

# Some recent finds of Bronze-Age metalwork from Perthshire

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## ABSTRACT

*Several discoveries of bronze metalwork reported in the period 1980–85 are described and illustrated: they include three separate finds of bronze axes, a flanged chisel or hammer, and an important late Bronze-Age hoard. All were declared Treasure Trove and are now in the collections of Perth Museum and Art Gallery. The opportunity has also been taken to include details of some earlier, but previously unpublished, finds and to provide an up-to-date list of Perth Museum's holdings of Bronze-Age metalwork.*

## INTRODUCTION

In a short paper read before the Perthshire Society of Natural Science in 1926, J Graham Callander discussed aspects of the prehistory of Perthshire with particular reference to various objects which had then recently been acquired by Perth Museum (1929, 145–8). Amongst other items, four axes and a dagger or dirk blade had augmented the museum's collection of Bronze-Age metalwork which had otherwise received little notice since Anderson and Black's review of the holdings of local museums in Scotland in the late 19th century (1888, 337–41). During the half-century up to the late 1970s, there were few further additions to these holdings, but the period 1980–85 in particular saw the local collection significantly increased by several important finds. In a number of the cases described here, the find was considered of sufficient importance to merit its declaration as Treasure Trove, and, as a result, the discoveries were brought to the attention of the former National Museum of Antiquities of Scotland (NMAS), usually through the good offices of Perth Museum and Art Gallery (PMAG). Although the primary aim of this paper is to describe these recent discoveries, the opportunity has also been taken to furnish brief details of some earlier but previously unpublished finds and to provide an up-to-date summary list of that museum's holdings of Bronze-Age metalwork, not least because some items can be more securely provenanced than previously published sources would suggest (see appendix, fiche 1: A5)

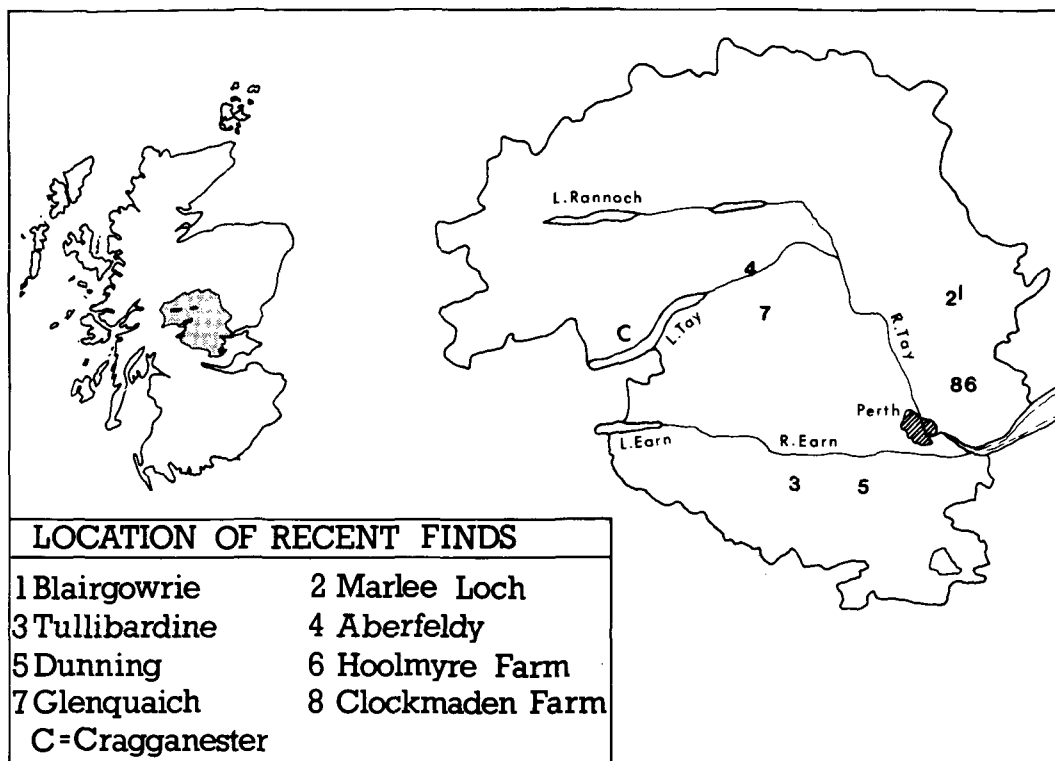
## THE BRONZES

### 1 FLAT AXE FROM 'NEAR BLAIRGOWRIE' (illus 1, 2, 3)

This fine flat axe was reported to Perth Museum in April 1981 by Mr David McKenzie of Blairgowrie. It had been found some years earlier while a raspberry field near Blairgowrie (general

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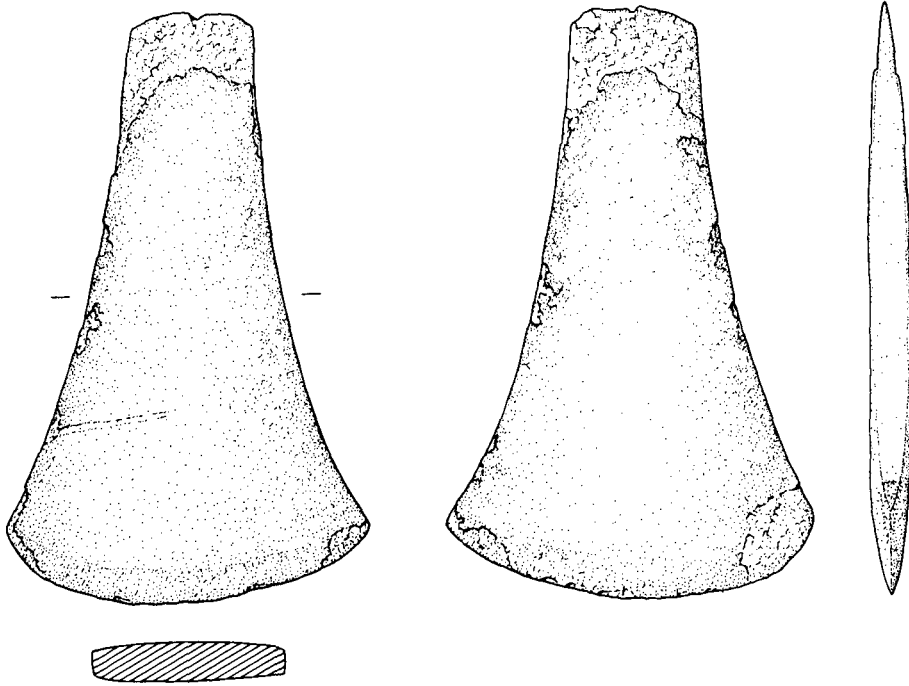
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ILLUS 1 Map of Perth & Kinross district, showing location of main sites referred to in text (based on OS map: Crown Copyright reserved)

grid reference NO 14 NE/24 NW) was being ploughed with a drill plough, cutting a furrow some 18 inches (c 0.46 m) deep, but Mr McKenzie was unfortunately unable to supply any further details of the location of the discovery. The axe was declared Treasure Trove, and is now in the collections of Perth Museum and Art Gallery (Acc no 1983.337).

The axe is in fair condition overall with a fine dark green patina, mottled in places, but at the butt, along parts of the sides and at the tips of the cutting edge, the surfaces have flaked away to a matt green surface with severe loss of metal. From the gently arched butt, the sides diverge gradually to meet the moderately expanded blade. The cutting edge is asymmetrical: a curving chamfered line, more pronounced on one face than the other, demarcates the edge bevel. In cross-section, the faces are slightly convex, and meet the sides with no indication of any distinctive shaping. The body has a smooth lenticular longitudinal profile. Discounting a number of obvious modern scratches representing damage sustained while the axe was in the ground or after its discovery, there are numerous fine striations on both faces of the axe, one of which shows an area of high gloss (see illus 3). The striations are aligned roughly parallel to the long axis over most of the surface, but around the cutting edge there are further fine lines running obliquely to the curve of the cutting edge suggesting that the striations reflect the processes of polishing and preparation of the surface and blade of the axe prior to deposition. Use of the axe prior to deposition might be expected to have obscured the striations around the cutting edge, which may indicate that it was deposited in a freshly sharpened if not pristine condition. A darker mottled line running obliquely across both faces may possibly represent a hafting mark (see illus 3): if so it would indicate that the axe had been mounted obliquely, and if sharpening took place with the axe-head set thus in its haft, this could partly account for the marked asymmetry of the cutting edge.



ILLUS 2 Flat axe from near Blairgowrie (scale 1:2)



ILLUS 3 Flat axe from near Blairgowrie

Length:	157 mm
Width of cutting edge (corroded):	97 mm
Width of butt (corroded):	34 mm
Maximum thickness:	11.2 mm
Weight:	527 g

This is a fine and characteristic example of the Migdale type of flat axe, as defined by Schmidt and Burgess (1981, 35–6). The type comprises simple thin-butted axes with more or less evenly curved sides and relatively wide cutting edge, and lacking features such as median bevels and raised edges. The Migdale type is the most numerous of all early Bronze-Age axe types in Scotland, and its distribution shows several marked concentrations, particularly in North-East Scotland (*ibid*, 59, pl 115; Coles 1969, fig 15). The Blairgowrie find reinforces a local concentration in south-east Perthshire and southern Angus, which extends from Tayside north-eastwards into Strathmore (Schmidt & Burgess 1981, eg cat nos 66, 89, 99, 103, 128, 150). Unfortunately, virtually nothing is known of the circumstances of discovery of any of these finds, so any pattern in their deposition is unknown. It may be that such a concentration is no more than a reflection of the agricultural richness of the area, past and present, with the tendency towards biased recovery that implies (cf Stevenson 1975), but the area's strategic position must inevitably have facilitated the capacity of local leaders to procure metal resources, for example through the control of exchange networks.

The Migdale type of axe represents one of the products of the earliest phase of tin-bronze metalworking in Britain, the so-called Migdale-Killaha stage (Burgess 1980, 75: stage IV). However, it is possible that the type remained in production (or circulation) in Scotland while the technological developments of the succeeding Stages V (Aylesford – Colleonard) and VI (Bush Barrow – Willerby Wold) were taking place elsewhere (Schmidt & Burgess 1981, 58, 68; Burgess 1980, 112). Absolute dates for the currency of this type may therefore range from the century or two before 2000 to c 1650 BC (*ibid*, 75, 114).

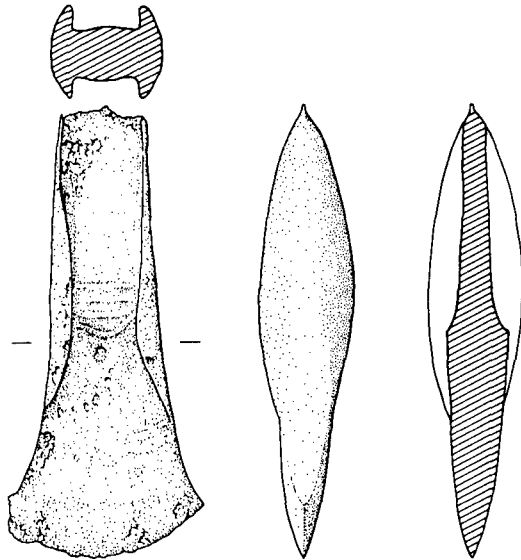
## 2 BRONZE FLANGED AXE FROM MARLEE LOCH, NEAR BLAIRGOWRIE (illus 1, 4)

In the course of field-drainage operations in December 1983, Mr A Robertson from Dundee found a bronze flanged axe at Marlee Loch, near Blairgowrie, reputedly at a depth of some five feet below the ploughed field (general area: NO 1443). Unfortunately nothing else is known of the circumstances of the discovery. Despite its corroded condition, the axe was claimed as Treasure Trove and in due course allocated to Perth Museum (Acc no: 1984.327).

The axe is badly corroded, with severe pitting across both faces and around the edges. It is mostly a mottled green, but where the surface is intact it has a silvery grey colour resembling that of some tinned axes. The butt is damaged and none of its original edge survives; from the butt the sides diverge gently and evenly to meet the blade, now badly fretted by corrosion and broken at the tips. The axe has a low, gently curved slope-stop backed by three decorative, ?hammered-up, ridges. There is a gently curving blade facet 15 mm from what survives of the cutting edge. The flanges are convex in side view with sloping facets: it is possible that the flanges may have carried hammered decoration but the extent of the corrosion leaves this uncertain.

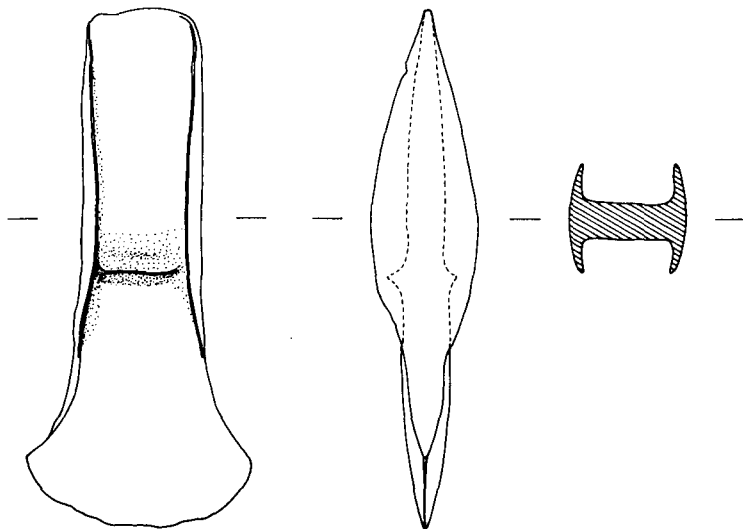
Length:	119 mm
Width of cutting edge (corroded):	53 mm
Width of butt (corroded):	24 mm
Maximum thickness:	15 mm
Weight:	325 g

This axe belongs to the Kirtomy type of plain flanged axes, as classified by Schmidt and Burgess (1981, 82–3): these are characterized by their convex flanges and by the absence of shield-pattern decoration on their faces, and represent one of several types of typologically early short-flanged axe that circulated in what would conventionally be termed the Middle Bronze Age. Early short-flanged



ILLUS 4 Flanged axe from Marlee Loch, near Blairgowrie (scale 1:2)

axes are represented in the region by only a few finds: these include axes from Blairgowrie (Schmidt & Burgess 1981, cat no 429: Bannockburn type), Tullybeagles Moor (*ibid*, cat no 446: Caverton type), and near Alyth (*ibid*, cat no 502: Kirtomy type, Arnhall variant). To these may be added a hitherto unillustrated example from Cragganester, by Loch Tay, found in the 1930s alongside the new Lawers road (see illus 5: previously unpublished record illustration found among manuscripts held in the Department of Archaeology, Royal Museum of Scotland). The axe was apparently retained in private hands, and appears to be a further example of the Kirtomy type and not, as previously thought, a flat axe (Coles 1969, 84, 93; Schmidt & Burgess 1981, 257, on the basis of a brief description in Gillies 1938, 401).

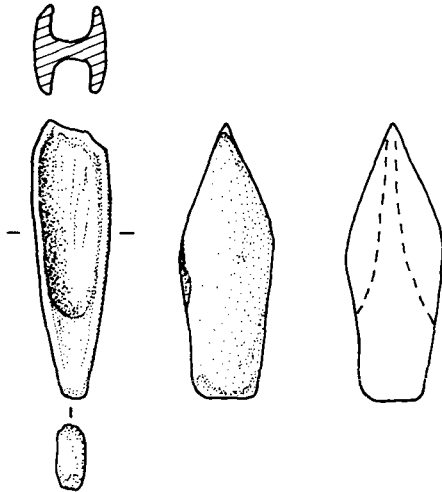


ILLUS 5 Flanged axe from Cragganester, Loch Tay (scale 1:2)

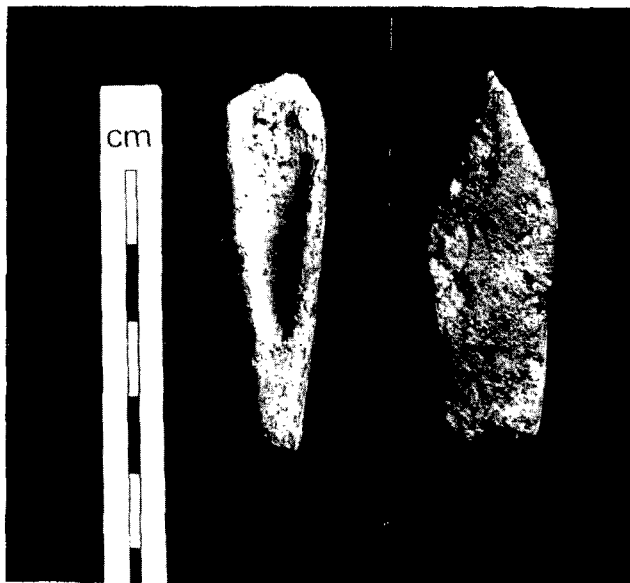
The relative chronology of the Kirtomy-type flanged axes is uncertain owing to the simplicity of their form and the absence of secure associations; the type may have appeared in the course of the Acton Park industrial stage, datable to the 15th–14th centuries BC (Burgess 1980, 126: stage VIII; cf Coles 1964, 128: Caverton phase), but the eponymous hoard from Kirtomy, Farr, Sutherland cannot be dated earlier than the Penard stage, several centuries later (Schmidt & Burgess 1981, 86).

3 BRONZE FLANGED CHISEL FROM WEST MAINS OF TULLIBARDINE (illus 1, 6, 7)

In the course of metal-detecting near the site of Tullibardine Castle (NO 911 138), which was demolished last century, Mrs W Garvie of Perth found a small bronze object which she subsequently



ILLUS 6 Flanged chisel/hammer from West Mains of Tullibardine (scale 3:4)



ILLUS 7 Flanged chisel/hammer from West Mains of Tullibardine

took to Perth Museum for identification. Although found in the same vicinity as a variety of medieval metalwork including the foot of a copper alloy ewer and scrap fragments of other vessels (*Discovery Excav Scot* 1986, 41) the object is almost certainly a broken flanged chisel of prehistoric date. Such tools are very uncommon in Scotland, and so, despite its poor condition, the find was declared Treasure Trove and is now in Perth Museum and Art Gallery (Acc no 1985.258).

This flanged implement is in poor condition, areas of patina having been chipped or flaked away especially around the flanges and butt. As a result of this damage, the butt end is now asymmetrical; from it rise pronounced cast flanges which then taper towards their junction with the rounded upper edge of a sloping stop. As a result of excessive wear or breakage the blade now terminates in a worn subrectangular face, 12 mm by 6 mm. It may be that this represents a working face and that the implement was in fact intended for use as a small hammer, but there are no close parallels to support this interpretation.

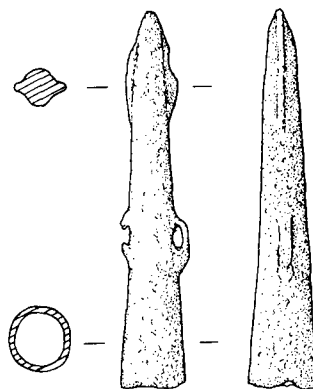
Length: 48.5 mm  
Maximum width: 14 mm  
Weight: 29 g

Flanged chisels are not particularly common in either Britain or Ireland. Those from Scotland were first listed and discussed briefly by Coles (1964, 117, 146, fig. 14): these are all considerably larger and heavier tools, with pronounced stops and a distinct blade set adzwise to the flanges. Dr Joanna Close-Brooks has pointed out that discussions of chisels ought also to take into account certain small implements in which the blade is set axewise and which have therefore tended to be treated with axes (Close-Brooks 1975; cf Schmidt & Burgess 1981 for other examples, eg 565, 764–5). The Tullibardine example differs from both of these groups both in respect of its diminutive size and the absence of a sharpened or tapering working edge. Whatever its intended function, however, the form of the artefact clearly invites comparison with the tools mentioned above. Closer comparison can perhaps be made with a flanged implement, 73 mm long and interpreted as a chisel, which was found on the Armagh/Monaghan border and is now in the collections of Armagh County Museum (Weatherup 1982, 61, fig 22.115).

The date of flanged chisels is presumed to lie within the range of cognate types such as flanged axes (Coles 1964, 117), which would suggest a broad span from the mid-second millennium to c 1000 BC.

#### 4 SPEARHEAD FROM ABERFELDY (illus 1, 8)

This spearhead was found in the garden of the Moness Hotel, Aberfeldy (NN 858 486) some time before October 1971, when it was sent to the National Museum for recording by its owner, Miss



ILLUS 8 Side-looped spearhead from Aberfeldy (scale 1:2)

Clark of Weem, Aberfeldy. On her death, it was bequeathed to Perth Museum and Art Gallery (Acc no 1985.152), where it had been deposited on loan for many years.

The spearhead is very worn and pitted, while corrosion or accidental damage has resulted in the loss of one of the string-type side loops since 1971, for both were complete, though badly corroded, when it was first recorded. The socket is otherwise virtually intact but the blade has been reduced to uneven stubs. The cross-section is rounded.

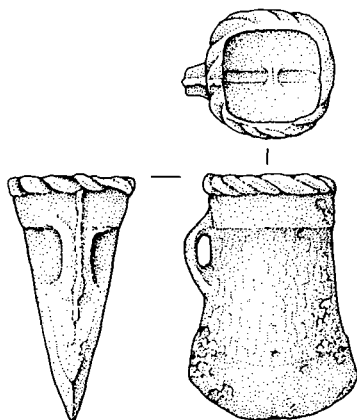
Length:	152 mm
Maximum extant width (socket):	19.5 mm
Weight:	45 g

This is a very worn example of a side-looped spearhead, type D in Coles's terminology (1964, 104, 143) and the most widespread of the middle Bronze-Age spearhead types found in Scotland (*ibid*, 109, fig 11). Such spearheads represent one of the innovations of the Acton Park industrial phase (Stage VIII), commencing in the 15th century BC, and continuing in use into the succeeding Taunton phase, if not later (Burgess 1980, 126).

#### 5 SOCKETED AXE FROM NEAR DUNNING (illus 1, 9, 10)

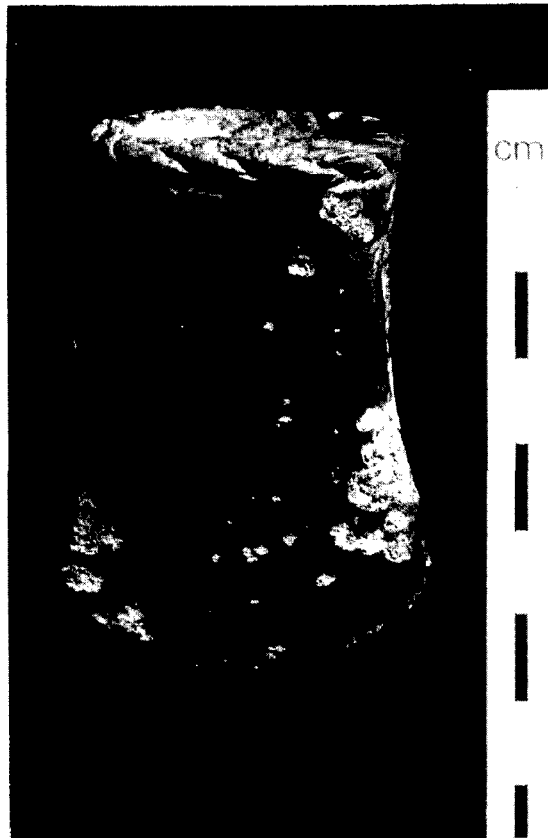
This unusual bronze socketed axe was brought into Perth Museum in July 1981 by Master Ronald McLeish of Dunning. It had been found in a ploughed field to the east of Dun Knock Wood near Dunning (general location NO 0214) in late February of that year, but no other details of the circumstances of its discovery are available. The axe was subsequently declared Treasure Trove, and is now in the collections of Perth Museum and Art Gallery (Acc no 1983.336).

Overall, the axe is in fair condition with a dark green patina, although there are several areas of corrosion and damage, particularly around the cutting edge and around parts of the mouth. The axe is subrectangular in cross-section with a rather baggy body, expanding gradually towards the cutting edge. There is a marked expansion in the profile of the face, 11 mm from the tips, and this feature gives a distinct 'crinoline' outline to the axe. The most unusual feature is, however, the fine cable- or rope-moulding encircling the socket. On one face this feature is disfigured by corrosion, but on the other the decorative effect is very clear (illus 10). A broader plain moulding encircles the remainder of the upper part of the axe and from it springs the loop. Light vertical tooling marks, less than 5 mm long, cover much of both faces. Casting seams are visible along both sides, although hammered flat in places. In the interior a very slight rib is visible in the basal angle of the socket.



ILLUS 9 Socketed axe from near Dunning  
(scale 1:2)





ILLUS 10 Socketed axe from near Dunning

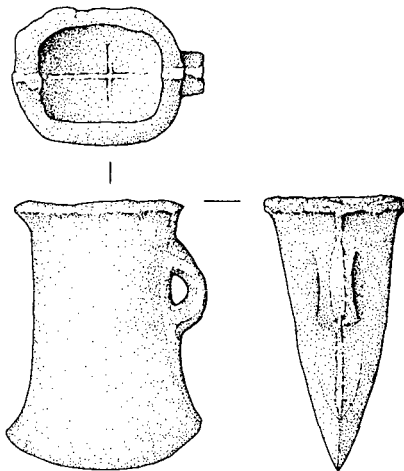
Length:	65 mm
Dimensions of socket (external):	35.10 by 34.15 mm
Dimensions of socket (internal):	25.95 by 23.35 mm
Width of cutting edge:	43.6 mm
Weight:	33 g

This axe forms one of a very small number of socketed axes from northern Britain, only six in all, distinguished by their rope-moulded mouths (Burgess 1968, 16; Schmidt & Burgess 1981, 183). This decorative feature appears to have been largely an Irish one, the earliest recorded use of the technique in the British Isles being found on an axe and a hammer in the Bishopsland, Co Kildare hoard (*ibid*, 183; Eogan 1983, 36–8, fig 10). The other Scottish examples include an axe found in the River Tay (Schmidt & Burgess 1981, no 1036), but comparison with the Dunning axe shows readily how the rope-moulded mouth occurs as a decorative trait on axes with quite different body forms. However, the affinities of three of the examples known from northern Britain are with Highfield type axes, which appear to date from comparatively early in the Ewart Park phase, now dated to the ninth and eighth centuries BC (Burgess 1979, 271–2, fig 15A). The general form of the example from Dunning appears to be related to a different category, the Portree type, also datable to the general Ewart Park phase (Schmidt & Burgess 1981, 184).

## 6 BRONZE SOCKETED AXE FROM HOOLMYRE FARM, NEAR BALBEGGIE (illus 11)

In 1970, Mr Campbell of Hoolmyre Farm, Balbeggie found a socketed axe on his farm, but unfortunately nothing is known of the circumstances of its discovery beyond the rather intriguing name of the field – Whistle Naked Field – in which it was found (NO 2119 3121). The axe was subsequently presented to Perth Museum and Art Gallery (Acc no: 1978.1001).

The axe has a broad baggy body and is plain apart from having a pronounced moulded rim and slight chamfering of the face edges; from the slightly splayed moulding the sides diverge gradually to meet the cutting edge which is rather blunt and shows no sign of resharpening. The broad loop springs from the side 10 mm below the rim, and on this side the casting seam is prominent between rim and loop, but over the loop itself and down to the tip of the cutting edge it has been hammered flat. On the unlooped side the casting seam has been carefully trimmed for most of its length. The mouth opening is subrectangular,



ILLUS 11 Socketed axe from Hoolmyre Farm, Balbeggie (scale 1:2)

although the moulding is of somewhat irregular thickness; the cross-section of the body, just below the loop, is more evenly subrectangular. There are two internal ribs set slightly off-centre extending up each face to a point approximately level with the base of the loop. The axe has matt brown surfaces and is in generally good condition.

Length:	72 mm
Dimensions of socket (external):	46 by 38 mm
Dimensions of socket (internal):	30.75 by 24.5 mm
Width of cutting edge:	51.5 mm
Weight:	181 g

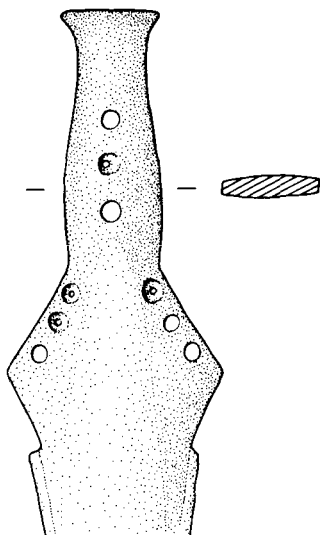
This axe belongs to the Portree type of bag-shaped axes with rectangular mouth and cross-section, specifically the Alford variant characterized by the absence of a collar (Schmidt & Burgess 1981, 188–91). About a score of axes have been assigned to this group which occurs mainly in Moray and the North-East, but in view of the small total numbers involved, it is perhaps premature to read very much into their distribution: a claimed concentration in Nairn and Moray reflects only four separate finds (*ibid*, 190). The axe represents one of the many varieties of socketed axe that circulated in northern Britain during the Ewart Park phase.

## 7 SWORD FROM GLENQUAICH, NEAR AMULREE (illus 1, 12, 13)

This fine sword was purchased at auction for Perth Museum and Art Gallery in 1978 through the offices of the National Museum of Antiquities of Scotland, with the assistance of grant-aid from the Local Museums Purchase Fund (Acc no 1978.1896). No information was available about the circumstances of its discovery when originally sold, but as a result of careful enquiries by Dr Joanna Close-Brooks, it was possible to establish that it was thought to have been found between 1870 and 1914 on a



ILLUS 12 Sword from Glenquach, near Amulree



ILLUS 13 Sword from Glenquaich,  
near Amulree: detail of  
hilt (scale 1:2)

grouse moor, owned by the maternal great-grandfather of the vendor, at Glenquaich, near Amulree (general location: NN 8837).

The sword has a fine, even brown, surface and is in excellent condition, although there is a slight buckle in the blade roughly midway down its length. The grip lacks flanges and the faces are slightly convex when seen in cross-section: it contains three rivet-holes, with three set in each of the sloping shoulders, although several of these have not been completely perforated. The blade has only slightly bevelled edges below a pronounced ricasso notch, and in section is an elongated oval. The incompletely drilled-out rivet-holes, the absence of pronounced edge bevels on the blade and the sword's fine condition may suggest deposition in an unused/unfinished condition (cf sword from Arthur's Seat, Edinburgh: Coles 1960, 116).

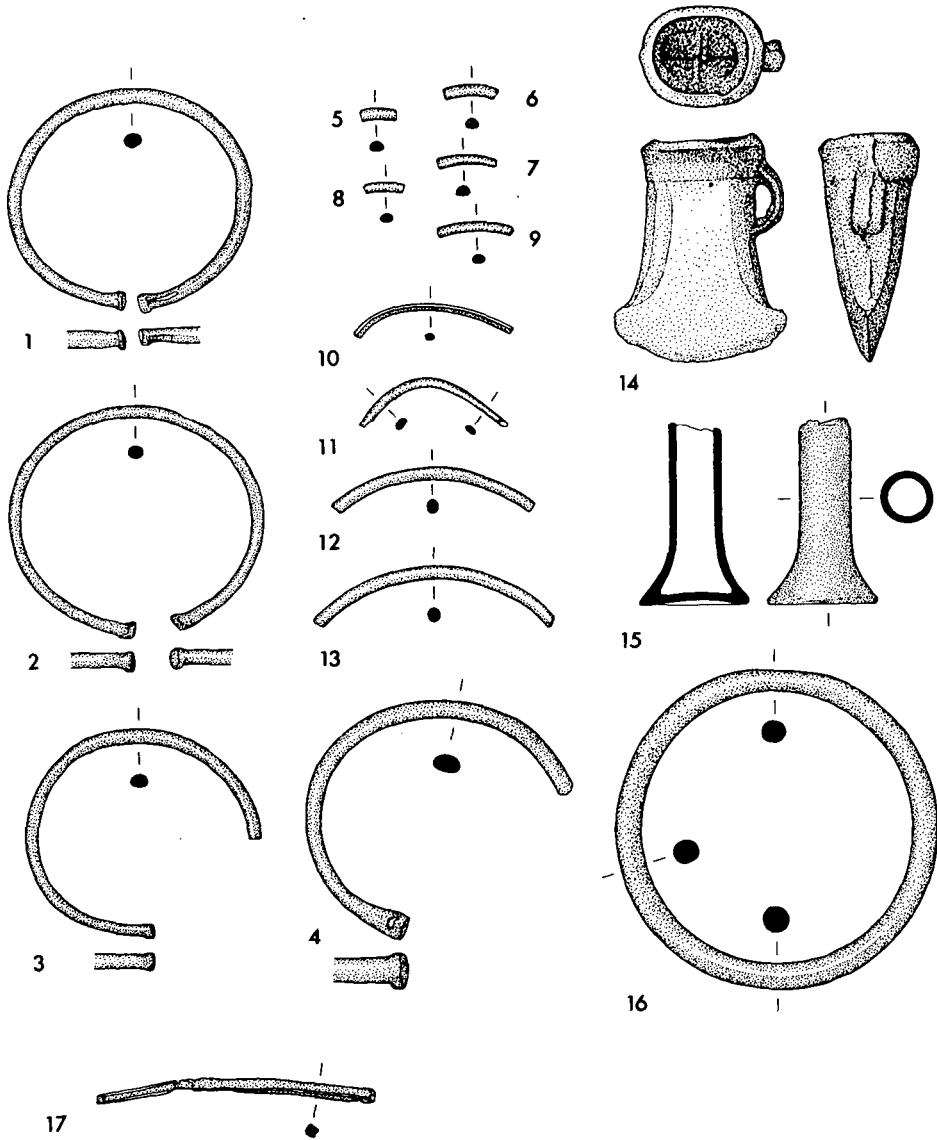
Length:	63.5 mm
Width at shoulders:	55 mm
Maximum width of blade:	46 mm
Weight:	740 g

This sword belongs to the general class of native British leaf-shaped sword called the Ewart Park type, which became the basic edge-weapon for the phase to which it has given its name (Burgess 1974, 209–11). Such swords have a wide distribution in northern Britain, where there is some evidence for regional differentiation, especially in the North and West (Coles 1960, 45; Burgess 1968, fig 12).

#### 8 HOARD FROM CLOCKMADEN FARM, COLLACE, PERTHSHIRE (illus 1, 14, 15, 16)

In September 1980, a group of bronzes was reported to Perth Museum, whose staff immediately identified it as a probable late Bronze-Age hoard and notified the National Museum of Antiquities of the discovery. The group composed four intact or virtually complete penannular armlets, and fragments of the hoops of at least a further six armlets, a ring, a socketed axe, a ferrule with expanded foot, and a strip of bronze. In view of their interest, the objects were declared Treasure Trove and claimed by the Crown. The information about the circumstances of the original discovery is unfor-

tunately sparse: the bronzes had been found in the spring of 1980 by two children, Jackie Coupar and Neil Morrison, having apparently been turned over by farm machinery after potato lifting on Clockmaden Farm, Collace parish, Perthshire. At first the archaeological significance of the metalwork was not appreciated, for the pieces were initially thought to derive from the wreck of a Second World War bomber popularly supposed to have crashed in the vicinity. Eventually however, their potential interest was recognized and steps were taken to report the find. In recognition of this, the finders were duly rewarded, and the hoard was disposed to Perth Museum and Art Gallery (Acc no 1982.236.1-17).



ILLUS 14 Hoard from Clockmaden Farm, Collace (scale 1:2)

After notification of the discovery, one of the writers (TC), with the assistance of Miss Caroline Wickham-Jones, undertook a metal-detector survey of the area around the approximate findspot, as marked on the ground by Mr D Coupar, the grandfather of one of the finders. The spot indicated lay on a slight knoll in rolling ground in a field, by then under ley, to the west-north-west of Clockmaden Farm steading (NO 188 315); however, scanning of an area approximately 30 m by 30 m produced no signals of archaeological interest.

### Contents of the hoard

#### *1-4 Penannular armlets*

- 1 The armlet is complete but slightly twisted out of true when viewed edge-on. The terminals are expanded with projections slightly more pronounced on the outer margin as seen 'in plan'. One butt is an irregular oval, the other squarish. The cross-section is oval; a casting seam is visible on the inside of the hoop, but has been removed by trimming and/or hammering towards each terminal.

Colour/condition: fine dark green/greenish grey patina  
 Overall dimensions: 65.75 by 59.8 mm  
 Internal dimensions: 57.5 by 50 mm  
 Thickness of hoop: 5.3 mm  
 Weight: 24.21 g

- 2 The armlet is complete, but asymmetrical perhaps as a result of distortion incurred during use. Both terminals are expanded: the greatest projection is from side to side, viewed edge-on. There are slight nicks behind each projection. The hoop is severely corroded in places.

Colour/condition: lustrous dark olive-green patina  
 Overall dimensions: 68.4 by 63 mm  
 Internal dimensions: 60.25 by 55 mm  
 Thickness of hoop: 4.20 mm  
 Weight: 16.61 g

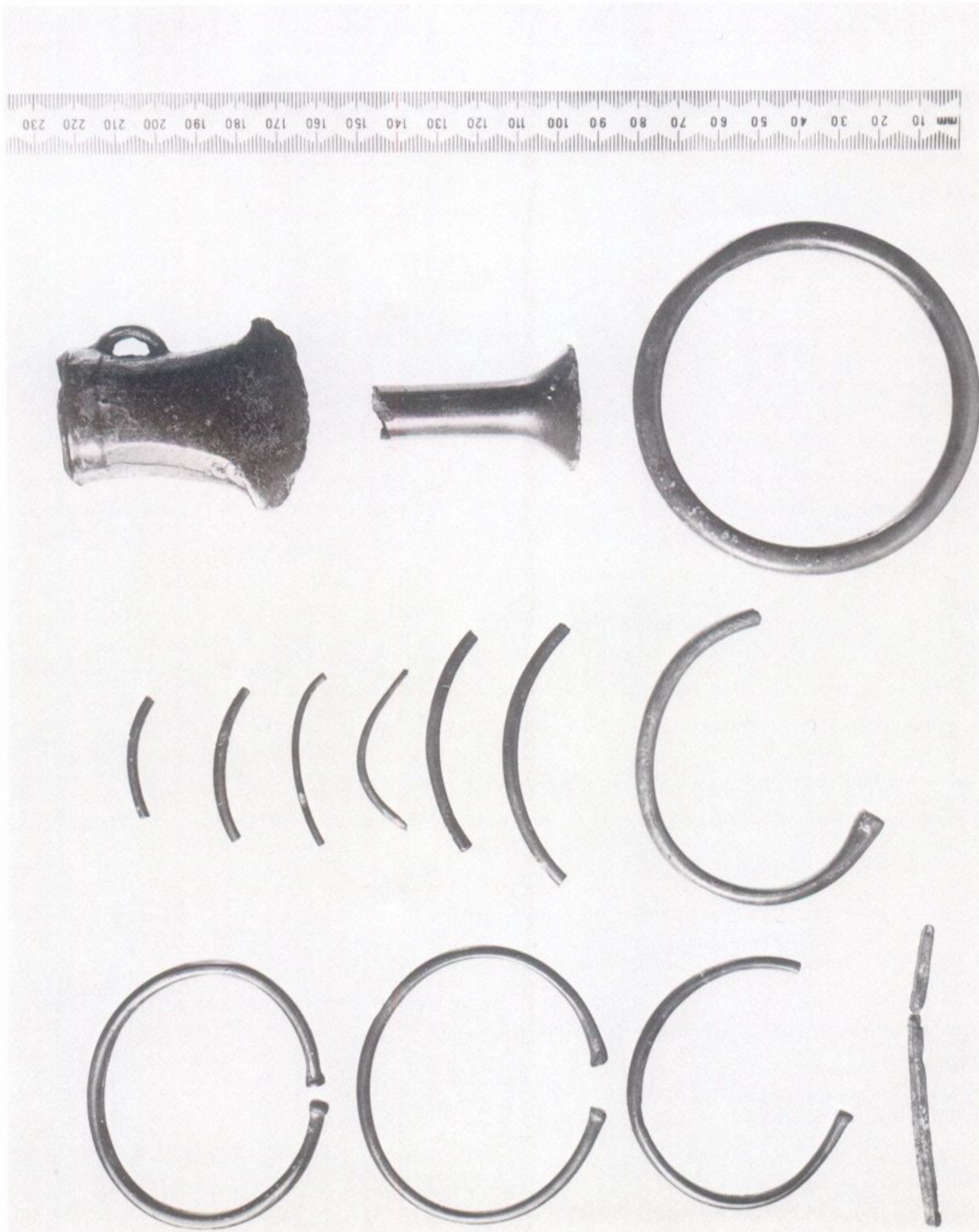
- 3 The armlet is incomplete; it is slightly twisted out of true when viewed edge-on. The surviving terminal is expanded with slight projections from side to side and a more pronounced outward swelling. The hoop has a flattened oval cross-section, although the outer surface is slightly more convex; it is corroded in places.

Colour/condition: dark green/greenish grey patina, matt in places  
 Overall dimensions: 63.25 by 55.9 mm  
 Internal dimensions: c 48 mm  
 Thickness of hoop: 5.5 mm  
 Weight: 13.91 g

- 4 The armlet is incomplete and is slightly twisted out of true when viewed edge-on. The surviving terminal swells slightly, but the most pronounced projection is from side to side. The irregularly oval butt is slightly faceted, and there are marked nicks behind the projections at their junction with the hoop. The cross-section is oval, the upper surface slightly more convex.

Colour/condition: pale green/blue-green patina  
 Overall dimensions: c 65 mm  
 Internal dimensions: c 60 mm  
 Thickness of hoop: 7.7-9.8 mm  
 Weight: 28.53 g





ILLUS 15 Hoard from Clockmaden Farm, Collace

5–13 *Fragments of armlets*

5–7 Three joining fragments of the hoop of an armlet; oval cross-section.

Colour/condition: dark green/greyish-green patina  
 Overall length (of chord): 34 mm  
 Thickness of hoop: 4 mm.

8–9 Two joining fragments of the hoop of an armlet; oval cross-section. Possibly part of same armlet as 5–7.

Colour/condition: dark green/greyish-green patina  
 Overall length (of chord): 27 mm  
 Thickness of hoop: 4 mm

These five fragments (5–9) were discovered as separate pieces but following conservation they were found to join (as shown in ill. 15). Although it was clear from their abraded and broken edges that fracture was not very recent, it is uncertain whether the condition of these fragments reflects breakage prior to deposition, or at some stage following their burial. Once joined, their overall length is similar to that of the remainder of the fragments (10–13) which might suggest that the damage was incurred while in the ploughsoil.

10 Fragment of the hoop of a slender armlet, with one flat, faceted, edge giving a distinctive D-shaped cross-section. The break-edges at each end are rather sharp, suggesting the piece has sustained some recent damage. Some corrosion present.

Colour/condition: lustrous dark olive-green patina  
 Overall length (of chord): 40 mm  
 Thickness of hoop: 2.5–2.6 mm

11 Distorted fragments of the hoop of a slender armlet, with noticeable corrosion at each end. Oval cross-section, of variable width and thickness tending to flatten towards one end.

Colour/condition: lustrous dark olive-green patina  
 Overall length (of chord): 37 mm  
 Thickness of hoop: 3.85 mm

12 Fragment of the hoop of an armlet with oval to circular cross-section; the fragment thickens and swells slightly towards one end, possibly suggesting a break near the terminal of a penannular armlet. The breaks appeared to be relatively fresh (when originally examined in 1980).

Colour/condition: lustrous olive-green patina  
 Overall length (of chord): 50 mm  
 Thickness of hoop: 3.5–3.6 mm

13 Fragment of the hoop of an armlet with oval to circular cross-section, and of variable thickness. Some corrosion on the surface of the hoop.

Colour/condition: dark green/grey-green patina  
 Overall length (of chord): 59 mm  
 Thickness of hoop: 3.75–4 mm.

*Socketed axe*

14 Socketed axe with deep, slightly flaring, collar and moulded rim; the broad loop springs from the lower part of the collar. The sides curve gently and then diverge to meet the expanded and resharpened cutting edge. The proportionately broad body has eight facets running from the base of the collar. There is a series of very fine vertical striations on the faces, while on the blade there are two sets of criss-crossing striations; all appear to be the result of the polishing and sharpening of the axe in antiquity. The casting seams are off centre and are still prominent in places, although hammered/trimmed on the unlooped side. The mouth is oval; on the inside there are two prominent



offset ribs, rising one on each face, to a point approximately level with the underside of the loop. There is some corrosion, especially around the cutting edge.

Colour/condition: dark green/bluish-green patina, lustrous in places  
 Length: 59 mm  
 Socket (external): 33.5 by 28 mm  
 Socket (internal): 58 by 50 mm  
 Width of cutting edge: 47 mm  
 Weight: 106.6 g.

*Disc-foot ferrule*

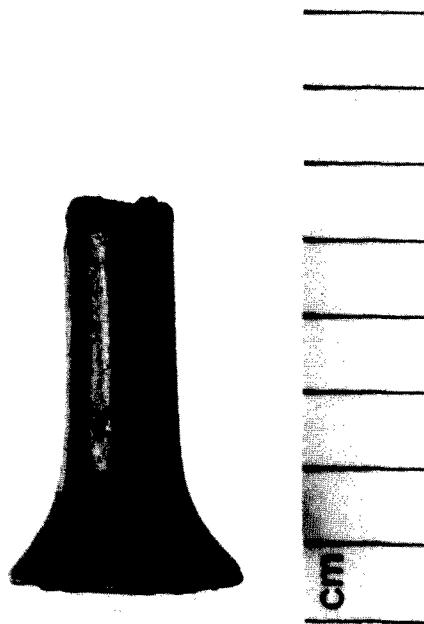
- 15 Incomplete tubular ferrule with splayed disc-foot. The concave base of the ferrule has fine striations running in several directions, while the tube also bears fine striations mainly running parallel to its long axis: all appear to be the result of preparation of the surfaces in antiquity. There has been severe corrosion around the foot.

Colour/condition: slightly lustrous blue-green patina  
 Length: 49.5 mm  
 Diameter of tube: 13.7–14.25 mm  
 Diameter of foot: 29.5–30.5 mm  
 Weight: 26.2 g

*Ring*

- 16 Ring with marked difference in thickness in one portion. Cross-sections vary from oval to almost circular.

Colour/condition: fine pale blue-green patina  
 Overall dimensions: 86.45 by 85.75 mm



ILLUS 16 Disc-foot ferrule from the Clockmaden Farm hoard

Internal dimensions: 72.25–72 mm  
 Thickness of hoop: 6.75–7.8 mm  
 Weight: 75.59 g

*Bronze strip*

- 17 Strip of bronze; irregular cross-section varying from square to rectangular, slightly concave in places. The strip is distorted and there is a severely corroded area 20 mm from one end; although the breaks at the ends are abraded it is uncertain if this damage happened in antiquity.

Colour/condition: dull green/grey-green patina; corroded  
 Overall length (of chord): 73.75 mm  
 Thickness: 3.35–3.75 mm

Discussion

The penannular armlets (nos 1–13) compare readily with armlets from several well-known hoards such as those found at Braes of Gight (Coles 1960, 94, pl II.2) and Glentinar (Pearce 1971; 1977) in Aberdeenshire, and Balmashanner, Angus (Coles 1960, 98; Schmidt & Burgess 1981, pl 152B). While the precise forms may differ, the character of the armlet component of these hoards is very similar: it is noticeable that there is a gradation in the size and weight from large armlets with a relatively thick cross-section to more slender (and possibly as a consequence more fragmentary) pieces. Penannular armlets, particularly those with outwardly expanded terminals (the so-called 'Covesea' armlets) have in the past been compared with Urnfield and Nordic bracelet types. However, O'Connor has pointed out that penannular armlets were popular throughout central, western and northern Europe towards the end of the Bronze Age and that direct comparisons for the 'Covesea' armlets cannot be sustained (1980, 212–13). While the armlets may well reflect ideas culled from continental, and Irish, sources, they can certainly no longer be cited as evidence for the arrival in north-east Scotland of 'settlers from the north-west German plain' (Coles 1960, 54).

The socketed axe in the hoard (no 14) is a characteristic but diminutive example of the Gillespie type as defined by Schmidt and Burgess: such axes have a faceted, broad, baggy body with deep flaring collar and usually a round or oval socket mouth (1981, 191). Gillespie-type axes (and their variant forms) occur mainly in southern areas of Scotland, but two of the four surviving axes in the Glentinar hoard are of this type (Pearce 1971, 57–8, fig 1, nos 3–4; Schmidt & Burgess 1981, nos 1116–1117). The presence of an axe of this type in the late Wilburton-phase hoard from Co Roscommon (Eogan 1983, 47, cat no 32) suggests that faceted axes may have been developed during the transitional period from the Wilburton/Wallington to the Ewart Park stage. Gillespie-type axes also occur in several Scottish hoards retaining Wilburton/Wallington material, and for that reason are likely to be early in the Ewart Park phase (Schmidt & Burgess 1981, 193). Other associations of this type cannot be dated more closely than to the general Ewart Park phase, dated by Burgess to the ninth and eighth centuries BC (1979, 271–2, fig 15A).

The presence of the disc-foot ferrule (no 15) supports the possibility that the Clockmaden hoard dates from a relatively early stage in the Ewart Park phase. Such objects are assumed to be fittings for spearshafts but only one example of this particular type has previously been discovered in Scotland: it is considerably larger, with a length of 131 mm, and, together with fragments of two leaf-shaped spearheads distorted by heat, forms the presumed hoard said to have been found in a cairn in the 'West of Scotland' (Coles 1960, 134: note Coles's list of ferrules on page 86 is inaccurate, for the 'West of Scotland' find is that figured by Gordon 1926, 116, pl L). Such disc-foot ferrules are typical of transitional Wilburton/Ewart Park hoards in the south, including Blackmoor, Hampshire (Colquhoun 1979, 111, fig 4.7, no 124), Fulbourn Common, Cambridgeshire (Clarke 1821) or Marston St Lawrence, Northamptonshire (Hawkes & Smith 1955, GB 12.7).

The Marston St Lawrence hoard also includes a ring, of round section with slight indications of thinning by wear (*ibid*, GB 12.9) recalling the thinning visible on the ring in the Clockmaden hoard (no 16). Plain rings are a feature of several Scottish hoards including those from Torran, Argyll (Coles 1960, 105; Campbell & Coles 1963; Schmidt & Burgess 1981, pl 147A); Monmore, Perthshire (Coles 1960, 125–6; Schmidt & Burgess 1981, pl 141B) and Balmashanner, Angus (Coles 1960, 98–9; Schmidt & Burgess 1981, pl 152B).

Little can be gleaned from the fragment of wire (no 17): at the time the hoard was first reported it was thought that this might be a spurious intrusion, but analysis has shown it to be of similar composition to the remaining pieces. It is possible, in view of the presence of other broken items, that this represents a strip intended for scrap. Wire of this type was used to reinforce the rims of cauldrons, as seen for example on the fragments in the hoard from Dalduff, Kilkerran, Ayrshire (Schmidt & Burgess 1981, pl 147 B.13–14).

### Conclusions

The Clockmaden hoard may therefore date from a relatively early stage of the Ewart Park phase, now dated to the ninth and eighth centuries BC (Burgess 1979, 271–2, fig 15A). Although it lacks the exotic items which characterize several of the north-east Scottish hoards, it is with hoards such as Glentinar, Braes of Gight and Balmashanner that the Clockmaden discovery has most in common. The contents of such hoards, and finds from related sites, have been identified as the components of Coles's Covesea industrial phase (1960, 39–44). While late Urnfield metalwork still provides the background for the appearance of some of the more distinctive ornamental metalwork in hoards such as Braes of Gight, Irish influences may be greater than previously allowed (O'Connor 1980, 377), and there is now little to support the original interpretation of the phase as a horizon marking the incursion of settlers from the north-west German plain (cf Coles & Taylor 1970, 97). Nevertheless, these hoards must reflect the relative enrichment of north-east Scotland during the Ewart Park phase.

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