

There remains the question of its function at Llangwm. Whilst there is no reason to doubt that the main series of stone lamps is secular, the medieval cresset stones which follow them seem to be not only ecclesiastical but (at least in Wales) specifically monastic.²⁵ The Llangwm lamp, from its find-spot alone, is clearly not secular and its size also emphasizes its special character. The secular lamps are about 5 in. (13 cm.) high, suitable for lighting a single room. The Llangwm lamp is four times this size. The only other stone lamps from Wales known to me are again monastic—a larger, undecorated version of the St George's Street, Winchester, lamp (i.e. as FIG. 39, no. 2) in local sandstone at Monmouth Priory and two examples of a simpler type not so far discussed. These, rectangular blocks of imported limestone, are from Talley Abbey, Carmarthenshire²⁶ and Burryholms in the Gower;²⁷ the latter, of 12th-century date, being footed and elaborately decorated. It therefore seems reasonable to assume a connexion between the Llangwm lamp and the monastic establishment indicated in the documents.²⁸

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THE EARTHWORKS OF BORDESLEY ABBEY, REDDITCH, WORCESTERSHIRE (FIG. 40)

Bordesley Abbey (SP 045686) was founded as a Cistercian monastery in 1136 or 1138 by Empress Matilda²⁹ in an area of Worcestershire which at that time was very wooded and rather isolated. The main claustral buildings were sited on the S. side of a low spur projecting E. at a point where a small stream joins the River Arrow, a situation very favourable for the elaborate and efficient use of the water running through its precinct.³⁰

The area is now included in Redditch New Town and it was this designation that prompted archaeological work on the site, including a detailed earthwork-survey carried out³¹ in 1968 (FIG. 40). Before this, little archaeological work had taken place here since the 19th century.³² The site is unusual in that a vast area (c. 140,000 sq. m.) of earthworks without standing remains has been preserved since the dissolution with little detectable later disturbance; this provides a unique open-air laboratory for the study of a monastic community. The survey was carried out on the basis of 100-ft.-grid squares, which were subdivided into 20-ft. squares where there were a great many earthworks. Features were then sketched in from these squares; for complicated areas individual sections were measured and plotted in more detail.

Until the 18th century 'a great old gate' (1)³³ stood at the entry from the W., and from this point the earthworks can be seen clearly in the fields below. On the left are

²⁵ The examples from Wales are from Monmouth Priory, Brecon Priory and Llanthony Priory (Mon.), all 12th-century foundations. For a full study (with list and bibliography) of medieval cresset-lamps see Jane Evans, 'A discovery of two unusual objects in New Shoreham', *Sussex Archaeol. Collections*, cvii (1969), 79–86.

²⁶ *Archaeol. Cambrensis*, 1941, 87–91 (now in the National Museum of Wales). I am very grateful to Miss Jane Evans for drawing my attention to this lamp.

²⁷ *Gower*, xvii (1966), 39, from excavations by Mr. Douglas Hague; full publication forthcoming.

²⁸ I am very grateful to the vicar of Llangwm, the Rev. K. H. S. Guppy, for permission to publish the lamp and to Mr. George Nichols, of the staff of the Royal Commission on Ancient Monuments, Wales, for the photographs on PL. XII.

²⁹ *V.C.H., Worcestershire*, II, 151; M. Dickens, *A Thousand Years in Tardebigge* (Birmingham, 1931), 16.

³⁰ J. K. S. St. Joseph and D. M. Knowles, *Monastic Sites from the Air* (Cambridge, 1952), p. xxii.

³¹ By M. A. Aston and A. P. Muntton of the Dept. of Geography, University of Birmingham.

³² J. M. Woodward, *The History of Bordesley Abbey* (London, 1866).

³³ Numbers in brackets are marked on FIG. 40.

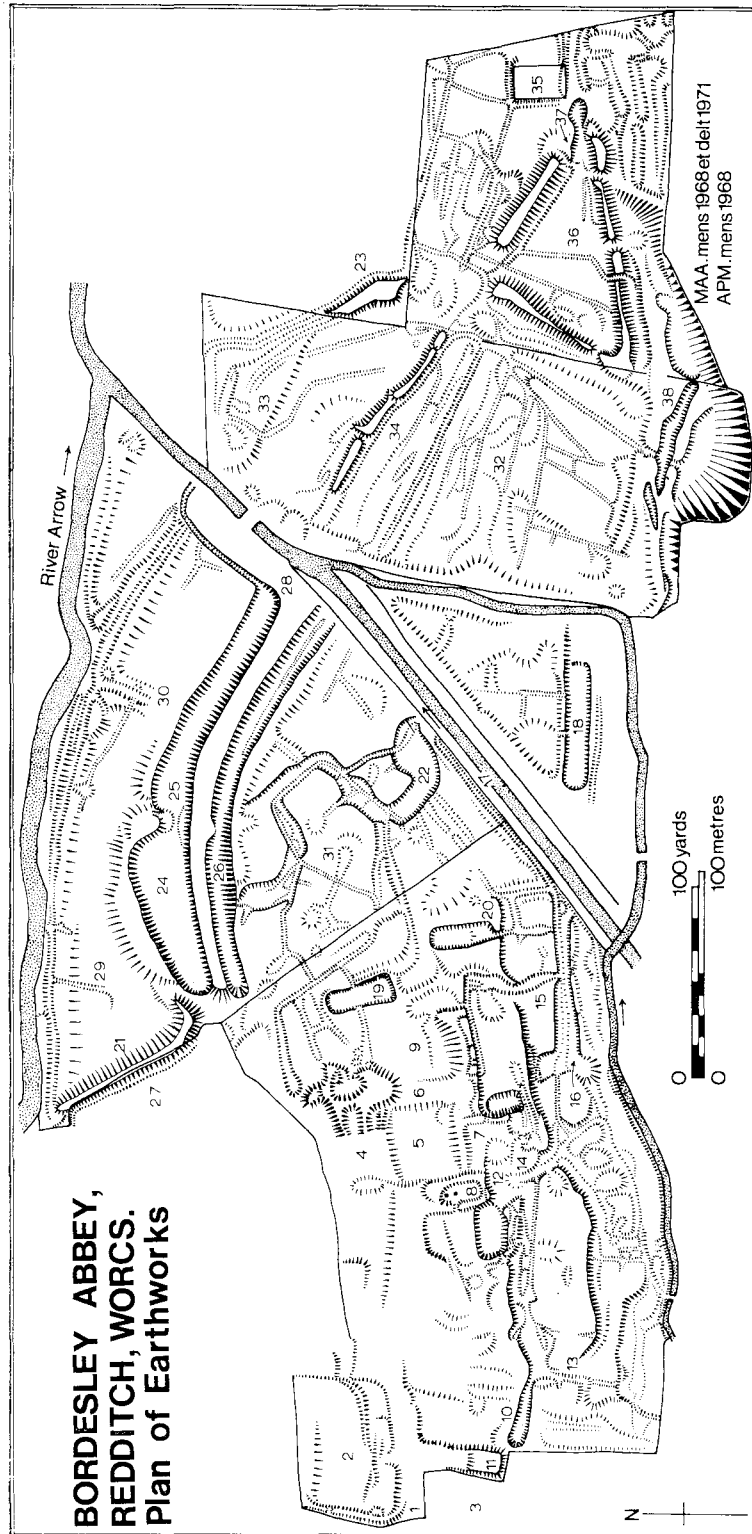


FIG. 40

PLAN OF THE MEDIEVAL EARTHWORKS OF BORDESLEY ABBEY, REDDITCH, WORCESTERSHIRE (pp. 133, 135 f.)

clear platforms where stables and guest-houses probably stood (2), and on the right is a small enclosure (3), slightly terraced in the hillside, where the medieval chapel of St. Stephen stood until the early 19th century. This was the *capella ad portam* of the monastery built to serve the hamlet of Bordesley, which may have lain outside the gate or more likely a little farther away at SP 038692. The graveyard around the chapel is still marked by recumbent headstones and many old yew trees. After the medieval period it was used at least once as a cholera cemetery for Redditch.

The site of the monastic church (4) can be clearly discerned and much of it has been excavated since 1967 by Trevor Rowley³⁴ and Philip Rahtz. To the S. can be seen the cloister-garth (5) and the ranges of claustral buildings on the E.(6), S.(7) and W.(8) sides, the last still possessing the bases of two columns. From the evidence of the earthworks it would appear that there may have been a smaller cloister SE. of the church (9).

The area of the monastery contains many earthworks situated on two terraces above the stream. At (10) a main leat enters the precinct and conveys water from a large pool (now filled in) W. of the precinct to the abbey buildings. There may have been a mill, or at least sluice-gates, where this leat enters (11), and much of the rest of its course seems to be obscured by the ruins of various buildings (12). It is, however, possible to recognize overflows or outlets at (13), (14) and (15). The bottom of the valley, near the stream, has low, confused earthworks and the only really clear feature is a fish-pond (16), which has been cut through by the construction of an 18th-century leat for Forge Mill S. of the site (17). Beyond this leat the other half of this fishpond can be seen in the field to the E. (18). There are further, small, fishponds at (19) and (20), each with its leat-system intact.

There is some evidence to suggest that the area just described was enclosed within an early precinct, the enclosure of which still survives on the NW., N. (not shown on the map), and NE. sides (21). From surface evidence and from the maps contoured at 1-ft. intervals supplied by Redditch New Town Development Corporation, it has been possible to show that (22) is probably the old course of the River Arrow. This dry channel occupies the lowest part of the valley with the present river 3 or 4 ft. above, suggesting that at some stage after the initial laying out of a precinct the monastic area was extended to the E. into low-lying areas. The river N. of the abbey here is considerably straighter than anywhere else in its course N. or S. of the site; indeed, there is a right-angled bend NE. of the precinct (off the map), where this straight course rejoins the meandering river. Engineering projects associated with water-control on this scale seem commonly to have been carried out by Cistercian houses (cf. the Yorkshire monasteries).³⁵

If this was indeed medieval reclamation, the area was put to very good use even though it is so low-lying. The limits of medieval technical ability seem to have been reached NE. of this new area, where a boundary-bank (23) cuts off a corner, within the bend of the river, which even today is permanently marshy and where attempts at drainage in 1948 seem to have failed. Within the new area large fishponds (24), (25) and (26) were built, fed by a leat tapped off the river N. of the abbey and led along a canal (27) into the ends of the ponds. Overflows were arranged into the stream (28) and back to the river (29) and (30) through the flood bank bounding the precinct. S. of these ponds the area which contained the old river course was kept drained by numerous ditches and probably served as rich pasture for cattle (31).

The field to the E. is crossed by numerous channels (32), all of which join up at the lowest point of the field. It is possible that the earthworks in this field represent either a drainage or an irrigation scheme. Water could be tapped off the stream to the W. through a system of flood-gates and led across the field in these channels. The

³⁴ *Med. Archaeol.*, XII (1968), 170; *id.*, XIII (1969), 248.

³⁵ E.g., J. Weatherill, *Yorks. Archaeol. J.*, XXXVIII (1954), 333, for details of Rievaulx Abbey.

possibility of a vineyard must be considered, even though the field is somewhat over-shadowed by the hill to the S. (in which there is a sand- or gravel-pit). There is a flattened boundary-bank running across the top of this field (33) and an enigmatic series of banks carrying on the line of the fishponds (34).

The easternmost field may mark the extremity of the monastic precinct and contains an industrial site (35) recently excavated by Trevor Rowley and Philip Rahtz, which was evidently set as far away from the church as possible, but kept within the precinct. It is difficult to define the course of the precinct boundary in this area; perhaps the large embanked triangular pond (35), created later to furnish power for a metal workshop which already existed, has obscured the precinct bank. The site of a mill, with stone footings just beneath the turf, can be recognized at (37); it might have operated either tilt-hammers for forging blooms or bellows to heat a forge. A channel conveying water along the base of the bluff S. of the precinct can be seen at (38), although it has been partly destroyed by recent pipe-laying operations.

E. of the industrial site there is a further linear hollow which probably represents the continuation of the original course of the river back to the River Arrow.

Around many of our monastic sites there are extensive areas of earthworks which have, as yet, been very rarely recorded or studied. Sketch surveys of sites in Worcestershire (Halesowen Abbey, Evesham Abbey, Dodford Priory, Cookhill Nunnery) and Warwickshire (Maxstoke Priory, Merevale Abbey, Kenilworth Abbey, Henwood Nunnery and Pinley Priory) have all revealed extensive areas of earthworks around the known and generally well-recorded stone buildings. Our knowledge of monasteries as economic units rather than architectural masterpieces could be considerably increased with detailed surveys of precinct areas, identifying features indicating water-control and utilization, tracing boundary-banks or walls of precincts, and locating outlying buildings. Surveys, such as this at Bordesley, inevitably pose a large number of questions and suggest many possible sites where special problems could be tackled by excavation.

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TWO EARLY CRUCK HOUSES IN NORTH BERKSHIRE IDENTIFIED BY RADIOCARBON (FIGS. 41-2)

The subject of this note stems from a programme which started in 1962 with Professor W. F. Libby's new radiocarbon laboratory at the University of California at Los Angeles. The object was to date some of the surviving medieval timber-framed buildings in or near Harwell in N. Berkshire. At that time there was a difference of opinion about the dates of cruck-framed buildings. Fox and Raglan had found stylistic evidence in Monmouthshire which led them to attribute most of the crucks there to the 16th century,³⁶ while Portman assigned the original cruck-framed part of Cruckfield Cottage in the parish of Long Wittenham, Berks., to the early 15th century, or possibly earlier.³⁷

Care was taken in planning this work to send samples for radiocarbon dating which were free from contamination with carbonaceous impurities and which also had a known growth allowance (that is the number of annual rings between the sample and the bark).³⁸ However, until 1966 no building-dates could be derived from the radiocarbon results, because the corrections to apply for the small, but important, variation in the carbon-14 levels in the atmosphere were not available. When some

³⁶ Sir Cyril Fox and Lord Raglan, *Monmouthshire Houses*, I (1951).

³⁷ D. Portman, *Berks. Archaeol. J.*, LVI (1958), 35.

³⁸ J. M. Fletcher, *Antiquity*, XLII (1968), 230.