

NOTE

A polished bone drop-spinning set from Vindolanda

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SUMMARY

A set of two polished bone artefacts, comprising a truncated conical disc and a fragment of decorated bone pin, was found within a fourth-century aggregate deposit for the latest surface of the Via Decumana, in the south-east quadrant of the last stone fort at Vindolanda. Signs of wear and particular features of its components suggest that the two elements may have been used as a set for drop-spinning.

DURING THE 2015 EXCAVATION SEASON in the south-east quadrant of the third- and fourth-century stone forts at Vindolanda, a set of two polished bone artefacts was uncovered within context V15-08A. The set, comprising a truncated conical whorl and a terminal, was recovered from a rubble and clay fill with small stones, which made up the aggregate for the final fourth-century road surface of the *Via Decumana*, running in a north–south direction from the southern wall of the *principia* (headquarters building) to the south gate of the fort. The find was located within a depression parallel to the road surface itself, indicating the presence of an underlying Antonine period drain.

The set (henceforth SF19380) is composed of a bone spindle whorl (27 mm diameter by 6 mm thickness) which was recovered in close association with a fragment of bone pin, possibly part of a spindle rod (18 mm long by 4 mm diameter of the shaft) (fig. 1). The rod was discovered *in situ*, inserted within the hole of the spindle whorl (6 mm internal diameter with 1 mm tapering) as shown in fig. 2. Part of the spindle whorl appears to be snapped, its edge broken in antiquity. On the bottom face is a decoration comprising a single incised circular line.

The whorl weighs 2 g and is a unique example at Vindolanda; 265 spindle whorls have been uncovered since 1972, yet none is comparable with SF19380 in shape, size, weight and decoration. No other spindle whorl at Vindolanda has been found with a rod still in place, but two complete polished bone sets, one of them certainly from a Romano-British context, are held at the British Museum (Museum numbers: 1856, 0701.1069 and 1974, 1009.171). Unfortunately, more specific data on their find-spots and contexts of retrieval has been lost, but the two sets share some features other than material and appearance: for example, the presence of a tapering pin with plain flat terminal and linear decorations on the whorls. The rod in 1856, 0701.1069 also has a sharp indentation in the body, located at the wider end; this could have been used to secure the initial thread when spinning.

The rod in SF19380 (similar objects are also described in literature as pins or pegs, see for example Wilmott 1997, 285) presents a double reel beneath an ovoid head, bearing the closest resemblance to Type 5 bone hair pins classified by Crummy (1979, 162). The lower, and

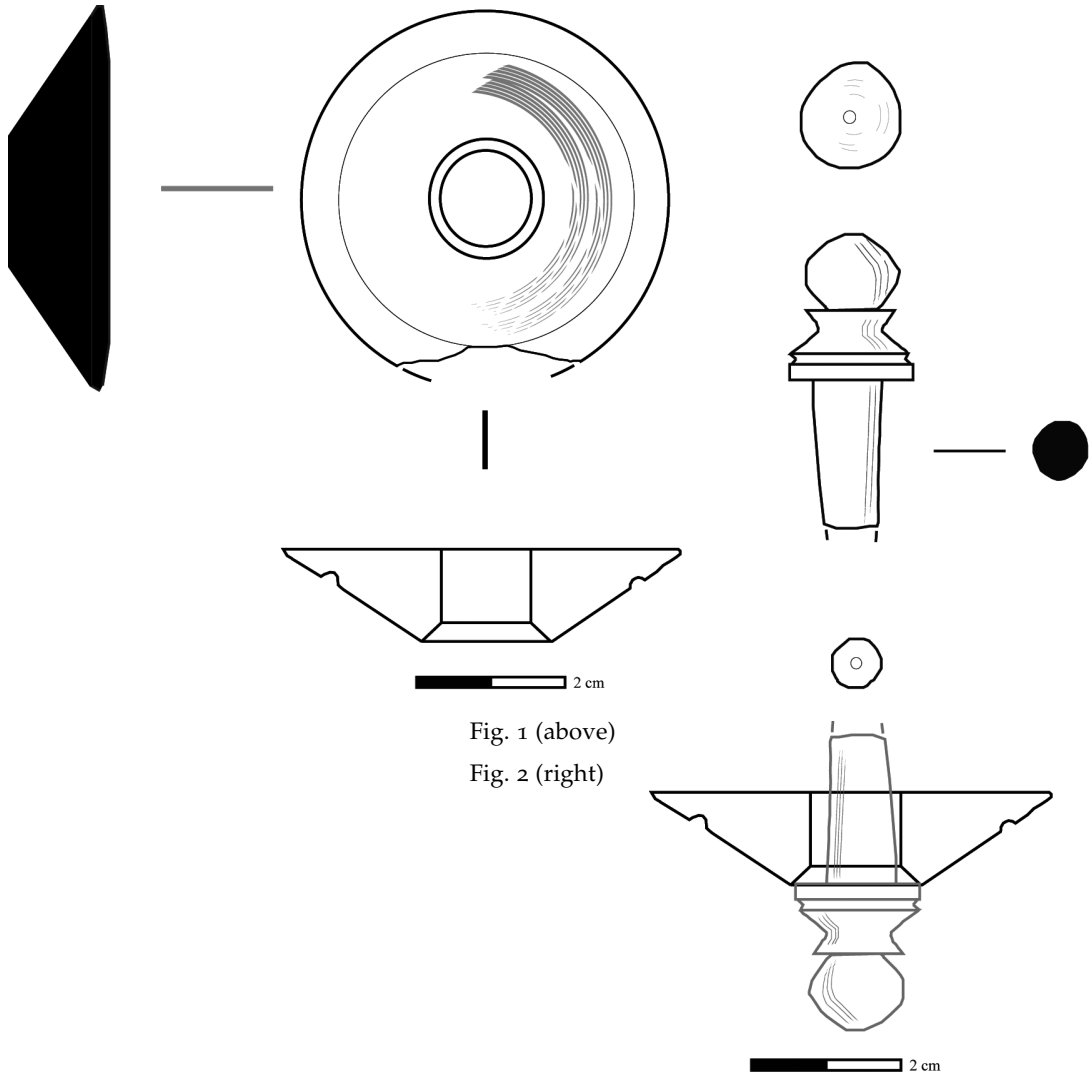


Fig. 1 (above)

Fig. 2 (right)

smaller, reel has also been damaged in antiquity. The find from Vindolanda finds comparison, albeit with one less decorative reel, in pin 595028 from Catterick (Wilson 2002, 191; fig. 113): both share the small lathe indentation at the top, but in the case of SF19380 the same indentation is also present at the bottom of the pin. It has to be noted that the two finds are comparable on an exclusively typological basis, as 595028 was not found in association with any other spinning related artefact. Such shape-based typology seems to provide evidence to validate the context information available for V15-08A, dating the object to the transition between third and fourth century (Crummy 1983; Swift 2003, 39). The rod in SF19380 also bears similarities in its decorative pattern with Type 2 'knob on cordon heads' metal hair pins

classified by Cool (1990,155). Cool's Type 2 pin, characterised by multiple reels and ovoid head, is found in contexts dating from the late second to fourth century.

The whorl finds its closest comparison with find 595007 from Catterick (Wilson 2002, 185 fig. 52), with which it shares decoration, diameter and material. The latter, which has been misidentified as a gaming counter, is drawn with its top inverted, a common problem in publications as pointed out by Gleba (2008, 138). The author has identified at Corbridge an almost identical object CO6706 (unpublished), which is comparable in weight, diameter and decoration to the Vindolanda example. Unfortunately, the context of CO6706 is unknown.

Whorls with incised linear decorations, most commonly made out of jet or shale and belonging to discoidal type, have been found at Birdoswald (Wilmott 1997, 289) South Shields (Allason Jones and Miket 1984, 320, finds include but are not limited to 7.172, 7.173, 7.174, 7.188) and Piercebridge (Fairless 2008, D11, 270) and are commonly found on Romano-British sites. In burial contexts, two examples of jet spindle whorls with concentric linear decoration are offered by Snape (1994, 60, finds 63.1 and 63.2); one of the two spindle whorls found in grave 1 (63.1) has been modified, its original hole enlarged to fit onto what has been interpreted as a distaff.

A few functional observations on both the whorl and the rod in SF19380 can aid in making some hypothesis regarding their use. While the shape of the spindle whorl does not exert a significant influence on the type of yarn spun, the ratio between diameter and height does, as it may affect the speed with which the spindle rotates (Gleba 2008,139). More so does the weight of the whorl; experimental studies have demonstrated that lighter whorls are most suited for spinning short wool, flax tow or cotton (Gleba 2008,140, referring amongst others to experiments performed by Mårtensson *et al.* (2006) for the Centre for Textile Research, University of Copenhagen). The perfectly centred hole in the Vindolanda find aids stability, avoiding wobble during spinning. This object, when assembled into a set, could potentially have been used to spin delicate, light yarn.

The flat side of the whorl in SF19380 does not appear to be decorated but wear signs, in the shape of a circular, highly-polished area, are visible to the naked eye (fig. 3); the extent of these suggests that the majority of cones of yarn produced and stored on the tool were 23 mm in diameter. Such wear patterns, with the exact same measurements, are also visible on CO6706. Cones of larger diameter than those indicated by the wear area would have not been impossible to spin with either whorl, but would not have been ideal. A larger, heavier cone of yarn would have overfilled the spindle whorl, causing wobble and loss in stability and would have ultimately negatively affected the rotation of the whole tool (Mårtensson *et al.* 2006, 7).

The components of SF19380 can easily be separated but the diameter of the body of the rod does not seem to be wide enough for the set to be used for top spinning; if placed in any position other than the one it was found in, the whorl simply slides off. Despite probably being made to work together as a set, the rod and whorl can achieve the same function if one of the two is replaced with a similar object (e.g. a heavier whorl or a longer pin), as long as the diameter of the hole and rod remain similar. Despite being finely made, and unprecedented in the Vindolanda record, this set of objects, and the spindle whorl in particular, were functional items, which were certainly used more than once before being discarded.

A discoid jet spindle whorl with a solar motif, linear incised decorations and no sign of tapering in the hole (henceforth SF10153), similar to the South Shields examples, was uncovered within the aggregate rubble deposit making up a fourth-century road surface outside the western wall of the last stone fort at Vindolanda (Birley and Blake 2007, 231).

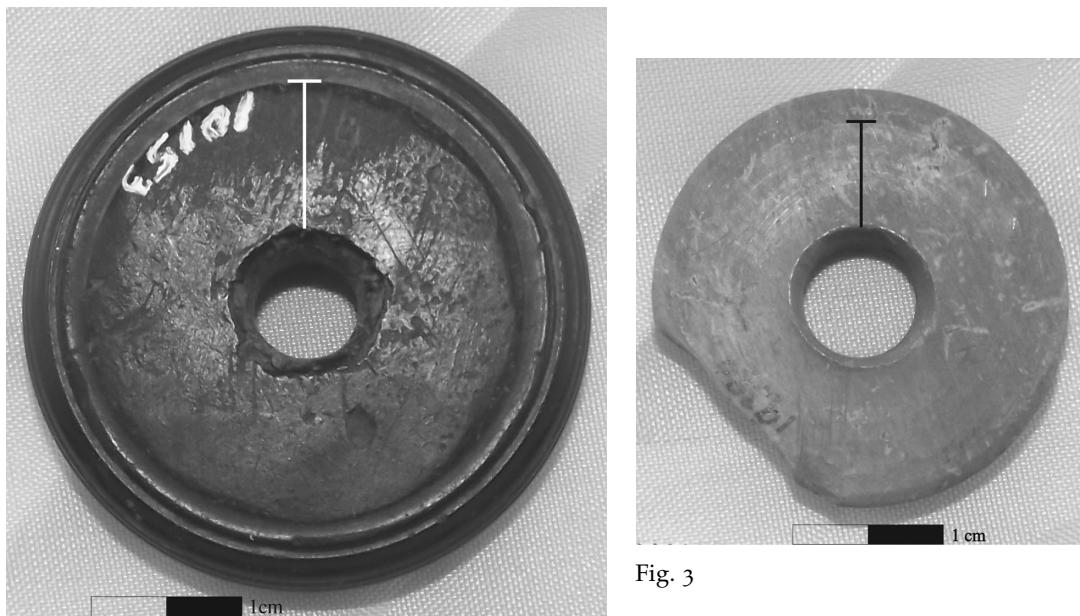


Fig. 3

SF10153 weighs 9g and is of greater diameter (36mm) than the whorl in SF19380, with the extent of use-wear trace indicating larger cones of spun yarn (28mm). For a comparison of size and aspect of the use wear traces in the two whorls see fig. 3. The greater size and weight of this spindle whorl, together with the lack of tapering in its hole, may indicate an altogether different spinning mode; SF10153 may have been used for spinning of a thicker and heavier yarn as opposed to the drop-spinning of light and delicate thread which may have been performed with SF19380.

The debate regarding the theoretical flaws in 'sexing' small finds, championed by Allason-Jones (1995, 22–32; 2001, 19–25), seems to find in Birley (2010) a logical solution. When looking at the distribution of spindle whorls and loom-weights across the extramural settlement and the North West quadrant of the third and fourth century stone fort at Vindolanda, Birley refers to the evidence as indicative of non-combatant activities. This label may encompass female work as well as possible male slave labour in the production of spun yarn.

The discovery of SF19380 and its comparison with SF10153 (datable to the same chronological framework but found in a different location), ultimately back up and add to the evidence for spinning at Vindolanda in the fourth century AD.

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