report WH/90/366R.
- Wilkinson, I P. 1990. Late Cretaceous Foraminiferida from the Shaftesbury Sheet. Report WH/90/408R.
- Wilkinson, I P. 1991. Micropalaeontology of the Lower Cretaceous deposits of the Church Farm no.2 Borehole, Shaftesbury. WH/91/72R.
- Wilkinson, I P. 1991. Ostracoda from the East Stour Borehole (ST8013 2297). Report No. WH/91/179R.
- Wilkinson, I P. 1991. Micropalaeontology of a suite of Kimmeridgian samples from the Shaftesbury Sheet. Report WH91/180R.
- Wilkinson, I P. 1991. Micropalaeontology of a suite of Oxford Clay samples. Report WH91/190R.
- Wilkinson, I P. 1991. Calcareous microfossils from the Combe Throop Borehole. Report WH91/295R.
- Wilkinson, I P. 1991. Microfossils from the Upper Jurassic deposits of Church Farm Borehole No.2. Report WH91/300R.
- Wilkinson, I.P. 1992. Calcareous microfaunas from a suite of samples from the Dorchester Sheet. Report WH/92/155R.
- Wood, C J. 1986. Bournemouth-Poole D of E contract. Biostratigraphy of London Clay (Eocene) from two localities near Corfe Mullen, Dorset. 1" Sheet 329 SY99NE. PDL 86/110.
- Wood, C J. 1988. Preliminary stratigraphical interpretations of Upper Cretaceous macrofossils collected by E C Freshney from 1" Sheet 313 (Shaftesbury). Report WH/88/91R.
- Wood, C J. 1989. Stratigraphical interpretation of Upper Cretaceous (Lower Chalk, Cenomanian) macrofossils collected by C R Bristow from 1" Sheet 313 (Shaftesbury). Report WH/89/121R.
- Wood, C J. 1991. Determinations of Upper Greensand and basal Lower Chalk macrofossils collected by C R Bristow from the Shaftesbury district. Report WH/91/120R.
- Wood, C J. 1991. Cretaceous biostratigraphy of localities between Shaftesbury and Compton Abbas collected by Rhodes and Jukes-Browne in 1896 and described by Jukes-Browne & Hill (1900, 1903) and by White (1923); with notes on additional specimens from the UGS of Shaftesbury and Okeford Fitzpaine in BGS collections and on the information published by Pulteney (1813). Report WH/91/121R.
- Wood, C J. 1991. The biostratigraphy of the Upper Greensand of Cornhills Farm (Sheet 313); the Upper Greensand and basal Zig Zag Chalk of Bookham Farm (Sheet 328); the Upper Greensand of the road cutting, Minterne Magna (Sheet 328); and the Upper Greensand of Hill Farm, Woolland, Dorset (Sheet 313). Report WH/91/122R.
- Wood, C J. 1991. The stratigraphy of the Upper Chalk in the Blandford Forum Sturminster Marshall area, Dorset, with particular reference to the geology of the Tarrant Valley. 1:50 000 sheets Shaftesbury (313), Ringwood (314), Dorchester (328) and Bournemouth (329). Report WH/91/123R.
- Woods, M A. 1991. Outline palaeontology and biostratigraphy of basal Cenomanian sediments near Zeals, Wilts. Report WH/91/291R.
- Woods, M.A. 1992. Interpretation of Upper Chalk fossils from the Dorchester area. Report WH/92/60R.
- Woods, M A. 1992. Interpretation of Middle and Upper Chalk fossils from the Dorchester and Shaftesbury areas. Report WH/92/61R.
- Woods, M A. 1992. Interpretation of Upper Greensand fossils from Hill Farm (313) & Minterne Magna (328), Dorset. Report WH/92/73R.
- Woods, M.A. 1992. Identification and interpretation of Middle and Upper Chalk macrofaunas from the Dorchester area, Dorset. Report WH/92/214R.

# The Status of Some Purbeck Sea Birds 2

TRELEVEN S. HAYSOM

'And what an occasion it is when the sea fowl begin to nest - cormorants, herring gulls, razorbills, guillemots, and above all, the puffins, sitting together like migratory parrots from the hanging forests of the Amazon, startling the sight with the tropical colouring of their broad chops!'

Llewellyn Powys, St. Aldhelm's Head

What follows is an attempt to revise the paper of the same title that appeared in the Proceedings in 1977 (Haysom 1977) describing the changing status of various cliff-breeding species.

Remarks made then about methods and limitations of these counts still apply, but it may be fair to add that for all their manifest shortcomings, continuity attaches some value to them as a way of following the fortunes of the Purbeck colony.

With regard to the names of sites between Durlston and St. Aldhelm's Head, they are of course given in sequence. Some less well known but salient features in terms of birds are: Bird Cove west of Dancing Ledge; Halswell west of Seacombe; Bird Rock on the east side of St. Aldhelm's Head. For more detailed reference I recommend Dr. Anderson's map on sale at the Lifeboat House. He was a friend of William J. Bower of Winspit, who provided the information. Billy Winspit, as he was known, worked Seacombe quarry and spent some summers fishing in a dinghy out of Winspit, sometimes taking his lobsters by boat around to Swanage. He had an intimate knowledge of this coast and a lively interest in its birds.

He would tend to interchange the terms cove and hole, so sometimes it would be Bird Cove, sometimes Bird Hole. Never though Blacker's Cove anymore than Lulworth Cove exchanges with Stair Hole (or does it?) A name that has been useful to use, which his map omits, is Bird Rock. It lies further off than most and, being a hazard, gets a name. Nor does he give Reform, a quarry west of Purbeck's most prominent cave, Blacker's Hole. I have called the stretch between Durlston Head and Tilly Whim rather loosely Durlston, so avoiding the confusing former name of White Cliff. As previously stated, apart from Puffin Hole, the individual ledge names at Durlston are my terms, originally coined for my own notes only. It may be worth mentioning that Jessie Lander, of Worth, would refer to this eastern end of 'back of cliff' (a Swanage expression) as Hawcombe rather than Tilly Whim etc. and the ground they fished off it as Fredrico, Scratch Ass, perhaps a little indelicate, is a quarry where two men were killed. Herbert Hooper, a stoker on the first ferry, formerly a Chapman's Pool fisherman, would announce arrival on the Purbeck shore with 'All change for Blacker's Hole, Knacker's Hole, Scratch Ass and Ring Bum gardens.' But Purbeck has changed since his day, when Joe Guy lived rough underground at Winspit in seclusion. The sense of isolation, even of wildness, always illusory, has gone. The cliff path, formerly a mere furrow in the grass as discrete as a badger run, has become a trampled track. George Burt's parkification of his Durlston estate has been extended. The coast has, to use the jargon, been enhanced and interpreted and, in my view, blighted. Weather permitting, diving is almost permanently practised on the Halswell wreck. Jet skis invade the coves, and helicopters daily roar overhead, panicking the birds. Most important of all, climbers have arrived in force. What impact this activity has is unknown, but it would appear to be secondary. Perhaps we should look at the winter open sea environment to discover what slowly but surely is wiping out the Razorbills and Puffins.

I am indebted to D. Kerridge, who has laboured with my untidy notes, poor grammar and questionable spelling, which prompted enquiries such as 'are Emmitt, Emet, Emetts Hill, the same place?' They are; so, too, are Buttery and Battery Corner, Bollard and Ballard, Idbury and Hedbury (which probably derives from a 17th century quarrier Tidbry). Current standard usages are open to question. But then William Bower could remark: 'they [Black Redstarts] come in CLIFT in the FALL'.

It has been a pleasure sometimes to have company when looking at a bird. The following: S. Aspinall, N. Baggs, the late J. Baiss, D. Burt, S. Burt, M. Chillingworth, I. Cooper, R. Cox, R. Hardy, L. Jerling, A. Lauder, B. Pickess, R. Plowman, D. Sales, E. Sibinga, M. Turnbull, P. Williams, have all helped specifically with counting, whether plying oars, tiller, binoculars or pen and notebook.

## FULMAR

Fulmar continue to put in their first appearances in December. These first visits seem to take place on mild mornings. For example '15 Dec. 1985 mild weather continues, wind light-moderate SW, one fulmar noticed at 0740 (soon after first light) circling up to cliff west of Puffin Hole (DURLSTON) joined by second at 0804, both still present at 0830 but both had apparently gone by 0940'. These visits inshore continue with increasing frequency and lengthening duration until the peak in late April/May, after which numbers fall away until a total desertion in Sept.

What seems odd about the Purbeck colony is that though birds court and apparently go through all the motions of breeding, hardly any eggs are laid. Indeed only one chick has been seen since those mentioned in the 1977 paper; it was flapping (close to fledging) on a high ledge close by the drain pipe at Durlston on 22nd Aug. 1978. This is a different ledge from the one where chicks were seen in 1972 and 1973. Since then an effort has been made to look for chicks in July-August, but without success. It is very possible that a few have been overlooked at Durlston, but I doubt very much if any have ever been raised at other sites. It is therefore disconcerting to see, in an authoritative work, a graph of breeding Fulmars showing numbers between Durlston and St. Aldhelm's Head fluctuating between 10 and 80 over the seasons 1970-1985.

I therefore include the following figures for the various Purbeck 'colonies', so that some indication of trends can be gained. Allowances should be made for seasonal variation. All counts conducted during afternoons or evenings.

### *Fulmar: Counts of Individuals Ashore (Excluding those on the wing or water)*

Date	D	RR	BH	Rn	SA	W/H	CH	BC	St.A	EH	Total
11.06.76	10	0	0	4	3	5	0	6	nc	0*	28
15.06.77	12	5	0	7	0	7	2	5	2		40
06.06.78	14	0	0	2	0	15	4	0	6		41
04.06.79	21	16	0	6	0	7	12	17	nc		79
01.06.80	9	4	0	1	0	0	3	5	nc		22
13.05.81	17	21	0	16	0	11	11	11	nc		87
15.06.81	17	14	0	2	0	5	3	11	nc		52
03.06.82	19	8	1	2	0	7	3	3	nc		43
30.05.83	41	nc	nc	nc	nc	nc	nc	nc	nc	nc	41
16.06.83	22	11	0	2	0	10	3	5	nc	nc	53
17.06.84	14	0	0	4	0	3	0	5	nc		26
21.04.85	nc	nc	0	4	0	20	2	13	6	2	47
05.06.85	19	2	0	4	0	13	7	2	nc	nc	47
03.06.86	nc	nc	0	0	0	26	7	0	0	nc	33
14.06.87	16	9	0	0	0	17	4	6	0		52
19.06.88	4	3	0	0	0	9	3	2	0		21
14.06.89	14	1	0	0	0	3	3	0	0		21
12.06.90	5	1	0	0	0	6	0	0	0		12
18.05.91	23	13	0	1	0	7	2	7	0		53
07.06.92	92	9	0	1	0	11	2	7	0		40

\*D = Durlston; RR = Ragged Rocks; BH = Blacker's Hole; Rn = Reform; SA = Scratch Ass; W/H = Williams Cove/Halswell; CH = Crab Hole; BC = Battery Corner; St.A = St. Aldhelm's Head; EH = Emmetts Hill nc = no count \* = landing in May.

Those late May/June counts are after the peak. Fulmars were landing regularly on the St Aldhelm's Head ledge during the no count years, but not after 1985, when a Peregrine began using it. Emmetts Hill seems only to be visited early in the year, beginning in 1977.

Numbers at Gad Cliff seemed to have remained fairly stable for the period: 6 on the main buttress above Wagon Rock (this prominent shore line rock given as Wagon Rock by the O.S. is clearly not the same as that described by Lillian Bond in her book *Tyneham*. Her rock has moved a short distance seawards, crushing the cave she describes so graphically). Others have told me that it should really be Fallon, or Vallon Rock, hence Wagon; 5 further to the west, with 3 more back at the extreme east end on 11 May 1986 being typical.

At Bat Head usually about 10 can be found ashore in early June, with some birds landing some way further west towards West Bottom. On May 28th 1991 we looked at all possible cliffs from Chapman's Pool to White Nose. In addition to the usual birds at Gad Cliff there was a single in a hole on Swyre Head and 2 more on Dungy Head.

On May 30th 1983 there were 5 ashore over the cave right on Ballard Head, 2 more in holes further north towards the great fault and another in a solution pipe hole close to the Pinnacle. These were the first Fulmars that I had seen landing on those cliffs, but it is virtually certain that it was not the first year. They continue to land there.

During the spring of 1984 an immature female Peregrine was regularly present at St. Aldhelm's Head. She was joined by a noisy and highly aggressive immature tiercel in spring 1986. He in particular took to resting up on the fulmars' favoured ledge, since when they seem not to use it. Before this tiercel's arrival Dick Burt on the 2nd May 1986 saw the falcon coming in off the sea carrying something big and white, which she dropped into the water. After a few minutes it took off, proving to be a fulmar.

However, Peregrines may not always dominate. At Berry Head last year they moved in on a ledge frequented by fulmars. The fulmars were seen spraying the falcon (not the more wary tiercel) with oil and it was later picked up in a sickly condition.

#### CORMORANT

The Gad Cliff colony has been counted in late April or May. The querulous calls of chicks have been heard on March 31st, so eggs are laid at least by the very first days of that month, some

#### *Cormorant: Gad Cliff Occupied Nests In May*

Year	77	78	82	84	85	86	87	88	89	90	91	92
Count	80	83	84	90	83	88	106	110	111	108	94	89

\* Winter 78/79: there occurred a large rock fall at Gad Cliff, extending the full height and carrying away the easternmost ledges of the Cormorant colony (on the east side of the high buttress above Wagon Rock)

#### *Cormorant: Miscellaneous nest counts*

1978	Bat Head to White Nose:	24 (from boat)
1982		24 (from shore which is too close underneath; some nests probably missed)
1991		38 (from boat)
1992		53 (from boat)
08.06.82	Bollard	82
30.05.83		82
19.06.84		92
14.06.85		100
16.06.86		117
05.06.87		147
19.06.88		120
30.05.90		172
10.06.91		122
11.06.92		127

probably even in February. Some chicks are fledged by May 26th, but all the Gad counts were done before this date. (However, most of the Bat Head and Ballard counts were done later, so allowances for early departure should be made). Some Gad Cliff nests remain occupied as late as 25th August. Is it possible that these late birds are replacement layings resulting from predation by Ravens that certainly take numbers of eggs and newly hatched chicks?

The Gad Cliff colony continues to be remarkably stable, ranging in 27 years only between 80 and 111 occupied nests, and it would seem White Nose is similarly stable, but counts have unfortunately been much too far apart. However, events at Ballard have been dramatic, with a leap from 11 in 1974 to 82 in 1982, unfortunately without interim counts.

As remarked in 1977, no Cormorants nest elsewhere in Purbeck, but there are various other winter roost cliffs. However, it was noticeable during 1991 that there was increased frequenting of Cormorants during the spring and summer at other sites, particularly Buttery Corner. On December 17th 1991 7 were ashore at Halsewell, near Seacombe, 5 already in summer plumage, 2 of them displaying by wing flapping, thereby flashing their white thigh patches like Belisha beacons. With Gad Cliff almost certainly and Ballard now probably at saturation point, can we expect a new colony?

(This speculation has proved to be correct, as a nest was being built on the 8th March, 1992. This is certainly the first breeding of Cormorant between Swanage and Chapman's Pool in 35 years).

#### SHAG

The most marked feature of this period has been the shift away from the east side of St. Aldhelm's Head and the start of nesting at Durlston and Bird Hole, etc., in particular the virtual crash in 1984 on the stretch of cliff between Sutton Rock and Battery. These birds were nesting close to the Bird Rock Guillemots, which also mysteriously crashed the previous year. What happened?

Seen diving and bringing 'twiggy' looking weed to the surface and then to nest over several years from the same area, west of Dancing Ledge. Definitely not flotsam.

#### *Shag: Sites other than Durlston to St. Aldhelm's Head*

1978	Gad Cliff	5 + 1 on Worbarrow Tout
1978	Bat Head	4
1982	Ballard	6 between the Head and north of the fault
1985	Gad Cliff	5 + 1 on Tout
1986	Gad Cliff	3 + no count
1991	Gad Cliff	3 + 1 on Tout
1991	Gad Cliff	1 Fossil Forest
1991	Bat Head	1 only

#### KITTIWAKE

The steady growth from 1956 peaked at almost 300 breeding pairs in 1980-82, since when numbers have mostly fallen, so that they are back to 1970 levels. It is interesting that Blacker's Hole, one of the secondary colonies, now has more birds than Durlston, but Crab Hole, colonised a year earlier, no longer echoes to their clamour at all. Peregrines seen taking adults and chicks, which seem to have no defence, the falcons pinning them down and eating them on their nests.

To the east the Isle of Wight colony, 8 nests in 1969, at least 8 individuals in 1982, is now defunct, but in Sussex and Kent new colonies have increased to 979 and 2886 nests respectively.

#### RAZORBILL

The first individuals, already assuming summer plumage, appear close inshore soon after first light on mild mornings in early February, or even the last days of January, an early record being 4 on 30th January 1993. As the season advances more arrive and the visits last longer. Groups form and with distinctive tails

Shag: Durlston - St. Aldhelm's Head. Occupied Nests In Early June

Year	D	RR	SH	BH	WW	YH	SH	BC	SA	TM	HC	CF	G	MC	H	CH	S	SB	Total
1976	0	0	0	3		1	2	3	3	1	0	0	0	0	1	2	5	27	48
1977	0	0	0	3	1	0	0	0	3	0	0	0	0	0	0	0	2	28	37
1978	0	0	0	3	1	1	1	2	3	0	0	0	0	0	1	2	3	19	36
1979	0	0	0	2	0	1	0	3	3	0	0	0	0	0	1	0	1	38	49
1980	1	0	0	2	0	1	1	3	3	1	0	0	1	0	1	1	5	7	27
1981	1	0	0	4	1	0	2	1	4	0	0	0	0	0	2	0	1	17	33
1982	2	0	0	3	0	1	1	4	5	0	0	0	0	0	1	0	6	18	47
1983	3	0	0	3	0	1	2	4	6	0	0	0	0	0	2	0	4	14	39
1984	2	0	0	5	0	2	1	5	6	2	0	0	0	0	3	1	8	2	37
1985	6	0	0	4	1	0	3	3	6	0	1	0	0	0	0	8	0	6	40
1986	9	1	0	5	1	1	0	7	8	0	0	0	0	5	7	0	7	2	53
1987	3	1	0	2	0	1	0	6	6	2	0	0	0	3	6	0	1	5	37
1988	9	0	1	3	1	2	1	5	6	0	0	0	0	2	8	0	6	3	47
1989	10	0	1	3	0	2	0	4	5	1	0	1	0	2	7	0	7	5	48
1990	7	0	0	4	0	0	2	5	8		1	0	1	3	2	0	3	10	46
1991	8	1	0	3	0	1	3	5	7	2	0	0	0	3	2	0	2	11	48
1992	9	2	0	4	1	4	1	4	5	6	2	0	1	0	4	4	4	15	66

D = Durlston; RR = Ragged Rocks; SH = Square Hole; BH = Blacker's Hole; WW = White Ware - Reform; YH = Yalley Hole; SH = Smockey Hole; BC = Bird Cove; SA = Scratch Ass; TM = Top Mast; HC = Hedbury Cove; CF = Cliff Fields; G = Gallery; MC = Michael's Cove; H = Halsewell; CH = Crab Hole; S = Crab Hole-Sutton; SB = Sutton-Battery.

Kittiwake: Counts Of Occupied Nests In June

Year	D	BH	R	CH-S	Total
1976	86	18	6	61	171
1977	73	21	6	91	191
1978	76	31	8	81	196
1979	77	49	16	92	234
1980	106	100		86	292
1981	89	80	10	71	250
1982	121	91	4	81	297
1983	101	72	3	85	261
1984	89	77	0	49	215
1985	88	76	0	28	192
1986	65	83	0	11	159
1987	100	80	0	2	182
1988	104	94	0	0	198
1989	86	76	0	0	162
1990	86	79	0	0	165
1991	42	84	0	0	126
1992	38	91	0	0	129

D = Durlston BH = Blacker's Hole R = Reform CH-S = Crab Hole to Sutton Rock

cocked, they growl and bill rub, displaying bright yellow gapes before taking off to circle the breeding ledges with their special 'butterfly' mannerism. How smart and animated these spring birds are, in such contrast to those besmirched with oil that so frequently come ashore in winter, victims of our ugly abuse. How, though the wares still appear lifeless and a grey wind chills to the bone, they tell of spring!

During April there is a lessening of this courtship behaviour, but then a revival in late June and early July, presumably as non-breeding sub-adults visit and go through the motions. The first fish carrying, indicating a hatched chick, has been seen by 22nd May, so the first eggs are laid by about April 17th, with departure of the first chicks about June 10th; but most are later, some as late as 18th July.

I was wrong in predicting the demise of this colony by 1982. From 1976 to 1987 they seemed to show a remarkable stability at about 12 pairs, but in 1989 they were down to only 8 certain pairs. The Main Bench, Isle of Wight, colony has gone: none 8th June 1991 from 3 on 18th June 1986, when they were occupying a diagonal crack immediately above the easternmost Guillernots. With this disappearance Flamborough Head, Yorkshire, becomes

Razorbill: Boat Counts Of Individuals

June	Year	D	BH	R	H	CH	Total	
11	1976	2	2	7	1	2	14	
15	1977	7*	6a	7b	1	1	24	
		8 chicks visible on 2.07						
6	1978	3	3	6	1	1	14	
		12 pairs this year						
4	1979	2	4	5	?c	1	12	
		12 pairs this year						
1	1980	1	4	10	1	3	19	
16	1981	1	2	8		1	12	
		All of these with chicks						
3	1982	2	3	6	?	1	12	
		10 pairs						
16	1983	3	3	9	?d	1	16	
17	1984	2	4	10	6	2	24	
5	1985	4	3	4	?	3e	14	
		12 pairs it seems						
7	1986	4	5	16y.	1	2	29	
		morning count						
14	1987	2	8	9.z.	3	1	23	
		12 pairs it seems						
18	1988	1	3	2	1	1	8	
		Only 5+ certain pairs, but some chicks probably already gone by this date						
14	1989	3	2	5	0	2	12	
12	1990	3	2	4	0	0	8	
		pairs?						
16	1991	4	1	8	0	0		
		+6 on sea +1 on Ragged Rocks						
7	1992	3 + 2 on Awash	3	16	2	0		

\* +2 more on sea: at least 3 sites  
a 3 sites b at least 5 sites c very hidden site d 4 circling e 3 pairs y-1 Bird Cove  
07.06.86 z one on water close off Bird Cove 22.03  
D = Durlston; BH = Blacker's Hole; R = Reform; H = Halsewell; CH = Crab Hole

the nearest east-about colony.

Boat count samples are of much more use in assessing colony size than those of Puffin, but June counts can include non breeders. Some years it has been possible to prove actual breeding pairs by seeing the chicks, but some sites are difficult, in particular the high ledge at Durlston, where it seems only 2 pairs have bred of late, and yet spring assemblies would suggest more.

In July occasionally individuals turn up on ledges where there is no breeding. These are surely young adults venturing ashore for the first time.

Razorbills sometimes fish close inshore. 18th June 1978 the Halsewell bird dropped down to the water and commenced diving; in about 25 submergings it caught at least 2 fish, which it took up to its chick. Minutes later it repeated the whole performance, sometimes only 50-100 feet offshore. On 8th June 1985 one was repeatedly diving in the ebb tide rip off Durlston, beneath a cluster of Kittiwakes and Terns. But in general, as with Guillemots, they get their fish some way away.

Occasionally small billed sub-adults are met with in Purbeck waters in May, including, rarely, flightless individuals. After the July exodus, auks seem to become rare here, but by October not only are the local Guillemots returning to the breeding ledges, but Razorbills from elsewhere reach us. For example, on the 8th October 1982 a party of 30 passed off Peveril Ledge during only a few minutes spent sea watching. Dead birds, usually oiled but occasionally not, are often found ashore, particularly in winter. (Why should oil pollution seem to be to some extent seasonal?) Most of these must be from other colonies; one ringed individual was from Puffin Island, Anglesea.

How bleak Crab Hole and Halsewell have become without their Razorbills. They join Bat Head, Sutton Rock, Gallery, Cliff Fields, Idbery, Bird Cove, all forsaken since 1960.

#### GUILLEMOT

The counts seem to show a curious oscillation with the underlying trend being downwards until about 1983, since when no particular trend is evident. Counts for all the separate ledges

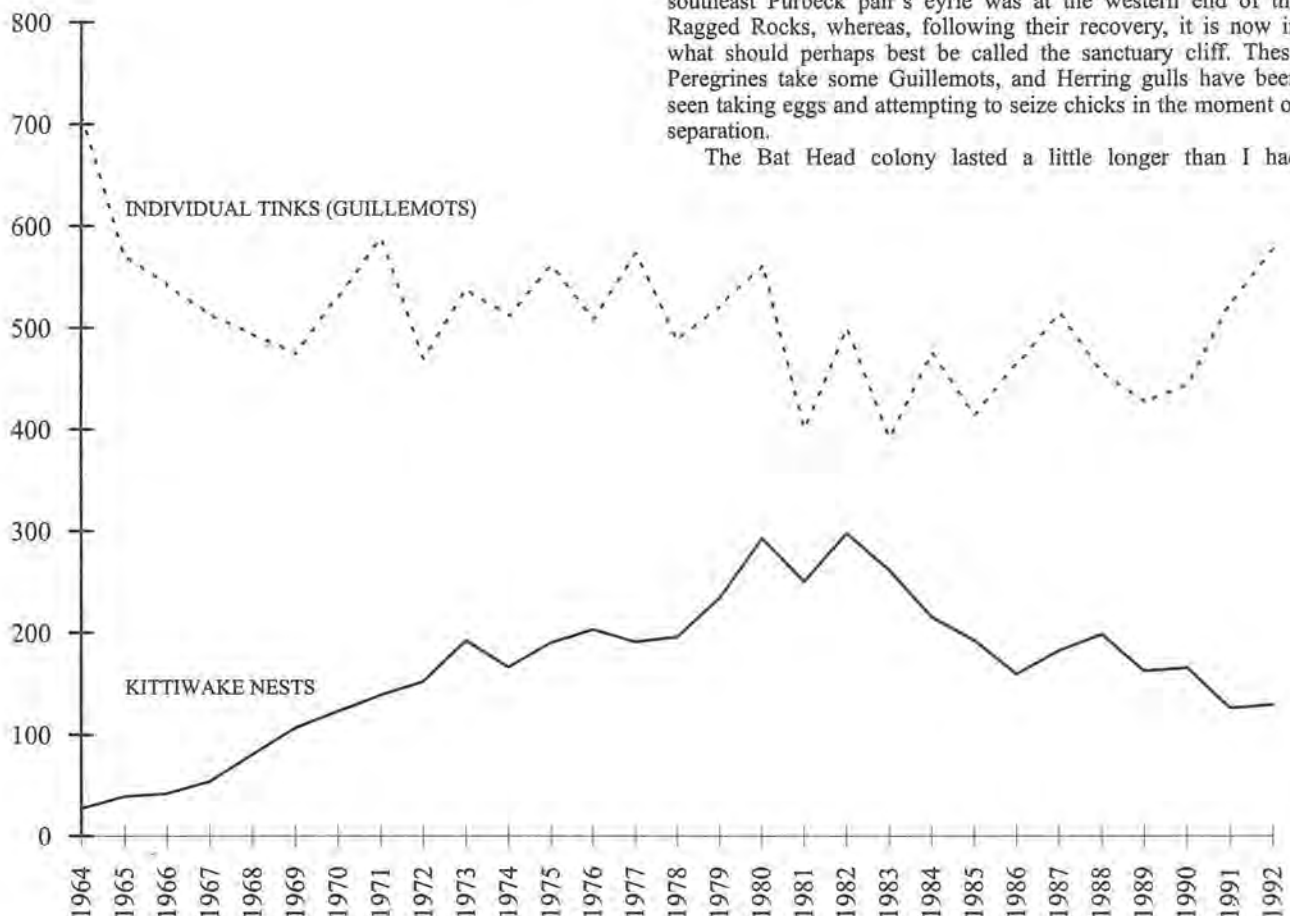
are included so their independent fortunes can be followed. Since 1975 5 further ledges have become deserted: (a) 3 of the Ragged Rocks sites (rock falls have altered the breeding ledges, but this stretch is climbed on a great deal). (b) White Ware which, though none bred in 1974 or 1975, some birds were still visiting in spring of 1976. They did not go on to breed, nor have they since. This desertion is almost certainly linked with climbing as an abseil stake was fixed dead above this colony. (c) Scratch Ass, which ceased in 1982.

The most singular feature of the period has been the sudden change of fortune of the Bird Rock colony, crashing from 74 individuals in 1982 to 0 in 1985. The birds were present in spring 1984 but had gone by June, too early for normal departure, which shows that some, at least, were attending this ledge and failing to breed rather than that they were just switching to another site. This stretch is not much climbed. Are rats a possibility? They are present in the shore under St. Aldhelm's Head and plentiful at Winspit and Dancing Ledge, appearing at dusk as the people leave. I suspect that much of the cliff is accessible to them.

Guillemots (and Razorbills) have the habit of scrambling out of the water onto shelving rocks beneath their breeding ledges, 'doing a Great Auk impression' as it has been described. The favourite rock in Purbeck, indeed the only one regularly used, is what was 'the Point', now lying awash beneath the Durlston western Guillemot ledge. As previously mentioned, this rock fell during the night of February 26th 1975, before when there was not a regularly used rock. Presumably birds loitering on it in June and July are mostly non breeding sub-adults or failed breeders. Their presence is a further complication to counting at Durlston.

What was particularly noticed on several June evenings in 1987 at Durlston was that in addition to the loiterers on the awash rock there were 40+ west of the Western Ledge, where no eggs are ever laid. Similarly, in 1987, 1988 and 1989 there were birds on a 'new' ledge at Blacker's Hole - see count table. Were some of these birds switching from Bird Rock? Durlston Guillemot numbers have held up well. Does the total ban on climbing east of Tilly Whim make this cliff the most attractive? It seems to have done so for Peregrine, as in pre-crash pre-climbing days the southeast Purbeck pair's eyrie was at the western end of the Ragged Rocks, whereas, following their recovery, it is now in what should perhaps best be called the sanctuary cliff. These Peregrines take some Guillemots, and Herring gulls have been seen taking eggs and attempting to seize chicks in the moment of separation.

The Bat Head colony lasted a little longer than I had



concluded. 4 eggs laid in 1978, 2 incubating adults, panting in the heat on June 5th 1982, but none in 1984 or since. How dismayed Llwellyn Powys would have been to witness this impoverishment.

Guillemots first return by mid-October in mild conditions, circling up to their ledges at first light. As the winter comes on it is difficult to see a pattern to their attendance. Some days when conditions would appear to favour a visit they do not appear, but on others large numbers can come in, more in fact than later in the year. For example, December 28th 1991, 112 flew out of Bird Cove, where most June counts have produced 40 or 50.

Matings occur months before egg laying and some birds arrive with fish. So fish carrying is not evidence of hatching chicks. Some eggs are laid by April 25th, so chicks are hatched by May 28th, and some are jumping by about 15th June. Most go around midsummer, and the last by 20th July. There appears not to be an end of season influx of non-breeders. As the chicks go so the numbers fall. I have never seen a Guillemot on a Purbeck ledge in August, but Ilay Cooper has once. As previously mentioned, there is a distinct difference in departures between ledges at Durlston. It occurs each year. The Western Ledge is forsaken before Puffin Hole. For example, 30th June 1987: 'only 1 chick with 8 adults left on the Western Ledge but Puffin Hole crowded with 82'.

The jumping of the partly grown chicks is a marvel. '20th July 1977. Saw the departure of a chick from Scratch Ass this evening, when still fully light'. [I quote this note as the event was unusual in several respects and one of the last from this now defunct colony. It was exceptionally early in the day, more usually it can be too gloomy to see well; and it is rare for a chick to be left unguarded. Normally the chick jumps first with the attendant adult crashing down, not flying straight after it]. The chick was well out towards the edge when we arrived. An adult was swimming a little way off. Both were calling a lot, the adult with its loud growls, the chick with its penetrating, insistent whistle [they develop this call prior to departure; it must serve to keep in touch with the parent - the male, as recent research has

shown - at night for the ensuing weeks]. The chick suddenly went down, but at such a steep angle it hit the cliff and just seemed to tumble. The adult joined it. Swimming closely together, sometimes diving, they made their way seawards'.

To rest on the oars, close under Tilly Whim on a quiet night about midsummer, can be memorable. As dusk comes on there is mounting excitement and the clamour increases. Loud growls from the old birds, high pitched squeaks from well-grown chicks. A chick comes forward from the crowd, stands looking down at the water like a reluctant bather. Perhaps it retreats, but again it comes to the edge. Suddenly it goes, dropping down at a steep angle into the sea. Its attendant parent jumps with it, not flying but, in its anxiety to keep close to its chick, literally crashing down behind it. Joining up, sometimes diving, they head straight out to be lost in the oncoming gloom. All amid the wash and murmur of the sea.

The birds go offshore and moult, and not much is seen of them during August and September, though occasionally moulting, flightless birds are encountered. 7th August 1976, one off Chapmans Pool; 8th July 1982, another in Durlston Bay, and, most remarkably, one on the rock awash on 30th June 1983, also lacking primaries.

Guillemots rarely seem to fish within sight of the breeding cliff, so 20th June 1986 was unusual with 20 or so actively diving and surfacing with fish close off Tilly Whim.

Robert Smith did a lot of work in catching and cleaning victims of oiling. He discovered that an easy way to catch beached birds was after dark by dazzling them with a bright torch. He found the retinas of Guillemots big and highly reflective. Are they, at least in part, nocturnal? Daylong visits to the cliff apparently without feeding may also suggest it. Some of the recently past generation of fishermen still called these birds Tinkershires, Tinkers or Tinks. It was therefore interesting to discover that the people of Newfoundland and Labrador call the similar Razorbill Tinkers, evidence of Dorset's past links with Canada.

In good conditions there is a strong chance of spotting bridled individuals. Some are surely missed. However, contrary to my

Guillemot: (boat Count of Individuals)

	11.6	15.6	06.6	04.6	01.6	15.6	03.6	16.6	17.6	05.6	07.6	14.6	18.6	14.6	12.6	16.6
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Durlston Puffin Hole	81	105	90*	7	71	63**	84*	55*	90*	85**	86	82*	95*	106	94*	108
				0+												
Cave	63	56	45	45*	61	31	62	42	52	60*	56	65	60	65	64	65
Earthrock	12	14	12	10	12	6	16	5	6	9	8	16	13	12	12	25
Western	63	44	43	84	72	69	64	49	72	71	72	68+	57	65*	67	94*
												39*West				
Bracket Awash	9	9	6	7	8	7	7	9	7	7	6	8	10	8	7	9
East Anvil	11	12	7	5	7	6	5	4	2	3	3	5	3	4	3	4
Ragged Rocks	7	10	7	7	6	4	5	3	3	4	6	15	4	0	3	3
	26*	27	26*	27	35	24	54	27*	40	24	42*	49	39	33	41	43
	4*	10	6	8	8	6	2	0	4	1		4	8	4	0	2
	6	1	-	-	1									4*	6*	5*
	7	9	13	4	3*	4	1	1								
	6*	7*	12	12	4*	5*	5	4*								
Blacker's Hole	X	14	12	9	12	8	11		14	13	16	13+	17+	10+	9	13
												7West	10West	3West		
Reform	29*	32*	31*	31	45	21	26*		37	24	31	X	28	15	24	35
Bird Cove West	25	34	25	1	31	21	15	23	35	33*	42	40	45	43	38	55*
				8+												
Scratch Ass	3	4	3	3	1	1	0	0	0	0	0	0	0	0	0	0
Top Mast	10+	10	10	10	9	5	8	7	9	6	15	11	10	8	0	7
Halsewell	12	9	9	12	13	7	11	5	11	16	(5)	9	6	0	1	3
Crab Hole	32	32	25	33	38	29	25	37	49	41*	30	37	24	20*	14*	14*
East Sutton	2	7	5	13	13	4*	2	7	16	7	5	8	18	5	4	14*
West Sutton	7	5	8	2	4	2	2	3	6*	4	10	4	4	3	2	8
Bird Rock	94	116	93*	108	107	78	74*	40	15	0	26*	9	7	23*	11	22*
Total	509	567	488	564	561	401	498	354	474	499	464	513	458	417	444	524

\* = bridled individual X = no count

earlier remarks, it does seem as if the same individuals come for several successive years to the same ledge. One on the westernmost Ragged Rocks ledge would appear to have bred there from 1975 to 1986 for example.

The great storm surge of December 17th 1989, had more impact on this cliff than any blow in 30 years. Among the several rock falls it caused was the collapse of the traditional Guillemot ledge at Halswell. However, a singular event of even greater significance has been the fall of the roof of Williams Cove in calm weather on about the 20th March, 1992, a cave whose age must be measured in hundreds, if not thousands of years.

#### PUFFIN

Puffins first appear close inshore in late February or early March. An early one was close off Bird Cove on 18th February 1989, soon after first light, with a wild southwesterly gale blowing. By the 1st March some are landing and going in to their holes of the previous year. These early birds must surely all be experienced. As March advances they begin their headjerking courtship, bill rubbing and mating on the water. Occasionally weed for nest material is carried, none plucking vegetation from the land as they do elsewhere, for their Purbeck ledges are bare.

Apparently Puffins never engage in carrying fish as a form of display, as Guillemots do, so a beakful of fish is sure evidence of a hatched chick. My earliest has been a laden bird going eastwards past St. Aldhelm's Head on 14th May 1985, which means that some eggs at least are laid by 2nd April, not April 10th as previously quoted. Fledging periods in Britain average about 44 days, so those earliest chicks may be leaving before June is out. Laying must extend over rather more than a month as, exceptionally, fish laden adults are still coming in during the first days of August. But those August lingerings are rare; most have gone by mid-July.

One way to judge the colony size would be to count mature adults in spring, but their attendance at the colony is too irregular. During the incubation of late April and May they are not much in evidence, but by June they become much more noticeable. Not only are the breeding adults visible to-ing and fro-ing with fish for the chicks, but particularly on fine evenings, they socialize and loiter about both on the cliff and the water. This would be a time to count them, but the arrival of 1- (readily identifiable by their smaller bills and dusty faces), 2- and 3-year-old non-breeders confuses things. Annual boat counts in the first half of June have been attempted each year, but the irregular presence of assemblies, even the mere chance of any birds being present, means they are of little use in following the fortunes of the colony. For example, 11th June 1976 produced 23 individuals, 1st June 1980 only one.

A better indicator of breeding is, of course, fish carrying, and in some seasons an effort has been made to note all those sites in use by watching from long range cliff vantage points and from boats.

Bird Cove, the centre of Purbeck Puffindom, is difficult to count, as it cannot be easily seen into. Several pairs breed close together here, disappearing into deep recesses behind the Guillemots. The number of fish taken in gives some comparisons with other more easily observed sites, and figures given are, I suspect, minima. Long range watching is generally necessary as Herring Gulls can set up a clamour which alarms the auks. Gulls

#### *Puffin: Some evening loiterings:*

29 June 1977	15 off Sutton including one 1st year	
29 July 1977	17 off Bird Cove	
27 June 1978	17	
28 June 1978	22 off Bird Cove	including one 1st year
29 June 1978	18	
5 July 1978	5 off East Winspit	10 Sutton rock
7 July 1981	13 off Bird Cove	
9 July 1981	16 off Bird Cove	
9 July 1981	14 off Sutton	
26 June 1985	21 off Bird Cove	including one 1st year
2 July 1987	18 off Bird Cove	

#### *Puffin: Breeding Pairs*

	1977	1980	1985	1987	1990	1992
Durlston				1	0	0
White Ware	1	0	0	0	0	0
Valley Hole	0	0	0	0	0	0
Smokey Hole	1	1	2	1	0	0
Platter	2	2	1	1	0	0
Bird Cove	4+	4+	3+	3+	2+	2+
Scratch Ass	1+	3	2	2	2	2
Top Mast	1	1	1	2	0	0
Mid Hedbray	1	0	0	0	0	0
Halsewell	0(?)	0	0	0	0	0
East Winspit	1	0	0	0	0	0
Sutton Rock	5+	4+	3	3	2	2
Total	17+	15+	12+	13+	6+	6+

do not appear to be predators of Puffins here in Purbeck, but simply by standing close to a Puffin hole they may deter them from coming in when feeding their chicks.

1987 was a special year in that quite unexpectedly a pair appeared and bred at Durlston. This was the first breeding there since 1969. The warden, Hamish Murray, actually saw the chick going seawards well before dark on 15 July. Here, at last, was perhaps a sign of a reversal of the inexorable decline of the past 30 years or more. But sadly no subsequent breeding attempts there seem to have occurred, and the general decline continues. That year (1969) the Purbeck total was 37+ pairs. By 1972 it was down to 27+, when the last Swanage parish site (just east of the Anvil) was finally deserted. Now, at a mere 6 pairs, it looks as though we are going to lose them. How bleak a prospect it is that March should come around without a Puffin arriving from over the horizon to take up its ancestral cliff.

There is a revival of courtship behaviour amongst these high summer evening gatherings. Pairs headjerk and bill rub and, if there is not too much noise from wind and swell, their soft *paarr* calls come across the water, less strident than the braying Guillemots, telling of convergence with the Jackass Penguins of the far South.

In 1977 I commented that the edge of the race on St. Aldhelm's Head during the ebb is a favourite feeding place. It could be added that they are also to be found on the edge of the race where the counter meets the main flood as it streams away to the southeast off Sutton.

Sometimes a Puffin will drop to the water and quickly accumulate a beakful of fish close in to the breeding cliffs, but the edge of the race does seem a favourite place. For example, evening of 5th July 1984, between 7 p.m. and 8 p.m., watching from Sutton rock, 5 lots of fish were taken in to 2 sites. Each time the fish carrier departed away to the west, landing in the ruckle where the Chapman's Pool outset meets the ebb. Other Puffins were there, 2 of them getting up and setting off eastwards. In the perfect clear evening light they could be followed all the way round to Bird Cove.

#### GULLS

Counts of Herring gulls have not been attempted each year, but they were counted in 1965. A sharp drop in numbers has been apparent recently, so another count was done in 1989, which confirmed the impression. Between Durlston and St. Aldhelm's Heads in 1965 there were 208 occupied nests, but in 1989 there were just 46.

Over the past 30 years occasional pairs of Lesser Black-backed Gulls seem to have held territories at Sutton rock, Reform and Ballard (just north of the great fault), but no certain breeding has been proved.

There are usually 2 pairs of Greater Black-backed Gulls between St. Aldhelm's and Durlston Heads, but more at Ballard, where several nest on the top of the cliff base beaches, between Ballard Head and Old Harry.

Haysom, W.T., 1977 'The Status of some Purbeck Sea Birds', *Dorset Proceedings* 99, 97-103.

# The Macro-invertebrates of Fourteen West Dorset Ponds

PHILIP TEMPLE  
A Mansel-Pleydell Prize Essay

## SUMMARY

Surveys for invertebrates were made in 14 ponds of West Dorset from 1989 to 1992. These sites encompass an age range from 2 to several hundred years. The species identified are listed and qualified, and the most common ones, 3 aliens, and 1 rare gastropod are noted. Comment is made on how well the results represent the area studied.

## INTRODUCTION

The Pond Action group at Oxford Polytechnic has specified requirements (Biggs *et al.* 1989) for a National Pond Survey (NPS). Their aim is to construct a pond classification scheme, a relatively neglected topic in freshwater biology. The first stage is to be based on invertebrate communities defined to species level, though environmental data is also being recorded for subsequent analysis.

This paper is a selective report on the data contributed from West Dorset to the NPS. The work was begun in August 1989 and ended in October 1991.

## SITE INFORMATION

The 14 ponds chosen for this study are all from the Bridport area (Figure 1). Table 1 shows for each site the grid reference, altitude, age, the presence/absence of fish, shading, bottom material and vegetation cover - both submerged and surface. The fish column does not allow for the possibility that eels could be present. These are regularly reported when ponds hereabouts are dredged and are probably more common than is generally realised; they are found in pond C. The ages given as 150 years or more are guesses and no allowance has been made for any redigging. Dredging is known to have taken place at C some 6 years ago, and at J just 6 months prior to the first sample taken there.

Measurements of the water pH, alkalinity, conductivity, and calcium and nitrate contents were, with some exceptions, made in each of 3 seasons (see Sampling Method). The pH and nitrate values were obtained from indicator strips, the alkalinity and calcium content by titration, and conductivity by a meter. The measures are subject to seasonal, daily and local variation. Despite this, the relative values between ponds were largely consistent, and in Table 2(a) they are represented by mean values.

Nitrate levels were high at F (where pigs have access) and at J (close to a slurry pit).

Table 2(b) lists maximum pond areas, maximum depths of water and sediment, the source of water supply and any information on the last time the pond dried out (ie lost all free water). The silt depth given for F is for the old part of the pond; an overflow area of about equal size which exists for most of the year has almost none. The water of pond E was down to 0.7m<sup>2</sup> x 5 cm deep in August 1990 and probably dried up thereafter. 1990 and 1991 were notable in recent decades for low water table levels. 6 ponds were affected - D, G, E, F, I, M - the latter four drying out, F for the first time in memory for 35 years.

## SAMPLING METHOD

The NPS specified 11 groups of invertebrates to be identified to species and it is useful to consider them in 3 sets:

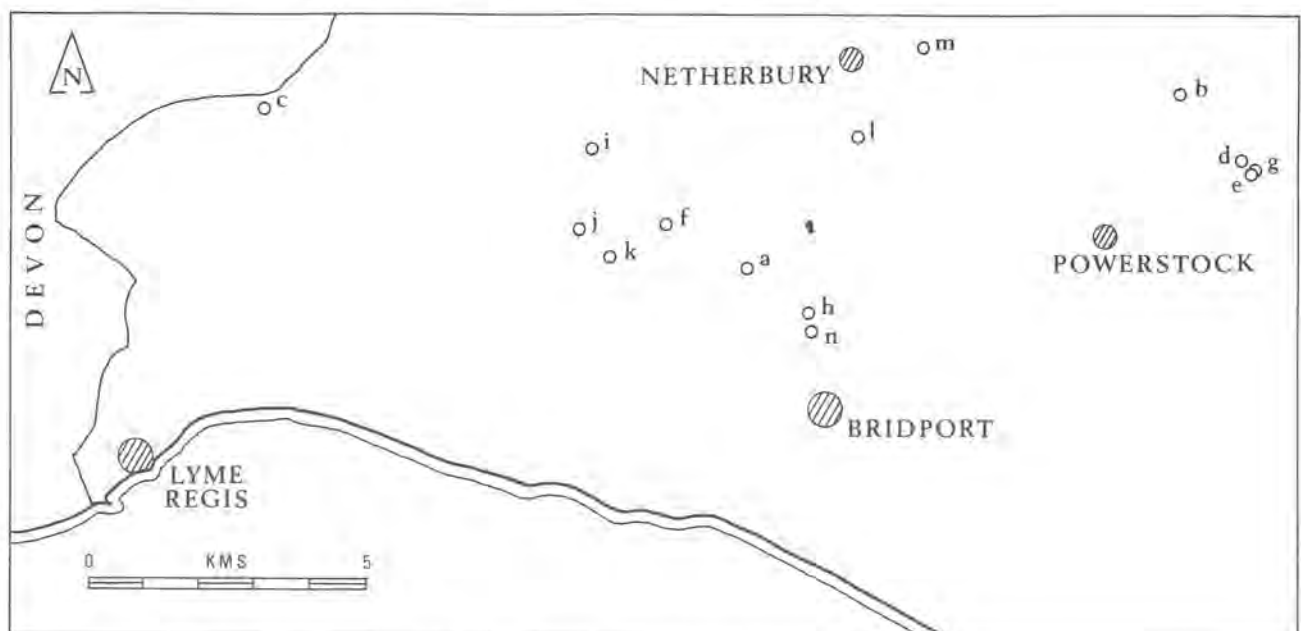
(A) Tricladida, Gastropoda, Hirudinea and Malacostraca are the non-insects, incapable of flight and almost all permanently resident in water at all stages of their life history,

(B) Ephemeroptera, Plecoptera, Megaloptera, Odonata and Trichoptera are insects present in water in the larval form only, and

(C) those Hemiptera and Coleoptera whose adult forms live in water - or on the surface.

The identification keys (see Bibliography) for these groups are almost all complete down to species level.

Except for the additions noted below, sampling was carried out over 3 seasons: Spring (defined as March to May), Summer (June to August) and Autumn (September to November). For each pond they were made in consecutive seasons, though not



1. Map of the Bridport area showing pond locations

TABLE 1. Location, age and environmental data of the ponds.

Pond	NGR	Alt. (m.)	Age (1.1.92) (years)	Fish?	Shade (d=dense) (%)	Dominant Bottom Material	Vegetation Cover (Summer %)	
							submerged	surface.
A	SY 452955	25	10	NO	0	Ooze	95	40
B	SY 529986	175	4	NO	0	Leaves	40	20
C	SY 365983	190	500+	NO	10(d)	Ooze & Leaves	40	80
D	SY 540974	140	140	NO	0	Ooze	5	5
E	SY 542972	140	5	NO	45	Leaves	60	25
F	SY 437963	30	150	NO	10(d)	Ooze	25	0
G	SY 542972	140	3	NO	80	Leaves	10	5
H	SY 462947	25	6	YES	5(d)	Silt & Leaves	55	15
I	SY 424976	55	150	NO	70(d)	Ooze & Leaves	15	0
J	SY 422962	65	150	NO	25(d)	Ooze & Leaves	2	0
K	SY 427957	70	10	YES	2	Silt & Leaves	25	25
L	SY 471978	60	2	NO	0	Silt & Leaves	15	0
M	SY 483994	75	150	NO	80(d)	Ooze & Leaves	45	25
N	SY 463944	20	9	YES	0	Silt	95	50

TABLE 2. Pond water data:

## (a) chemical

Pond	pH	Conductivity ( $\mu\text{mhos/cm}$ )	Alkalinity (mmol/l)	Calcium (mg/l)	Nitrate mg/l
A	7.2	490	1.17	37	0
B	6.5	280	0.26	23	0
C	6.0	170	0.15	10	0
D	7.1	260	0.92	44	0
E	6.8	220	0.43	21	0
F	7.9	730	2.82	82	25
G	7.3	350	1.18	53	0
H	7.5	550	1.74	55	5
I	7.4	790	1.20	40	0
J	7.3	440	0.95	40	25
K	7.3	360	1.14	45	0
L	7.3	370	1.19	43	0
M	7.3	390	1.74	62	0
N	7.8	530	1.33	50	10

## (b) physical

Pond	Area		Max. Depth		Most Recent Drying Out	Source
	Max. ( $\text{m}^2$ )	Min. ( $\text{m}^2$ )	Water (m.)	Sediment (m.)		
A	405	405	0.65	0.10	never	Stream
B	122	122	0.70	0	never	Nearby Spring
C	1400	1270	0.65	0.25	never?	Nearby Spring
D	232	158	0.70	0.40	never?	Rain/ Water Table
E	80	1	0.35	0.30	Sept '90?	Ditch
F	579	0	0.60	0.80	Aug '90	Spring
G	23	19	1.00	0.20	never	Rain/ Water Table
H	320	320	1.50	0.10	never	Nearby Spring
I	243	0	0.60	0.40	Sept '90	Rain/ Water Table
J	365	365	1.10	0.10	never?	Field Drainage
K	1155	1155	5.00	0.15	never	Springs
L	205	205	1.50	0	never	Nearby Spring
M	193	0	0.20	0.25	Sept '91	Spring
N	2420	2420	2.10	0.15	never	Stream

necessarily in the same year. Each sample consisted of vigorous sweeps with a standard net (mesh size 1mm and an opening of approximately 22cm x 24cm) for a total of 3 minutes.

The allocation of the time depended on a survey of habitats within the pond. These included substrates, edge vegetation, vegetation in the main water body, the open water and, where there is an inlet, the zone adjacent to it. The aim was to ensure that every kind of habitat was sampled in order to maximise the number of species obtained within the 3 minute time constraint. Such selection is necessarily subjective. In this study most of the individual habitat samples were separately sorted and identified and this led to an increased skill in their selection. Additionally, pond A was totally resampled and analysed in August 1990. Consequently, some of the 1989 and early 1990 samples were repeated in the following year so that 48 collections in all were taken.

The NPS specification requires that the 3 minutes be equally divided between the habitats, but as this was not always practicable some adjustments were made. For example, where an individual habitat was so small that to use all of the allocated time would have required repeated sampling in the same location, perhaps even being destructive of vegetation.

Furthermore, efficiency of sampling varied with habitat. Dense stands of *Iris pseudacorus* were found to be particularly difficult, though the pond A analysis (above) showed that nothing would be missed by excluding them. In some cases it was more practical to remove whole clumps of aquatic plant, for instance where the alien *Crassula helmsii* was too dense to penetrate with a net (pond C).

Sorting in most cases was completed on the day of sampling. If not, the samples were refrigerated to keep organisms alive and so more visible. 3 days was found to be a sensible limit for this procedure. Remaining live organisms were returned to the pond of origin.

A count was also recorded for each species but is not part of this report. However, some reference is made to these values in the Discussion.

## RESULTS

Table 3 lists the species found in each of the 14 ponds. The following qualifications apply:

(a) Some larval insects are not identifiable until the final instar. This applies especially to the Trichoptera and some of the Odonata, and these groups are to some extent under-represented.

(b) In the case of Odonata 'f', standing for 'seen in flight', is recorded where the adult was seen but the larva was either not

TABLE 3. Species found in the 14 West Dorset ponds.  
(x = in a sample; f = seen in flight only)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
TRICLADIDA														
<i>Polycelis nigra</i> (Müller)	x		x			x		x			x		x	
GASTROPODA														
<i>Potamopyrgus jenkinsi</i> (Smith)	x	x	x		x	x		x		x	x	x	x	x
<i>Lymnaea glabra</i> (Müller)					x									
<i>Lymnaea peregra</i> (Müller)		x	x					x			x			x
<i>Lymnaea stagnalis</i> (L.)			x											
<i>Lymnaea truncatula</i> (Müller)		x	x		x	x			x			x		x
<i>Aplexa hypnorum</i> (L.)														x
<i>Physa acuta</i> type	x		x					x						x
<i>Armgier crista</i> (L.)	x			x	x	x		x		x	x		x	
<i>Gyraulus albus</i> (Müller)														
<i>Planorbis carinatus</i> (Müller)										x			x	
<i>Anisus leucostoma</i> (Millet)			x			x								
<i>Acroloxus lacustris</i> (L.)	x		x											
HIRUDINEA														
<i>Theromyzon tessulatum</i> (Müller)	x	x	x	x		x		x			x	x	x	x
<i>Glossiphonia heteroclita</i> (L.)	x										x			x
<i>Glossiphonia complanata</i> (L.)	x										x			
<i>Helobdella stagnalis</i> (L.)	x		x		x			x			x	x	x	x
<i>Haemopsis sanguisuga</i> (L.)				x										
<i>Erpobdella testacea</i> (Savigny)									x				x	
<i>Erpobdella octoculata</i> (L.)	x		x		x	x	x	x						x
MALACOSTRACA														
<i>Gammarus pulex</i> (L.)	x	x						x		x	x			
<i>Cranonyx pseudogracilis</i> (Bousfield)														x
<i>Asellus aquaticus</i> (L.)			x					x					x	x
<i>Asellus meridianus</i> (Racovitza)	x		x			x		x	x					
EPHEMEROPTERA														
<i>Cloeon dipterum</i> (L.)	x	x	x	x		x	x	x	x	x	x	x		x
<i>Habrophlebia fusca</i> (Curtis)										x				
<i>Ephemera danica</i> (Müller)		x												
<i>Caenis horaris</i> (L.)	x	x		x				x			x	x		x
PLECOPTERA														
<i>Nemoura cinerea</i> (Retzius)					x	x			x					
<i>Nemurella picteti</i> (Klapálek)	x													
MEGALOPTERA														
<i>Sialis lutaria</i> (L.)	x		x	x		x	x	x			x			x
ODONATA														
<i>Anax imperator</i> (Leach)	x	x	x	x				x		x	f	x		x
<i>Aeshna cyanea</i> (Müller)	x	x	x	x	x		x	f			x	x		
<i>Sympetrum danae</i> (Sulzer)				f										
<i>Sympetrum sanguineum</i> (Müller)	f			f										
<i>Sympetrum striolatum</i> (Charpentier)	f	x	f	f		f		f				x		f
<i>Libellula depressa</i> (L.)	x	x	x	x				f				x		f
<i>Libellula quadrimaculata</i> (L.)				x										x
<i>Lestes sponsa</i> (Hansemann)		x		f										
<i>Pyrrhosoma nymphula</i> (Sulzer)	x	x	x	x	x		x	x			x	x	x	
<i>Ischnura elegans</i> (van der Linden)	x	x		f				x		f	x	x		x
<i>Enallagma cyathigerum</i> (Charpentier)	x	x	x	f		f		x		x	x	f		x
<i>Coenagrion puella</i> (L.)	x	x	x	x		x		x		x	x	x		x
TRICHOPTERA														
<i>Plectonemia geniculata</i> (McLachlan)								x						
<i>Holocentropus picicornis</i> (Stephens)	x							x						
<i>Phryganea bipunctata</i> (Retzius)											x			
<i>Trichostegia minor</i> (Curtis)					x									
<i>Halesus</i> sp.													x	
<i>Anabolia nervosa</i> (Curtis)											x			
<i>Glyptotaelius pellucidus</i> (Retzius)						x								
<i>Limnephilus centralis</i> (Curtis)												x		
<i>Limnephilus flavicornis</i> (Fab.)						x								x
<i>Limnephilus lunatus</i> (Curtis)	x	x	x		x	x		x			x	x		x
<i>Limnephilus marmoratus</i> (Curtis)			x	x							x	x		
<i>Limnephilus vittatus</i> (Fab.)												x		
<i>Sericostoma personatum</i> (Spence)												x		
<i>Athripsodes aterimus</i> (Stephens)	x			x				x			x			
HEMIPTERA														
<i>Mesovelia furcata</i> (Mulsant & Rey)				x										
<i>Hydrometra stagnorum</i> (L.)	x	x						x			x			
<i>Velia caprai</i> (Tamanini)					x									
<i>Microvelia reticulata</i> (Burmeister)	x			x				x			x	x		
<i>Gerris gibbifer</i> (Schummel)					x		x							
<i>Gerris thoracicus</i> (Schummel)									x					x
<i>Gerris lacustris</i> (L.)	x	x		x	x		x	x	x	x	x	x		x
<i>Gerris odontogaster</i> (Zetterstedt)	x			x								x		x
<i>Nepa ceneria</i> (L.)			x		x						x			x
<i>Ranatra linearis</i> (L.)	x			x										x
<i>Ilyocoris cimicoides</i> (L.)	x		x	x				x		x				x
<i>Notonecta glauca</i> (L.)	x	x	x	x		x	x	x	x	x	x	x		x
<i>Notonecta marmorea viridis</i> (Delcourt)	x			x		x		x	x	x	x			x
<i>Notonecta obliqua</i> (Gallen)	x	x	x	x		x			x			x		
<i>Notonecta maculata</i> (Fab.)	x			x						x				

Table 3 continued

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
<i>Plea leachi</i> (McGregor & Kirkaldy)	x	x	x	x		x		x		x	x	x		x
<i>Cymatia bondsdorffii</i> (Sahlberg, C.)	x													
<i>Cymatia coleoprata</i> (Fab.)	x		x								x			
<i>Callicorixa praeusta</i> (Fieber)	x	x				x		x	x	x	x			x
<i>Corixa punctata</i> (Illiger)	x	x	x	x		x	x	x	x	x	x	x		x
<i>Corixa panzeri</i> (Fieber)	x			x							x			
<i>Hesperocorixa linnaei</i> (Fieber)			x					x			x			
<i>Hesperocorixa sahlbergi</i> (Fieber)	x	x	x	x	x	x			x	x		x	x	
<i>Hesperocorixa castanea</i> (Thomson)		x		x					x					
<i>Hesperocorixa moesta</i> (Fieber)		x	x											
<i>Arctocorixa germari</i> (Fieber)	x													x
<i>Sigara dorsalis</i> (Leach)	x	x	x	x		x		x	x	x	x	x	x	x
<i>Sigara distincta</i> (Fieber)	x		x			x		x	x	x	x	x		x
<i>Sigara falleni</i> (Fieber)	x	x		x				x	x	x	x			x
<i>Sigara scotti</i> (Douglas & Scott)				x										
<i>Sigara lateralis</i> (Leach)	x	x		x		x		x	x	x				x
<i>Sigara nigrolineata</i> (Fieber)	x	x	x	x		x	x	x		x		x	x	
<i>Sigara concinna</i> (Fieber)						x								
<i>Sigara venusta</i> (Douglas & Scott)	x		x	x				x		x	x			
COLEOPTERA														
<i>Hygrobia hermanni</i> (Fab.)	x		x							x				x
<i>Gyrinus substriatus</i> (Stephens)	x	x	x	x		x	x	x	x	x	x	x		
<i>Gyrinus urinator</i> (Illiger)	x													
<i>Haliphus confinis</i> (Stephens)				x										
<i>Haliphus fluviatilis</i> (Aube)	x		x								x		x	x
<i>Haliphus heydeni</i> (Wehncke)	x	x	x	x	x	x	x		x	x	x		x	
<i>Haliphus immaculatus</i> (Gerhardt)	x	x		x				x			x			
<i>Haliphus lineatocollis</i> (Marshall)	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Haliphus obliquus</i> (Fab.)		x	x	x				x			x			
<i>Haliphus ruficollis</i> (Degeer)	x	x	x	x				x						
<i>Noterus clavicornis</i> (Degeer)	x	x	x			x		x		x		x		
<i>Colymbetes fuscus</i> (L.)			x					x	x					
<i>Copelatus haemorrhoidalis</i> (Fab.)								x						
<i>Rhantus suturalis</i> (MacLeay)		x						x						
<i>Ilybius ater</i> (Degeer)			x	x				x						
<i>Ilybius fuliginosus</i> (Degeer)			x		x		x		x	x	x	x		x
<i>Agabus bipustulatus</i> (L.)	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Agabus melanocornis</i> (Zimmermann)					x									
<i>Agabus nebulosus</i> (Forster)	x	x		x		x		x	x	x				
<i>Agabus paludosus</i> (Fab.)								x						
<i>Agabus sturmi</i> (Gyllenhal)	x		x		x		x	x	x		x	x	x	x
<i>Dytiscus marginalis</i> (L.)		x		x				x				x		
<i>Acilius sulcatus</i> (L.)		x		x			x		x					
<i>Laccophilus hyalinus</i> (Degeer)	x										x			
<i>Laccophilus minutus</i> (L.)	x	x	x	x		x		x	x	x		x		x
<i>Stictotarsus duodecimpustulatus</i> (Fab.)	x													
<i>Hyphhydus ovatus</i> (L.)	x		x	x		x		x		x		x		
<i>Hygrotus inaequalis</i> (Fab.)	x	x	x	x		x		x	x	x	x	x		x
<i>Coelambus confluentis</i> (Fab.)			x			x								
<i>Hydroglyphus pusillus</i> (Fab.)				x				x						
<i>Oreodytes sanmarkii</i> (Sahlberg)			x											
<i>Hydroporus angustatus</i> (Sturm)						x			x					
<i>Hydroporus discretus</i> (Fairmaire)				x									x	
<i>Hydroporus ferrugineus</i> (Stephens)		x												
<i>Hydroporus incognitus</i> (Sharp)			x		x							x	x	
<i>Hydroporus memnonius</i> (Nicolai)					x							x		
<i>Hydroporus nigrita</i> (Fab.)			x											
<i>Hydroporus palustris</i> (L.)	x		x	x	x	x	x	x	x		x		x	
<i>Hydroporus planus</i> (Fab.)	x	x	x			x		x	x	x		x		
<i>Hydroporus pubescens</i> (Gyllenhal)						x								
<i>Hydroporus tessellatus</i> (Drapiez)		x	x	x		x		x	x	x				
<i>Suphrodytes dorsalis</i> (Fab.)						x			x					
<i>Elmis aenea</i> (Müller)											x			
<i>Coelostoma orbiculare</i> (Fab.)			x			x		x						
<i>Hydrobius fuscipes</i> (L.)		x	x	x				x	x	x	x		x	x
<i>Helophorus aequalis</i> (Thomson)	x	x	x		x			x	x					
<i>Helophorus brevialpis</i> (Bedel)	x	x	x	x	x	x	x	x	x	x	x	x		x
<i>Helophorus grandis</i> (Illiger)	x	x	x	x	x	x	x	x	x	x	x	x	x	
<i>Helophorus minutus</i> (Fab.)		x	x			x			x					x
<i>Helophorus obscurus</i> (Mulsant)			x		x	x			x					
<i>Helochaeres lividus</i> (Forster)	x	x	x	x	x			x				x		x
<i>Enochrus melanocephalus</i> (Olivier)														x
<i>Enochrus ochropeterus</i> (Marshall)			x	x		x		x						
<i>Enochrus testaceus</i> (Fab.)								x						
<i>Laccobius bipunctatus</i> (Fab.)	x	x	x					x			x	x		x
<i>Anacaena globulus</i> (Paykull)	x	x	x		x									
<i>Anacaena limbata</i> (Fab.)	x		x	x	x			x			x	x		x
<i>Anacaena lutescens</i> (Stephens)		x	x	x	x									
<i>Limnebius truncatellus</i> (Thunberg)			x		x									
<i>Ochthebius dilatatus</i> (Stephens)		x						x						
<i>Ochthebius minimus</i> (Fab.)						x			x					

found or not identifiable. *Sympetrum* larvae too young to identify were found at 3 of the 6 ponds where adult *S. striolatum* were seen.

(c) *Coenagrion puella* and *C. pulchellum* are inseparable as larvae. There are, though, no recent records in Dorset for *pulchellum* (Prendergast 1991) whereas *puella* is commonly seen, so the latter only has been listed.

(d) Females of *Sigara striata* and *S. dorsalis* are not separable. The males of *dorsalis* were found in most ponds but only female *dorsalis/striata* in ponds B and I. Because *striata* is reported as confined to the extreme South-East of England (Savage 1989) *dorsalis* has been assumed.

(e) Females of Haliplidae of the 'ruficollis group' cannot be identified, though only pond L had females without males in all samples. Thus there are certainly some Haliplidae present in some ponds which are not recorded.

(f) Females of certain *Helophorus* species cannot be identified. There were 2 such species in this survey, *minutus* and *obscurus*, which are quite different in appearance. In 5 ponds (D,E,F,I and K) females (only) resembling *minutus* were obtained; in 2 (H and N) females resembling *obscurus*. This is not recorded in Table 3.

(g) There are those species less easily obtained in samples because of their elusiveness and/or low population level. *Dytiscus marginalis* is a probable example; large Dytiscid larvae were more often found than the adult form.

(h) From casual records for other ponds in the area only 6 other species have been found, and 4 of these are Gastropods: *Bithynia tentaculata*, *Valvata piscinalis*, *Planorbis planorbis* and *Hippeutis complanatus*.

Table 4 lists the 22 species found in at least 10 ponds. Coleoptera account for 10, Hemiptera 7, insect larvae 3 and the non-insects 2.

## DISCUSSION

### Set (A); Non-insects

*P. jenkinsi* is found in every site where there is the least suggestion of a stream connection, including F and M where outlet courses that once existed are no longer visible. The one

TABLE 4. Species most commonly found.

Species	Number of ponds
<i>Haliplus lineatocollis</i>	14
<i>Agabus bipustulatus</i>	13
<i>Helochorus brevipalpis</i>	13
<i>Helophorus grandis</i>	13
<i>Cloeon dipterum</i>	12
<i>Notonecta glauca</i>	12
<i>Corixa punctata</i>	12
<i>Sigara dorsalis</i>	12
<i>Potamopyrgus jenkinsi</i>	11
<i>Gerris lacustris</i>	11
<i>Hesperocorixa sahlbergi</i>	11
<i>Gyrinus substriatus</i>	11
<i>Haliplus heydeni</i>	11
<i>Hygrobia inaequalis</i>	11
<i>Theromyzon tessulatum</i>	10
<i>Pyrhosoma nymphula</i>	10
<i>Coenagrion puella</i>	10
<i>Plea leachi</i>	10
<i>Sigara nigrolineata</i>	10
<i>Agabus sturmii</i>	10
<i>Laccophilus minutus</i>	10
<i>Hydroporus palustris</i>	10

other species of this set also in Table 4, the water bird parasite *T. tessulatum*, is clearly associated with ponds regularly visited by ducks.

Ponds which have a history of drying up do not seem to be particularly lacking in non-insect species. A more relevant factor is a stream outlet; such ponds have on average twice as many species. If F and M are transferred to this category the ratio becomes 4:1.

Members of this set were often collected in substantial numbers (60% of site totals were of 50 or more). It seems reasonable to suggest that most of those species present in each pond have been found, and a similar confidence could be attached to their absence. Exceptions to both hypotheses would be the semi-aquatics *L. truncatula* and *H. sanguisuga*.

Because the average dispersal ability of these species is presumably less than that of the insects, the 24 shown in Table 3 may inadequately represent this part of Dorset; 25% more Gastropods are known to be about.

### Set (B); Insect Larvae

These probably are the groups most affected by pond drying. Odonata were especially lacking in such sites (E,F,I and M). *Nemoura cinerea* was, on the other hand, found only in E,F and I. Note also that E is the only pond inside woodland (just) and M is the site most completely enclosed by trees and shrubs. The ubiquitous *Cloeon dipterum* was absent only from these latter 2 ponds.

The Trichoptera stand out as being thinly distributed across the ponds. Only 3 of the 14 species were found in more than 2 ponds, *L. lunatus* in 9 ponds being exceptional. Spring finds accounted for 80% of species, a reflection of their time of emergence. More samples during the course of Spring and early Summer might substantially fill out the picture.

Such a recommendation could also work for certain Odonata, such as *Lestes sponsa* and *Sympetrum* sp., which grow from egg to imago in a few months and could therefore be under-represented.

*H. fusca* and *E. danica* are normally stream-dwellers (Elliott *et al.* 1988) and just one of each was found in the whole survey. Ignoring these, and excluding the Trichoptera, we are left with 17 species which may make a good representation of this set in this area.

### Set (C); (i) Hemiptera

The drying out of ponds does not seem to have been a significant factor. E and M, the 2 most enclosed ponds, were low in Hemiptera, especially sub-surface species. *H. sahlbergi* was in both; in fact in all sites except those with fish (H,K and N)

All 4 British Notonectids were obtained, ponds A and D having a complete set. Those Notonectids found in more ponds also tended to have higher sample counts, so that the overall totals vary from 400 for *glauca* down to just 4 for *maculata*.

The species are well spread across the sites. The mean number of ponds per species is more than 5, and 20% of species are in at least 10 ponds (Table 4). Some 45% of site counts per species were at least 10. Excluding brackish waters, Savage (1989) has 28 underwater pond Hemiptera for the SW region (Cornwall to Gloucester) of which 25 are in Table 3. Pond A alone has 19, and *A. germari* in addition. However 25% of site counts are singletons, extreme cases being *S. scotti* (1 pond), *A. germari* (2) and *H. linnaei* (3).

The 34 species of Hemiptera probably are a good representative set.

### Set (C); (ii) Coleoptera

As with the other insect sets the enclosed ponds had least species. Drying out, as with C(i), does not seem to be reflected in the number of species.

The Coleoptera make up 40% of Table 3 and 45% of Table 4. The latter are all common British species and most were usually caught in numbers. But 45% of site records over 3 seasons are of

a single find, which suggests that further sampling would uncover more than in the case of the Hemiptera.

#### Alien Species

There are 2 North American species in Table 3. *Physa acuta* is in the 3 ponds in which water lilies are known to have been added (C,H and N) and in A which is closely connected to a pond which also has this introduction. *Crangonyx pseudogracilis* is only in N; the other Gammarid, *Gammarus pulex*, is abundant both up- and down-stream of this pond. Both of these aliens are widely found in Britain. The author also has 2 other records of *Dugesia tigrina* (Tricladida).

#### Rare Species

*Lymnaea glabra* (pond E) is classified as Vulnerable (Red Data Book Classification 2). The British Museum (Natural History) held one previous record this century for Dorset - at a site 1.6 km from E (1988). The author has located 16 sites; 9 of these, including E, are on Powerstock Common SSSI.

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#### BIBLIOGRAPHY

(SP of the FBA = Scientific Publication of the Freshwater Biological Association)

Biggs, J., Walker, D., Williams, P. and Whitfield, M., 1989

*National Pond Survey, Methods Booklet*, Oxford Polytechnic.

- Edington, J.M., and Hildrew, A.G., 1981 *Caseless Caddis Larvae of the British Isles* Sp of the FBA No. 43
- Elliott, J.M., 1977 *A Key to the Larvae and Adults of British Freshwater Megaloptera and Neuroptera*, SP of the FBA No. 35.
- Elliott, J.M., Humpesch, U.H. and Macan, T.T., 1988 *Larvae of the British Ephemeroptera: a Key with Ecological Notes*, SP of the FBA No. 49.
- Elliott, J.M. and Mann, K.H., 1979 *A Key to the British Freshwater Leeches*, SP of the FBA No. 40.
- Friday, L.E., 1988 *A Key to the Adults of British Water Beetles*, Field Studies Council Publication No. 189.
- Gardner, A.E., 1983 'A Key to Larvae' in C.O. Hammond *The Dragonflies of Great Britain and Ireland*, Harley Books.
- Gledhill, T., Sutcliffe, D.W. and Williams, W.D., 1976 *A Key to British Freshwater Crustacea Malacostraca*, SP of the FBA No. 32.
- Hynes, H.B.N., 1977 *A Key to the Adults and Nymphs of the British Stoneflies (Plecoptera)* 3rd edition, SP of the FBA No. 17.
- Macan, T.T., 1977 *A Key to the British Fresh- and Brackish-water Gastropods* 4th edition, SP of the FBA No. 13.
- Miller, P.L., 1987 *Dragonflies*, Naturalists Handbooks No. 7 Cambridge University Press, pp. 49-56.
- Prendergast, E.D.V., 1991 *The Dragonflies of Dorset*, Dorset Natural History and Archaeological Society.
- Reynoldson, T.B., 1978 *A Key to the British Species of Freshwater Triclad*s, 2nd edition, SP of the FBA No. 23.
- Savage, A.A., 1989 *Adults of the British Hemiptera Heteroptera; a Key with Ecological Notes*, SP of the FBA No. 50.
- Wallace, I.D., Wallace, B. and Philipson, G.N., 1990 *A Key to the Case-bearing Caddis Larvae of Britain and Ireland*, SP of the FBA No. 51.

# The Management of Lowland Heath from 1966 – 1989 at Arne Nature Reserve, Dorset, U.K

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#Royal Society for the Protection of Birds, Syldata, Arne, Wareham, Dorset, BH20 5BJ. Great Britain.

## ABSTRACT

1. The conservation management of heathland between 1966 and 1989 at Arne in Dorset, U.K. is presented. This reserve has arguably received the most intensive and controlled management programme of any of the Dorset lowland heaths over this period, and provides an example of heathland management for conservation purposes. 2. Out of a total of 240.0 ha of dry heath dominated by heather *Calluna vulgaris* on average, 0.50% (1.21 ha) has been control-burnt each winter, and 0.24% (0.57 ha) has been mown. 3. Humid heath, dominated with cross-leaved heath *Erica tetralix* with some Dorset heath *E. ciliaris*, has received less intentional management: however, 21.0 ha out of 40.50 ha has been managed by unplanned fires and the effects of drought. 4. Common gorse *Ulex europaeus* scrub has been managed by coppicing and burning degenerate stands of around 15-30 years of age, with some 1.18% (0.53 ha) of the total 45.0 ha resource being managed each winter. 5. Furthermore 80.0% (116.0 ha) of naturally regenerating Scots pine *Pinus sylvestris* has been removed from the heath since 1980. Bracken *Pteridium aquilinum* has been rigorously controlled by spraying with *Asulam* each year. 6. This management has produced a wide variety of age structures in the heath vegetation and has helped maintain the rich nationally and internationally important flora and fauna on the site. In comparison many other heathland sites in the county have been damaged because of a lack of management or ravaged by accidental fires, over the past 20 years.

## INTRODUCTION

Lowland heath is a scarce European biotope composed of dwarf shrubs growing on impoverished soils, usually in temperate and relatively oceanic climates (Noirfalise and Vanesse, 1976). This vegetation has been largely destroyed by man throughout its European range, with an overall loss since 1800 in excess of 90% (Farrell, 1989). The 'relatively' intact preservation of the Dorset heaths in southern Britain, despite extensive losses over the past 25 years, renders them one of the most important areas of lowland heath in Britain and perhaps Europe (Farrell, 1989. Ratcliffe 1977).

The heathlands of the Royal Society for the Protection of Birds (RSPB) Arne nature reserve in Dorset, United Kingdom

(Figure 1) are of international significance. They have been designated as a Grade 1\* Site of Special Scientific Importance (SSSI) by the Nature Conservancy Council (NCC) and are now being considered as a Biogenetic reserve by the Council of Europe, in their system aiming to define representative ecosystem types with high biological value throughout Europe (Farrell, 1989).

It is well known that the lowland heath requires active management in order to maintain the composition of the vegetation, with its associated flora and fauna (Gimingham, 1972; Webb, 1986). Without management, open heath is invaded by bracken *Pteridium aquilinum* (L.) Kuhn, shrubs and finally trees (Marrs, 1987; Marrs *et al.*, 1986), resulting in a rapid decline in

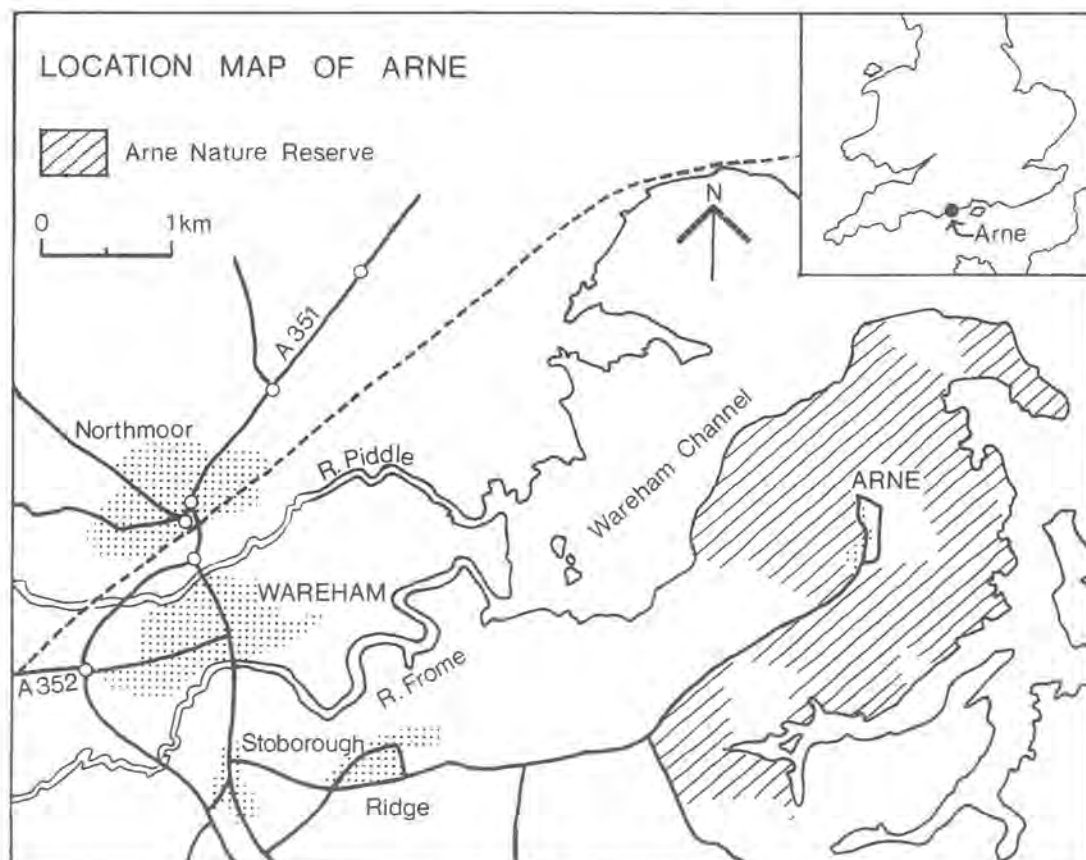


Figure 1: Location Map of Arne

biological interest. Concern was expressed in the early 1960s over the lack of management upon the Dorset heathlands, with resulting loss of open heathland due to the encroachment of pine woodland (pine scrub) (Moore, 1962). Scrubbing over of the dry heaths has been a continuing process and the principal loss of Dorset's dry heathland between 1978 - 1987, amounting to 15% (176 ha), was attributable to this one factor! (Chapman, *et al.*, 1990).

The methodology of managing and restoring heathlands has become increasingly well documented in recent years (Marrs & Lowday, 1983; Pickess *et al.*, 1989; Environmental Advisory Unit, University of Liverpool, 1988), but little has been published relating to areas of heathland managed annually for conservation purposes. In this paper we present a synopsis of the heathland management undertaken at Arne Nature Reserve since 1966. The rationale, methods, conservation benefits and costs are summarized.

It is hoped that this example of lowland heathland management will provide a useful model from which heathland management at other sites can be developed.

#### DESCRIPTION OF STUDY AREA

The Arne Nature Reserve (498.0 ha) is situated on the western side of Poole Harbour and occupies a major portion of the Arne peninsula (NGR SY 973882). It lies on the sands and gravels of the Tertiary Bagshot Beds. At present the heathlands comprise some 280.0 ha of the nature reserve (Fig 2), which represent about 3.9% of Dorset's remaining 7250.0 ha of heathland (Pickess, 1989).

In terms of the National Vegetation Classification (NVC), the dry heath at Arne is most closely similar to the *Calluna vulgaris-Ulex minor* heathland community (H2) (Rodwell, 1988), although the constant species *Deschampsia flexuosa* (L.) Trin. is absent. The humid heath supports stands most similar to the *Cladonia* spp. subcommunity of the *Ulex minor - Agrostis curtisii* community (H3b). Also present at Arne are more localized stands of *Ulex europaeus-Pteridium aquilinum* scrub (W23) and *Rubus fruticosus-Pteridium aquilinum* scrub (W25) (Rodwell, 1986),

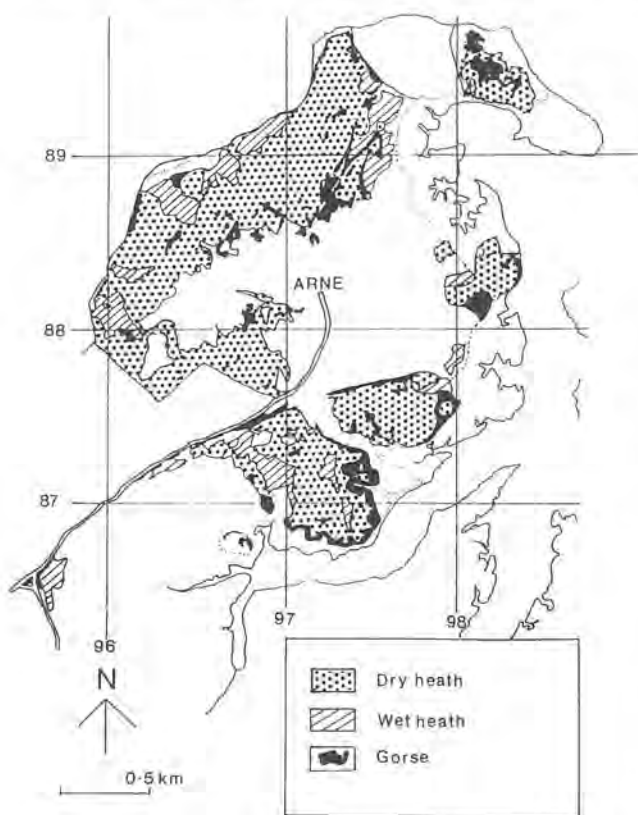


Figure 2: Distribution of Lowland Heath on Arne Nature Reserve (December 1989)

and the *Rhynchospora alba-Drosera intermedia* subcommunity of *Erica tetralix-Sphagnum compactum* mire (M16c) (Rodwell, 1987). In Britain, the heathland communities H2 and H3 are restricted to the Poole Basin, but the examples at Arne are rather atypical and require further investigation. Nationally scarce plants (NCC, 1989) which occur on the heaths at Arne are Dorset heath *Erica ciliaris* L., marsh gentian *Gentiana pneumonanthe* L. and mossy stonecrop *Crassula tillaea* Lister-Garland.

The fauna of Arne is also highly notable. All six species of British reptile, including the nationally rare (NCC, 1989) smooth snake *Coronella austriaca* Laurenti and sand lizard *Lacerta agilis* L. occur. Also present are important breeding populations of the nationally scarce (Bibby *et al.*, 1989) birds Dartford warbler *Sylvia undata* Boddaert and Nightjar *Caprimulgus europaeus* L. There is also a noteworthy assemblage of nationally rare or scarce invertebrates, which includes species such as *Ceriatrigon tenellum* de Villers (Odonata); *Chorthippus vagans* Eversmann (Orthoptera); *Pempelia genistella* Duponchel, *Coscinia cribraria* L. and *Cyclophora pendularia* Clerck (Lepidoptera), *Hylaues gibbus* Saunders (Hymenoptera:Aculeata) and *Zora armillata* Simon (Arachnida) (Pickess, 1978, Pickess, unpublished; Shirt, 1987).

#### HEATHLAND MANAGEMENT POLICY AND PRESCRIPTIONS

The object of management has been to maintain and enlarge the heathland ecosystem for the benefit of its nationally and internationally important plant and animal communities. The aim has been to sustain nutrient impoverishment through periodic removal of the standing heather crop and accumulated litter by burning and mowing (Gimingham, 1972). This has brought about a diversification of age structure to the heaths so creating a mosaic of differing aged stands.

The management prescriptions which have been followed throughout the history of the reserve in order to facilitate this policy are:

(a) *Heather burning/mowing*: To recycle some of the areas of degenerate heather, or small patches within even-aged stands to enhance structural diversity, usually by controlled burning of small blocks in February or March.

(b) *Gorse coppicing/burning*: To recycle blocks of gorse, usually in March, when they cease to be compact and bushy, specifically to favour the Dartford warbler which uses dense gorse for cover, nesting and foraging (Bibby 1978, 1979a, 1979b, 1979c).

(c) *Pine and birch Removal*: To remove the naturally regenerating birch and pine during the winter months, always leaving a scattering of both young and mature trees for their entomological and ornithological value. Also, removing when necessary, invading pine and birch saplings that are re-seeding onto the heath.

(d) *Bracken control*: To prevent domination of the heathlands by this invasive species; control by spraying with a selective herbicide in July and August.

(e) *Rhododendron control*: To pull-up or where not practicable to cut-down and chemically treat all rhododendron stumps and eventually to eradicate this species from the reserve, allowing the cleared ground to return to heathland.

(f) *Pond creation*: To create by digging or using explosives at least one pond in each major humid heath system. In the event of heathland fires the ponds also provide emergency water supplies. They also assist aquatic invertebrates and provide watering places for birds and mammals.

(g) *Fire-breaks*: To establish a network of strategically located rotovated fire breaks to protect the heathlands, enabling control and containment in the event of an accidental fire.

(h) *Creation of sandy patches*: To create small patches of sand in mature heath for the benefit of sand lizards and invertebrates.

Full details of the methodology of these management operations are presented in Pickess *et al.*, (1989).

## HABITAT MANAGEMENT FROM 1966 TO 1989

## 1. MANAGEMENT OF HEATHER

Dry heath is generally managed by the controlled burning of blocks of 100m<sup>2</sup> to 3,000m<sup>2</sup> in February - March. Between 0 and 7 (mean 2.4) such blocks have been burnt each year since 1966. Usually one similar sized block is mown every other year, normally because inclement weather during the burning season prevents the planned burning taking place. Accidental fires also have occurred on the Arne heaths but have generally been small and brought under control rapidly by the reserve staff (except in 1973 when 30.0 ha was burnt). The area of dry and humid heath which has been managed since 1966 is presented in Table 1.

On average around 1.96% (5.5 ha) of the total area of dry and humid heath (280.5 ha) has been managed per annum. This figure includes the 30.0 ha that was accidentally burnt in 1973 but this does not alter the calculation as a comparable amount of heath would have otherwise had to be managed, although this management would have been spread over a number of years and divided into smaller blocks.

## 2. MANAGEMENT OF COMMON GORSE

Common gorse *Ulex europaeus* L. is an extremely important plant at Arne because of its use by the rare Dartford Warbler (Bibby 1978, 1979a, 1979b, 1979c). The most beneficial common gorse bushes for these birds are between 1m and 1.5m tall (6-12 years old) in the building to mature stage when they are densely bushy (Bibby, 1978; Bibby & Tubbs, 1975). When common gorse becomes degenerate (15+ years old) it loses compactness and is of far less value to the birds. As patches reach the degenerate stage they are managed by manual coppicing, pulverising with a tractor mounted flail, or are burnt. This is usually undertaken in February and March. The stands vary in area between 25m<sup>2</sup> and 500m<sup>2</sup> and between 1 and 11 (mean 4.3) blocks have been managed annually since 1966, thus ensuring a diverse age structure in all common gorse stands (Pickess *et al.*, 1989).

The areas of common gorse which have been coppiced and burnt since 1966, and the area which has been planted is presented in Table 2.

Over the history of the reserve around 1.2% (0.53 ha) of the common gorse has been managed annually. Areas of gorse (totalling 2.45 ha) have also been planted in sheltered valleys to provide additional habitat for Dartford warblers which are highly susceptible to harsh winter conditions. For example, as a result of the harsh winter of 1962/63 the British population declined by over 90% (Bibby, 1979b).

## 3. CONTROL OF TREE ENCROACHMENT

Unlike many southern English lowland heath sites neither Silver Birch *Betula pendula* Ehrhart or the Downy Birch *B. pubescens* Ehrhart present major management problems. The reason why

TABLE 1  
Areas (ha) of dry and humid heathland managed at Arne between 1966-1989

	Deliberately burnt	Accidentally burnt	Mown	Mown/burnt in combination
<b>Dry Heath = 240.00 ha</b>				
Total managed	29.00	21.00	13.75	7.00
Average ha per year	1.21	0.87	0.57	0.29
Average % per year	0.50	0.36	0.24	0.12
<b>Humid Heath = 40.50 ha</b>				
Total managed	none	11.50	3.00	1.50
Average ha per year	none	0.48	0.13	0.06
Average % per year	none	1.18	0.32	0.15

birch does not invade the heaths is not as yet fully understood. The principal tree invading the heaths is Scots pine *Pinus sylvestris* L., with some Maritime Pine *P. pinaster* Aiton. Both of these seed freely into the heath, presenting a major management problem. The origin of the pines at Arne is uncertain but they were probably planted during the 18th Century. Since the purchase of the reserve in 1979 their removal has become a priority. Dense stands have been progressively thinned and their margins pushed back, whilst less dense areas have been felled and returned to heath. The reduction of pine on the reserve's heaths is presented in Table 3 and Fig. 3. Once an area has been returned to open heath, it is necessary every five years to remove, either by hand pulling or cutting, the pine seedlings that have again invaded the area.

At the present rate of clearance it should take less than 10 years to complete the removal of the unwanted pines from the reserve. However, a few clumps (30m<sup>2</sup> to 100m<sup>2</sup>) of maturing/mature pine will be left on the heaths, together with a scattering (up to 25 per ha) of single bushy pines (one to three metres tall) to provide habitat for invertebrates, and for nesting, perching and foraging birds.

The first plant to proliferate after dense pine removal is bracken, often forming pure stands which then spread onto the open heath. Hence as a direct consequence of pine removal the main emphasis of reserve management is shifting from pine removal to bracken control.

## 4. BRACKEN CONTROL

The bracken problem at Arne is enormous, with over 300.0 ha of dry heath likely to be affected by this fern. Bracken control has aimed to eradicate the species over extensive areas, involving pushing back the frontiers of the stands, and spot-spraying isolated fronds over large areas. It is very important to control bracken in areas newly cleared of pine where it is already dense and well established. Failure to control the fern at the first opportunity after pine clearance will result in it expanding into adjacent heather-dominated areas.

The principal method of removing stands of bracken at Arne is by spraying with the herbicide Asulox (asulam: Rhône-Poulenc Ltd.), recently in conjunction with an adjuvant Agral (I.C.I. plc.). Dense areas are sprayed by using either a Micron 'ULVA' or 'Herbi' sprayer (Micron Sprayer Ltd.). For spot-spraying either a knapsack sprayer (Cooper, Pegler & Co. Ltd.) or a small hand held 1.25 lt garden sprayer (Hozelock ASL). However, once a programme of spraying is initiated at a particular site, all reappearing fronds must be spot-sprayed every year until the fern is eradicated. The policy of bracken management at Arne is never

TABLE 2  
Area (ha) of Common Gorse managed at Arne between 1966-1989

	Coppicing	Burnt	Planted
Total Common Gorse in 1989 = c. 45.0 ha#			
Total ha managed	12.65	11.25*	2.45*
Average ha per year	0.53	-	-
Average % per year	1.18	-	-

# This figure is included in the 240.0 ha of dry heath

\* Because of the irregularity of Common Gorse burning or planting, no useful average can be calculated

TABLE 3  
Areas (ha) of pine cleared and returned to heathland 1980-1989

Approximate area affected by pine invasion in 1980	c. 145.0 ha
Approximate area cleared of pine since 1980	c. 116.0 ha (80.0%)
Approximate area still awaiting clearance at January, 1990	c. 29.0 ha (20.0%)

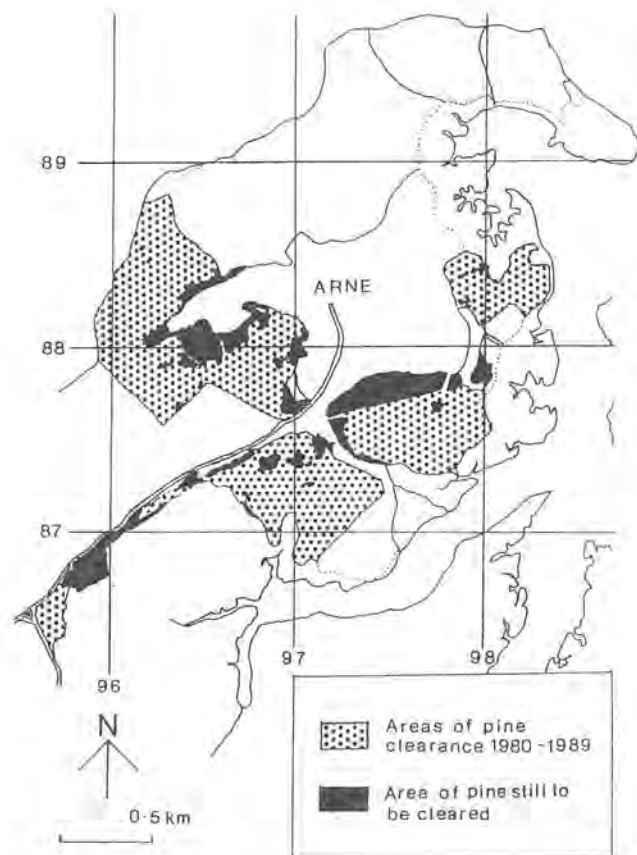


Figure 3: Areas of Pine cleared and awaiting clearance on Arne Nature Reserve (December 1989)

to control new areas until all fronds in the sites treated in previous years have been treated. Failure to observe this will lead to rapid re-establishment. Due to these efforts there are now considerable areas of heath where bracken has been all but eliminated.

Bracken control with Asulox does, however, have its problems. The herbicide can only be applied during the period July - mid-August depending upon the growing season. Its application is also dependent upon a period of dry settled weather, and because of this the areas treated from year to year will vary. Care has to be taken if Common Gorse is present, as the spray will kill young plants in the pioneer stage and scorch but usually not kill older plants

#### 5. RHODODENDRON CLEARANCE

Since 1981 a programme of management aiming to clear all the rhododendron *Rhododendron ponticum* from the humid heaths has been implemented. At Arne the plant has been long established forming dense stands to 8 m tall. In order to remove the individual plants, they are first cut down and the rootstock either winched out, or the stumps treated with the herbicide Amcide (ammonium sulphamate: Hayward & Bower Ltd.), which is added as a saturated solution to 1.0 cm diameter holes drilled 8-10 cm into the stump (Evans and Becker, 1988). About a 95% kill is achieved using Amcide; any regrowth is sprayed with Roundup (glyphosate: Monsanto plc.) incorporating an adjuvant 'Additive B' (Monsanto plc.) which assists penetration of the thick waxy leaves.

Using these techniques over 3.0 ha of rhododendron have been removed from the humid heath since 1981. After rhododendron removal the areas are being recolonized by typical humid heath species, including the nationally scarce Dorset heath *Erica ciliaris*.

#### 6. POND CREATION

On lowland heaths there is always a threat of accidental fires,

especially during spring and summer. The creation of ponds in all the major humid heath areas has provided valuable additional emergency water sources in the event of a fire. These water bodies have also assisted our nationally important populations of Odonata (Pickess, 1989), as well as providing watering places for mammals and birds.

The ponds have been created in several ways, initially by hand but in recent years by mechanical diggers and with the assistance of the Army using explosives. The ponds should not be less than 20.0 m in circumference and have a depth in the centre of at least 1.5 m to ensure they retain water in drought conditions, as water level is governed by the water table.

#### 7. FIRE-BREAKS

Over 6 km of strategically located fire-breaks have been established on the reserve. Their main purpose is to allow easy access for containment and control in the event of a fire and preventing major fires from sweeping across the heaths.

The fire-breaks are approximately 6.0 m wide and are rotovated annually in May. In all other months of the year sand lizards would be at risk from rotovation because the fire-breaks are used for hibernation and egg laying.

#### 8. CREATION OF SAND PATCHES

Within the mature heath sandy patches have been created on south facing slopes either by hand or mechanical digger. These patches are usually 1.0 - 2.0 m long and up to 1.0 m wide and known to be important for invertebrates and sand lizards (McLean, 1988; Corbett, 1983)

The management achieved at Arne between 1966 and 1989 is summarised in Table 4.

#### COSTS

Accurate details of management man-days and approximate costs are only available for 1988/89 and are presented in Table 5. It should be borne in mind that these figures do not represent the true cost to the RSPB because some of the man-days included voluntary labour and part of the 1988 figure was also government funded. A figure of £50.00 per man-day includes the cost of the machinery/chemical/clerical back up to support the work force.

Because heathland management is labour intensive, our achievements at Arne have been governed by financial factors and the availability of voluntary labour. Not until the early 1980s when permanent staffing rose from one to two persons has it been possible to intensify our efforts. We were greatly assisted between 1984 - 1988 through funding by the governmental Manpower Services Commission (MSC) which allowed employment of a small work force of between three and six persons. What can be achieved in the 1990s will still be very much dependent upon voluntary assistance. Much of the pine cleared during the 1980s has been of commercial value and felled by contractors, which has provided a small income for the reserve.

#### CONSERVATION BENEFIT

It is difficult to demonstrate that the management at Arne has benefited any one species, largely because management has aimed at maintaining the integrity of the heathland system, which has more general benefits to all the flora and fauna. However, the five pairs of heathland indicator species; one a widespread species and the other almost confined to Dorset's heathlands, used by Moore (1962) are all still present on Arne's heathlands.

#### Flora

The Arne population of the nationally scarce marsh gentian has responded well after a portion of the site was burnt, supporting the findings of Chapman (1983) and Chapman et al., (1989) that marsh gentian is benefited by fire as it is able to exploit a temporary decrease in competition. The Dorset heath also recovers quickly after control burning. This species has also recolonized areas once dominated by rhododendron.

### Fauna

More efforts have been made to assist populations of the key breeding birds, nightjar, (summer migrant) and Dartford warbler (resident), which is on the northern edge of its European range. Breeding populations of both these species have been monitored in parallel with the management effort since the reserve was founded in 1966. This work has shown that there has been little change in the breeding population of nightjar over the 24 year period, 16-18 churring males being present annually. This population stability is encouraging as the national nightjar population has been declining over a similar time period, for example from over 3000 pairs in 1976 to c. 2000 by 1981 (Gribble, 1983). This suggests that the suitability of the heaths has been maintained by the active management.

In contrast, the Dartford warbler has shown marked fluctuations in its breeding population, mainly brought about by the effects of severe winter weather. However, it was noticeable that following the severe winter periods recorded in 1986 and 1987, the Arne population remained unchanged from the previous year. When similar conditions occurred in 1978 and 1979 the population was drastically reduced by 74% and 60% respectively (Pickess, pers. obs.). Moreover, following the severe 1962/63 winter the British population was reduced by over 90% (Bibby & Tubbs, 1975). It is possible that the improved survival at Arne in 1986 and 1987 may be attributed to a greater availability of dense gorse patches, as a result of the programme of management and planting. Prevention of accidental fires on the heath is also very important. For instance, at Arne there have been no recent accidental fires, whereas at the nearby Godlingston Heath National Nature Reserve about 60% of the reserve was burnt during the winter of 1986, destroying the best Dartford warbler habitat. Coupled with the fire was a severe winter and the warbler

population declined by 38% (Fig. 4). The population has been slow to recover because of a resulting shortage of suitable habitat.

The diversification of the heather age structure has also favoured other typical heathland birds at Arne such as the stonechat *Saxicola torquata* L. and meadow pipit *Anthus pratensis* L. Both these species prefer younger age-classes of heather in which to feed, whereas the Dartford warbler requires more mature heather (Pickess, pers. obs.).

That only one major accidental fire has occurred at Arne over the past 24 years may have assisted the reptile populations of the site. The mosaic of heather age-classes present at Arne have

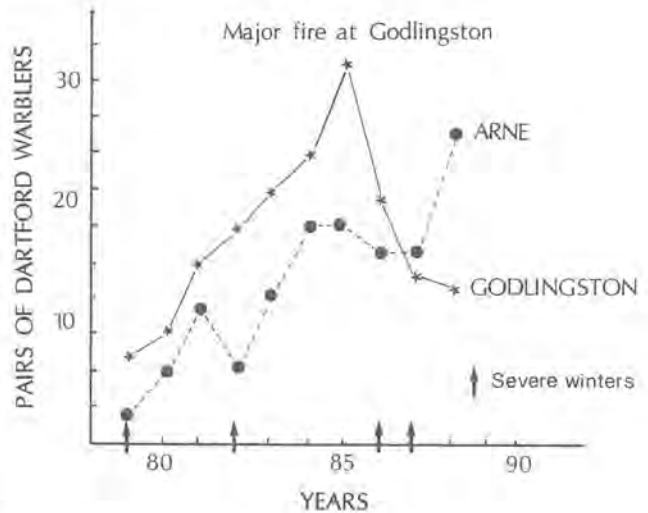


TABLE 4  
Summary of heathland management at Arne 1966-1989

HABITAT	MANAGEMENT TYPE	AREAS MANAGED OVER TIME
Dry Heath:		
c. 240.0 ha	Burnt	1.21 ha/year since 1966
	Mown	0.94 ha/year since 1966
	Mown/Burnt	0.92 ha/year since 1966
Humid Heath: 40.5 ha	Burnt	0.50 ha/year since 1966
	Mown	0.25 ha/year since 1966
	Mown/Burnt	0.20 ha/year since 1966
Common Gorse: 45.0 ha*	Coppicing	0.53 ha/year since 1966
	Planting	2.43 ha (1977-1989)
Pine Dominated Dry Heath: 145.0 ha (1980)	Returned to heath	116.0 ha (1980-1989)
Rhododendron Dominated Heath: 7.0 ha	Returned to heath	3.0 ha (1981-1989)
Fire breaks:	Firebreak creation	6.0 km created and maintained annually (May)
Sand Patches:	Patch creation	Over 100+ created and maintained since 1966
Ponds:	Pond creation	25 created since 1966

\* This figure is included in the overall hectareage of dry heath (240.0 ha), as much of the gorse is mixed within this vegetation.

TABLE 5  
Summary of heathland management labour costs (including support costs) for 1988 and 1989 (based on £50.00 per worker-day)

	Heather	Gorse	Pine#	Bracken	Rhododendron	Total
1988						
(worker-days)	7	90	400	39	400	936
Cost (£)	350	4,500	20,000	1,950	20,000	46,800
1989						
(worker-days)	3.5	71	343	29	150	596.5*
Cost (£)	175	3,550	17,150	1,450	7,500	29,825

# This figure does not include timber felling work carried out by contractors.

\* In 1989 it was possible to separate voluntary labour from employed labour. Of the 596.5 worker-days, a total of 359 worker-days was attributable to voluntary labour which represents 39.8% of total heathland labour effort.

resulted from deliberate management, with the knowledge that older degenerate heather is very important for the survival of the sand lizard and smooth snake (Braithwaite et al., 1989; Corbett, 1988; House & Spellerberg, 1983). On many other Dorset heaths there have been several large accidental fires, especially in 1976, which have certainly harmed populations of the rare reptiles. The population dynamics of heathland invertebrates are not well understood. However, it is known that younger age classes of heather are required for many of the important invertebrates, and that degenerating heather is also essential for others (McLean, 1988; Webb & Hopkins, 1984; Webb, 1989). Therefore to retain invertebrate diversity it is vital to ensure that a mixture of heather age-classes is always present. It is known that the now restricted Silver-studded blue butterfly *Plebejus argus* is dependent upon the pioneer to building phase of humid heath (Emmet and Heath, 1989), hence the mowing and controlled burning of this habitat has probably benefited this species. The creation of sandy patches primarily for the benefit of sand lizards will also have assisted invertebrates such as *Hymenoptera*. The creation of ponds has enhanced the reserve's nationally important *Odonata* populations.

### RECOMMENDATIONS

From the experience gained at Arne some general recommendations can be made to lowland heathland managers.

(A) If traditional rotational heathland management is in progress then it is imperative that it should be continued, and that if it has only recently ceased, then it should be re-instated.

(B) It is desirable to manage about 2%-3% of the heather dominated vegetation annually so that almost all is recycled in 30/40 years.

(C) Bracken should be rigorously controlled by spraying with Asulox, or it will smother and eradicate the heather. It is especially important to eliminate bracken from areas where trees have been removed in order to promote the establishment of heather.

(D) Stands of bushy gorse should be maintained on a heath by regular coppicing or burning because they are important feeding, breeding and sheltering locations for scrub birds. Management should provide 5%-50% gorse on the heath, and ideally around 2%-5% of this should be recycled *per annum* on a 15 year cycle. A minimum of 1% should be managed *per year* and some of this can be incorporated into the heather management programme.

(E) A scattering of small bushy and isolated stands of mature pine trees, together with occasional birches, are useful as they promote bird and invertebrate interest. In such areas tree density should vary from extremely infrequent bushes/trees up to 25 bushes/trees per ha.

(F) The creation of at least one pond in each humid heath system for use as an emergency water supply in the event of accidental fire and for multi-purpose wildlife benefits.

(G) A network of fire-breaks should be established to give added protection to site in the event of accidental fire.

(H) Sandy patches should be created in the dry heath for the benefit of invertebrates, and especially rare reptiles, if they are present.

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### REFERENCES

- Bibby, C.J. (1978). 'Conservation of the Dartford Warbler on English lowland heaths: a review'. *Biol. Conserv.* 13, 299-307.
- Bibby, C.J. (1979a). 'Breeding biology of the Dartford warbler, *Sylvia undata* in England'. *Ibis* 121, 41-52.
- Bibby, C.J. (1979b). 'Mortality and movement of the Dartford warbler in England'. *Br. Birds* 72, 10-22.
- Bibby, C.J. (1979c). 'Foods of the Dartford warbler *Sylvia undata* on southern English heathlands' (Aves: Sylviidae). *J. Zool. Lond* 188, 557-579.
- Bibby, C.J. and Tubbs, C.R. (1975) 'Status, habitats and conservation of the Dartford warbler in England'. *Br. Birds* 68, 177-195.
- Bibby, C.J., Housden, S., Porter, R. and Thomas, G.J. (1989). 'Towards a

- bird conservation strategy'. *RSPB Conserv. Rev.* 3, 4-9
- Braithwaite, A.C., Buckley, K.F., Corbett K.F., Edgar, P.W., Haslewood, E.S., Haslewood, G.A.D., Langton, T.E.S. Whitaker, W.J. (1989) 'The Distribution in England of the Smooth Snake (*Coronella austriaca* Laurenti)'. (1989) *Herpetol. J.* 1: 370-376.
- Chapman, S.B. (1983) 'Population dynamics of the marsh gentian and management aspects'. In Farrell, L. (ed.), *Heathland Management*. NCC Focus on Nature Conservation No. 2., 95-98
- Chapman, S.B., Rose, R.J. and Clarke, R.T. (1989) 'The behaviour of populations of the marsh gentian (*Gentiana pneumonanthe*): a modelling approach'. *J. appl. Ecol.* 26: 1059-1072.
- Chapman, S.B., Clarke, R.T. and Webb N.R. (1990) 'The Survey and Assessment of Heathland in Dorset, England', for Conservation. *Biol. Conserv.* 47: 137-152.
- Corbett, K. (1983). 'Management of heathland for the Sand Lizard'. In Farrell, L. (Ed.) *Heathland Management*. NCC Focus on Nature Conservation no. 2., 4-11
- Corbett, K. (1988). 'Management for rare reptiles.' In: *Dorset heathland management for reptiles - paper 4*, NCC South West Region, unpublished.
- Emmet, M and Heath, J. (1989) *The Moths and Butterflies of Great Britain*. Vol. 7; part 1.
- Environmental Advisory Unit: University of Liverpool (1988). *Heathland Restoration: a handbook of techniques*. British Gas, plc.
- Evens, C.E. and Becker, D. (1988). 'Rhododendron control of RSPB reserves'. *RSPB Conserv. Rev.* 2, 54-57.
- Farrell, L. (1989). 'The different types and importance of British heaths'. *Bot. J. Linn. Soc.* 101, 292-299.
- Gimingham, C.H. (1972). *Ecology of Heathlands*.
- Gribble, F.C. (1983). 'Nightjars in Britain and Ireland in 1981'. *Bird Study*. 30, 165-176.
- House, P.J. and Spellerberg, I.F. (1983) 'Ecology and conservation of the Sand Lizard *Lacerta agilis* L habitat in southern England.' *J. Appl. Ecol.* 20: 417-437.
- Marrs, R.H. (1987). 'Studies in the conservation of lowland *Calluna* heaths: Regeneration of *Calluna* and its relation to bracken infestation II'. *J. appl. Ecol.* 24, 177-189.
- Marrs, R.H., Hicks, M.J. and Fuller, R.M. (1986). Losses of lowland heath through succession at four sites in Breckland, East Anglia, U.K. *Biol. Conserv.* 36, 19-38.
- Marrs, R.H. and Lowday, J.E. (1983). *Management of lowland heaths*. CST report No. 491. Nature Conservancy Council.
- McLean, I. (1988). 'Heathland management for invertebrates'. In: *Dorset heathland management and reptiles - paper 3*, NCC South West Region. Unpublished.
- Moore, N.W. (1962). 'The heaths of Dorset and their conservation'. *J. Ecol.* 50, 369-391.
- Nature Conservancy Council, (1989). *Guidelines for selection of biological SSSIs*.
- Noirfalisie, A. and Vanesse, R. (1976). *Heathlands of Western Europe* Nature and Environment Series No.2. Strasbourg: Council for Europe.
- Pickess, B.P. (1978). 'The Dragonflies of Arne Nature Reserve and their conservation'. *Proc. Dor. Nat. Hist. & Arch. Soc.* 100: 109-111.
- Pickess, B.P. (1989). *Dorset heathland SSSIs*. Unpublished RSPB background paper.
- Pickess, B.P. (1989a) 'The Importance of RSPB Reserves for Dragonflies'. *RSPB Conserv. Rev.* 3: 30-34.
- Pickess, B.P., Burgess, N.D. and Evans, C.E. (1989). *Heathland management at Arne*. RSPB Management Case Study, unpublished.
- Ratcliffe, D.A. (1977). *A Nature Conservation Review: Vols. 1 and 2*, Nature Conservancy Council.
- Rodwell, J. (1986). *The National Vegetation Classification: Woods I-III*. Lancaster University. Unpublished report to the Nature Conservancy Council.
- Rodwell, J. (1987). *The National Vegetation Classification: Mires I-II*. Lancaster University. Unpublished report to the Nature Conservancy Council.
- Rodwell, J. (1988). *The National Vegetation Classification: Heaths I-II*. Lancaster University. Unpublished report to the Nature Conservancy Council.
- Shirt, D.B. (ed) (1987). *British Red Data Books: 2. Insects*. Nature Conservancy Council.
- Webb, N.R. (1986). *Heathlands*. New Naturalist, Collins.
- Webb, N.R. (1989). 'Studies on the invertebrate fauna of fragmented heathland in Dorset and the implications for conservation'. *Biol. Conserv.* 51, 273-286.
- Webb, N.R. and Hopkins, P.J. (1984). 'Invertebrate diversity on fragmented *Calluna*-heathland'. *J. appl. Ecol.* 21, 921-933.

## Dorset Archaeology in 1992

The contributions for 1992 are arranged by project type in the following order: assessments and evaluations (including fieldwalking), excavations (interim notes), watching briefs, standing building surveys and finds reports. Within those headings, the notes are organised by location, in alphabetical order.

### ASSESSMENTS AND EVALUATIONS

#### NUTCOMBE TERRACE, CHARMOUTH

An evaluation was carried out to the rear of Nutcombe Terrace in advance of proposed housing development (centred on SY 3615 9375). Charmouth has its origins as one of the few 'new towns' created during the 14th century but little is known of the earlier history of the area. The main road through Charmouth probably follows the line of the Roman road between Dorchester and Exeter, but no evidence of Roman or prehistoric activity is known in the area (Penn 1980).

The evaluation, which consisted of the excavation and recording of one machine trench, produced no evidence for archaeological deposits and only finds of post-medieval and modern date were recovered. Intermittent and irregular earthworks in the proposed development area are probably associated with small-scale quarrying for chert.

The evaluation was commissioned by Ken Morgan Architects on behalf of the West Dorset Housing Association Ltd. The project was managed by Roland J.C. Smith and directed in the field by Mick Rawlings.

Roland J.C. Smith  
Wessex Archaeology

Penn, K.J., 1980, *Historic Towns in Dorset*, DNHAS Monograph Series 1

#### KNAPP MILL AVENUE, CHRISTCHURCH

A desk-based study and evaluation were undertaken in compliance with a condition of an outline planning permission for residential development in March-April 1992 on land at Knapp Mill Avenue, Christchurch (centred on SZ 1541 9398).

The site, comprising c. 3.9 ha of former agricultural land, lies on the floodplain of the River Avon. Extensive prehistoric flint assemblages of Mesolithic and Neolithic date have been found in both the immediate and more widespread vicinity. The study area is also adjacent to the known site of a burial mound which in addition to three primary cremation burials, was the site of a further 90 cremation burials. (Piggott 1938) A series of 0.5 m<sup>2</sup> test-pits and two machine trenches recovered only a small number of undiagnostic flint flakes and scarce small sherds of possibly 12th-13th century pottery. No features were revealed.

The evaluation was commissioned by Savills Ltd on behalf of the West Hampshire Water Company. The project was managed by Julie Gardiner and directed in the field by P.A. Harding.

Julie Gardiner  
Wessex Archaeology

Piggott, C.M., 1938 'The Middle Bronze Age Barrow and Deverel-Rimbury urnfield at Latch Farm, Christchurch Hants' *Proc. Prehist Soc.* 4, 169-187

#### PENNY'S FARM, CRANBORNE

An evaluation by machine trenching was undertaken in November 1992 in association with a planning application for a proposed small-scale residential development (centred on SU 059 132).

The site, which covers a field of c. 0.85 ha immediately south-east of Penny's Farm, lies on gently sloping ground north of the River Crane. At the south-eastern end of the field are several irregular, sub-circular hollow earthworks; neither the origin nor date of which are known, but which may be the result of small-scale gravel extraction.

Features of Late Neolithic, Middle Saxon and possible medieval date were investigated in the field north-west of Penny's Farm in advance of and during previous housing development.

The evaluation produced evidence of archaeological activity across a broad chronological range. Small quantities of worked flint were recovered from a variety of features and the presence of at least two separate flint industries, of probable Neolithic and Bronze Age date, was indicated. Large amounts of burnt flint were noted in several features. A single Romano-British cremation contained in a Black Burnished ware vessel of 3rd-century date was also found, an unusual discovery for this area where inhumation was more common. Features of medieval date were also excavated.

The evaluation was commissioned by Ken Morgan Architects on

behalf of Gascoyne Cecil Estates. The project was managed by Carrie M. Hearne and directed in the field by Mick Rawlings.

Carrie M. Hearne  
Wessex Archaeology

#### NORDEN, CORFE CASTLE

The archaeological evaluation of land at Norden, Corfe Castle, was carried out during October 1992. The investigations comprised a series of 20 auger bore-holes between SY 9577 8293 - 9564 8291 and the excavation of six trial pits in a single field plot (centred on SY 9590 8295). The land lies immediately to the north and east of the present known extent of a Romano-British industrial settlement at Norden. No evidence for deposits of Romano-British date was discovered in the survey area. Two low earthwork banks within the field plot may be remnants of post-medieval field boundaries. A short length of the former mineral tramway from Norden to Goathorn, including iron rails, survives on the edge of this plot.

Peter W. Cox  
AC archaeology

#### BURTON PUMPING STATION, NEAR DORCHESTER

An evaluation by fieldwalking and a watching brief were carried out in advance of and during the construction of a new pumping station (centred on SY 6890 9190).

The site covers an area of c. 1.2 ha. It lies approximately 1 km north of the Iron Age hillfort at Poundbury and the centre of Roman *Durnovaria*. Closer to the site, c. 400m to the south-east, a number of probable Roman burials have been found.

The finds recovered during the fieldwalking included a general scatter of worked flint of probable Middle-Late Bronze Age date. The pottery found was mainly late medieval or post-medieval in date, although four sherds of earlier medieval material were also recovered.

No archaeological features were observed during the watching brief; some worked flints were noted during topsoil stripping.

The fieldwalking and watching brief were commissioned and funded by Wessex Water. The project was managed by Carrie M. Hearne and was directed in the field by Duncan Coe.

Carrie M. Hearne  
Wessex Archaeology

#### LAMBERTS HILL RESERVOIR, NEAR DORCHESTER

An assessment was carried out of the proposed site for a water reservoir (centred on SY 637 904).

The proposed site is c. 0.55 ha in area. It lies 5 km west of Dorchester, and adjacent to the Roman road running from *Durnovaria* to Eggardon Hill. The area is dotted with prehistoric monuments, principally Bronze Age burial mounds, and the site lies immediately north of the 'Rew' group of barrows.

No archaeological features were recorded and only a single worked flint was recovered. Intermittent ploughmarks were noted cutting the surface of the bedrock (chalk) in some trenches, but these are thought to be of recent origin.

The assessment was commissioned and funded by Wessex Water. The project was managed by Ian Barnes and directed in the field by Michael J. Heaton.

Ian Barnes  
Wessex Archaeology

#### EVALUATION AT MAIDEN CASTLE SCHOOL, DORCHESTER

An area of c. 1.44 ha (3.5 acres) at SY 679 895, including part of a crop-mark settlement of Iron Age or Romano-British date, was evaluated by means of machine-excavated trenches. The trenches revealed parts of two ditched enclosures together with linear features presumed to form a trackway.

The most coherent enclosure lay in the north-eastern corner of the site. Sample excavation of the interior of this enclosure revealed traces of

pits and two hut platforms, for which associated pottery suggests a date in the later Iron Age or earliest part of the Roman period. Other, probably contemporary, hut platforms were recorded to the south-west of this enclosure. A second enclosure lay only partly within the evaluation area but would also seem to be of late Iron Age/early Romano-British date. Considerable disturbance by shallow gravel quarries of post-medieval date was recorded within the southern half of the site.

The evaluation was funded and commissioned by Dorset County Council. A detailed evaluation report is held by the County Sites and Monuments Record.

Alan Graham and Julian Richards  
*AC archaeology*

#### EVALUATION OF LAND NEAR EVERSNOT AND STOCKWOOD, IN ADVANCE OF A37 ROAD IMPROVEMENTS

The evaluation of two areas adjacent to the A37 was carried out during October 1992 by mechanically-excavated transects. Area 1, comprising 6750 m<sup>2</sup> of land in pasture (centred on ST 5925 0489) north of Holywell crossroads, revealed a single prehistoric pit containing pottery, probably of Middle Bronze Age date, and a negative field lynchet. No finds or deposits were revealed in Area 2 (centred on ST 5830 0710), near Stockwood, which comprised 625 m<sup>2</sup> of land in pasture. Area 2 is immediately adjacent to the former site of a 17th century cottage (*RCHM, Dorset West* Vol 1, Stockwood 5), shown on the first edition OS map as Bucks Head. This derelict building is now known to have been demolished in the late 1950s during road widening.

Peter W. Cox  
*AC archaeology*

#### TAN LANE, BOURTON, NEAR GILLINGHAM

An evaluation was carried out in advance of proposed residential development. The site encompasses c. 1.5 ha of pasture either side of Tan Lane on the north-eastern edge of the village (ST 7805 3100). Bourton was first mentioned in AD 1212 and was included within the parish of Gillingham until the 19th century. As an agricultural hamlet, it generated moderate incomes from the woollen and textile trades of the Wiltshire and Somerset borders until the 19th century (*RCHM 1972, 3*).

The County Archaeological Officer recorded the presence of slight, regular earthwork platforms and terraces on either side of Tan Lane. They survive as low, rectangular terraces aligned with Tan Lane. There are three, possibly four, terraces north of Tan Lane and one terrace in the north-west corner of the field south of the lane.

The evaluation consisted of the excavation and recording of three machine trenches in the proposed development area. Apart from rubble-filled land drains of recent date, only two features were recorded: a relic hedgeline and a shallow negative lynchet. Both features corresponded with the lower and upper edges of earthwork terraces, and were their only subsoil components. No artefacts were recovered. On the evidence of the evaluation trenches, it is likely that the earthworks are remnants of a system of small field enclosures. No dating evidence for their construction or use was found.

The work was commissioned by Brimble, Lea and Partners on behalf of the landowners, Mr and Mrs Shearing. The project was managed by Roland J.C. Smith and directed in the field by Michael J. Heaton.

Roland J.C. Smith  
*Wessex Archaeology*

*RCHM, 1972, Historical Monuments in the County of Dorset, Vol IV: North.*

#### HOOKE

A small-scale excavation took place in the village of Hooke (ST 536 002) for site assessment purposes in July 1992. The site lies on the east side of Green Lane, about 70 m S of the parish church. Five test pits were dug and 2 engineers' test holes were archaeologically recorded, so as to assess the nature, extent, date and preservation state of archaeological features and deposits.

No structural features were found. The site was covered by soil deposits which had probably been disturbed in the present century. A few residual medieval sherds and a greater quantity of post-medieval pottery, much of it modern, were recovered from these deposits.

The site is shown as a garden on the Tithe Map of 1840 (Dorset County Record Office, T/HOO). It probably originated as a post-medieval intake on the edge of a large peripheral green to the S of the village.

Thanks are due to Ted Bugler, the site owner, for his interest and co-operation, to Bob Edwards who supervised the excavations and undertook post-excavation research, and to the students of Bournemouth

University who worked on the site.

Alan Hunt  
Bournemouth University

#### RINGWOOD ROAD, LONGHAM

A preliminary investigation was conducted at a proposed reservoir site east of Ringwood road, Longham (SZ 062 978). The site consists of an irregular, low-lying area, of c. 60 ha, within the Stour Valley. An area of c. 350 square metres was excavated. Archaeological material appeared to be limited to one possible, undated feature and sporadic finds of pottery and worked flint within the subsoil. Besides one glazed, probably medieval sherd, the nine pottery fragments were all small, abraded and formless. Their fabric suggests a prehistoric, probably Bronze age, date. The nineteen flints did not include any recognisable tool types but were also compatible with a Bronze age date.

The work was commissioned by RMC Technical Services Limited and formed part of a wider evaluation conducted by Oxford Archaeological Associates Limited. The archive is lodged with Poole Museum Service under the reference PM58/DR6.

D.R. Watkins  
Borough of Poole Museum Service

#### EVALUATION OF ST MARY'S CHURCH, LYTCHETT MATRAVERS

Documentary research relating to the area of a proposed vestry extension on the northern side of St Mary's Church, Lytchett Matravers, provided no indication of pre-19th century structures. A subsequent excavation of the proposed extension area demonstrated an absence of structures or deposits associated with the medieval church. The current topography of the investigated part of the churchyard was demonstrated as largely relating to the dumping of upcast from the construction of the vestry in 1876.

Julian Richards  
*AC archaeology*

#### MILTON ROAD, MILBORNE ST ANDREW

The archaeological assessment of a land at Milton Road, Milborne St. Andrew (SY 802 980) comprised the mechanical excavation of c. 300 metres of trenches across a single field plot. Inspection of the exposed subsoil revealed a number of features and deposits. Most were naturally-occurring periglacial features; three may be of an archaeological nature, but manual excavation failed to recover datable artefacts. Two possible negative lynchets were noted on the hillside. A number of pieces of prehistoric worked flint was recovered from spoil heaps. Towards the lower-lying east side of the field the underlying chalk was buried by a hillwash deposit of up to 700 mm in depth, under which a series of gravel and silt deposits were noted which are considered to be of alluvial origin. A worked flint flake and much burnt flint was contained within the upper alluvial deposits and is similar to burnt mound deposits identified in valley floors elsewhere in the county.

Peter W. Cox  
*AC archaeology*

#### HOGFORD MILL, PAMPHILL

Hogford lies on the south-west bank of the River Allen and west of Wimborne (SU 0000 1500). Water mills and farmhouses have occupied the site since the medieval period. In 1991 the area was ploughed revealing a scatter of debris. The following is a survey of the documentary evidence together with an analysis of the material collected by fieldwalking.

Hogford was one of a number of water mills along the Allen. Its nearest neighbours were Hinton Mill 3 km to the north-west and Walford 1 km to the south-east. Hogford lay within the Domesday manor of Wimborne, Shapwick, Chrichel and Up Wimborne, which contained eight mills in 1086. The name Hogford is mentioned in 1332 (Mills 1980, 166) and the site of a mill is recorded here in the Kingston Lacy accounts for 1380-1381. At this time John and Edith Samford held the water mill of *Hoggefordsmull*, with its water course, weir and gate, with the right to build a fulling mill and a new house (D/BKL CG3/1). The mill was held by Edward and Alice Samford in 1388-89 (CG3/2) and between this date and 1408-9 (CG3/10) the fulling mill and house were built and the tenancy passed to John Forster.

The accounts for 1408-09 give the following details:

'He answers for 33s 4d from the farm of a fulling mill called Hoggefordsmull with fishing there lately in the tenure of Edward Samford now demised to John Forster for the term of his life by

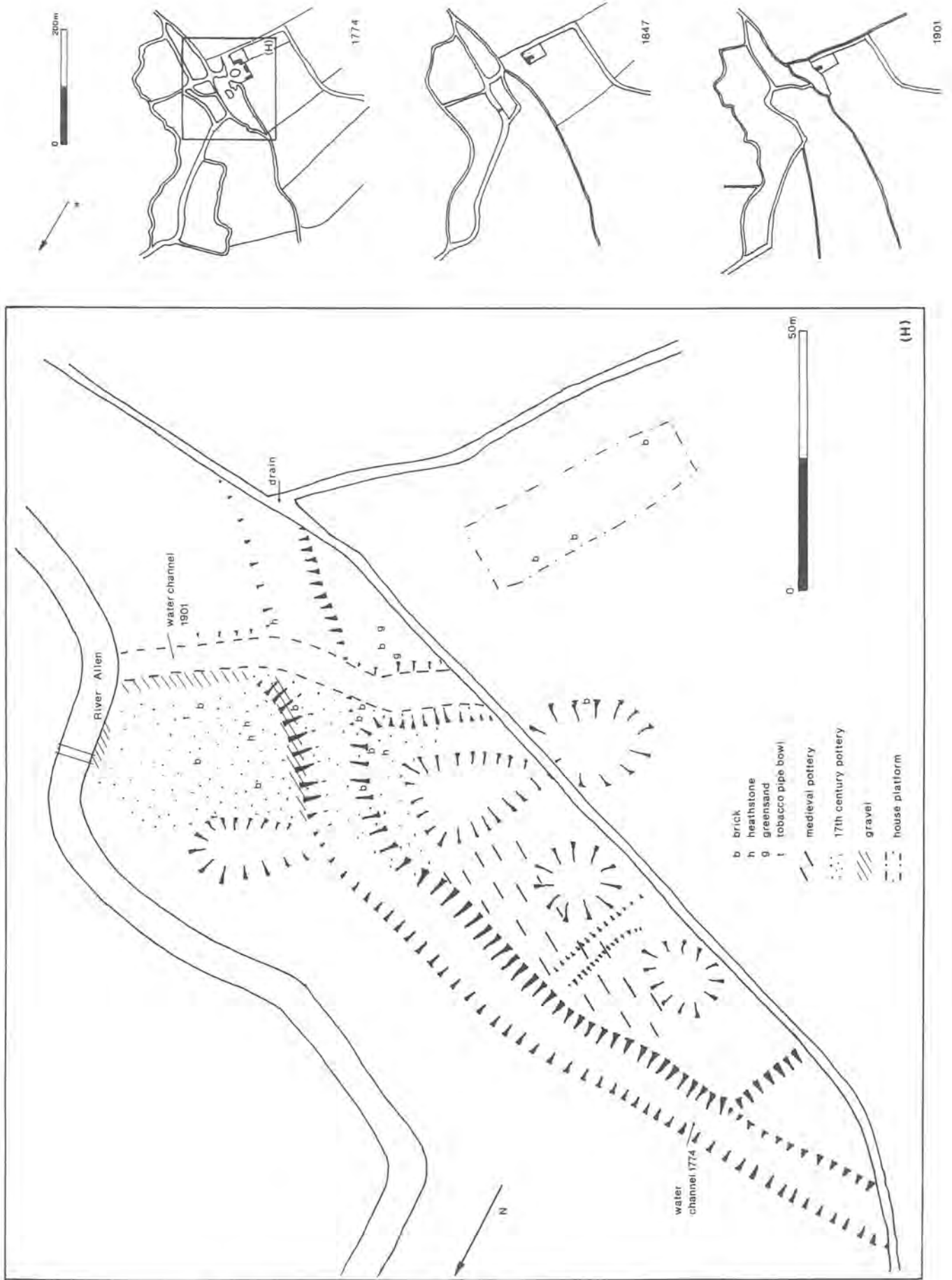


Figure 1: Hogford Mill, Pamphill. Plan of the earthworks and pottery scatter.

court roll of the 7th year and the same John will repair and maintain the said mill and the house of the same at his own expense during the aforesaid term as appears in the roll of the aforesaid court. And for 26s 8d from the farm of one other mill called Hoggesfordmull, lately in the tenure of Edward Samford, nothing since it is in the lands of the king for default of tenancy as appears in the roll of the aforesaid court. And (he answers) for 6s 8d from the farm of the fishing of the mill pond and the mill sluice/dam and the floodgates so demised.'

The second mill, held by the king, is not recorded in the accounts after 1408-09. Translation of the court roll for 1407-1408 would provide interesting details of the dispute between lord and tenant at Hogford. Unfortunately there is a gap in the court roll record, within the Bankes Archive, from 1403-1414.

An account of materials used to repair the fulling mill survives for the year 1427 (CG3/18):

'The same accounts on the wages of John Fayr carpenter for making the [?foot step of the fulling mill] of Hoggefordsmull 1 day taking 6d per day [?at assessed rate]. And 3d on the wages of his assistant for making "le stooke" of the fulling mill for 3 1/2 days taking 6d per day at assessed rate. And 17 1/2d on the wages of his assistant for the same time taking 5d per day at the assessed rate. And 6d on 18 nails purchased called "spykenail" for fastening planks [?a sluice] above "le flodegaytys". And 6d on the Wages of William Jolif carpenter for fastening planks on "les flodegates" for 1 day at assessed rate. And 3d on nails purchased called "bordnaill" for fastening "les hacchis" for "flodegates". And 6d on 2 planks purchased for the same "hacchis". And 5d on the wages of Walter Masseday carpenter for making one [?pulley] for holding up "les shaft" of the mill, for 1 day at assessed rate. And 4d on the wages of his assistant for the same at assessed rate. And 4s paid to 4 carters hired for fetching "pylys" from the park of Holt and carriage to Hoggefordsmulle for the [?carters] 12d at assessed rate. And 12d

on the wages of one carter carrying clay to the mill of Hoggeford for 1 day at assessed rate. and 4d on the wages of one man for cutting down underwood in Baddebury for thence making [?a fold] for "les flodesgatis" And 6d on the wages of 1 carter for carrying the said underwood from Baddebury to Hoggefordsmulle. And 14d on the wages of Peter Brownyng for cleaning the pond of the mill there for 3.5 days ...'

The tenancy of the mill passed to William Faule in 1438-1439 (CG3/21). The last two surviving medieval accounts (1445-46, CG3/22 and 1456-57, CG3/23) state that John Forster was the tenant at this time. He is responsible for the upkeep of the property although the lord king will supply him with wood to repair the flood gates and the mill when necessary.

References to Hogford in the 16th and 17th centuries have not been found, although in the 1552 and 1591 surveys (D/BKL), Walford Mill is recorded as a fulling mill. The close proximity of another fulling mill, sited nearer to Wimborne, may have put Hogford out of business in the 16th century although the dense 17th century pottery scatter, described below, indicates that the site was occupied from the early 17th century.

Repairs to Hogford Mill are recorded in the accounts of 1725 and in the accounts of 1731 John Bankes pays £1-7s to workmen for digging his fishponds here (Margaret Bankes, D/BKL). In 1774 (Woodward, D/BKL) Thomas Morris is the tenant of Hogford Farmhouse and 55 acres of pasture and arable at Hogford and Bickham. The map shows the farm buildings arranged around three sides of a yard. On the north side of the yard is a circular pond and beyond this the River Allen and an array of drains and water courses which may once have been leats associated with earlier mill sites. No mill buildings are shown or recorded in the inventory for the 1774 survey.

The 1874 tithe map (T/WM) shows the farmhouse but not the two farm buildings depicted on the 1774 map. A farm house and farm buildings had been erected at Bickham, by this time, indicating that Bickham had become the farm centre. The Ordnance Survey 1901 map shows a smaller building at Hogford with a well. This last building fell into ruin and was demolished in the 1950's.

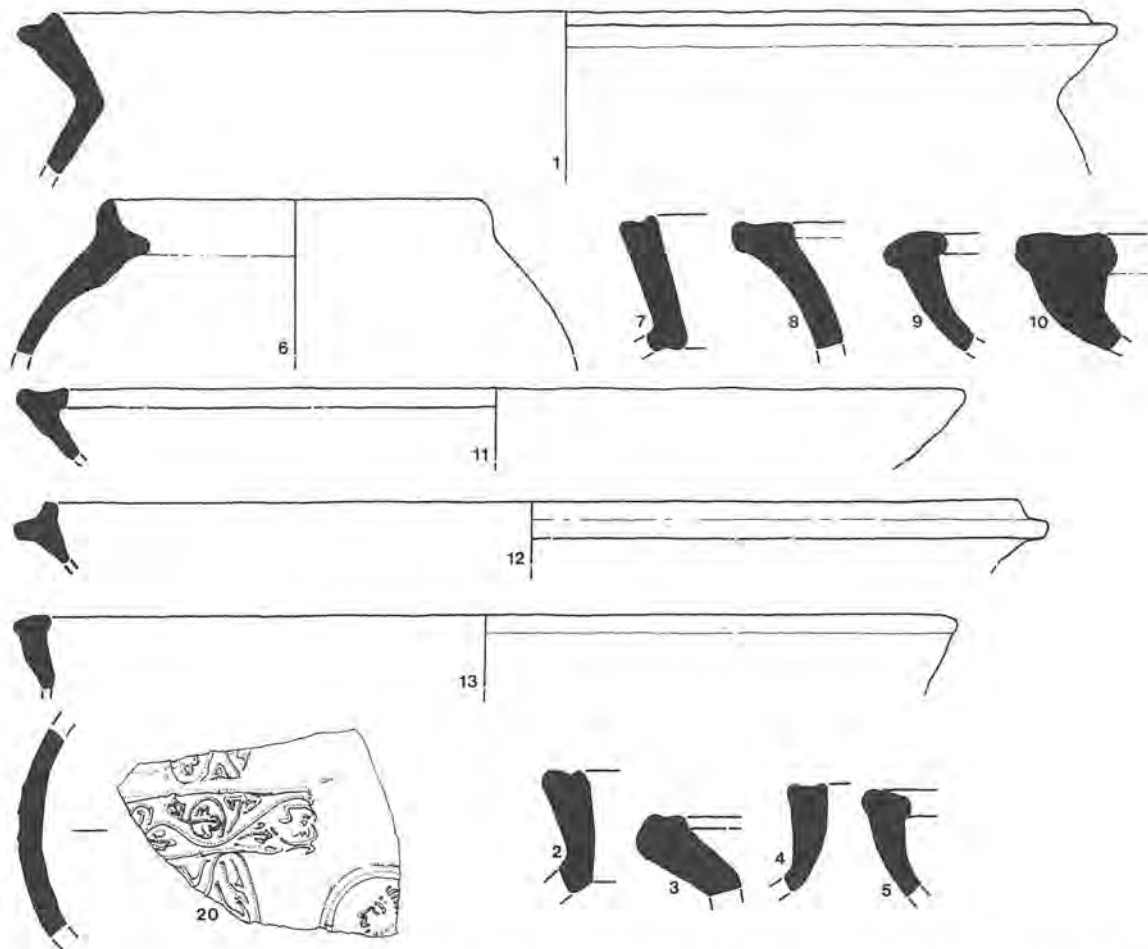


Figure 2a: Hogford Mill, Pamphill. The pottery. Nos 1-10 one half life size, Nos 11-13 one quarter life size, No 20 half life size.

In 1991 the sites of the buildings, ponds and water courses were visible on the ground as earthworks and as scatters of debris. These were plotted using an EDM and three discrete areas of occupation were identified (Fig. 1).

The earliest of these debris scatters lay south of the River Allen and immediately north of a narrow drainage ditch. The course of a disused water channel marked the north edge of the scatter. The pottery was predominantly medieval and was concentrated in an area measuring 50 m east-west and 20 m north to south. One hundred and five coarse-ware sherds were recovered, mainly abraded body sherds resembling Poole fabric 1 (Jarvis 1992, 64), the assemblage included 17 rim sherds. These were from cooking pots and open bowls. The six sherds from open bowls included two examples of a heavy thickened rim with interior bevel (Fig. 2 no. 9) similar to those from Corfe Castle (RCHM 1960, 44) and a sherd (Fig. 2 no. 10) of a heavy expanded rim flattened on top turned down unevenly on inner edge similar to one from Corfe Castle (*ibid.*, 43); both have been dated to the 12th century. There were 11 sherds from cooking pots and of these, six were examples of bifid rims (Fig. 2 nos. 1:2 & 7) similar to (Jarvis 1992, 67, and Fig. 31) dated to the 13th-15th centuries.

Pottery which could be dated to the 16th century was lacking and the site appears to have been abandoned until the 17th century. Some 50 m to the north-east of the medieval pottery scatter and on the north side of the dry water channel, was a scatter of 17th century material within an area of black soil. This measured 35 m north-south by 20 m east-west. The scatter contained areas of burnt clay and occasional bricks, heathstone and greenstone fragments. It continued to the south bank of the present course of the River Allen. Included within the assemblage were five 17th-century tobacco pipe bowls (Fig. 2 nos. 15-19) their shape and size indicates a date of 1640-1680. No exact parallels were found in published reports but they are similar in size and shape to Poole examples (Markell 1992, 159 Fig. 93 no. 22 and Fig. 94 no. 36). The 61 fragments of pottery were mainly green, yellow and orange glazed fabrics characteristic of the Verwood and district potteries. One handle fragment and a foot, probably from a pipkin, had the wet-looking glaze noted as typical of products from the Horton kiln (Copeland-Griffiths 1989). There were two fragments of saltglaze ware (one brown body sherd with a raised pattern, Fig. 2 no. 20) but there were no examples of the cream, tin glaze or white stone wares

characteristic of the 18th century.

A settlement shift seems to have taken place towards the end of the 17th century. The house platform which marked the site of the 18th-century Hogford Farm lay 75 m away, on the south side of the drainage ditch. This raised area measured 25 m north-south and 8 m wide with a scatter of bricks and sherds across it. A hollow area 25 m in diameter on the north-west side of the house platform may be the site of a fish pond.

The site of Hogford Mill has now been returned to pasture as part of a new tenancy agreement.

Thanks are due to Sarah Bridges who translated the medieval accounts, Jo Draper who examined the pottery and Stefan Marjoram who illustrated the finds. The finds are held at Kingston Lacy House.

Sarah Bridges, Dorset Record Office  
Martin Papworth, The National Trust

Copeland-Griffiths, P., 1989, 'Excavation near a 17th century kiln at Horton, Dorset', *Dorset Proceedings* 111, 72-85

Jarvis, K.S., 1992, 'Medieval Pottery', in I.P. Horsey, Excavations in Poole 1973-1983, *DNHAS Monograph Series* 10

Markell, D.J., 1992, 'Clay Tobacco Pipes', in I.P. Horsey, Excavations in Poole 1973-1983, *DNHAS Monograph Series* 10

Mills, A.D., 1980, 'The Place Names of Dorset', English Place Name Society LIII

RCHM, 1960, 'Excavations in the West Bailey of Corfe Castle', *Medieval Archaeology* IV

Manuscript Sources: Dorset Record Office

Bankes of Kingston Lacy and Corfe Castle Estate Archive (reference D/BKL)

Kingston Lacy manorial accounts 1380-1457 (CG3/1-3/23) 'Gilt Book' Surveys of Kingston Lacy manor 1552 and 1591.

Account books of Margaret Bankes and John Bankes 1691-1740.

Maps of Kingston Lacy Estate by W. Woodward 1774.

Wimborne Minster Tithe Map 1847 (Reference T/WM).

#### WHEELERS LANE, BEARWOOD, POOLE

An archaeological evaluation was undertaken in advance of the proposed development of new school buildings (centred on SZ 0455 9675) in November 1992.

Extensive archaeological fieldwork carried out over the past decade on the Stour Valley river gravels in this area has illustrated the richness of the local archaeological landscape. Evidence for activity dating from the Mesolithic, Neolithic and Bronze Age periods has been found, as have extensive field systems and associated settlements dating to the Iron Age and Romano-British periods. Archaeological investigations at Whites Pit, immediately west of the current site, revealed a number of ditches which are almost certainly part of an extensive field system and probably related areas of settlement and occupation activity dating to the Late Iron Age/Romano-British period.

The site covers an area of c. 1.18 ha and was evaluated by means of a 5% sample by machine trenching. A number of archaeological features were located, ditches and gullies for the most part, several of which could be traced across the field in different trenches. Severe weather conditions experienced during the investigations prevented the full examination of some features, but all were planned and the majority were subjected to sample excavation by hand. A single sherd of (unstratified) Late Iron Age pottery was the only artefact recovered.

It is probable that the archaeological features located represent the continuation of the Late Iron Age or Romano-British field system recorded in Whites Pit.

The evaluation was commissioned by Dorset County Council. The project was managed by Carrie M. Hearne and was directed on site by Duncan Coe.

Carrie M. Hearne  
Wessex Archaeology

#### LOWER CONSTITUTION HILL, POOLE

An assessment was carried out, in the grounds of Bournemouth and Poole College of Further Education (SY 028 921). The site consists of an irregular area of c. 1 ha, straddling the 100 m contour. Six trenches with a total length of 124 m were excavated but no archaeological material was recovered. The work was commissioned by Dorset County Council and the archive is lodged with Poole Museum Service under the reference PM066/DR5.

D.R. Watkins  
Borough of Poole Museum Service

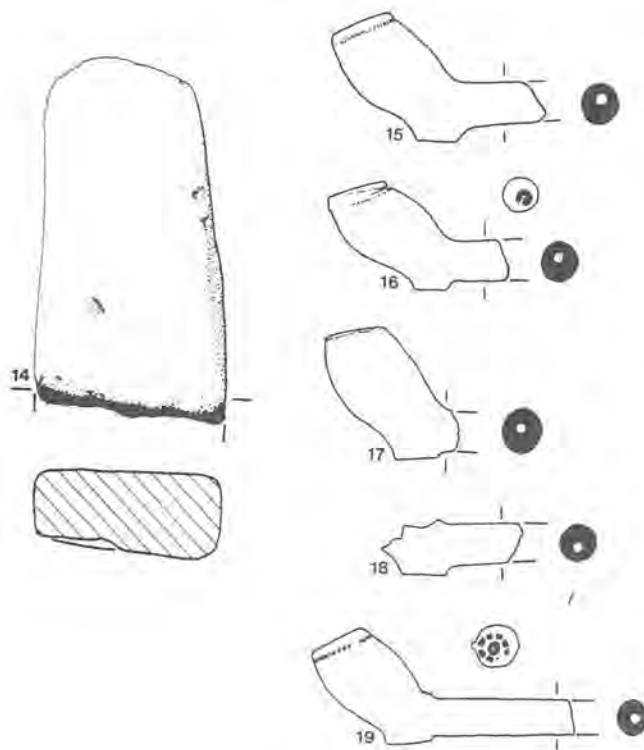


Figure 2b: Hogford Mill, Pamphill. A whetstone from the medieval scatter, and clay pipes at half life size.

**EVALUATION AT SOUTHCOMBE, PIDDLTRENTHIDE**

An area adjacent to the church of All Saints, Piddletrenthide, was evaluated by means of a series of machine-excavated trenches. The excavation demonstrated a sequence of activity commencing with a ditch of later prehistoric date. Early medieval occupation of the site is attested both by features and by pottery of a similar date residual in trenches where post-medieval structures were recorded. Documentary evidence suggests that the site was occupied by houses, gardens and orchards during the 18th and 19th centuries.

Julian Richards  
*AC archaeology*

**SHAFTESBURY ABBEY**

Investigation of a second nave pier within Shaftesbury Abbey (ST 861 228) revealed, in contrast to that investigated in 1991, a more substantial below-ground structure. The position of this structure was immediately below the position of the pier previously marked by an unconsolidated pile of greenstone blocks.

Julian Richards  
*AC archaeology*

**FROME WHITFIELD, STINSFORD**

An evaluation of a part of a single field plot at Frome Whitfield (SY 692 914) was carried out during August 1992. The area lies adjacent to the site of the Frome Whitfield deserted medieval village and church of St. Nicholas. The work comprised the excavation of two 1 m<sup>2</sup> trial pits. Both contained small quantities of medieval and post-medieval pottery, possibly ranging in date from the 12th to 19th century. Trial pit 2 revealed a single linear feature, probably a ditch, containing medieval pottery.

Peter W. Cox  
*AC archaeology*

**GOATHORN PENINSULA, STUDLAND**

The archaeological evaluation of approximately 3.2 ha of land (centred on SZ 011 859) to the north of the existing wellsite (F) on the Wyth Farm Oilfield was undertaken during September 1992 by the excavation of 82 hand-excavated 1 m<sup>2</sup> trial pits. Pits were located on National Grid co-ordinates of 20 m intervals across areas of coniferous plantation. No artefacts or subsoil features were located in the survey and observed soil depths rarely attained more than 0.3 m.

Peter W. Cox  
*AC archaeology*

**EVALUATION AT WASHPOND LANE, SWANAGE**

Evaluation at SZ 0153 7938 in advance of the construction of a flood alleviation scheme at Swanage was commissioned and funded by Purbeck District Council.

The site was thought to lie close to the Domesday settlement of *Mouleham* and slight earthworks were noted by the County

Archaeological Officer. Machine trenches produced no evidence of surviving archaeological features and no artefacts of pre-20th century date. The putative earthworks were demonstrated to be features largely of the natural topography, enhanced by recent agricultural activities.

Julian Richards  
*AC archaeology*

**ST. JOHN'S HILL, WAREHAM**

An evaluation of an area of 0.8 ha at the rear of St John's Hill car park (SY 9245 8727) was carried out in July 1992. The site lies within the Saxon burh of Wareham and in an area between the former churchyard of the medieval church of St John the Baptist and the medieval back lane of Church Street. The excavation and recording of deposits in two mechanically-excavated trenches revealed a sequence of post-medieval building footings, construction trenches and demolition levels, including cellars of late 18th or 19th century buildings on the Church Lane and St John's Hill frontages. The lower levels encountered in the trenches (around 1.20 m below ground surface) may represent a truncated medieval soil horizon, but no artefacts or features of medieval or earlier date were present.

Peter W. Cox  
*AC archaeology*

**WORGRET ROAD, WAREHAM**

A preliminary evaluation of a single field plot (around SY 914 872) was carried out in May 1992. The work comprised fieldwalking of the entire field and the excavation of three trial pits and two trenches (total excavated area of 214 m<sup>2</sup>). Surface artefacts, recovered from the field surface and from the topsoil in the machine-excavated trenches, date from the later prehistoric to medieval periods. No subsoil features were observed which pre-date the use of the area as an army camp during the first quarter of this century. Although the survey area lies within 200 m north-east of a late Iron Age and Romano-British industrial site excavated in 1986 (*Proceedings* 113, 55-105), there is no evidence from this preliminary investigation for the continuation of the site into the survey area.

Peter W. Cox  
*AC archaeology*

**GOLDCROFT ROAD, WEYMOUTH**

The archaeological evaluation of 3 ha of land between Goldcroft Road and Weymouth Golf Course, Weymouth (SY 668 798), was undertaken during November 1992. The investigation comprised the mechanical excavation of six trenches, each 100 metres in length. Finds only of post-medieval date were recovered from the soppoil and several linear features observed cut into the underlying clay are associated with modern land drainage.

Peter W. Cox  
*AC archaeology*

**EXCAVATIONS****EXCAVATIONS AT CORFE CASTLE 1992**

The excavations in May concentrated on resolving levels between the fourth tower excavations of 1991 and the great ditch in the Outer Bailey.

Part of the ditch filling was removed on the west side of the bridge to reveal the curtain wall linking the fourth tower with the south-west gatehouse. This wall lies beneath another narrower wall dated by RCHM (1970, 67) to the post-medieval period.

A small test pit 1 m by 1 m was excavated into the black 17th-century silt which abutted the flint and limestone rubble core forming the north edge of the fourth tower and the south edge of the great ditch. This was to investigate the junction of this core-work with the rough ashlar and garreted facing of the east side of the curtain wall. The test pit showed that the ashlar blocks of the curtain wall were built over the core-work. This indicates that the length of curtain wall on the north side of the fourth tower may once have matched the 13th-century width of the curtain wall on the south side of the tower, but was made narrower. The wall between the third and fourth towers measures 3.2 m in width, whereas that between the fourth tower and the south-west gatehouse is 1.7 m wide.

At the north end of the curtain wall, the west tower of the gatehouse was fractured from the main structure during the demolition of the castle in 1646. Excavation revealed the line of fracture between the tower and

the footings of the bridge. The early 17th-century black silts exposed on the south side of the great ditch dipped beneath 18th- to 20th-century deposits. These later deposits were not excavated to the 17th century level in the centre and north side of the ditch. Once the length of earlier curtain was exposed the ditch was turfied at the new level. The interior of the fourth tower has also been turfied and the curved archers' steps up to the tower embrasures have been raised by one course to highlight their position and protect the underlying medieval masonry.

Within the garden area on the north side of the Inner Ward, a ramp of soil was removed to prevent access to the top of a fragment of 11th-century curtain wall. This mound of material proved to conceal a damaged flight of steps which once led from the turret on the east side of the Inner Ward to the top of the curtain wall. Four steps of Portland-Purbeck Limestone were uncovered but the upper steps had been robbed. The core of the structure was made of unmortared rubble which included fragments of carved stone. One of these was part of a Purbeck Marble mortar. The stairs abutted the curtain wall and the date of the structure, from the pottery, is probably early 17th century. The steps are not shown on Ralph Treswell's 1586 plan.

Consolidation work at the castle has uncovered the reveal of a doorway, at ground floor level, in the north end of the early 13th-century manor house called the Gloriette. Also in the Inner Ward, the top of an

archway was revealed on the interior face of the east curtain wall below the entrance to the turret. Repairs to post-medieval blocking on the north side of the West Bailey uncovered the footings of a postern gate shown on Ralph Treswell's 1586 plan of the castle.

In November, the ticket office on the north side of the outer gatehouse was removed. Immediately below the concrete base of the ticket office were the east and north walls of the east guard chamber. These were *in situ*, unlike the walls of the west guard chamber, excavated in 1986, which had been undermined by the 1646 demolition.

The excavations were carried out with the help of local and National Trust Acorn volunteers, supervised by Nancy Grace and with grant aid from English Heritage.

David Thackray and Martin Papworth  
The National Trust

RCHM, 1970, *Dorset Vol II South-East* pt 1

#### MIDDLE FARM, BRIDPORT ROAD, DORCHESTER

An excavation was undertaken in advance of development by the Duchy of Cornwall (centred on SY 677 902). The excavation followed a two-stage evaluation which had suggested substantial activity in the Bronze Age and the presence of a field system and associated settlement or settlements on the site (Davies 1989). The excavation was designed to examine those areas considered most likely to contain the remnants of Bronze Age settlement sites.

The excavation confirmed that the site was comprehensively covered by the remains of a Bronze Age ditched field system. The field system comprised a series of shallow, linear ditches, defining rectangular fields, each around 0.5 ha in area. The ditches were filled with flint debris and some settlement rubbish, including pottery and quernstones, suggesting that settlements were not far away. At least one undated, post-built round-house was recorded during the excavation, which may represent a contemporary living site. These remains can be linked to the Bronze Age ditches, enclosure and roundhouse recorded some 500 m to the west on the line of the bypass (Woodward and Smith 1987).

Other evidence for prehistoric activity both pre-dated and post-dated the Bronze Age field system. A notable find was the discovery of a Palaeolithic flint handaxe, in fine condition, recovered from the clay-with-flints subsoil of the site. The Earlier Neolithic period was represented by at least four pits containing struck flint, pottery and food remains. Precise dating of these features awaits radiocarbon determinations, although these isolated and scattered pits can be compared to other such features recorded in recent excavations at Flagstones, Dorchester (*ibid*).

Late Bronze Age settlement remains consisted of two post-built roundhouses and at least eight pits. The pits were filled with settlement debris including pottery, querns, whetstones and food remains. These settlement features probably comprise a component of the Late Bronze Age settlement, partly recorded at Coburg Road, some 100 m to the south (Smith 1988).

The excavation was commissioned and funded by the Duchy of Cornwall. The project was managed by Roland J.C. Smith and was directed in the field by Michael J. Heaton.

Roland J.C. Smith  
Wessex Archaeology

Davies, S.M., 1989, 'Middle Farm, Dorchester', *Dorset Proceedings* 111, 110

Smith, R.J.C., 1988, 'Excavations at the New Rugby Football Ground, Coburg Road, Dorchester', *Dorset Proceedings* 110, 144-145

Woodward, P.J., and Smith, R.J.C., 1987, 'Survey and excavation along the route of the southern Dorchester By-pass, 1986-1987 - an interim note', *Dorset Proceedings* 109, 79-89

#### FIELDWORK AND EXCAVATION ON THE DORCHESTER ROMAN AQUEDUCT, SUMMER 1992

Study of the Dorchester Roman Aqueduct has been carried out by a variety of persons since the turn of the century. Considerable information is available both as to its route and its construction. In particular R.A.H. Farrar analysed the confusing records of earlier work in the course of preparing the Royal Commission on Historic Monuments report published in 1970 (RCHM 1970, 585).

The aqueduct delivered water at approximately the level of the Top of Town roundabout, after following the south-west side of the Frome Valley from a source which is as yet unclear. At each re-entrant the aqueduct, rather than cross the low ground on overhead structures as it might in a

more prosperous province, detours up the re-entrant until the contour makes it possible for it to cross over the level, and then resumes its course along the Frome valley.

Close to Dorchester the channel has been excavated, notably by Christopher Sparey Green in his work at Poundbury Industrial Estate (Green 1987). Beside Poundbury Hillfort, along the valley side to Whitfield Farm, and in and out of the Fordington Bottom re-entrant, the channel is clear to see on the surface.

In the next re-entrant at Giles Cross, although in favourable conditions the aqueduct can be seen on the surface, its course is quite clear on aerial photographs taken by John Boyden in the drought of 1976, and this has recently been confirmed by excavation by AC archaeology, appropriately on the line of the new Wessex Water main to supply Dorchester. Both these sources also confirm the presence of a smaller aqueduct just below the larger one, though the excavation suggests that water never flowed in the smaller.

The next re-entrant is at Bradford Peverell. There is little to see at present, although the channel has been excavated in the past, and it has recently been visible in a pit cut in the yard of Home Farm. Beyond this, a long terrace runs through a young beech wood to a point nearly opposite Stratton Mill, followed by a small re-entrant called Green Valley, where a medieval cultivation terrace follows a more or less horizontal course till it enters Penn Wood, which continues along the back of the house at Quatre Bras. Along the northern edge of this wood runs a conspicuous ditch. The terrace and the first part of the ditch in Penn Wood form a scheduled monument, as a result of the excavations of 1939 by Selby and Wainwright which were assessed by Farrar, though never published because of the outbreak of war.

North-west of Quatre Bras there has been no firm sighting of the channel, but The Royal Commission, following Foster (1922, 1) drew a line following the contours which would take the channel past Littlewood Farm, up the Steppes Farm re-entrant (where there is a stream), and probably continuing out the other side and along the Frome valley to a source on the Frome itself at about Notton.

The aim of the excavation and fieldwork carried out by students of Bournemouth University in June and July 1992 was to establish this north-western part of the aqueduct's course, and if possible to find the source point.

It should be made clear from the start that this aim was not achieved. The evidence obtained was mainly negative, and further work will be necessary in 1993 to resolve new uncertainties. The first problem tackled was the possible continuation of the channel further north west than the re-entrant at Littlewood Farm, ie to Notton or beyond. This was first suggested by Foster in his article of 1992, and provisionally accepted by RCHM in their report of 1970.

The only visible evidence lies in an undoubted water channel running from Steppes Farm and Metlands towards Frampton Court, along the south-eastern boundary of Metlands Wood. This is marked as firm on Foster's map, and is incorporated in the RCHM map. It still held some water in wet weather as recently as 1969. A survey in 1992 made it clear that this channel falls towards Frampton Court rather than towards Steppes Farm. It must therefore be a surviving portion of an aqueduct to the Benedictine Monastery or the later Frampton Court, tapping the Compton Valence spring.

All evidence for the Roman channel beyond the Littlewood re-entrant is thus eliminated. There is nothing else, either as standing monument or as excavated evidence. This does not of course remove the possibility that the aqueduct continued, but in the absence of evidence the assumption must be made that the source is somewhere on the stream which rises at Compton Valence and joins the Frome at Frampton.

The next step taken was to excavate for the channel in Barrow Plantation (SY 623 939) near Steppes Farm. According to RCHM the channel bed was already at the 83 m contour at Quatre Bras. Accepting this gradient from Dorchester and continuing it past Littlewood towards Steppes Farm means that the channel would pass Steppes Farm at about 87 m, leading to a junction with the stream somewhere south of Longlands Farm, though not as far as Foxlease Withybed as suggested by Coates in 1902 (Coates 1902, 80).

Accordingly a 65 m long trench was cut in Barrow Plantation at right angles to the contours, which should have cut the channel if it lay anywhere between the 84 and 90 m contours. No channel was found in the chalk subsoil, which clearly revealed all disturbances.

Faced with this apparent contradiction operations were moved to Muckleford, where the scheduled section of aqueduct behind Quatre Bras would enable the search to start from a known point. A section was cut through the channel in Penn Wood (SY 645 933) just outside the scheduled length. The trench extended well above and below the supposed line. No channel was found, again in a chalk subsoil which allowed little possibility of error.

A section was also cut on the supposed line in the garden of the Old Chapel at Muckleford (SY 638 036), with equally negative results, though traces of both Roman and medieval settlement were found here, together with a Durotrigian coin.

It thus appears that the aqueduct does not run as suggested by RCHM and earlier workers, and that the scheduled length in Penn Wood is only based on a hedgebank and field ditch. Further research is needed into the origins of the section copied here by Farrar on the RCHM map; it may have been dug elsewhere.

The consequence of this discovery is that the most westerly point of the aqueduct that can be accepted for certain is at Bradford Peverell, and the height and gradient of the rest of the channel may be quite different to what has been supposed before. If the line of the aqueduct was higher than 83 m at Quatre Bras, then it should have appeared in the excavation in Barrow Plantation. It ought to follow that the channel is lower than previously supposed, but this proposition can also be discounted as late in the summer the opportunity was taken to cut a long narrow trench down the field between Penn Plantation and the road to Muckleford, after the harvesting of the wheat crop. The result was entirely negative. There is no ploughed-out channel within the confines of the field, ie down to approximately the 70 m contour.

This leaves us with an extremely puzzling situation. There appears to be no confirmed trace of the aqueduct north-west of Bradford Peverell. If this is the case either the gradient and line of the channel is badly misunderstood at present, or it simply did not go that far, and obtained its water another way, perhaps from a spring which no longer flows.

It is hoped that further work in 1993 will clarify the situation, and a definitive account of the full length of the aqueduct can then be published.

The University is grateful to all the land owners along the Frome who allowed excavation and survey on their land, including G.C. Elliott at Longlands, P.G. Stopford Adams at Steppes Farm, G. Winsey at Metlands, E. Whettam at Littlewood, G. Pritchard at Higher Muckleford Farm, D.B. Gargrave at Old Chapel, J.R. Colville at Quatre Bras and J. Tutte at Lower Skippet.

W.G. Putnam  
Bournemouth University

Coates, Maj., 1902, 'The Water Supply of Ancient Dorchester', *Dorset Proceedings* 22, 68-79

Foster, P., 1922, 'The Roman Aqueduct at Dorchester', *Dorset Proceedings* 46, 1-13

Green, C.J.S., 1987 *Excavations at Poundbury Volume 1: The Settlements*, DNHAS Monograph Series 7.

RCHM, 1970, *Historical monuments in the County of Dorset II*, part 3.

#### EXCAVATION OF A ROUND BARROW, GOLDEN CAP

A linear group of four mounds, on the crest of Golden Cap (190 m OD), are probably Bronze Age round barrows; these sites have become eroded by the many thousands of visitors to the area. Their exposed position prevents vegetation cover re-establishing itself during the quieter winter months. The mound at the south-west end of the group, RCHM Stanton St Gabriel 5d (SY 4054 9207), is gradually being destroyed by coastal erosion.

In June 1992, plane table and contour surveys were carried out on the earthworks and the south-west side of RCHM 5d was excavated. Before excavation, the barrow measured 12 m in diameter and 0.5 m in height but it had been covered by wind-blown sand. When the sand was removed the mound was found to be constructed of large blocks of chert (average size 0.1 m) and measured 16 m and 1.2 m high. If the cairn was originally circular then approximately 40% of the mound has been lost through cliff erosion.

A wide trench, aligned north-west to the south-east, was excavated across the centre of the mound. The trench revealed that the cairn covered a thin layer of charcoal and black soil. This soil has been sent for environmental and radiocarbon analyses. A finely-worked flint tool was recovered from the surface of the cairn but no other prehistoric objects were found.

The mound has been altered in the post-medieval period when the south-east side had been cut away to form a level building platform 2.5 m wide. Post holes and a few scattered bricks marked the position of the structure. The building platform was covered in layers of sand and chert rubble which contained pottery, glass and iron objects dating from the 18th and 19th centuries. These finds probably indicate the site of the Golden Cap Napoleonic coastal signal station which was in use from 1798-1814 (Cooksey 1974).

The mound had also been altered by an excavation, 2.2 m in diameter

and 1.3 m deep, which had been cut through the centre of the cairn and into the surface of the grey sand and chert subsoil. It had subsequently been filled with wind-blown sand. Occasional fragments of pottery found within the filling indicate a 19th-century date for this excavation.

Many thanks to the local and National Trust Acorn volunteers who helped with the excavation and survey supervised by Nancy Grace.

In August, the Golden Cap barrows were capped with gravel to protect them against further visitor erosion and the Earl of Antrim monument and coastal pathway marker were moved 30 m to the north to draw walkers away from the barrow sites.

Martin Papworth  
The National Trust

Cooksey, A.J.A., 1974, Admiralty Signal and Telegraph Stations, *Dorset County Council Education Committee*, booklet no. 607.

#### EXCAVATIONS OF A PREHISTORIC CEREMONIAL COMPLEX AT OGDEN DOWN, GUSSAGE ST. MICHAEL

Fieldwork by the author and Barry Lewis in 1980 at Ogden Down revealed the position of three previously unrecorded ring-ditches centred at ST 97101290. These were subsequently published by the RCHM (Bowen 1991). At the same time an anomalous oval depressed feature, some 16 m across, was also noted. It was felt at the time this feature may have been associated with the group of ring-ditches and could possibly be an eroded pond barrow. Following the most informative excavation of the pond barrow at Down Farm (Green 1982; Barrett *et al* 1991) further excavations of other possible, plough threatened, examples were felt to be potentially very valuable in helping to understand these little explored monuments. The possibility of a relationship with the nearby ring-ditches, in this case, looked particularly promising.

Hand topsoil stripping began in October 1990 of an area in excess of 1,000 square metres. The possibility of fragile deposits close to the surface negated the use of an earthmover. This area included the possible pond barrow, a large area around it and the ring ditch A39. The stripping was completed during the winter and work began again in April 1991 to clean the surface and excavate the features revealed. It soon became apparent, on excavating part of the irregular oval feature uncovered, that it was not a pond barrow but an eroded patch of clay-with-flints overlying the chalk. However, during the removal of part of this deposit several postholes, forming a double row, were found to have been cut through it. Further work outside the deposit showed that posts continued to the edges of the stripped area, northwards in the direction of one of the other ring ditches A37 and southwards towards the Cursus. Work then transferred to the ring ditch A39 (see Fig. 3).

#### Ring Ditch A39

Upon excavation this proved to be of a two phase construction. The ditch had been recut, deepening it from 0.70 m to 0.95 m. The original mound had covered a primary central pit where a Middle Bronze Age cremation in a bucket urn was revealed.

This first mound had been stopped short of the ditch leaving evidence of a metre-wide berm. This berm then became the focus for further cremations on the northern and western perimeter. Three of these were contained in bucket urns, two with sherds and the remaining eight unaccompanied. Several of these were badly damaged by ploughing.

It appears that during this phase of secondary burials the ditch was deepened in order to partly cover these additions and possibly to re-whiten the original mound. Freshly broken pottery and the secondary urn burials showed that this phase also belonged to the Middle Bronze Age and charcoal obtained from these various deposits should enable a detailed sequence to be constructed later. The soil profile of the ditch revealed a deep decalcified clay-loam which was probably eroded, by pre Iron Age cultivation, from nearby loessic deposits (Staires n.d.). Following the harvesting of the crop, machine stripping of the topsoil began 12 m north of the post alignment, which uncovered the exact position of ring ditch A37.

#### Ring Ditch A37

Excavation here revealed the post avenue not only led directly to the ring ditch but was also integrated into a double post circle completely surrounding it (Figs. 3 & 4). Excavation was sufficient on the north side to show the avenue did not carry on further in this direction.

No surviving burials were found but the discovery of an antler pick

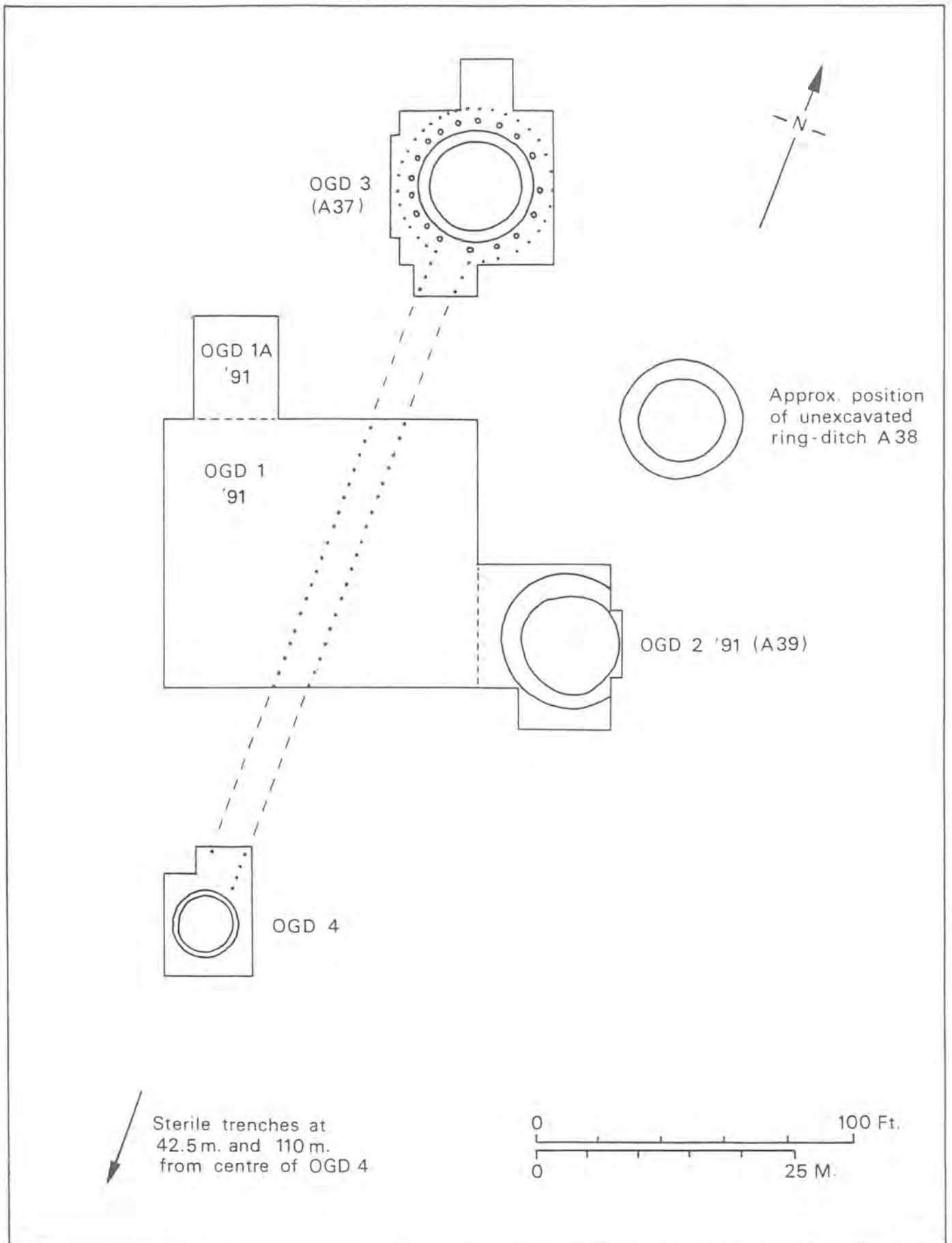


Figure 3: Ogden Down site plan.

and a cow skull close together on the floor of the ditch, together with the heavy truncation of the ditch profile suggests a date in the Later Neolithic or Earlier Bronze Age.

The inner post circle consisted of 18 large but shallow postholes and the outer ring comprised 32 deeper but smaller postholes similar to those in the avenue. No diagnostic finds were recovered from these features but radiocarbon samples were found which should eventually reveal the dating sequence.

#### Ring Ditch Ogd 4

Further excavation now concentrated on following the avenue to the south. At a distance of 20 metres from the last point the avenue was revealed a further area was stripped. This unexpectedly uncovered another ring ditch only 7 m in diameter. This proved to be at the southern end of the avenue. Postholes of the avenue continued to this ring ditch but not beyond it as proved by further excavations (see main plan). The only burial surviving here was the very base of an urned secondary cremation near the southeast edge of the mound and of Middle Bronze Age date. However, a well stratified transverse arrowhead found in the ditch suggests it may be of Late Neolithic date.

#### Conclusions

The excavations at Ogden Down revealed a ceremonial complex of unexpected formality. This appears to be the first example of a timber avenue lining two ring ditches/burial mounds. Writing as long ago as 1958, L.V. Grinsell, predicted such when he wrote, "stone avenues and stone rows lead up to many of the round barrows on Dartmoor, and of

which there might well have been wooden examples in certain parts of SW Britain" (Grinsell 1958, 74).

The influence of the Cursus is undoubted. The avenue is at right angles to it and in its way is associating itself with that great, much more ancient, avenue of the dead. Projection of the post avenue alignment to the north reveals another group of barrows only 300 m away. The sequence suggests the avenue was constructed between the two ring ditches/mounds somewhere in the Late Neolithic/Early Bronze Age, possibly further aligned on a mound 300 m to the north.

This alignment may well have astronomical significance. The further building of mounds in the Middle Bronze Age (Grinsell 1982, 40) close to these significant points on the alignment attest the later communities needs to embellish and associate themselves with these still important ceremonial complexes.

#### Acknowledgements

I am most grateful to the landowner Tony Molins and farm manager David Gill without whose ready cooperation and interest, the project could not have taken place. Several members of the East Dorset Antiquarian Society helped with the excavations and in particular the stirring work of Jim Russell, John and Della Day is gratefully acknowledged. I am also grateful to Mervyn Hinge and Steve Staines for help with aerial photography and soil analysis respectively.

Martin T Green

Bowen H.C., 1991, *The archeology of Bokerley Dyke*

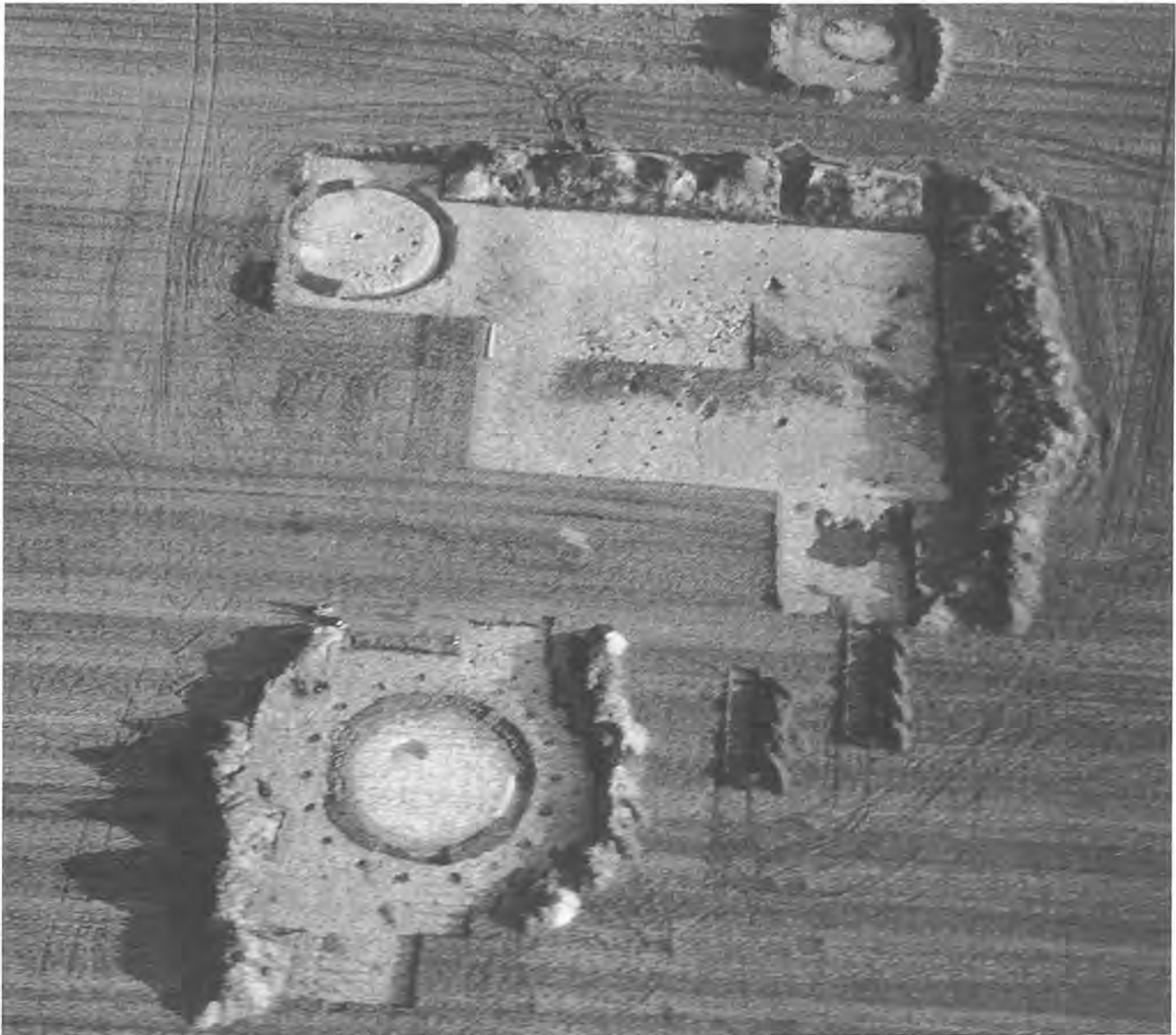


Plate 1: Ogden Down, Gussage St Michael. The excavations viewed from the north. The avenue can be seen crossing the stripped area in the centre and connects the ring-ditches visible at the top and bottom of the photograph.

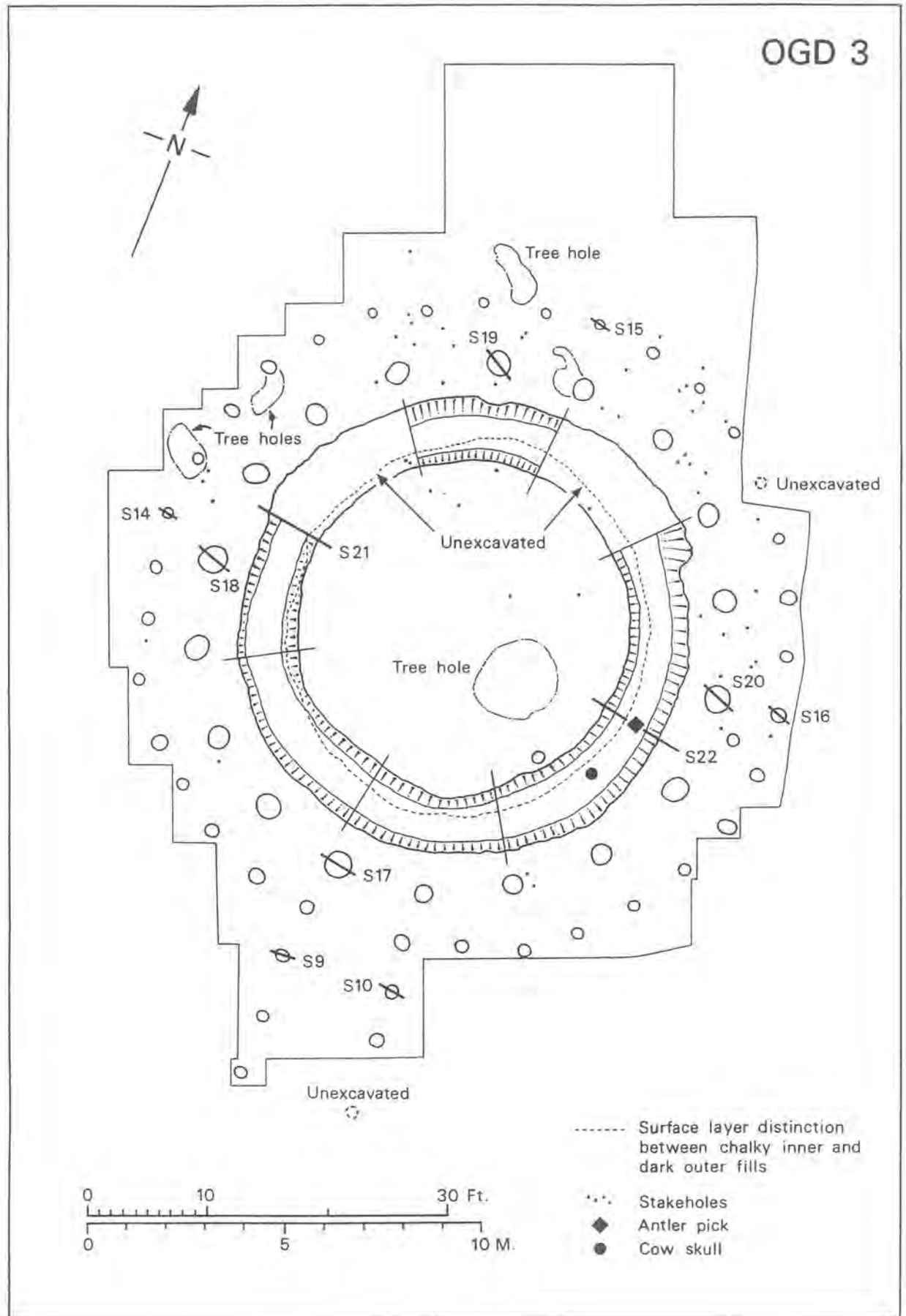


Figure 4: Ogden Down, ring ditch A37.

- Green M.T., 1982, *Dorset Proceedings* 104, pages 170-72.  
 Barrett J., Bradley R., and Green M., 1991, *Landscape, monuments and society - The Prehistory of Cranborne Chase*.  
 Staines S. n.d., Soils Report on excavations at Ogden Down.  
 Grinsell L.V., 1958, *The archaeology of Wessex*.  
 Grinsell L.V., 1982, *Dorset Barrows Supplement*.

### PAMPHILL MANOR HOUSE

During 1992 refurbishment work has taken place on Pamphill Manor (ST 9898 0063) on the Kingston Lacy Estate. Detailed drawn and photographic records have been made while the work has progressed. This complex building has brick walls and is roofed partly with Purbeck Limestone slates and partly with clay tiles.

Hutchins (1863, 236) states that the house was built by Matthew Beethell, who was steward to Sir Ralph Bankes in the late 17th century. Documentary and archaeological research has shown that the central part of the building is earlier than this. The title deeds of the house date back to 1622 (D/BKL) when the property was transferred from William Ettricke to Henry Hanham. The same document shows that Matthew Beethell held the property from 1660-1667. It is probable that the curvilinear gabled east range was added to the original building at this time. In the early 18th century, the north and west wings were added and in the 19th century, a service wing was built on the west side of the 18th century wings. In the early 20th century a south wing was added, thus completely enclosing the original house.

The vernacular survey of Pamphill Manor, which describes the building in detail, is held at the Kingston Lacy Office, Hillbutts.

A small excavation took place in the inner hall, which is situated in the earliest part of the building. This room contains four Tuscan columns supported on brick and limestone bases. As part of the building work, the concrete floor was taken up and the ground surface lowered by 0.2 m. The material below the concrete was removed by archaeological excavation and a 1 m square trench against the east wall of the hall and at the foot of the main staircase was excavated to the natural subsoil.

The following sequence of layers was noted. A parquet floor above concrete (1) above clean sand (2) which surrounded iron water pipes (3). Below the sand were fragments of a brick floor (24) bedded on mortar (6) and abutted and overlain by building debris (4) which included numerous fragments of plaster, brick and purbeck limestone. The bases of the Tuscan columns (7) and (8) were abutted by (4) and built on (6). Two tobacco pipe bowls in (4) date this layer, (7) and (8) to the early 18th-century phase of building. Below this was a culvert (14) of brick and purbeck limestone which was cut through a loamy clay (16) containing occasional fragments of clay tile and heathstone. Also in this layer were four body sherds from a cooking pot which had a reduced sandy fabric. The fragments were 3 mm thick and coated with ash on the exterior surface. (16) lay above the foundation trench filling (17) of the east wall of the inner hall. The filling contained no diagnostic finds but numerous lumps of heathstone. This heathstone may derive from dressing the stones which form the foundations of the east wall (9). The heathstone foundation was 0.5 m deep and four courses of stonework survived. The lower courses were of neat blocks of faced stone but the upper course was fragmentary with bricks placed around the stone, presumably to create a level surface on which to build the brick wall (19).

The lack of brick in layers (16) and (17) and the heathstone and clay tile inclusions suggest that the original building was of heathstone and pre-dates the common use of brick in the Wimborne area. The pottery may indicate a 15th - 16th-century date but the sample is too small to be reliable. The fragmentary nature of the upper course of heathstone may indicate the partial demolition and reconstruction of the wall.

The extent of the heathstone footings of this east wall were seen in the north and south ground floor rooms of the east range. In both rooms an ogee moulded heathstone offset survived in the thickness of the wall at the north and south ends. This gives a length for the original building of 9.5 m. This offset presumably would have continued around the exterior of the building but the heathstone had been cut back to the brick face on the east side of the wall.

In the south room of the east range, a sequence of building phases was uncovered. The lath and plaster had been applied to wooden battens fixed to the brick west wall and across a window opening. This opening contained a pair of double-leaved shutters (identical to the shutters retained in the other window openings of this room). The window was blocked by the construction of the early 20th century south wing but originally it had been built into a doorway infilled with brick. Another straight joint was visible 2 m to the north where the late 17th-century wall abutted the south elevation of the original building.

Thanks are due to Philip Brebner for his building survey and advice on the architectural development of Pamphill Manor and to Gerald Pugh and Mandy Lennox who helped with the excavation.

Martin Papworth  
The National Trust

Hutchins, J., 1861-70, *History and Antiquities of the County of Dorset* (3rd Edition). iii. (ed. Shipp, W. and Hodson, J.W.).

Bankes of Kingston Lacy and Corfe Castle Family Estate Archive (Dorset Record Office reference D/BKL).

### TOLLER PORCORUM

During June and July 1992 excavations continued at the site of Church Mead, in the village of Toller Porcorum in West Dorset (SY 5615 9794). Excavations in 1991 had revealed several episodes of activity particularly in the years spanning the 12th to 16th centuries, but also included slight traces of earlier activity (Gale 1991). The results highlighted intense, but periodic agricultural activity within the heart of the present village, during the medieval period. Evidence for settlement was largely restricted to a structure/s only partially excavated, which had clearly been abandoned by the late 16th century.

Excavations in 1992 were designed to examine further this later medieval structure, and also to examine a platform a few metres to its north where further structures were postulated.

### Church Mead Excavations 1992

By the end of the excavations in 1992 the medieval structure had been completely exposed, revealing the remains of what is likely to be a small peasants cott which had been partially constructed over the fill of a ditch, which in turn could be dated to the late 13th century. This building was constructed on a thin foundation of pebble and stone, all of which would have been available locally. At the moment, the nature of the superstructure remains speculative, although one would perhaps expect cob built walls in a region where this type of construction is reasonably commonplace for lower status buildings in the post-medieval period (Ryan pers comm).

This building was substantially altered, with the insertion of a fireplace at its western end, constructed on top of the poor foundations of the infilled 13th century boundary ditch. Increased weight on the unsuitable wall foundations at this end of the building seems to have accelerated its collapse, resulting in the present deformity of its plan. The plan revealed a single celled structure with internal dimensions of 3.8 m x 3.2 m. Excavation of this structure is as yet incomplete and much evidence concerning its construction and dating have yet to be revealed.

Excavations to the north of this building on the suspected building platform, failed to reveal any structural detail at all. The subsequent interpretation of this platform, is that it probably formed the garden or toft of the cottage which may have survived as a boundary into the 19th century, documented on the 1844 Tithe map. This levelled platform had partially truncated a section of ditch which unusually for the site contained no artefactual data at all. It is probable therefore that this ditch belongs to Period 1 (pre-12th century) of the sites phasing.

Evidence for industrial activity in the area persists with further finds of dumped furnace waste (fragmentary furnace blooms) occurring during period 3 (13th century?). Several ferrous objects were also recovered during the excavations (including two domestic knives and one sickle), but all of them were deposited at least three centuries later than the furnace material.

It is hoped that a further and final season of excavations will be undertaken in 1993.

### Test Pit 8 (Village Hall)

With the kind permission of the Parish Council a small test pit was excavated to natural at the rear of the present village hall 30 m north of the church of SS Peter and Andrew. In such a central and prominent part of the village it was hoped that we would find evidence for early occupation. Unfortunately a mixture of outcropping bedrock and intense tilling of the soil revealed fragmentary artefactual remains dating from the 12th - 19th centuries.

### Acknowledgements

I would like to thank the villagers of Toller Porcorum for their continued support and interest, particularly Chris and Audrey Russell; Ben and Brenda Pick; Ted and Anne Bugler. Many thanks must also be expressed to my colleagues at Bournemouth University particularly Alan Hunt, Carole Ryan, Tim Sutherland, Jenny Yates and the large number of

students who gave of their best, in the worst of a Dorset summer.

J Gale  
Bournemouth University

Gale J.L., 1991, Toller Porcorum *Dorset Proceedings Vol 113*, 178-80

### WOOLCOMBE

1992 saw the final season of excavations in the recent campaign at the medieval and post-medieval settlement of Woolcombe (SY 553 954). Having regard to the very limited time available, attention was concentrated in the field known as the Lower Bottom, an area occupied by settlement between the 12th and 16th centuries. A plan of earthworks in this area, and of subsites excavated, is given in Hunt 1990, fig. 12. Topographical development of the site, based on excavation and survey data, is summarised in Hunt 1991 fig. 4. Excavations in 1992 focussed on features of Periods B and C (later 13th-16th centuries).

Subsite IX was considerably extended to the north, into an area dominated by a substantial irregular earthwork feature, interpreted as a building platform, lying in the angle of two converging hollow-ways. It transpired that the entire area was covered by a very strongly constructed metalled yard surface in Period B, and that this persisted in use into Period C. In this yard, and at the north end of the "platform", was a strongly-built stone structure (EB8), whose incomplete survival prevented any convincing interpretation; it may have been a rick base, or the foundation of a building. The metalled roads flanking this structure were deliberately constructed at a lower level - hence their surface appearance as hollow-ways - indicating that drainage of the site and structure was a priority.

Also in IX, to the south of previous excavations, a small extension was opened in an area where building rubble suggested the presence of a Period B/C structure. The disturbed remains of a small stone-founded building (EB7) were duly revealed, but its function and status could not be determined on the basis of such slender evidence. The building was probably of Period B, but pottery suggested that it persisted in use until the 16th century or perhaps later.

Test pits were dug on the east side of the main NE-SW hollow-way, in a previously unexplored area. Concentrations of large and mixed stone rubble, probably building demolition debris, was present here.

Further south, in Subsite VIIN, further extensions were added to the area excavated in 1991, and test pits were dug to the north and west. These confirmed the absence of further Period B buildings in this area. They also added further detail to the pattern of metalled and drained yards established here in Period B. The yards remained in use in Period C, but a series of boundary banks were added, subdividing the area into smaller yards and paddocks. These were laid out largely as indicated in Hunt 1991, fig. 4C, BK3 and BK4. To the W and to the E, at the limits of the metalled yard area, more building rubble was traced in test pits.

Further test excavations to the S confirmed the Period B/C road layout indicated in Hunt 1991 fig. 4, B and C, and also delimited the settlement in this direction.

This season's excavations added a number of details to the topography and development of Period B, which is now interpreted as a deliberately planned and strongly constructed farmyard with associated buildings, including at least one cottage and a number of other unidentified structures. These variously stood close to the main NE/SW hollow-way, or on the periphery of the extensive metalled yard. It now seems inappropriate to describe this settlement as a hamlet, in the absence of clearly defined curtilages within it. It resembles most strongly a farm attached to the substantial house of these Periods - the predecessor of the present farmhouse - partly excavated to the north-east. This apparently integrated development was probably the work of Robert Bingham (*fl. c.* 1245-1303), and probably represents a gentry residence and working farm with resident cottage tenants/estate employees.

Features and finds of earlier periods were very limited. In the SW corner of the field, close to a quarried Greensand outcrop, a ?Bronze age pit was excavated in a further test excavation.

I am grateful to Messrs Thomas, Hamish and Duncan Prentice for allowing us to excavate; to Sarah Austin and Bob Hatton (supervisors); to Ian Hewitt (finds manager); to Bill Putnam, Jenny Yates, Graeme Dumas and George MacLeod (transport and equipment) and to the many students of Bournemouth University, who, together with visiting volunteers, worked so hard and so effectively in this concluding excavation at Woolcombe.

Alan Hunt  
Bournemouth University

Hunt A.M., 1990, 'Woolcombe,' *Dorset Proceedings* 112, 125 - 127

Hunt A.M., 1991, 'Woolcombe,' *Dorset Proceedings* 113, 175 - 178

### WORTH MATRAVERS 1992

A second season of excavation was undertaken at *Compact Farm* (SY 975 778; see Hinton and Peacock 1991 for the report on the first season's work) by the Department of Archaeology, University of Southampton, again with the kind permission of Mr David Strange and with funding from English Heritage. Supervisory services were again provided by Wessex Archaeology and this year thanks are owed for their hard work to Michael Rawlings (a former student - poacher turned game-keeper?) and to Alan Graham.

Because of the all-stone construction of the walls and floors of the Roman grain-drier and the building that contained it, visitors to the site in 1991 had found the excavation particularly easy to understand. Consequently it was decided to invite schools in the area to send groups to see the 1992 work, and, to make the best use of this opportunity, the John Lewis Partnership gave generous financial assistance which enabled information to be provided to teachers. Grants from English Heritage and Dorset County Council meant that it was possible to have a teacher on the site to talk to pupils. Furthermore, Alfred McAlpine Construction Ltd arranged for a viewing platform to be erected to give visitors a better perspective of the site. The Department of Archaeology is very grateful for this support, and to Philippe Panel for his work with the schools.

In 1992, the remainder of the building that contained the drier was excavated, and was found to have several unexpected complications (Fig. 5). The flags of its floor survived in the north-east corner, but those at the east end were at a slightly higher level; no explanation has yet been found for this 'dais'. Also perplexing is a rectangular feature extending out from the middle of the east wall, formed of large upright stones, some of which had begun to collapse inwards. It appears to be an addition to the building, as some stones had been removed from the east wall as though to create an opening. One possible interpretation of this feature is that it was to facilitate the passing of grain or other produce from the outside to the inside of the building; it was not a drain, as its floor slopes down towards, and not away from, the end wall, but it might perhaps have been lined with wood and used to fill troughs on the inside. Determination of its function is made more difficult by the complexity of the south-east corner of the building where it was found that stones had been robbed from both walls, leaving only shallow trenches to show their lines, the south wall apparently having an eastward extension. In addition, the flags had been removed from the floor, and the interior had what is interpreted as small rubble from the building's collapse or demolition spread across it. Into this layer had been dug a wide, shallow pit, used as a grave. This had been half-removed by a second pit, which had destroyed the upper part of the skeleton, an adult's, and had also cut through the spread of ash from a hearth revealed in 1991.

To the north of the building, postholes and parts of a circular gully were found, which are provisionally interpreted as the remains of a circular building, the gully being its eaves-drip line. This building may also be indicated by a spread of small stones west of the drier, but the relationships here have not yet been fully explored. Dating evidence is limited, the most useful being a sherd of Italian amphora, probably Dressel I, a 1st-century BC import.

The soil into which the gully and postholes had been cut seems to be the same as that which overlies the flags of a structure revealed in 1991 in the north-west of the excavated area. Only a small part of this has been excavated, but it is already apparent that it is not a straight-forward rectangular building; it may be polygonal, or it may be rectangular with a polygonal 'apse'. Unfortunately one chord on the south has been badly disturbed. What is assumed to be the interior has been filled with quite tight-packed rubble, much of it burnt, overlying a flagged floor of which only a very small part has been revealed. The insides of the putative walls seem to be lined, at least in part, with vertically-set stones, which also show signs of burning. Dating of this feature requires further elucidation, but the present evidence suggests that it predates the circular building.

A small pit, 209, east of the polygonal feature, contained Roman pottery, as did 632, a larger pit to the south. This was filled with stones, some very large, and was at first thought to be the base of a structure; it seems more likely, however, that it was an ordinary pit finally filled with debris from the building that contained the grain-drier. Some of the stones in it are similar in size to those of that building, although it was not possible to prove a connection. The pit also contained a massive piece of what was almost certainly a Limestone roofslate. To the west of 632, a spread of large stones quite probably betokens another structure, which is likely to be one of the latest features in the site's sequence. To the south, 666 may prove to be a Roman well, stone-lined at the top of its shaft; only the top metre has been excavated. Despite the difficulty of digging a well-shaft through the Purbeck Limestone, wells assumed to be 19th-century or earlier are reported in the neighbourhood. Pit 198 maybe prehistoric, as there is a lot of Iron Age pottery in its lower fill; Roman pottery probably intruded as the contents compressed.

The artefacts from the 1992 excavation have a range similar to those from the 1991 work. The known timespan of use of the site is extended by the grave and other features in the south-east corner of the rectangular building, but it is not clear whether these activities took place in the later 4th, 5th or even later centuries. The circular structure takes the sequence at the other end of the timescale at least to the very beginning of the millennium. It is too soon to speculate about the polygonal structure.

Elsewhere in Worth Matravers, surveying of the lynchets on *East and West Man* (centre, SY 975 765) continued in 1992 with the help of the

Royal Commission on Historical Monuments (England). The Commission also collaborated in a survey of the 'Purbeck Marble' quarry debris south of *Haycraft Farm* (SY 985 796), undertaken with the kind permission of Mr B. Farr.

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Hinton, D.A., and Peacock, D.P.S., 1991, 'Worth Matravers', *Dorset Proceedings* 113, 187-90.

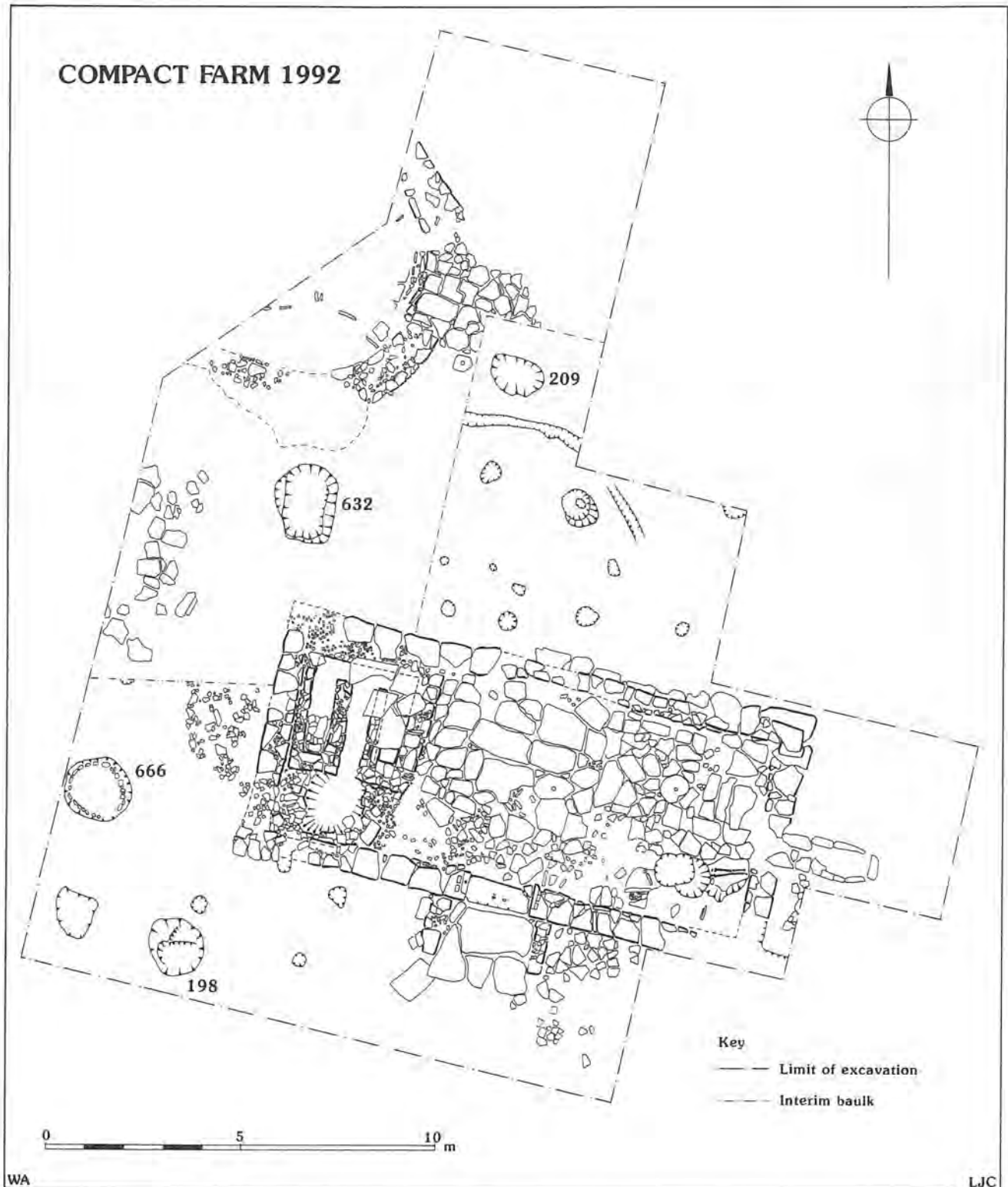


Figure 5: Worth Matravers.

## WATCHING BRIEFS

## BESTWALL QUARRY GRAVELS PROJECT

In 1992, English China Clay (Quarries Ltd) were granted permission to extract gravel from 55 ha of land on the Bestwall peninsula over a 10 year period. The site lies between the floodplains of the rivers Frome and Piddle; a quarter of a mile to the west is the historic market town of Wareham and the eastern boundary is Swineham Point on the edge of Poole Harbour.

A detailed assessment was carried out by Wessex Archaeology in 1989; this confirmed the presence of a substantial Romano-British site on the eastern end of the Peninsula as well as other features dating from the Bronze Age to the modern period.

In June 1992 approximately 2.5 ha of topsoil was stripped prior to gravel extraction, archaeological supervision was undertaken by the author with the cooperation of English China Clay (Gravels) Ltd. Of the features, 22 were spreads of charcoal and two were amorphous spreads of 18th century material. A collection of surface finds was made, these included prehistoric flintwork, two abraded sherds of Roman pottery and large quantities of post-medieval ceramic material, glass and stone.

A metal detector survey of the exposed sub-soil areas was also conducted. Metal finds included coins, tokens, buttons, musket balls and buckles which date from the 16th century to the present day.

Fieldwork was undertaken by members of the Wareham & District Archaeology & Local History Society.

Lilian Ladle

Wareham & District Archaeology & Local History Society

## OBSERVATIONS AT BRADFORD PEVERELL

Observations were carried out at SY 649 932 where construction work was considered likely to impinge on the line of the Roman aqueduct to Dorchester. Observations demonstrated that no disturbance had taken place. Undated colluvial deposits were noted.

Julian Richards  
AC archaeology

## WINTON PRIMARY SCHOOL, BOURNEMOUTH

A watching-brief was carried out in July 1992 during the ground-works of construction of the new Winton Primary School buildings (SZ 0840 9475). Nearby finds of Neolithic axes and Bronze Age urns indicated the potential for archaeological deposits within the relatively undeveloped confines of the school grounds.

An area of c. 1800 m<sup>2</sup> was stripped of topsoil revealing many modern features and two features of archaeological interest: a field boundary ditch dated to the late Iron Age by sherds of Durotrigian pottery, and a fire-pit, possibly of the same period.

The watching brief was commissioned and financed by Dorset County Council Building Services Department, managed by Carrie M. Hearne and carried out in the field by H.F. Beamish.

Carrie M. Hearne  
Wessex Archaeology

## NEW NORDEN MINE, CORFE CASTLE,

Observation of the groundworks in preparation for a new clay mine at Norden Farm involved the monitoring of two areas: the site of a new duck pond (around SY 9512 8280) and the access area for the new shaft (around SY 9495 8275). In the first area traces of two continuous subsoil ditches were identified, aligned approximately north/south and south-west/north-east, and short lengths of three other ditches generally aligned south west-north east. Forty-eight oxidised and abraded fragments of late Iron Age pottery were recovered from the north south ditch. The second area revealed traces of three ditches, two aligned approximately north west-south east and one aligned north-south. Fragments of post-medieval pottery were recovered from the first two ditches and in one, a single flint flake. A sherd of Samian pottery, and seven sherds of medieval pottery were recovered from the topsoil and exposed subsoil surface.

Peter W. Cox and John Valentin  
AC archaeology

OBSERVATIONS ON THE DORCHESTER RING MAIN -  
INTERIM NOTE

Observation, recording and excavation were carried out on the line of a major new water main for Dorchester. The pipeline was commissioned by

Wessex Water who also funded the archaeological programme. The assistance of Wessex Water and of their pipeline contractors in the successful implementation of the archaeological recording project is gratefully acknowledged.

The pipeline ran from the west of the town at Bradford Peverell, northwards towards the River Frome, terminating at Eagle Lodge on the east of the town, and also southwards from Bradford Peverell through Fordington Down terminating at Maiden Castle Road.

The presence of significant archaeological deposits in and around the town of Dorchester is well documented. Liaison between Wessex Water and County Archaeological Officers resulted in changes in route to avoid scheduled and known sites. Prior to the commencement of construction, areas of archaeological potential were established through further consultation of the County sites and monument record, and the detailed plotting of features from aerial photographs.

Following the fencing of the pipeline easement each of the ordnance survey land parcels was walked to establish the presence, if any, of visible earthworks in the easement or within the immediately adjacent fields. Once topsoil had been removed, the easement was again walked, surface finds were collected and the presence of any subsoil features was noted. Where substantial archaeological deposits were noted at this stage, more detailed recording and excavation were carried out along the route of the pipe trench and if necessary deposits along the running track were recorded and protected. Subsequently the pipe-trenching was monitored and any exposed features were recorded.

The following list summarises the sites recorded.

*A possible Roman Road ditch at SY 6375 9050*

*The Dorchester aqueducts* (at various locations). The main aqueduct and a smaller parallel ditch, assumed to be an additional channel were examined in a number of locations in the dry valley to the west of Tilly Whim Lane. One section was excavated in advance of pipe trenching and demonstrated two phases of channel in the main aqueduct, with evidence for several clay linings. Although no direct dating evidence was recovered, samples for archaeomagnetic dating were taken from the fine alluvial silts which represent the abandonment stage of this channel.

Where excavated this smaller (downslope) channel was found to be much shallower than the main aqueduct with no evidence of any re-cut or lining.

*A prehistoric field system* to the east of Tilly Whim Lane at SY 663 916. Lynchets and ditched features were recorded within an area where aerial photographs had indicated extensive field system traces. The excavation of two negative lynchets produced pottery of Late Bronze Age/Early Iron Age date.

*Prehistoric features* on Fordington Down (SY 667 911). Aerial photographs indicated substantial archaeological deposits close to the pipeline. Pits, postholes and ditches of later prehistoric date were recorded, in some instances sealed beneath a possible Romano-British buried turf line.

*Romano-British settlement in Fordington Bottom (SY 666907)*

Topsoil removal revealed extensive Romano-British remains including indications of substantial structures. A combination of active protection and limited excavation (restricted to the line of the pipe trench) enabled seven phases of activity to be recognised. Colluvial deposits containing prehistoric artefacts were overlain by three phases of Romano-British occupation associated with destruction levels and soil accumulations. The 3rd-4th century phase includes a substantial flint and mortar building with associated surfaces and features. In the final phase a medieval ditch was cut through this building.

*Field system and Romano-British pits at SY 666 906**Iron Age and Romano-British settlement remains at Maiden Castle Farm*

SY 67819 89498 (see also summary report for evaluation at Maiden Castle School) approximately 90 m to the north of Maiden Castle Road, a complex of post alignments and boundary/enclosure ditches were revealed. Ditches produced pottery of Late Iron Age/Romano-British date.

*Romano-British features at SY 668 925*

A number of features containing animal bone and pottery were recorded sealed beneath a layer of colluvium. The majority were ditches and pits, some of the latter clay-lined. The remains of a corn drier of a small kiln/furnace were also recorded.

*Prehistoric worked flint scatters at SY 68922.91862 and SY 693 918.*

*A medieval ditch at SY 700 916*

*Romano-British ditches at SY 7052 9120.*

Julian Richards  
AC archaeology

## LANGMOOR, FERNDOWN

A watching brief was carried out in September 1992 during groundworks associated with residential development (SU 083 011).

A Mesolithic tranchet axe had been previously found within the development area and a possible Bronze age barrow may lie north-east of the site. No archaeological features were observed during the watching brief but a few unstratified struck flints were recovered.

The watching brief was commissioned and funded by Yellow Tree Developments. The project was managed by Carrie M. Hearne and carried out by Elaine A. Wakefield.

Carrie M. Hearne  
Wessex Archaeology

## LYTCHETT MINSTER SEWERAGE WORKS, NEAR POOLE

A watching brief was carried out during the excavation of a sewage outfall pipe in February 1992 (centred on SY 9675 9240). A single linear feature was recorded but no datable artefacts were recovered. The watching brief was commissioned and funded by Mildren Construction Ltd, managed by Carrie M. Hearne and carried out by Duncan Coe.

Carrie M. Hearne  
Wessex Archaeology

## OBSERVATIONS IN POOLE

Watching briefs were conducted on four major projects in the Poole area. The soil stripping of approximately five acres of Canford Heath (SZ 4031 0949), redevelopment of the 'Double Six' pub site on Turlin Moor (SY 39870 09188), the excavation of water supply pipes in the area of Lake Farm Roman Fortress, SMR M736[69] (SY 3998 0991) and the construction of a marina and housing development at Hamworthy (SY 3987 0903). All, with the exception of Lake Farm, proved negative.

## Lake Farm

Two trenches were dug by Wessex Water in the vicinity of this monument. One, which extended 520 m along Willet Lane from its junction with Wimborne Road, was outside of the scheduled area, and proved negative. Another, of 280 m length, was within the scheduled area, and showed evidence of archaeological activity in the form of two undated features. Unfortunately, the narrow (0.5 m wide) trench limited observation and made it impossible to determine the nature of these features.

Full records of these observations are in the Poole Museum archives.

Kevin W. Collins  
Borough of Poole Museum Service

## 6 SOUTH STREET, SHERBORNE

The observation of footings trenches for the extension of the property during October 1992 revealed a stone drain, probably of post-medieval date, and four fragments of medieval glazed pottery.

Peter W. Cox  
AC archaeology

## REMPSTONE CENTRE CAR PARK, WAREHAM

Observation of the construction of a new soakaway and drainage gullies in the extension of the car park off Church Street, Wareham (SY 9246 8733) was undertaken during January 1992. The work revealed a single sherd of 12th - 13th century pottery and the skeleton of a horse of unknown date.

Peter W. Cox  
AC archaeology

## WEST STAFFORD BY-PASS, OBSERVATION AND RECORDING

Subsequent to the evaluation and excavation reported in *Dorset Archaeology* in 1991 a programme of observation and recording, funded by Dorset County Council Transportation and Engineering Department, was carried out during road construction.

Numerous scatters of worked flint were recovered along the line of the by-pass and features of prehistoric date were observed and sampled in several locations. A number of small pits were recorded close to the crop-mark ring ditch excavated in advance of construction and a single large pit, associated with more ephemeral and possibly structural features was located on the crest of Frome Hill (SY 715 895). The excavation of this feature produced a large collection of Middle Bronze Age pottery, associated with animal bones and a single fragment of copper alloy slag. Peat deposits within the Frome valley were observed but no archaeological deposits or artefacts were recorded.

Julian Richards  
AC archaeology

## AMENITY LAKE AT WEST STOUR

Planning permission for the construction of an amenity lake (ST 770 226) of 0.18 ha as a conservation project, on a steep, scrub-covered slope in West Stour, was granted in 1992. A copse, containing a spring, lies adjacent to the north-west in the parish of Kington Magna. The spring had formerly been used as a water supply for Nyland and part of Kington Magna but was now to feed the lake. In addition, the field immediately to the north-west and south-west of the copse has been identified as an important Mesolithic site with scattered tufa occurring on the ploughed surface below (Ross 1987, 91-103), and because of this archaeological significance, it was considered advisable to monitor the construction of the lake.

## Geology

The slope on which the lake was to be sited dropped steeply north-east/south-west from c. 110 m OD to 105 m OD. The geology is described by Dr. C.R. Bristow of the British Geological Survey as follows:-

'The area of the amenity lake falls on the outcrop of the Hazelbury Bryan Formation (formerly the Lower Calcareous Grit) of the Corallian Group. At the top of the scarp is the Cucklington Oolite; just below the lake occurs the Oxford Clay. However, the geology is complicated as there is a belt (c. 200 m wide) of landslip that extends all along the lower part of the scarp that obscures the junction of the Hazelbury Bryan Formation/Oxford Clay.

The Hazelbury Bryan Formation consists of an alternating sequence of sandy, patchily shelly clays and fine-grained, commonly clayey sands. There are two such sandy units in the Kington Magna area; springs commonly issue from their base.

An additional complication is the presence of two small faults of about 5 m displacement which go through the wood. These could also give rise to lines of seepage....'

## Construction

Patchy clay on the upper part of the area was misleading in that it probably represented part of the Hazelbury Bryan Formation and not the Oxford Clay which was to provide the lining of the lake and, therefore, the latter was at a greater depth than anticipated. This was probably due to the landslip described above and resulted in the lake being nearer 4 m deep than the 2 m originally planned. A considerable depth of Oxford Clay, of a most intense blue, was excavated which provided the impervious lining. The resulting lake is roughly kidney-shaped with an overflow directed south to a ditch in the field below. The header tank of the old water supply in the copse was first tapped to feed the lake but proved unsuccessful owing to the levels and an easement had to be cut through the copse to pipe the spring near its source by means of a filling pond. A 4" pipe was laid at a variable depth of c. 0.75 m with the stratigraphy showing, as far as could be ascertained, typical topsoil of c. 0.25 m over sub-soil with the same patchy clay and many tree roots. A steady stream of water was provided.

The lake filled very rapidly with heavy rainfall in December and water was soon overflowing onto a field lower down. Unfortunately there has also been considerable slipping of the soil from the upper slope and to a lesser extent, on the bank of the lower side, into the lake. It is now nearly empty and presumably will need reconstruction.

The creation of a second lake lower down has also been suggested.

## Archaeology

Due to the scale and rapidity of construction, there was little opportunity to collect artefacts. The few fragments of Mesolithic flint included one unpatinated Mesolithic blade (65 mm x 25 mm), a small crested blade, 10 flakes and 19 chips, some of which were microblade fragments. These items were all collected randomly and surprisingly, there was no tufa.

The parish boundary enclosing the area on the south, was a marked bank and ditch of c. 0.80 m dropping more steeply into the copse, while the upper boundary near the lake was partially covered with spoil during construction, which is most regrettable considering that it may be medieval or earlier in date.

The water supply system will be described at a later date when more information has become available.

The flint artefacts have been marked with the Code No. WS 92 (6) and will be deposited in the Dorset County Museum.

## ACKNOWLEDGEMENTS

The permission and co-operation of the landowners Mr. and Mrs. M Trim of Stour Cross Farm, West Stour is gratefully acknowledged. The author thanks Dr. C.R. Bristow for detailed information about the geology.

M.S. Ross  
Shaftesbury & District Archaeological Group

Ross, M.S., 1987, 'Kington Magna and Surrounding Areas: A Fieldwalking Survey of the Prehistory (1979-1987)', *Dorset Proceedings* 91-103.

## ROMANO-BRITISH SETTLEMENT REMAINS AT DAIRY HOUSE, WINTERBORNE HERRINGSTON - interim note

Settlement features and material of Romano-British date came to light during machine excavation for a silage-clamp extension to the north of Dairy House. Human skeletal remains were first reported by the farmers, Messrs. Raymond Williams and Alan Barnes, a few metres to the north of stone footings and burnt deposits (at SY 6942 8860) cut into chalk on a gentle south-facing slope above the South Winterborne stream. Access for recording was limited to a photographic record prior to the completion of machine works by Mrs. A. Barnes, after which an area of some 15 m<sup>2</sup> cleared of topsoil, was excavated by hand along the eastern side of the silage-clamp (DCM Acquisition Record 1730).

The stone footings could be identified as the surviving back and flues of an 'inverted tuning-fork drier' (Morris 1979, 10, 98 and fig. 11b), although the front and stoke-hole had been destroyed during machine operation. The base of the drier was c. 1.5 m below present ground level, was rectangular and measured 2.4 m across the back. Pottery recovered was indicative of a late 3rd-/4th-century date for the drier. Carbonised grain and ash deposits were recorded at the back of the drier and samples taken for further examination. A preliminary study has identified at least four cereal types (bread and spelt wheat, barley and oats), together with weed seeds, chaff and landsnails (Allen 1992).

Driers are common on settlement sites of this period and examples of this type are known locally on more extensively recorded settlements and in association with other drier types, buildings and other features; one nearby at Alington Avenue, Dorchester (Davies *et al.*, 1985) and another at Worth Matravers in Purbeck (Hinton and Peacock 1991). The published distribution of this type is widespread with examples recorded in northern, central and southern Britain (Morris 1979, fig. 186d), and of the

two dated by Morris, both were of the late 3rd/4th century date (Morris 1979, Table 1). The dating for the example from Worth Matravers is problematic, and no dating for that one at Alington is yet available. What records were possible at Herringston suggest that the drier was not housed within a building, no other settlement structures having been recorded other than a single wall footing 5.5 metres south to the south-east.

At Alington the drier was constructed in open ground on the edge of the settlement, whilst at Worth Matravers the drier was housed within a small rectangular building (Hinton and Peacock 1991, fig. 1). It is likely that in the absence of any previous discoveries at Dairy House during earlier farm building and silage-clamp construction to the south and west and in the examination of the topsoil dumps to the north of the present discoveries that a more extensive contemporary settlement, if it exists, is more likely to be found nearby to the east and south-east. Roman coins, two Constantinian Ae, have previously been reported 100 m to the south-east to establish the presence of a settlement such as those now known nearby in the vicinity of the Roman town of *Durnovaria* (Woodward 1991, 21, 36 and fig. 14; Woodward and Smith, 1987, fig. 1).

Peter J. Woodward  
Dorset County Museum

Allen, M.J., 1992, Environmental Assessment for Dairy House, Winterborne Herringston, Dorset, Wessex Archaeology Report No. 35837a, Salisbury.

Davies, S.M., Stacey, C. and Woodward, P.J., 1985, 'Excavations at Alington Avenue, Fordington, Dorchester 1984/85: Interim Report', *Dorset Proceedings* 107, 101-110.

Hinton, D.A. and Peacock, D.P.S., 1991, 'Worth Matravers', *Dorset Proceedings* 113, 187-190.

Morris, P., 1979, *Agricultural Buildings in Roman Britain*, Brit. Archaeol. Rep. 70, Oxford.

Woodward, P.J., 1991, 'The documentary and monumental sequence' and 'Landscape Survey Discussion', in N.M. Sharples, *Maiden Castle, excavations and field survey 1985-6*, Archaeol. Rep. 19, HBMCE.

Woodward, P.J. and Smith, R.J.C., 1987, 'Survey and excavation along the route of the Southern Dorchester By-pass, 1986-1987: an interim note', *Dorset Proceedings*.

## BALFOUR FARM, WOOL

A watching brief was carried out during the excavation of a drainage trench (SY 8384 8606).

Evidence of a building and associated pottery of 1st-4th centuries AD has been previously found in this area. Cropmarks and surface finds of daub, cement-like material and ceramic roof tiles in a field to the north-east suggest that other buildings may survive in the vicinity. The area has been designated a Scheduled Ancient Monument.

The trench, of which only some 10 m remained open, had been open for some time and observation conditions were not therefore ideal. However, no archaeological features were observed and no artefacts were recovered.

The watching brief was commissioned by Richard G Wylie and Associates and the inspection was carried out by Duncan Coe.

Susan M Davies  
Wessex Archaeology

## STANDING BUILDING SURVEYS

### STURMINSTER NEWTON CASTLE, STURMINSTER NEWTON

Recording of the 14th-century ruins of Sturminster Newton Castle manor house (ST 784 134) was carried out in March 1991. A ground plan, drawn elevations, and a photographic record of the fabric were made in advance of the preparation by English Heritage of a programme of repairs. The archive has been submitted to English Heritage via Dorset County Council.

John Hawkes  
AC archaeology

### SYDLING ST NICHOLAS TITHE BARN

A survey was carried out in April 1992 by Oxford Archaeological Unit for Dorset County Council and English Heritage on the roof and walls of the late medieval barn (RCHM West Dorset 233). It was found that the aisled barn was probably a 16th-century replacement of an earlier roof of cruck

construction, for which wall sockets were found inside the buttresses. Copies of the photographic and measured survey have been deposited in the county site and monuments record.

Julian Munby  
Oxford Archaeological Unit

### TOLLER PORCORUM

During June and July 1992, a survey of standing buildings was undertaken by students of Bournemouth University. The emphasis was very much on student learning but some interesting points emerged regarding dating, planform, and features of interest (but in order to protect confidentiality these cannot be expanded upon in any detail). A total of eight buildings were the subject of intensive survey and many others were included in an extensive survey using an SMR style format. The intensive survey archive is held at Bournemouth University.

The intensive survey revealed at least one building of late 16th/early 17th-century date - Buxton Farm at the extreme west end of High Street. Although much altered in the early 18th century and containing many fine features of this period, it retained evidence of a two unit baffle entry plan with a probable byre attached. It was paralleled by Manor Cottage (east end of High Street), although on a humbler scale, also of the same planform but early/mid 17th century. Extensive survey of other buildings - Mary Jane's (Coxes Cottage) and Bridge End Farm, also revealed the house and byre format. Other buildings (The Old School House, Toller Mill, and The Cottage, School Lane), also revealed more fragmentary traces of structures dating to the 17th century. Toller Mill had a single beam datable from its chamfer and lamb's tongue stop with unusual zig-zag step, and School House had a moulded stone doorcase and window which appeared to be reset within a totally 18th-century house of three unit inner room plan. The Cottage, School Lane, also had the fragmentary remains of a two-unit central-stack plan, possibly of this period. All these 17th century houses, with the exception of Buxton Farm, which itself was an exceptional building of continued high social status throughout the 17th and 18th centuries, were situated at the East end of the village, within the vicinity of the Church and the possible green.

The 18th century was marked by a refurbishment of existing houses and by the construction of concentrations of new houses of a specific type at the West end of the village (33 High St. and 35/37 High St.). These were possibly much modified three unit, inner-room plans. Sadly the removal of ceiling frames in these (and in other houses in the village) foiled a satisfactory elucidation of the plan, as had the insertion of external doorways into each unit (including unheated units, thus precluding the possibility of cottage conversions). This curious activity remains without explanation unless there was a continuous state of indecision about the position of the main entrance, prevalent from at least the early Victorian period onwards. The 18th century three unit plans are concentrated at the West end of the village.

No 15 High Street appears to be no earlier than c. 1700 but has the two unit crosspassage plan, and the 18th century period is also exemplified by the Vicarage, which retains an almost complete interior but has lost its thatched roof. School House and The Cottage, School Lane gain significant alterations in the period; the latter has a single storey service wing, and a three-sided workshop wing, and the former is possibly a complete house of the period with resited 17th-century moulded stone features.

The early Victorian period is characterized by window alterations at

Buxton Farm, and major face-lift at The Cottage. This involved the addition of a third unit to the main range, to create a grand reception room, and the conversion of the original parlour unit to another grand reception room. The original houseplace was relegated to service/servants room cut off from the rest of the house. Other alterations included the raising of an 18th century service wing, introducing brick corbelled dormers throughout, a gothic style porch, and a fine interior which includes rare vertical sliding shutters housed in shutter boxes beneath the sills.

Also commensurate with the early Victorian period are two groups of cottages on the North side of High St. which have hipped lead covered doorhoods with a faint gothic flavour. These may precede the coming of the Railway, which itself produced other buildings of interest such as Railway House (2 High St).

Two further developments are of interest, the addition of single unit cottages to 15 High St. and Bridge End Farm. The former retains a wartime cottage interior, but could date to the early/mid 19th century. The latter is called Railway Cottage, and was presumably constructed to house a railway employee.

An early farm building conversion at No. 4 High St provided much food for thought. The farm building format is shown on the title map but its generous chimney breast surely indicates a date for conversion before the date of the majority of its surviving features which is c. 1900, unless this is clear evidence that the traditional building format and two unit plan continue into the early part of this century.

The survey was undertaken solely on the basis of access to buildings which was provided by many kind residents of Toller to whom I am greatly indebted but despite the lack of rigour imposed by a research design it has provided a useful portrait of the development of a West Dorset village.

#### Brooms Farm, Wynford Eagle

This farmhouse which was under repair was examined but not measured and revealed itself to be an early 18-century cob and thatch construction, the planform being a possible two unit with crosspassage. The roof was raised in the early 19th century, and the windows replaced at the same time. It was later reported that a plan-and-muntin type partition had been found during the repairs.

Carole Ryan  
Bournemouth University

## FINDS REPORTS

### A HANSEATIC FLAGON FROM CHESIL BAY

The base of a pewter flagon was discovered by a diver, Mr A.J. Ridges, and brought to Poole Museum for identification. Set internally in the base, is a pewter disc of approximately 46 mm diameter and 2 mm width, (Fig. 6) on which is a relief of the crucified Christ flanked by two figures assumed to represent the Virgin Mary and St John (Homer, *infra*).

The object was referred to Mr R.F. Homer who identified the object as a medieval 'Hanseatic' flagon of north German manufacture. His comments are published below.

The flagon was found approximately 400 mm off Chesil beach (SY 67250 73900), at a depth of 20 m. The seabed in the area is smooth and sandy with relatively little weed and no significant shelf. The object was buried, with only a small portion of the broken edge visible above the sand. The absence of other wreck finds in the area may suggest this was an incidental loss.

#### The Flagon

The late 13th and early 14th centuries saw rapid expansion of the pewter industry in response to increasing secular demand. In Lubeck, chief city of the Hanseatic League, pewterers were at work before 1300 and a characteristic product of this area was the so called *Hansekan* or Hanseatic flagon (Laufer, 1913). These vessels were of a simple, rugged, form having a bellied body with a flared foot rising to a more-or-less elongated neck covered by a centrally domed, hinged lid. A typical feature is a separately cast pewter medallion bearing a religious motif attached internally to the lid and/or base. This style of flagon was made in the German Baltic states from the first half of the 14th century until well into the 15th century.

This fragment (Fig. 6) comprises the lower half only of the body of a typical Hanseatic flagon which appears to have separated from the upper half at a soldered seam. The medallion in the base displays the crucifixion flanked by two figures who, by analogy with well preserved examples, are

the Virgin Mary and St. John. This is the commonest decorative motif to be found in these flagons.

The fragment is dated c. 1350-1450. It is unlikely that it was part of a cargo bound for an English port as protectionist policies prohibited the import of foreign pewter. Possibly it was the personal property of someone aboard a Hanseatic merchant ship.

The object is currently in the possession of its owner, Mr Ridges, who

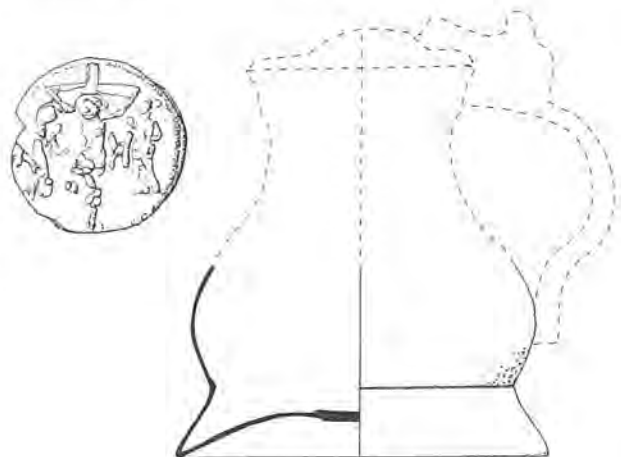


Figure 6, Hanseatic flagon base found at Chesil scale 1:4; detail of medallion scale 1:2

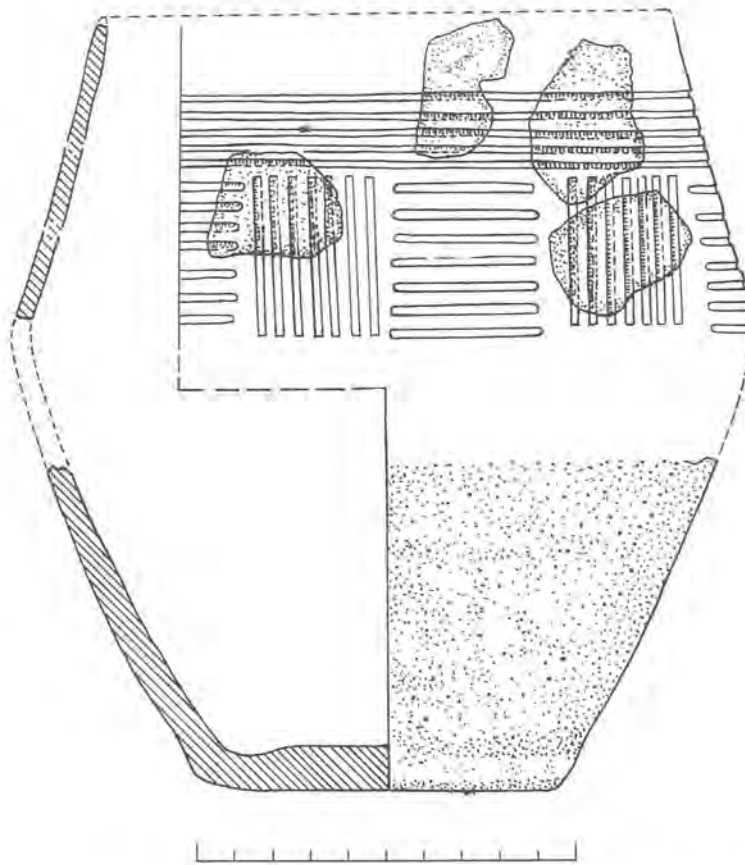


Figure 7: Corfe Common. Suggested reconstruction of the pottery. scale 1:2

can be contacted through the Old Harbour Dive Centre, 11 Nothe Parade, Weymouth. The drawings were prepared by Mr Lennard M. Anderson.

Kevin W Collins and Ronald F Homer  
for Borough of Poole Museum Services

Laufer, O., 1913, 'Spätmittelalterliche Zinnfunde aus Hamburg und einige Niederdeutsche vergleichstücke', in, 'Mitteilungen aus dem Museum für Hamburgische Geschichte', Beihefte 7, Teil 2.

#### BRONZE AGE POTTERY FROM CORFE COMMON

In April 1990, on Corfe Common 250 m east of the road to Kingston, pottery sherds were recovered from the spoil of a badger sett. The sett had been freshly dug into the round barrow RCHM Corfe Castle 192 (SY 9652 8084).

The spoil from the set, which only contained ceramic finds, was carefully examined to recover all the disturbed fragments of pottery. The removal of scrub and bracken from the site, since 1990, has discouraged animals from burrowing into the round barrow. No further pottery fragments have been recovered.

#### Pottery report by Dr David Tomalin

Twelve sherds from this site all appear to belong to a single urn with a comb-decorated neck. The fabric is reduced and hard-fired and shows some superficial external oxidation. The matrix contains a little angular quartz sand but it is otherwise virtually untempered in a manner which is comparable with type II globular urns of the Deverel-Rimbury tradition. These urns have been appropriately described by Calkin (1964, 24-9) as commonly thick and gritless. Combed decoration, as opposed to incised parallel grooves, is similarly well at home on Calkin's type IIb globular urns. Despite the tantalising absence of the shoulder and the rim tip of this pot, there seems little doubt that it is to this latter class that this vessel belongs. Analogy with other vessels of this type suggests that small perforated lugs were perhaps situated on the shoulder of this pot.

Calkin, J.B., 1964, 'The Bournemouth area in the Middle and Late Bronze Age with the Deverel-Rimbury problem reconsidered', *Archaeological Journal* 119.

Martin Papworth  
The National Trust

#### FURTHER FINDS FROM ROPE LAKE HOLE, KIMMERIDGE

During a walk along the coastal path with Steve Etches this summer (1992), we noticed considerable recent badger activity on the cliff edge at approximately SY 931 776. Amongst the debris much Iron Age pottery, animal bone and shale lathes cores were noticed but not kept.

This site has long been known and excavations have taken place in 1974, 1976 and 1979 (Maw 1976 and 1978; Woodward 1987) which revealed a long sequence of activity from earliest Iron Age times to the 4th century AD. The purpose of this note is to record two particularly interesting finds revealed by the badgers' recent activity. The first is a small copper alloy brooch (Fig. 8) of "winged fiddle" type. It is complete but for the pin which was probably iron and has patches of corrosion over much of its surface. Areas relatively free of corrosion show the brooch was once tinned. Along the upper part of the bow is a zig-zag ridge produced by punch work. The best parallel for this example appears to be from Hod Hill (Brailsford 1962) where six fiddle brooches were found, one of which (C94) also possesses wings. This brooch has a much straighter bow than the Kimmeridge find but in other respects is very similar. Brailsford records the rarity of this type and quotes two further examples from Ham Hill. The form appears to have been in use during the period 50 BC - 50 AD.

The second find was of the base of a small Samian ware cup (form 33) bearing the stamp (Fig. 9) of the potter Bassinus ii. This is only the fourth record of this potter's stamp appearing in Britain the other three being from Leicester, London and Silchester. The use of form 18/31R and 42 at those sites suggests activity within the Hadrianic - Antonine range, evidently a brief one. It needs future finds from dated contexts to define the range more closely than the period AD 125 - 155 which is suggested

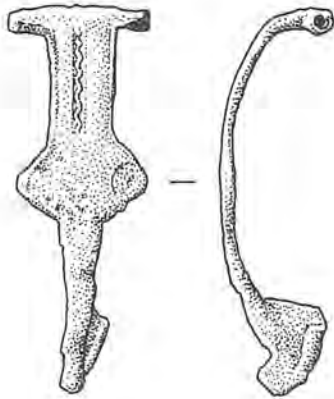


Figure 8. The brooch from Rope Lake Hole, at one half life size.

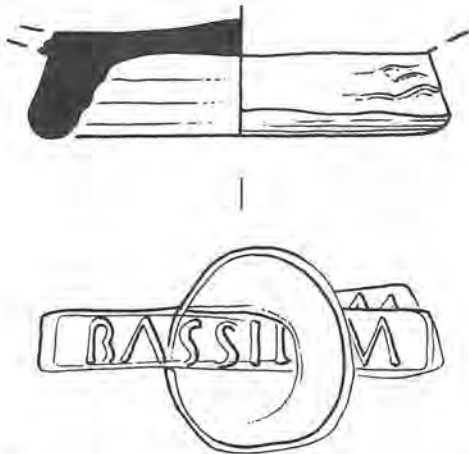


Figure 9. The Samian from Rope Lake Hole at one quarter life size, stamp at one half life size

at present. The fabrics known point to an origin in central Gaul, at least one sherd matching Lezoux standards. Close examination of the base revealed deliberate smoothing of the broken edges and concentric wear around the inner edge of the foot ring. This wear is commensurate with the sherd having had a secondary use as a small palette possibly for cosmetics. (C.J. Sparey-Green pers. comm.)

The finds have been deposited in the Dorset County Museum.

I am very grateful to Brian Hartley for the information on Bassinus ii and to Nick Griffiths for the drawings.

Martin T. Green

Maw R., 1976, 'Interim report on an excavation at Rope Lake Hole near Kimmeridge, Dorset', *Dorset Proceedings* 97, 51.

Maw R., 1978, *Dorset Proceedings* 98, 58-9.

Woodward P., 1987, 'The excavation of a Late Iron Age & Romano-British settlement at Rope Lake Hole', in *Romano-British*

*Industries in Purbeck* DNHAS Monograph Series 6, 125-180.

Brailsford J.W., 1962, *Hod Hill Vol 1 Antiquities from Hod Hill in the Durden collection* British Museum.

#### A MEDIEVAL GOLD RING FROM FRIAR WADDON, PORTESHAM

This gold finger ring, found in August by Mr P.R. Dennis in a ploughed field at Friar Waddon, was considered at a Coroner's Treasure Trove inquest on 17 December 1992 and declared not to be Treasure Trove..

The ring weighs 6.14 g. It has an internal diameter of 19 mm; the band is just over 1 mm thick and 5 mm wide. Around the outside of the band and set within engraved lines 4 mm apart is the black letter inscription *iaspar melcior baltazar*; between the first two names is a fourfoil; between the other names simple trails with bifurcating ends. The background is covered with close cross hatching; tops of several letters appear outside the top of the frame which must have been engraved after the outline of the inscription letters had been engraved.

The three names in the legend are those of the Magi, or Three Kings: they are supposed to be effective against falling sickness or fever. There are four rings (one of gold, one of brass, and two of silver gilt) in the British Museum with similar inscriptions (OM Dalton, *Catalogue of the Finger Rings, bequeathed by Sir Augustus Wollaston Franks* (London, 1912), nos 885-8 and pl. XV).

The style of lettering indicates a 15th-century date.

It is of interest to note the discovery in the same area of a 16th-century silver finger ring with a devotional inscription to the Blessed Virgin Mary (Laurence Keen, 'A Late Medieval Silver Ring from Portesham', *PDNHAS*, 111 (1989), 114). However, the field in which this new find was made is not thought to be the site of a medieval settlement.

Laurence Keen

#### WAREHAM LADY ST MARY - ST JOHNS HILL

In April 1992, during construction work for replacing pavements on St John's Hill, Wareham (SY 924 873), a workman disturbed and lifted a human skull. It was found one metre below present ground surface and about four metres north of the property known as 'Gold Court'.

The skull was well preserved and was found together with a small fragment of another skull. Also present was a right-hand lower jawbone with seven teeth intact, these were free of dental caries and were worn flat. The bones were those of a mature individual. The find confirms Hutchins account of bones and skulls found in the same area in 1753.

Lilian Ladle

Wareham & District Archaeology & Local History Society

Hutchins J. *The History and Antiquities of the County of Dorset*, 3rd ed. 1861-70.

#### WAREHAM LADY ST MARY, ROPERS LANE

A short cross silver penny (King John), found in a garden on the east side of Ropers Lane (SY 922 875) in 1962 was recently handed in to Wareham Museum for identification.

The obverse of the coin depicts the king's head with a sceptre to the left of the legend HENRICVS REX. On the reverse, in the centre is a four-limbed cross and within each angle are four pellets. The legend reads R VF ON LV DC.

In 1180, during the latter part of the reign of Henry II, a new "short cross" coinage was issued and was current through the subsequent reigns of Richard, John and Henry III. The entire issue bears the legend "hENRICVS" Rauf the minter of London produced coins between 1199 - 1216 for the whole of king John's reign.

The coin remains with the finder Mr Ken Talbot.

Lilian Ladle and Ken Wheatley  
Wareham & District Archaeology & History Society

## Shorter Contributions

### THE BOURNEMOUTH HOSPITAL BRONZE AGE HOARD

Timothy Champion and Keith Jarvis

#### The Excavations

Keith Jarvis

The discovery of the hoard of ten palstaves occurred in 1985 at SZ 12801 94131 when a contractor was hand-digging a gate posthole for the fence of a temporary 11Kv electricity generator (Jarvis 1985). Due to safety considerations, excavation of the findspot by the Poole Museums Archaeological Unit could not take place until the temporary generator was replaced at the end of the building programme.

In 1987, part of the area became available for excavation and the opportunity was taken to excavate an irregular area of ten square metres situated 6 m from the findspot. The purpose of this work was to establish whether the hoard was an isolated feature or part of an extensive archaeological site which would require excavation before the area became a car park. The excavation (Jarvis 1987) revealed no evidence of occupation except for one unworked burnt flint from the topsoil.

In February 1988, access finally became available to the findspot, and a two metre square centred on the modern gate postholes was excavated. The modern postholes, 0.3 m wide and 0.45 m deep, were found cut into the natural mottled yellow-grey sandy clay. Slight traces of green bronze corrosion were recorded in the western posthole tending to confirm the location given by the finder. The site had been stripped of about 0.3 m of topsoil prior to building work and the observed stratigraphy consisted of 0.1 m of brown sandy clay subsoil containing sparse gravel sealing the natural sandy clay. No evidence of any archaeological finds or features was found.

It must be concluded that the palstaves were buried in a small feature which was totally destroyed by the modern posthole. Although the two areas excavated are small they both indicate that the area was not occupied and that the hoard was probably not buried near a settlement.

The palstaves are in the joint possession of the Russell Cotes Museum, Bournemouth and Poole Museums.

#### The Hoard

Timothy Champion

The hoard consisted originally of ten palstaves, of which only five have become available for publication. The other five examples, now missing, are said to have been similar to those described here.

The five palstaves are identical, and must have been cast in the same mould. They are of exactly the same form and decoration, and are even identical in the irregularities of the casting seam. They vary in length by up to 2 mm, due to the variation in the way the casting jet has been broken off the end of the butt.

The palstaves are unusually small; being approximately 120 mm in length, they are substantially shorter than most others. They have prominent sideflanges, and a marked midrib on the blade. The stopridge is not of a uniform height with the flanges, but dips steeply towards the centre of the blade. The junction of the stopridge and the midrib is obscured on both sides by a small circular indentation, placed slightly off the line of the central axis of the blade. The blade is not symmetrical about the midrib. One side is rather narrower, with a concave profile and only a slight hint of a recurve towards the junction with the blade. The other side is much wider and has a more prominently S-curved profile, giving the so-called crinoline shape characteristic of many palstaves.

The palstaves are unfinished. The casting jets have been broken off, but the seams have not been treated. Visual examination shows no sign of any further working of the blade. The weights of four of the palstaves are in the range 130-134 g although No. 5 is 126 g.

The quality of the casting is not uniform. Nos 1-3 have only very minor blemishes, but no. 4 and especially no. 5 have major flaws from air bubbles. No. 5 also varies somewhat from the others in the precise form of one flange above the stopridge and in the profile of the stopridge itself on one side, suggesting that by the time it was cast the mould had become slightly deformed.

The palstaves vary in surface finish. Much of their surface is covered in a dark green patina, but all are affected to some degree by a grainy green corrosion, which is most extensive on nos 4 and 5. Nos 1 and 2, by contrast, have considerable patches of original metal exposed with a dark golden brown patina. These variations presumably result from variable conditions in the feature in which they were buried. Modern damage is minimal, being limited to a small chip in the blade of no. 1, and a break on the corner of the blade of no. 2.

The standard typology of southern palstaves is that developed by Rowlands (1976, 22-40) and adopted with some minor amendments by O'Connor (1980, 3958). In this system the palstaves belong to Rowlands's Class 2 or 'sideflanged' category, in particular to his Group 2 of this class. This is a widespread type in southern England, and its associations place it firmly in the Taunton phase of Bronze Age metalwork; this belongs to the end of the earlier Bronze Age, if a twopart division is being used, or to the Middle Bronze Age (MBA2) if a tripartite division is preferred. In absolute terms, the Taunton phase would be best assigned to the period around 1350-1200 BC.

Palstave hoards of this period are found in two main clusters, one in the Thames valley and the other along the central part of the south coast of England. The Bournemouth hoard therefore fits well into this latter group, which extends from the coastal plain of west Sussex through southern Hampshire and the Isle of Wight to eastern Dorset. These hoards are made up either exclusively or predominantly of palstaves, and are sometimes quite large. The recently published hoard from Marnhull, Dorset (Lawson and Farwell 1990), for instance, comprised 90 palstaves, but most are much smaller.

All of the more important features of the Bournemouth hoard can be paralleled among other hoards of the period. Many of the hoards contain palstaves which are very similar to each other, and in some cases it seems likely that they were cast in the same mould, or at least in moulds made from the same pattern, as in the case of the hoards from Burley, Hampshire and Little London Farm, Waldron, Sussex (Rowlands 1976, 238 and 270); the Bournemouth hoard, however, is the most definite case of multiple castings from one mould. In some other hoards, also, some of the objects were clearly unfinished; as at Bournemouth, the hoard from the Marshall Estate, Bognor Regis, Sussex, contained palstaves with the casting flashes still in place (Rowlands 1976, 2634).

The most striking feature of the Bournemouth palstaves is their small size. This is matched in the hoard from Stibbard, Norfolk (Rowlands 1976, 250). The surviving pieces of this hoard, originally much larger, comprise twenty palstaves and five spearheads, all much smaller than normal; the palstaves measure about 100 mm in length. There is a similarly diminutive palstave from Clifton Hampden, Oxfordshire, the only surviving item from a hoard of nine found there (Rowlands 1976, 252).

Few of the hoards have been recovered under conditions which allow careful observation, let alone archaeological excavation. Nevertheless, there is a recurring theme in the descriptions of the find circumstances, when any details are available. The hoards seem to have been regularly placed in small pits dug into the subsoil, often

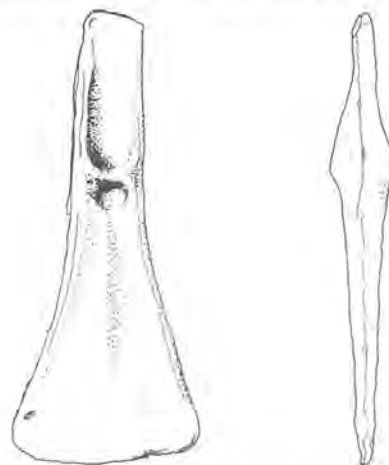


Figure 1. Bournemouth Hoard: Palstave No. 1. Scale 1:2.

closely packed together. None of the hoards has yet been shown to have been deposited in or near contemporary occupation.

The Bournemouth hoard therefore reinforces the pattern of palstave hoards in the south coast region. It falls within what Bradley (1990, 97) has termed 'utilitarian' hoards, and seems to represent a particular stage in the cycle of metalwork production; perhaps the products of an episode of casting, awaiting distribution for use, or perhaps the accumulation of metal in units of standard size and weight for exchange purposes. That might explain why the collection was put together in the first place, but the reasons for the deposition and non-recovery of such hoards are still obscure.

#### Acknowledgements

The authors would like to thank Mrs T. Hall for assisting with the excavation and Mr L. Anderson for the illustration.

#### REFERENCES

- Bradley, R., 1990, *The passage of arms: an archaeological analysis of prehistoric hoards and votive deposits*, Cambridge University Press.  
 Jarvis, K.S., 1985, 'Interim report on a hoard of Middle Bronze Age Palstaves from Bournemouth', *Dorset Proceedings* 107, 153  
 Jarvis, K.S., 1987, 'Bournemouth Hospital Middle Bronze Age Hoard Site', *Dorset Proceedings*, 109, 123  
 Lawson, A.J. and Farwell, D.E., 1990, 'Archaeological investigation following the discovery of a hoard of palstaves near New Inn Farmhouse, Marnhull, Dorset', *Dorset Proceedings* 112, 1318.  
 O'Connor, B., 1980, *Cross-Channel relations in the later Bronze Age*, British Archaeol. Rep. International Series 91, Oxford.  
 Rowlands, M.J., 1976, *The production and distribution of metalwork in the Middle Bronze Age in southern Britain*. British Archaeol. Rep. British Series 31, Oxford.

## LATE IRON AGE AND ROMANO-BRITISH SITES LOCATED ON THE CHALBURY TO OSMINGTON WATER MAIN

Julie Lancley, with comments on the finds  
 by Lorraine Mephram and Elaine Morris  
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#### Summary

*A watching brief conducted along the route of a new water main uncovered further evidence for late Iron Age and Romano-British activity to the north of Sutton Poyntz. A number of ditches and other features contained pottery predominantly dated 1st-4th century AD. Four sites recorded along the route lie close together and seem to represent an extension of an area of previously recorded occupation debris within Sutton Poyntz. Topsoil stripping of a fifth site, to the east, also produced late Iron Age and Romano-British pottery but this site was not excavated.*

#### Introduction

A significant number of archaeological finds, predominantly late Iron Age and Roman in date, were made on along the proposed route of the Chalbury to Osmington water main (SY 6989 8355 to SY 7209 8416), within the parishes of Osmington and Weymouth in south-east Dorset. The pipeline route, 2.57 km in length and just 0.8 m wide, runs from Chalbury Reservoir (SY 6989 8355), passing north of the village of Sutton Poyntz, and joining an existing mains on the lower slopes of White Horse Hill (SY 7209 8416), north of the village of Osmington (Fig. 2). The watching brief was undertaken by Wessex Archaeology and was commissioned and financed by Engineering Services of Wessex Water Services Ltd.

Five concentrations of archaeological features and finds were identified and examined. Sites A to D lay close together to the north of Sutton Poyntz, on Kimmeridge Clay deposits; Sites B and C below the springs which originate from Spring Bottom (SY 7079 8440). Site E was situated further east on a narrow band of Upper Greensand at the base of the chalk outcrop forming White Horse and East Hill.

#### Archaeological Background

Sutton Poyntz and the surrounding area is rich in prehistoric and Romano-British activity. Bronze Age round barrows are situated on the chalk ridge to the north of Sutton Poyntz and the Iron Age hillfort of Chalbury lies just to the west (Fig. 2).

Late Iron Age and Romano-British activity can be found within the immediate area of Sutton Poyntz village (SMR Weymouth 448, centred on SY 7067 8393; RCHM 1970, 618), and also to the south (Fig. 2). The evidence ranges from possible settlement sites with

occasional burials, to a villa and possible temple site, both of late Roman date. North-west of Sutton Poyntz, at Plaisters Lane (SY 7019 8424; RCHM 1970, 618-9), part of a rectangular, dry stone structure enclosing a stone-lined oven of uncertain function, a pit and three inhumations, were excavated. The site has a date range of 1st-4th centuries AD. Three further burials were discovered during the construction of a house, Watermeadow, at Sutton Poyntz in 1939 (SMR Weymouth 448, SY 70 83), of which two (both flexed inhumations) were excavated. Grave-goods included bead rim vessels and a plate brooch dating to the second half of the 1st century AD. Artefacts, including a coin of Antoninus Pius (AD 138-161) and pottery of 3rd-4th century date were recovered from the immediate vicinity and pottery of a similar date range was also recovered from the waterworks nearby.

A cemetery located to the south of Sutton Poyntz (SY 6988 8213; RCHM 1970, 616-17) comprised 80 inhumations spanning the 1st-late 2nd century AD. Other domestic or possibly industrial material of a similar date was recovered and, although not directly associated with the burials, probably indicate the presence of a nearby settlement.

Later Roman sites to the south of Sutton Poyntz (Fig 2) include a possible 4th-5th century temple, situated close to the cemetery (SY 6989 8207; RCHM 1970 616-17). One kilometre to the north-east is a villa of 3rd-4th century date (SY 7050 8258; RCHM 1970, 618). Slightly further afield, occupation debris of 2nd-4th century date has been found on the coast at Bowleaze cove (SY 7034 8192; RCHM 1970, 617-618) where a possible Roman landing stage was identified (RCHM 1970, 617), with a single inhumation burial nearby.

#### The Sites

Site E was only recorded in plan, after topsoil stripping. It was not excavated as it lay on a seldom used access point where it was considered that it would be effectively preserved. A series of possible features, including a linear spread of limestone, was sealed by a layer of dark brown, silty clay loam which included sherds of Romano-British pottery, animal bone and some fired clay. Pottery recovered from the area indicates activity in the 1st-2nd centuries AD. Sites A to D lay within a 200 m length of the pipeline route and may be considered as parts of an overall spread of late Iron Age-early Roman material, probably extending from the known area of activity within Sutton Poyntz village (see above). Archaeological features were concentrated in Site B with the greatest number of finds coming from Sites B and D. Sites A and C each contained two ditches but with little dating evidence.

#### Site A

Sites A and B both lay within one plot along the pipeline route, separated by a trackway. Layer 110, which contained Iron Age, Romano-British and medieval pottery, as well as animal bone and oyster shell, occurred across both 'sites'. Although sherds were largely unabraded, it is considered that the medieval pottery was intrusive, resulting from modern disturbances such as the cutting of an earlier water main. Within Site A were two undated ditches; Ditch 116 had no clearly definable relationship with layer 110.

*Ditch 113* had a U-shaped profile, 0.8 m wide, 0.65 m deep. Lower fill 112, mid yellowish-brown, sandy clay. Upper fill 111, mid-brown, slightly sandy clay. Both fills contained limestone rubble, and no artefacts were recovered. The ditch was sealed by layer 110.

*Ditch 116* had an irregular-shaped profile, 2.3 m wide 0.7 m deep. Lower fill 115, mid brown, sandy clay. Upper fill 114, mid-dark brown, sandy clay loam. Animal bone was recovered from 114.

#### Site B

This area comprised three possible ditches, cutting several occupation layers, of probable late Iron Age or Romano-British date (Fig. 3). This site had been disturbed by the installation of an earlier water main and other services, which made interpretation difficult.

A brown, sandy clay loam, layer 109, containing limestone rubble and Romano-British pottery. Possibly the same as layer 127.

A dark yellowish brown, sandy clay loam layer, 110, containing Iron Age, late Iron Age and early Roman, medieval and post medieval pottery. Two of the ditches which cut this layer, 120 and 130 appeared to be late Iron Age or Romano-British in date, suggesting a similar date for this layer. See also layers 128, 129, 132 and 133.

The earliest datable deposit, 117, was a dark brownish-yellow, sandy clay layer, containing late Iron Age-early Roman pottery. This was sealed by occupation layer 110.

*Ditch 120* was the earliest of the ditches, it had a steep-sided profile, 2.8 m wide, 1.1 m deep. No finds were recovered. Lower fill 121, mid brownish-grey, sandy clay. Upper fill 131, very dark

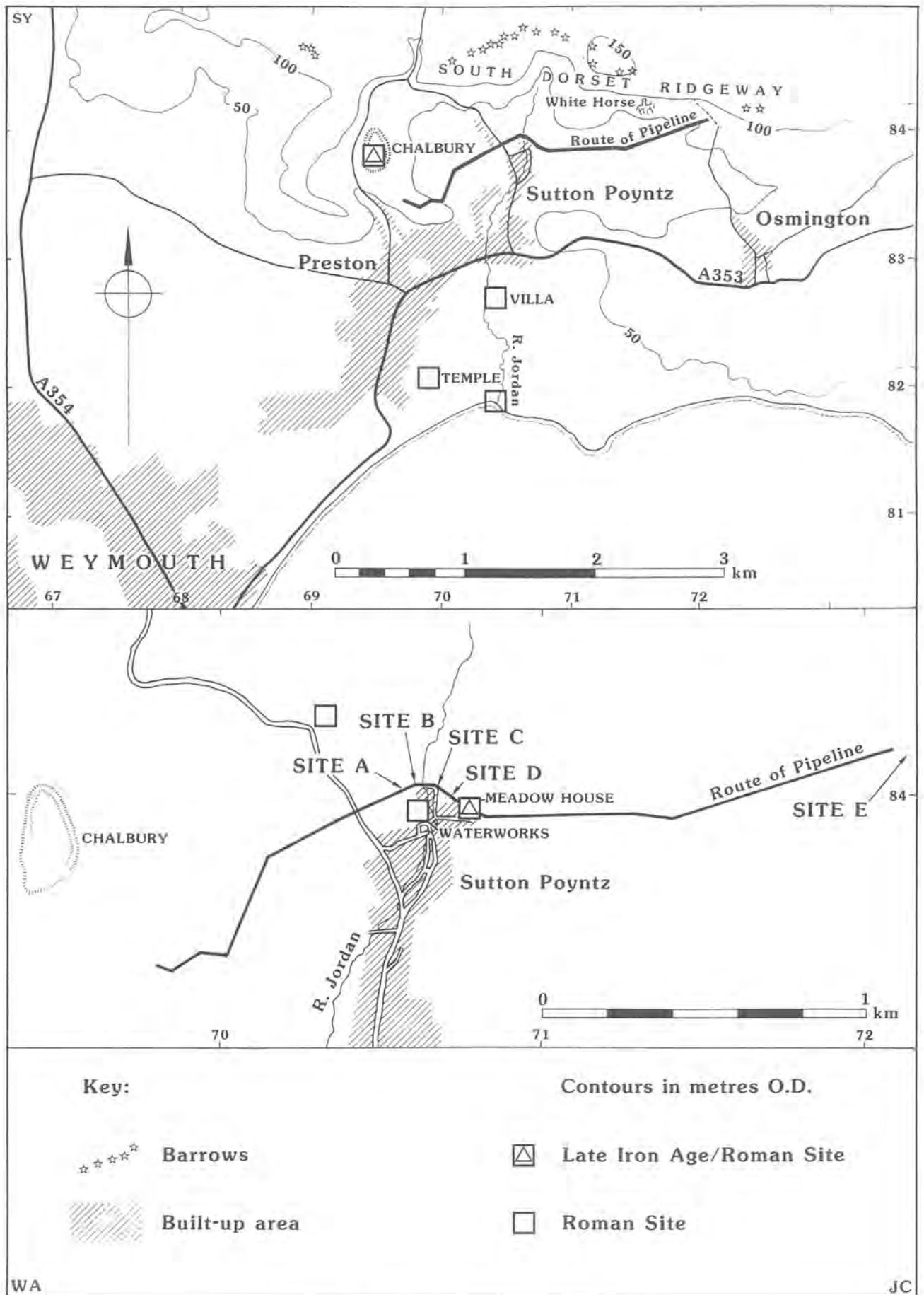


Figure 2: The Chalbury to Osmington water main - location.

brown-black, sandy loam with limestone rubble. The feature was cut by ditch 130. Sealed by 109.

The latest of the three ditches, 126, had a flat-bottomed, steep-sided profile, 3 m wide, 1.9 m deep. Primary fill 125, reddish-brown, sandy clay. Fill 124, mid brownish-grey, sandy clay with limestone rubble. Fill 123, mid brown, sandy clay. Fill 122, mid brown, sandy clay loam. Romano-British and medieval pottery was recovered from the upper fill (122), of the recut, both of which may be residual, but a medieval date for the recut cannot be discounted. The feature cuts layer 110. No finds were recovered from the lower fills. It is likely the two upper fills, 122 and 123, are within a recut. The recut also cut through layers 109 and 127, which contained Iron Age and Romano-British pottery.

A light brown sandy clay layer, 127, containing limestone. Possibly the same as 109, but generally a stonier layer.

Layer 128, 129, 132 and 133 were light yellow or brownish sandy clays, containing no artefacts but some limestone fragments. Layer 128 lay below 127, and 129, 132 and 133 lay below 109. These layers may all be part of the same deposit, although there are small variations in colour and texture, and they may be the same as layer 110.

Ditch 130 had a shallow, flat-bottomed profile, 3.5 m wide, 0.8 m deep. Lower fill 119, yellowish-grey sandy clay. Upper fill 118, very dark brown-black, slightly sandy loam. Finds, including late Iron Age-early Roman pottery, were recovered from 118. Sealed by 109.

Feature 163 was an undated, shallow U-shaped hollow, cutting layer 109. Fill 164 was a dark brown sandy loam containing flint, chalk and limestone fragments.

#### Site C

Site C, situated 60 m east of Site B and 50 m west of Site D, comprised two ditches, of which Ditch 101 may represent a boundary.

Ditch 100 had a rounded profile, 0.8 m deep, 1.4 m wide. Lower fill 97, dark brownish-grey, slightly sandy clay. Fill 96, dark brownish-grey, slightly sandy clay. Fill 95 mid brown, slightly sandy clay. No finds were recovered. The feature is cut by Ditch 101.

Ditch 101 had a V-shaped profile, 1.90 m deep, 8 m wide. Lower fill 94, mid-brown sandy clay. Fill 94, mid brown, sandy clay loam.

Upper fill 98, light-mid brown, sandy clay loam. It cuts Ditch 100.

#### Site D

Site D was situated 60 m to the east of Site B. It comprised a series of deposits but with no structural evidence.

Beneath the topsoil was a thin layer of slightly sandy clay loam, 77, with an average depth of 0.6 m, which contained 2nd-4th century AD pottery.

At the western extent of the site were two soil layers 80 and 92, both had an average depth of 1 m. Layer 80, mid brown, slightly sandy clay loam. Layer 92, dark brown, clay loam containing Romano-British and medieval pottery. A large, shallow, probably natural hollow within the clay was also present, filled with layers of dark brown, silty clay loam (81-83). The upper layers (81 and 82) were characterised by Limestone rubble; the lowest (layer 83) was dated to the 3rd-4th centuries.

It is feasible that the hollow, lying close to the existing stream, may have been an old stream channel. However the finds are largely unabraded, perhaps suggesting that the hollow was deliberately backfilled.

#### The Finds

The range of finds recovered from Sites A to E are summarised in Table 1. Very little diagnostic material was recovered amongst the non-ceramic finds. Details of the pottery distribution are summarised in Table 2.

#### Pottery

Twenty-two body sherds of later prehistoric pottery were recovered from Sites B and D, in two calcareous fabrics, shelly and Oolitic Limestone, similar to fabrics identified at other Dorset sites such as Maiden Castle (Brown 1991), Rope Lake Hole (Davies 1987, 151) and Eldon's Seat (Cunliffe and Phillipson 1969, 206). The material from Site B, recovered from soil accumulation contexts 110 and 128, also contained pottery ranging in date from the late Iron Age to the post-medieval periods suggesting either that the earlier pottery was redeposited, or that the later pottery was intrusive.

A total of 110 sherds of late Iron Age and early Romano-British

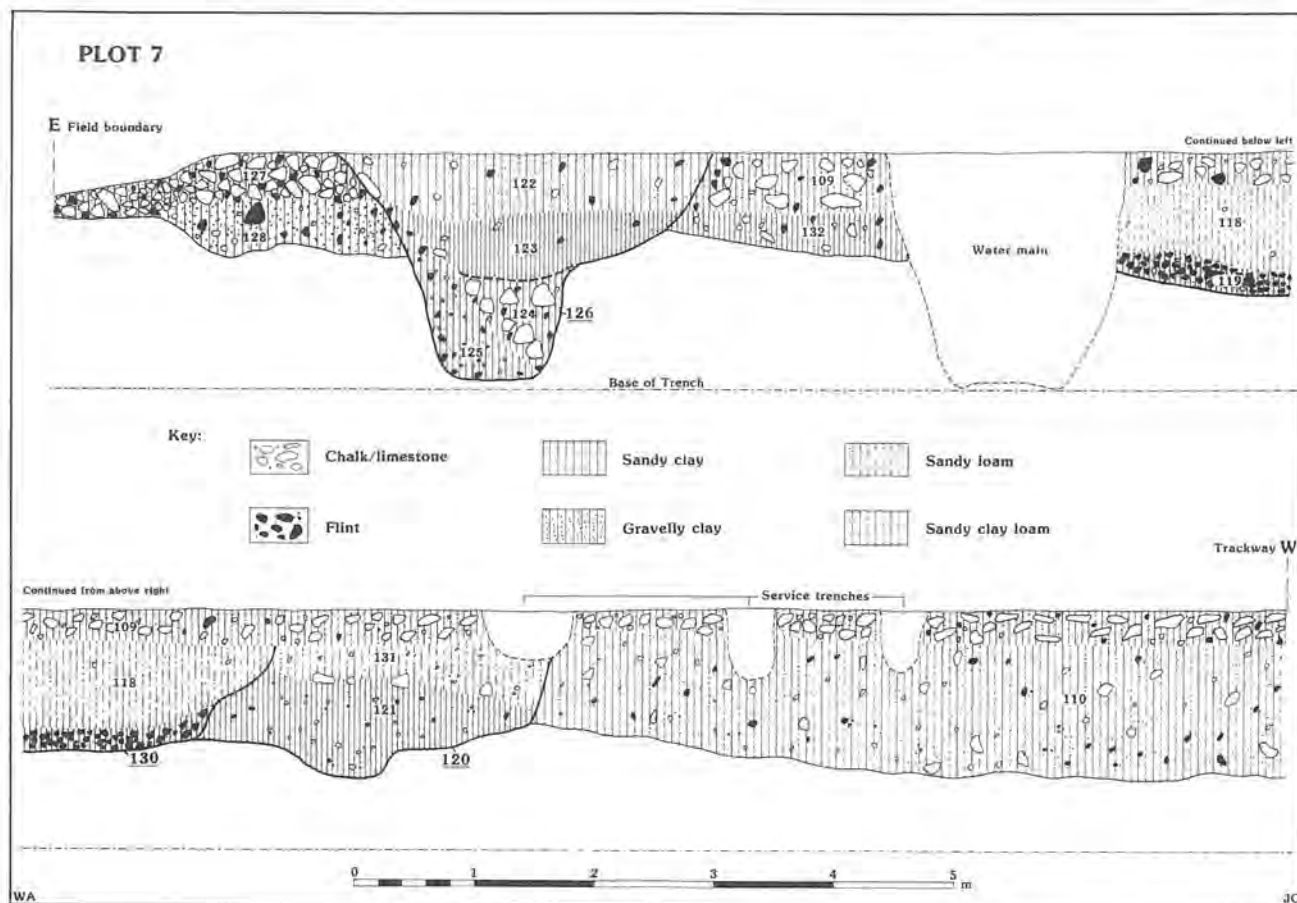


Figure 3: The Chalbury to Osmington water main: section on Site B.

Table 1: Summary of finds from Sites A-E (Totals include unstratified and unexcavated contexts, weight in grammes)

Site	Context Nos	Feature Nos	Pottery		Flint		Burnt Flint		CBM		Fired Clay		Animal Bone		Slag		Shell		Stone		Glass		Totals	
			no	wt	no	wt	no	wt	no	wt	no	wt	no	wt	no	wt	no	wt	no	wt	no	wt	no	wt
A	114	116	-	-	-	-	-	-	-	-	-	-	7	90	-	-	-	-	-	-	-	-	7	90
B	105*	-	13	172g	1	22g	-	-	1	25g	-	-	1	2g	-	-	-	-	-	-	-	-	16	221g
	108*	-	13	102g	-	-	-	-	-	-	1	6g	-	-	-	-	-	-	-	-	-	-	14	108g
	109	-	4	40g	1	11g	-	-	3	68g	2	37g	-	-	-	-	-	-	-	-	-	10	156g	
	110	-	42	284g	3	152g	-	-	-	-	9	53g	94	648g	2	10g	2	7g	-	-	-	-	152	1154g
	117	-	36	292g	-	-	-	-	-	-	10	78g	2	1g	-	-	-	-	-	-	-	-	48	371g
	118	130	8	106g	-	-	1	43g	-	-	1	2g	3	8g	-	-	1	13g	-	-	-	-	14	172g
	122	126	2	75g	-	-	-	-	-	-	1	45g	1	9g	-	-	1	22g	1	20g	-	-	6	171g
	128	-	6	64g	-	-	1	8g	-	-	-	-	13	128g	-	-	-	-	-	-	-	-	20	200g
	<b>Totals</b>		<b>124</b>	<b>1135g</b>	<b>5</b>	<b>185g</b>	<b>2</b>	<b>51g</b>	<b>4</b>	<b>93g</b>	<b>24</b>	<b>221g</b>	<b>114</b>	<b>796g</b>	<b>2</b>	<b>10g</b>	<b>4</b>	<b>42g</b>	<b>1</b>	<b>20g</b>	-	-	<b>281</b>	<b>2553g</b>
D	75*	-	42	231g	5	63g	1	6g	-	-	-	-	12	108g	-	-	-	-	-	-	-	-	60	408g
	76*	-	8	180g	2	21g	-	-	-	-	-	-	4	20g	-	-	-	-	-	-	2	6g	16	227g
	77	-	6	264g	1	74g	-	-	-	-	-	-	4	16g	-	-	-	-	-	-	-	-	11	354g
	78*	-	-	-	-	-	-	-	-	-	-	-	-	-	4	387g	-	-	-	-	-	-	4	387g
	79*	-	35	309g	3	66g	-	-	-	-	-	-	13	177g	-	-	-	-	-	-	-	-	51	552g
	83	90	11	351g	1	23g	-	-	-	-	5	249g	21	597g	-	-	-	-	-	-	-	-	38	1220g
	92	-	3	54g	-	-	-	-	5	81g	-	-	3	16g	-	-	-	-	-	-	-	-	11	151g
	<b>Totals</b>		<b>105</b>	<b>1389g</b>	<b>12</b>	<b>247g</b>	<b>1</b>	<b>6g</b>	<b>5</b>	<b>81g</b>	<b>5</b>	<b>249g</b>	<b>57</b>	<b>934g</b>	<b>4</b>	<b>387g</b>	-	-	-	-	<b>2</b>	<b>6g</b>	<b>191</b>	<b>3299g</b>
E	50*	-	12	129g	-	-	-	-	-	-	1	8g	-	-	-	-	1	15g	-	-	2	3g	16	155g
	51*	-	2	3g	-	-	-	-	-	-	-	-	1	7g	-	-	-	-	-	-	-	-	3	10g
	52	-	21	108g	-	-	-	-	-	-	4	14g	12	33g	-	-	-	-	-	-	-	-	37	155g
	53	-	5	24g	1	3g	-	-	-	-	-	-	14	31g	1	2g	-	-	-	-	-	-	21	60g
	54	-	5	38g	-	-	-	-	-	-	6	22g	13	49g	-	-	-	-	-	-	-	-	24	109g
	55	56	28	166g	1	8g	-	-	-	-	2	14g	6	24g	-	-	-	-	-	-	-	-	37	212g
	57	-	6	28g	-	-	-	-	-	-	1	16g	3	14g	1	1g	-	-	-	-	-	-	11	59g
	<b>Totals</b>		<b>79</b>	<b>496g</b>	<b>2</b>	<b>11g</b>	-	-	-	-	<b>14</b>	<b>74g</b>	<b>49</b>	<b>158g</b>	<b>2</b>	<b>3g</b>	<b>1</b>	<b>15g</b>	-	-	<b>2</b>	<b>3g</b>	<b>149</b>	<b>760g</b>
<b>Overall totals</b>			<b>308</b>	<b>3020g</b>	<b>19</b>	<b>443g</b>	<b>3</b>	<b>57g</b>	<b>9</b>	<b>174g</b>	<b>43</b>	<b>544g</b>	<b>227</b>	<b>1978g</b>	<b>8</b>	<b>400g</b>	<b>5</b>	<b>57g</b>	<b>1</b>	<b>20g</b>	<b>4</b>	<b>9g</b>	<b>627</b>	<b>6702g</b>

## Notes

CBM - Ceramic Building Material \* - Unstratified context ? - Unexcavated context

Table 2: Summary of Pottery from Sites B, D and E (includes pottery from unstratified and unexcavated contexts, weight in grammes)

Area	Context nos.	Feature no.	Later prehistoric		LIA/early RB		1st/2nd century		3rd/4th century		Medieval		Post medieval		Total	
			no	wt	no	wt	no	wt	no	wt	no	wt	no	wt	no	wt
B	105*	-	-	-	-	-	2	15g	-	-	7	96g	4	61g	13	172g
	108*	-	1	29g	-	-	11	53g	-	-	-	-	1	20g	13	102g
	109	-	-	-	-	-	4	40g	-	-	-	-	-	-	4	40g
	110	-	14	63g	16	143g	-	-	-	-	10	58g	2	20g	42	284g
	117	-	-	-	36	292g	-	-	-	-	-	-	-	-	36	292g
	118	130	-	-	8	106g	-	-	-	-	-	-	-	-	8	106g
	122	126	-	-	1	9g	-	-	1	66g	-	-	-	-	2	75g
	128	-	1	7g	-	-	5	57g	-	-	-	-	-	-	6	64g
	<b>Totals</b>		<b>16</b>	<b>99g</b>	<b>61</b>	<b>550g</b>	<b>22</b>	<b>165g</b>	<b>1</b>	<b>66g</b>	<b>17</b>	<b>154g</b>	<b>7</b>	<b>101g</b>	<b>124</b>	<b>1135g</b>
D	75*	-	2	11g	-	-	-	-	33	176g	1	5g	6	39g	42	231g
	76*	-	-	-	1	48g	6	119g	1	13g	-	-	-	-	8	180g
	77	-	-	-	-	-	2	213g	4	51g	-	-	-	-	6	264g
	79*	-	4	32g	24	131g	-	-	-	-	1	8g	6	138g	35	309g
	83	90	-	-	-	-	-	-	11	351g	-	-	-	-	11	351g
	92	-	-	-	-	-	2	40g	-	-	1	14g	-	-	3	54g
	<b>Totals</b>		<b>6</b>	<b>43g</b>	<b>25</b>	<b>179g</b>	<b>10</b>	<b>372g</b>	<b>49</b>	<b>591g</b>	<b>3</b>	<b>27g</b>	<b>12</b>	<b>177g</b>	<b>105</b>	<b>1389g</b>
E	50*	-	-	-	-	-	-	-	-	-	1	2g	11	127g	12	129g
	51*	-	-	-	-	-	2	3g	-	-	-	-	-	-	2	3g
	52	-	-	-	-	-	21	108g	-	-	-	-	-	-	21	108g
	53	-	-	-	-	-	5	24g	-	-	-	-	-	-	5	24g
	54	-	-	-	-	-	5	38g	-	-	-	-	-	-	5	38g
	56	55	-	-	26	163g	1	1g	-	-	-	-	1	2g	28	166g
	57	-	-	-	-	-	6	28g	-	-	-	-	-	-	6	28g
	<b>Totals</b>		-	-	<b>26</b>	<b>163g</b>	<b>40</b>	<b>202g</b>	-	-	<b>1</b>	<b>2g</b>	<b>12</b>	<b>129g</b>	<b>79</b>	<b>496g</b>
<b>Overall totals</b>			<b>22</b>	<b>142g</b>	<b>112</b>	<b>892g</b>	<b>72</b>	<b>739g</b>	<b>50</b>	<b>657g</b>	<b>21</b>	<b>183g</b>	<b>31</b>	<b>407g</b>	<b>308</b>	<b>3020g</b>

## Notes

\* - Unstratified context

pottery was recovered from Sites B, D and E. The fabrics, all sandy, are typical of the local coarsewares of this period from south Dorset, the likely source being within the Wareham-Poole Harbour area. A limited range of forms was recovered, including a bead rim vessel and an everted rim jar. These are common forms frequently occurring within pre- and post-Conquest assemblages in south Dorset and Purbeck, as at Bincombe (Bailey and Flatters 1971, figs 5 and 6) and Rope Lake Hole (Davies 1987, figs 81 and 82).

One hundred and twenty-three sherds of Romano-British pottery were recovered from both stratified and unstratified contexts within Sites B, D and E. The assemblage is predominantly in sandy Black Burnished category 1 (BB1) fabrics from Wareham-Poole Harbour. The forms present include 'dog dishes' and dropped-flanged bowls. The fabrics and forms are comparable to assemblages from Dorchester (Davies and Seager Smith forthcoming) and Ower Farm (Woodward 1987, figs 48 and 49).

The non-BB1 pottery includes four sherds of samian from Sites D and E, one of which is decorated, two examples of Dragendorff 33 cups of probable 2nd century date, and one example with part of a stamp on the base. Site D also produced one sherd of mortarium, possibly from Oxfordshire. One example each of an indented New Forest beaker (AD 270-400) and a Spanish Dressel 20 amphora, most probably of 2nd century date, were recovered from unstratified contexts.

A total of 21 sherds of medieval pottery was recovered from Sites B, D and E. The pottery is in coarse sandy fabrics, some also containing crushed sub-angular flint fragments. Glaze is very scarce, and there is only one sherd with signs of scratchmarking. Vessels consist entirely of cooking pots. The glazed sherds may derive from pitchers or jugs, but no diagnostic sherds are present. This coarseware assemblage can be broadly dated to the 12th or 13th century, by comparison with sites in south Dorset, such as Dorchester (Draper and Chaplin 1982), Holworth (Rahtz 1959) and Wareham (Hinton and Hodges 1977). A source has been suggested in the Purbeck area (Hinton and Hodges 1977), although recent chemical analysis has shown that the scratchmarked sandy wares are more likely to derive from the kilns of the Laverstock area (Spoerry 1990, 14). Another possible source is the kiln at Hermitage in north Dorset, which was producing sandy wares in the 13th century (Field 1966).

There are also eight sherds in finer sandy fabrics, occasionally glazed, which are likely to be of late medieval or early post-medieval date (15th-16th century). These include jugs and cooking pots or jars, a few examples having thumbled strips below the rim (e.g. Draper and Chaplin 1982, fig. 22). These were recovered from predominantly unstratified contexts within Sites B and E.

There are 29 sherds of post-medieval coarse earthenwares, including both red wares and the pale-firing Verwood-type wares from east Dorset. Later post-medieval wares are represented by two sherds of 18th century basaltes. The pottery was recovered from unstratified contexts within Sites B, D and E, and stratified contexts within Site B.

### Discussion

Sites B and D, situated immediately to the north of Sutton Poyntz lay within the vicinity of a known late Iron Age and Romano-British site (SMR Weymouth 448). Although no direct relationship between them could be demonstrated, they are likely to have formed part of the same settlement and dating evidence gives a similar range.

Several differences are noticeable between Sites B and D. The pottery assemblage from Site B is earlier, predominantly 1st-2nd century AD, with no fine or imported wares (Table 2). The pottery from Site D, however, contains a higher quantity of 2nd-4th century wares including small amounts of finewares and Dressel 20 amphora. The differences may demonstrate a shift in occupation through time, across the settlement, from Site B to Site D.

Site B was the only site to contain medieval pottery in any significant quantity. No features, however, could be securely dated as medieval. The presence of the pottery indicates the main area of medieval activity was not within Site B, but more likely to be within Sutton Poyntz village to the south.

Despite the restricted access and opportunities for observation afforded by the narrow pipe trench, sites located during this watching brief have given further evidence of occupation from the late Iron Age and Romano-British periods. In general, most of this activity is located within or very close to the River Jordon valley, utilising a possible communications route to the coast at Bowleaze cove (SY 7034 8192, RCHM 1970, 617-618) where a possible Roman landing stage has been identified. The exception was Site E, where a previously unknown area of activity dating to the late Iron Age or early Roman period, was located but not excavated.

### Archive

The site archive is currently held by Wessex Archaeology under project code W446.

### References

- Bailey, C.J., and Flatters, E., 1971, 'The trial excavation of an Iron Age and Romano-British site at Quarry Lodden, Bincombe, Dorset', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 93, 135-143
- Brown, L., 1991, 'Later prehistoric pottery' in Sharples, N., *The Maiden Castle Project*, English Heritage Archaeol. Rep. 19, 185-203
- Cunliffe, B., and Phillipson, D., 1968, 'Excavations at Eldon's Seat, Encombe, Dorset', *Proc. Prehist. Soc.* 34, 191-237
- Davies, S.M., 1987, 'The coarse pottery' in Woodward, P.J., 'The Excavation of an Iron Age and Romano-British settlement at Rope Lake Hole, Dorset' in Sunter, N. and Woodward, P.J., *Romano-British Industries in Purbeck*, Dorset Natur. Hist. Archaeol. Soc. Monog. 6 Dorchester, 150-158
- Davies, S.M., and Seager Smith, R.H., forthcoming, 'The Romano-British pottery' in Woodward, P.J., Davies, S.M. and Graham, A.H., *Excavations at the Old Methodist Chapel and Greyhound Yard, Dorchester: 1981-1984*, Dorset Natur. Hist. Archaeological. Soc. Monog.
- Draper, J. and Chaplin, C., 1982, *Dorchester Excavations Vol. 1*, Dorset Natur. Hist. Archaeol. Soc. Monog. 2
- Field, N.H., 1966, 'A thirteenth century kiln at Hermitage, Dorset', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 88, 161-75
- Hinton, D.A., and Hodges, R., 1977, 'Excavations in Wareham, 1974-5', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 99, 42-83
- Rahtz, P.A., 1959, 'Holworth - medieval village excavation, 1958', *Proc. Dorset Natur. Hist. Archaeol. Soc.* 81, 127-47
- RCHM, 1970, *An Inventory of Historical Monuments in the County of Dorset Vol 2 south-east Part 3*, Royal Commission on Historical Monuments (England), HMSO
- Spoerry, P.S., 1990, 'Ceramic production in medieval Dorset and the surrounding region', *Medieval Ceramics* 14, 3-17
- Whitley, M., 1943, Excavations at Chalbury Camp, Dorset, 1939, *Antiq. J.* 23, 98-121
- Woodward, P.J., 1987, 'The Black Burnished (Category 1) wares in Woodward, P.J., The excavation of a Late Iron Age trading settlement and Romano-British BB1 pottery production Site at Ower, Dorset' in Sunter, N. and Woodward, P.J., *Romano-British Industries in Purbeck* Dorset Natur. Hist. Archaeol. Soc. Monog. 6 (Dorchester), 83-92

## REVISED DATING OF THE WORGRET STRUCTURE

David A Hinton

The commendably swift publication of a site excavated in 1988 in the flood-plain of the River Frome at Worgret, some 2 km west of Wareham, Dorset, drew attention to the discovery there of the base of a structure with well-preserved timbers, which had been filled in with iron-slag and furnace-lining residues; other material found included large quantities of leather (Maynard 1988). 'One of the latest elements of the wooden frame, stake 50, has a C14 date of 1520± bp HAR 9594, calibrated to AD 470-590' (*ibid.*, 96), and various interpretations of the structure were offered; the possibility of a bridge was not favoured, but objections were also raised to its use as a trough for a smithy or tannery, or as a wildfowl snare (*ibid.*, 96-7). Stake 50 appeared to have been added to the structure at a late stage in its use, to counter signs of collapse (*ibid.*, 78). Both because the slag is likely to be waste from local ores, and because of the furnace-lining debris, smelting was almost certainly taking place locally, not long before those residues were deposited (Salter 1988, 83, 85). A sequence of construction in the late Roman period, ie the 3rd or 4th century, with use continuing into the late 5th or 6th, and infilling in the 6th or slightly later seemed to be indicated (Maynard 1988, 86).

There was considerable interest in this report, as it argued for intensive iron-smelting during the period when it might be least expected, with demand for large-scale production of any commodity at its lowest - when even the local Black-Burnished pottery industries had ended (Hearne and Smith 1991, 98-99; Cleary 1989, 135-6, 186). Unfortunately the immediate post-Roman date relied entirely on the radiocarbon analysis, although it was stressed that the nature of the slag and of the furnace lining indicated early medieval production (Salter, 1988, 82, 83, 85). No post-Roman pottery was found, nor

would it be expected in that area - Purbeck as a whole has produced three glass beads as the only recognizable artefacts of the 5th or 6th centuries (Hearne and Smith 1991, 73; Guido 1987), except perhaps for inscribed stones at Wareham (see Hinton, this volume). Further dating was therefore sought, and a generous donation to the Dorset Archaeological Committee from BP Exploration Ltd enabled a sample taken with the permission of the Dorset County Museum by C.O'Shea of Portsmouth City Museum Conservation Laboratory to be submitted for tree-ring analysis to Miss J. Hillam of the Sheffield Dendrochronology Laboratory at the University of Sheffield. The sample selected was from Timber 32, a base-plate which, unlike some of the timbers, did not appear to have been reused (Maynard 1988, 88 and figs. 4 and 10).

Miss Hillam reported that she was able to measure 224 rings on the sample; it has no sapwood (ie the outer rings up to the bark), but one corner may be the heartwood-sapwood transition. Using a computer program initially developed at the University of Belfast, the measured ring sequence was compared to 'local' dendrochronologies, such as those from Saxon wells at Portchester and Southampton, and was found to be a close match over the period AD 431-654. It can also be matched with more distant sites, in Essex and Yorkshire. As 95% of British oaks over thirty years of age have between ten and fifty-five sapwood rings, the earliest date that the Worgret timber can have been felled is AD 664. If the heartwood-sapwood transition is actually present in the sample, it was felled before AD 709; otherwise it could be a few years later (Hillam 1992; Miss Hillam has kindly agreed to publication of this synopsis of her report).

Because of its location, one interpretation of the Worgret structure is that it was a watermill, a possibility strengthened by the evidence that stakes had been inserted to stabilize it, since the reverberations of rotary action would be likely to render a mill unstable. Dr R. Holt of the School of History, University of Birmingham, was therefore consulted, because of his recent book (1988). He has pointed out (*in litt.*) that the structure could have been the housing of an overshot wheel fed by a raised launder, as there does not seem to have been a channel leading directly to it. There is no reason to doubt that the technology for vertical wheels of this kind existed in the period - not least because of their recent recognition in Ireland (Rynne 1989). Dr Holt noted that the find described as a quernstone (Maynard 1988, 93) would be worth re-examining to see if it might in fact have been part of a mill-stone, but this cannot be ascertained as it is too incomplete (I am grateful to Mr P. J. Woodward for checking this). Evidence of a raised launder would be unlikely to survive at such a site. The Frome valley has been much altered by the creation of water-meadows, so post-Roman river heights, which would affect the length that such a launder would need to be to get the necessary head of water to the mill-wheel, cannot now be ascertained. The valley is very flat, but if the river itself was unsuitable, a launder could have been fed from streams that run down from the terrace immediately to the south.

Dr Holt raised the intriguing possibility that a mill on the site could have been used in iron production; a mill can be adapted for the working of bellows by looping a cord around a peg at the end of a revolving shaft - there were both pegs and leather at the site - though nothing that could be positively attributed to such use. Mills can also operate tilt hammers to crush ore. There is no direct evidence that iron was being smelted actually on the Worgret site, but the slag and furnace lining had shown that this was taking place nearby. Dr C. J. Salter, who had provided the original metallurgical report (Salter 1988), was next consulted; his view (*in litt.*) is that the metallurgy certainly does not preclude the use of a mechanically-powered bellows in the production of the Worgret slag. (Both Dr Holt and Dr Salter are thanked for giving their opinions and for allowing them to be cited).

As Timber 32 was not reused, its dendrochronology provides a post-AD 664 date for the initial foundation of the structure at Worgret. This is at variance with the date from the single radiocarbon sample, which indicated the 5th or 6th century for a secondary phase, but it is not the first time in the Poole Basin that radiocarbon has produced post-Roman dates subsequently shown to be too early by some 200 years (Horsley and Winder 1992). The revision does not of course give a date for either the modification or for the infilling of the structure, but a mill is not likely to have a very long life; without substantial repairs, its abandonment may well be within a hundred years of construction. This revision therefore remains fully in accord with Dr Salter's original ascription of the infilling furnace linings and slag, which must have been closely contemporary with the abandonment, to the post-Roman period. But it fits much better with what is known about large-scale iron smelting generally; the 8th-/9th century production site at Ramsbury, Wiltshire (Haslam 1980), has been

augmented now by preliminary reports from both Gillingham, Dorset (Heaton 1991 and this volume) and Romsey, Hampshire (Nenk, Margerison and Hurley 1991, 158).

If the Worgret structure was indeed a watermill, be it for iron production or for flour milling, or for both since adaptation would have been possible, a late 7th-/early 8th-century date would also be in accord with what is known of post-Roman use of mills. The earliest known in England are at Tamworth, Staffordshire, where the well-preserved foundation of a horizontal-wheeled mill of the mid-9th century had an underlying predecessor (Rahtz and Meeson 1992), and at Old Windsor, Berkshire, where preliminary reports of mid-Saxon mills with vertical wheels are claimed (Wilson and Hurst 1958, 184-5). If the radiocarbon date were correct, Worgret would be the only recorded 5th-/6th-century use of a mill in either Britain or Ireland (Holt 1988, chapter one; Rynne 1989, 23).

All the sites mentioned in the last two paragraphs have either royal or ecclesiastical connections ascribed to them. The ownership of Worgret is not certainly known until 1086, when it was divided between three different holders (Thorn and Thorn 1983, 11, 9; 37, 10; 57, 7), but it was part of the parish of Lady St Mary, Wareham, throughout the Middle Ages, almost certainly part of the pre-Conquest minster's *parochia*, and quite probably part of a 9th-century and earlier royal estate (Keen 1984, 220, 224-7; Hinton and Webster 1987, 53). If the inscribed stones in Lady St Mary testify to the existence of a British church in Wareham (see Hinton, this volume), that could have been a previous owner of the land at Worgret, perhaps retaining it for a time after south-east Dorset passed into the political control of Wessex, almost certainly by AD 705, probably earlier (Yorke 1990, 136-40). Presumably British churches in the west were thereafter drawn into the new, English systems, some subsequently disappearing altogether from the records, others re-emerging in new guises as 'minsters', one or two like Wareham also as nunneries. In any case the revised dating and re-interpretation of the evidence from the site at Worgret suggest developments there at exactly the period when the Wessex kings were expanding and consolidating their spheres of control, and exploiting new economic opportunities.

- Cleary, A. S. Esmond, 1989, *The Ending of Roman Britain*.  
 Guido, M., 1987, 'The coloured glass' 100-2 in Sunter, N., and Woodward, P. J. *Romano-British Industries in Purbeck*, DNHAS Monog. 6.  
 Haslam, J., 1980, 'A middle Saxon iron smelting site at Ramsbury, Wiltshire', *Medieval Archaeol.* 24, 1-68.  
 Hearne, C. M., and Smith, R.J.C., 1991, 'A late Iron Age settlement and Black-Burnished ware(BB1) production site at Worgret, near Wareham, Dorset (1986-7)', *Dorset Proceedings* 113, 55-106.  
 Heaton, M.J., 1991, 'Recent archaeological work at Chantry Fields, Gillingham', *Dorset Proceedings* 119, 190-2.  
 Hillam, J., 1992, 'Tree-ring analysis of an oak timber from the 1988 pipeline excavation at Worgret, Dorset', Sheffield Dendrochronology Laboratory report submitted to Dorset Archaeological Committee. Copy in Dorset County Museum archive.  
 Hinton, D.A., and Webster, C.J., 1987, 'Excavations at the Church of St Martin, Wareham, 1985-86, and "minsters" in south-east Dorset', *Dorset Proceedings* 109, 47-54.  
 Holt, R., 1988, *The Mills of Medieval England*, Oxford.  
 Horsley, I., and Winder, J.M., 1992, 'The late Saxon and Conquest-period oyster middens', 60-1 in Horsley, I.P., *Excavations in Poole 1973-1983*, DNHAS Mono. 10.  
 Keen, L., 1984, 'The towns of Dorset', 203-47 in Haslam, J. (ed.), *Anglo-Saxon Towns in Southern England*, Chichester.  
 Maynard, D., 1988, 'Excavations on a pipeline near the River Frome, Worgret, Dorset', *Dorset Proceedings* 110, 77-98.  
 Nenk, B.S., Margerison, S. and Hurley, M., 1991, 'Medieval Britain and Ireland', *Medieval Archaeol.* 35, 126-238.  
 Rahtz, P., and Meeson, R., 1992, *An Anglo-Saxon Watermill at Tamworth*, Counc. Brit. Archaeol. Res. Rep. 28.  
 Rynne, C., 1989, 'The introduction of the vertical watermill into Ireland: some recent archaeological evidence', *Medieval Archaeol.* 33, 21-31.  
 Salter, C., 1988, 'The iron-working slag from the River Frome site', 82-5 in Maynard.  
 Thorn, C. and F. (eds.), 1983, *Domesday Book; 7, Dorset*, Chichester.  
 Wilson, D.M., and Hurst, J.G., 1958, 'Medieval Britain in 1957', *Medieval Archaeol.* 2, 183-213.  
 Yorke, B., 1990, *Kings and Kingdoms of Early Anglo-Saxon England*.

## THE INSCRIBED STONES IN LADY ST MARY CHURCH, WAREHAM.

David A. Hinton

The five memorial stones that were found during the rebuilding of Lady St Mary in 1840 have had various dates ascribed to them, and different theories about their significance have emerged. They are particularly remarkable for having been found in a group, and for being so far from any comparable memorials - the closest geographically being in west Devon (Radford, 1975, 13; Pearce 1978, 20). Their inscriptions were all cut into Romano-British architectural fragments (see descriptions in RCHM 1970, 308) which must have originated in a villa such as Bucknowle, itself some five miles away overland but mostly down-hill, or from Dorchester, from which they could have been brought on a punt. They are not from much further afield, because they are limestone; all the comparable memorial stones are granite or whatever stone is local to their area, so those at Wareham have not been brought there by some antiquarian or other relatively recent agency. It is theoretically possible that Wareham was not where they were erected, but it is highly unlikely that they would have been brought any significant distance merely to be used as walling material in the Church.

In effect, there are two theories about the stones' origins: one sees them as outliers of the south-west British series, which would suggest a 'Celtic' enclave at Wareham, the other has them as Breton, the work of exiles from the north-west peninsula of modern France. The latter idea has been in abeyance for some years, but has recently been reiterated in a paper that has stressed the presence of Bretons, some probably men of learning, in the Wessex of King Alfred and his successors (Dumville 1992, 157). This would of course place the stones into the late 9th century and later, whereas the other theory allows for much earlier dating. Unfortunately, the protagonists have not directly addressed each other, and a review of the possibilities is therefore appropriate.

The Church in Brittany was very closely linked to that in south-west Britain and in Wales so it is unsurprising that similar memorial stones should occur in both countries (for the former, Bernier 1982, 155-85, a reference for which I am indebted to Professor James Graham-Campbell; for the latter, Pearce 1978, Foster 1988 and Nash-Williams 1950). For the same reason, the personal names on them are very similar in type, and those on the Wareham stones, insofar as they can be deciphered, have been discussed in relation both to names on stones in, or in manuscript texts from, Cornwall, Devon and Wales (RCHM 1970, 311-12) and from Brittany (McClure 1907, 728-29), to a non-specialist equally convincingly. Again to a non-specialist, there is nothing in the letter forms used on the Wareham stones to point in one direction or the other (Bernier 1982, 184 has an extremely useful table; cf. Nash-Williams 1950, 225 *seq.*). One thing obvious to anyone looking at the Wareham stones (or more helpfully at the line drawings of them in RCHM 1970, 166) is that no two have the same style of lettering. C.A.R. Radford and K.H. Jackson (*ibid.* 311-12) proposed a date in the 7th century for the earliest, Wareham, i, early 9th for the latest, Wareham v. Radford subsequently extended this back to the late 6th (1975, 13). Unfortunately, the dating of the western British stones is highly problematical, but two are credibly associated with known historical figures, and by chance one of these, which commemorates Cadfan of Gwynedd, has lettering very comparable to Wareham iii; as the Cadfan stone cannot pre-date c. 625, and is unlikely to have been erected later than the reign of Cadfan's grand-son Cadwalladr (Nash-Williams 1950, 15-17), a 7th-century date seems reasonably assured for Wareham iii. The dates of Wareham i and ii depend on much more shifting sands: the possibility that the whole series could even begin in Roman, rather than sub-Roman, times has recently been mooted (Dark 1992). The termination date is even more uncertain: perhaps in the 7th century (Knight 1992, 50), perhaps in the 12th (Dark 1992, 60). The latter view is more in line with that of G. Bernier about the Breton series (1982, 155-85): he distinguishes 'Merovingian' from 'Carolingian', the latter being the more numerous, and 8th-/9th-century, before the Church in Brittany suffered a *diaspora*. Epigraphically, Wareham iv and v are more like Bernier's 'Carolingian' inscriptions, i-iii being 'Merovingian', ie consistent with the dates ascribed to them by comparison with the western British series.

Since the epigraphy of the Breton inscriptions can be shown to

have a chronological development, it is logical to argue that all the Wareham stones would be 'Carolingian' if they commemorate Bretons who arrived as exiles at the end of the 9th century. Furthermore, most of the longer 'Carolingian' Breton inscriptions begin 'Cruux', 'Crax', or 'Crox', another 'Lapidem', whereas the three longer Wareham inscriptions, i-iii, all start simply with names. It is very difficult, therefore, to believe that the early dates of those three should be abandoned in favour of the late 9th century. Nos. iv and v could be of that period, and could be for Bretons. If so, their stones were added to an existing series - erected for earlier, historically unrecorded Breton exiles? How did these Bretons come to have continuing access to Roman ruins for their stones? Why did similar communities, in France as well as in England (Chedeville et Guillotel 1984, 379-82), not leave stones as their memorials? Why were the Wareham stones broken up and used in the nave wall - one of them could have been set so that the inscription would be visible, but it is more likely that they were merely rubble (RCHM 1970, 308) - if there was a vibrant Breton community in Wareham? Sadly, we do not know the date of Lady St Mary Church, but for it to have contained stones newly cut in the late 9th century seems to force its construction at least to the middle of the 10th, which is later than many authorities would choose, even if it were not rebuilt for the growing *burh* after King Alfred's reign, as suggested by Keen (1984, 239).

The balance of evidence seems to weigh against a Breton, late 9th-century origin for the stones, certainly for all but two of them, probably for all. Radford was probably correct to insist that those two post-date the Saxon political take-over of the area (1978, 140n); his association of them with the landholding Welshmen of King Ine's laws who had 600-shilling wergilds is provocative (they are at least as likely to be memorials to priests), but points up the integration of British and English that Dorset probably experienced. Wareham by the end of the 8th century was a suitable place for a Wessex king's burial, and Asser's words about its nunnery do not suggest anything irregular. The memorial stones, however, suggest a strong British church tradition there into the 8th century, which is in keeping with other evidence from Purbeck. It must have been a tradition fostered by continuing contacts with other British churches, or the lettering on the stones would not have kept abreast with changes recognizable elsewhere. That the Wareham memorials are relatively more numerous than at other centres may be an accident of survival - the building of a new church at a point when the British tradition was redundant, its memorials no longer respected and available for use as rubble - or it may be because the British enclave there felt a particular need to stress its separateness against a tide of Saxon orthodoxy.

### REFERENCES

- Bernier, G., 1982, *Les Chretientés Bretonnes Continentales depuis les Origines jusqu'au IXème Siècle*, Université de Rennes.
- Chedeville, A., et Guillotel, H., 1984 *La Bretagne des Saints et des Rois V<sup>e</sup>-X<sup>e</sup> siècle*, Rennes.
- Dark, K., 1992, 'Epigraphic, art-historical and historical approaches to the chronology of Class I inscribed stones', 51-61 in Edwards and Lane.
- Dumville, D.N., 1992, *Wessex and England from Alfred to Edgar*, Woodbridge.
- Edwards, N., and Lane, A. (eds.), 1992, *The Early Church in Wales and the West Oxbow Monograph 16*, Oxford.
- Foster, S., 1988, 'Early medieval inscription at Holcombe, Somerset', *Medieval Archaeol.* 32, 208-11.
- Keen, L., 1984, 'The Towns of Dorset', 203-47 in J. Haslam (ed.), *Anglo-Saxon Towns in Southern England*, Chichester.
- Knight, J., 1992, 'The early Christian Latin inscriptions of Britain and Gaul: chronology and context', 45-50 in Edwards and Lane.
- McClure, E., 1907, 'The Wareham inscriptions', *Eng. Hist. Rev.* 22, 728-30.
- Nash-Williams, V.E., 1950, *Early Christian Monuments of Wales*, Cardiff.
- Pearce, S., 1978 *The Kingdom of Dumnonia*, Padstock.
- RCHM 1970. Royal Commission on Historical Monuments, *An Inventory of Historical Monuments in the County of Dorset, Volume Two, South-East*, London.
- Radford, C.A.R., 1975, *The Early Christian Inscriptions of Dumnonia* Cornwall Archaeol. Soc.
- Radford, C.A.R., 1978, 'The pre-Conquest boroughs of England, ninth to eleventh centuries', *Proc. Brit. Ac.* 64, 131-53.

## MEDIEVAL SETTLEMENT AT KINGTON MAGNA, DORSET

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In the parish survey of Kington Magna, four shallow lynchets were noted running north-south across a small field at ST 77052295, part of a larger area known as Broad Orchard or Mead, and were thought to represent a further area of medieval settlement (Fig. 4), (Ross, 1985, 29-30, Fig. 5).

Following ploughing of this field in September 1991 for the first time in living memory and evidently very infrequently in the past, a few flint fragments and a quantity of somewhat abraded medieval pottery sherds were collected by fieldwalking, confirming its former use. Although the larger part of this field adjoining the former Manor Farm was also ploughed, it had been cultivated at regular intervals and few sherds were found, probably an indication of the absence of house platforms, but there were also very wet areas where springs come to the surface which precluded total inspection.

The small field (31) (Fig. 4), of c. 0.25 ha slopes from the west at c. 120m OD to c. 105m OD in the east, tilting slightly north, bounded on its parallel sides by Chapel Hill and a stream. A notable earthen bank, 3m across at its widest, runs from a point lower down Chapel Hill at 'C', ends where a sharp S-bend occurs in the road at Broad Orchard corner, 'D' - 'E', and re-emerges on a different alignment, flanking the field in question 'E' - 'F' and continuing uphill. Some slumping of this bank is evident within the field. There is no topographical reason why the bank should not have continued in a straight line up the hill, so its break appears to respect this area of medieval settlement.

The greater part of the field leading north to Manor Farm (30) (Fig. 4) of 3 ha, slopes south-west from 120m OD to 105m OD. A low bank traced across the upper part and the continuation of the trackway from the settlement indicated its extent. The boundary on the north

side 'F' - 'C' (Fig. 4) consists of a bank and ditch but the field is much ploughed out towards the farm, (*ibid.*)

Three months earlier, further evidence of potential medieval settlement in Kington Magna had also come to light from an archaeological assessment for the New Parsonage Site at Godwin's Orchard (ST 763231), (Fig. 4). Nearly 4000g of medieval sherds were collected, similar in date and fabric to other local material and thought to represent cook pots and coarse pitchers with a few glazed jug sherds. Most of the material came from a sealed horizon and had not been disturbed by ploughing. Although no structural traces were found, the freshness of the sherds suggested activity nearby (Richards 1991, 181). The proximity of this site to Back Lane gives substance to the importance of such a 'street' in the medieval village plan, which had seemed relatively distant from the main settlement near the church.

### The Artefacts

#### The Flint

A Mesolithic/Earlier Neolithic element was present and the following material was collected:-

Field (30) Core [1] with secondary working; waste [2]

Field (31) Core ? Mesolithic [1], core, rough [1]; waste [11]

#### The Pottery

Sherds were similar in date and range to those previously collected from the parish and were seemingly representative of cooking pot/storage vessels, with a few fine wares such as jugs or pitchers. A small number of sherds was scratch-marked. In the absence of other evidence, rim forms and fabrics gave a date between the twelfth and fourteenth centuries, with probably a few fifteenth/sixteenth century sherds and some recent nineteenth/twentieth century additions. The small size and poor quality of the material made identification difficult, but the following fabrics were distinguished by using a hand lens.

*Fabric 1*. Fig. 5. (Field (31) [2])

Rim of pan or bowl in a hard, coarse fabric with abundant ill-sorted,

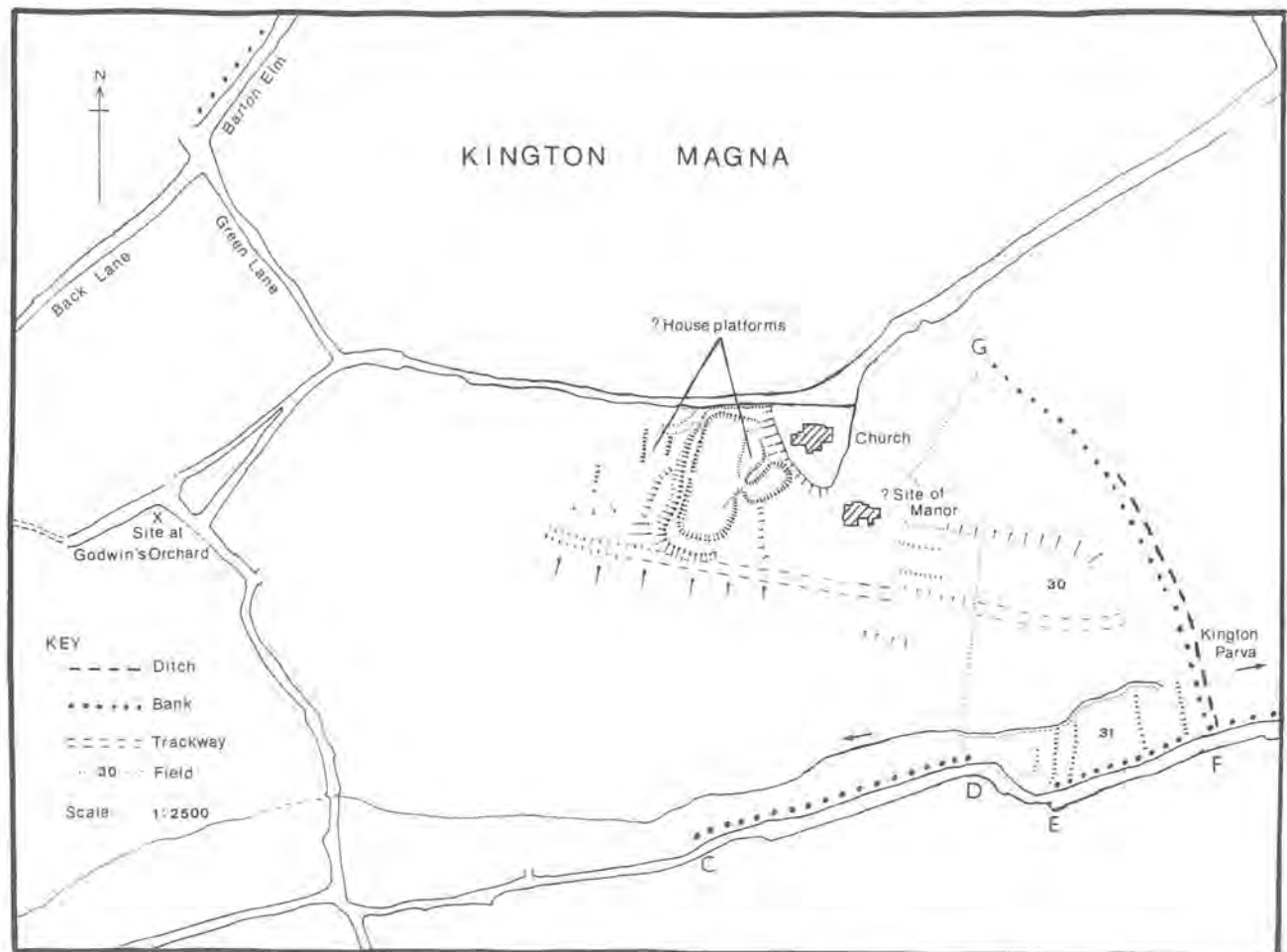


Fig. 4. Kington Magna: plan of medieval settlement, (after Ross, 1985 Fig. 5).

sub-angular quartz grains and frequent angular flint and ferruginous inclusions up to 3mm diameter. Dull brick-red colour externally, dark grey core and internally. Decorated with three concentric grooves below rim and diagonal stabbing along top of rim. One other small sherd.

This fabric has similarities with that designated as D25 at Kington Magna (Ross 1985, 35), allied to Fabric A at Sherborne Old Castle (Harrison & Williams 1979, 93-4) but with more quartz and additional ferruginous inclusions.

#### Fabric 2.

About one-third of the sherds were in a variable coarse to fairly fine fabric, a hybrid type more like a finty C/D ware at Sherborne Old Castle (*ibid.* 98). Sub-angular quartz of differing sizes up to 2mm predominated with less prominent sub-angular flint/quartzite up to 5mm diameter with occasional grog. Three bases had inclusions of angular ferruginous material up to 5mm diameter. A small number of sherds with voids suggested limestone temper but did not react to Hydrochloric acid (diluted) and calcareous material was not identified. Some sherds were distinctly abrasive to the touch with the temper protruding, while others were almost soapy. There were obviously several variants in this fabric.

Colour ranged from buff or brown to terracotta with a reduced grey core. Some external surfaces were blackened suggestive of their use as cooking pots.

Thirteen rims include eleven typical everted rim cooking pot/storage vessels; 1 pie-crust? C12 (*c/f* Spoerry 1990, 140 Fig. 13 no. 12) but in a coarser fabric; 3 rims thickened towards top seen



Fig. 5. Rim of medieval pottery at  $\frac{1}{4}$  life size. (Drawn by Peter Bellamy).

	Rim	Base	Sherds	Scratch- marked	Glazed Decor	Number	Weight
<b>12th - 14th century</b>							
Field (30)							
[1]-[4]	1		6			7	29g
[1]	1	2	6			9	65g
[2]	2		9			11	90g
[3]		2	10			12	75g
[4]	1					1	25g
Field (31)							
[1]			7	4		11	50g
[2]	5	4	25	2	5	39	350g
[3]	12	12	44	3	6	77	555g
[1]-[3]	6	6	87	6	6	111	450g
						TOTAL	278 1689g
<b>15th/16th century</b>							
Field (30)							
[2] & [4]	1		5			6	50g
Field (31)							
[1]-[3]	2	2	17		2	23	99g
						TOTAL	29 149g
<b>19th/20th century</b>							
Fields (30) & (31) Verwood type and misc. sherds							
						TOTAL	35 436g

#### The pottery at Kington Magna

previously at Kington Magna, and at Shaftesbury (*ibid.* nos. 13 & 16), 2 squared rim cooking pots (Ross 1985, 38-9, Fig. 11, no. 5); flanged rim? pitcher or jug, well-made; shallow bowl rim, abrasive fabric.

#### Fabric 3.

A hard, well-fired fabric with varying sizes of sub-angular quartz grains, both reduced and oxidised, the latter predominating with occasional flint, ferruginous inclusions and grog. Recognisably different fabrics from fairly coarse to fine, almost smooth, were noted. These appeared to be hybrid types of the (coarse) C and (fine) D wares at Sherborne Old Castle (Harrison & Williams 1979, 94) and Kington Magna (Ross 1985, 35-9) and probably similar to those studied at Shaftesbury and recorded as B Ilchester-types and C coarse quartz tempered wares (Spoerry 1990, 139-141). A few scratch-marked sherds were seen in these fabrics. Colours ranged from black to dark red and terracotta, with a reduced core, usually grey.

Eight rims included: - 1 typically everted, in hard, well-fired fabric 'visually grainy to the naked eye' (*ibid.* Fig. 13, no. 18); 2 hammerhead bowl rims, rather crude? C13, one black exterior (*c/f* Ross, 1985, Fig. 11, no. 3); 1 straight-sided bowl or dish; 3 fragments probably cooking pot/storage vessel types.

#### Fabric 4.

A few sherds visually similar to Fabric E (Harrison & Williams 1979, 94) and D27 at Kington Magna (Ross 1985, 35) and described as Hermitage type wares at Shaftesbury (Spoerry 1990, 139), contained abundant fine quartz grains and occasional black flecks (not identified). This may include some of the putative fifteenth/sixteenth century wares. Colour light red with often grey core, probably in use from the fourteenth century.

Everted shallow rim of ? bowl with seating groove, rose-red colour and base in same fabric with black flecks.

#### Fabric 5.

'White' wares, probably a Laverstock-type pottery (Harrison & Williams 1979, 94-5, (Spoerry 1990, 140), also found at Kington Magna (Ross 1985, 36) and included sherds decorated with glaze or slip, generally assumed to have been used for fine wares such as jugs.

2 rims had abundant fine quartz grains and inclusions of angular flint, also some likely ferruginous material; 1 with grey core.

Two rims were thought to be Roman black-burnished ware. Occasional Roman material has been previously found in the area.

#### The Copper (Given to the landowner)

Probable George II halfpenny, too abraded to identify with certainty. George III copper penny 180? (7).

#### The Iron

Two small iron nails, hand-made.

Hook for tail-gate of farm cart.

#### The Glass

Plain glass phial, 35mm x 15mm, moulded, ?C19/C20.

#### Sources

Comparisons have been made with other medieval pottery from the north of Dorset, but as Harrison makes clear, Kington Magna not only has similarities with the flint and quartz wares at Sherborne Old Castle, but also appears to have 'hybrid' fabrics (Nos. 1 & 2), different from both Sherborne to the west and Shaftesbury to the east (Harrison & Williams 1979, 97-8).

Fabrics from Shaftesbury are almost entirely quartzitic with flint noticeably absent (Spoerry 1990, 139-141), which suggests a source for Kington Magna from Sherborne and the flinty clays of the Yeo valley (Harrison & Williams 1979, 96). Even the 'white' wares, assumed to be of Laverstock-type, contain a small amount of flinty material, which has not been recorded by the authors cited above. These may well originate elsewhere, although on the basis of purely visual examination, the identification may not be valid.

A local source of medieval pottery production has always seemed likely, judging by the quantities of sherds collected from Kington Magna, Fifehead Magdalen (Ross 1986, 97-9) and more recently from Gillingham (Heaton 1991, 190-2 and Cox, P.W., forthcoming), but has proved elusive. Apart from the name Thoma Pottere at nearby West Stour (Rumble 1980, 70) and the incorrectly attributed Crockerford at Fifehead Magdalen (actually East Coker, Somerset), (Sabin 1960, 61-2), no other diagnostic personal or place names, documentary evidence or kiln wasters have been found from the immediate area.

In his work covering the Blackmore Vale, Spoerry found some

evidence for medieval ceramic production although the only kiln site recorded is that of the 13th century at Hermitage (Spoerry 1988, 29-35).

The only possible attribution, therefore, at Kington Magna relates to the material from the Hermitage and allied kilns as discussed above (Fabric 4).

#### Discussion

Whether these two sites, Broad Mead to the east and Godwin's Orchard in the west, were part of the strategy of what is thought to be planned, nucleated settlement, aligned on the trackway and round the church and manor, or whether they were merely progressive development in land use, is a matter for conjecture. Their position does appear to be an extension from the main settlement and hints at the possible existence of other sites.

The similarity of pottery styles and fabrics throughout does also suggest that all these sites were contemporaneous, although it could be argued that certain sherds found near the church were of earlier date. Unfortunately the excavation carried out in 1980 was too small to be truly representative (Ross 1985, 34-9).

Evidence of cultivation round the settlement has been recorded as have traces of lynchets on the surrounding hillsides, probably due to pressure of an increasing population and general soil infertility in the twelfth and thirteenth centuries. By the early fourteenth century however, it is likely that climatic deterioration and the ravages of the Black Death were responsible for the contraction, partial depopulation and ultimate desertion of the settlements.

It is presumed, therefore, that these sites went largely out of use by the fifteenth century. The realignment of the bank round Broad Mead (Field 31) indicates a possible later feature, respecting the settlement, but new banks created on depopulated sites were often referred to by contemporary writers (Thorpe 1985, 61-2).

The fieldwork and small excavation have proved significant in terms of advancing knowledge of the medieval history of the parish of Kington Magna, whose name suggests its position as an ancient royal estate of the Saxon kings.

#### Archive

Drawings and artefacts, with details of fabrics and descriptions of the rim forms, have been deposited in the Dorset County Museum with permission of the landowner, Mr. R. Gosney, Kington Manor Farm, who has retained the two coins.

#### Acknowledgements

The permission of the landowner, Mr. R. Gosney of Kington Manor Farm to carry out fieldwork is gratefully acknowledged.

Involvement with the excavation of Godwin's Orchard, Kington Magna and discussion of the pottery with Julian Richards has been most helpful.

The drawing of the settlement site was made originally by Peter Cox to whom thanks are due for permission to reproduce the map.

- Harrison, B.P. & Williams, D.F., 1979, 'Sherborne Old Castle, Dorset: medieval pottery fabrics', *Dorset Proceedings*, Vol. 101, 91-102.
- Heaton, M.J., 1991, 'Recent Archaeological Work at Chantry Fields, Gillingham', *Dorset Proceedings*, Vol. 113, pp. 190-2.
- Richards, Julian, 1991, 'Godwin's Orchard, Kington Magna, Dorset', *Dorset Proceedings*, Vol. 113, p. 181.
- Ross, M.S., 1985, 'Kington Magna: a parish survey', *Dorset Proceedings*, Vol. 107, pp. 23-46.
- Ross, M.S., 1986, 'Observations along Wessex Water Authority Reinforcing Main: Marnhull to Kington Magna, April-October 1985', *Dorset Proceedings*, Vol. 108, pp. 89-102.
- Rumble, A.R. (ed.), 1980, *The Dorset Subsidy Roll of 1372*.
- Sabin, Arthur, (ed.), 1960, *Some Manorial Accounts of Saint Augustine's Abbey, Bristol*, Bristol Record Society Publication, Vol. XXII.
- Spoerry, P.S., 1989, 'Documentary and other evidence for medieval and post-medieval ceramic production in Dorset', *Dorset Proceedings*, Vol. 110, pp. 29-35.
- Spoerry, P.S., 1990, 'Some Medieval Pottery from Shaftesbury', *Dorset Proceedings*, Vol. 112, pp. 139-141.
- Thorpe, H., 1965, 'The Lord and the Landscape', *Transactions of the Birmingham Archaeological Society*, Vol. 80, pp. 38-77.

#### ABBREVIATION

Dorset Proceedings - *Proceedings of the Dorset Natural History and Archaeological Society*.

## BRICKMAKING AT GILLINGHAM AND MOTCOMBE, DORSET

M.S. ROSS

Shaftesbury & District Archaeological Group

A former brickworks at Kingscourt, Gillingham was described recently (Ross 1992, 21) but new documents have come to light listing a brick and tile kiln on land at Park House Farm, Gillingham... that nearly adjoins the Mere Road and the village of Gillingham... (Report on the Motcombe and Gillingham estates by Richard Peyton dated 5th April 1825; Grosvenor Estate E3/8 by kind permission of The Duke of Westminster DL).

With a Sale Notice of the 'Extensive Manor of Gillingham' of 1821, are details of the relevant farms and their fields, with names and map, *ie* Park House Farm and the adjoining Wood Water Farm (*ibid.*) E3/8). Kingscourt Brickworks lay between the junction of the River Lodden and the Fern Brook (Ross 1992, 21), and this land appears from the reference number on the Sale Map to be part of Wood Water Farm. After careful scrutiny and comparison with the Tithe Map (Dorset Record Office T/GIL 1841), it seems likely that this was a slight printing error and that the area in question was all part of Park House Farm. It is still recorded as Alfred's Close (15 ac) on the Thithe Map and in 1841 (No. 937) and the Kingscourt Brickworks occupying some 3 ac (No. 937A) would account for the disparity in size.

Nevertheless an attempt was made to locate brickworks elsewhere on Park House Farm when it was noted that a field named Brickell's Ground of 3 ac lay on the edge of the Shaftesbury Road, some 1.5km to the east. This area was not shown on the Sale Map of 1821 as presumably it was not then enclosed but appears as No. 957 on the Tithe Map in 1841. Apart from being very wet and the presence of some eight roughly circular features of extremely rank, dry grass scattered over the field which was vaguely suggestive of activity in the past, there was no evidence for brickworks. The name would seem, therefore, to be personal rather than descriptive. Although this is the only such reference in Gillingham, several appear in the parish of Motcombe adjoining (Mills 1989, 51) and also at the Long Cross Brickworks, Shaftesbury describing both people and properties (Ross 1992, 17).

Erection of the Brick Kiln is described thus:

Building a kiln, Tile sheds 100 feet long, Mill house, shelves for drying tile on moulds, wheel barrows, planks and implements, straw hurdles, pumps and matts, sand from Shaston, labour for making, Coal for burning and duty etc., for the summers of 1824 and 1825.

£695 - 3 - 4

The report also refers to draining of the land, in part the reason for the brickworks and the manufacture of land drains. In addition, the 1825 report describes Park House Farm as '... all but completed ...' (Grosvenor Estate E3/8). The present farm house, known as Park Farm House of the early nineteenth century, is a Grade II listed building (North Dorset District Council No. 3/149, 1987) and is almost certainly the same, being built of Greensand with interior brick walls. However, the earlier Sale Notice of 1821 describes a 'good farm house' which is shown on the accompanying map and in the same position, while Park Farm is similarly recorded on the 1811 Ordnance Survey map (Mills 1989, 16). It would appear, therefore, that the 1825 reference is to a rebuilding of the farm house, perhaps in keeping with the improvements being carried out on the estate.

A cottage near the 'Brickfields' was recommended to Earl Grosvenor '... as a residence for a Clerk of the Works or Under Steward or Bailiff...' (*ibid.*) It is thought that the property just west of Kingscourt Brickworks was probably known as Grosvenor Cottage and was purchased at that time. It is now the Haywain Restaurant (Laurence Clark, pers. comm.)

In conclusion, it is apparent that the Brickworks referred to in these documents are those at Kingscourt, which puts their date of origin back some fifteen years to 1824/5, and, as noted previously, by 1841 they were being run by Mrs. Eliza Silverthorne (Dorset Record Office, T/GIL 1841 & Ross 1992, 21).

#### Acknowledgements

The kind permission of The Duke of Westminster DL to refer to these documents is gratefully acknowledged. I also thank the Archivists of the Grosvenor Estate for their help, Mr. Laurence Clark for drawing my attention to these documents and Mrs. R.W. Clarke of Park Farm

House and Mr. Peter Crocker for information about the building.

Mills, A.D., 1989, *The Place-Names of Dorset*, Part Three.

Ross, M.S., 1992, 'Brickmaking at Gillingham and Motcombe, Dorset', *Proceedings of the Dorset Natural History & Archaeological Society*, Vol. 113, pp. 17-22.

#### ERRATUM

In the original article on 'Brickmaking at Gillingham and Motcombe, Dorset', published in the *Proceedings of the Dorset Natural History & Archaeological Society*, Vol. 113, 1992, p. 19, the second Marquess of Westminster succeeded to the title in 1845, not 1841 as stated.

## TWO DORSET DRAWINGS BY HEYWOOD SUMNER

Gordon Le Pard

Matchams View, Hum Road, Ringwood, Hampshire

For many years a small pen and ink drawing, *The View from Dudsbury looking towards Longham*, hung at the entrance to the museum of the Bournemouth Natural Science Society. It had long been recognised as the work of the artist and archaeologist Heywood Sumner. Early in 1992 a second drawing, *The View from Ramsdown looking towards the Island*, was discovered, covered with dust, on a shelf in a little-used room. This was identified as a second drawing by Sumner and has now been hung with the first in the room devoted to British archaeology at the museum, which has been named the 'Heywood Sumner Room' in his honour.

These drawings form a pair, being almost identical in size and design. Research has shown that they were drawn as a result of collaboration between the Bournemouth Natural Science Society (B.N.S.S.) and that remarkable man George Heywood Maunoir Sumner.

Heywood Sumner (1853-1940) was a leading member of the Arts and Crafts movement. Skilled in the graphic arts, he was best known for book illustration, poster design, and murals executed in the unusual technique of plaster sgraffito (which involves covering a wall in two coats of contrasting coloured plaster, then cutting away parts of the upper coat to reveal the lower coat, and create the design).

In 1897 he moved, with his wife and five children, to Bournemouth. Then in 1902 to Cuckoo Hill, a house he had designed himself, at South Gorley on the western edge of the New Forest. Over the next few years his artistic work declined, he last publicly exhibited in 1914, as he began his topographical and archaeological studies for which he is best known today.

It was for one of these studies, *The Ancient Earthworks of the Bournemouth District*, that the two drawings were produced. 'On 12 December, 1918 a conference (of the B.N.S.S.) was held to discuss possibilities of archaeological record work. A discussion led to a resolution to undertake a topographical survey of the Bournemouth area, and this was entrusted to, and kindly undertaken by, Mr. Heywood Sumner F.S.A., and Mr. W.G. Wallace.' (Shaen Solly 1920).

Sumner intended this survey to complement the surveys he had already carried out on the ancient earthworks of Cranborne Chase (1913) and the New Forest (1917). Unlike those surveys, where most of the work had been done on his own, Sumner now had the help of W.G. Wallace the curator of the B.N.S.S.'s museum as well as an amateur archaeologist of some experience (he had excavated at Badbury Rings in 1900). In the archives of the B.N.S.S. are preserved many letters from Sumner to Wallace, describing their exploration of the ancient earthworks in the countryside around Bournemouth.

Both of Sumner's two previous surveys had been very well illustrated, not just with plans of the earthworks, but with drawings which places the monuments in their topographical setting. After a day spent surveying the Iron Age hill fort at Dudsbury, above the Stour, he wrote to Wallace 'I must try to make a little head-piece of the view from the Water-gate' - as to the King-fisher, I also wanted to bring him in - but black & white deterred me.' (Letter to Wallace 6/6/19).

This drawing was completed during 1919, as a letter (undated but, from internal evidence, written in late April 1920) includes the comment, 'I am glad that you like the little view from Dudsbury'. This is, almost certainly, the pen and ink drawing entitled *The View from Dudsbury looking towards Longham*. Unfortunately there is no mention in the letters of a second drawing that could be identified

with the view from Ramsdown, although Ramsdown itself is mentioned on several occasions.

The results of the Survey were published in 1921, without the drawings. The reason for this omission seems to have been cost. The B.N.S.S. had agreed to publish the survey in their *Proceedings*, but when it came to publication wanted to make cuts to economise (then, as now, illustrations were expensive additions to a paper). Sumner does not seem to have minded the drawings being cut, but when one of the plans was threatened his anger was aroused,

'I hope that S.S. [Shaen Solly, the chairman of the Archaeological and Historical section] will be able to settle the inclusion of the key map, for it is, as you say, an important (*indeed an essential*) item in our record. Please let me know further if the editor says "No", because then I must say my say & see what can be done'. (Letter to Wallace 29.1.21).

The map was included, the drawings were not, but given to the B.N.S.S. where they were framed and virtually forgotten. Sumner made up for this omission by writing 'word pictures' of the two scenes depicted, which can serve as captions for the drawings.

#### Drawing 1

##### *The View from Dudsbury looking towards Longham*

'The investigation of ancient earthworks leads the enquirer to beautiful out-of-the-way places amongst which Dudsbury will be memorable for its spacious view across the lower reaches of the Stour Valley, seen over woodland growth that covers a precipitous foreground, below which the river winds through meads dotted with feeding cattle. Herons stand motionless in the river shallows; kingfishers dart along the backwaters; sea-gulls hover, and pitch on their inland chance; while the field archaeologist perforce carries in his special quest of the past, to gaze and admire as he sees the present beauty that lies beneath his view' (Sumner 1921 p 50).

The drawing is in pen and ink, on board measuring 175mm by 92mm signed H.S. in the lower right corner. It has been mounted in recent times and it was not felt advisable to remove it from its mount to determine the presence, or absence, of any marginal comments.

#### Drawing 2

##### *The View From Ramsdown looking towards Longham*

"The site-seer must not omit to scramble up the steep, slippery scarp of Ramsdown, for here, beside the three barrows that crown the summit, he will see a fine view of the Avon valley, New Forest and distant Island, across a foreground that has not been disturbed by the recent military activities on St Catherine's Hill. Stately pines and luxuriant rhododendrons clothe Ramsdown - the remnant that remains after wartime cutting near by" (Sumner 1921 p 50).

The drawing is unsigned, in pen and ink on board measuring 175mm by 91mm. There is a marginal note in pencil on the top margin 4" across, presumably a note for the printers indicating the final published size.

This drawing is also a palimpsest, on the back is a fragment of a larger drawing illustrating a group of pottery. It shows the sections and decoration of three romano-british mortaria rims, which are not illustrated in any of Sumner's published descriptions of romano-british pottery. Since the view from Ramsdown can be dated to late 1919 early 1920, the abandoned drawing must date before this, therefore it seems likely that it was initially intended as a plate to illustrate *A Descriptive Account of the Roman Pottery made at Ashley Rails, New Forest* (Sumner 1919) which describes an excavation carried out in 1917-8 where similar mortaria were recorded. (Fulford 1975).

Writing of the New Forest in 1910 Sumner had written;

'Now ... I should like to be able to give ... something that will enable my future reader to see, as I now, these wild hills and woods and valleys - a vision that Time and the changes and chances will otherwise surely relegate to the dark limbo of vanished Forest life. And with this end in view I think that pages of pictures will be more illuminating than pages of writing'. (Sumner 1910 p 75).

Today these two drawings serve the purpose that Sumner hoped they would seventy years ago. Whilst the view from Dudsbury is still recognisable in spite of housing development and a recent golf course, that from Ramsdown is completely different. A dual carriageway passes between Ramsdown and St. Catherine's Hill, whilst much of the heather covered slopes have vanished beneath dense pine woodland. His drawing is the only record of this vanished scene.

I would like to thank the Bournemouth Natural Science Society not only for permission to reproduce their drawings, but for access to the letters between Heywood Sumner and W.G. Wallace. In particular I must thank Tony Westrap (Chairman of the Archaeology and History

Section) who discovered the Ramsdown drawing and who has given me considerable help and encouragement in my researches into the archaeological and topographical career of Heywood Sumner.

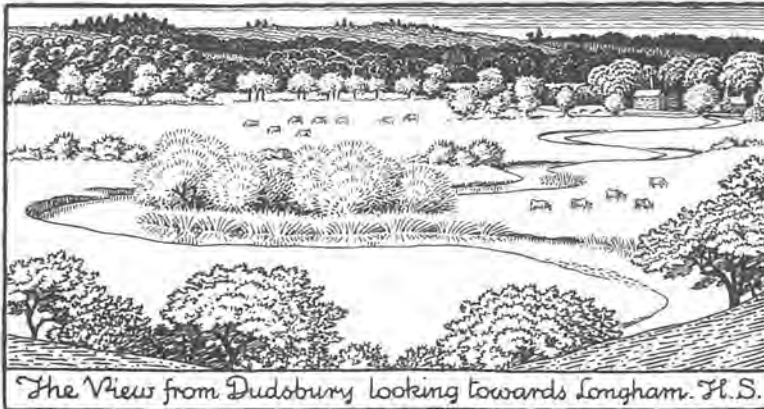
- Fulford, M.G. 1975 *New Forest Roman Pottery* British Archaeological Reports 17. p 76.  
 Shaen Solly, H. 1920 'Archaeological & Historical Section Chairmans Note' *Proceedings of the Bournemouth Natural Science Society* 11 (1918-19)  
 Sumner, H. 1910 *The Book of Gorley* Chiswick Press.  
 Sumner, H. 1913 *The Ancient Earthworks of Cranborne Chase* Chiswick Press.  
 Sumner, H. 1917 *The Ancient Earthworks of the New Forest* Chiswick Press.  
 Sumner, H. 1919 *A Descriptive Account of the Roman Pottery made at Ashley Rails, New Forest* Chiswick Press.  
 Sumner, H. & Wallace, W.G. 1921 'Ancient Earthworks in the Bournemouth District.' *Proceedings of the Bournemouth Natural Sciences Society* 12 (1919-20), pp 48-72.

## AN INVENTORY OF ANCIENT, HOLY AND HEALING WELLS OF DORSET

James Rattue

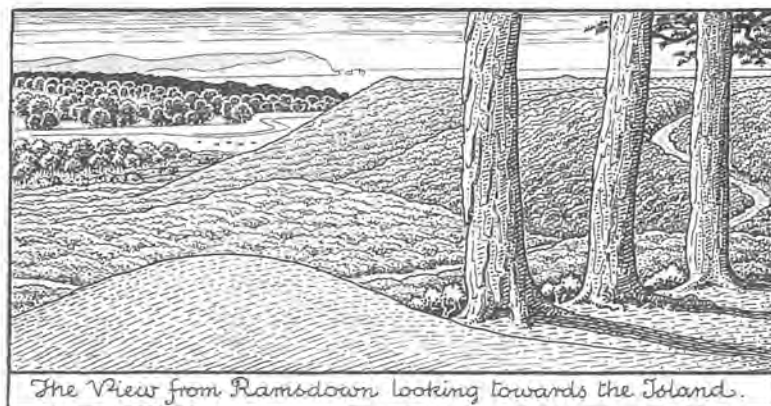
- ABBOTSBURY: Holywell Spring, SY 590827. On modern OS.  
 Lady Well, SY 579857. 1811. Minster town, secular college recorded c. 1026. Tales of maidens visiting well, but possible confusion with St Catherine's Chapel wishing traditions (Harte 1985, 3; R.C.S Walters papers, pers. comm. from Mr M Valentine).  
 ARNE: Rodwell, lost. 1811. From 'Rood Well' (Mills 1977, 76-7).  
 St Edward's Well, SY 925860? 1893. Corfe people tell of well at site of martyrdom, Melancholy Lane; possibly 'St Edward's Well, Wareham' in Hope (Hope 1893, 68).  
 ASHMORE: Washer's Pit, ST896117. 1890. Lady in white hanged herself

- above it, haunts it despite being saved. On parish boundary; lost barrow near haunted by 'gappergennies' (Watson 1890, 3, 19).  
 ASKERSWELL: Osgar's Well, SY 592926. 1086. Never failed (Mills 1986, 30; Hutchins 1863, 173-4).  
 BEAMINSTER: Mary Well, ST479012. 1692. Near St Mary's Church, possible minster (Eedle 1982, 39)  
 Wellwood Well, ST 482039. 1235. 200 yards from chapel site (Mills 1986, 152).  
 BERE REGIS: St Anchoret's/Holy Well, ST 847946? 15th cent. In hillfort, sulphuric, healing, chapel to St Mary or Anchoretta before 13th cent., and Fair with legendary origins from 1231, with proceeds to Tarrant Abbey, on September 21st to coincide with pilgrimage. Tale of golden table in well. Possible minster (Harte 1986, 85; Hutchins 1861, 135; Pitfield 1983, 1; Pitfield 1978, 33; Pickard-Cambridge 1886, 93).  
 BOTHERHAMPTON: Eye Well, ST 475927? 1893. East-running, used for eyes 1893 (Udal 1922, 173).  
 Wander Well, approx., SY 467912. Modern farm name.  
 BOURNEMOUTH: Head's Well, SZ 086160? Headswell Road and Close named from Heads, Redhill landowners c. 1900 (Mr S Hopkins, pers comm.).  
 King's Well, SZ 070959? Kingswell Road probably named from local landowner and magistrate, c. 1910 (*ibid.*).  
 BRADFORD ABBAS: Church Well, approx. ST 588145. Near church; once had pump; commemorative concrete block levelled 1972 (Garrett 1975, 131, and 1988, 103).  
 BRADFORD PEVERELL: White Well, SY 675916. Rich in lime carbonate in 1852 (Hutchins 1863, 415; Mills 1986, 155; Whitaker 1926, 103).  
 BRIDPORT: St Andrew's Well, SY 675916. 12th cent.? Chapel nearby, St Mary's Church probable minster; supposed ley line to St Andrew's Well, Ansford (Som); small alignment from St Mary's to Bradpole Barrow. Well still known (Pavord 1982).  
 BROADWEY: Jones's Hole, SY 656838 (Mills 1977, 201).  
 BUCKLAND NEWTON: Well, approx. ST 690070. 1920. At foot of hillfort, well with 'golden treasure'; foundations of house shook when it was raised (Waring 1977, 72). Rug Well, ST 686500? 1296. 'In campo de *Parva Minterne*', but this is Mills's site (Mills 1989, 253).  
 BURTON BRADSTOCK: Holy Well, SY 497479. 1843. Fourteen fields



The View from Dudsbury looking towards Longham. H.S.

Drawing 1; Copyright Bournemouth Natural Science Society.



The View from Ramsdown looking towards the Island.

Drawing 2; Copyright Bournemouth Natural Science Society.

- have Holwell in name; probably from *holh*, 'hollow' (Harte 1985, 3; Eastwood 1975).
- CASTELTON: Dimor Well, approx., ST 610183. 1843. From Dimor, house or hamlet (Mills 1989, 306).  
Seven Wells, approx. ST 614156. 1454. At Silverlake Farm (*ibid.*).
- CATTISTOCK 'SS Peter and Paul's Well', SY 592995. Victorian well in churchyard with inscribed cross.
- CERNE ABBAS: Hel Well, lost. 1897. Possibly from Helith, supposed name of Giant, or from *hel*, 'dark, covered' (Colley March 1899, 479; Marples 1981, 168).  
Pill Well, lost. 1897. Curative (Colley March 1899, 479).  
St Augustine's Well, ST 665156. c. 1175. Originally Silver Well, site of St Edwold's hermitage, later legend of St Augustine striking rock to form it; chapel over it once; all who will die in next year appear in it on Easter morning. Cured eyes; children dipped at dawn; grants husbands and fertility; wishing (ritual derived from novel?). Minster town (Colley March 1899, 479; Udal 1922, 158-9; William of Malmesbury, 185; Knowles & Hadcock 1971, 53).
- CHARMOUTH: 'White Lady Well', approx. SY 365937. 1988. Body of woman hidden in it; haunted by White Lady and monk (Underwood 1988, 37).
- CHICKERELL: Holy Well, SY 653836. 1086. On parish boundary (Mills 1986, 59).
- CHILCOMBE: Salt Well, lost. 1774. Saline, 'much frequented by pigeons'. Attempted spa 18th cent.; water has tenth of salt content of seawater. Chilcombe possibly derived from 'valley with spring' (Hutchins 1863, 739; Bailey 1982, 46; Mills 1986, 87).
- CHILD OKEFORD: Appletree Well, ST 838132. On modern OS. Locally reputed 'finest spring in Dorset', dried 1988 owing to building work.  
Holy Well, lost. 18th cent. (Mr. J. Harte, pers. comm.).
- CHILFROME: 'St Helen's Well', ST 589991. Spring by road or in field to north, 100 yards from chapel of St Helen founded 1297 (Hutchins 1863, 641).
- CHRISTCHURCH: Holy Well. (no map ref. due to owners' request). c. 1930. Holy because of use for baptismal water by Roman Catholic church, Burton.  
Monk's Well, SZ 167928. Monkswell Gardens a modern estate road, possibly from source of a large ditch. Minster town (Knowles & Hadcock 1971, 139).  
Purwell, approx. SZ 168931. 1300. 'Spring by pear tree' (Mills 1986, 124).  
Pit Well, lost. 1902. Near High St., nine feet deep; used for public supply. Unpaved and near sewer (Whitaker 1902, 22).  
Tutter's/Tatton's/Tutton's Well, SZ 168928 or 173923. 1893. Destroyed c. 1985 (first site) or c. 1955 (second) (Hope 1893, 68; Whitaker 1902, 19, 72).
- CORFE: Bleach Well, SY 951802. 956. At Blashenwell, 'spring for bleaching cloth' (Mills 1986, 38; Hutchins 1861, 526).  
Castle Well, SY 959823. 1774. Lady Banks threw treasure in it before fleeing in Civil War (Harte 1986, 20).  
Cold Well, SY 966822. 1510. At Challow Farm, from *cealdwiella* (Mills 1977, 10).  
Well, SY 958826. 1972. Romano-British holy well in enclosure, contained sheep's skull; site occupied c.90-c.410 (Hughes 1972, 76).  
St Edward's Well, SY 961823. c. 1310. Traditionally saint's body thrown in well, but all accounts mention springs. Cured eyes and agues. Cremation burial found nearby 1753 (D'Evelyn & Mills 1956, 114; Hutchins 1861, 499, 511; Bond 1885, 8).
- CORSCOMBE: Dogwell, approx. ST 537073. Farm name, may refer to stream.
- CRANBORNE: Holy Well, SU 071128. 1194 (as Holewella). Villa near; originally from *holhwiella*, 'hollow well', but thought of as holy in 1929. Minster supposedly had Celtic origins (Harte 1985, 5; Mills 1986, 89; Hutchins 1868, 381).
- DORCHESTER: Lewell, lost. 1650. From *hleowiella*, 'well with a shelter' (Mills 1977, 362).
- EAST ORCHARD: Holy Well, ST 842182. Locally regarded as holy; chapel was nearby in Chapel Close (Irvine 1989, 30, 32).
- EAST STOKE: Baker's Well, SY 857885. 19th cent. cf. Reginald Pistor, 1327 (Mills 1977, 141). Holy Well, SY 851879. 1811. Probably garden feature in Hethfelton estate; also Holy Stream and Holy Wood. Tale of ghost coach at bridge (Mr J. Harte, pers. comm.; Waring 1967, 331).
- EDMONSHAM: Chalybeate Spring, SU 076109. 1774. Used against obstructions (Hutchins 1774, ii 152).
- EVERSHOT: St John's Well, ST 573646. 1888. Source of Frome, near church (was St John's, now St Osmund's) (Mr J. Harte, pers. comm.).
- FIFEHEAD NEVILLE: Holy Well, ST 772113. 1903. Warm; villa nearby (Harte 1985, 5).
- FLEET: Bagwell, approx. SY 626816. Modern Farm name; cf. haunted Bagewell, at Fleet, Hampshire (Green 1974, 108-9).
- FONTMELL MAGNA: Healing well, ST 865169. 1978. Cured bowel disorders (Harte 1985, 5).  
Holy Well, ST 868181. 932. On parish boundary (Grundy 1936, 104, 107; Mills 1980, 103).
- FRAMPTON: Well, lost. Men working for landowner J.E. Brown found Neolithic mace-head in well in 1937 (Mr J. Harte, pers. comm.).
- GILLINGHAM: Holy Well, lost. 1788. Cf. Adam de Halewell, 14th cent. (*ibid.*)  
Satchell's Wells, lost. 1839. (Mills 1989, 23).
- GLANVILLES WOOTTON: Chalybeate Spring, ST 682085. Modern. In manor garden.
- GOATHILL: Eye and Healing Wells, 1791. Chalybeate springs either side of road; healing well a purgative (Collinson 1791, ii 363).
- HAMWORTHY: Attwell Spring, approx. SZ 975912. 1341. Bound-mark of Poole Liberty, originally Rodeclyffe atte welle, but 'a spring called Attwell' by 1774. Lost during Civil War, relocated on Arne peninsula to give Poole control of Harbour (Hutchins 1861, 87; Mills 1980, 21).
- HAZELBURY BRYAN: Holy Well, ST 747093. 1607 (Harte 1985, 5).  
Pyle Well, ST 752082. On modern OS. Cf. Thomas de la Pile, 1268; perhaps from *pile*, 'shaft', or *pyll*, 'stream' (Mills 1980, 103).  
Sulphur well, ST 752082. Previously unnoticed mineral well with worked stone about it.
- HERMITAGE: Lady Well, ST 651068. 19th cent. Austin friary founded 1314; church dedicated to St Mary. Nearby house called Remedy, perhaps referring to healing (Harte 1985, 5; Hutchins 1870, 468).
- HILTON: Allers Spring, approx. ST 767021. At Allers Farm (Mills 1989, 212).  
Bullocks Well, ST 762057? 1399. Originally Bollocashe, from *bullucaeisce*, 'ash-tree' (*ibid.*)  
Castle Lake Spring, ST 713026. Modern. Used for public supply.
- HINTON MARTELL: Pill Well, SU 018047. On modern OS. See Hazelbury Bryan for derivations.
- HOLWELL: Holy Well, ST 699121. 1188. Originally Holewala, from *holhwala*, 'bank in the hollow'; on parish boundary and near church. Used 'into living memory' for baptisms; cured eyes; excavated 1968 (Bord 1985, 157; Mills 1986, 59).
- HORTON: Roman holy well. SU 033073. Durotrigean pottery and 140 Roman coins found here in 19th century; possible minster (Harte 1986, 21).
- IBBERTON: St Eustace's Well, ST 786076. 1774. Originally Stachy's Well after Stachy family recorded 1340. Named St Eustace's after church dedicated lost. Near church, used for reservoir c. 1905 Hutchins 1870, 361-2; Hope 1893, 69).
- KINGTON MAGNA: Curdell Spring, approx. ST 765228. 1911. High chlorine content (Whitaker 1926, 212).  
Mitchell's Well, ST 767232. 1911. In churchyard wall; shared mineral properties of above (*ibid.* 27).
- KINSON: Eye Well, approx. SZ 083963. 1935. Cured eyes; by main road (Dacombe 1935, 117-78; Lands 1972, 61).
- LANGTON MATRAVERS: Knavesell, SZ 002811. From name Kyna, or *kynefa*, 'servant' (Mills 1977, 135-6).
- LITTON CHENEY: Roman Well, SY 555907. 1965. Name confirmed by discovery of Romano-British settlement, 1965; now dried owing to building of water plant, and not known locally (Bailey 1982, 46).  
St Peter's Well, SY 552907. 1774. Close to church, possible liturgical use (Hutchins 1863, 750).
- LODERS: Well, site unknown. 1967. Haunted by White Lady, in cottage garden (Waring 1977, 70).
- LONG BREDY: Gorwell, SY 576868. 1290. 'Dirty spring'; for Hutchins the scene of Druidic sacrifices (Hutchins 1863, 752; Mills 1986, 78).  
St Peter's Well', SY 560905. Modern. Near church, possible liturgical use, locals deem it a pagan well.
- LYDLINCH: Petrifying spring, ST 772116. 1976. Haunted by ghost of drowned child; suicide here in recent years (Knott 1976, 78).
- LYME REGIS: Leper's Well, SY 321922. 18th cent. Healing, sulphuric; site of hospital chapel to St Mary and Holy Spirit, 1336. Called a 'grotto' in 18th century (Penn 1980, 73; Mr J. Harte, pers. comm.; Wanklyn 1927 1927, 124, 218).  
St Andrew's Well, SY 334926. 15th cent. St Andrew's Chapel here ruined by 1610; used for town supply (Roberts 1823).
- LYCHETT MATRAVERS: Warm Well, SY 949962. Farm name (Mills 1977, 32).
- MAPPOWDER: Barbers Well, site uncertain. 1655 (as Barbers Hayes Well) (*ibid.* iii 263).  
Morning Well, lost. 20th cent. Behind church, did not fail in 1921 drought (Harte 1985, 7).
- MARNHULL: East Well, ST 785091. 13th cent. Destroyed (Mills 1989,

- 168).  
 Pill Well, lost. See Hazelbury Bryan for derivations.  
 MELBURY BUBB: Oily/Ailen/Holy Well, ST 595044. 1774. On parish boundary, produced healing oil; 'holy' since arrival of railway, but chapel was nearby. Not the spring at Burl Farm (Hutchins 1863, 645; Mr J. Harte, pers. comm.; Good 1987, 71).  
 Woolcombe Well, approx. ST 594052. 1086. From *wiellacumb*, 'valley with spring' (Mills 1986, 162).  
 MILTON ABBAS: Lad's Well, approx. ST 802019. 1771. Lad's Well Mead, destroyed when house built (Wansborough n.d.).  
 Lady Well, approx. ST 800016. 1771. Minster founded 933 (Knowles & Haddock 1971, 55).  
 Healing Well, lost. 1684. Local reputation for curing gout and purging (Whitaker 1926, 100).  
 St Catherine's Well, approx. ST 808022. 1893. Near chapel; widhing; girls perform rites here (Hope 1893, 67).  
 MINTERNE MAGNA: Lady Abingdon's Well, ST 663036. On modern OS. Cf. Mary, widow of John Churchill, married Montagu, Earle Abingdon, 1719 (d. 1757) (Hutchins 1879=0, 471).  
 MORDEN: Whitwell SY, SY 902945. 1422, as Whytewell; refers to position at foot of chalk hill (Mills 1986, 70).  
 MOSTERTON: Pot Well, approx. ST 445047. Farm name.  
 MOTCOMBE: 'Holy spring', ST 826226. Near probable Romano-British temple site, on parish boundary (Henig & Keen 1984, 147).  
 Stickle Well, ST 862241?. 1609. From *sticol*, 'steep banks' (Mills 1989, 57).  
 NETHERBURY: Ellwell, SY 471969. 1332. Ella's or 'elder well' (Mills 1986, 70).  
 Pen Well, approx. SY 496983. Hill name.  
 NETHER COMPTON: Stony Well, ST 605167. 1244 (*ibid.*, 135).  
 NORTH WOOTTON: Warm spring, ST 656147. 1774. Near old church (Hutchins 1870, 303).  
 OBORNE: Blind Well, lost. 1839. 'Overgrown spring' (Mills 1989, 355).  
 Bragge's Well, ST 655185? 1870. Chalybeate; cf. C. Bragge, vicar 1589-1639 (*ibid.*).  
 Castle Well, ST 647168. 1943. Contained silver treasure (Harte 1986, 70).  
 OKEFORD FITZPAINE: Cold Well, ST 796092? 1575 (Mills 1986, 33).  
 Cookwell Spring, ST 808108. On modern OS, now used for supply.  
 OWERMOIGNE: Bubble Spring, SY 779803. On modern OS.  
 PARKSTONE: Old Smuggler's Well, SZ 064897. Modern - Branksome Chine a smugglers' route (Drapper 1988, 122).  
 PIDDLETRENTHIDE: Armswell, SY 732034. 1225. From name Eormen. Possibly refers to stream, not well (Mills 1986, 29).  
 PORTESHAM: Holy Well, SY 611844. 1024. On parish boundary (Hutchins 1863, 757; Mr J. Harte, pers. comm.).  
 Waddon Spring, SY 611858. On modern OS.  
 PORTLAND: Culver Well, SY 684693. 1608. From *culfre*, 'pigeon'. Near Mesolithic settlement (Morris 1987, 9; Mills 1977, 21-2).  
 Fortune's Well, approx. SY 686735. 1608. Wishing well, sealed up 1914 (Morris 1987, 8, 88, 120).  
 Maiden Well, SY 684735. c. 1897. Destroyed after typhoid outbreak (*ibid.*, 106).  
 Mery Well, SY 683737. c. 1900. Pond filled c. 1902-4 (*ibid.*, 107).  
 POWERSTOCK: 'Devil's Well', lost. 1965. Man had encounter here with Devil who stole his soul by extinguishing a candle in water (Waring 1977, 71).  
 'Red Water Well', lost. 1965. Dyed by blood or red petticoat of drowned unfaithful wife (*ibid.*).  
 POXWELL: Poca's Well, SY 737839? 897. Or from *pocca*, 'frog'; *Pocaageswealla*, 'Poca's steep hill'; locally Puck's Well. Hutchins mentions spring in village centre (Mee 1967, 154; Hutchins 1861 407; Mills 1977, 143-4).  
 POYNTINGTON: Greenland Spring, ST 634211. On modern OS; beneath hawthorn tree  
 PUDDLETOWN: White Well, lost. 1270. At foot of chalk hill (*ibid.*, i 329).  
 PULHAM: Pelwell, approx. ST 800082. Farm name.  
 PURSE CAUNDLE: Well at manor house, ST 695177. 1985. Curative, fairy here (Harte 1985, 6).  
 St Peter's Well', ST 696176. Churchyard sulphuric (?) spring, possible liturgical use.  
 RADIPOLE: Stony Spring, ST 665507. 1840. On parish boundary, destroyed c. 1965 (Mills 1977, 242).  
 RYME INTRINSECA: Well, lost. 1935. At Court Hill, traditionally hides treasure (Dacome 1935, 17-18).  
 SANDFORD ORCAS: Culver Hole, ST 622213. On modern OS. From *culfre*, 'pigeon'  
 SHAFESBURY: Abbey Well, ST 864226. 1840 (Mills 1989, 151).  
 Bores Well, ST 828251? 1461. Possibly in Well Lane, Enmore Green (*ibid.*, 147; Hutchins 1868, 5).  
 Boywell, ST 859220. 958. From *boka*, 'arch'. Man charged *temp.* Edward IV for fouling it (Grundy 1938, 75; Hutchins 1868, 6); Mills 1989, 148).  
 Holy Well, ST 862227. 1482/3. Minster founded c. 650 (Hutchins 1868, 6; Knowles & Haddock 1971, 255).  
 Houndes Well, ST 859220 *Temp.* Edward IV (Hutchins 1868, 6).  
 Laundry Well, ST 860226? 17th cent. Probably well in Pump Court, site of St Andrew's Chapel and laundry for nuns (*ibid.*, 5; Sydenham 1959, 82).  
 Peryshers Spring, ST 860223? 1447. Suggested site is on parish boundary (Mills 1989, 158).  
 Pilewell, ST 864229? 1385. See Hazelbury Bryan for derivations (*ibid.*).  
 Radwell/Redwell, ST 865229? 1299-1300. Cured eyes; bound-mark of Gillingham Forest; filled in 1860. Chalybeate. focus of Byzant ceremony, which dates from at least 1364 (Roscoe 1952, 35; Grosvenor 1873, 18; Legg 1987, 120).  
 Seete Well, ST 865229. 1447. From *seetre*, 'sewerage', or *sceat*, 'corner of land' (Mills 1989, 147; Hutchins 1868, 5).  
 (n.b. also a 'spring in a grotto' in Old Manor House gardens (Sydenham 1959), 83)).  
 SHERBORNE: Holy Well, lost. 1427. Cf. Holiwell Gate, 1600. Minster founded c. 672, Celtic church before that (Mills 1989, 374; Knowles & Haddock 1971, 57; Haslam 1980, 216).  
 New Well, ST 635168. 1437. Culverted to Conduit in 16th cent. (*ibid.*, iii 147; Leland 1869, ii 48).  
 Sulphur well, lost. 1774. Cured mange and itch in animals (Hutchins 1870, 297).  
 Whynnys Well, ST 633132. 1466. Also Horsecastle Spring, 1614; but not derived from St Winifred (Mills 1989, 361, 376; Fowler 1951, 194, 230).  
 SHILLINGSTONE: Seven Wells, lost. c. 1270 (Mills 1980, 242).  
 SILTON: Weaver's Hole, ST 774306. On modern OS. Traditionally used by weavers to treat cloth.  
 Silver Well, ST 782295? 1837 (Mills 1989, 67).  
 SPETISBURY: Barnwell, ST 918021. 1886. On island in Stour; from *baunwiella*, 'slayer's spring' (Mr J. harte, pers. comm.).  
 Water Gunnel Spring, ST 902029. 1926. Now feeds watercress beds (Whitaker 1926, 17).  
 STALBRIDGE: 'St Mary's Well', ST 734180. 1540. Spring in church wall; mentioned by Leland. Possible liturgical use (Harte 1985, 7).  
 STEEPLE: Bride Well, SY 912811? 1811. Possibly transferred name from London (*ibid.*, 8).  
 STINSFORD: Heedless Williams's Pool, SY 731913. 1967. Coach vanished here (Waring 1967, 331).  
 STOKE ABBOTT: Berie Well, ST 453007. c. 1520; Abbot of Sherborne then granted churchwardens land to make a way to it (Hutchins 1863, 149).  
 STOURTON CAUNDLE: Well, ST 718146? 1967. Ghost coach vanishes here (Waring 1967, 331).  
 STUDLAND: Lambert's Well, lost. 1840 (Mills 1977, 51).  
 STURMINSTER NEWTON: Well, approx. ST 783133. c. 1820. Well with treasure guarded by ghost cat; Iron Age fort/castle nearby (Harte 1986, 76). Also tale of tunnel to Fiddleford Mill.  
 SWANAGE: Best's Well/the Boil, approx. SZ 028788. 1910. Leeches taken from stream for medical use (Hardy 1910, 86-7).  
 Boil Well, SZ 033787. On seashore; not to be identified with above (Mr D. Lewer, pers. comm.).  
 Frog Well, SZ 029788. 1910 (Hardy 1910, 86).  
 Owl Well, SZ 020808. 1236. Ulwell not from 'holy well', as Hutchins thought. Saxon burial ground nearby (Mills 1977, 148; Hutchins 1861, 672; Cox 1988).  
 'St Mary's Well', SZ 027788. Spring under churchyard, possible liturgical use.  
 SYMONDSBURY: Eye Well, SY 446936. 1892. Eyes cured when morning sun first touched water; now dry due to building work (Udal 1922, 173, 178).  
 Queen Hester's Well, SY 458909. c. 1756. Shown on map of coastal defences of that date.  
 TARRANT MONKTON: St Anne's Well, ST 945091. House-name. church dedicated to All Saints.  
 TOLLER PORCORUM: Mary Well, SY 555995. On modern OS. Locals confuse it with fountain at Lower Kingcombe; church dedicated to SS Andrew and Peter.  
 TRENT: Holy Well, ST 599195. 1839. Local tradition of ley line from it to Chalice Well, Glastonbury (Mr J. Harte, pers. comm.).  
 UPWEY: Healing Well, SY 671848. 1212 (Mills 1977, 70).  
 Wishing Well, SY 660852. 1774. Close to Church, source of Wey, but wishing ritual seems to derive from mid-Victorian novel

- (Harte 1985, 6; Hutchins 1863, 840; Scott n.d., 3 Smart 1874).  
 WAREHAM: All Hallows Well, SY 923875. 1545. Next to All Hallows Chapel; minster founded c. 672 (Harte 1985, 7; Knowles & Hadcock 1971, 484).  
 WARMWELL: Warm Well, SY 753860? 1086. Was thermal (Mills 1986, 150).  
 WEST COMPTON: Woolcombe Well, SY 553954. 1086. 'Spring in a valley'; now used for spring water bottling plant (*ibid.*, 177).  
 WEST KNIGHTON: Lewell, approx. SY 732885. 1086. See Dorchester for derivation (*ibid.*, 98).  
 WEST LULWORTH: Beaghill's Well, approx. SY 829830. 1279 (Mills 1977 129-30).  
 WEST STOUR: Chesters Well, ST 782237. 1842. Near villa site (Ross 1984, 118).  
 WEYMOUTH: Long Well, lost. 1619. Common well of town; cf. Atte Welle, 1323 (Mills 1977, 256).  
 Rodwell, SY 673783. 1667. From *hreodwiella*, 'reedy spring' (*ibid.*).  
 Tim's Well, lost. 1582 (as Tems Well); called Thames Well 1663 (*ibid.*, 259).  
 Wilson's Well, lost. 1646 (*ibid.*).  
 WHITCHURCH CANONICORUM: Cockwell, SY 397948. Farm name; from Cocca? Filled in c. 1980.  
 Holy Well, SY 395954. Near church, reputedly built by Victorian benefactress, dressed at village Fete (Rev. J. Stow, pers. comm.).  
 Loscombe Well, SY 404947. On modern OS.  
 St Whyte's Well, SY 398937. c. 1625. Hermit's well, cured eyes, restored and consecrated by Bishop of Salisbury 1985. Periwinkles here called St Whyte's Eyes (Hutchins 1863, 252; Gerard 1732, 16-17).  
 WINTERBORNE ABBAS: Wherry Spring, SY 608902. 1774. Will not let people see it burst. From *hwer*, 'bubbling'; *werian*, 'weir'; or *werig*, 'cursed' (Hutchins 1863, 196; Trask 1941; Wainwright 1942).  
 WINTERBORNE KINGSTON: Roman holy well, SY 852971. c. 1890. Roman well at waystation with offerings including bronze plate inscribed with hare (*Antiquaries Journal* 33 (1953), 74).  
 WINTERBORNE MONKTON: Pool, SY 681880. 1967. Wayside pool in which ghost coach vanishes (Waring 1967, 331).  
 WOOL: Well, SY 845861. 1086 (Mills 1986, 161; Hutchins 1861, 348).  
 WOOLAND: Gorwell, ST 774069? 1384. From *gara*, 'spur of land'; perhaps the village pump (Mills 1989, 237).  
 WORTH MATRAVERS: Culver Well, SY 976797. 1811. From *culfre*, 'pigeon' (*ibid.*, 67).  
 Maidenwell, SY 974774? 1305 (Harte 1986, 61).  
 WYKE REGIS: Lewell, lost. 1582. See Dorchester for derivation (Mills 1977, 271).  
 Manwell, lost. 1582. 'Common well', now Mandeville (*ibid.*, 270).

## BIBLIOGRAPHY

- Bailey, C.J. 1982, *The Bride Valley*, Dorchester  
 Bond, T. 1885, *History and Description of Corfe Castle*  
 Bord, J. & C. 1985, *Sacred Waters*  
 Colley March, H. 1899, 'Dorsetshire Folklore Collected in 1897', *Folk-lore* 1899, p. 479  
 Collinson, J. 1791, *The History of Somersetshire*, Bath  
 Cox, P.W. 1988 'Seventh Century Inhumation Cemetery at ... Ulwell', *Proceedings of the DNHAS* 110 (1988), 37-47  
 Dacombe, M.R. 1935, *Dorset Up Along and Down Along*  
 D'evelyn, C. & Mills, A.J. 1956, *The South English Legendary*  
 Draper, J. 1986, *The Complete Guide to Dorset*, Stanbridge  
 Eastwood, J. 1975, *The Burton Bradstock Book*, Burton Bradstock  
 Eedle, M.E. 1984, *History of Beaminster*, Chichester  
 Fowler, J. 1951, *Medieval Sherborne*, Dorchester  
 Garrett, E. 1975, *The Story of Bradford Abbas*, Bradford Abbas  
 Garrett, E. 1988, *A History of Bradford Abbas*, Stanbridge  
 Gerard, T. 1732 [1625], *A Survey of Dorsetshire*  
 Good, R. 1987, *The Lost Villages of Dorset* (2nd edn.), Stanbridge  
 Green, A. 1974, *Our Haunted Kingdom*  
 Grosvenor, T. 1873, *Motcombe Past and Present*, Sherborne  
 Grundy, G.B. 1936, 1938, 'Saxon Charters of Dorset', *Proceedings of the DNHAS* 58 (pp. 103-37), 60 (pp. 75-90)  
 Hardy, W.M. 1910, *Old Swanage, or Purbeck Past and Present*, Dorchester  
 Harte, J. 1985, 'Dorset Holy Wells', *Source* 1 (pp. 1-7) - 1986, *Cuckoo Pounds and Singing Barrows*, Dorchester  
 Haslam, J. 1980, *Anglo-Saxon Towns in Southern England*  
 Henig, M. & Keen, L. 1984, 'Figurines from Dunctiffe Hill, Motcombe', *Proceedings of the DNHAS* 106 (pp. 147-50)  
 Hope, R.C. 1893, *The Legendary Lore of the Holy Wells of England*

- Hughes, M. 1972, 'A Sacred Well at Norden', *Proceedings of the DNHAS* 94 (pp. 76-7)  
 Hutchins, J. 1774, *The History and Antiquities of the County of Dorset* (1st edn.); 2nd edn., 4 vols: vol. 1 (1861), vol. 2 (1863), vol. 3 (1868), vol. 4 (1870)  
 Irvine, P. 1989, 'The Goddess at the Well', *Dorset County Magazine*, Apr. 1989 (pp. 30-32)  
 Knott, O. 1976, *Tales of Dorset*, Dorchester  
 Knowles, D. & Hadcock, J. 1971, *Medieval Religious Houses of England and Wales*, Oxford  
 Lands, S.J. 1972, *Old Kinson*, Swanage  
 Legg, R. 1987, *Mysterious Dorset*, Milborne Port  
 Marples M. 1981, *White Horses and Other Hill Figures* (2nd edn.), Gloucester  
 Mee, A. 1967, *The King's England: Dorset* (2nd edn.)  
 Mills, A.D. *Place Names of Dorset*, 3 vols.: vol. 1 (1977), vol. 2 (1980), vol. 3 (1989), Cambridge - 1986, *Dorset Place Names, their Origin and Meaning*, Wimborne  
 Morris, S. 1987, *A History of Portland*, Stanbridge  
 Pavord, A. 1982, 'The Ley Line Puzzle', *The Unexplained* 23 (pp. 450-53)  
 Penn, K. 1980, *Historic Towns in Dorset*, Dorchester  
 Pickard-Cambridge, O. 1886, 'Woodbury Hill', *Proceedings of the DNHAS* 8 (pp. 90-93)  
 Pitfield, A.P. 1978, *The Book of Bere Regis*, Bere Regis - 1983, *Bere Regis Church*, Dorset, Bere Regis  
 Roberts, G. 1823, *A History of Lyme Regis and Charmouth*  
 Roscoe, E. 1952, *The Marn'll Book*, Gillingham  
 Scott, E. n.d., *Upwey Wishing Well*, Upwey  
 Smart, Hanley, 1874 *Broken Bonds*  
 Sydenham, L. 1959, *Shaftesbury and Its Abbey*, Lingfield  
 Trask, H.E. 1942, in *Somerset & Dorset Notes and Queries*, 1942, pp. 253-4  
 Udal, J.S. 1922, *Dorsetshire Folklore*, Dorset  
 Underwood, P. 1988, *Ghosts of Dorset*, St Teath  
 Wainwright, C.R. 1942, in *Somerset & Dorset Notes and Queries* 1942, p. 288  
 Wanklyn, C. 1927, *Lyme Regis: A Retrospective*  
 Wansborough, R. n.d., *The Story of Milton Abbas*, Milton Abbas  
 Waring, E. 1967, 'The Phantom Coach in Dorset', *Proceedings of the DNHAS* 89 (pp. 331-2)  
 Waring, E. 1977, *Ghosts and Legends of the Dorset Countryside*, Tisbury  
 Watson, E.W. 1890, *Ashmore*  
 Whitaker, W. 1902, *The Water Supply of Hampshire*  
 Whitaker, W., & Edwards, N. 1926, *Wells and Springs of Dorset*  
 William of Malmesbury, 1870, *Gesta Pontificum Anglorum*, ed. N.E.S.A. Hamolton (Rolls Series)

## THE BELL OF BOTHENHAMPTON: THE TRAVAILS OF A SEVENTEENTH-CENTURY CHURCHWARDEN

J.H. Bettey

A dispute which came before the Exchequer Court at Westminster in 1690 reveals in remarkable detail the difficulties faced by the churchwarden of Bothenhampton, and the problems which could be encountered in carrying out the many duties of that office.<sup>1</sup> The story begins on Easter Monday 1689 when Thomas Young, a carpenter of Bothenhampton was elected churchwarden of the parish for the ensuing year. The custom at Bothenhampton was to have only one churchwarden each year. Thomas Young was a poor man with a wife and family; as churchwarden he was enthusiastic and energetic, but suffered from two grave disadvantages. One was that he was totally illiterate and the second was that he was too ready to trust the reliability and integrity of those about him, few of whom, including his fellow-parishioners of Bothenhampton, emerge with any credit from the story. Soon after his election, a visitation was held by the Chancellor of the diocese, Dr Henry Jones, who found that Bothenhampton church was in very bad repair with a leaking roof and defective bells, and he ordered that this state of affairs should be rectified forthwith. Believing that he had the support of his fellow-parishioners, Thomas Young organised major repairs to the church building. As part of the evidence presented during the court case, a list of his expenditure during his year of office was provided by Young. This shows that as well as the normal payments

for bread and wine, for vermin caught in the parish and for a remarkably large number of travellers who sought charity, there was large expenditure on repairs to the church. Thomas Young himself worked there as a carpenter for 10 days, charging 14s 0d for his labour, and there were numerous payments for stone, timber, lime, lead, laths and nails, while a mason, plumber and glazier were also employed. Although Thomas Young had received only £1 4s 6d from the previous churchwarden, he spent more than £17 0s 0d on building repairs during his year of office. But this was far from being the end of his expenditure, for he also decided that the largest of the three bells in the tower should be re-cast since it was 'crack't, lame and defective'.

The bell was taken down from the tower and at considerable expense was sent to be re-cast by Thomas Purdue, the well-known bellfounder at Closworth, just over the county border in Somerset. Purdue had agreed to do the work for £12 0s 0d plus 1s 2d for every additional pound of metal added to the bell during re-casting. In the event 90lbs of metal were added which cost £5 5s 0d, while Purdue also re-cast the brass mountings of the bell for a further £1 1s 6d.

When the work was completed the bell was returned to Bothenhampton and replaced in the tower. It was at this point that Thomas Young's problems began. He claimed to have consulted his fellow parishioners about all the work he had authorised, but when he tried to collect money from them to pay for it many of them refused on the grounds that the work was far too ambitious and expensive. Although the total cost of all the work amounted to more than £35 0s 0d, Young was able to collect less than £22 0s 0d from the parishioners, and found himself unable to pay Thomas Purdue for the bell. Purdue put the matter into the hands of John Munden, an attorney, who was variously described as living at Ryme Intrinseca or Beer Hackett. Munden sued Thomas Young for the money owed to Purdue, and Young was arrested by the sheriff and imprisoned in the county gaol at Dorchester. Not one of the parishioners of Bothenhampton, on whose behalf Young had incurred the expenses, came forward to stand surety for him, and he remained in prison for five weeks. As part of the evidence which he later presented to the Court of the Exchequer, Young provided a list of the large amounts he was obliged to spend on food, drink, heating and fees while in prison.

The full account of his expenditure was as follows:

Schedule of Costs and Charges when in Prison,	
Spent when I was under arrest	7s 0d
Spent at Dorchester before I was in prison	6d
In prison for Garnish	3s 0d
An Attorney a fee for Advice	3s 4d
Cost the first week for Dyet	9s 11d
Payd cost the second weeke	10s 0d
For beer and wood the two first weekes	7s 0d
For my dyet the third weeke	9s 0d
The same weeke for fire and beer	4s 3d
The 4th weeke in charges	14s 9d
For a keeper to come home with me to see and enquire whether the parishioners would pay their moneys	£1 0s 0d
In Expenses on the road	2s 4d
The 5th weeke's expenses	15s 8d
For a copy of the warrant	1s 0d
For a horse to go to Blandford	2s 0d
In Lodging fees in prison	£1 17s 6d
Spent the Munday morning before I could get out of prison	3s 4d
Paid the undersheriff for my discharge	2s 0d
For writts and warrants and Bailiffs fees and labour	£4 0s 0d
For my losse of tyme for 5 weekes imprisonment	£1 10s 0d
Layd out for a Messenger to go twice to Closworth and his Expenses	10s 0d
In other expenses about sending back the bell	£1 0s 0d
<b>TOTAL</b>	<b>£14 9s 7d</b>

Part of the expense was incurred in paying one of the gaolers to go with him to Bothenhampton where he pleaded unsuccessfully with the

parishioners to provide him with the necessary money to pay the church debts. Further expenses came from sending a vain appeal for help to the Archdeacon's court at Blandford Forum, and from sending a messenger to Closworth to negotiate with Thomas Purdue. It was these negotiations which eventually secured his release, for Purdue agreed to drop the suit against Young if the bell, said to be worth £60, was returned to his bell foundry at Closworth. It seems clear that Purdue wanted to keep the bell as a bargaining counter to use against the parishioners at Bothenhampton, but he managed to persuade the gullible churchwarden that the re-cast bell 'was thought to be too high and loud in tone for the other bells in the tower' and that it should be sent back to be made flatter in tone. Young's naive belief was that when the bell was newly tuned the parishioners would be so pleased with it that they would readily contribute the money for it.

Young agreed to return the bell and was duly released from prison. The bell was collected by Thomas Knight of Closworth, yeoman, who was Purdue's son-in-law. He took the bell to Beaminster and left it at the house of Susan Ford, widow. Later it was collected by Purdue and taken to Closworth.

Young's troubles were, however, far from over. His term of office as churchwarden now came to an end, and on Easter Monday 1690 Joseph Hardy of Bothenhampton was elected in his place. Joseph Hardy immediately began a suit in the Court of the Exchequer on behalf of the parishioners of Bothenhampton, claiming that Thomas Young had 'entered into a combination and confederacy' with Thomas Purdue and Thomas Knight of Closworth, Susan Ford widow and William Collins carrier of Beaminster, John Munden of Ryme Intrinseca and several other people to steal the bell from Bothenhampton church. The Exchequer Court appointed a commissioner, John Minterne, to take statements from all the parties at Yetminster on 7 & 17 October 1690, and it is from their lengthy evidence that the whole story emerges. In his statement Thomas Young, understandably, complained bitterly about his fellow parishioners who had so badly left him in the lurch, remarking that they were 'both Rich and Vexatious and by Litigious Suits are resolved to ruine and undo him'. He described how 'burthensome his Office hath been to him and how many long and tedious journeys he had taken about the same' and he had 'hoped to have had rather thanks for his paynes rather than to have been put to such extreame costs ...'.

The Court was obviously impressed by Young's evidence and by his account of the tribulations he had suffered, and found in favour of the defendants, awarding them costs against Joseph Hardy and the parishioners of Bothenhampton. This was still not the end of the matter, however, for in July 1693 Thomas Young complained to the Court of Chancery that he had not received his portion of the costs, and that because he was illiterate he had been persuaded by John Munden, the attorney, to put his mark to a document appointing Munden to defend him in the earlier hearing before the Court of the Exchequer. Now he had again been arrested and imprisoned for failing to pay Munden's fee.<sup>2</sup>

During the nineteenth century much of the old church at Bothenhampton was demolished, and a new church was built nearby. The bell which was at the centre of so much trouble survives in the new church as an eloquent witness to the episode; it bears the names of the two principal protagonists, Tho. Young and Jo. Harde, C[hurch] W[ardens]. It also bears the initials of the bell-founder, Thomas Purdue, and the date of its re-casting, 1689.<sup>3</sup>

The tribulations faced by the unfortunate Thomas Young were summed up by Susan Ford of Beaminster, who roundly condemned the parishioners of Bothenhampton for their tight-fisted refusal to reimburse their churchwarden; she declared that they acted out of malice towards him and that Young was 'but a poore man and scarce able to defend himself against such a body of Confederates'.

#### References

1. Public Record Office, E112/641, Exchequer Bills and Answers, William & Mary, Dorset 9, Michaelmas 1690.
2. P.R.O. C8/355/237, Complaint of Thomas Young of Bothenhampton, carpenter, 10 July 1693.
3. J.J. Raven, 'The Church Bells of Dorset', *Dorset Natural History and Antiquarian Field Club Proceedings*, XXX, 1904

# NATURAL HISTORY REPORTS

## GEOLOGY

Michael House

Three important publications on Dorset geology became available in 1992. Chief of these is a completely new Bournemouth *Memoir*, replacing that by Clement Reid published in 1898, so nearly a century ago. *Geology of the country around Bournemouth*, by C.R. Bristow, E.C. Freshney and I.E. Penn of the British Geological Survey (BGS) is published by HMSO and comprises 116 pages with abundant diagrams, many in colour, and colour photographs. Although dated 1991 it was not available at local agents until February 1992. It is a major contribution to the knowledge of the geology of eastern Dorset covered by geological Sheet 329. The area embraced includes Christchurch and Highcliff and north to Burley in the east, and Poole Harbour and north to Bradbury Rings in the west. There is a good discussion of the underground geology, now well known from several deep boreholes, and several structure contour maps are given on the buried Mesozoic units. Much information is included on the Wytch Farm Oilfield, and a photograph of the nodding donkeys forms a frontispiece, but a thorough account is not given because of confidentiality: the new developments in Poole and Bournemouth Bays are not mentioned. For most locals acquainted with the geology the greatest interest will lie in the description and interpretation of the splendid coastal outcrops from Canford Cliffs to Hengistbury Head, and the detailed cliff profiles provided. From the resurvey a very refined (and complicated) stratigraphical terminology of the early Tertiary Beds (Palaeogene) results which, even on the broad scale, has not reached the standardisation one might have expected. Thus the Geological Society of London's Tertiary correlation chart of 1978 recognised successively the Reading, London Clay, Poole and Bournemouth Formations but these formal terms were not used by the BGS in their work *The Hampshire Basin* (by R.V. Melville and E.C. Freshney, 1982, HMSO) where a higher Barton Formation was used. In the new *Memoir* whilst a yet higher Headon Formation is adopted, the earlier formation units are mostly discarded in favour of larger Bracklesham and Barton Groups. Given the excellent illustration in general it is sad that none of the fossil faunas and floras are illustrated, particularly some of the famous plant remains. Perhaps the most important additional contribution is the discussion on the ancient river terraces, and some fourteen of these have been mapped and correlated, a major extension of the classic work of J.F.N. Green and others. There is even a map of the dolines in the Corfe Mullen-Lytchett Matravers area. This is a major source of reference to Dorset geology and bears witness to the extremely high standard of work associated with BGS.

Available separately is the accompanying 1:50,000 Series map, *Bournemouth, Sheet 329, Solid and Drift*. This map follows the new style of BGS maps in which, in addition to the folded geological map, an equal area gives a stratigraphical column, sections, and other explanatory material. The details and quality of the mapping subdividing the Tertiary, and especially the distinguishing of the terrace levels is particularly noteworthy.

The third publication of note is *The coastal landforms of West Dorset*, edited by R.J. Allison, and Geologists' Association Guide No. 47, published in 1992 and available from the Association (c/o The Geological Society, Burlington House, Piccadilly, London W1V 0JU). With 134 pages of text, references and a glossary, this is a useful complement to the *Geology of the Dorset Coast* by the writer, also in the Geologists' Association guide series. There is a general discussion of the geology, and then specific accounts of the landslips of the Lyme Regis and Charmouth area by the editor. Clifford Embleton reviews the denudation chronology. Helen Rudkin gives a detailed account of Stonebarrow, indicating dates for the major slips. Black Venn is similarly dealt with by Alexander Koh. Aspects of landslips in urban areas are covered by E. Mark Lee and Malcolm Bray gives a review of the Chesil Beach. The glossary is particularly helpful. This guide thus concentrates on West Dorset and is a useful addition to an earlier guide, *Classic coastal landforms of Dorset*, by D. Brunson and A. Goudie, Geographical Association, Landforms Guide No. 1 (1981) which gave emphasis on the east Dorset coast.

## RAINFALL 1992

D J Paxman

Dorset's general rainfall in 1992 amounted to 889 millimetres, only 3 per cent less than the 1951-1980 average of 915 millimetres, and the largest total since the 1014 millimetres of 1986.

### MONTHLY SUMMARY

	Rainfall (mm)	Average 1951-80	% of average	Number of days with thunder
January	35	97	36	0
February	49	73	67	0
March	60	70	86	4
April	96	50	192	1
May	16	62	26	2
June	35	55	64	1
July	56	56	100	3
August	125	73	171	8
September	97	85	114	3
October	50	87	57	6
November	161	103	156	3
December	110	102	108	1

Frome St Quintin (1111 millimetres) was the wettest station and Weymouth (696 millimetres) the driest.

### GENERAL REPORT

In spite of the wettest April since 1966 and the wettest August since 1960 the aggregate rainfall through the first eight months of the year was usually about two thirds of average. It was in the last four months of the year that this situation was redressed. The wet August was followed by the wettest September since 1981, and November was the wettest since 1974. Although 1992 ended as the sixth successive year with less than average rainfall the deficit was a very small one.

Thunderstorms occurred on 32 days, compared with an average of only 22 days over the previous ten years. There was no measurable snowfall in Dorset.

### HEAVY FALLS OF RAIN

#### June 30th

Through much of June a ridge of high pressure extended NE from the Azores anticyclone into the Norwegian Sea. Although winds over the British Isles were often from N to NE it was the warmest June since 1976. The settled spell came to an end when a thundery depression moved up the English Channel on 30th. A thunderstorm over north Dorset gave a fall of 61 mm at Thornford, south of Sherborne. This was Dorset's heaviest fall of the year in a single rain-day. However, the storm was localized. At only one other of our stations could the day's rainfall be termed heavy (38 mm at East Stour). Southwards the rain diminished rapidly to a mere 4 mm at Weymouth.

#### September 18th

A shallow thundery system developed off the western coast of Morocco on 15th and moved north then north-east. By noon on 18th the centre was over the east Midlands of England. There were thundery outbreaks over Dorset on both 17th and 18th. On the latter day a broad swathe of the county from Sherborne to Purbeck had 25 mm or more rain (Milton Abbas 41 mm, Dewlish 32 mm). Near Warminster, Wilts, 95 mm fell at Upton Scudamore.

#### September 22nd

On September 19th a small disturbance in mid Atlantic began to develop in extent, though without much deepening, as it moved towards the British Isles. By 22nd it was a broad, complex, but shallow depression, centred over E and SE England, and with most of

RAINFALL IN DORSET 1992

STATION	OBSERVER OR AUTHORITY	GREATEST FALL IN 24 HOURS		DAYS WITH 0.2 mm OR MORE	DAYS WITH 25 mm OR MORE	DEPTH OF RAINFALL IN MILLIMETERS													Total for Year
		Depth	Date			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec		
Bournemouth (Alderney Reservoir)	Bournemouth Water	26.0	14/11	163	2	21.3	36.3	50.8	94.2	24.6	26.5	64.8	102.3	90.3	52.2	168.3	96.6	828.2	
Bournemouth (Hurn Airport)	Met Office	25.1	25/11	168	1	20.2	31.8	60.1	83.9	21.5	28.4	51.1	89.7	97.7	52.7	148.4	96.5	782.0	
Bradford Peverell	D Oliver	33.7	6/12	187	3	38.9	68.7	72.9	114.3	16.0	21.4	60.8	150.9	112.6	45.6	195.1	131.2	1028.4	
Bridport (Bradpole)	G R Smith	22.8	27/4	127	0	34.1	49.0	63.5	84.5	18.1	30.9	45.8	120.7	87.2	40.7	134.2	88.2	796.9	
Broadwindsor (Netherhay)	J A Barnard	35.0	6/12	-	-	52.7	67.0	73.0	112.4	12.7	29.5	34.2	127.0	103.7	56.8	170.9	128.8	968.7	
Cerne Abbas (Abbot's Walk)	Mrs M Boxwell	30.3	1/12	192	3	38.9	64.3	76.8	109.8	10.4	36.5	55.7	143.7	98.1	39.9	195.2	141.4	1010.7	
Charminster (Hill View)	Mrs Eveleigh	32.6	6/12	-	-	36.9	62.0	63.9	104.7	11.2	26.9	55.5	130.1	95.7	42.6	176.4	116.7	922.6	
Corfe Mullen (Central Avenue)	A H Dunn	28.5	3/7	194	2	22.4	46.2	55.6	97.5	16.8	43.4	72.9	116.1	88.6	46.5	172.2	99.3	877.5	
Dewlish (Parsonage Farm)	Mrs Britton	36.0	29/8	160	7	30.0	70.0	76.0	114.0	25.0	34.0	66.0	173.0	117.0	30.0	182.0	124.0	1041.0	
Dorchester (Weatherbury Way)	J R Oliver	27.1	25/11	172	2	34.7	71.8	64.5	99.1	16.4	17.1	58.4	140.6	90.9	45.5	176.9	105.3	921.2	
Durlston Country Park	M Turnbull	33.8	19/10	169	4	29.9	34.7	57.7	91.7	16.9	37.6	56.7	132.4	100.1	95.0	162.1	86.8	901.6	
East Stour	R Brown	38.2	30/6	191	2	32.8	41.3	50.8	65.1	16.9	60.6	73.9	110.4	85.3	42.4	125.0	87.4	791.9	
Forde Abbey	M Roper	41.0	17/12	149	2	34.6	43.1	58.8	75.6	17.6	31.7	33.5	117.2	80.2	53.2	139.8	109.2	794.5	
Frome St Quintin	D Pearman	33.3	22/9	179	4	41.1	77.0	78.7	127.0	15.7	41.9	58.4	165.6	116.8	50.3	188.0	150.6	1111.1	
Higher Wraxall (Manor Farm)	Lt Col Wilson	34.0	17/12	165	2	45.3	50.3	71.8	113.1	9.5	32.2	44.4	148.3	94.2	42.3	165.6	128.1	945.1	
Langton Matravers (Leeson House)	D Kemp	-	-	-	-	32.3	40.8	46.5	87.9	24.6	31.6	71.4	143.3	109.9	99.1	181.1	95.9	964.4	
Leigh (Denbury House)	Lt Col Barlow-Poole	53.9	22/9	129	1	43.4	44.5	50.5	94.2	11.4	38.9	37.3	97.3	127.3	29.5	132.6	99.6	806.5	
Lyme Regis (Pinhay Devon)	J D Allheusen	51.8	29/9	167	1	29.6	53.8	68.5	85.8	11.0	42.5	48.8	109.2	61.4	63.4	126.6	85.5	786.1	
Melbury Sampford (Melbury House)	S Rayner	30.3	17/12	172	3	51.0	70.7	73.6	117.0	12.5	38.0	50.2	142.8	101.0	42.9	162.0	131.8	993.5	
Milton Abbas	K Battrick	41.5	18/9	-	-	37.0	62.5	71.0	106.0	13.3	32.5	73.0	156.5	124.5	39.0	185.5	149.0	1049.8	
Osmington Mills (Coastguard House)	J Hadwin	25.5	14/11	151	1	32.8	46.0	64.5	92.0	19.0	27.0	65.0	119.0	59.0	53.0	161.0	120.5	858.8	
Parkstone (Lilliput)	R J O Crew	25.9	3/7	134	1	25.9	21.6	33.8	80.5	20.1	25.1	54.6	99.8	75.4	54.9	153.9	87.6	733.2	
Puddletown (Bandolf Manor)	H G Wood-Homer	33.6	29/8	171	1	30.6	54.9	63.1	99.3	15.4	26.9	58.8	149.1	93.2	43.6	171.8	107.8	914.5	
Swanage	K Moore	30.0	19/10	167	3	26.7	34.2	52.0	77.5	20.1	34.7	54.8	110.2	94.5	94.8	162.8	85.7	848.0	
Tarrant Monkton (Monksmead)	B G Hart	31.3	22/9	191	2	25.6	48.4	53.4	95.9	14.1	42.1	85.6	111.2	107.2	39.0	149.5	124.2	896.2	
Thornford	D H Paul	61.0	30/6	153	4	45.0	35.1	51.5	83.2	5.9	75.2	50.2	113.4	129.0	33.1	134.7	111.0	867.3	
Wareham (East Stoke River Lab)	J Morgan	27.3	18/9	180	3	28.5	47.5	66.0	106.1	19.2	25.1	58.1	119.2	92.3	48.2	177.2	99.0	886.4	
Wareham (Trigon)	G P Sturdy	27.0	18/9	-	-	22.4	35.4	37.1	87.8	16.3	35.2	49.3	106.2	79.6	54.1	171.2	87.9	782.5	
Weymouth (Cranford Avenue)	H F Middleton	23.3	13/8	165	0	29.2	33.3	50.1	77.3	13.4	32.1	49.5	95.0	56.8	39.4	139.1	80.6	695.8	
Winfrith (Atomic Energy Establishment)	M Rodgers	26.2	25/11	154	4	25.3	45.7	57.2	103.3	34.5	27.9	65.7	139.9	90.4	42.9	177.4	99.9	910.1	
Yetminster (Church Street)	J M Bosworth	55.5	22/9	-	-	46.7	43.0	49.6	88.6	7.7	50.6	44.6	103.9	118.3	68.7	131.1	111.9	864.7	
Yetminster (The Mill House)	R M Clarkson	45.9	22/9	107	1	45.5	34.8	43.4	78.0	4.8	47.2	39.9	81.8	96.5	34.3	100.3	101.3	707.9	
AVERAGE FOR THE COUNTY				164	2	34.7	49.2	59.6	95.6	15.9	35.4	55.8	125.1	97.4	50.0	160.9	109.6	889.1	

western Europe within its general circulation. It gave us the kind of weather we associate with depressions that approach not from the west but the south. Thunderstorms developed and were slow-moving in the slack pressure gradient. They gave prolonged heavy rain and hail in some places, while neighbouring areas had little or no rain. The major outbreak in Dorset was over an area south-west of Sherborne between 1730 and 2100 GMT. Thornford and Yetminster recorded 55 mm, and Leigh 54 mm. Another storm gave 31 mm at Tarrant Monkton. By contrast, Weymouth reported the day's fall as 0.3 mm, Osmington had a trace too small to measure, and Winfrith was entirely without rain. The distribution of rainfall in Dorset was remarkably similar to that noted on June 30th. The parts of England most affected by the day's storms were further east, from Hampshire to the Wash. Here large areas had falls comparable with that near Sherborne, and there was an unconfirmed report of 106 mm in Bedfordshire.

#### November 25th

A deep depression was centred over Iceland while a secondary disturbance moved rapidly up the English Channel, giving some heavy falls over southern counties. A Dorchester 21 mm fell between 1500 and 1930 GMT. The heaviest fall was 27 mm at Bradford Peverell. Thunderstorms occurred at Dewlish, Winfrith, Corfe Mullen and Bournemouth.

#### December 1st

At midday there was a quasi-stationary depression over Iceland and a newly formed secondary in mid Atlantic. As this rapidly approached the British Isles an unstable wave intensified the warm frontal rain. All Dorset had a wet day, with over 25 mm of rain along the hills from Melbury to Milton Abbas (30 mm at Cerne). The coast and Blackmoor Vale had the lowest falls.

#### December 6th

Further extensive heavy rainfall came on 6th when a depression moved slowly across Ireland and then swung south-east. By the end of the rain-day (0900 GMT on 7th) the centre was over the southern North Sea and subsequently moved away into Germany. Thunderstorms occurred in parts of Dorset during passage of the frontal troughs and rainfall exceeded 25 mm over half the county. The heaviest rain fell along the North Dorset Heights (35 mm at Netherhay), and in a small area just north of Dorchester (34 mm at Bradford Peverell). By contrast, Weymouth had only 14 mm and in Purbeck the general fall was 10 mm.

#### December 17th

While pressure was high and continuing to build over central and eastern Europe, a vigorous depression approaching the British Isles from the Atlantic was deflected northwards. At midday on 17th its centre lay to the west of Northern Ireland. Thereafter it moved slowly towards the Norwegian Sea while continuing to deepen. Southerly gales affected most of Britain on this day and there was heavy rain as a complex trough of occluded fronts moved very slowly east, not clearing the country until early on 19th. In Dorset the heaviest rain was over the hills from the Devon border to Cerne Abbas. Forde Abbey had 41 mm and Higher Wraxall 34 mm. Away to south and east the falls were much lighter (12 mm at Weymouth and only 9 mm at Durlston).

#### RAINFALL STATIONS

New stations:-

	NGR	Height ASL
Bradford Peverell	SY 662927	82 m
Thornford	ST 605135	60 m

The station at Shillingstone (Green Hills) closed at the end of 1990, and Yetminster (The Mill House) at the end of 1992.

Four stations are now differently named in the rainfall table. Tarrant Monkton and Corfe Mullen are no longer listed under their respective post towns, Blandford and Wimborne. Melbury House is now listed under Melbury Sampford rather than Evershot. Manor Farm, Wraxall, is now listed under Higher Wraxall rather than Maiden Newton. These changes are in the interests of simplicity and of conformity to the practice of the national network.

#### CORRECTION TO VOLUME 113

On page 216, column 2, the January 1987 rainfall at Netherhay was 35.5 mm.

The Editor regrets that in O.J. Paxman's article last year 'A Downward Trend in Rainfall', the second paragraph included a jumbled date - 1856-19 = 895. This should have read 1856-1895.

#### DORSET BOTANY - 1992

D. Pearman

Substantial progress was made in the year on both the new Flora of the county, and on surveying of the Sites of Nature Conservation Interest by the surveyor employed by the Dorset Environmental Record Centre, who covered another 300 sites. A number of really notable discoveries were made, including a few new county records. These included *Sibthorpia europaea* at its most easterly British site, apart from an outlier in Sussex. *Vulpia unilateralis* at its most westerly British site, and *Cirsium tuberosum*, which is now almost confined to Wiltshire. *Orobancha purpurea* was definitely confirmed for the first time, and *Astragalus glycyphyllos* was discovered in what seems to be its first native site.

There were still good displays of annuals on the heathland, following the two drought years, particularly along the Bournemouth cliffs. The advent of set-aside has yet to produce any tangible benefits, although this may well change with the vast increase scheduled for 1993 and beyond. Much more thought on set-aside management is needed.

In parallel with work on flowering plants for the new Flora, much work is also being done on Lichens, Bryophytes and Fungi. In Fungi alone the number of species known in the county has almost doubled in the last eighteen months, thanks to the efforts of J. Keylock and Dr. H J M Bowen. Among notable species of liverworts there was the first British mainland record of the alien *Lophocolea bispinosa*, found near Bovington.

Appended to the following list of notable species found in the year are some records from the diaries and herbarium sheets of Dr. K. Rooke of Cranborne, who was active in that relatively underworked and distant area in the early 1960s. His widow has kindly donated his herbarium to the Museum.

Abbreviations used are as follows: H.J.M.B. Dr. H.J.M. Bowen; B.E. B. Edwards; A.H. Miss A. Horsfall; D.P. D. Pearman; R.W. R.M. Walls

*Acinos arvensis* - Basil Thyme

West Moors R.A.O.C. K. Powrie. A few plants on chalk spoil.

*Adiantum capillus-veneris* - Maidenhair Fern

Reforme, Portland. B.E. Another quarry site, a few hundred yards to the east of that found a few years ago. The sole indisputably native plant on Shepherds Dinner seems to have gone.

*Astragalus glycyphyllos* - Wild Liquorice

Shire Rack. G. Field. There have been occasional ephemeral records in the past, although only many years ago. This colony, on a steep bank in light woodland, seems native, and is a very welcome addition to the county's flora.

*Atriplex longipes* - Long-Stalked Ora????

Brands Bay, Poole Harbour, P. Symons. A recently determined record from 1969.

*Botrychium lunaria* - Moonwort

Despite intensive searching of the last known sites, there has been no success in refinding this declining fern, which was last seen in Dorset in the 1970s at Scotland, near Sleppe, and on Black Down, near Portesham.

*Callitriche truncata* - a water starwort

Forde Abbey lakes. H.J.M.B.; C.D. Preston, Lower Holditch, I. & P. Green. Although this was only confirmed from the Dorset side of the R. Axe a few years ago, further search has shown it to be widespread in a small area of far west Dorset.

*Carex curta* - White Sedge

Slop Bog, D.P. Previously known from the Moors R., where there are several colonies, and from Cranborne Common, where it just survives. There is a very large population in invading birch carr at this site which has now (1992) been bought by the County Council. Slop Bog drains into the Moors River.

*Carex diandra* - Lesser Tussock Sedge

The Moors. Arne. D.P. The three plants have increased to about a

dozen as the ditch has been colonised after the 1986 cleaning.

*Carex dioica* - Dioecious Sedge

S. of Blue Pool, Wareham. D.P. A new and substantial site for this sedge which is very rare in the South of England. Here it covers an area of about six square yards. The colony at Slepe is still substantial, and a few plants were re-found in 1989 at the Aggleston. Those are the only sites in Dorset.

*Carex humilis* - Dwarf Sedge

Boyne Bottom and Stubhampton Bottom. B.E. Two new sites for this sedge now almost confined to relict steep slopes in the N.E. of the county.

*Cicendia filiformis* - Yellow Centaury

Stoborough Heath. B. Pickess. Morden Bog. S. Eden. Two very welcome new records. By 1989, before the recent dry summers, this plant was confined to a handful of plants near Arne. Last year the large site on Cranborne Common was noted; this year both of these new sites had substantial populations, if only because the dry conditions had opened up the vegetation. Management and/or drought conditions will be necessary to ensure their survival.

*Cirsium tuberosum* - Tuberous Thistle

West of Blandford. A. Halahan, conf. H.J.M.B. A new county record. A colony of 4/5 clumps on a unimproved bank at the top end of an improved field. The bank was grazed, but a new fence was erected this year. Apart from one outlier in Glamorgan, the plant is confined to Wiltshire, where there are over 20 sites. The Dorset plant is about 20 miles S. of the nearest Wiltshire site, and appears to be the genuine plant, rather than the hybrid with *C. acaule*.

*Crassula tillaea* - Mossy Stonecrop

Knighton Heath. D.P. & R.W. and many records from the Poole Basin as far as beyond Christchurch, Dorset probably holds the best populations in Britain.

*Cynodon dactylon* - Bermuda Grass

Still persisting in the sites at Baier, Poole, and around Sandbanks.

*Cyperus longus* - Galingale

Not re-found at Langton Herring - see note in last year's Proceedings.

*Epipactis purpurata* - Violet Helleborine

Knighton Common, nr. Thornford. H.J.M.B. and C Turner. An important extension to the known range.

*Equisetum variegatum* - Variegated Horsetail

Worbarrow Bay. A.J. Byfield & D.P. Confirmation of the continued existence of the substantial colony, despite a massive landslide right to the edge of the site.

*Erodium maritimum* - Sea Storksbill

Hounds Tout. H.J.M.B., below Flowers Barrow. R. FitzGerald. Two new coastal sites.

*Euphorbia paralias* - Sea Spurge

Chesil Beach. J. Pyett. A very substantial site, very high up the rear of the beach, in the area of the tern colony. Currently the only known site in Dorset.

*Festuca heterophylla*

West Holme. H.J.M.B. A second county record, here only a single plant.

*Gentianella anglica* - Early Gentian

Shepherds Bottom, B.E. and Clubman's Down, B.E. Dorset and possibly the Isle of Wight have the best remaining colonies of this plant.

*Hieracium peletarianum* -

West Weares, Portland. D.P. & A.J. Byfield. The first record of this extremely rare hawkweed away from the chalk coast between Ringstead and Arish Mell. Very rare elsewhere in Britain.

*Hordeum Marinum* - Sea Barley

The record from Ferrybridge, about 1981, is a mistake. This plant has not been seen in Dorset since the mid 1970's.

*Hypericum montanum* - Pale St. John's Wort

E. of Corfe Castle. B.E. Another small site for this very localised species.

*Juncus foliosus* - Leafy Toad Rush

Specket Lane, nr. Pilsdon Pen. J. Keylock. A second county record.

*Lathyrus japonica* - Sea Pea

Chesil Beach, opposite the R.E. Bridging Hard, D. Seaward. Whilst there is the large well-known site at Abbotsbury and a smaller site at the Portland end, this new area, which contains many plants, is a welcome extension.

*Leersia oryzoides* - Cut-grass

Newly-discovered information in D.E.R.C. suggests that the site was *not* buried under the new by-pass, but it existed until the late

1970s in a rough wet field to the E. ie, towards Poole Harbour. Hard grazing in a dry year was said to be the cause of its demise, which does not seem entirely likely.

*Limonium binervosum* - Rock Sea-Lavender

Arish Mell. H.J.M.B. etc. A good colony of the form *L. dodartiforme*.

*Lotus subbiflorus* - Hairy Birdsfoot Trefoil

Higher Hyde area. S. Watson. West Moors R.A.O.C., D.P. & R.W. and several places from Sandbanks to Christchurch.

*Lycopodiella inundata* - March Clubmoss

Winfrith, H.J.M.B. & D.P. A small colony inside the A.E.A. perimeter fence, confirming an older record communicated by Dr. N Webb.

*Lythrum hyssopifolia* - Grass Poly

Still persisting well at its site on the edge of an arable field near Charborough in good quantity in 1992.

*Marrubium vulgare* - White Horehound

Bat Head, B.E. 14 plants; confirming an old record, and forming only the second extant site in the county. Nationally, the plant is now very rare as a native.

*Medicago polymorpha* - Toothed Medick

Portland Bird Observatory, D.P. in two places.

*Moenchia erecta* - Upright Chickweed

Pilsdon Pen, J. Keylock. This confirms a record from J Graveson, probably from c. 1960, and is another W. Dorset record to add to that from Stonebarrow Hill, recorded there last year.

*Orobancha purpurea* - Purple Broomrape

Ferrybridge, J. Pyett, conf. F. Rumsey. 4 plants in rough grass. This is the first confirmed county record, although Miss. D. Meggison did report the plant from the same area in the late 1940s. It is restricted to only 8 other sites on the British mainland.

*Parapholis incurva* - Curved Hard-Grass

Newtons Cove, Weymouth, D.P. Nothe, H.J.M.B. Dancing Ledge, H.J.M.B. Sandbanks, R.W. Especially abundant this year on the bare ground around the lighthouse at Portland Bill.

*Polycarpon tetraphyllum* - Four-leaved Allseed

The Ferrybridge site, reported again last year, has been in flower for almost the entire year.

*Polygonum minus* - Small Water-pepper

Burton Common, J. Ounsted. West Moors R.A.O.C., D.P.

*Polygonum mite* - Tasteless Water-pepper

Kingcombe, S. Eden, conf. J. Akeroyd

*Polypogon monspeliensis* - Annual Beard Grass

Arne, B. Pickess. A new site, on the line of a pipeline across the estuary towards Slepe Farm. Only a few plants.

*Potentilla argentea* - Hoary Cinquefoil

Worgret, M. Lock.

*Puccinellia fasciculata* - Correr's Saltmarsh-Grass

Newtons Cove, Weymouth, D.P., in abundance, confirming H.J.M.B.'s recent record. In fact all four *Puccinellia*'s are found in the area, making it unique, at least in the W. of England, and ideal for any student of the genus.

*Puccinellia rupestris* - Stiff Saltmarsh-Grass

West Bexington, D.P. Sandsfoot Castle, D.P., frequent amongst the boats in the sailing school.

*Rhynchospora fusca* - Brown Beak-sedge

Rimsmoor Pond, M. Galliot. Highwood Heath, A.H. Morden. Decoy and the surrounding areas were thoroughly explored in 1991 and 1992. There are many sites for this plant, some very large indeed and in total the area probably holds almost half of the British population.

*Rorippa sylvestris* - Creeping Yellow-cress

Marnhull, D.P. Child Okeford, D.P., both conf. T.C.G. Rich. Just how rare is this plant? There are few recent records other than of casuals as garden weeds, yet one morning's search produced these two records on bare, gravelly soil by the R. Stour - a habitat that must be not uncommon. Other post 1980 records of "native" habitats are Ridge, A.H. 1980, Hammoon, A.H. 1981, and Stanpit Marsh, R.W. 1981.

*Salicornia pusilla* - a glasswort

Ferrybridge H.J.M.B.

*Saxifraga granulata* - Meadow Saxifrage

Pentridge Hill. H. Prentice

*Sparganium minimum* - Least Bur-reed

The Moors, D.P. Another site, in an old pond behind Banks Gate Cottages, 1/4 mile from the one known station.

*Trifolium glomeratum* - Clustered Clover

W. of Branksome Chine, R.W.

*Trifolium squamosum* - Sea Clover

Lodmoor, T. Pyett. One or two plants from behind the Sea Life Centre. Portland, D.P. One plant in a fallow field near P.B.O.

*Trifolium suffocatum* - Suffocated Clover

Sandbanks, R.W. Southbourne Cliffs in 3 places, R.W.; D.P.

*Typha angustifolia* - Lesser Reedmace

Brownsea Island. Apparently native.

*Vicia Rathyroides* - Spring Vetch

Southbourne Cliffs. D.P. There is an interesting and exhaustive treatment of the provenance of this species in Dorset by Prof. Good in Vol. 92 (1970) pp. 123-4 of these Proceedings. Of course the current record is in what was then Hampshire (V.C.11), but he came to the conclusion that the only reliable records were from the Parkstone and Branksome cliffs. The seed is the crucial difference, being wrinkled in *V. lathyroides* and smooth in all varieties of *V. angustifolia*. In 1991 it was recorded from Fitzworth and Studland as well as from 3 sites to the E of the current one.

*Vulpia ciliata* - Bearded Fescue

'War Hill', Studland. C. Flynn

*Vulpia fasciculata* - Dune Fescue

A very good year for this plant at Ferrybridge, with 1000's of plants. Hengistbury Head, P. Bowman.

*Vulpia unilateris* - Mat-grass Fescue

Povington, H.J.M.B. A new county record. A few plants, with *V. bromoides* on chalky waste lining the road across the acid Povington Heath. The grass, which was only recognised in Britain in 1903, occurs in dry places in thin grassland or even on bare chalk, as at Micheldever in Hants. The provenance of the chalk at Povington is unknown, but it must be worth looking at bare places on the chalk for this annual, which disarticulates early.

*Zostera marina* - Eelgrass

Branksome Chine Beach, fresh plants. H.J.M.B.

#### Aliens and Adventives

*Echinochloa utilis*

Binnegar Tip, H.J.M.B. New county record

*Hyacinthus hispanica*

Burton Bradstock, H.J.M.B. New county record

*Ilex v. altacherensis*

Branksome Chine, H.J.M.B. New county record

*Lilium pyrenaicum*

Ford Abbey, H.J.M.B. New county record

*Misopates calycinum*

Binnegar Tip, H.J.M.B. New county record

*Polypogon viridis*

Church Rd., Poole. C.Flynn

*Silene armeria*

Puddletown, H.J.M.B. New county record

*Epilobium brunnescens*

West Knighton Gravel Pits, D.P. & R.W. The only recent record for this New Zealand species, so frequent now on many hills and mountains.

*Frankenia laevis*

West Bay. Well established on bare clay cliffs.

#### Records made by Dr. K. Rooke of Cranborne

*Acinos arvensis* Blackbush Down 1963

*Blyssmus compressus* Wimborne St. Giles 1963

*Carex curta* Cow Bridge, Cranborne 1963

*Carex acuta* Sutton Holm Meadow 1963

*Cerastium arvense* Gussage Hill 1961; Roman Rod., Harley Wood 1960; Roadside, Toby's Bottom Cranborne 1960

*Lycopodiella inundata* 3 sites nr. Cow Bridge, Cranborne 1960. Stephens Castle, Verwood 1962

*Ononis spinosa* Ash's Farm Lane, Cranborne 1963

*Ophrys insectifera* Boveridge Park 1960

*Pinguicula lusitanica* Bonfire Hill, Alderholt 1961

*Polygonum bistorta* Alderholt Mill 1960

*Potentilla recta* Church Farm, Alderholt, 1960

*Radiola linoides* Bonfire Hill, Alderholt 1961

*Viola lactea* Cow Bridge, Cranborne 1960

#### MARINE INVERTEBRATES

John Hawthorne

Ms Jenny Mallinson of the Department of Oceanography, the University of Southampton, has kindly provided the following notes.

#### *Aglaophenia parvula*

Hydroids are colonial animals related to sea anemones and corals. Some of the more attractive British hydroids are the *Aglaophenia* (sorry, no English name) with their clean feather-like form and distinctive fruiting bodies. The best known of the species is *A. pluma* as it is the only one that occurs in rock pools. It can also be found in shallow water covering the stems of brown algae, such as pod-weed, *Halydris siliquosa*. Recently, a previously poorly recorded species of *Aglaophenia*, *A. parvula* has been observed in Poole Bay. It was first spotted on Southampton University's experimental artificial reef, where its progress was closely monitored. It has subsequently been found by divers in 1991, growing in vast stretches along Peveril Ledge and off Lulworth and it appears to be one of the more common hydroids of the area. The two species are very similar in the early stages of growth. Both start with single curled feather shaped colonies about 2 - 3 cm long with a brown midrib and white or grey side branches. This is about as far as *A. pluma* goes although there are reports of it bifurcating at the tip occasionally. In a good year, such as 1990, *A. parvula* will grow to about twice the height (approx. 5 cm), bifurcate and then go on branching dichotomously three or four times, reaching a height of 10 cm or more. It has not been seen to do this since, although there are usually a few beginning to branch in a patch of colonies.

The massive numbers of *A. parvula* seen in Poole Bay in 1991 could represent a more southerly species, spreading to the area, that has now become established. The Dorset coast is known for its species on the limit of their distribution. However, it must be remembered that hydroids are not easily sampled with surface operated equipment nor are they a particularly well-known group. They could have been there all the time and just not noticed or they may have been mis-identified as the more familiar *A. pluma*. When it is thriving, as in 1991, it is unique and unmistakable but it does not appear to do that every year. With the increase of divers with an interest in marine life, there is more chance that these phenomena will be picked up but there is still an awful lot of seabed out there and only a handful of people noticing and reporting changes that are occurring.



Plate 1 *Aglaophenia parvula*. (Rom)

Plate 2 *Akera bullata*. (Rom)**Spider crabs**

1990 was a "spider crab year". Crustacea, with their hard exoskeletons, have to moult to grow. The shell splits and the animal, with an identical but larger soft shell underneath, crawls backwards out of the old shell, inflating itself with water as it emerges. The "new" shell hardens in a few days and the internal organs and muscles are gradually built up until it has to moult again. During this vulnerable period some protection is needed. With the spiny spider crab, *Maia squinado*, this is achieved by gathering together in great writhing heaps. When this occurs close to the shores where it can be observed by divers, the effect is spectacular. This happened in Poole bay in July and August 1990. Off Studland a number of aggregations were seen ranging from a few metres to tens of metres across. The large males moulted first and then appear to have wandered off. The last to moult were the small bite-sized individuals, buried deep in the mounds of empty shells and hidden from hungry predators. Some say these aggregations are related to mating but we saw no evidence of this. The animals dispersed after about a week leaving a battlefield of what looked like hundreds of "bodies". Closer inspection shows that shells hinge open from the back. This does not happen with a dead animal. The shells had largely disappeared within a month. This is an example of what could, at first sight, be considered an environmental disaster but is actually a perfectly natural and necessary occurrence.

***Akera bullata***

*Akera bullata* is an unusual mollusc which lives in soft sediment among weed and stones and it is rarely seen. Small specimens are known to occur in the Fleet but there are few other reports of it until it "takes to the wing". The last occurrence of this was in July 1990. Large acorn-shaped velvety-brown creatures up to 5 cm long, were seen around the pontoons at Castletown, Portland. They were bobbing up to the surface with large wing-like projections wrapping around and then out from the body. If they broke the surface or were touched they dropped to the bottom like a stone and reverted to their more usual snail-like motion. There were chains of pink egg masses on the seabed. This sort of behaviour in an unfamiliar animal attracts attention and it would not be unreasonable to assume that it has not happened since its last reported occurrence, five years ago. Ian Parry from the dive shop at Portland, who first spotted the "flying *Akera*" of Castletown and has looked out for them ever since, can confirm this.

***Leptopsammia pruvoti***

The sunset coral has been recorded off Lyme Regis by the Devon Wildlife Trust. Ms Mallinson hopes to follow up this discovery.

## LEPIDOPTERA

Alan T Bromby

Records were received from:

D.M. Arnold, A.T. Bromby, A.H. Dunn, N. Hutchinson, R. Plowman, M Rogers &amp; P. Waring

Dorset Environmental Records Centre have kindly supplied records of migratory species and Mr Plowman and Mr Rogers have submitted details of catches from light traps at Durlston Country Park (R.P.) and Portland Bird Observatory (P.B.O.).

*Plutella xylostella* L Diamond-back Moth. Portland 277 between 16.5 & 22.8 with peak of 30 on 7.7 (P.B.O.)

*Evergestis extimalis* Scop. Portland 15.8. & 19.8 (P.B.O.)

*Uresiphita polygonalis* D & S. Portland 28.9. (P.B.O)

*Ostrinia nubilalis* Hb. European Corn-borer. Portland 30.6., 1.7., 9.8 & 26.9. (P.B.O.)

*Palpita unionalis* Hb. Portland 1.6. (P.B.O.)

*Acrobasis tumidana* D & S. Portland 10.8. (P.B.O.)

*Colias croceus* Geoff. Clouded Yellow. Portland 14.6., 2 on 15.6, 23.6., 52 between 6.7 & October with peak of 12 on 30.7. (P.B.O.) 73 records between 16.5. & 30.10 (D.E.R.C.)

*Pieris brassicae* L. Large White. Portland Strong north immigration off sea 14.5. & 15.5. (P.B.O.)

*Vanessa atalanta*. Red Admiral. Radipole 29.5. - 31.10. (D.N.A.) Portland 21.4. regularly between 13.5. & 8.11. Corfe Mullen 13.5. (A.H.D.)

*Cynthia cardui* L. Painted Lady. Radipole 13.6., (D.N.A.) Portland almost daily 15.5. - 10.10 latest 26.10. (P.B.O.) Corfe Mullen - scarce this year (A.H.D) 102 records between 14.5. & 23.9. (D.E.R.C.)

*Trichiura crataegi* L. Pale Eggar. Radipole 6 between 8.9. & 16.9 (D.N.A.)

*Gastropacha quercifolia*. The Lappet. Radipole 3.7. (D.N.A.)

*Cyclophora pupillaria* Hb. Blair's Mocha. Swanage 8.8. (R.P.) Portland 30.7. (P.B.O.)

*Rhodomatra saccharia* L. The Vestal. Swanage 20.8. (R.P.). Portland 3 on 15.5., 24.7., 7 between 2.8. and 18.8.; 6 between 25.9. & 1.10 (P.B.O.) Radipole 18.9. (D.N.A.). West Bexington 9.7. & 18.9. (D.E.R.C.)

*Orthonama obstipata* Fabr. The Gem. Portland 30.7; 8 between 19.9 & 4.10; 30.10 & 8.11. (P.B.O.)

*Thera cypressata* Geyer. Cypress Carpet. Swanage 30.6. (R.P.) Portland 10.6. & 20.6. (P.B.O.)

*Eupithecia venosata* Fabr. Netted Pug. Radipole 21.6. (D.N.A.)

*Eupithecia phoeniceata* Ramb. Cypress Pug. Parkstone 4.9 (A.T.B.)

*Epione repandaria* Hufn. Bordered Beauty. Radipole 1.7. & 11.7. (D.N.A.)

*Selidosema brunnearia* Vill. Bordered Grey. West Holme Heath 6.8. (N.H.)

*Lomographa temerata* D & S. Clouded Silver. Swanage 28 between 23.5 & 1.7. followed by 7 between 23.7. & 8.8. (R.P.) Radipole 15 between 1.6. & 2.7 (D.N.A.)

*Agrius convolvuli* L. Convolvulus Hawk-moth. Portland 28.7., 9 between 18.8 & 20.9. (P.B.O.) West Bexington 6 between 21.8. & 20.9. (D.E.R.C.) Burton Bradstock 1.9. Swanage 26.6., 19.8., 20.8., 17.9. & 29.9. (R.P.)

*Acherontia atropos* L. Death's-head Hawk moth. A larva 15.7.; 16.9. (D.E.R.C.)

*Sphinx ligustri* L. Privet Hawk moth. Radipole 9 between 31.5. & 22.7. (D.N.A.)

*Hemaris tityus* L. Narrow Bordered Bee Hawk moth. Corfe Mullen 14.5. (A.H.D.)

*Macroglossum stellatarum* L. Humming Bird Hawk moth. Swanage 26.5. & 19.8 (R.P.) Portland 2 on 14.5; 11 between 29.7. & 23.9. (P.B.O.) 9 recorded between 26.5. & 26.9. (D.E.R.C.)

*Hyles lineata* Fabr. Striped Hawk. Swanage 19 between 15.5. & 1.6. (R.P.) Portland 23.5., 9.8. & 20.8. (P.B.O.)

*Clostera curtula* L. Chocolate Tip. Radipole 7.5. (D.N.A.)

*Diloba caeruleocephala* L. Figure of Eighty. Radipole 2.10. (D.N.A.)

*Dicallomera fascelina* L. Dark Tussock. West Holme Heath 6.8. (N.H.) East Lulworth 24.7. (N.H.)

*Eilema caniola* Hb. Hoary Footman. Swanage 18.8. (R.P.)

*Eilema pygmaeola* Doubl. Pigmy Footman. Portland 30.7. (P.B.O.)

*Lithosia quadra* L. Four-spotted Footman. Swanage 2 on 9.7. (R.P.)

*Euplagia quadripunctaria* Poda. Jersey Tiger. Portland 5.8. (P.B.O.) West Bexington 6 between 20.7. & 18.8. Shipton Gorge 2.8. Burton Bradstock 6.8. (D.E.R.C.)

*Meganola albula* D & S. Kent Black Arches. Swanage 5 between 27.6. & 24.7. (R.P.) East Lulworth 25.6. (N.H.)

*Nola cucullatella* L. Short-cloaked Moth. Radipole 29.6. & 23.7. (D.N.A.)

*Nola confusalis* H-S. Least Black Arches. Radipole 3 between 5.5. & 20.5. (D.N.A.)

*Euxoa obelisca* D & S. Square-spot Dart. St Aldhems 10.9. (N.H.)

*Agrotis vestigialis* Hufn. Archer's Dart. West Holme Heath 6.8. (N.H.)

*Agrotis ipsilon* Hufn. Dark Sword Grass Swanage 2 on 23.4; 5 between 23.5. & 3.6; 176 between 16.6. & 20.8; 17.9. & 23.9. (R.P.) Portland 17.3, 18.4, 15.5. 19.6 & 26.6; then 142 between 1.7. & 22.8; 6 between 18.9. & 4.10 (P.B.O.)

*Agrotis crassa* Hb. Great Dart. Portland 30.7. (P.B.O.)

*Rhyacia simulans* Hufn. Dotted Rustic. Swanage 25.6. (R.P.)

*Peridroma saucia* Hb. Pearly Underwing. Swanage 9 between 23.5. & 13.56; 24.7; 30.7; 142 between 30.7. & 21.8; 80 between 9.9. & 29.9. (R.P.) Portland 15 between 23.5. & 12.6. then 253 between 31.7. & 8.11 (P.B.O.)

*Polia trimaculosa* Esp. Silvery Arches. Radipole 25.6. (D.N.A.)

*Lacanobia w-latinum* Hufn. Light Brocade. Radipole 12 between 20.5. & 22.6. (D.N.A.)

*Mythimna albipuncta* D & S White-point. Swanage 26.5, 8.6; 5 on 30.6; 2 on 8.8; 3 on 20.8. & 21.8; then 8 between 9.9. & 23.9. (R.P.) Portland 23.5. & 24.6; 9 between 20.8. & 18.9. (P.B.O.) Radipole 16.9. & 20.9. (D.N.A.)

*Mythimna vitellina* Hb. The Delicate. Swanage 2 on 15.5; 5 between 30.5. & 3.6; 70 between 1.8. & 21.8; 103 between 6.9. & 29.9 (R.P.); Portland 92 between 15.5. & 31.5; then 729 between 3.8. & 17.10 (P.B.O.) Radipole 17 between 6.9. & 2.10 (D.N.A.)

*Mythimna pudorina* D & S. Striped Wainscot. East Lulworth 25.6. (N.H.)

*Mythimna unipuncta* Haw. White-speck. Swanage 5.1; 2 on 25.5. (R.P.) Portland 22.4. & 10.9. (P.B.O.)

*Mythimna obsoleta* Hb. Obscure Wainscot. Radipole 12.6. (D.N.A.)

*Mythimna loreyi* Dup. The Cosmopolitan. Swanage 2 on 19.8; 23.9. (R.P.) Portland 4 between 15.5. & 20.5; 25.7. then 20 between 7.8. & 29.8. & 10 between 16.9. & 27.9. (P.B.O.) Radipole 19.9. (D.N.A.)

*Cucullia verbasci* L. The Mullein. Radipole 5.5 (D.N.A.)

*Lithopane hepatica* Cl. Pale Pinion. Radipole 24.4. (D.N.A.)

*Lithopane ornitopus* Hufn. Grey Shoulder-knot. Radipole 29.3. & 4.4. (D.N.A.)

*Eupsilia tranversa* Hufn. The Satellite. Radipole 5.5 (D.N.A.)

*Conistra rubiginea* D & S. Dotted Chestnut. Parkstone 18.4. (A.T.B.)

*Xanthia citrigo* L. Orange Sallow. Radipole 28.9. (D.N.A.)

*Rusina ferruginea* Esp. Brown Rustic. Lydlinch 1.6. (P.W.)

*Apamea furva* D & S. The Confused. Portland 30.7. (P.B.O.)

*Apamea ophiogramma* Esp. Double Lobed. Radipole 24.7. (D.N.A.)

*Archanara geminipuncta* Haw. Twin-spotted Wainscot. Radipole 21.7. & 24.7. (D.N.A.)

*Archanara dissoluta* Treit. Brown-veined Wainscot. Radipole 29.6. (D.N.A.)

*Spodoptera exigua* Hb. Small Mottled Willow. Swanage 20.9. (R.P.) Portland 19.5. & 29.5. (P.B.O.)

*Pyrrhia Umbra* Hufn. Bordered Sallow. Radipole 3.7. (D.N.A.)

*Heliolithis armigera* Hb. Scarce Bordered Straw. Swanage 4 on 30.6., 5 on 8.8., 19.8., 5 on 20.8; 28.9; 2 on 29.9. (R.P.) Portland 29.5; 1.8; 9.8; 3 between 15.8 & 20.8; 16.9 & 2.10 (P.B.O.)

*Heliolithis peltigera* D & S. Bordered Straw. Swanage 20 between 16.5. & 9.6; 5 on 9.7; 2 on 30.7; 6.8; 2 on 8.8; 7 on 18.9; 20.9. (R.P.) Portland 20.5; 12.6; 11 between 29.7 & 15.8 (P.B.O.) Radipole 28.9 (D.N.A.)

*Heliolithis nubigera* H-S. Eastern Bordered Straw. Swanage 15.5. (R.P.)

*Eublemma ostrina* Hb. Purple Marbled. 3 on 15.5; 26.5 & 27.5 (R.P.) Portland 20.5; 21.5; 9.8; 19.8 & 23.9 (P.B.O.)

*Ctenoplusia limbirena* Geun. Scar Bank Gem. Swanage 17.8. (R.P.)

*Trichoplusia ni* Hb. The Ni Moth. Swanage 23.6; 24.6; 2 on 30.6 & 1 on 8.8. (R.P.) Portland 4 between 11.7. & 31.7. 3 between 6.8. & 20.8. (P.B.O.)

*Autographa gamma* L. Silver Y. Swanage earliest 13.5. then taken regularly until 29.9; no October records, but a single on 23.11 (R.P.) Portland 746 between 15.5. & 9.11 with peak of 66 on 31.7. (P.B.O.)

*Euclidia glyphica* L. Burnet Companion. Radipole 10.6. (D.N.A.) Lydlinch 12.6. (P.W.)

*Rivula sericealis* Scop. Straw Dot. Swanage 6.8; 9 on 19.8. (R.P.)

## LAND ARTHROPODS

N.R. Webb

As in former years, I have compiled this report mainly from records sent to the Dorset Environmental Records Centre and I am grateful to Richard Surry for his help in abstracting them. Some records have been sent directly to me while others have been obtained by abstracting the entomological journals. This report includes records from D. Allen, S. Barber, H.J.M. Bowen, R. Bratt, C.R. Bristow, J.R. Cox, B. Edwards, M.H. Lock, A. Mahon, N. Matthews, D. Pearman, A. Rose, E. Rose, R. Surry, W.G. Teagle, N.R. Webb, P. White and T. White.

### Orthoptera

A good number of records continue to be received for this group, of which the identification of the various species is relatively straight forward.

Oak Bush-cricket (*Meconema thalassinum*). Swanage.

Great Green Bush-cricket (*Tettigonia viridissima*). Eggardon Hill, Sandfoot Castle and Pokesdown.

Wart Biter (*Decticus verrucivorus*). Reported in good numbers from its traditional site.

Dark Bush-cricket (*Pholidoptera griseoptera*). Whitfield Woods, Osmington Mills, Bedchester, Wool, Dewlish, Shaftesbury, Coombe Heath and Stoborough.

Long-winged Conehead (*Conocephalus discolor*). Wool, Rockley Park and Ham Common.

Speckled Bush-cricket (*Leptophyes punctatissima*). Frome St Quinten, Maiden Newton and Piddles Wood.

Stripe-winged Grasshopper (*Stenobothrus lineatus*). 25 new 1 km squares found by B. Edwards during his chalk downland survey.

Woodland Grasshopper (*Omocestus rufipes*). Puddletown Forest, Rhododendron Mile, Moreton and Gallows Hill.

Common Field Grasshopper (*Chorthippus brunneus*). Maiden Newton, Pallington, Wool, South Heath, Rockley Park, Ham Common and Littledown.

Meadow Grasshopper (*Chorthippus parallelus*). Pallington, Wool, South Heath, Blandford St Mary and Ham Common.

### Odonata

J.R. Cox has continued with his intensive transect recording at Studland Heath National Nature Reserve for a fifteenth season. This is now a very impressive body of data. During 1992 he noted eighteen species in the survey. The detailed observations follow.

Small Red Damselfly (*Ceriagrion tenellum*). A drop of about one third from last year's numbers. This was the second lowest index of abundance since 1978. First seen 7 June; last seen 10 August.

Azure Damselfly (*Coenagrion puella*). An unprecedented rise in numbers to almost double the previous highest record in 1979. First seen 24 April; last seen 21 June.

Common Blue Damselfly (*Enallagma cyathigerum*). A slight drop on last year's figures, but still about average for the fifteen years of counting. First seen 7 May; last seen 27 September.

Large Red Damselfly (*Pyrrhosoma nymphula*). An increase of about one third on last year's numbers which brought numbers to about average. First seen 11 April; last seen 7 July.

Common Blue Damselfly (*Ischnura elegans*). Numbers reduced by about 25% compared with last year bring the index to slightly below average. First seen 27 April; last seen 28 August.

Emerald Damselfly (*Lestes sponsa*). A slight decrease with numbers still below the average. First seen 14 June; last seen 10 August - a short season this year.

Hairy Dragonfly (*Brachytron pratense*). Almost no change from last season with approximately average numbers recorded. First seen 7 May; last seen 8 June - a short season this year.

Southern Hawker (*Aeshna cyanea*). Another slight increase but still slightly below average. First seen 21 July; last seen 18 October.

Common Hawker (*Aeshna juncea*). Not recorded on the transect this year.

Migrant Hawker (*Aeshna mixta*). A slight increase on last year's numbers, but the overall tendency to increase seems to be diminishing. First seen 21 August; last seen 18 October.

Brown Hawker (*Aeshna grandis*). One recorded on 21 July on the census walk. This was the only sighting for the year. It seems unlikely that the ovipositing by a female in 1989 has been successful in establishing this species in the area.

Emperor Dragonfly (*Anax imperator*). Two seen on a bog pool on the very early date of 31 May by P.G. Hawking, J. Ball & Miss C.E. Olliphant. One on 28 July and two 10 August.

Downy Emerald Dragonfly (*Cordulia aenea*). A drop of about 25% on last year's numbers, but still within the average for the fifteen years of counting. First seen 14 May; last seen 7 July.

Black-lined Skimmer (*Orthetrum cancellatum*). A fall in numbers to almost half of that recorded last year. First seen 7 June; last seen 15 August.

Keeled Skimmer (*Orthetrum coerulescens*). A very slight increase but numbers still below average. First seen 7 June; last seen 15 August.

Four-spotted Chase (*Libellula quadrimaculata*). A rise of about 40% on last year's numbers, but this figure is still way below the average figure for the fifteen years. First seen 3 May; last seen 21 July.

Broad-bodied Chaser (*Libellula depressa*). Only one record from the census on 6 August. Only one other sighting at Studland on 17 May (S.M. Guy).

Black Darter (*Sympetrum danae*). After the exceptionally large numbers last year the total for this year was below average. However the census route does not sample the optimum habitat on the Reserve for this species. First seen 25 July; last seen 10 September.

Ruddy Darter (*Sympetrum sanguineum*). A large drop in numbers from last year, but still above the fifteen-year average. First seen 16 June; last seen 10 September.

Common Darter (*Sympetrum striolatum*). A drop of just over half of last year's total bringing numbers to below the fifteen year average. First seen 14 June last seen 19 November.

### Coleoptera

Coccinellidae (Ladybirds)

There continues to be a good number of records for this easily identified family of beetles.

16-spot Ladybird (*Micrapsis 16-punctata*). Burton Bradstock, Milton-on-Stour, Wareham, Stoborough Heath and Fontmell Down.

2-spot Ladybird (*Adalia 2-punctata*). Maiden Newton, Charminster, Marnhull, Huntingford, Worgret, Wareham Common, Wareham and Ridge.

10-spot Ladybird (*Adalia 10-punctata*). Wareham Common and Wareham.

7-spot Ladybird (*Coccinella 7-punctata*). Charminster, Furzy Cliff, Puddletown Heath, West Stafford, Wool, Charlton Marshall, Worgret, Newton Gulley and 31 1 km squares in ST 82 around Shaftesbury and Motcombe recorded by C.R. Bristow.

Kidney-spot Ladybird (*Chilocorus renipustulatus*). Wool

Pine Ladybird (*Exochromus quadripustulatus*). Lower Hyde.

Orange Ladybird (*Halyzia 16-guttata*). Fontmell Down

22-spot Ladybird (*Psyllobora 22-punctata*). Charminster and West Stafford.

Cream-spot Ladybird (*Calvia 14-guttata*). Motcombe and Swanage.

14-spot Ladybird (*Propylea 14-punctata*). West Stafford, Milton-on-Stour, Motcombe, Fontmell Down, Wareham Common, Creech and Wareham.

### Other beetles

Glow Worm (*Lampyris noctiluca*). Godlingston

Green Mint Beetle (*Chrysolina menthastri*). Stoborough.

*Pilostoma fastuosa*. Powerstock Common: a nationally notable tortoise beetle.

*Timarcha tenebricosa*. Ballard Down

*Timarcha goettingensis*. Double Barrow, Badbury Rings and

Hengistbury Head.

### Hymenoptera

Hornet (*Vespa crabro*). Stoborough, Melbury Park and Evershot with nests reported from Boswell's Plantation, Goathorn and Furzebrook. This species seems to be increasing in abundance and all records would be welcome especially in the light of the recent discovery of *Dolichovespula media* in the County (see below).

### Diptera

Additional records of hoverflies (*Syrphidae*) are *Sicus ferrugineus* near Wool and *Volucella zonaria* at Swanage and Poole.

## DORSET HOVERFLY REPORT

David and Ted Levy

We are delighted to confirm the publication of *Dorset Hoverflies*, which provides records in the form of distribution maps covering the 202 species that have so far occurred in the county. It forms a sound basis for all future hoverfly recording to improve the maps with wider county coverage.

### Records

Over 80 species were recorded during the year and it has been claimed that it has not been an especially good year for hoverflies.

Once again we are most grateful for the records of Mike Parker, while we continue our mapping in Somerset.

<i>Chrysotoxum vernale</i>	Tadnoll	4.5.1992
<i>Cheilosia carbonaria</i>	Hooke Park	14.8.1992
<i>Cheilosia intonsa</i>	Eggardon Hill	24.7.1992
<i>Cheilosia vulpina</i>	Scrubbity Burrows	25.5.1992
<i>Criorhina asilica</i>	Hermitage	22.5.1992
<i>Eoseristalis abusivus</i>	Tadnoll	4.5.1992
<i>Microdon eggeri</i>	Scrubbity Burrows	25.5.1992
<i>Neoscias obliqua</i>	Minterne Magna	25.5.1992
<i>andasyophthalmus tibialis</i>	Oakers Wood	14.5.1992
<i>Platycheirus fulviventris</i>	West Bexington	25.7.1992
<i>Trichopsomyia flavitarsis</i>	West Compton	6.8.1992
<i>Tropidia scita</i>	West Bexington	25.7.1992

There is an undated record of *Brachypalpus laphrififormis* for Arne, W.D. Dean.

### *DOLICHOVESPULA MEDIA (RETZIUS). A SOCIAL WASP NEW TO DORSET*

S.P.M. Roberts

It is a rare event to record a new species from such a well recorded group as the aculeate Hymenoptera in the county, especially one as large and conspicuous as *Dolichovespula media*.

This wasp has been found at four Dorset localities, three in the Stour Valley, and one a few miles to the south in the spring and summer of 1992. The first record was of a nest found in late June in Sturminster Marshall (J. Gulliver; record via G.R. Else), which was reported in the *Bournemouth Evening Echo* on the 2nd July. This article prompted a reader to report a similar nest from her garden in Christchurch. The third record, also of a nest, was from Durweston at the end of the summer. The fourth report was produced in response to a request for Hornet records in the DTNC winter newsletter. The Hornet record was accompanied by two photographs which on examination proved to be two different queens of *D. media*. The photographs were taken in May 1992, and depicted the wasps sitting on a fence, collecting woodpulp for nest construction. These May records are the earliest known specimens of this species for the county.

The arrival of *D. media* in Dorset comes as no real surprise given the rapid spread of the species since its first discovery in Britain in 1980 by S. Falk in Friston Forest, near Newhaven, in East Sussex. In the last ten years, the species has spread inexorably northwards and westwards, to reach West Wellow in Hampshire in 1991 (the first Hampshire record). In 1992 it has extended its range further to include the New Forest (16 known nests), Wiltshire, Oxfordshire, Devon and Leicestershire in addition to Dorset.

The species is typically significantly larger than all the other social wasps with the exception of the Hornet, *Vespa crabro*, and the abdomens of the workers are often more heavily marked with black, with the yellow restricted to narrow bands on the posterior margins of the terga. The Durweston nest was greyish, streaked with brown, and suspended from the branches of a shrub (a typical site). Nests are most often found in suburban areas, and may be as large as a small football at full size. The species has a short season with the nest being fully formed by August, and in decline by the end of that month (M. Archer, pers. comm.). The brood cells are usually about 7 mm across (as opposed to 4.5 mm for the commoner social vespids, and 12 mm for the Hornet).

The species has been accorded schedule 3 (rare) status in the Red Data Books (Else & Spooner *in* Shirt, 1987) but this status has been provisionally downgraded to Notable (a) status (Falk, 1991). It is likely that as this handsome species becomes increasingly widespread and numerous over the next few years, it will be removed from the Red Data Books altogether. A map of its national distribution is currently in press and includes all sites known up until the end of 1992 (G.R. Else, pers. comm.). It will certainly be interesting to monitor the rate of extension of range in the county.

#### Acknowledgements:

I owe thanks to the following people: G.R. Else, Mrs. Hutchinson of Christchurch, G. Heffer from Durweston, and A.J. Philpott from Broadstone for supplying the records or details of the species to me; and to Dr. M.E. Archer, G.R. Else and M. Edwards for discussions on the Biology and distribution of the species in Britain.

#### Identification:

Allen, G.W. & Archer, M.E. 1989. '*Dolichovespula saxonica* (Fabricius). (Hym., Vespidae) found in Britain, with a key to British *Dolichovespula*'. *Entomologist's Monthly Magazine*, 125: 103-105

#### References:

- Else, G.R. & Spooner, G.M. 1987 *In* Shirt, D.B. (Ed.) *British Red Data Books: 2. Insects*. N.C.C.  
 Else, G.R. 1992 *Wildlife Reports. British Wildlife 4*: Number 1  
 Falk, S. 1991 *Research and Survey in Nature Conservation*, No. 35. *A Review of the scarce and threatened bees, wasps and ants of Great Britain*. N.C.C.

## THE STATUS AND DISTRIBUTION OF *PSEUDEPIPONA HERRICHII* (HYMENOPTERA) IN DORSET

Stephen Morrison

*Pseudepipona herrichii* is a solitary wasp belonging to the family Eumenidae of the superfamily Vespoidea. *P. herrichii* is the only member of its genus represented in the British Isles. It is an easily recognised species and can be told from other British species by its unique orange-red markings on the sides of the first tergum.

This heathland wasp has been recorded on the wing from late May to late August but is usually seen between mid June and early August. Males are the first to emerge and can be seen in fairly large numbers flying low over the aggregation waiting for females to emerge. When the females do emerge they presumably mate. Afterwards the females commence excavation of nest burrows. The burrow is generally excavated in light but hard, friable clay soil and consists of a shallow burrow, not more than three inches deep, with up to three, possibly more, chambers directly connected to the main burrow. Here the wasp stocks its prey of Tortricine moth larvae caught from the surrounding heather. Each cell is stocked with between eight and fifteen paralysed larvae; before which a single egg is laid and left suspended from the ceiling of the cell by a fine thread. The burrow is then sealed. The same wasp may excavate several burrows in the same area and, along with other wasps of the same species, can make a substantial aggregation.

*Pseudepipona herrichii* is widely distributed throughout the Palearctic but is apparently local on the continent. It is also found locally in Canada. In the British Isles all records are restricted to the heathlands of south-east Dorset, mainly in the Isle of Purbeck.

It was first discovered when a female was taken at Stoborough Heath (SY 93 84) on the 24th July 1886. Since then, it has been discovered at five other sites.

Unfortunately, all records up to 1985 failed to give a grid reference. This has made it very difficult to accurately pinpoint aggregations. A site by site analysis follows.

#### Stoborough Heath: SY 93 84

First noted on the 24th July 1868 when a female was taken. Thereafter, individuals were taken, or noted, on the 7th August 1939 and the 1st August 1942. G.M. Spooner located the wasp in three areas on the 11th July 1949. They are as follows.

1. 'single female, burrow on mound, edge of Slepe Heath'.
2. 'Stoborough Heath, railway track, two burrows'.
3. 'mound near main road, several burrows'.

Unfortunately, I cannot locate the areas mentioned so will leave the information raw.

K.M. White visited the area and observed the wasp from 1976 to 1980 inclusive (he first noted it on the 19th June 1976 when several were seen). He then visited Stoborough on the 19th July 1986 and found one female. Subsequent searches in 1986 or 1987 (exact year not known) failed to turn up any sign of the wasp. My visit on the 1st August 1991 proved fruitless in that no individuals were seen but three burrows located in clay soil, in an area of five square cm, on the west slope of a large pool on Creech Heath north (SY 927 846) may have been excavated by this species. A further investigation is needed.

The reason given for the lack of records in 1986 or 1987 was due to the destruction of the nesting site by motorcyclists 'dirt-tracking'. The area where the 1991 burrows were found seems safe from this activity. Stoborough Heath is now under the ownership of the Royal Society for the Protection of Birds so, hopefully, this problem will cease.

A record for 'Furzebrook' in 1943 probably relates to this site.

#### Studland/Godlingston Heath: SZ 82 01

The first record here was of a male taken on the 17th July 1878. Individuals were then noted from 1908 to 1910, 1912, 1913, 1930, 1934 to 1939, 1951 and from 1984 to the present day. All records up to 1934 probably related to aggregations on Godlingston Heath. From 1934 to 1939, an aggregation was noted at Brand's Heath north, Studland Heath (SZ 028 843). This site is now covered in heather and gorse and the aggregation has long disappeared. The wasp is still present in large numbers on Godlingston Heath.

#### Bloxworth Heath: SY 88 92 (tentative)

The only record for this site is of a female taken in 1882. This area is now a forestry plantation. As far as can be found out, the exact site may be to the west and just off Morden Bog N.N.R. (SY 91 92)

#### Gore Heath: SY 92 91

The only record is of an aggregation discovered by G.M. Spooner on the 15th June 1934. Males were noted to be plentiful with females just emerging. The area was apparently 'strictly limited'. From a map showing the site, it seems to be situated at SY 919 916. This area is now a forestry plantation and the aggregation no longer exists.

#### Rempstone Heath: SY 98 84 (tentative)

The only record is of two females collected on the 20th July 1937. This site was certainly linked to the present day aggregations on Godlingston Heath. The area is now covered by a forestry plantation. There is a possibility that a few wasps have hung on at nearby Newton Heath, now also a forestry plantation. Here, there is an old, extensive clay working with heather in reasonable abundance (SZ 005 845). The habitat is similar to some of the sites on Godlingston Heath.

#### Grange Heath: SY 90 83 (tentative)

There is one record of 'burrows in one spot ... on north side' on the 29th July 1937. The exact site is not known but it is now likely to be covered by a forestry plantation.

#### Furzebrook: SY 92 83 (tentative)

The only record is of three females taken on the 4th July 1943. It is unclear where the exact site was but it is likely to have been on

Stoborough or Creech Heath (see before).

In summary, *P. herrichii* has been noted at six sites but most of these have been planted over with pine. The wasp is now apparently restricted to Godlingston Heath. There is the possibility that it may still be present on Stoborough and Creech Heaths. The latter site has remained unchanged since the wasp was first recorded there. There is a remote possibility that it may still occur at Newton Heath. I know of no searches made here.

AMPHIBIANS

Robert V. Skinner

The amphibian reports received by the Dorset Environmental Records Centre during 1992 are included in tabular form at the end of this section. Records from the Studland Heath NNR were not available at the time of going to press but it is hoped they can be incorporated in the report for 1993.

- Smooth newt. *Triturus vulgaris* - L.  
See DERC report at the end of this section.
- Palmate newt. *Triturus helveticus* - L.  
At least five seen in a Corfe Mullen garden pond on 19 April. Six present in a garden pond at Winterborne Stickland on 14 July and during August. (A H Dunn) Very common in garden ponds in the Parkstone area, outnumbering the Smooth Newt by at least ten to one. (R V Skinner)
- Crested Newt *Triturus cristatus* - Laurenti,  
See DERC report at the end of this section.
- Common Frog. *Rana temporaria* - L.  
The earliest report was of pairing in a garden pond at Southbourne on 8 February followed by the appearance of spawn on 11 February. (S Bissierot) A large number of adults were seen in a Parkstone garden pond on 13 February and the first spawn observed on 21 February. (R V Skinner) Male heard calling in a garden pond at Corfe Mullen on 12 February and two clumps seen on 25 February. Up to 30 individuals counted in three ponds in one garden at Corfe Mullen at the end of February and beginning of March. (A H Dunn)
- Common Toad. *Bufo bufo* - L.  
A good colony observed in a Parkstone garden on 10 March. (A H Dunn) All the spawn deposited in one

Parkstone garden pond was infertile, a condition which had not been seen in previous years. (R V Skinner)

The table overleaf lists the amphibian records for 1992 received by the Dorset Environmental Records Centre, Dorchester.

REPTILES

Robert V Skinner

The reptile reports received by the Dorset Environmental Records Centre during 1992 are included in tabular form at the end of this section. Records from the Studland Heath NNR were not available at the time of going to press but it is hoped they can be incorporated in the report for 1993.

- Slow-worm *Anguis fragilis* - L.  
At least six found in a garden at Sturminster Newton in July. (A H Dunn)
- Viviparous or Common Lizard. *Lacerta vivipara* - Jaquin.  
See DERC report at the end of this section.
- Grass Snake *Natrix natrix helvetica* - Lacepede.  
A large specimen seen several times in a garden pond at Winterborne Stickland during June. Another large specimen was observed in a garden at Morden Park on 14 August. (A H Dunn)
- Adder *Vipera berus* - L.  
An adult between 18" and 20" in length was seen on a path in Morden Park on 27 July. It 'froze' when approached and held its ead erect (A H Dunn)

The table overleaf lists the reptile records for 1992 received by the Dorset Environmental Records Centre, Dorchester.

BIRDS IN DORSET 1992

Paul M. Harris

A relatively uneventful start to 1992 was relieved only by the Iceland Gull spending its sixth winter in Weymouth and by two rather unusual wintering records, a Kentish Plover at Ferrybridge and a Red Kite which apparently spent the winter near Beaminster, the first chance for most birdwatchers to see this species in the county.

Spring came rather early this year with the first Wheatear on 27th

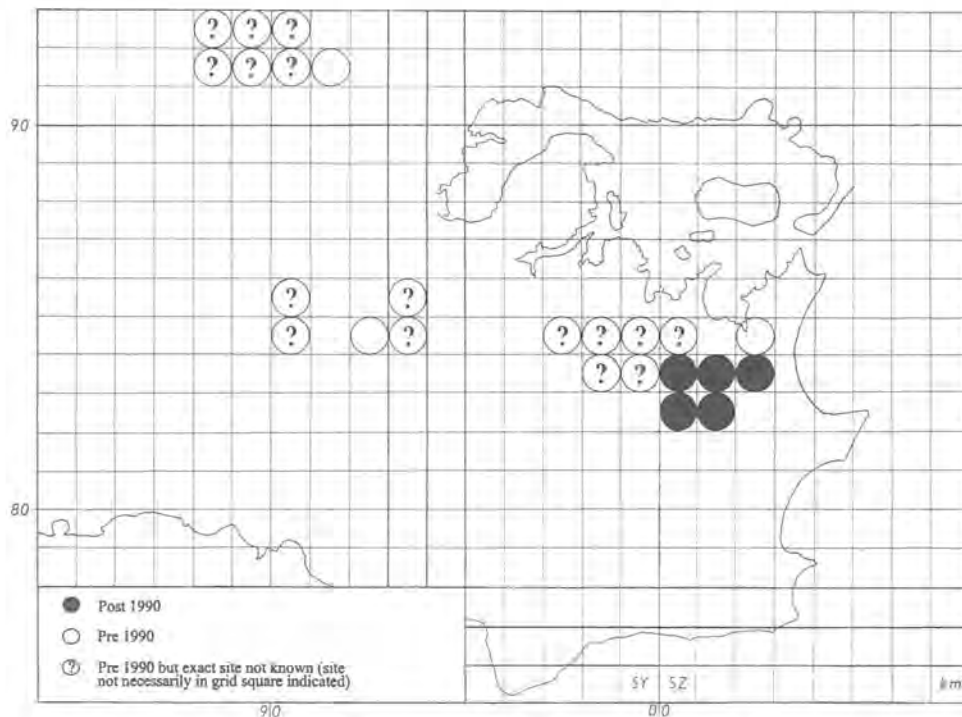


Figure 1: The distribution of *Pseudepipona herrichii*.

## AMPHIBIANS

SPECIES	SITE	GRID REF.	RECORDER	DATE
Smooth Newt	Bagber	ST7615	E D V Prendergast	1992
	Winterborne Zelston	SY8997	J Bush	July 1992
Crested Newt	Winterborne Kingston	SY8497	H J M Bowen	1992
	Holwell Pond	ST6910	E D V Prendergast	21.5.92
Common Frog	Marnhull	ST7618	H J M Bowen	1992
	Tolpuddle	SY7894	"	"
	Winterborne Kingston	SY8947	"	"
	Coombe Heath	SY8684	"	"
	Nr Sandsfoot Castle	SY673773	P R A Pratt	"
	Dorchester	SY693893	E M Keats	Feb 1992
	Wyke Regis	SY666771	A Penny	27.2.92
	Holnest	ST665094	A Mahon	31.3.92
	Povington Ranges	SY897821	E D V Prendergast	23.5.92
	Swanage	SZ028797	D Leadbetter	30.6.92
	Evershot	ST577047	N Matthews	19.10.92
	Dorchester	SY696903	"	29.10.92
	Common Toad	Wyke Regis	SY666771	A Penny
Higher Woolcombe		SY550960	A Mahon	4.5.1992
Tyneham		SY882802	W G Teagle	14.6.1992
Hooke Park		SY525995	J D Powne	18.9.92

## REPTILES

SPECIES	SITE	GRID REF.	RECORDER	DATE	
Slow-worm	Durlston	SZ0076	H J M Bowen	1992	
	Nr Sandsfoot Castle	SY673773	R R A Bratt	1992	
	Wyke Regis	SY671772	C Martin	19.4.92	
	Herston	SZ018787	W G Teagle	27.4.92	
	Bagber	ST7615	E D V Prendergast	4.5-15.11.92	
	Mare Pond	SY8983	"	11.8.92	
	Stoborough	SY923864	M H Lock	15.8.92	
	South Heath	SY857897	W G Teagle	15.8.92	
	Langton Matravers	SZ005787	"	16.8.92	
	Compton Valence	SY591932	J D Powne	9.9.92	
	West Stafford	SY724895	E & A Rose	26.9.92	
	Common Lizard	Hengistbury Head	SZ1790	H J M Bowen	1992
		Hurst Heath	SY7890	"	"
Winfrith Heath		SY8086	"	"	
Nr Sandsfoot Castle		SY673773	R R A Bratt	"	
Redcliffe Point		SY712816	S Searle	4.4.92	
Holworth		SY763815	H S Legge	29.7.92	
Adder	Black Hill	SY836942	C R Bristow	17.3.92	
	Chamberlaynes Bridge	SY864922	"	19.3.92	
	Powerstock Common	SY545974	A Mahon	4.5.92	
	Church Ope Cove	SY697710	S Searle	26.5.92	
	Powerstock Common	SY539973	E & A Rose	24.6.92	
Grass Snake	Bagber	ST7615	E D V Prendergast	24.5.92	
	Povington Heath	SY8884	"	27.6.92	
	Stock House	ST713135	"	28.7.93	
	Mare Pond	SY8983	"	11.8.92	
	Piddles Wood	ST796131	W G Teagle	25.8.92	

of February and the 1st Sand Martin on 2nd of March. April was notable mainly for a very obliging, and early, Purple Heron in Lytchett Bay, Poole. The only other notable birds were Red Rumped Swallow and Golden Oriole on Portland.

After April, May was an extraordinary month with two county firsts. The first of these was a Lesser Short Toed Lark (the archetypal silly bird name) on Portland. This constitutes the first British record of this species, the only other records being of two flocks in Ireland in the 1950s, a record which is now generally disbelieved. Sadly the bird chose to only stay one day.

The second county first was an American Lesser Golden Plover at Ferrybridge. Thankfully this bird chose to stay for several days.

Incredibly, either this bird or another was at Stanpit marsh, Christchurch, subsequently. Also on offer in May were singing male Common Rosefinch at Durlston (interestingly a species which bred in Yorkshire this year), Collared Pratincole, Black Kite, Red Rumped Swallow, male Bluethroat on Portland, and Red Footed Falcon at Hengistbury Head. This was the only Red Foot recorded in Dorset

considering the nationwide influx of up to 150 birds this year.

June was hardly an anticlimax with a Black Kite choosing to spend the night at Durlston roosting in a gully. Only the second ever truly visible county record. Also, Portland recorded Common Rosefinch and Greenish Warbler, and Weymouth replied with a stunning adult Night Heron and a Subalpine Warbler. A singing Rosefinch was also seen at Abbotsbury.

July was a month for Egrets, with a Great White Egret seen in Poole Harbour and a huge influx of Little Egrets into the county with 11 in Poole harbour and 10 together at Lodmoor. Otherwise Hoopoe at West Bexington and Melodious Warbler at Portland were notable.

As usual the ringers proved that Aquatic Warbler is not a rare bird, just a very skulking one, as they trapped 12 in Poole Harbour (down on last years 20) including the earliest ever record. Other highlights were a Caspian Tern at Hengistbury, Red Rumped Swallow in Wareham, Sabines Gull on Portland and the usual Osprey passage.

September on Portland was memorable for two reasons, the first being a Bobolink on Portland an extremely rare American bird and

also a first county record, and the second was an incredible days seawatching from the coastal headlands with hundreds of Skuas being seen, (including several Long Tailed's), thousands of Terns, numerous Shearwaters, several Storm Petrels and a few Sabines Gulls. This was undoubtedly caused by strong onshore winds and thick banks of fog in the Channel causing the birds to become lost. Other highlights were Yellow Breasted Bunting at Hengistbury, three Tawny Pipits together at Portland and a probable Lesser Crested Tern off Portland Bill. A very obliging Aquatic Warbler on Lodmoor for two weeks and an Arctic Warbler at Portland were no less notable.

October is generally rather a let down and this year was no exception with two Red Throated Pipits, an American Wigeon and a couple of Red Breasted Flycatchers in the county the only memorable birds.

With the onset of winter in November the bird watching scene becomes generally rather quiet. Predictably, the Iceland Gull reappeared in Weymouth for its seventh consecutive winter since it first appeared as a youngster and astonishingly a Kentish Plover again prepared to spend the winter at Ferrybridge, occasionally being joined by another. Otherwise a reappearance by the American Wigeon on Lodmoor and a late Pallas Warbler at Winspit seemed to round off the year.

December however had a sting in the tail with the appearance of a Lesser Scaup at Hatch Pond, Poole. This was yet another county first and the only the fifth British record. Sadly its stay was as brief as the Lesser Short Toed Lark!

MAMMALS

E.M. Keats

I have been pleased to receive a number of mammal records for 1992, some through the Dorset Environmental Records Centre and some direct to me. All records are filed at DERC and they help to build up a

distribution pattern for Dorset. Identification details are required with the rarer species and behaviour observations are also welcomed. Please give grid references. Mr R. Surry Keeper of Records at DERC has prepared the two maps with records up until the end of 1992.

The Scientific names are as listed in *Finding and Identifying Mammals in Britain* 2nd. edition 1989 by G.B. Corbet, British Museum (Natural History).

In addition to species mentioned elsewhere in the report the following species were reported in 1992: Hedgehog *Erinaceus europaeus* Common Shrew *Sorex araneus* Pygmy shrew *Sorex minutus* Whiskered/Brandt's bat *Myotis daubentonii* Serotine Bechstein's bat *Myotis bechsteinii* Daubenton's bat *Myotis daubentonii* Serotine *Eptesicus serotinus* Noctule *Nyctalus noctula* Rabbit *Oryctolagus cuniculus* Grey Squirrel *Sciurus carolinensis* Wood mouse *Apodemus sylvaticus* House mouse *Mus domesticus* Brown rat *Rattus norvegicus* Fox *Vulpes vulpes* Weasel *Mustela nivalis* Mink *Mustela vison* Sika deer *Cervus nippon* Fallow deer *Cervus dama* Roe deer *Capreolus capreolus*.

Mole *Talpa europaea* Most records of this species come from sightings of molehills, however one mole was found dead on a road verge.

Water Shrew *Neomys fodiens* One juvenile was found dead on a path at Radipole Lake; not many records are submitted for this species.

**Bats.** The Dorset Bat Group has had a busy year inspecting properties requiring timber treatment or building work, giving talks and conducting other educational activities and surveying properties threatened by a new bypass. The fine for killing or disturbing bats has been increased, up to £5000. Greater Horseshoe bat *Rhinolophus ferrumequinum* In December 1992 68 were recorded in different winter hibernation roosts with a further 15 just outside the County. This species bred well in central Dorset with 40 young in the main breeding roost although a small number died.

The man made cave dug to provide a winter hibernation roost had 42 Greater Horseshoe bats *Rhinolophus ferrumequinum* 4 Brown

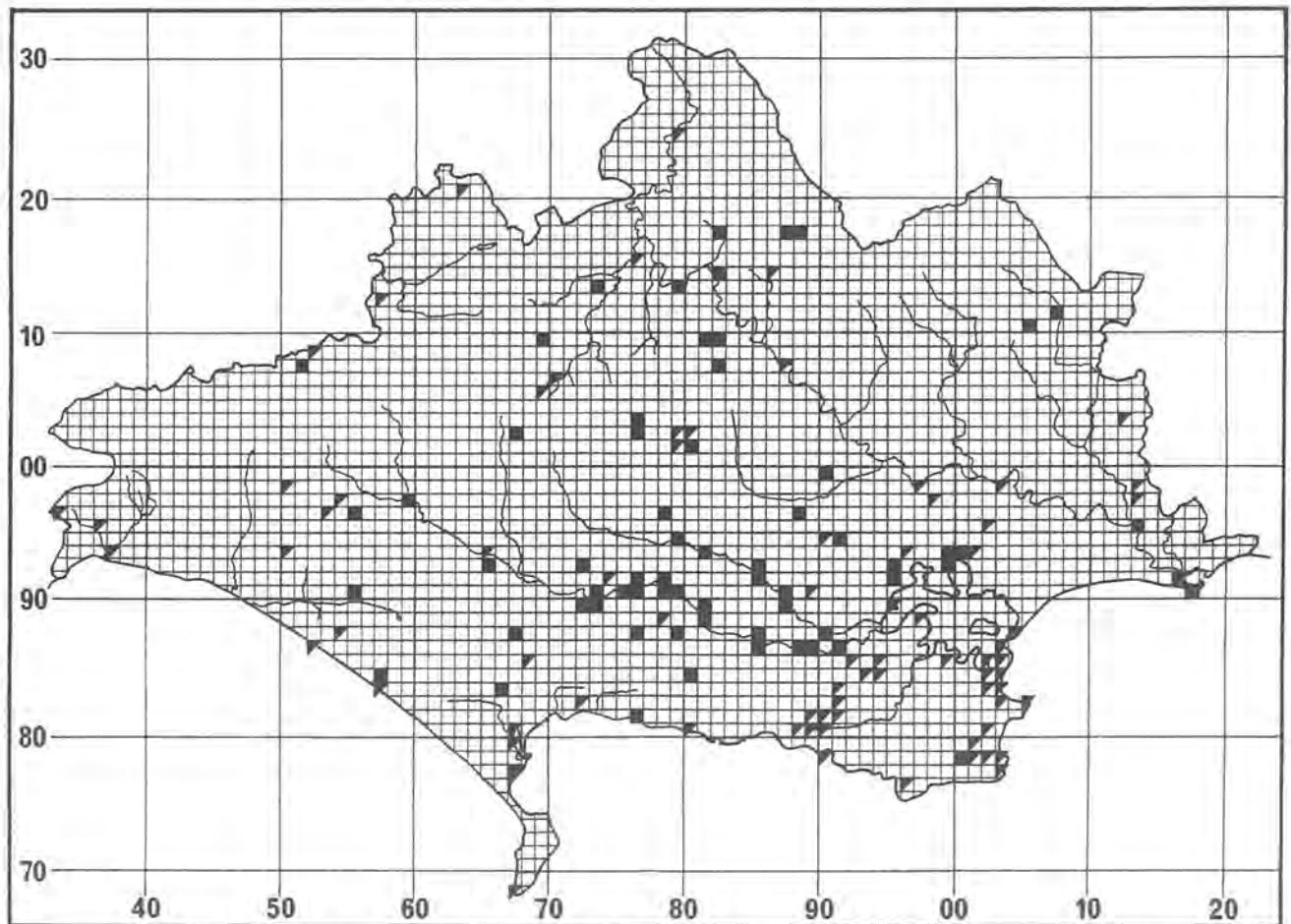


Figure 2. Field Vole, *Microtus agrestis*. Half-filled squares - pre 1980 records, filled squares - post 1980 records.

Long-eared bats *Plecotus auritus* 2 Natterer's bats *Myotis nattereri* 3 Pipistrelle *Pipistrellus pipistrellus* and 1 Barbastelle *Barbastella barbastellus*.

**Lesser Horseshoe bat** *Rhinolophus hipposideros* There has been a serious decline in this species in Europe so all populations in Britain and Ireland are of international importance. Unfortunately in the last year one Dorset roost has fallen into disrepair and the bats have left and the owners of two other roosts have requested exclusions.

**Grey Long-eared bat** *Plecotus austriacus* A???? found on the step of St. Peter's church, Dorchester one Saturday morning and brought to the Museum appeared uninjured, it took water and meat cat food and was released the same evening near the church, it flew strongly away. The previous night had been cold and the bat may have been unable to catch enough insects to keep going.

**Brown Hare** *Lepus europaeus* A number of records for this species has been received and it has been suggested that hares are scarcer than they used to be. Please send in details of sightings so that the recent distribution can be plotted.

**Red Squirrel** *Sciurus vulgaris* A survey on Brownsea Island is trying to determine the density of Red Squirrels in pine woods and Mrs Parkyn and the team of voluntary wardens were asked to record whether squirrels seen were wearing collars. They were also asked to record any squirrels with swollen ears as this is thought to be a symptom of a type of Parapoxvirus. There were 18 sightings of an individual with swollen ears, mainly in June and July but this does not indicate the number of diseased individuals as they were all in the same area and could have been one squirrel. One squirrel only was seen with a collar in October. A particularly bold squirrel climbed on to the deck chair and nibbled the occupants knuckles and then sat on the back of the chair. Total numbers of sightings were down at 402 but this may be the recorders walking at different times from the previous year and not necessarily a drop in the number of squirrels.

Red squirrels were also recorded on Green Island. Bank Vole *Clethrionomys glareolus* This species was recorded on Brownsea Island, in Morden Park, at Compton Valence, Abbotsbury, Sadborow, Winterborne Stickland, Milborne St. Andrew, and cats at Winterborne Kingston caught 42 over a period of 10 months.

**Field Vole** *Microtus agrestis* (Figure 2)

The map shows very limited records for this species and a number of pre 1980 record sites have not had records since so if Field voles have been seen please let DERC have the records. One record this last year was a field vole found under a sheet of corrugated iron in tussocky grass in Wyke Regis. Water Vole *Arvicola terrestris* Records of this species have been submitted for Trigon, West Bexington, and Dorchester, squares where there have been no previous reports.

**Dormouse** *Muscardinus avellanarius* (Figure 3) This is a nocturnal species which is not easily seen but the map shows a number of squares with pre 1980 records but not since; I wonder if Dormice are still in suitable sites in these squares.

**Stoat** *Mustela erminea* This species was seen on Portesham Hill, Whitcombe, Winterborne Kingston, Milborne St. Andrew, West Hill Corfe Castle, Corfe Common, on roman road near West Compton and near Maiden Newton.

**Badger** *Meles meles* A number of records have been submitted but sadly many are of dead badgers by the roadside as is also the case with foxes.

**Otter** *Lutra lutra* One was seen close up in gardens in the Parkstone area, the number of fish in a pond had decreased in the weeks before the sighting. One was seen crossing the road in North Dorset near the river Stour.

**Grey Seal** *Halichoerus grypus* A very sick grey seal rescued from the beach at Osmington Mills by the RSPCA had to be put down by a vet.

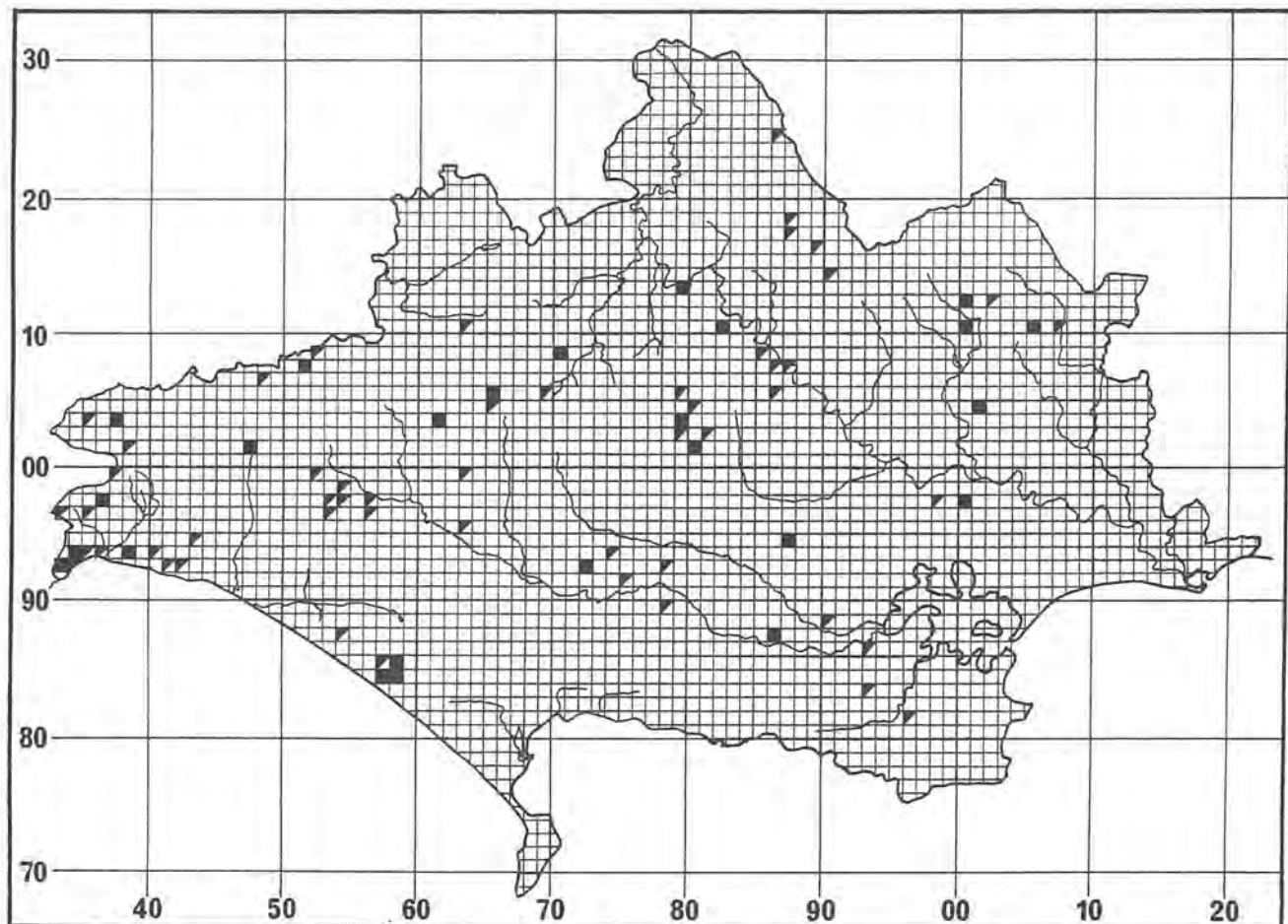


Figure 3. Dormouse, *Muscardinus ave avellanarius* Half-filled squares - pre 1980 records, filled squares - post 1980 records.

## OBITUARIES

### DEREK FRANK BEAMISH

Derek Beamish, who died in April 1992, edited the local history papers in these *Proceedings* for the past 12 years, and also acted as judge for the Society's Mansel-Pleydell and Cecil Essay Prizes for a number of years.

Born in Southampton of a Bournemouth family, a move by his parents led to schooldays at Poole Grammar School during the war which was reflected in his later interest in that period. In all his later travels it was to Poole that he returned, for he loved the town as if it were his native place.

He won an open scholarship to Keble College at Oxford University where he gained his first degree, and then his MA. He entered the RAF as a Flying Officer and when his commission ended, joined the Colonial Service, having gained his Master of philosophy degree from Southampton University in his spare time. His thesis was 'The Parliamentary and Municipal History of the Borough of Poole, Dorset, c. 1740 - c. 1840' (1982). In Nigeria he taught at a Government Civil Service College, and his professional interest in British history and constitution started. After that country's independence he returned to the UK and took a post at the Dorset Institute of Higher Education as Principal Lecturer on the BA degree course. He was not a hectoring or strident lecturer but in his quiet and humorous way possessed rare skills in developing the talents in his students. His encouragement and praise enabled them to accept constructive criticism. Derek did not direct studies for popular results but to train minds to accept academic disciplines and standards. A colleague at the time referred to his 'dynamic and refreshing approach reflecting his alert mind'.

As well as lecturing, Derek somehow also managed to pursue personal research based on Poole's archives. In 1972 he embarked on his first book leading to the foundation of Poole Historical Trust; to fill a need for research work to be carried out not for its own sake, but for publication to wider audiences as part of the reason for undertaking the work and to give life to history. As Francis Bacon said 'history makes men wise'. He acted as the Trust's Secretary from its foundation to his death, during which time he saw 10 books into print.

The realisation nowadays that local history is not just of importance or interest to the local audience was anticipated by Derek. He was keen to explain the context within which Poole's history lies, developing beyond the work of earlier authors, with a keen eye for proper examination and re-interpretation of primary evidence. He knew, as a lawyer does, that no conclusion can be drawn from Fact 1 and Fact 2 in isolation. They might create an impression - but how often in life do we find perceptions are superficial and untrue? He was prepared to do all the hard work necessary to establish proof and links from the facts particularly in relation to electoral history of the 19th century.

It was in placing Poole events in their national and international context that his association with Newfoundland arose. He was a founder member, and latterly became Chairman, of Wessex Newfoundland Society. He wrote the biography of Benjamin Lester (a prominent 18th century Poole merchant), for the *Dictionary of Canadian Biography* (Vol. V, 1983).

The late Professor Hoskins wrote 'The older one grows in the practice of writing history the more sceptical one becomes about the truths embedded in books and documents and the more one comes to realise that history is about people and they are continually escaping our net if we merely fish in muniment-rooms and libraries'.

Derek agreed with this and encouraged others to do so in their own writing. For he wasn't an antiquarian or just a local historian, but a vivid tutor to many with a wealth of knowledge which he willingly and never condescendingly imparted to others. He never complained that he couldn't cope with the quantity of requests for help he received.

Derek was an administrator as well as a historian. In the early

70's he put together and ran a job creation scheme working on unexamined materials in Poole Borough's archives. In 1987 his desire to spend more time researching coincided with early release from his principal lecturer role at Wallisdown. Using his administrative skills, local knowledge and connections with local organisations he became Mayor's and Sheriff's Secretary (the most overqualified holder of the post Poole has had or is ever likely to have) to enable him to examine borough records in his spare time. In due course he was appointed as assistant archivist; the first holder of such a post in Poole. He was a member of the Board of the British Records Association until his death.

When illness first overcame him Derek, typically, displayed sterling qualities. He was concerned not to let anyone down, and not least his wife, Mair, and sons Neil and Hugh. They were his first concern and in their successes he rightly showed his pride. His attitude to his approaching death was an example which left many disarmed, but full of admiration. He had a positive goal to remain at work, sharing the company he valued of his colleagues neither seeking sympathy nor wanting the full extent of his illness known. He had to be realistic about his priorities. He had another book bursting to get out; one which epitomised his life's researches, and re-interpreted Poole's history and links with Newfoundland. He worked on this to within a day or two of his death and completed more than half of the planned text. This and all his personal research papers and much of his library have been bequeathed to the Borough Archives as the 'Beamish Collection'.

Derek contributed massively to the work of the Society. His life may have been cut short but his work and his memory and the inspiration he provided to others will endure.

I K D Andrews  
Town Clerk and Hon. Borough Archivist  
Borough of Poole.

#### Books by Derek Beamish

- The Pride of Poole* - D Beamish, J Dockerill, J Hillier - 1974 and 1988 (Poole Historical Trust)
- Album of Old Poole* - D Beamish, J Hillier, G Smith - 1975 (Poole Historical Trust)
- Merchants and Mansions of Poole* - D Beamish, J Hillier, H F V Johnstone - 1976 (Poole Historical Trust)
- Poole & World War II* - D Beamish, H Bennett, J Hillier - 1980 (Poole Historical Trust)
- Poole & D Day* - D Beamish - 1984 (Poole Borough Council)



*Derek Beamish in 1988*

## NORMAN HASSELL FIELD BA BSc FSA (1917-1992)

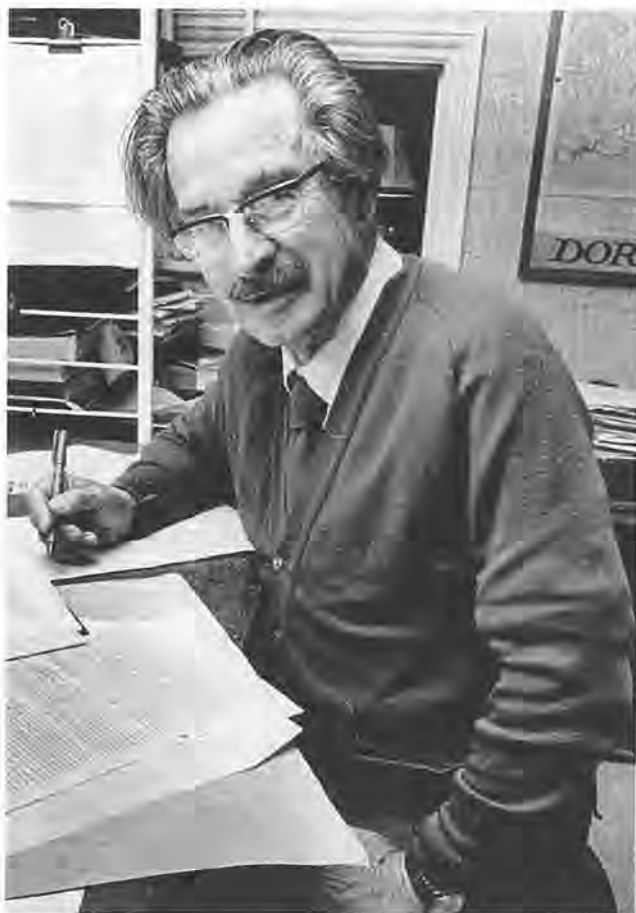
*The text of the address at his funeral on 30 April 1992*

We are all met today because our lives have been influenced by Norman Field, and because we hold him, and members of his family, in great affection. There will be as many different interpretations of Norman's life as there are people present, but the chances are that most of us will have got to know him through a number of rather varied subjects, maybe teaching, or archaeology, or Museums, as neighbours, or as fellow bridge-players.

In 1981 at the Dorset County Museum we continued a tradition, started many years ago, and asked Norman if he would forgive a personal intrusion and let us have a brief autobiography, outlining the salient points in his life. Norman, as someone who had built on the work of previous archaeologists, appreciated the reason for this intrusion. One hundred or more years on from the days of Charles Warne, the Cunningtons, William Shipp and Henry Durden, we know singularly little about those interesting people, or indeed other active Dorset amateur antiquaries of the day, who left a very personal and important mark on Dorset's history.

The salient points which Norman jotted down for us in 1981 were that he was born on 21 December 1917 in Hampstead, his father a solicitor and his mother French. That link with France of course continues to the present day, and in 1976 led to the publication by Batsford of Norman's translation of Chevalier's *Roman Roads*, revised and reprinted in paperback in 1989. More than one of us has been greatly helped by Norman's facility with the French language.

After leaving Sheen Grammar School he worked for two



N.H. Field

years with the Amalgamated Press in London, while at the same time, characteristically, studying in the evenings at Birkbeck College, until the unfortunate years 1936 to 1938 when he was in hospital battling with TB, in the days when victory over that disease was not a foregone conclusion.

Following his conquest of TB he completed his French and Spanish studies, predominantly self-taught, for an external degree at London University, and then started teaching in 1940, first at Taunton School, then the Collegiate School in Bournemouth, before moving to Poole Grammar School in 1943 where he taught until his retirement in 1977. By that time he had been Senior Modern Language Master at the school for 24 years. In 1944 he had added another qualification, self-taught again, an external BSc in economics.

He married Constance Muriel Eatherington in 1945 and thereby gained a happy life, with William, Jenny and the grand-children. Jenny and William were caught up with their father's enthusiasm for archaeology even when they were very young.

Norman summarised his hobbies and interests as 'the archaeology of Dorset, especially the beginning and end of the Roman period, reading, writing articles, listening to music, pottering about doing things in the garden and the house, and bridge'. Archaeology, again, was mainly self-taught, originally stimulated by H.P. Smith of Poole, somewhere around 1952.

His bibliography, which is a formidable one (articles in the *Proceedings of the Dorset Natural History and Archaeological Society*, *Antiquity*, the *Proceedings of the Prehistoric Society*, *Britannia*, and the *Antiquaries Journal*), spread over a period from 1958 to the present day, shows two characteristics. Some of his articles were the result of Norman's ever-willingness to gather together a group of volunteers to record a site that would otherwise have been destroyed by development. The second group of articles were the result of research excavations.

In the notes he jotted down for us he mentions the great debt to the many boys of Poole Grammar School whose support, through the school archaeological society, made many discoveries and reports possible - and, of course, among the many he fired with a lifetime's enthusiasm for archaeology are at least one who now holds a chair of archaeology in a university in this country, and one who has played an important part in the movement for rescue archaeology.

As the years go by Norman had an interesting penchant for work on the Roman road system of Dorset, and the Roman conquest of the area, and certainly field work in archaeology is a very important part of his legacy to us.

It was in an archaeological context that many of us learned of Norman's steely determination within that mild manner. I shall never forget how he stuck to his guns at Lake Gates. He would not be deflected from believing in the first century Roman fort there, despite the total disbelief of all the professional Romanists; and how triumphantly Norman's faith was justified by excavation. There must have been many such instances of his faith triumphing - but he never took advantage of his erstwhile critics.

And that is by no means all his achievements. He still found time for much else thanks, as he said, to Connie whose support above all made so many activities feasible. From 1957 to 1974 he was Chief Correspondent for Dorset to the Inspectorate of Ancient Monuments and Historic Buildings. This meant that he was on call to follow up any report of damage to scheduled sites, besides working his way (with Connie) round the many hundreds of those sites, to record their condition, in the days when intensive farming was causing severe damage.

He was elected a Fellow of the Society of Antiquaries of London in 1972. He was Chairman of at least two archaeological bodies, President of the Dorset Natural History and Archaeological Society from 1978 to 1981, having been a member of its Council since 1956, and he had a long association with a whole host of archaeological bodies, the Priest's House

Museum, the Wimborne Historical Society, the Wimborne Archaeological Group, the Avon Valley Archaeological Society, the East Dorset Antiquarian Society and CBA XII, all of whom helped him at one time or another with excavation and field work. One of his co-directors at Bucknowle describes him as very gentle and modest, but very determined. Others have spoken of his kindness, enthusiasm and willingness to help.

Norman knew Dorset. He had an eye for the lie of the land, an instinctive feeling for the likely route of a road, or the position of a settlement. He also felt deeply the need to protect the surviving ancient sites by all means possible. Very few archaeological meetings passed without him prodding, effectively, the powers that be, to take some necessary action, even though it might have taken quite a bit of prodding.

It is sad that he did not live to see the publication of his book on the Second Legion, nor will he see the publication of the excavations at Bucknowle; but these, with all the other work he has left behind, will be a truly lasting and impressive memorial, for which we give thanks this afternoon.

R.N.R.P.

Publications: *Proceedings of the Dorset Natural History & Archaeological Society*

- 'Romano-British Buildings at Woodhouse Hill, Studland: Fourth Interim Report', vol. 79, (1957) 106
  - 'Romano-British Buildings at Woodhouse Hill, Studland: (Final Interim Report', vol. 80 (1958) 105-6
  - 'A Romano-British Burial and Pits near Bryanston School, Blandford', vol. 80, (1958) 108-110
  - 'An Excavation at the Earthwork in Bowley's Plantation, Owermoigne', (Interim Report) vol. 81, (1959) 102-3
  - 'A Medieval Kiln at Hermitage, near Cerne Abbas', vol. 81, (1959) 103
  - 'Bindon Abbey, Wool, Dorset - a new Tomb', vol. 83 (1961) 86-89
  - 'Excavations in the Leaze, Wimborne, Dorset', vol. 83 (1961) 89
  - 'Discoveries at the Knowlton Circles, Woodlands, Dorset', vol. 84 (1962) 117-124
  - 'Excavation at Lake Gates, Pamphill, near Wimborne, Dorset', vol. 87, (1965) 99-101 (N.H. Field and R.M Butler)
  - 'Romano-British Settlement at Studland, Dorset', vol. 87, (1965) 142-207
  - 'A Bronze Age Burial Urn from Willett Road, near Wimborne', vol. 88, (1966) 105-6
  - 'Excavations at Lake near Wimborne', vol. 88, (1966) 115 (N.H. Field and R.J. Briggs)
  - 'Two Romano-British Sites near King Down, Pamphill', vol. 88, (1966) 116
  - 'The Deserted Medieval Village Settlement of West Burton, Winfrith Newburgh', vol. 88, (1966) 117-118 (N.H. Field and C.C. Taylor)
  - 'A Thirteenth Century Kiln at Hermitage, Dorset', vol. 88, (1966) 161-175
  - 'Excavations on the Roman military site at Lake, near Wimborne', vol. 89 (1968) 143
  - 'Excavations on the Roman military site at Lake, near Wimborne', vol. 90 (1968) 171
  - 'The Romano-British site on Bradford Down, Pamphill, near Wimborne', vol. 90, (1968) 171
  - 'Excavations on the Roman military station at Lake near Wimborne', vol. 91, (1969) 188-9
  - 'Excavations at Bradford Down, Pamphill', vol. 91, (1969) 189
  - 'Excavations on the Roman military station at Lake near Wimborne 1970', vol. 92, (1970) 151
  - 'Excavations at Bradford Down, Pamphill 1970', vol. 92, (1970) 151
  - 'Excavations on the Roman military station at Lake near Wimborne 1971', vol. 93, (1971) 161
  - 'The Leaze, Wimborne an excavation in a deserted medieval quarter of the town', vol. 94, (1972) 49-62
  - 'Interim notes on excavations at Bradford Down, Pamphill, 1972', vol. 94, (1972) 76
  - 'A Late Bronze Age Urn from Tyneham, Dorset', vol. 95, (1973) 86 (N.H. Field and J.B. Calkin)
  - 'An Ancient Causeway at Lazerton Farm, Stourpaine', vol. 95, (1973) 87-88
  - 'An Unrecorded Culvert, East Street, Wimborne', vol. 96, (1974) 70 (N.H. Field and R. Jones)
  - 'A Probable Roman Fortlet on Keynston Down, Dorset', vol. 98, (1976) 65-7
  - 'The Roman Villa at Bucknowle, Corfe Castle', vol. 102, (1980) 88 (J. Collins and N. Field)
  - 'Roman Road at Lake Farm, near Wimborne', vol. 103, (1981) 123
  - 'The Roman Villa at Bucknowle Farm, Corfe Castle - 1981', vol. 103, (1981) 123
  - 'The Iron Age and Romano-British Settlement on Bradford Down, Pamphill, Dorset', vol. 104, (1982) 71-92
  - 'A Roman Road from Lake, near Wimborne, to Dorchester?', vol. 105, (1983) 146
  - 'The Bucknowle Excavation 1983', vol. 105, (1983) 146, (J. Collins, N.H. Field and A. Light)
  - 'The Roman Road from Lake Farm near Wimborne, to Dorchester', vol. 106, (1984) 116
  - 'Roman Roads in East Dorset', vol. 109, (1987) 130
  - 'Excavations at Bucknowle Farm', vol. 109, (1987) 129 (J. Collins, N. Field and A. Light)
  - 'The Roman Road from Lake Farm to Dorchester at Stinsford', vol. 110, (1988) 145-6
  - 'Excavations at Bucknowle Farm 1988', vol. 110, 151-2 (1988) (J. Collins, N. Field and A. Light)
  - 'North Causeway, Wareham, December 1988', vol. 110, (1988) 152-4
  - 'The Roman Road from Lake Farm towards Winchester', vol. 111, (1989) 107
  - 'Bucknowle, 1989', vol. 111, (1989) 107
  - 'Bucknowle Farm, Corfe Castle, 1990', vol. 112, (1990) 117-9 (J. Collins, N. Field and A. Light)
  - 'The Iron Age and Romano-British site at Bucknowle Farm Corfe Castle', vol. 113, (1991) 173-4 (J. Collins, N. Field and A. Light)
- Other papers and publications*
- 'Fossil Sea-urchins from a Romano-British Site', *Antiquity* 39, (1965) 298
  - 'New Neolithic Sites in Dorset and Bedfordshire', (with C.L. Matthews and I.F. Smith) *Proceedings of the Prehistoric Society* 30, (1964) 352-381
  - 'Ptolemy's Isca', *Antiquity* 42, (1968) 309-311
  - 'A Romano-British bronze terminal from North Tarrant Hinton Down, Dorset' *Antiquaries Journal* 50, (1970) 337-81
  - The Ancient Monuments of Dorset a definitive list* (with J Bugler) DNHAS, (1972)
  - 'The discovery of a Roman fort at Shapwick near Badbury Rings, Dorset' *Britannia*, 7 (1976) 280-3
  - Roman Dorchester (Durnovaria)*, DNH&AS, Dorchester Excavation Committee, (1978)
  - Badbury Rings Dorset (with Nicholas Lock) privately printed, (1979)
  - 'A Romano-British amulet from Bradford Down, Pamphill, Dorset', *Antiquaries Journal* 61, (1981) 307-91
  - The Making of Dorset 2, Hod Hill*, Dorset Archaeological Committee, n.d., (1981)
  - Excavations on the Roman Villa at Bucknowle Farm Corfe Castle Summary of Work 1976-84* (with J. Collins and A. Light), (1986)
  - 'Corfe Mullen The Origins of a Dorset Village. Richards Estate Agents', (1988)
  - Roman Roads* Raymond Chevalier (translated by N.H. Field), Batsford, 1976; revised and reprinted in paperback, Batsford 1989
  - Dorset and the Second Legion New Light on a Roman Campaign*, Dorset Books, 1992

PROFESSOR RONALD D'OYLEY GOOD MA ScD FLS  
1896-1992

'I have been a fairly regular visitor to the Museum since about 1906': Ronald Good completing the outline of his life deposited in the Museum at the request of the Society's Curator and Secretary, Francis Dalton. Although he did not join the Society until he was 43, when he had completed the results of the Botanical Survey of Dorset, begun in 1931, (published in book form as *A Geographical Handbook of the Dorset Flora* in 1948) he has left a considerable mark on the Society and its Museum, and on the county.

Born on 5 March 1896, the second son and third child of William Ernest Good and Mary Gray Good (née Smith), both his father and grandfather were doctors in Dorchester, living and practising at 48 and 41 High West Street respectively. His father looked after William Barnes at the end of his life (*teste* John Cowper Powys). Ronald Good was educated at Weymouth College and Downing College, Cambridge where he was an Exhibitioner and, later, Foundation Scholar, taking 1st class honours in the Natural Science Tripos both in Part I (Botany, Chemistry & Zoology) in 1921 and in Part II (Botany) in 1922. He rowed in the College Eights in the 1st Lent and in the 1st May boats.

The delay in the completion of his first degree was, of course, the result of war service. He was in the Dorchester Company of the Volunteer Training Corps from its inception, about Christmas 1914, until he joined the Inns of Court OTC in 1916. He was commissioned in the 4th Dorsets in 1917, and served in France with the 2/5 Lincolns, and as Battalion Signals Officer from 1917 to 1918, before joining the 3/4 Dorsets in Ireland until 1919. In the Second World War he was in the Home Guard (Dorsets and, later, East Riding) from 1940 to 1945.

Having taken his BA in 1921, and his MA in 1925 he started his academic career in the Department of Botany in the British Museum (Natural History) where in 1922 he was in charge of the



R.D'o.Good.

herbarium and public exhibitions until 1928.

In 1927 he married Patty Gwynneth, fifth daughter of Herbert Edward Griffith of Putney. She died in 1975. They had one daughter.

In 1928 Ronald Good was appointed Head of the Department of Botany at Hull University College, then in its infancy. With the growth of the University he became Professor of Botany in 1946, and during his time at Hull, College University Marshall. Whilst at Hull he was awarded his Cambridge doctorate in 1950, and became Emeritus Professor of Botany at the, by then, University of Hull on his retirement in 1959.

Amongst his scientific journeys and surveys were expeditions with the British Association to Canada in 1924, to Southern Africa in 1929, the Bahrain Islands in 1950, a world tour of the tropics and southern hemisphere in 1954, and to the mouth of the Amazon, Trinidad and Jamaica from 1960 to 1961.

The earliest references in the *Proceedings* to Good occur in 1915 when, in February, he exhibited two pressed specimens of *Ranunculus ophioglossifolius* at the second winter meeting and, at the Annual Business Meeting on 4 May, Canon Mansel-Pleydell 'in the unavoidable absence of Lord Eustace Cecil' presented him with the Cecil silver medal prize of £10 for his essay on Radium.

His Dorchester residence, when he joined the Society in 1939, was at Albert Lodge until 1946, after which he lived primarily in Hull from whence he edited the Society's Dorset Rainfall returns from 1941 to 1948, and wrote a useful paper, published in Volume 63 of the *Proceedings*, summarising Dorset's rainfall observations since 1856. He also edited the Society's botany reports from 1960 to 1976. His first spell on the Society's Council was from 1945 to 1951 at which point his work for the University prevented him from attending monthly meetings in Dorset. However he rejoined the Council in 1960 and remained on it as President from 1961 to 1965, as Trustee from 1964 to 1985 and then as Past President until his death.

In 1939 besides joining the Society Good was awarded the Mansel-Pleydell silver medal for an essay 'The Old Roads of Dorset', the first of a series of classic Dorset works which will ensure that his name will be associated with the subjects, roads and the flora, as long as the subjects are studied in Dorset. *The Old Roads of Dorset* was first published in 1940, and then in a much enlarged edition in 1966. Good's own words best describe the genesis of the work 'The earlier history of this book was, appropriately enough, very like that of the roads it describes. It began, in the nineteen-thirties, as a few quite random notes and observations made in the course of a long exploration of Dorset in connection with a piece of scientific research, but as time passed these accumulated until they came to form, though scarcely with deliberate intent, a rough outline of local road history, and it was this outline which eventually became the little book that was published in 1940. In much the same way the roads themselves have gradually developed from a few faint tracks of remote ages, first into the requisite network of communication and finally into the foreshadowing of an ordered whole that we see today'.

The publication of *A Geographical Handbook of the Dorset Flora* had to wait until 1948 although the book was based on an extensive botanical survey he carried out between 1931 and 1939, with an important chapter by K.L. Robinson from his survey on the soils of Dorset made in the war years. Mrs. Jean FitzPatrick, when she succeeded him as the Society's botany editor in 1977, wrote 'Dorset owes an enormous debt to Professor R. D'o.Good both for his detailed documentation of the county's rich botanical heritage in his *Geographical Handbook of the Dorset Flora* published by this Society in 1948 and for his work as County Recorder for many years. His research has given us a valuable foundation on which to build and for comparison with the rapidly changing ecological situation of today. Within the old county of Dorset he collected plant lists from 7,500 'stands' and recorded over a quarter of a million plant individuals from which he mapped the distribution of some 600 of the 1,300 species of

flowering plants recorded. Professor Good's Flora was in fact a "trail blazer" in the history of local floras.' The book was heralded in *Nature* (No. 4152, May 28, 1949) as 'an original and valuable contribution to plant geography, and a signpost to new pastures for the field botanist.' Two addenda by the Professor were published in *Proceedings*. 75(1953) and 83(1961).

As President of the Society Ronald Good succeeded Brigadier Charles Hall Woodhouse to whom he dedicated *The Old Roads of Dorset*. He served in that office from 1961 until 1965, particularly significant years in the history of the Society and its Museum. Colonel Charles Drew had established the County Museum's reputation in the museum world during his curatorship, ending with his death in 1956. The Society had prepared plans for an extension to the Museum which were nullified by the outbreak of war, the war years and the ensuing period of austerity. It was not until the early 1960s that there was a chance to return to the intentions of 25 years earlier. Professor Good was President at the time when the Society broke new ground, and launched a successful public appeal for a considerable sum to renovate the existing museum buildings, and to build an extension to house a multi-purpose gallery for temporary exhibitions and activities, a new archaeological gallery, a bygone (now called social history) gallery, a laboratory, and not least a multi-purpose space where schools could be introduced to the Museum's collections, and where groups of adults could hold meetings in the evenings and in the school holidays.

According to the Society's rules Good's Presidency should have ended in 1964 but as he had done so much for the Appeal the Council considered it would be unwise to break continuity in the middle of the Appeal, and so the rules were changed 'to provide for the President to be elected for special reasons for more than three years'. In 1965 his successor, Sir David Williams, paid tribute 'at a turning point the times did indeed produce the man, and for the last few years we have benefited from his enthusiasm, tact and attention to detail. The Society could not have been better served'. It was appropriate that, soon after the new buildings were completed in 1972, we held a little exhibition of Ronald Good's admirable chalk drawings of some forty views of the Dorset landscape and its buildings.

It is not generally known that although the Dorset flora came out under the imprint of the Society in 1948, when the annual income of the Society was £2,650 for all its work, we were in no position to pay for its publication. Professor Good assumed total responsibility for the production; but once the cost had been recouped, from the sale of some 750 copies of the book, the Society received all the proceeds from the sale of the remaining 250 copies.

Few men have given Dorset so much, or known and loved the county so well.

R.N.R.P.

#### Publications

*Plants and Human Economics* (1933)  
*The Old Roads of Dorset* (1940); (enlarged edition 1966)  
*Weyland* (1945); (enlarged edition 1946)  
*The Geography of the Flowering Plants* (1947); (enlarged and revised editions in 1952, 1964 and 1974)  
*A Geographical Handbook of the Dorset Flora* (1948)  
*The Wild Flowers of Kuwait and Bahrain* (in collaboration with Violet Dickson) (1955)  
*Features of Evolution in the Flowering Plants* (1956); (new edition USA 1974)  
*The Lost Villages of Dorset* (1979)  
*The Philosophy of Evolution* (1981)  
*A Concise Flora of Dorset* (1984)  
 and many contributions to scientific journals..

From *The Independent* (18 Dec 92)

RONALD GOOD was born in Dorchester in 1896 and retained

throughout his life a love and interest in "his" county. Although first and foremost a botanist of world repute, his interest in all things Dorsetshire inspired a steady stream of publications ...

Good's life and academic development were rudely interrupted by the First World War. He entered the Dorset Regiment, and while serving in the trenches was wounded and invalided home. He went to Downing College, Cambridge (where he was Senior Scholar), and took an MA and ScD. His driving interest in botany saw him appointed to the staff of the Botany Department of the Natural History Museum in 1922, where he remained until 1928 in the Gamopetalae section.

His interest in imparting his knowledge and sense of wonder in the plant kingdom drew him to the college and university environment. He entered what is now Hull University in 1928, where in the Botany Department he eventually became Head of Department, a post he held until his retirement in 1959. His time at Hull saw the development of three different themes to his research interest. The first in plant utilisation, which led to his *Plants and Human Economics* (1933). The second, and no doubt the central theme of all his interests, in Plant Geography. His book *The Geography of the Flowering Plants* was published in 1948, based on a text prepared in 1939 but held up by the Second World War. This immediately became the standard reference work, which nearly 50 years on and several editions later is still a key work in botany. His third and closely related research interest was the evolutionary process in plants, and in 1956 *Features of Evolution in the Flowering Plants* appeared, followed in 1981 by *The Philosophy of Evolution*.

Many of the topics covered in these volumes and his scientific papers highlighted man's role in the transfer and destruction of plants around the world and the consequences for mankind long before it became an area of popular concern.

G.L.I. Lucas

From *The Guardian* (18 Dec 92)

Very many of the world's botanists will mourn the death aged 96 of Ronald Good - the author of one of the major standard reference works of modern botany *The Geography of the Flowering Plants*. The book was first published in 1947, although it was completed in the summer of 1939, and 50 years on it is still a valued text today. His clear-sighted, well-written volume has caught the imagination of many a budding naturalist and has shown them the wonders of "wandering continents" and the consequences of isolation on the formation and distribution of species.

Ronald Good had a global perspective of the plant kingdom which also allowed him to make his mark with *Features of Evolution in the Flowering Plants* (1956). He was a careful and precise lecturer with a singular way of defining all new technical terms before his lectures began. As I later realised, this was a reflection of his methodical taxonomic background and training which he received at the British Museum (Natural History) between the years 1922 to 1928 in the *Gamopetalae* section. He took up his true vocation of teacher and writer on moving to the University of Hull in 1928. He eventually became Head of Department, a post he held until retirement in 1959.

There was another side to Good's interests, firmly rooted in Dorset, but showing the same link between geography and botany. His *Geographical Handbook of the Dorset Flora* (1948) is a model. He broke the mould of the old annotated checklist approach by adding four detailed chapters on the distribution of species with appropriate "dot" maps, which he related to an introductory chapter on geology, topography and climate. A colleague contributed a further chapter on soils.

This design became a classic which many authors follow to the present day. He was a steady writer of scientific papers and books. All possess an individual clarity and insight. Many of his statements are even more relevant to today's problems with the environment than were foreseen in the past. An example of this can be seen in this short extract from the preface to the first edition of *The Geography of the Flowering Plants*: "The spectre of starvation and the rigours of rationing have brought about a much more vivid appreciation of what man owes to the plant world".

This message still needs to be remembered and acted upon today in this so-called era of "biological diversity awareness".

G.L. Lucas

## MAUREEN WEINSTOCK M.A.

Before a Record Office was set up in Dorset, Miss Weinstock was working on the archives at the County Museum in Dorchester, sorting and cataloguing them with her friend George Squibb. In 1955 both of them were on the panel which selected Miss Margaret Holmes as the first County Archivist for Dorset. On the establishment of a Record Office the documents collected by the County Museum were handed over to Miss Holmes' care. The "Museum Collection" forms the basis of the archives in the Record Office and the lists and cards compiled by Maureen Weinstock and George Squibb are still in use today.

She was born in Dublin (before Partition in that Province) of a Jewish family, the eldest of five children. She attended St. Paul's School for Girls, Hammersmith, where she was taught by Gustav Holst who was music teacher there, and who inspired in her a life-long love of music. She won open awards to both Oxford and Cambridge and chose Oxford because Lady Margaret Hall gave her a scholarship, while at Cambridge an exhibition was offered. She studied history at Oxford in the late 1920's. On obtaining her degree she became a schoolmistress and in her spare time edited the Hearth Tax Returns for Oxfordshire, published by the Oxfordshire Record Society. Whilst at Oxford she met George Squibb, with whom she was later to work in Dorset. Later she taught in Croydon and became involved in helping people in the poorer areas of London's East End. It was while she was in London that she took her Master's degree, studying with the historian Tanney.

During the Second World War she worked as a supervisor in a munitions factory in Liverpool, an experience which she always



Maureen Weinstock from the Weymouth Teacher Training College photograph of 1959.

maintained enlarged both her vocabulary and her perception of human behaviour. After the war she became Vice-Principal of the emergency teacher training College at Worcester, one of several set up to address the post-war shortage of teachers. In September 1949 she was appointed the first Principal of the newly established Weymouth Teacher Training College, a post which she held until her retirement in 1966. Her first task was to appoint her staff, and then to set about preparing for the first intake of young women. In 1949 the college buildings and equipment were inadequate and Miss Weinstock was responsible for their development and her proudest achievement was the establishment of a good reference library. Her pupils studied a wide range of subjects of their choice, as well as teaching method. By resisting expansion she was able to maintain a high level of pastoral care which was greatly appreciated by her students.

She belonged to a generation of formidable women college principals and, probably uniquely among them, she carried a history teaching time-table all through the years of her principalship. She enjoyed teaching and insisted on taking part of the history syllabus herself. An efficient administrator, she refused to be monopolised by her management duties or hindered by committees. Staff meetings were both infrequent and brief - it was said that her highland terrier, Angus, who shared much of her temperament, was trained to bark uncontrollably when she thought the time for discussion was over. It was her policy to make herself available to her students, whatever their problems. She kept a small fund of her own money which she would lend to students in difficulty - and they always paid back. She was quietly proud of her Jewish ancestry, but open-minded in her own approach to religion. Each week she took an Old Testament assembly and her voice suited the readings which she chose. The students respected her and knew that she kept an eye on all aspects of college life, and many who took up teaching careers in the area became life-long friends.

Once established in the county, she immersed herself in the history of Dorset, editing the first publication of the Dorset Record Society, a transcription of the Weymouth and Melcombe Regis Minute Book 1625-1660. Her first book, *Studies in Dorset History* came out in 1953 which was followed by another book *More Dorset Studies*. Then in 1967 she produced *Old Dorset* for the David and Charles series. These drew heavily on her researches at Dorset Record Office, where she continued to help Margaret Holmes voluntarily, help which was much appreciated in the early days when there were few members of staff. Miss Holmes would often show her interesting new accessions, which Miss Weinstock would work on and use as the basis for an article in a local journal. She was a contributor to the *Proceedings* of the *Dorset Natural History and Archaeological Society* and *Somerset and Dorset Notes and Queries*. In recognition of her publications, she was elected Fellow of the Royal Historical Society.

She lectured widely, to many different groups and was always pleased to share her love of archives and historical research. All her life she was a good clear and concise speaker. She continued to give talks until well into her eighties with a vigour that many a younger person would have envied. As an historian she was meticulous in her research and was not afraid to express her disapproval of those who failed to meet her standards. At the same time she was unfailingly generous in giving help to amateur historians who often came to seek her advice. Throughout her time in Dorset she was a staunch supporter of the Dorset County Museum, and was still attending their music concerts within a month of her death. She belonged to many local societies, including the Dorchester Association, the Friends of Dorset's Archives and the Somerset and Dorset Family History Society.

Maureen Weinstock was a remarkable person, strongly independent, kind and loyal to many friends, and with a strong sense of public duty. After retiring she became a prison visitor, working in the Portland prisons to bring counsel and cheer to the inmates and advising the parole boards. She was involved in the early days of the Weymouth Citizens' Advice Bureau, a concern

typical of her life-long social conscience and of the Fabian socialist tradition in which she had grown up. In her later years she devoted most of her spare time to fund-raising for her chosen charity, the Samaritans and was Chairman of their fund-raising committee until her death. Many times she telephoned me with a request for mince-pies, or Easter biscuits for a Samaritans coffee morning, indeed she often told me that she wanted the word "Beggar" on her tombstone because she begged shamelessly from her friends. She could be a formidable friend. I shall miss her booming voice on the telephone issuing the well-known summons -"I haven't seen you for a while!" or the more direct "Have I been crossed off your visiting list?" But beneath the stern exterior was an unexpected gentleness and a genuine concern for her fellow creatures.

She died in hospital after a short illness on 27 February 1992 at the age of 86.

P.A.S.

#### Publications

##### *Somerset and Dorset Notes & Queries*

- 'A Dorset Inventory from the Syndercombe Papers', Vol XXVI (1952) part CCXLX, pp. 64-5.
- 'Inventory of Goods of Adrian Bower of Wraxall', Vol XXVI (1954) part CCLV111, pp 232-236.
- 'A Dorset Lay Subsidy Roll 1525', Vol XXVII (1955) part CCLX pp

24-25.

- 'Weymouth Mayoral Account 1579 Pt I', Vol XXVII (1957) part CCLXV pp 140-143.
- 'Weymouth Mayoral Account 1579 Pt II', Vol XXVII (1959) part CCLXX pp 235-238.
- 'A 17th century panacea from Dorset', Vol XXVII (1966) part 283 p 258.
- 'Coroners' Inquests 1804-1838', Vol XXIX (1970) part 292 pp 135-138.
- 'Bridport Shipping', Vol XXIX (1971) part 294 pp 183-184.
- 'Some Dorset Apprenticeships', Vol XXIX (1972) part 295 pp 213-215.
- 'A Sherborne Charity', Vol XXIX (1973) part 298 pp 288-290.
- 'Foster's Charity, Sherborne', Vol XXX (1974) part 300 pp 51-52.
- 'Blandford in Elizabethan and Stuart Times', Vol XXX (1975) part 302 pp 118-122.
- 'Dorset Trades and Occupations', Vol XXX (1976) part 303 pp159-161.
- 'The Baths in Weymouth', Vol XXX (1977) part 305 pp 247-249.
- 'Sydenhams of Wynford Eagle The Lottery', Vol XXX (1979) part 310 pp 447-449.

##### *Proceedings of the Dorset Natural History & Archaeological Society.*

- 'Dorchester Model Prison 1791-1816', vol. 78, pp94-109.
- 'Dorset Settlement Examinations', vol. 92, pp. 218-223.

##### *Books*

- Studies in Dorset History* (1953) Longmans
- More Dorset Studies* (nd. c. 1960) Longmans
- Old Dorset* (1967) David & Charles



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