

Title: An axe mould from Lyre, Co. Cork

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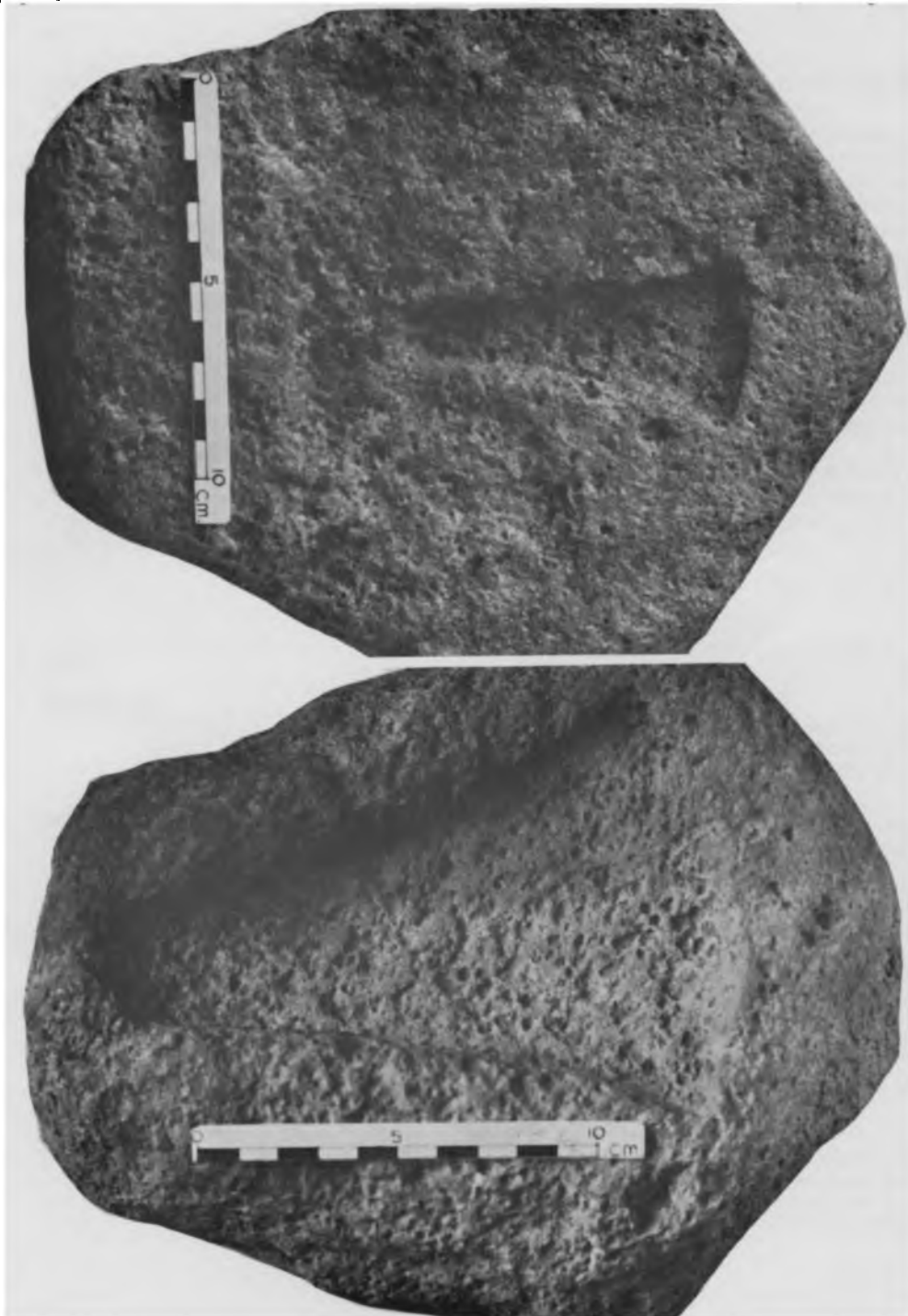
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The two faces of the Lyre, Co. Cork, mould showing the pitted condition of the matrices.

An Axe Mould from Lyre, Co. Cork.

By MICHAEL J. O'KELLY

This mould has been lying around the farmyard of Mr John Clifford ever since it was found several years ago. So far as is known it was discovered in the vicinity of the yard though its exact find spot is not now remembered. The farmyard lies in the northern end of the townland of Lyre, three miles north of the village of Carrignavar and about 10 miles north of the centre of Cork City.¹ On seeing a Radio-Telefís Éireann programme in which such a mould was displayed by Dr Joseph Raftery, Keeper, Irish Antiquities Division, National Museum of Ireland, Mr Clifford realised that the object was of interest and importance and took it to his local priest, An tAth. T. Ó Murchú, M.A., who in turn took it to the Cork Public Museum where it is now permanently housed on acquisition from the owner (Reg. no. G.680).

The piece of stone used is an unshaped weathered fragment of brownish-red sandstone 23.5cm long by 19.5cm in maximum width. It varies in thickness from 4.6cm to 6.8cm. One face, that containing the larger matrix, shows no lichen growth and thus it must have been downward for some time. It is therefore less weathered than the face containing the smaller matrix which was upward as is shown by the all over spread of lichen. The stone contains some feldspar and there are numerous oxidised inclusions of pyrite.² The oxidisation of the inclusions is more marked within and adjacent to the mould matrices, a feature which may be due to the effect of the hot metal which was poured into them. On oxidisation, the inclusions have become rust brown in colour and softer than the surrounding stone so that weathering has completely dissolved out many of them, leaving the surface of the stone pitted all over, but particularly so in the matrices and around their edges. Heat also probably rendered small areas of the surface friable, enabling the granules of the stone to be more easily weathered out and this has added to the pitting. Because of this no tool marks remain and nothing useful can be said of the chisel or tracer used in the cutting out of the matrices. There is a single matrix on each of the two main faces of the stone, one for a thin butted axe with curving sides and widely splaying cutting edge, the other for a smaller type of axe (pl. III fig. 1).

The large matrix on what we may call face 1, is deeply incised into the stone. Its axial length is 16cm and its width from tip to tip on the chord of the cutting edge end is 11cm, both measurements taken at the lip of the matrix. The same dimensions taken along the floor are 15cm and 10.5cm respectively and this gives an indication of the amount of splay in the side walls. The greatest depth of the matrix is 1.8cm at its mid-point from where the floor surface curves upward towards the butt and cutting edge ends as well as to the two sides. While the floor surface of the matrix is deeply

¹ The exact position of the farmyard is : Townland : Lyre ; Parish : Dunbulloge ; Barony : Barrymore ; Co. Cork. O.S. 6" scale sheet Cork no. 52. From West : 43.8cm ; from North : 14.0cm.

² Information from Dr. Peter Vernon, Department of Geology, University College, Cork.

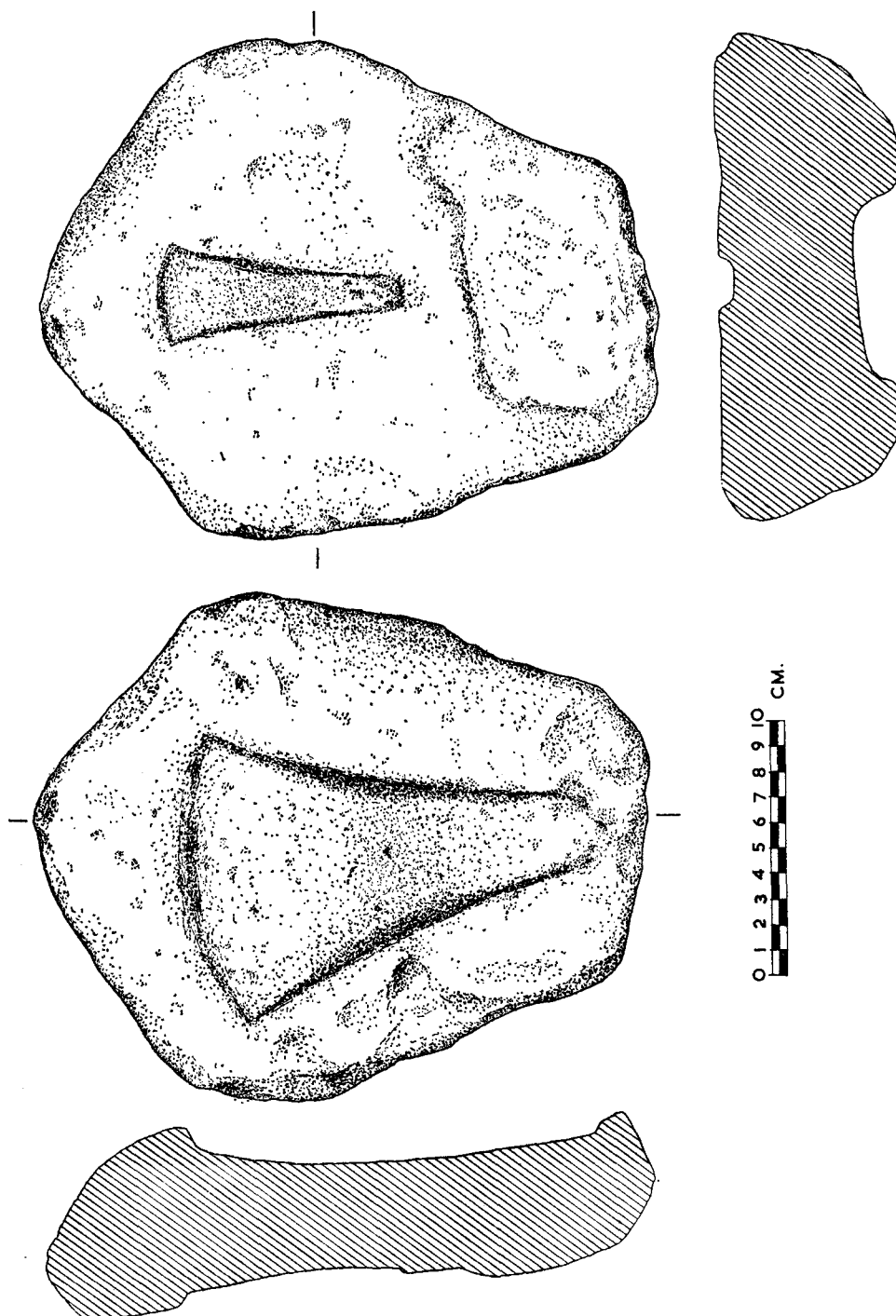


Fig. 1. The Lyre, Co. Cork, mould showing the two faces with relevant cross-sections.

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pitted all over due to the causes outlined above, the harder unpitted parts of the surface retain clear evidence of an original polish which can both be felt and seen. Magnification clearly shows the rubbed-down condition of the individual granules which make up the surface.

The matrix on the opposite surface, face 2, of the stone is small and has a narrow almost pointed butt end, nearly straight though splaying sides, which give it a triangular outline, and in proportion to its size, a fairly deeply curved cutting edge end. The matrix is shallow in comparison with the larger one and its side walls have a greater amount of splay. Axial length at the lip is 9.3cm and lip width on the chord of the cutting edge end is 4.5cm. These dimensions at floor level are 8.5cm and 3.5cm respectively. Maximum depth is at the centre point and is 8.5mm.

The floor and side walls are appreciably more pitted than is the surrounding stone surface and because of this and the shallow depth, the original curvature of the floor is not clearly determinable. It seems likely however, that there was an upward curve towards the butt and cutting edge ends and towards the two sides from the deep mid-point. It is clear from the lichen growth that this face has lain uppermost for much of the time the mould has been exposed in the farmyard and hence it has suffered more from the weather. All trace of polish, if it ever existed, has disappeared from the floor surface of the matrix. The individual granules of the stone are sharply angular and do not show the rubbed condition of those in the larger matrix.

As I have suggested³ in discussing a more elaborate mould of the same general type, recently found near Bantry, Co. Cork, the objects cast in such moulds can only have been axe rough-outs from which the finished blades were forged by hammering, grinding and polishing. Since in the Lyre mould, as also in the Bantry example, there is no evidence that covers either of clay or stone were used to convert the matrices into closed moulds,⁴ the objects cast were well-shaped on the downward sides, but were more or less flat on the upper surfaces. In certain unfinished rough-outs, such as those from the Killaha East⁵ hoard from near Kenmare in Co. Kerry, the upward surfaces show roughnesses and hollows due to differential cooling of the metal, while the downward faces approximate more nearly to the finished axe form.

A well preserved axe found recently (1969) at the edge of the Beaker settlement on the periphery of the Newgrange passage-grave, can be seen to have been cast in such an open mould, despite the fact that hammering, grinding and final all-over surface polishing have made it a very well finished specimen indeed. The longitudinal axial section of this blade is asymmetrical in exactly the same way as that of some of the unfinished rough-outs. One face, that which must have been uppermost, is appreciably flatter than the other, the downward one, which exhibits the curvature of the floor of the matrix in which it was cast, a curvature closely paralleling that of the face 1 matrix of the Lyre mould. The Newgrange axe is thickest at its centre point thus matching the point of greatest depth in a matrix such as that of Lyre.

³ O'Kelly: "An Axe Mould from Doonour, Bantry, Co. Cork" in *J.R.S.A.I.*, XCIX (1969), 117-124 (and refs. therein to other comparable moulds). The Doonour mould is in the National Museum of Ireland, reg. no. 1966 : 33.

⁴ In this connection see Coghlan and Rafferty: "Irish Prehistoric Casting Moulds" in *Sibrium* VI (1961), 225-8 and figs 1, 2, 3; Tylecote: *Metallurgy in Archaeology* (London 1962), pp. 111f.

⁵ Illustrated in Ó Riordáin: *P.P.S.*, XII (1946), 155 & Pl. XII; Harbison: *P.R.I.A.*, LXVII, C, (1968), figs 24-5. The objects are in the National Museum of Ireland, reg. nos 1939 : 392, 393, 394.

Another feature also shows that the axe is an open mould casting. The side walls of the mould matrices splay outward from floor to lip as indicated by measurements given above, and this means that a rough-out will be broader on the upward face than on the downward one. Though the Newgrange axe has been hammered to create slight flanges along the sides of the upper part of the blade, this hammering has not been enough to obliterate the fact that the face which was uppermost in the mould is 3mm wider than the downward one.

An axe made in the face 1 matrix of the Lyre mould would have had a finished size and shape such as would place it in Harbison's Type Killaha class,⁶ while that cast in the face 2 matrix would approximate to his Type Ballyvalley, though the butt end of the matrix is narrower than that of the majority of the Type Ballyvalley axes listed and illustrated in his catalogue. This, however, need not be a difficulty because the hammer finishing of the rough-out would have spread the metal to give the wider form. The size of the finished axe was determined not only by the length and breadth of the matrix, but also by the depth to which the matrix was filled with the molten metal. A thick rough-out would be drawn out to a larger size than a thin one in the hammer finishing, as one may legitimately assume that the smith did not waste scarce and valuable metal by unnecessary grinding away. In fact, different sizes and shapes of axe can be produced from the same matrix by pouring in more or less metal and by drawing out to a greater or lesser extent in the hammer finishing.

Harbison⁷ groups his Types Killaha and Ballyvalley axes into the time bracket 1650 to 1500 B.C., though with some implication that the Type Ballyvalley is later than Type Killaha. The occurrence of matrices for the two types on a single mould would support arguments in favour of their contemporaneity in manufacture and use.

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⁶ Harbison : *Prähistorische Bronze Funde IX*, 1 (München 1969), 24 and fig 6.

⁷ Harbison : *ibid*, pp. 78-9 and 82-3.