Bronze mould from Felmingham Site 34732

(Fig. 1)

In November 1999, whilst metal-detecting by Mr M. Harmer, a further example of a bronze mould was discovered. For the only other recorded examples of bronze moulds anywhere in the Roman Empire, see Bayley, J., Mackreth, D.F. and Wallis, H., 2001, 'Evidence for Romano-British Brooch Production at Old Buckenham, Norfolk', *Britannia* 32, 93–118. Mr D.F. Mackreth has kindly provided the following report:

This can be identified as one half of a two-piece mould for the manufacture of the Icenian rearbook-type brooch. The variety cannot be identified as the front half of the mould is missing (despite further exhaustive searching by the finder). The proportions are slightly odd in that it is as wide as it is high. The date must be before AD 54–60, when to all intents and purposes the brooch ceases not only to be made but, seemingly, worn.

Dr Justine Bayley of the English Heritage Centre for Archaeology has analysed the surface of the mould by X-ray fluorescence, which showed it to be a lightly leaded bronze. A full analysis of a sample from the mould was undertaken by Dr David Dungworth (also EH CfA) who reported the following composition: Cu 83.6%, Sn 7.4%, Zn 0.7%, Pb 7.3% and Fe 0.1%. The two analyses are in full agreement. Dr Bayley has also contributed the following report:

The mould can be compared with those from Old Buckenham, though the alloy of which it is made and its design are rather different. The most obvious difference is that the sprue cup, through which the metal was poured into the mould, is at the head rather than the foot of the brooch. This is unusual, as the only other Roman brooch moulds that were filled from this end were for early 1st-century brooch types where the sprue and runner were hammered out to form the spring/pin of a one-piece brooch which needed to be attached to the brooch head. Where the spring/pin was a separate piece of metal, the main body of the brooch was usually cast from the foot end. The main reason for this departure from normal practice may have been that the rearhook on the head which D.F. Mackreth has identified would have been awkward to make at the closed end of the mould. Alternatively, the craftsman who made this mould may have had a personal preference for the sprue cup being at the head of the brooch, even though there was no functional reason for this.

The two holes through the mould suggest that the method of holding its original two valves together was similar to that used on the Old Buckenham moulds, but as the front valve of the mould is missing there can be no certainty about this. It is also not clear if the foot end of the mould is incomplete, or whether the end of the cavity would have been closed by the front valve which would have wrapped round and extended beyond the end of the back valve, a return closing off the foot so the molten metal did not run out. The front valve may have been considerably expanded at the foot end so the assembled mould would stand securely the right way up for use.

The large mass of the mould, in comparison with that of the brooch cast in it, is necessary to ensure that the heat from the casting was conducted away quickly enough so the mould itself was not melted. As a leaded bronze, the mould would have had a slightly lower melting point than the unleaded bronze which was probably cast within it. This would not have mattered as the thermal capacity of the mould would have been sufficient to avoid disaster.

EXCAVATION OF A RING-DITCH AT HOPTON ON SEA, 2002 by Kenneth Penn

Introduction

(Fig. 1)

A series of features was examined during archaeological investigations during 2002 beside Lowestoft Road, Hopton on Sea (TM 527 999). The excavation (HER Site 16167; Fig. 1) was conducted by the Norfolk Archaeological Unit prior to residential development by Persimmon Homes (Anglia) Ltd. The site was selected for evaluation and excavation because a palimpsest of crop-marks had been identified on aerial photographs (Brennand 2000; Penn 2002). These were

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Figure 1. Location of Site 16167

thought to represent archaeological remains from several periods; one of the features, a ring-ditch, was regarded as a possible Bronze Age round barrow.

Description

(Figs 2 and 3)

The ring-ditch (319; Figs 2 and 3) was exposed by an excavation area measuring *c*. 30m square. The ring had an internal diameter of *c*. 20m and displayed three gaps or possible 'entrances', with one in the south-west, one to the north-west and one (rather wider) to the north-east. The The ditch was fairly narrow, with a maximum width of 0.75m. It had a varied profile; in parts it was shallow and flat-bottomed and in places it was steep-sided. In most places it contained a single fill (a dark grey-brown sand/silt), although in some sections a primary sandy silt was recorded (Fig. 3). A piece of clay pipe, a fragment of 18th- or 19th-century blue-and-white Transfer Printed Ware and eleven residual struck flints were collected from deep within these deposits. The latest of these finds suggests that the ring-ditch had infilled relatively recently.

A pit lay a little off-centre within the ring-ditch (350; Fig. 2). It measured *c*. 0.80m in diameter and was 0.25m deep. A circular depression in the eastern side of the feature suggested that it once contained a post with a diameter of *c*. 0.25m. A second pit (304), which was about 0.80m wide and 0.25m deep, was located a little to the south-east of the ring-ditch and may also have once contained a post. To the south of the ring-ditch a group of seven shallow post-holes (384, 386, 380, 390, 392, 394 and 396) was observed; all contained grey silty-sands and ranged in depth between 0.05m and 0.10m.

The ring-ditch was cut by two irregular features (410 and 412). One of these had been cut in turn by a field boundary ditch (318; Fig. 2). This latter feature was c. 1.00m wide and 0.25–0.30m deep with a sloping profile. Its mid grey-brown silty sand fill yielded a stem of a clay pipe, two sherds of Grimston ware, one sherd of post-medieval Glazed Red Earthenware, two fragments of brick and a residual prehistoric flint.

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Figure 2. Area of excavation, showing the ring-ditch and other features



Figure 3. West-facing section across the ring-ditch

Discussion

Prior to excavation it was thought that the ring-ditch could have been the remains of a Bronze Age barrow. However, the results of the excavation, and particularly the finds of pottery and clay pipe, point to a 18th- or 19th-century date for its construction. Whilst no obvious function for the ring-ditch was identified, two possible interpretations were suggested on the basis of observations elsewhere.

Elsewhere in Norfolk, at Trowse Newton (Site 9589), a ring-ditch of c. 20m diameter was identified from aerial photographs as a putative barrow and excavated in connection with the Norwich Southern Bypass project, but proved to be the remains of an installation built during the Second World War (Ashwin and Bates 2000). While it is possible that the Hopton ring-ditch was something similar, its irregular plan argued against this, as did the absence of modern debris from its fills.

Ring-ditches sometimes mark the sites of former post-mills. These were raised on a massive upright post set in the ground, supported by a sub-structure of quarter bars and cross trees. Archaeological evidence for these structures has been found in the form of earthfast settings, such as large post-holes and crossed trenches. Sometimes these features were surrounded by ring-ditches, perhaps to separate them from grazing animals (Steane 1985, 170). Having said this, the pit recorded within the ring-ditch seemed far too slight to fit with this interpretation.

In conclusion, this ring-ditch remains undatable and its function is unknown. As such, it is an important reminder to archaeologists that crop-mark ring-ditches need not represent barrows, Second World War installations or post-mills!

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