

I.

A BRONZE-WORKER'S ANVIL AND OTHER TOOLS RECENTLY ACQUIRED BY THE INVERNESS MUSEUM, WITH A NOTE ON ANOTHER SCOTTISH ANVIL. BY PROFESSOR V. GORDON CHILDE, *Director of National Museum of Antiquities of Scotland.*

Read January 14, 1946.

The bronzes were brought by a Canadian soldier to Miss MacDougall, of the Inverness Museum, who persuaded him to present them to the Museum. From the soldier's account it seems that the find was made on the edge of Inshoch Wood, near Woodend, between Auldearn and Brodie Stations, and so between a mile and a mile and a half from the shore. Miss MacDougall

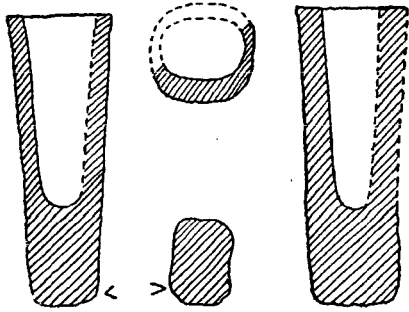


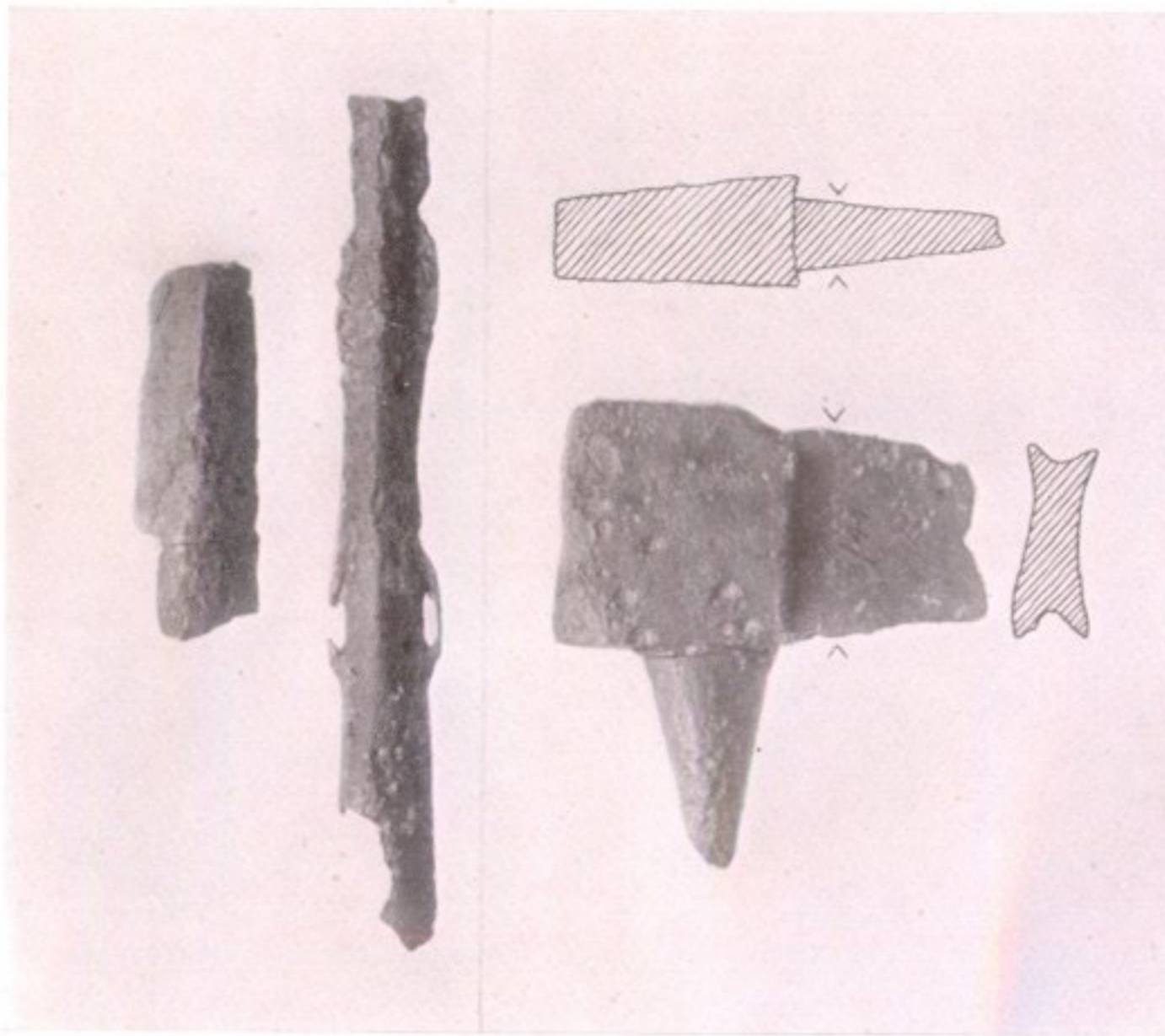
Fig. 1. Section of Hammer from Inshoch Wood. ($\frac{3}{8}$.)

sent the objects to the National Museum for treatment, and they have now been returned to Inverness. The objects (Pl. I, 1) clearly formed part of a metal-worker's stock or even of the furniture of his smithy. All show the same sand-pitting and patination. The broken spear-head is as likely to have been part of the scrap metal collected for resmelting as of his stock in trade. It is much abraded and sand-pitted and survives to a length of only $5\frac{5}{8}$ inches. It clearly belongs to the type with a small leaf-shaped blade, but loops on the butt.¹ This is presumably a hybrid between the native looped spear-head with rhomboid blade and the intrusive pegged spear-head introduced in the Late Bronze Age, to which period the type certainly belongs.

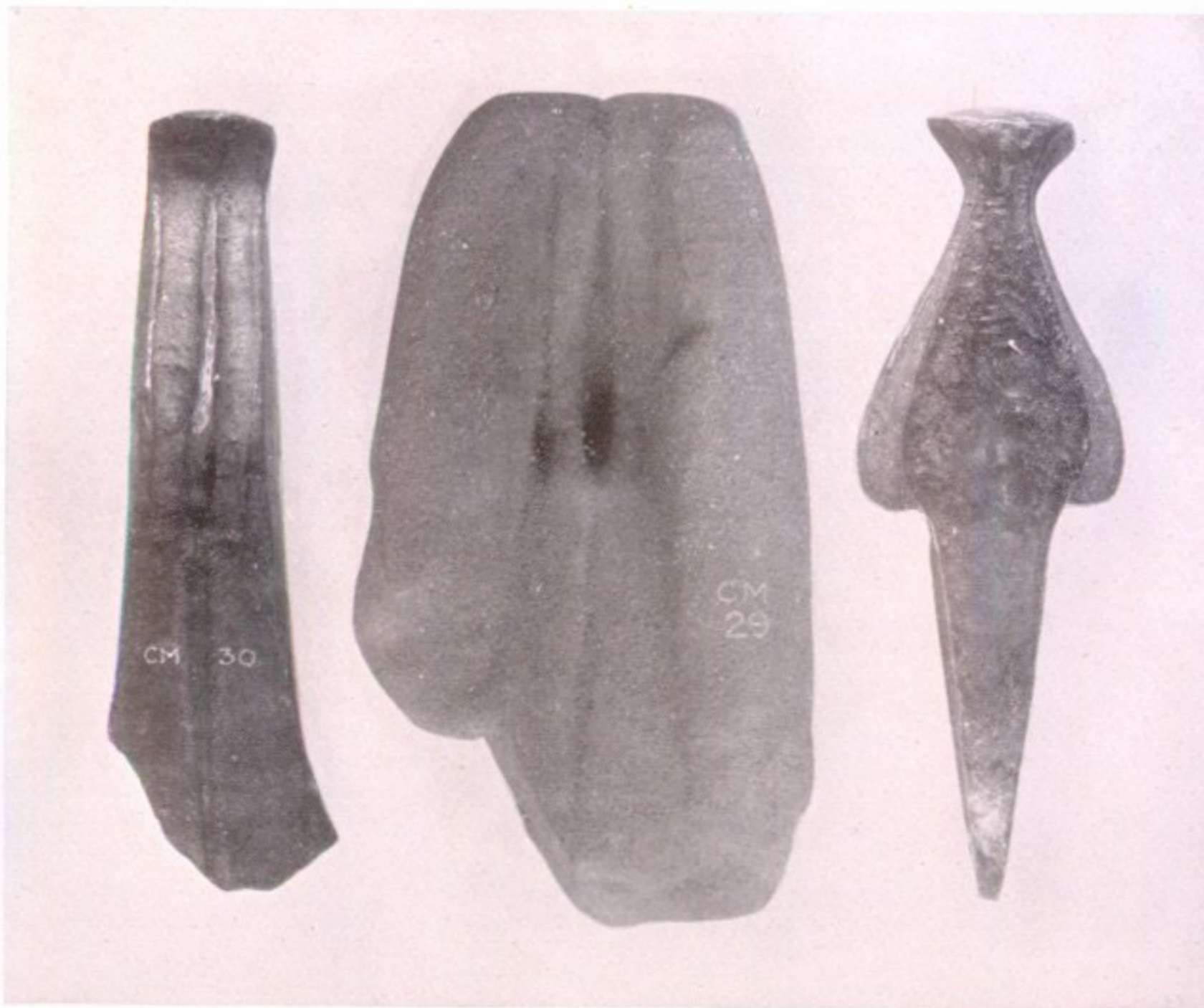
The small *socketed hammer* (fig. 1) is similarly sand-pitted on the surface, but less seriously. The butt-end is missing, the socket broken, and the working end badly battered. The maximum length preserved is $2\frac{1}{2}$ inches, $\frac{3}{4}$ inch being solid metal; the striking surface is narrow— $\frac{3}{4}$ inch by $\frac{1}{2}$ inch. The walls of the socket expand upwards, so that at the break the cross-section approximates to a true circle; the thickness of the wall here varies from $\frac{5}{32}$ inch (corresponding to the narrow side of the end) to a bare $\frac{1}{16}$ inch above the middle of the wide side.

The *anvil's* surface is badly sand-pitted and the edges are regrettably abraded. The body's side approximates to a square $1\frac{1}{2}$ inches each way,

¹ *Y.A.J.*, vol. xxxiv. p. 4; *Proc. Preh. Soc.*, 1941, pp. 129-31. Note the association of a similar spear-head with a socketed hammer and a tanged chisel at Burgess Meadow, Oxford.



1. Bronzes from Inshoch Wood, Inverness-shire. ($\frac{1}{2}$.)



2. Cast of mould (centre) from Low Glengyre (Wigtown) and casting made therefrom. ($\frac{1}{2}$.)

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and the one surface to a rectangle $1\frac{1}{2}$ inches by $\frac{1}{2}$ inch. The other face (opposite the spike) is a trapeze $\frac{1}{2}$ inch wide at one end by $\frac{2}{3}\frac{3}{2}$ inch at the other. It was certainly flat, but the other surface may have been gabled, but is too worn to afford an accurate cross-section anywhere. As in some other examples of such implements, two tapering "beaks" project from the body. The one, $1\frac{1}{4}$ inch long, is conical and oval in cross-section. The other is wedge-shaped, $1\frac{1}{4}$ inch wide at the base and contracting to less than 1 inch after $1\frac{1}{4}$ inch; in the same distance it has shrunk from a rim thickness of $\frac{5}{8}$ inch to barely $\frac{3}{16}$ inch. The sides of this wedge-shaped projection, as the section shows, are not flat but concave,¹ and the two end surfaces are more markedly grooved. It is usually said that the beaks served to fix the anvil in the workman's bench, but it may be suggested that they would be useful also in embossing, for instance in the way suggested by Maryon for the "blade" of the trunnion celt. The curious section of the wedge-shaped beak on our example must be not only intentional but also functional.

The spectrographic analysis of metal in the anvil was kindly made by Dr Mowbray Ritchie, of the Chemistry Department of the University of Edinburgh. The spectrogram allowed him to estimate the composition of the metal as follows: Copper 70 per cent., Tin 30 per cent., Iron 0.5 per cent., Lead 0.1 per cent., Nickel ?·05 per cent. It will be seen that this specimen, like other anvils, is made of a rich bronze.

Such anvils are extremely rare in Great Britain. Our *Proceedings*² record a specimen from Sutherland. In England the first and only anvil was found in 1930 at Flax Bourton, near Bristol,³ while Eire possesses four specimens, one found still more recently at Poulaphuca (Co. Kildare),⁴ a second from Lusmagh (Co. Offaly),⁵ one unlocated,⁶ and a fourth without beaks found near Sligo.⁷ These specimens were not included in the admittedly incomplete catalogue drawn up by Coutil in 1912,⁸ which enumerated only twenty-five specimens from the whole of Europe. Since then one small anvil has turned up in Denmark,⁹ the sole example to date from this rich archæological province. The broad wedge-shaped beak is an unusual feature in our specimen, to which the nearest parallel in the published anvils accessible to me seems to be that in Caen Museum, No. 1 in Coutil's list. An anvil from the Seine near Paris, now in the Evans Collection in the

¹ Alexander Smith, *Proc. Soc. Ant. Scot.*, vol. xvi. p. 22; Evans, *Bronze*, p. 182; Déchelette, vol. ii. p. 276.

² Vol. xvi. p. 22.

³ Dobson, *Arch. of Somerset*, p. 94.

⁴ *Proc. Preh. Soc.*, 1946, p. 161 and pl. xiii.

⁵ Maryon, *Antiq. Journ.*, vol. xviii. p. 249.

⁶ Coffey, *Bronze Age in Ireland*, fig. 21.

⁷ *J.R.S.A.I.*, 1885-6, p. 538.

⁸ *L'Homme Preh.*, 1912, pp. 97-102, 181-5.

⁹ *Aarbøger*, 1920, p. 101. Cf. Oldeberg, *Metallteknik under forhistorisk Tid*, ii. (Lund, 1943), p. 16.

Ashmolean Museum, Oxford,¹ comes still nearer the Inshoch example; it has the same wedge-shaped beak, slightly flanged.

The National Museum, however, possesses yet a third Scottish Bronze Age anvil, or rather the cast of one (Pl. I, 2). In 1923 the Museum received from Mr Ludovic McLellan Mann² a cast of the valve of a stone mould found on the field of Feymore, on the farm of Low Glengyre (Kirkcolm Parish, Wigtownshire), together with a casting from it. The mould is unfortunately broken, but the metal cast made from it seems to be reliable, save in one particular to be mentioned below. It is a curious object that "somewhat resembles a palstave," $5\frac{1}{2}$ inches long, $1\frac{1}{16}$ inch wide and $1\frac{5}{8}$ inch thick at its centre. At one end it splays out like the blade of a palstave to probably $3\frac{3}{4}$ inches (half is broken away in the mould), but the other end is a button, very slightly convex, measuring $\frac{7}{8}$ inch by $1\frac{1}{8}$ inch, and roughly hexagonal in plan. The face is bordered with 2 flanges for about half its length, like a palstave. Between them, where in a palstave the end of the knee-shaft would lie, runs a thick rounded rib increasing in elevation to $\frac{5}{16}$ inch, $2\frac{1}{8}$ inches in from head. Here it breaks off in a steep curve, but its line is continued down the centre of the "blade" by a low ridge or moulding.

Mr Mann suggested that the object had been a chisel, "held like that of a modern stone-mason, by the thumb and first two fingers of the left hand, whether naked or wrapped in some cloth or skin, while the right hand plied a mallet, probably a wooden one of moderate size, against the butt." Of course had the object been a heavily used tool, the button end might have been explained as the burring due to repeated hammering on the butt, but there would be no point in carving such an elaborate head on the matrix. Actually the flanges and ridge would make the implement a most inconvenient chisel, giving no protection against the mallet blows, but threatening to squeeze the thumb or finger against the object chiselled. On the other hand, the ridges must be functional and could effectively be made use of, for instance in hammering up the embossed ridges on a shield. Interpreted as an anvil, this Glengyre specimen thus confirms the view advanced above that not only the flat striking platforms of Bronze Age anvils were utilized.

The similarity of this anvil to a palstave noted by its discoverer remains to be explained. An examination of the mould provides a clue. Now this is admittedly the only mould for an anvil extant. But Maryon's examination of the specimen from Lusmagh³ has established that anvils were in fact cast in such moulds. But the mould from Low Glengyre, I suggest, was not originally designed for casting anvils but for palstaves. From a palstave mould the central ridge, so prominent just below the head of our casting, could be produced by simply carving a new deep groove in the raised surface

¹ I owe this reference and those to Irish anvils to Mr Eoin MacWhite.

² *Proc. Soc. Ant. Scot.*, vol. lvii. pp. 105-7.

³ *Antiq. Journ.*, vol. xviii. p. 249.

representing the hollow in which one prong of the shaft would lie in a palstave; the rest of this hollow could be filled up by removal of a layer of stone above the stop-ridge. On the face of the casting just below the stop-ridge there are traces of a hollow at the base of the "splaying" blade, just before its central midrib begins, reminiscent of the hollow often found in this position on late palstaves. Furthermore, on the mould one can observe about $1\frac{1}{2}$ inch below the head a "chip" on one side of the matrix. Though partly a fracture, this notch in the side of the matrix, if reproduced in the casting, would yield an excrescence on its side precisely at the point where a loop or ear is to be expected in a palstave. I suggest that the primary mould did make provision for such an ear and that our notch marks the site of that loop.