

8. A WOODEN SWORD OF THE LATE BRONZE AGE (PL. XXVIII).

The first reasonably complete wooden sword from the European Bronze Age was discovered in June 1957 during peat-cutting in Orkney by Mr Robert Petrie, farmer in Grotsetter, Tankerness.¹ Through the action of Dr Hugh Marwick details of the find and the object itself were sent to the National Museum, for which the sword was later purchased.

The find-spot was 50 yds. N. of the Burn of Blown, a quarter mile S. of the Five Hillocks on Lang Hill (R.C.A.M. No. 634) and one-third mile WSW. of Grotsetter on the road between Kirkwall and Deerness (Nat. Grid ref. N.30/493063). The sword was lying horizontally, edge upward. The moss there is unusually deep and had formerly been cut over for peats to a depth it is believed of about 5 ft. (3 peats deep). The sword was struck when Mr Petrie was cutting his first row of peats, and so at a depth of 6 ft. or more below the former surface. The underlying clay was 2–3 ft. lower down. Mr S. E. Durno of the Macaulay Institute subsequently visited the site and also had a sample of peat in which the sword had been embedded, but has reported that the peat was about as barren of pollen grains as any he had examined. Such pollen as was identified tended to make him wonder if the peat had not been disturbed at some period in its development either by natural reasons or by man: the very low pollen content could be interpreted as evidence of some degree of seriation during the accumulation of the deposit. (See postscript).

The sword itself is remarkably fresh-looking, and has dried out without distortion except for a curve at the point. But it must originally have been considerably heavier for Mr J. Anthony of the Royal Botanic Garden was surprised to find that it is of yew. Such a dense wood is unlikely to have been chosen for carving an imitation sword purely for show: pine-wood would have been easier and probably more readily available.² Another alternative, that it was intended as a master pattern for the making of clay-moulds for casting, such as were found by Dr A. O. Curle at Jarlshof,³ is ruled out by the size and perhaps also by the hilt.

The sword is indeed a replica of the earliest British series of leaf-shaped bronze swords, those with a lozenge cross-section. The total remaining overall length is 31.3 ins. While the longest bronze sword in the National Museum has a blade 27 ins. long (Mugdrum, lozenge-section), the wooden blade is 28 ins. and was once slightly more—the point has been broken and the broken edge then rubbed down in antiquity. More important, the maximum widths of the same two swords are bronze 1.8 ins., wood 2.45 ins., and their respective thicknesses .35 and .9 in. So a bronze sword made from a mould shaped from the Grotsetter wooden one would clearly have been relatively unwieldy, and extravagant of metal. Moreover the hilt is carved in the round, whereas the earliest British swords are not known to have all-metal hilts. The occasional later metal hilts and pommels were cast hollow, either at the same time as the blade (sword from Leadburn) or separately over the normal tang (one from Inverbroom); usually the tang was fitted with perishable hilt-plates.⁴

¹ Another was found in Ireland in 1958: it has a lens-sectioned blade (broken) and a large mushroom-shaped pommel. It is also of yew. Information was kindly given by Dr J. Raftery in advance of publication in *J.R.S.A.I.*, 1960, 24, and fig. 12.

² The present northward limit of yews natural growth is given as Perthshire and Argyll in H. Godwin, *History of the British Flora* (1956), 278.

³ *P.S.A.S.* (1934–5), 278–82. Actual wooden models for spearheads and are known in Ireland, *U.J.A.* 1954, 64.

⁴ *P.S.A.S.* (1937–8), 161.

It is unfortunate that the Grotsetter pommel, and the upper part of the grip, got broken off and lost in antiquity, for the shape of the pommel of our diamond-section blades is not known. The curvature of the carved hilt-plate where it meets the blade is normal, and the way it stops short before reaching the edge of the blade can, Mr J. D. Cowen kindly writes, be detected on many bronze swords, certainly abroad, both on those without a *ricasso* (blunt depression of the edge at the base of the blade) as at Grotsetter and with one, as on the Irish sword cited above which is similar in this respect.

The use of yew for weapons goes back to remotest antiquity—to the lower-palæolithic spear fragments found at Clacton and in Saxony.¹ Wooden weapons with narrow edges and points, serving the purpose of swords as well as clubs, were used in Polynesia and there were wooden daggers in Hawaii.² Though wooden daggers are not uncommon in Ancient Egypt, they were imitations for funerary purposes only.³ Mr Cowen knows of no wooden swords in continental Europe, and part of a blade of uncertain age found in Ireland can not be taken into account.⁴ It is imaginable that the ancient Orcadians made the Grotsetter sword for temporary ceremonial use with the intention of soon throwing it into a pool in the peat-bog as an offering to some deity, like the scrap-iron hoards of southern Scotland deposited centuries later.⁵ Professor Piggott indeed compared the latter to late bronze age deposits of shields at Yetholm and Beith. Equally relevant to the present problems are the three bronze swords found stuck points downwards in peat on the island of Shuna,⁶ and the two swords and three spearheads points downwards and arranged in a circle, like the Beith shields, at Whitingham, Northumberland.⁷ Yet though the Grotsetter sword may have been a votive deposit, the serviceable wood from which it was made argues against that as its original purpose. In addition the hilt, including the broken end, has been polished by handling, and it is evident that the sword was not discarded for a while after the pommel got broken off:⁸ it was not "ritually killed" at the time it got into the bog.

As already indicated, the lozenge section is one characteristic of the earliest British swords, as distinct from lighter "rapiers".⁹ There are only three lozenge-section swords in the National Museum of Antiquities: from Mugdrum in the Tay, from Poldar Moss, Stirlingshire, and (short, like a dirk) from Mey, Caithness. The common lens-section sword was developed by Late Bronze Age II of Hawkes' classification, as shown for example by the recent Clova hoard,¹⁰ so the Grotsetter sword should presumably be dated earlier, *i.e.* between 900 and 700 B.C. Few bronzes of any date, and no swords have been found in Orkney and even this wooden one is likely to have been imported from further south in Scotland, where yew grows. It is probable that it was made as a real weapon when bronze swords were scarce anywhere in Scotland, and no doubt it originally looked very like a metal one in colour as well as in shape.

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¹ Godwin, *cit.*

² B.M. *Ethnographical Handbook*, fig. 145; P. H. Buck. *Arts and Crafts of Hawaii*. I am indebted to Mr C. Aldred for this and the next reference.

³ *E.g.* W. M. F. Petrie. *Tools and Weapons*, pl. XXXIV and LI, 28.

⁴ W. G. Wood-Martin. *Lake Dwellings of Ireland*, p. 40-41.

⁵ *P.S.A.S.* (1952-3), 5.

⁶ *P.S.A.S.* (1874-5), 121.

⁷ *P.S.A.Lond.* (1870-3), 429.

⁸ Before this was realised Mr Petrie made an unavailing search for the missing part.

⁹ For their beginnings see *P.P.S.* (1951), 195 ff.

¹⁰ *P.S.A.S.* (1956-7), 224-5.

*Postscript.*CHEMICAL AND PHYSICAL ANALYSIS OF PEAT SAMPLES
FROM ORKNEY (Site of Wooden Sword).

By S. E. DURNO.

Depth.*	pH.	Ash.	Density.	% N.	% CaO.	% Na ₂ O.	% K ₂ O.	% MgO.
8-12	3.5	12.11	0.73	2.238	0.073	0.032	0.035	0.042
15-20	3.32	5.72	0.61	2.113	0.425	0.039	0.013	0.047
22-27	2.03	6.07	0.65	2.453	0.453	0.036	0.012	0.032
30-35	3.95	9.23	0.67	2.205	0.800	0.038	0.027	0.136
41-46	3.91	10.38	0.54	2.636	0.783	0.039	0.038	0.152
50-59	4.50	9.07	0.58	2.562	1.761	0.046	0.023	0.228

* From present surface—see p. 191.

The main points to note are as follows:

1. The pH at depth 22-27 ins. (the level at which the sword was found) is extremely low. This is the outstanding feature.
2. Both the ash content and density are higher than is normal for peat.
3. CaO values tend to be higher than normal.
4. MgO much lower than average in upper samples.
5. Na and K are approximately normal.
6. N is constant but higher than average.

We are unable to offer a satisfactory explanation for the remarkably high acidity of the peat in which the sword was found.