I.

THREE METAL-WORK HOARDS OF THE ROMAN PERIOD FROM SOUTHERN SCOTLAND.

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INTRODUCTION.

Some twenty-five years ago the late James Curle published in these *Proceedings* one of the classic papers on Romano-British archæology.[1] In the course of this study, devoted to objects of Roman origin found in native sites in Scotland, he discussed at some length, and with characteristically illuminating comment, three metal-work hoards made up largely of iron objects, found respectively in Kirkcudbrightshire, Roxburghshire and Berwickshire. The first and last of these, from Carlingwark Loch, and Blackburn Mill in the parish of Cockburnspath, had been briefly published in early volumes of the *Proceedings*; the third find, that from Eckford, was published by Curle for the first time, though found in the 1880's.

It is in no spirit of criticism of Curle's treatment of these finds that a reassessment of them is undertaken in the present paper. Full though his study was, the three hoards had to take their place in the wider survey of Roman and native in Scotland; since the 1930's our knowledge of the Early Iron Age in Britain, and especially in North Britain, has greatly increased. Furthermore, the publication of an analogous (if more spectacular) hoard from Anglesey by Sir Cyril Fox in 1946 has set a new standard for the treatment of such material, and has shown what can be

[1] "An Inventory of Objects of Roman and Provincial Roman Origin . . .," *P.S.A.S.*, LXVI (1931–2), 277–397.

wrested from seemingly unpromising scraps of ironwork by detailed examination and comparison.[1]

Sir Cyril's Llyn Cerrig report was the direct occasion of the study of the south Scottish metal-work hoards presented in this paper and, so far as the differing character of the hoards permits, the work has been organised along the same lines as he set out. The problems presented by the Scottish finds are considered under various heads, and in their wider setting, in the first part of the paper, the second part consisting of a detailed Catalogue of the objects in the three finds with their relevant comparative material. The existence of this documented Catalogue renders it unnecessary, in the general argument of the paper, to give references to parallels in other than general terms, since the entry under the appropriate number will give such detail as is available. Each hoard is separately numbered under an initial letter— E. for Eckford, C. for Carlingwark Loch and B. for Blackburn Mill.

The line illustrations, which form an essential part of the paper, were originally prepared by members of the Honours Class in Prehistoric Archæo-logy in the University of Edinburgh under the supervision of the writer and with his eventual checking and revision. In their present form they are almost wholly the work of Miss Audrey Henshall of the National Museum of Antiquities, to whom the writer's grateful thanks are due. All three hoards are in the National Museum, and their publication here is made possible by the courtesy of the Keeper, Mr R. B. K. Stevenson, who has given constant help during the preparation of the material.

The Sites and the Circumstances of the Finds.

The discovery of the hoards was in each instance accidental, and no precise information as to the details of the finding can now be obtained. The *Eckford* find was made in 1883 by a workman while digging in a little plot of land known as Toddle Rigs on the farm of Easter Wooden in the parish of Eckford, Roxburghshire. Toddle Rigs is an oval patch of ground which may be a dried-up loch lying within 1000 ft. of the Kale Water on its northern side. Some 25 pieces of metal were found, according to Curle, who first published the find: 19 are catalogued here, and among the missing fragments Curle identified pieces of a hanging-lamp or lamp-stand (*cf.* Blackburn Mill, B. 26) and of a gridiron (*cf.* Carlingwark, C. 71).

The *Carlingwark Loch* find was made about 1866 by two fishermen near the Fir Island in the Loch, which is on the outskirts of Castle Douglas, Kirkcudbrightshire. The objects comprising the hoard were contained in a large bronze cauldron which appears to have been dredged up from the shallow lake bottom by the two men referred to, who believed it to have

[1] *A Find of the Early Iron Age from Llyn Cerrig Bach, Anglesey* (National Museum of Wales, 1946), referred to in this paper as *Llyn Cerrig*. (See also note on abbreviations, p. 20 below.)

belonged to Edward I.   More than one of the islands in the loch is of artificial
crannog type or is revetted with wooden piles, but no association between
islands and hoard can be established.[1]

The *Blackburn Mill* or Cockburnspath find [2] was made before 1852 by
labourers cutting a drain "in a haugh adjoining the Water of Eye, at a depth
of about 15 ins. below the surface, lying on blue clay, below the peat" of
"a moss on the farm of Blackburn Mill, parish of Cockburnspath, Berwick-
shire." [3]   Here the objects were contained in two bronze cauldrons: "the
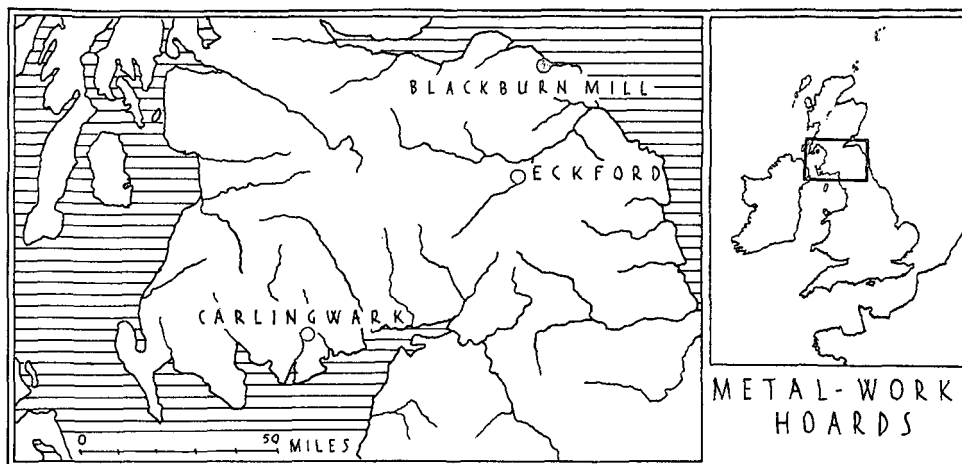one appeared to have been inverted on the other, with the articles within

Fig. 1. Location-map for the hoards.

them." [3]   This, the earliest and most precise of the three accounts of dis-
covery, certainly implies that the find had been deposited in an old lake,
later to become a peat-moss.

Little can be deduced from these meagre reports save one common
factor.   The Carlingwark hoard came from an existing lake, Blackburn Mill
almost certainly from an ancient one, and Eckford not improbably from a
similar site.   The bearing of this circumstance upon the original nature of
the deposits is considered below (p. 7).

As we have seen, 19 identifiable objects or fragments survive from the
Eckford find, which appears to have been larger: we are not sure, either,
that the finder recovered the whole of the deposit.   The Carlingwark find,
inclusive of the cauldron which contained it, numbers about 100 pieces

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[1] *P.S.A.S.* VII (1866–8), 7;   X (1872–4), 286;   Munro, *Anc. Scot. Lake-Dwellings* (1882), 28, with
further refs.

[2] For the desirability of using Blackburn Mill as the name of the find, *cf.* Bosanquet in *P.S.A.S.*, LXII
(1927–8), 250.

[3] *P.S.A.S.*, I (1851–4), 42–43.

exclusive of indeterminate scraps; Blackburn Mill, with two cauldrons, totals some 65 pieces. We have then over 180 objects to consider, and, as will be seen below, over 160 of these have features which enable us to make some sort of classification of them.

THE DATE AND NATURE OF THE HOARDS.

`The dates of specific objects in the hoards are commented upon in greater detail in the Catalogue, and at various points in the commentary which precedes it. But in general it is clear that all three finds belong to some phase or phases of the Roman occupation of southern Scotland, and are the products of a native population able to acquire a considerable complement of Roman tools and other objects in addition to the products of native Early Iron Age craftsmanship. Most of these Roman objects cannot be dated except within broad limits, but the Blackburn Mill hoard included a broken bronze patera of Antonine type (B. 52) which if the hoard was deposited as a unit, as the circumstances of finding suggest, would provide a *terminus a quo* for this event. The essentially peaceable character of the vast majority of the objects in the three hoards, commented on by Curle, would suggest a date after the initial Roman impact; in the campaigning phase of the occupation the acquisition of Roman objects of husbandry by the native population would be unlikely. On the whole, the 1st to the 2nd century A.D. represents the most likely covering date for all three finds.

The question of the nature of these deposits, however, cannot be answered so easily. Hoards of metal objects are well-known features of prehistoric archæology, and there is a general tendency to regard them as representing property buried in times of insecurity and not recovered, on analogy with coin hoards. Distinction has further been made between small groups of objects likely to represent the possessions of an individual, and larger finds of metal objects which may include scrap-metal or broken pieces, the latter being regarded as the stock-in-trade of smiths or traders.

On such an analogy, the three hoards under discussion, with their broken and useless objects, would fall under the heading of smiths' hoards—miscellaneous iron and bronze objects collected together, stored in an old cauldron for convenience, and then buried or dropped in a lake for safety. Curle, while recognising the possibility of the smith's hoard as an explanation of the finds, was however not certain: was the original owner of the Blackburn Mill hoard, he asked, "a husbandman or a travelling tinker"? Furthermore, in discussing the cauldrons, tripods and gridirons associated with the finds, he laid emphasis on the ritual quality of brewing herbal decoctions or beer in cauldrons, illustrating his point with reference to the Filzen and Rheinzabern finds from Germany. He also drew attention to the British find most closely comparable with the Scottish hoards, that from

Santon in Norfolk, where a metal-work hoard was contained in a cauldron of Carlingwark type.[1]

The question of the nature of these and similar hoards was raised in an acute form by the great find in the lake of Llyn Cerrig Bach in Anglesey. Here the circumstances of the deposit led Fox to regard it not as a utilitarian hoard of peasants or metal-workers, but as a votive deposit made in accordance with the known practice of the ancient Celts, attested by the classical writers, of making such offerings in pools and lakes held sacred to certain deities. Such was the interpretation of the Scottish finds half hinted at by Curle, with his stress on ritual possibilities inherent in some of the components of the hoards, and we must now examine the matter in more detail.

The deposition of objects in lakes or bogs for presumed votive purposes is attested throughout Northern European prehistory, with the Final Palæolithic votive deposit of a drowned reindeer in the Meiendorf lake as one of its earliest manifestations. Becker has recently studied Neolithic finds in the Danish bogs which can be best interpreted as votive;[2] in Scandinavia generally the custom seems to have continued through the Bronze Age and is well represented in later finds mentioned below. In Britain there is some evidence of likely votive deposits at least by the end of the Bronze Age. The six bronze shields set on edge in a circle in a bog at Beith in Ayrshire, and probably the similar shields found at Yetholm in Roxburghshire,[3] are Scottish examples of such finds, and the famous hoard from Llyn Fawr in South Wales, which included two cauldrons, could be interpreted in this manner.[4]

With the Early Iron Age we are on surer ground, since the ambiguous evidence of archæology can be supplemented by comments on Celtic religious practices by the classical writers. Fox has drawn attention to Cæsar's reference to votive deposits made by the Gauls after a victory, citing the Swiss find at Tiefenau near Berne as an instance. This hoard of metal-work, dating from La Tène II–III times, is of some interest in showing the difficulties of interpretation of such finds: it includes unfinished blanks or rough-outs for iron tools and weapons, and is regarded by Tschumi as representing the stock-in-trade of a workshop.[5] But the site is a remarkable one, on a peninsula formed by a loop of the River Aare, on which have also been found a La Tène settlement and graves, a Romano-Celtic temple and another Roman temple, and Roman graves. One could then put up a case for regarding the peninsula as a Celtic sanctuary persisting into Roman times,

[1] R. A. Smith in *Comms. Camb. A.S.*, XIII (1909), 146, and refs. under C. 1 below; for "Santon" rather than the older "Santon Downham," R. R. Clarke in *Arch. J.*, XCVI (1939), 71.

[2] E.g. *Mosefundne Lerkar fra Yngre Stenalder* (1948).

[3] Sprockhoff, *Handelsgeschichte der Germ. Bronzezeit* (1930), 12, with full refs.

[4] *Archæologia*, LXXI (1921), 133; *Ant. J.*, XIX (1939), 369.

[5] *Jahresbericht der Schweiz. Gesell. für Urgesch.*, XXI (1929), 131.

and see the hoard (or rather hoards: there were two finds made in the last century) as votive, as Fox has done.

A find very comparable with those under discussion is that from Dürnau in Württemburg. In a peat-bog near the Federsee was a hoard of iron objects, including two hammers, a sickle, a chisel, two pairs of tongs, tire fragments and other pieces belonging to the mountings of chariots or carts, a part of a bull-headed fire-dog, and the leg of a tripod-stool. With the iron objects were two bronze vessels, one a situla and the other a flask. Reinerth regarded the find as belonging to the middle of the 1st century B.C.[1]

The famous *aurum Tolosanum* however, the Celtic treasure at Toulouse, also quoted by Fox, was specifically a series of votive deposits, "some placed in sacred precincts, and some in sacred pools," [2] and in this context the find of Vemmerløv in Sweden, of animal and human bones in what had been artificial pools, believed to be Bronze Age but imprecisely dated, is apposite.[3] By the Roman Iron Age of Scandinavia, votive bog-finds are well recognised, ranging from Hjortspring in the 3rd century B.C. to such great hoards as that of Thorsbjerg, ranging over four centuries ending about A.D. 400.[4] Among these finds, the ritual carts of Djebjerg are of outstanding interest in their relation to the account of the rites accompanying the procession of the sacred car of the goddess Nerthus as related by Tacitus.[5]

Light on the custom of making votive offerings in lakes in Roman Gaul is thrown by a passage to which, I believe, attention has not before been drawn in this connection. In a story of St Hilary of Arles given by Gregory of Tours is a description of ceremonies carried out at a lake identified as the Lac de St Andéol, near Aubac in the Cevennes.[6] At a recognised time of the year people would gather by the lake, coming in carts laden with food and drink for three days' feasting, and throw in as offerings bread, cheese and beeswax, as well as rags and clothing, and other objects according to their standing.[7] The mention of textiles recalls the Thorsbjerg

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[1] Reinerth, *Das Federseemoor als Siedlungsland des Vorzeitmenschen* (1929), 162.

[2] *Llyn Cerrig*, pp. 69–70, with comment by I. A. Richmond on the quotations from Strabo and Justin involved.

[3] *Real.*, XIV, 112; Hilda Ellis' statement that the pools were enclosed by sharpened stakes seems hardly justified on the evidence (*Road to Hel* (1943), 14–15).

[4] Shetelig and Falk, *Scand. Arch.* (trans. Gordon, 1937), 186, 204, with refs.; Jankuhn, *Forschungen u. Forschritte*, XII (1936), 202, 365–7; *Antiquity*, XXVI (1952), 14. I am indebted to Professor Jankuhn for photostats of his earlier papers.

[5] *Germania*, XL.

[6] The identification is that of Dumézil, *Festin d'Immortalité* (1924), 245, citing Revel, *Relig. de la Gaule avant le Christianisme.*

[7] Gregory of Tours, *In Gloria Confessorum*, Cap. 2 (*M.G.H. Script. Merov.*, I (1885), 749). The passage runs as follows:

"Mons enim erat in Gabalitano territurio cognomento Helarius, lacus habens magnum. Ad quem certo tempore multitudo rusticorum, quasi libamina lacui illi exhibens, lenteamina proieciebat ac pannos, qui ad usum vestimenti virili praebentur; nonnulli lanæ vellera, plurimi etiam formas casei ac ceræ vel panis diversasque species, unusquisque iuxta vires suas, quæ dinumerare perlongum puto. Veniebant autem cum plaustris potum cibumque deferentes, mactantes animalia et per triduum aepulantes." *Cf.* Olwen Brogan, *Roman Gaul* (1953), 203.

garments, and the Santon find included pieces of wax as well as leather fragments, and one must reckon with perishable elements having vanished in all finds suspected to be of a votive nature. A suggestion has in fact been made that the deposits of "bog-butter" so well known in Highland Scotland and in Ireland may be related to votive practices,[1] and in this connection the find of a bronze cauldron of a type comparable to that from the Blackburn Mill hoard (B. 1) "in close juxtaposition" to kegs of bog-butter at Kyleakin in Skye is of some interest:[2] cauldron and butter were found 7½ ft. deep in the peat, and if they are indeed contemporary, it would give us not only another likely votive deposit of the Iron Age in Scotland, but would take back the practice of depositing bog-butter to a respectable antiquity.

There is, then, a case for regarding the three Scottish hoards under discussion as representing some form of votive deposits made in lakes or pools in accordance with a well-established Celtic custom. The presence in the hoards of scrap-metal, broken objects, or rough-outs would not necessarily militate against such an interpretation, for their presence would be symbolic, like the shreds and rags of cloth at the Lac de St Andéol, and they would in fact constitute a form of wealth to the metal-worker. Unlike the Llyn Cerrig deposit, spread over a couple of centuries, or that at Thorsbjerg, over four, the actual deposition of the Carlingwark and Blackburn Mill finds at least must have been the result of a single act whereby a group of objects, themselves perhaps collected over a period of time and deposited in their container, were together committed to the "indwelling spirit of the pool," in Fox's phrase. The Santon cauldron and its contents would represent a similar set of circumstances.

But at this point we must consider the large ironwork hoards which have been found on Roman sites. At Silchester two such finds were made, one in a pit and the other in a disused well, and both of the 4th century A.D. The first hoard, from Pit N in Insula I, consisted of 66 pieces, including iron axes, hammers, gouges, chisels, plough-coulters, tongs, files, a carpenter's plane, a hippo-sandal, a lamp and a gridiron.[3] The second was found in Well no. 2 in Insula XXIII, where the mass of ironwork accounted for 7 ft. of the filling: over 100 objects were present, again including tools such as those of the Pit N hoard, and in addition scythes, field-anvils, bucket-handles, linch-pins, door strap-work, a padlock and cauldron-chains, and bronze vessels.[4]

A very similar hoard, also probably of the 4th century, was found in a pit 6 ft. deep on the Roman town-site of Great Chesterford, containing

[1] Estyn Evans in *Ulster J.A.*, x (1947), 59–62. *Cf.* the pots containing butter and animal fat in the Thorsbjerg find (Jankuhn *loc. cit.*).

[2] *P.S.A.S.*, XIX (1884–5), 309.

[3] *Archæologia*, LII (1890), 742; *ibid.*, LIV (1895), 139.

[4] *Ibid.*, LVII (1901), 246.

96 objects, including a dozen scythes, field-anvils, coulters, linch-pins, nave-bands of wheels, pole-sheathings and a cauldron-chain.[1]   And again, at Newstead, the 1st century Pit XVI contained 94 whole or fragmentary metal objects, almost all of iron, and including hammers, tongs, chisels, gouges, nave-bands, scythes, and a fragment of a probable cauldron-chain.[2] Similar finds are known from Roman forts in Germany.[3]

There is a marked uniformity between these hoards, and between them and the three south Scottish finds under consideration.   It is noticeable that even at Newstead the make-up of the hoard is peaceable in character, and reflects the farmers and craftsmen of the Romanised British population rather than the armourers' workshops of the military forces.   These town and fort hoards suggest at first sight accumulated blacksmith's scrap or the stock-in-trade of a craftsman, hidden in the ground with intent to recover in times more favourable than those at the time of deposition, but in view of the known Belgic practice of depositing votive offerings in wells or shafts, it is possible that the utilitarian explanation may not wholly apply in all examples.[4]

THE CHARACTER AND CONTENT OF THE HOARDS.

As will be demonstrated below, the hoards contain objects which can be divided into three main classes—those of Roman origin, those of native Early Iron Age type, and those of types common to Iron Age and Roman material culture.   Of 165 objects which can be related to one or other of these classes, 82 are Roman, 34 are native and 49 Romano-British: they are typically the products of communities of Romanised Britons drawing on the sources of craftsmanship available during the earlier part of the occupation.   No difference of content can be detected between the three groups, and many types are shared in common between them.   They can then be treated as a whole, representative of Romano-British culture in southern Scotland from Carlingwark Loch in the west to Blackburn Mill, some 90 miles to the north-east.

Perhaps the most striking feature of the assemblage, as Curle was quick to point out, is that it represents a peaceable population engaged in husbandry.   At Carlingwark alone the tips of eight swords and fragments of chain-mail indicate the presence of warriors, for the probable fragment of an iron shield-boss from Blackburn Mill is slender evidence enough.   All else points to farmers, shepherds, peasants and the village blacksmith, for

[1] *Arch. J.*, XIII (1856), 1.
[2] *Newstead*, pp. 119–20.
[3] As at the Saalburg (Jacobi, *Das Römerkastell Saalburg* (1897), II, pl. xlvi, 1), Zugmantel (*Germania* (1932), XVI, 159), and the Heidenburg, Kaiserlauten (*Alt. uns. Heid. Vorzeit*, v (1911), 255, pl. 46).
[4] *Cf.* Burchell in *Arch. N.L.*, Jan. 1949, 13.

the enamelled cheek-piece of a bridle and a bronze terret from Eckford could as well or better have decked the harness of a chariot-pony used in peaceful pursuits than one drawing a battle-car. Iron tires and a pole-tip of rough workmanship could as well belong to a farm cart as a chariot, and the utilitarian iron bits again are more appropriate to the farm than the parade inseparable from Celtic warfare. The contrast with the pre-Roman martial assemblage from Llyn Cerrig is complete and striking; the hoards are the archæological counterparts of the hut-villages sprawling over the defences of obsolete hill-forts in the Scottish Lowlands in the Roman period, and like them show that the phrase *pax Romana* was not an empty one.

Whether Roman or native, the material from the hoards can be divided reasonably enough into categories of agricultural, domestic and technological significance: the farm, the house and the craftsman's shop. In the commentary which follows, the Roman tools and objects are dealt with first,[1] followed by the native material and that which is represented by types common to both cultures.

(a) *The Roman Element in the Hoards.*

As detailed comment on specific types is made in the Catalogue, there is no need here to do more than touch on certain points. An important innovation in husbandry which we must attribute to the Romans in Britain is the *scythe*, represented by fragments at Carlingwark (C. 21–23) and by the necessary concomitant of the *field-anvil* at Eckford (E. 19) and Blackburn Mill (B. 38), used with a hammer to repair injury to the edge while in use. Scythes are represented at Newstead as on many Roman sites, and although known on the Continent in late La Tène times, their appearance in Britain, as in Scandinavia, must be attributed to the Romans. *Sickles* are common to both native and Roman agricultural equipment, but the example from Blackburn Mill (B. 34), retaining its original wooden handle carved into the form of a phallus, must be Roman, associated with classical imagery and the Priapic aspects of the harvest-home.

Roman farriers' practice is reflected in the characteristic *"buttress"* or farriers' tool of the Roman world (E. 17) and by the *hippo-sandals* (B. 20, 21). These latter clumsy horseshoes have an added interest in that one preserves the tread of the "sandal," which is studded with stout spikes, evidently to guard against slipping in icy weather: no small risk in a Berwickshire winter.

[1] One should note in passing that no adequate treatment of Roman tools and similar metal objects in Britain exists, and the evidence has to be gathered from those excavation reports of Roman sites in which the iron objects have been considered worthy of detailed publication. Fortunately, Curle's great publication of Newstead provides a rich series of types of specific application to the Scottish Lowlands

On the whole, the tool-kits of Roman craftsmen differed in degree rather than in kind from those of the Gaulish or British carpenter and blacksmith. An increased command over iron technology in the classical world enabled various forms of heavy *hammers, picks, axes* and *adzes* to be produced in forms superior to those of the native Celtic world, and all these types in their characteristic Roman form are represented in our hoards. The heavy *draw-knife* or spokeshave (C. 60) appears to be specifically Roman in type, but in the normal run of chisels, gouges and saws native and Roman forms appear to be indistinguishable, and they are touched on below.

The Roman contribution ' to the British house as reflected in these hoards is convincing and significant. The use of the *gridiron* (C. 71, and perhaps Eckford) as an alternative to the open hearth and traditional cauldron meant a new culinary amenity; so too the *tripod* (C. 73). The hanging-lamps or *lamp-stands* (B. 26, and again perhaps at Eckford) introduce an element of refinement and even perhaps of increased privacy within the chieftain's house, and the *key, spring padlock* and pieces of *hinges* (B. 9; C. 13; E. 12; C. 84, 85; B. 28) all imply improved house construction and greater security than that afforded by the primitive locks opened by the latch-lifter of native type (*cf.* C. 14 below).

The bronze *patera* from Blackburn Mill is of course a characteristic Roman type, one of three finds in the eastern Lowlands assigned by Bosanquet to a mid or late 2nd-century date.[1] From the Carlingwark finds came fragments of greenish *glass* (now lost); "on one piece, 3 ins. long by 2 ins. in breadth, is in relief the letter A and I, which may be a portion of M or some other letter." [2] These pieces of glass must have been Roman in origin: the relief inscription suggests the well-known "gladiator" cups of the 1st century A.D., but the size of the Carlingwark fragments implies a larger vessel than the normal run of these small bowls.[3]

All the foregoing, and a likely proportion of the undifferentiated Romano-British types of tool, represent of course completely novel and intrusive equipment brought by and in the train of the Roman armies. They are products of mass-production and standardisation, and an indistinguishable series could be produced from any part of Britain and from most of the Continent during the first couple of centuries A.D. But the native element is of greater potential interest. How far does it reflect a population of Early Iron Age culture in southern Scotland, and of distinctively local character, or how much of the material is common to wider areas of Britain? Can affiliations between the native cultures of the north and those of other regions be established?

[1] *P.S.A.S.*, LXII (1927–8), 246–54.
[2] *Ibid.*, VII (1866–8), 9.
[3] *Cf.* Harden in *Camulodunum* (1947), 300; Kisa, *Das Glas im Altertume* (1908), II, 471 ff.; III, 923 ff.

(b) *The Native Element in the Hoards.*

In this section we shall consider not only types specifically non-Roman in character, but also a certain number of items which could equally reflect Roman or native traditions. It will be convenient to deal with this material as before in groups of related objects. Once again the Catalogue must be referred to for detailed documentation.

Three types of object represent warfare: the *sword-tips* from Carlingwark (C. 26–33), the pieces of *chain-mail* from the same hoard (C. 74), and the probable fragment of a round iron *shield-boss* from Blackburn Mill (B. 30), and perhaps the Carlingwark fragments (C. 38). Of these, the sword-tips with their absence of mid-rib, their outline and their variation in width, seem on the whole to be best matched in the Llyn Cerrig series of native sword-types. This series comprises at least two main types—a narrow-bladed weapon of a type known from the 3rd century B.C. onwards in Britain, and comprising the writer's Groups II to IV, and (Group V) a broader blade (and a scabbard-mount of comparable proportions)—which appear to be the British representatives of the Continental La Tène III series, and likely to have been introduced by the Belgæ.[1] The Carling-wark swords, like those at Llyn Cerrig, indicate two traditions, the latter beginning not earlier than the 1st century B.C.

The chain-mail one might at first sight assign to a Roman origin, citing Newstead as a local find; but whatever the ultimate origin of this type of armour, it was being acquired by Celtic warriors in Britain before the Roman Conquest, if presumably from Roman sources. The *locus classicus* is the Lexden burial, which bold spirits have conjectured to have been that of Cunobelin himself: [2] this contained corroded fragments of such a corselet, and whatever may have been the name of its owner, he was a Belgic chieftain and was buried early in the 1st century A.D. The second find in a native context in Britain is in the metal-work hoard from Stanwick in the North Riding of Yorkshire, to be dated around A.D. 50–70 and representing the height of the native kingdom of Brigantia. The presence of chain-mail at Carlingwark, then, may be susceptible to interpretation in terms of Brigantian relationships in native princely houses, as well as in those assuming a later acquisition from local Roman sources in Scotland. Wheeler, commenting on the Hjortspring (Denmark) find of chain-mail of the 3rd century B.C., has hinted that Asiatic sources may have been drawn on by the Celts and other barbarian peoples.[3]

The shield-bosses (if the fragments indeed represent these) are similarly

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[1] *P.P.S.*, xvi (1950), 1–28; Group V swords listed and mapped (Carlingwark not here included), p. 28 and fig. 13.

[2] C. F. C. Hawkes in *Camulodunum*, 13.

[3] *Rome Beyond the Imperial Frontiers* (1954), 56, 59.

ambiguous. Circular bronze bosses are known in the Early Iron Age of Britain,[1] and round iron bosses at Hunsbury, some with curious spikes through them, may well be from shields, and on the Continent the circular iron shield-boss appears to be a La Tène III development, Déchelette quoting examples from Alise, Carniola and East Prussia. On the other hand, it is equally a Roman type occurring locally at Newstead and elsewhere in Britain, so that it is impossible to decide the precise status, Roman or native, of the Blackburn Mill piece.

Objects connected with chariots or carts may be considered next. The enamelled bronze *cheek-piece* (E. 1) and the *terret* (E. 2) are specifically of native types, the former sporadically but widely distributed in England from Somerset to East Anglia and northwards to Yorkshire. The enamelled design belongs to a school with Belgic affiliations, and comparable pieces are harness-mounts in the Westhall hoard of Boudiccan date and, in Scotland, the Auchendolly terret, an undoubted import from the Belgic area of southeast England as Leeds' map of this type shows.[2] The Eckford terret is, however, not of southern English type, but a member of a class which has a distribution almost wholly between the two Roman walls, with dated examples ranging from Trajanic to Antonine times and (in a modified form) into the 3rd or 4th century A.D.

The iron *pole-tip* (E. 3) is unique in itself but with clear analogues in native and Romano-British contexts—the Great Chesterford pole-sheathings are particularly interesting in this connection. The single-piece *tires* must again be reckoned a native contribution, in view of the evidence brought forward by Fox and others to show the distinction between the Celtic practice of shrinking-on a single-piece tire, and the Mediterranean tradition of nailing it to the felloe of the wheel. The *linch-pins* from the hoards comprise two types, the first, represented by the pair of bronze caps from Blackburn Mill (B. 6), belonging to a native group with their best parallels in Belgic examples from East Anglia of mid-1st century A.D. The remaining linch-pins, of iron (E. 4; C. 7, 8; B. 4), are of Romano-British types, but their full distribution has never been worked out: there are several Scottish examples, English specimens have been noted E.R. Yorks., Northants and Gloucestershire, and they occur in Roman sites in Germany.[3] The *horse-bits* (C. 4, 5; B. 7, 8) are of a simple form frequent in Romano-British contexts but with good La Tène prototypes, and they differ completely from the specifically Roman types as seen at Newstead, and from London.

The furnishings of the hearth, represented by the *cauldrons* and fragments of others (C. 1, 17, 18; B. 1, 2, 14), and by *cauldron-chains* for their

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[1] Fox in *Arch. Camb.* (1945), 200.

[2] *Celtic Ornament*, fig. 33, terrets of Leeds' Type 2.

[3] Several from Zugmantel: *O.R.L.*, xxxii (1909), 100, 190, Abb. 44, no. 36, Taf. xv, 63, 65, 66; *cf.* Saalburg, Jacobi, *Römerkast. Saalburg*, pl. xxxii, 1, 7.

suspension (E. 6–9; B. 17; probably C. 10; B. 18), are of considerable interest. Hawkes has discussed the Carlingwark and Blackburn Mill cauldrons and shown how they represent La Tène III types, the British examples being not earlier, on available evidence, than the 1st century A.D.[1] The Santon cauldron, containing a hoard closely comparable with those under discussion, is a case in point; it is in a Belgic context and is of the same type as that from Carlingwark. A small example of the same type of cauldron comes from a well at Silchester, where it cannot be earlier than c. 100 A.D., and a fine specimen, almost identical with that from Carlingwark, turned up as a stray find in the Black Moss, High Grains, Bewcastle. The two Irish examples, from Co. Antrim and the Bog of Allen, show the widespread distribution of the type in the north and west. A remarkable little model of such a cauldron, cast in one piece, comes from a cremation burial at Tarland, Aberdeenshire, probably of the 2nd century A.D., and Hawkes has drawn attention to a parallel custom of burying miniature cauldrons among the Gallo-Roman Nervii in the first three centuries A.D. It may be worth while noting that such Scandinavian cauldrons as that from Rynkeby in Denmark, or the iron-bound types such as those from Brokaer in Jutland and Bjergelide near Horsens, come close to our Santon–Carlingwark type, and probably share a common origin.[2]

The globular form as seen at Blackburn Mill is less easy to tie down in terms of date or culture, except in the broadest terms, and comparable examples have been listed by Fox and Hawkes. In Scotland we may note the Kyleakin (Skye) cauldron already referred to above (p. 7), and a very fine unpublished example from a bog at Abercairney, now in the Perth Museum. Further, it should be pointed out that the cauldron from Kincardine Moss, Stirling, is a particularly fine example of Fox's globular, composite type,[3] and must surely be of Iron Age date and not, as sometimes inferred rather than stated, a member of the Late Bronze Age group of globular cauldrons.[4]

The Y-shaped chains for the suspension of cauldrons over an open hearth, represented at Eckford (E. 6–9) and Blackburn Mill (B. 17), and probably by a fragment from Carlingwark (C. 10; cf. B. 18), are of great interest. In addition to the examples just mentioned, there are some 16 finds of cauldron-chains or fragments from Britain, which can be divided

[1] "Bronze-Workers, Cauldrons, and Bucket-Animals in Iron Age and Roman Britain," Aspects of Archæology (1951), 172–99, esp. 179–83.

[2] Rynkeby, Brønsted, Danmarks Oldtid, III, 97; Brokaer and Bjergelide, Müller in Aarbøger (1881), 110; cf. Stenberger, Öland under Yngre Jernaldern (1933), fig. 1; Shetelig and Falk, Scand. Arch. (trans. Gordon), pl. 30a. Cf. also Eggers, Der Römische Import in Freien Germanien (1951), 40, Taf. 2 and Karten 10 and 11, for distribution of such cauldrons in Northern Europe; Wheeler, Rome Beyond the Imperial Frontiers (1954), 72–90 for summary.

[3] Llyn Cerrig, p. 88; P.S.A.S., XIX (1884–5), 313.

[4] Cf. Childe, Prehist. Scot. (1935), fig. 44. The Kincardine Moss cauldron was not, however, included by Leeds in his classic study of Late Bronze Age cauldrons (Archæologia, LXXX (1930), 1–36).

into two types.   The first, or *Stanfordbury Type*, is that which is also known from a number of sites of Hallstatt or La Tène date on the Continent: one English find of what is probably a fragment of one such chain is of the 4th or 3rd century B.C., but the remainder form a compact group in time and space, confined to the Belgic area of south-eastern England and ranging in date from the 1st century B.C. into the earlier Romano-British period.   The Eckford fragments are from a chain of this Stanfordbury type.

At Blackburn Mill, however, and probably also at Carlingwark if the broken fragment of iron C. 10 is correctly interpreted, we have representatives of a second type of chain, the *Great Chesterford Type*, in which the looped rods joined with rings which are characteristic of the Stanfordbury type are replaced by relatively elaborate chain-work.   In three examples at least there is a complex openwork decorative feature at the top of the chain, and the Y-junction is elaborated in decorative fashion.   At Blackburn Mill this feature incorporates ornamental spirals, and in the Great Chesterford example the junction is formed of a fantastic *tour de force* of blacksmithing in which two iron rods have been tied into a reef-knot which forms the central feature of a reduplicated triple lyre pattern, the outermost members in the lower half of which are returned as tight spirals in precisely the manner of Blackburn Mill.[1]   The elaborate double-looped links of the Blackburn Mill chain are also found on the Great Chesterford specimen, on a Stanfordbury type chain from Over Fen (no. II), at the Saalburg, and on slave-chains of Romano-Belgic type from Lagore which, with other evidence from that site, may indicate an occupation earlier than that in the Dark Ages by which the crannog is best known.

The known examples of Great Chesterford type chains come from Romano-Belgic contexts in southern England, and there is a probable fragmentary example from Newstead.   Their distribution pattern is concordant with the Stanfordbury type chains, and both of course represent, with the cauldrons they supported, a feature of the native household wholly alien to the Roman tradition.   The great length of the complete Great Chesterford chain, slightly over 7 ft., gives an indication of the proportions of the house in which such a chain could hang a cauldron above a fire: the large ring at the upper end of the chain shows that it was held on a transverse pole, along which it could be shifted to bring it into the desired position over or to one side of the hearth.[2]   The distribution in the British Isles of cauldron-chains of the foregoing types is given in fig 3 (p. 18).

The Celtic household is further represented by two objects of comparative luxury: the iron *mirror-handle* (C. 3) and the bronze *tankard-handle* (C. 2),

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[1] *Cf.* Fox in *Ant. J.*, XXVIII (1948), 129; *P.P.S.*, XVIII (1952), 50.   The spirals are of course present in the classical or sub-classical prototypes of the lyre pattern.

[2] I owe this suggestion to Sir Cyril Fox, who has also pointed out to me a medieval counterpart of the pole-hung cauldron-chain.
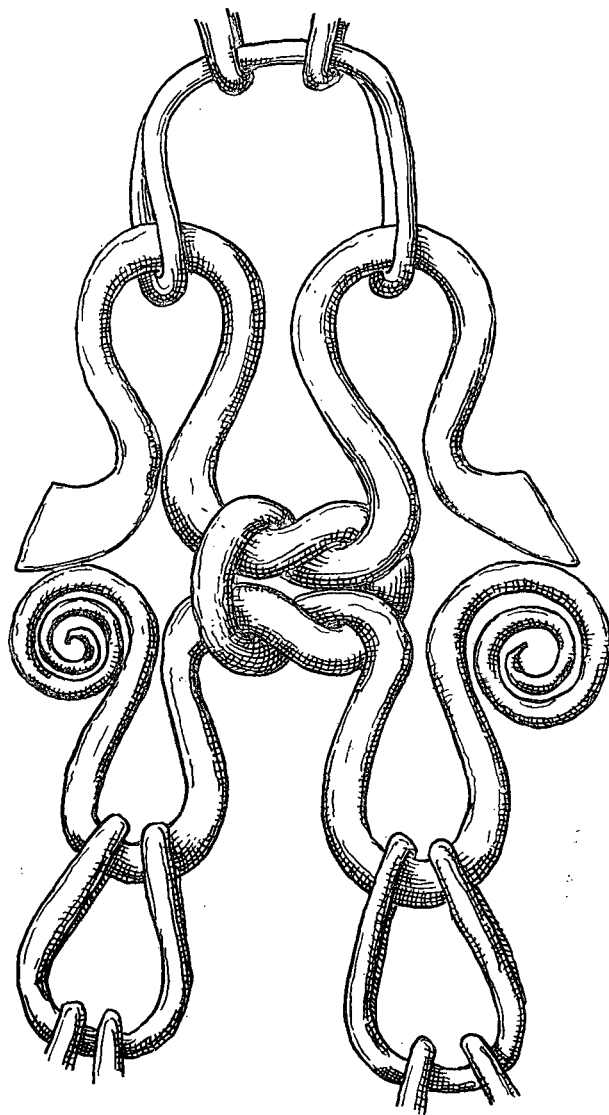
Fig. 2. Iron centre-piece of cauldron-chain, Great Chesterford. ($\frac{1}{2}$.)

both from Carlingwark. Fox has shown how the mirror-handle is a north English type, with outliers in the south-west at Stamford Hill, Plymouth, and to the north-west in the Lambay Island hoard off Dublin.[1] The tankard-handle, on the other hand, comes into Type II of Corcoran's classification, which he regards as a Belgic form,[2] so that while the mirror-handle may be a more or less local product with probable Brigantian origins, the tankard-handle is likely to have an origin in southern England, within the Belgic province.

In the sphere of agriculture, the hoards have produced two *ploughshares* of different type (E. 10 and B. 31) but both within Payne's group of Belgic or Romano-British shares.[3] Comparable shares come from Traprain Law and Oxnam in southern Scotland, but are otherwise confined to south-east England in Belgic or Roman contexts.

It is difficult to comment upon the craftsmen's tools in the hoards which cannot be assigned to a Roman origin, or which are more likely to be native than not. Such forms as the *saw* (C. 20), the tanged *sickle* (C. 37), the *adze* (B. 39), or the *files* (C. 68, 69), *gouges* (B. 40, 50), etc., can be seen to have a general origin in the later La Tène cultures of the Continent, and in Britain are the common stock of Iron Age B and C at least. Good parallels exist in southern England, but this may reflect more extensive excavation rather than a real concentration.

The striking feature which does emerge from this analysis however is that, where a precise attribution can be made, it is almost invariably within the Belgic or Romano-Belgic cultures of south-eastern England. Distinctively North British types are rare—the Eckford terret and the Carlingwark mirror-handle stand out as exceptions. Certain well-known native types of metal-work, such as the developed forms of horse-bits characteristic of North Britain in the 1st and 2nd centuries A.D., are noticeably absent from the hoards. Our final task, then, must be to seek for a reason for the presence of these alien types in southern Scotland.

THE SIGNIFICANCE OF THE HOARDS.

The mixture of Roman and native metal types in the hoards could reasonably be supposed to reflect one of three possibilities:

1. The native types are not sufficiently distinctive to be attributable to any phase or area of the later Iron Age cultures of Britain, but represent the common stock of blacksmithing at the time of and shortly after the Roman Conquest. They would therefore indicate a local contribution from south Scottish Iron Age cultures,

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[1] *Arch. Camb.* (1948), 24–44.
[2] *P.P.S.*, XVIII (1952), 85–102.
[3] *Arch. J.*, CIV (1948), 82–111.

combined with Roman types imported into the region in the Agricolan and later campaigns.

2. If weight is attached to the Belgic character of much of the native metal-work, its presence in Scotland could be the result of immigrations into the Lowlands from south-east England on the eve of, or following immediately upon, the Roman Conquest of A.D. 43. The Roman element in the hoards would indicate subsequent contact with military forces stationed at Newstead and elsewhere in southern Scotland.

3. The hoards could be regarded as representing the importation into Scotland of a mixed Romano-British or Romano-Belgic culture from south-eastern England in the late 1st or early 2nd century A.D., in which the fusion of native and Roman elements had already taken place before the move north. Such a movement within the period of the Roman occupation could hardly be other than an expression of deliberate Imperial policy.

The first of these three views depends upon assumptions easy neither to confirm or refute. In our admittedly incomplete knowledge of Early Iron Age ironwork in Britain, it might be urged that to define regional types as likely to be Belgic is to force the evidence beyond its proper bounds. But the cauldron-chains and ploughshares seem distinctive forms enough, absent for instance in the large metal-work series from Glastonbury, and the difference in composition of our Scottish hoards from that of Llyn Cerrig suggests that those responsible for their deposition drew upon sources neither pre-Roman in date nor characteristic of the Jurassic Zone or the south-west: the virtual absence in them of metal-work types known to be Brigantian in distribution would again argue against derivation from that area. (Fig. 3.)

If the native types in the hoards be regarded as likely to derive from south-east England, and to be Belgic in the widest sense, we must then consider the date and manner of their acquisition by communities in southern Scotland. It is on the whole unlikely that they represent objects acquired by trade from Belgic sources by an existing iron-using population in the north, and we must suppose that they represent actual Belgic elements among the mixed refugee population from southern England which seems to have been responsible for the establishment of Early Iron Age culture in the Scottish Lowlands.[1] These immigrants appear to have entered largely by way of the Tweed mouth, in the 1st century B.C. and later, and are mainly represented by their hill-forts in the Cheviot foothills. The Belgæ in south-east England do not appear to have made fortifications of the type represented on a small scale by the southern Scottish sites, and the metal-work objects

[1] C. M. Piggott in *P.S.A.S.*, LXXXIV (1949–50), 129–135; S. Piggott in *The Problem of the Picts* (forthcoming), ch. ii.
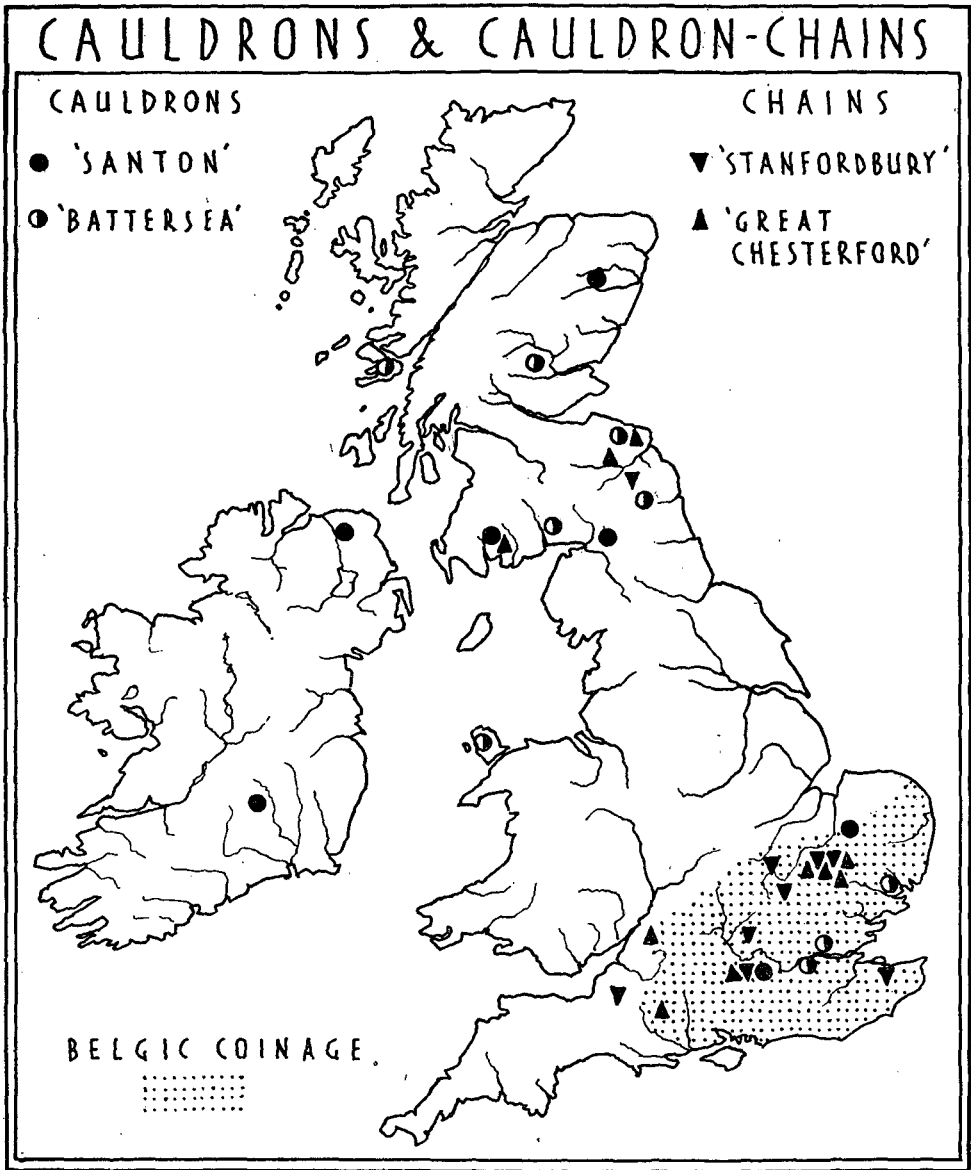
Fig. 3.

under discussion would be the only archæological evidence of their establishment in the north. If such communities were brought into being shortly before the Roman Conquest of Scotland, they would provide the requisite native element in the hoards, to which would be added Roman objects from local military sources.

On the other hand, the objects of suspected Belgic origin in the hoards are those known in southern England in contexts after A.D. 43—they are in fact to be regarded as Romano-Belgic rather than representative of the pre-Roman phase of the native culture. The whole composition of the hoards is, as we have seen, strikingly similar to those from such Roman sites as Silchester or Great Chesterford, and the last of three possibilities, that the metal-work under consideration represents communities of people of Romano-Belgic origin, newly established in Scotland after the Agricolan campaign, is in many ways the most attractive.

In a recent study of native agriculture at the time of the Roman Conquest of Britain, the writer has pointed out that north-west of the Jurassic Ridge there are likely to have been large areas of pastoralism, with subsistence agriculture at a Bronze Age level, and that in Scotland even more primitive conditions may well have prevailed.[1] The ploughshares of Romano-Belgic type in southern Scotland suggest a deliberate innovation in agricultural techniques, either as a result of native migration at or around the time of the Roman Conquest of southern Britain, or, as is now suggested, as part of a Roman scheme for increasing the corn production of northern Britain to meet some at least of the requirements of local garrisons. We are reminded of the corvées later employed on Hadrian's Wall, made up of men from southern England including members of the tribal areas of the Dumnonii, the Durotriges and the Belgic Catuvellauni,[2] and of Regina, a girl of the same tribe, who married a Palmyrene and was buried at South Shields. The deliberate, and if necessary forcible, transference not only of military units but of whole tribal groups from one region to another was, after all, by no means unknown as an instrument of Roman policy.[3] The alternative suggestion could therefore be put forward that the hoards (and other evidence of Belgic contacts in southern Scotland) might be interpreted as indicating a deliberate transference of civil population from SE. England to the Scottish Lowlands at the end of the 1st century A.D.

[1] In *Roman and Native in North Britain* (forthcoming), ch. i.
[2] Bruce, *Handbook to the Roman Wall* (ed. I. A. Richmond, 1947), 160.
[3] *Cf.* Collingwood, *Roman Britain* (1936), 146; Macdonald, *Roman Wall in Scotland* (2nd ed., 1934), 48.

CATALOGUE.

The catalogue of objects in all three finds which follows here is arranged in concordance with the illustrations in figs. 4 to 13. Reference letters indicate the appropriate find, E. representing Eckford, C. Carlingwark, B. Blackburn Mill. Material, dimensions and details of each object are given first, followed by the Catalogue Number of the National Museum of Antiquities in brackets. There then follow general and comparative comments.

In addition to abbreviations normally in use, certain works, referred to on several occasions, are cited in shortened form as follows:—

Camulodunum	Hawkes, C. F. C., and Hull, M. R., *Camulodunum,* Soc. Ant. Lond. Research Committee Report no. XIV (1947).
Celtic Ornament	Leeds, E. T., *Celtic Ornament in the British Isles down to* A.D. *700,* 1933.
Déchelette, III, IV	Déchelette, J., *Manuel d'Archéologie* . . ., 2nd Ed., III (1927), IV (1927).
Excav. Cran. Chase, I, II	Pitt-Rivers, A., *Excavations in Cranborne Chase,* I (1887), II (1888).
Glastonbury, II	Bulleid, A., and Gray, H. St G., *The Glastonbury Lake-Village,* II (1917).
Lagore	Hencken, H., "Lagore Crannog," *P.R.I.A.,* LII (Sect. C) (1950), 1–247.
Llyn Cerrig	Fox, C., *A Find of the Early Iron Age from Llyn Cerrig Bach, Anglesey,* 1946.
Lydney	Wheeler, R. E. M., *Report on the Excavation* . . . *in Lydney Park, Gloucestershire,* Soc. Ant. Lond. Research Committee Report no. IX (1932).
Maiden Castle	*Ibid., Maiden Castle, Dorset, ibid.,* Report no. XII (1943).
Newstead	Curle, J., *A Roman Frontier Post and its People: The Fort of Newstead,* 1911.
Richborough, II, IV	Bushe-Fox, J. P., *Second Report on the Excavation of the Roman Fort at Richborough, Kent,* Soc. Ant. Lond. Research Committee Report no. VII (1928); *ibid., Fourth Report* . . ., *ibid.,* Report no. XVI (1949).
Verulamium	Wheeler, R. E. M., *Verulamium: A Belgic and Two Roman Cities,* Soc. Ant. Lond. Research Committee Report no. XI (1936).

I. THE ECKFORD FIND.

E. 1. **BRIDLE CHEEK-PIECE,** bronze, 4·25 ins. long, maximum breadth 0·9 in. The cheek-piece is circular in section, with a flat-sided central expansion to accommodate the leather strap of the bridle within a slot 1·2 by 0·2 ins. The slightly expanded terminals are decorated each with three incised lines. On one face of the central expansion is a design in champlevé red enamel, in good condition. (DWA 1.)

The symmetrical "fold-over" design is based on a repeated pair of voided acorn-shaped nodes united by a "broken-back" curve, and is a

simplified, though not debased, version of the enamelled harness-mount from Westhall, Suffolk (Leeds, *Celtic Ornament*, pl. i, 6), or the terrets from that site and from Lakenheath (*ibid.*, pl. i, 3; Lakenheath identification by R. R. Clarke *loc. cit. inf.*, 70) and Auchendolly, Kirkcudbrightshire (*P.S.A.S.*, xx (1886), 396). There is good reason for regarding the Westhall find as of Boudiccan date (R. R. Clarke in *Arch. J.*, xcvi (1940), 68–70) and a mid-1st century A.D. date for all these enamels seems reasonable.

Bronze cheek-pieces for bridles are not common in the British Iron Age, and seem unknown in comparable Continental cultures. They may represent a local translation into metal of the horn and bone cheek-pieces of Iron Age "A" and Late Bronze Age type.

BRONZE BRIDLE CHEEK-PIECES.

Site.	Reference.	Comment.
Birrens, Dumfriesshire.	*P.S.A.S.*, LXII (1937–8), 335–7, fig. 38.	Massive bronze cheek-piece with terminal knobs and panel of double-trumpet relief moulding, associated with two terrets with enamelled knobs in a deposit of *c.* A.D. 157.
Bowerchalke, Wilts.	*Wilts. A.M.*, XLIII (1925–37), 352.	Enamel in red and blue squares and discs.
Cambridge.	*V.C.H.*, *Cambridge*, I (1938), 292, fig. 25, no. 8.	Small bronze cheek-piece with ring-and-dot ornament (? sunk for enamel).
Eckford, Roxburghshire.	Present paper.	
High Cross, Leicestershire.	Leicester Mus., unpublished.	Bronze. Faint traces of incised design probably similar to that on the Eckford specimen. No enamel traces. Found in association with bronze chariot horn-cap (*Llyn Cerrig*, pp. 17, 77); probably second half of 1st cent. A.D.
Polden Hill, Somersetshire.	*Brit. Mus. E.I.A. Guide* (1925), 143–4; F. Henry, *Préhistoire*, II (1933), 99.	Five bronze and enamel cheek-pieces and two of iron were found in this hoard; probably of 1st cent. A.D.
Santon Downham, Norfolk.	F. Henry, *Préhistoire*, II (1933), 98.	Enamelled bronze cheek-piece with lateral expansions at slot similar to Eckford.
Silchester, Hants.	*Ibid.*	Simple form similar to High Cross, bronze with sinkings for enamel.
Stanwick, N.R., Yorks.	*Archæologia*, LX (1906), 289; *York vol. Arch. Inst.* II (1848), pl. iii, p. 37, no. 3.	Small example — bronze, undecorated. From the large metal-work hoard, probably mainly mid-1st cent. A.D.

E. 2. **TERRET,** bronze. Loop of bronze, broken and distorted but approxi-
mately 1·7 ins. across internally in original state, terminating in moulded
collars linked by flat plate.   The loop is decorated by three groups each of
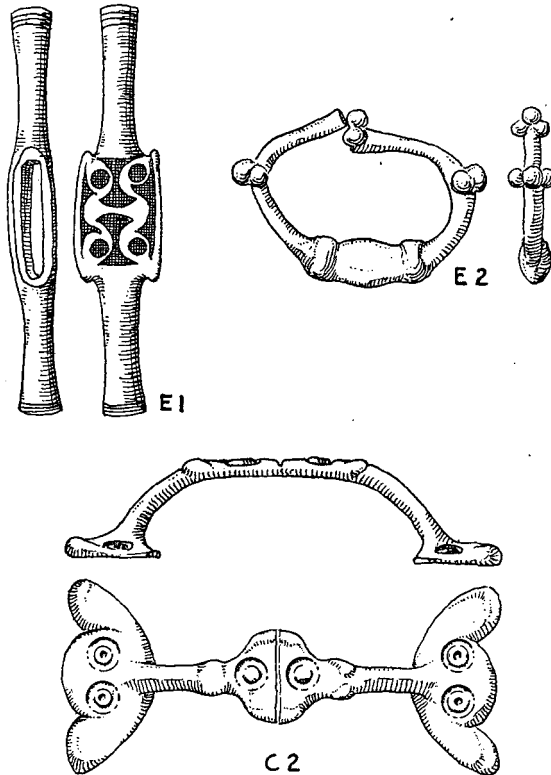three pellets or knobs spaced symmetrically.   (DWA 2.)

Fig. 4. Bronze objects from Eckford (E. 1; E. 2) and Carlingwark (C. 2).   (½.)

Knobbed terrets of this type are Leeds's class 7 (*Celtic Ornament*, p. 125),
and have a predominantly Lowland and Scottish distribution.   To Leeds's
list (Kirkby Thore, Yorks; Muircleugh, Lauder; Eckford; Middlebie,
Dumfriesshire; Traprain Law; but not Ardoch) add: Castledykes,
Lanark (Hunterian Mus.); Nether Denton (Chesters Mus.); Fremington
Hagg, Swaledale (York Mus.); Poltross Burn (*T. Cumb. and West. A.S.*,
N.S., xi, 13).

The distribution is almost entirely between the two Roman Walls.
The Nether Denton terret is almost certainly Trajanic, though that from
Castledykes is Antonine, and Poltross Burn (a modified form) 3rd to 4th
century A.D.   The type obviously had a long life in the North.

E. 3. **CHARIOT or CART POLE-TIP,** iron. A massive iron ferrule or shoe,
circular in cross-section and of truncated conical form.   It is broken at its
larger end, which is open, and its maximum length is now 4·6 ins.   The

external diameter of the smaller, closed end is 2·8 ins., and the internal diameter approximately 2·3 ins.   The closed end is perforated centrally by a hole 0·5 in. diameter, and a second hole, 0·7 in. diameter, perforates the side 2·2 ins. from the closed end.   (DWA 14.)

The most probable use of this object seems to be a pole-tip for the central shaft of a two-horse vehicle, secured by a broad-headed nail driven in lengthwise from the front with the transverse perforation to allow of a vertical pin to which the yoke would be lashed.   No precise parallels can be quoted, though the relevant material is discussed by Fox in describing the analogous but not precisely similar iron sheathing of a chariot pole-tip from Llyn Cerrig (*op. cit.*, 92), and the bronze pole-tip from the famous Charioteer's Barrow at Arras, E.R., Yorks (*Ant. J.*, XXIX (1949), 81–3).   In the hoard of iron objects from Great Chesterford in Essex, of Roman date, two iron pole-tips were, however, found, open at the end and with a square hole for the yoke-pin, intermediate between Arras and Eckford in type (*Arch. J.*, XIII (1856), 4, and pl. i).   The bronze mountings of the pole-tip and other parts of the Djebjerg ritual cart may also be noted (H. Petersen, *Vognfundene i Djebjerg Præstergaardmose* (Copenhagen, 1888), pl. v, nos. 6 and 7).   Although lighter and of more elaborate design, they present the same fundamental elements of design as the Eckford specimen, of truncated conical shape, with a (decorative) boss or large-headed nail at the smaller, closed end, and the hole for transverse pin.

Precise dating is impossible in view of the long persistence of chariots in Iron Age Europe and during Roman times.   Arras is probably late 3rd century B.C., Djebjerg about 100 B.C., and Llyn Cerrig from the 1st century B.C. to *c.* A.D. 50.   Great Chesterford is within the Roman period but with native elements (*e.g.* cauldron-chains).   The Eckford specimen may be anywhere within the range of date of the other associated objects.

E. 4. **LINCH-PIN**, iron.   A plain square-section iron bar 0·5 in. thick with a flat spatulate head.   Total length 5·6 ins.   (DWA 22.)

Parallels to this linch-pin come from a Roman context on Hadrian's wall at Chesters (two examples in Chesters Mus.); another comes from a Roman site at Elslack, Yorks (Skipton Mus.).   There seems little doubt that this type is related, on the one hand, to the decorated spatulate-headed linch-pin of enamelled bronze from King's Langley, Herts (*Ant. J.*, XX (1940), 358), and, on the other hand, to the large series of iron linch-pins with looped spatulate head normally found in Roman contexts [*Ant. J.*, XXI (1941), 67; *cf.* Newstead (*Newstead*, pl. lxx, 1, 3, 6); Blackburn Mill (B. 4 below).   *Cf.* also the probable example from Carlingwark (C. 7)].

The Kings Langley pin is dated to the first half of the 1st century A.D., and the pins in Roman contexts range from the 1st to the 4th centuries A.D., but may be of native origin.

E. 5. **TIRE**, iron.   Six fragments ranging from 12·5 to 4·4 ins. long, all probably of one tire.   Much rusted, but width estimated at 1·3 ins., maximum thickness 5 mm.   Apparently Fox's type A/C, worn rather thin (*Llyn Cerrig*, p. 75).   (DWA 19.)

There are no nail-holes, and these fragments presumably represent a single-piece iron tire shrunk on to the felloe of the wheel, a type of tire and technique of fixing that seems non-Roman and of La Tène origin (*op. cit.*, 12).   Comparable tires, complete and fitted to their wheels, are known from

Newstead (*Newstead*, pl. lxix) and Bar Hill (Macdonald and Park, *Bar Hill* (1906), 92–9). Tire fragments also occur in the Carlingwark and Blackburn Mill finds described in this paper (C. 6; B. 3).

E. 6. **TWISTED LOOPED ROD,** iron. A square-sectioned rod, twisted to give a decorative effect, with flattened loops at each end. Overall length 11·0 ins., thickness 0·3 in. (DWA 15.)

E. 7. **POT-HOOK WITH TWISTED SHAFT,** iron. Broken fragment 8·8 ins. long, made from a twisted rod 0·3 in. thick, expanding to a flattened hook 0·45 in. wide at the unbroken end. (DWA 16.)

E. 8. **POT-HOOK WITH TWISTED SHAFT,** iron. Smaller fragment 5·5 ins. long, matching no. 6. (DWA 17.)

E. 9. **HOOK WITH TWISTED SHAFT,** iron. Fragment 3·9 ins. long, 0·2 in. thick, of twisted rod with terminal hook (not flattened). (DWA 18.)

Nos. 6–9 should be taken together as elements of a double-hooked cauldron chain.

British cauldron chains are not uncommon and may be divided into two types, both represented in the South Scottish hoards under discussion. The Eckford fragments represent a chain of the *Stanfordbury Type*, in which looped rods joined by rings form the main components, with lengths of chain adjusted to the height above the fire required. This type follows closely the Continental pattern, where it goes back to Hallstatt times. English finds are mainly in Belgic contexts (Bigbury, Stanfordbury), though the Bledlow hook, if indeed of a cauldron chain, would be 3rd century B.C. The second, or *Great Chesterford Type* of chain is represented at Blackburn Mill and is discussed later (B. 17 below); it is a Romano-Belgic type.

DOUBLE-HOOKED CAULDRON CHAINS.

A. EUROPE.

(The following provisional list is certainly imperfect but indicates the wide range of the type.)

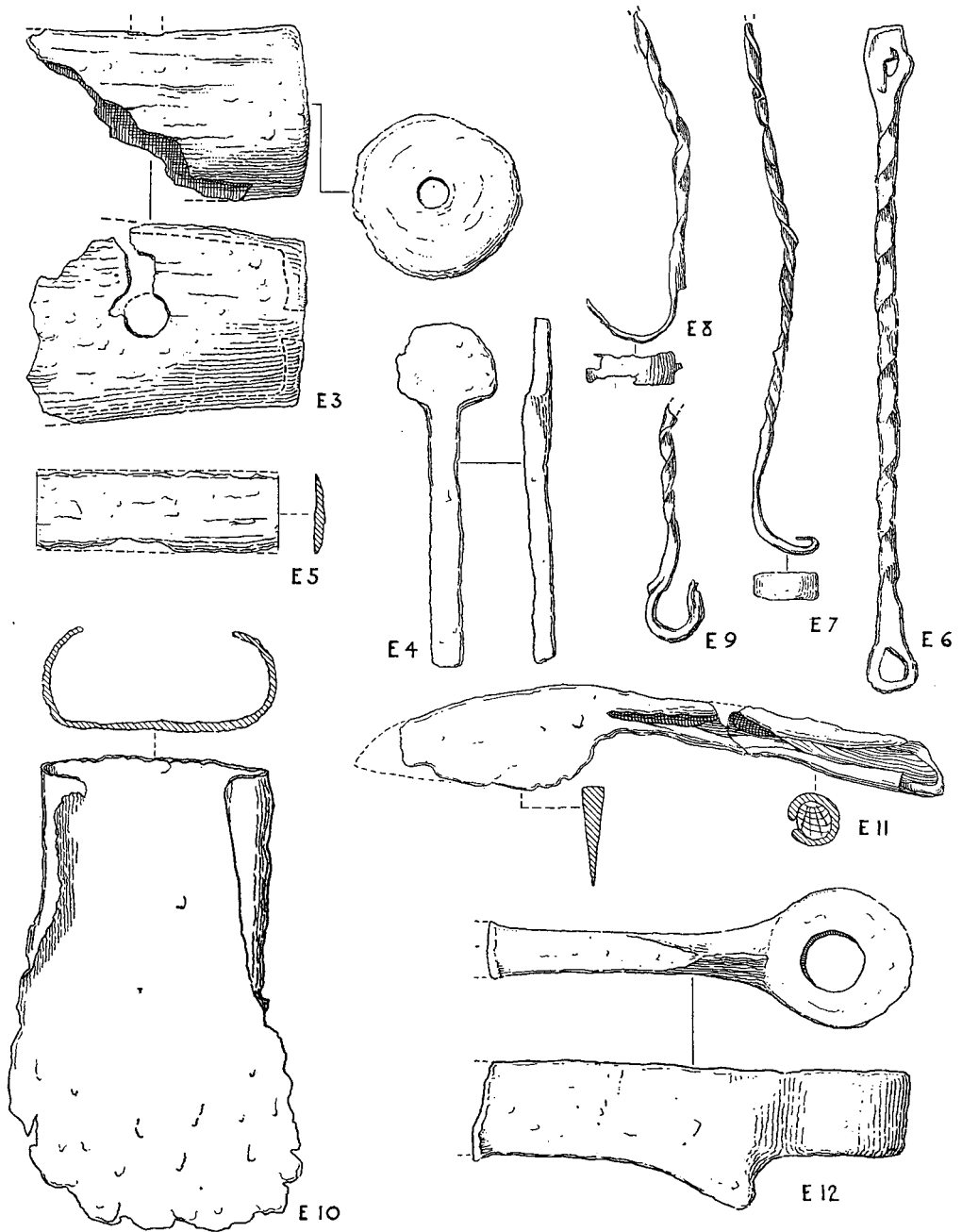| Site.	Reference.	Comment.
Anderlecht, Barbant, Belgium.	De Loë, *Belgique Anc.*, II, 162, fig. 64.	Twisted rods and chain, from pre-Roman level under Romano-Belgic house.
Camp de Château, Salins, France.	Déchelette, III, 292, fig. 323, I.	Chain, rods and hooks. Not twisted. Hallstatt.
Duhren, Baden.	Déchelette, III, 293.	In La Tène II grave, dated by Jacobsthal to late 2nd cent. B.C. (*Early Celtic Art*, I, 157).
Emmendingen, Baden.	Déchelette, III, 926, fig. 636, I.	Similar to La Tène example, found with a cauldron of Carlingwark type. Late La Tène.
Frögg, Rosegg, Carinthia.	*P.S.A.S.*, XXIII (1889), 244, pl. iv, 8.	Chain and hook fragments. Twisted. Hallstatt.

Fig. 5. Iron objects from Eckford.   ($\frac{1}{3}$.)

A. Europe—(continued).

Site.	Reference.	Comment.
La Tène, Switzerland.	Vouga, *La Tène,* pl. xxvii, 4 : 4; Déchelette, III, 293, fig. 323, 2.	Of La Tène II date.
Saalburg, Germany.	Jacobi, *Römkas. Saalburg* (1897), I, ·157; II, pl. XIV, vii.	From Well no. 6 in 1st cent. A.D. Roman fort.
Tielle Inferieure, Switzerland.	Déchelette, III, 293.	
Vertault, Côte-d'Or, France.	Déchelette, III, 295, fig. 323, 3.	Similar to the La Tène example. From a Gallic Wall fort of late La Tène date with occupation into Roman times.
Zarybrick, Bohemia.	Déchelette, III, 85, 292.	Fragments of chain and hooks with twisted rods. Hallstatt.

B. Cauldron Chains of Type I (Stanfordbury Type) in Britain.

Site.	Reference.	Comment.
Bigbury Camp, Kent.	*Arch. J.,* LIX (1902), 215, pl. ii, 5; *ibid.,* LXXXIX (1933), 107.	Several examples, with fragments of tripods of Stanfordbury type; 1st cent. B.C./early 1st cent. A.D.
Bledlow, Bucks.	*Records of Bucks.,* XIV (1944), 197, fig. 1, no. 2.	Twisted, hooked and looped rod in Iron Age "A" context of 4th–3rd cent. B.C.
Eckford, Roxburghshire.	Present paper.	
Hunsbury, Northants.	*Arch. J.,* XCIII (1936), 67.	Fragments of more than one example; 2nd cent. B.C./early 1st cent. A.D.
Kingsdown Camp, Somerset.	*Archæologia,* LXXX (1930), 85, fig. 7.	Twisted, looped rod, probably from cauldron chain; *c.* A.D. 40–50.
Over Fen, Cambs. I (probably in or near).	Cambridge Mus. of Arch. and Ethn., no. Z.11494.	Complete example, no associations.
Over Fen, Cambs. II (probably in or near).	Cambridge Mus. of Arch. and Ethn., no. Z.11495.	Complete example, no associations.
Silchester, Hants.	*Archæologia,* LVI (1899), 242, fig. 3.	Two at least, one from House I, Insula XIX and another from Insula XXIII associated with three of Great Chesterford type. 4th cent. A.D.
Stanfordbury, Beds.	Fox, *Arch. Camb. Reg.,* 100, pl. xvii; *Arch. J.,* LXXXVII (1930), 260.	Chains suspended from iron tripod, in grave of mid-1st cent. A.D.

E. 10. PLOUGHSHARE, iron, 7·8 ins. long, maximum breadth 4·7 ins., made of a 0·2-in. thick flat plate folded in at the upper end to form an oval socket 3·6 by 1·4 ins. to receive the thinned-down tip of the share-beam. (DWA 9.)

It is this type of wide flat share has been discussed by F. G. Payne (*Arch. J.*, CIV (1948), 82–111), and seems to be of Belgic and Roman date; the Eckford share is the widest of its type from Britain, though comparable examples come from Traprain and Oxnam in southern Scotland, and from Blackburn Mill, no. B. 31 and perhaps B. 33*a*.

E. 11. SOCKETED REAPING-KNIFE or SICKLE, iron, 9 ins. long, with upper end missing; split socket 0·6 in. internal diameter at maximum. Blade 1·6 ins. wide at base. (DWA 11–12.)

It is difficult to find close parallels for this knife with its distinctively long socket, but an example from Newstead (*Newstead*, pl. lxi, 10) probably represents the type. It is likely to be Roman rather than native in origin.

E. 12. MASSIVE DOOR-HINGE, iron. Overall length 7 ins., but broken off at end; perforation 1 in. in diameter. (DWA 21.)

This is presumably Roman, and worked on an iron L-shaped staple such as that from the Carlingwark hoard (C. 52).

E. 13. SMALL PICK, iron, 7·3 ins. long overall, 1·8 ins. wide at centre, with oval shaft-hole 0·95 by 0·8 in. It has one flat hammer-head, burred from use, and one narrow pick blade. (DWA 3.)

E. 14. SMALL PICK, iron, 4·4 ins. long overall, 1·9 ins. wide at centre, with shaft-hole 0·75 in. diameter. (DWA 4.)

Both these tools are representatives of common Roman types which were either masons' or miners' tools (*cf.* Blackburn Mill, B. 37). Wheeler, *Lydney* (1932), 92, gives references to ironminers' picks (cf. *Newstead*, pl. lviii, 5, 12). A native type, with characteristic narrow oval shaft-holes, occurs in pre-Roman contexts on the Continent (Déchelette, IV, p. 879, fig. 607), in England (Bredon Hill, *Arch. J.*, XCV (1938), 73–4), and (as a hammer) at Carlingwark, C. 42.

E. 15. ADZE-HAMMER, iron, 8·4 ins. long overall, hammer end 1·1 in. square, blade originally c. 2·5 ins. wide. Slightly oval shaft-hole, 1·2 by 0·9 ins. (DWA 5.)

This massive tool appears to be a Roman type (*cf.* Collingwood, *Arch. Rom. Brit.* (1930), fig. 65, p, though with tubular shaft-hole).

E. 16. MATTOCK, iron, 9·5 ins. long overall, both blades c. 1·4 ins. wide. Oval shaft-hole 1·7 by 1·0 ins. (DWA 6.)

This axe-adze or mattock seems to be related to the Roman military *dolabra* (cf. *Newstead*, pl. lvii, no. 1 especially), and to the mattock which normally has a broad spade-like end (Collingwood, *op. cit.*, fig. 65, *q*). It lacks, however, the "clips" on the socket so characteristic of Roman shaft-hole axes, adzes and similar tools.

E. 17. FARRIER'S " BUTTRESS," iron, 11·3 ins. long overall, 2·0 ins. wide at lower end, 1·1 in. at upper. (DWA 13.)

An essentially Roman tool, commented on by Curle (*P.S.A.S.*, LXVI (1931–2), 317), with references to examples from Silchester (*Archæologia*, LVII (1901), 248) and the Continent. The "buttress" is used for paring horses' hoofs.

E. 18. **COLD CHISEL,** iron, 6·8 ins. long, square-sectioned, 0·5 in. across. Head slightly burred. (DWA 8.)

Blacksmiths' chisels of this type are known from Continental sites of La Tène date (La Tène, Gross, *La Tène* (1887), pl. ix; Déchelette, IV, 873, fig. 601), but in this country the type is probably more likely to be Roman (cf. *Newstead*, pl. lxiii, 7).

E. 19. **FIELD ANVIL,** iron, 5·9 ins. long, with octagonal head 1·1 in. across. Remains of the rusted lateral ground-rests still in central perforation. (DWA 7.)

The mower's anvil is used with a hammer for straightening scythes, which, although known on the Continent in late La Tène sites (Déchelette, IV, 888, fig. 613), do not seem to have been introduced to this country until Roman times. (As also in Scandinavia: Steensberg, *Anc. Harvesting Imps.* (1943), 101; cf. scythe fragments from Carlingwark, C. 21–23 above). Roman examples of field anvils may be cited from Silchester, Newstead (*Newstead*, p. 285, pl. lxii) and elsewhere.

II. THE CARLINGWARK FIND.

C. 1. **CAULDRON,** bronze, 24 ins. diameter at mouth, 26 ins. at maximum bulge, 18 ins. deep. The vessel is made of three pieces of thin sheet bronze of which one piece forms the lower part and has been beaten up to form a shallow carinated bowl 9·6 ins. high. To this two bands 8·5 ins. wide are riveted to form the upper part of the cauldron; these are each rather more than half a circumference of the vessel's mouth, and overlap diametrically by about 8 ins. on each side, where they are held by three vertical rows of rivets. This provides double-thickness bronze at the points for handle-attachments, the torn rivet-holes of which can still be seen. On analogy the rim would also have been strengthened by an iron hoop now missing. The rivets are small and round-headed, and the joints are of fine craftsmanship. (DW 1.)

The vessel has been extensively repaired in antiquity by means of sheet-bronze patches riveted to the interior. Two styles of repair can be seen, (*a*) with small neat rivets similar to those used in the original joints, and (*b*) bent pieces of thin bronze strip pushed through and flattened in the manner of a modern paper-clip (cf. nos. C. 17, C. 18).

Cauldrons of this "Santon" type have been discussed by Hawkes in *Aspects of Archæology* (1951), 172–99), who shows that this two-piece form goes back to the 1st century B.C. on the Continent (*e.g.* Emmendigen, Baden; Déchelette, *Manuel*, IV, fig. 636). The Austwick cauldron (*P.P.S.*, III (1937), 164) appears to be of later, Roman, date (Hawkes, *loc. cit.*, 185–6).
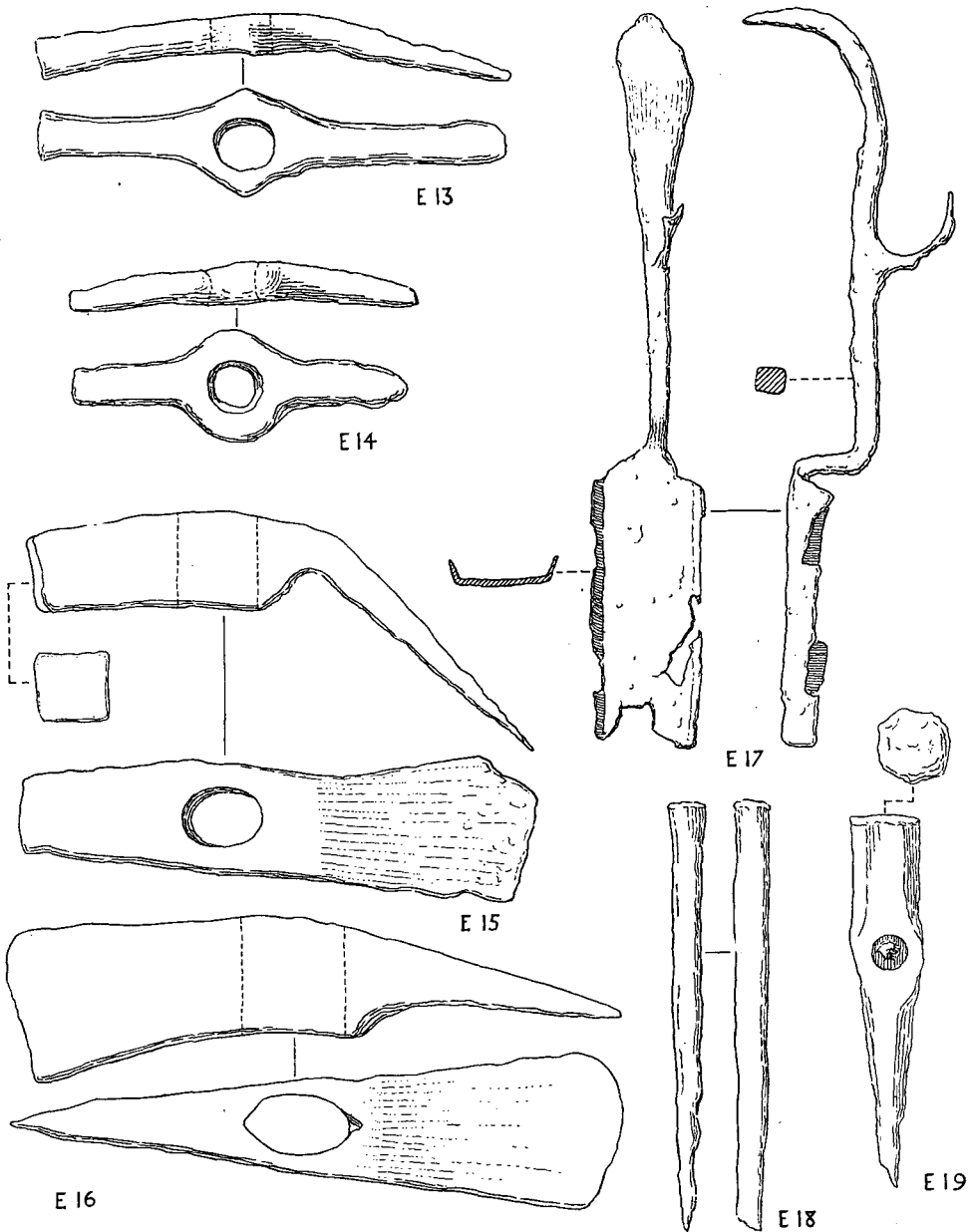
Fig. 6. Iron objects from Eckford.   ($\frac{1}{3}$.)

CAULDRONS OF SANTON TYPE

Site.	Reference.	Comment.
Ballymoney, Co. Antrim.	*J.R.S.A.I.*, LIII (1923), 25, fig. 13; *P.R.I.A.* (c), LI (1947), 59.	Found in a bog; 26·5 ins. diameter at mouth, 19·75 ins. high.
Bewcastle, Cumberland.	Tullie House Mus., Carlisle (no. 51, 1947).	Found in Black Moss, High Grains, about 1907. Rim diameter 24 ins., height 19½ ins.
Bog of Allen, Urlingford, Co. Kilkenny.	As for Ballymoney.	Found in a bog; 24 ins. diameter at mouth, 18·75 ins. high.
Carlingwark Loch.	Present paper.	
Santon, Norfolk.	*P. Camb. A.S.*, XIII (1909), 147; *Arch. J.*, XCVI (1939), 71 ff.	Containing metal-work hoard; probably Boudicecan. 18½ ins. diameter, iron rim and ring-handles.
Silchester, Hants.	*Archæologia*, LVII (1901), 246.	From Well 1, Insula XXIII. 10 ins. diameter, beaten from single piece; iron rim.
Tarland, Aberdeenshire.	*P.S.A.S.*, XLIX (1914–5), 203.	Miniature version in cast bronze, with burial probably of 2nd cent. A.D.

C. 2. **TANKARD-HANDLE,** bronze, 4·5 ins. long, 2 ins. wide at ends. Ring ornament at the extremities and on the central member presumably held enamel with, at the end, central pins holding the handle to a wooden body (DW 80.)

Early Iron Age tankard-handles have been discussed by Corcoran (*P.P.S.*, XVIII (1952), 85–102). The Carlingwark handle (his no. 22) he related to the series beginning in the 1st century B.C. with that from the Aylesford cemetery, but emphasises its degenerate quality. The ring-ornament, if it did in fact hold enamel, would relate it to such other North British pieces with bichrome enamel ring-and-dot ornament (*e.g.* a terret in the Middlebie hoard) and the Place Fell (Ullswater) bit. These presumably show Roman influence in the use of polychrome enamelling.

C. 3. **MIRROR-HANDLE,** iron, 3·8 ins. long. Baluster-moulded with rectangular-section ring terminal. (DW 77.)

This is a representative of Fox's Type I (Bar Handles) in his classification of mirror-handles (*Arch. Camb.* 1948, 24–44). Such bar-handles appear to derive from the Arras type of the 3rd century B.C., but Carlingwark need be no earlier than mid-1st century A.D.

C. 4. **TWO-LINK BIT,** iron. One ring missing, but original overall length *c.* 10·2 ins., surviving ring 2·8 ins. external diameter. (DW 76.)
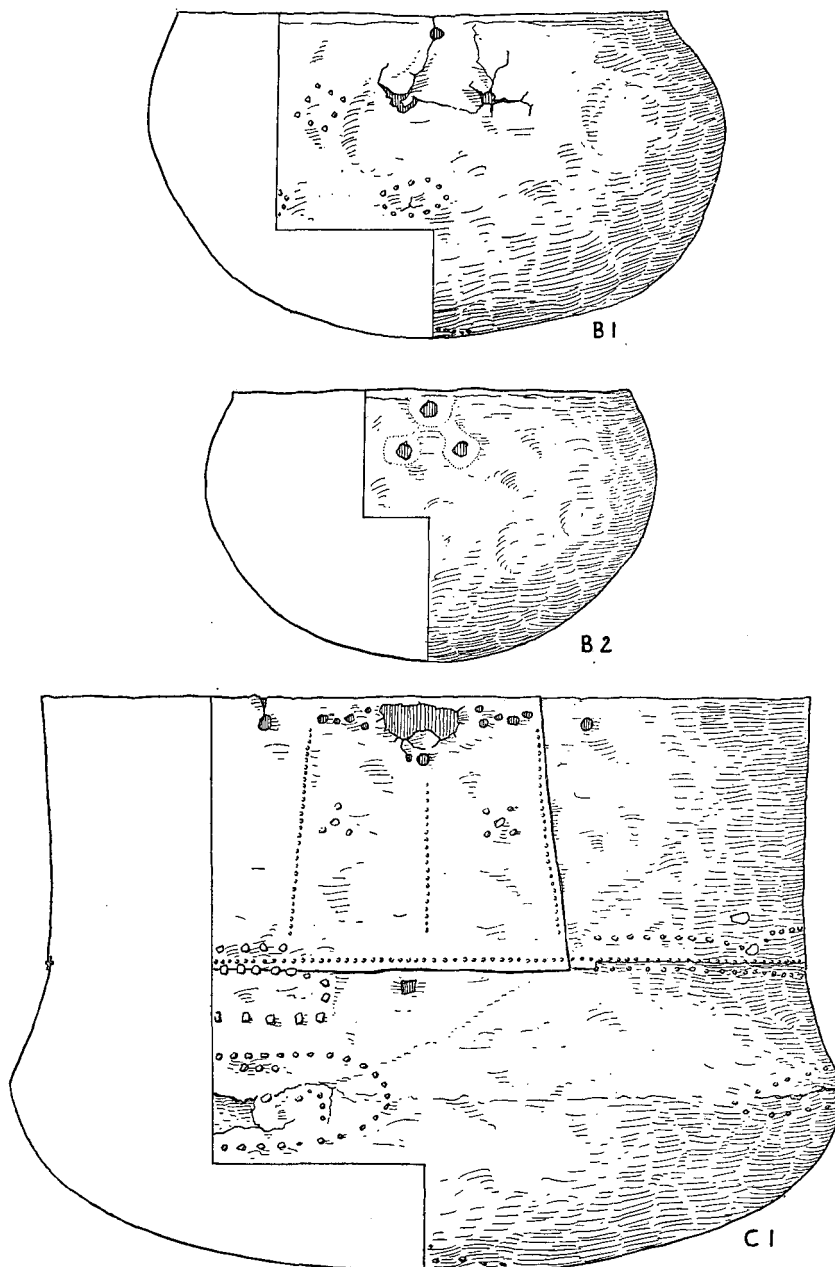
Fig. 7. Bronze cauldrons from Blackburn Mill (B. 1; B. 2) and Carlingwark Loch (C. 1).   (⅙.)

C. 5. **TWO-LINK BIT**, iron, fragmentary, and with ring crushed out of shape, fragment now 2·7 by 2·0 ins. overall.   (DW 74.)

Fragments of similar bits occurred in the Blackburn Mill hoard (B. 7, B. 8) and at Newstead (Nat. Mus. Ant., nos. FRA 420, 450, not published as such).   Broadly similar bits occur in Roman contexts in Britain [*e.g.* Wroxeter, Corbet Anderson, *Roman City of Uriconium* (1867), pl. xii; Colliton Park, Dorchester (Dorchester Mus.); Silchester (Reading Mus.); Woodcuts, Dorset, probably in Roman context (*Excav. Cran. Chase*, I, pl. xxv, 3)].   But they are in contrast to the obviously Roman military types as at Newstead (*Newstead*, pl. lxxi, nos. 1–3) or London (Wheeler, *London in Roman Times* (1930), 149), and, in view of the exactly similar bits at La Tène (Gross, *La Tène* (1887), pl. xii, 8, 12), it is possible that the British examples are really native types.   Fragments of similar bits were found in a Belgic context at Maiden Castle (*Maiden Castle*, pp. 274–5).   *Cf.* iron bits at Llyn Cerrig, nos. 85, 128, of which 85 approaches our type.   They survive into the Dark Ages as at Lagore (*Lagore*, p. 103).

C. 6. **TIRE**, iron, fragment, 4·3 ins. long, 1·5 ins. wide.   Fox's Type A, unworn. See notes under Eckford find, E. 5, and *cf.* Blackburn Mill (B. 3).   (DW 85*a*.)

C. 7. **LINCH-PIN** (?), iron, fragmentary, 2·6 by 1·8 ins.   It is suggested that this object may be the top of a linch-pin having a spatulate head and hook, in this instance with the hook hammered in flat against the head.   A certain example of this type occurs in the Blackburn Mill find (B. 4) and discussion will be found there.   *Cf.* also the unlooped Eckford pin (E. 4).   (DW 85*b*.)

C. 8. **LINCH-PIN** (?), iron, fragmentary, 1·7 by 1·6 ins.   This hooked fragment may also be a linch-pin head of the type described under C. 7.   (DW 63.)

C. 9. **CLEAT or STAPLE**, iron, 4·3 by 1·4 ins.   This is a larger version of the common Roman boot-cleat (*e.g.* 7 found with 36 hobnails at feet of burial at Rotherley: *Excav. Cran. Chase*, II, 190), and may have been used for fastening wood.   (DW 49.)

C. 10. **CHAIN-JUNCTION** (?), iron, broken.   A small rectangular block of iron 0·9 by 0·9 by 0·6 in., decorated on each face with an incised cross.   A slightly curved rod, broken off short, springs asymmetrically from one edge.   (DW 85*c*.)

This may be a broken junction-piece for three chains, as suggested for an object in the Blackburn Mill find (B. 18) discussed below.

C. 11. **HANDLE-LOOP**, iron.   Perforated figure-of-eight-shaped plate riveted to another with three arms having expanded circular ends with rivet-holes, 5·6 by 5·3 ins. overall.   The outer face is roughly decorated with incised lines forming chevron patterns on the arms.   (DW 67.)

This is one of a pair of handle-loops from a metal or wooden cauldron, tub or bucket.   It is probably a Roman type, and there is a close parallel, decorated in the same manner, from Corbridge (Corbridge Mus.), and another from Traprain, much corroded.

C. 12. **HANDLE-LOOP**, iron, fragmentary.   The upper part, with rivet, of a similar but slightly more massive object than the above, 3·4 by 1·5 ins. overall.   (DW 66.)   (*Cf.* another fragment (DW 85*i*) perhaps also of a similar handle.)
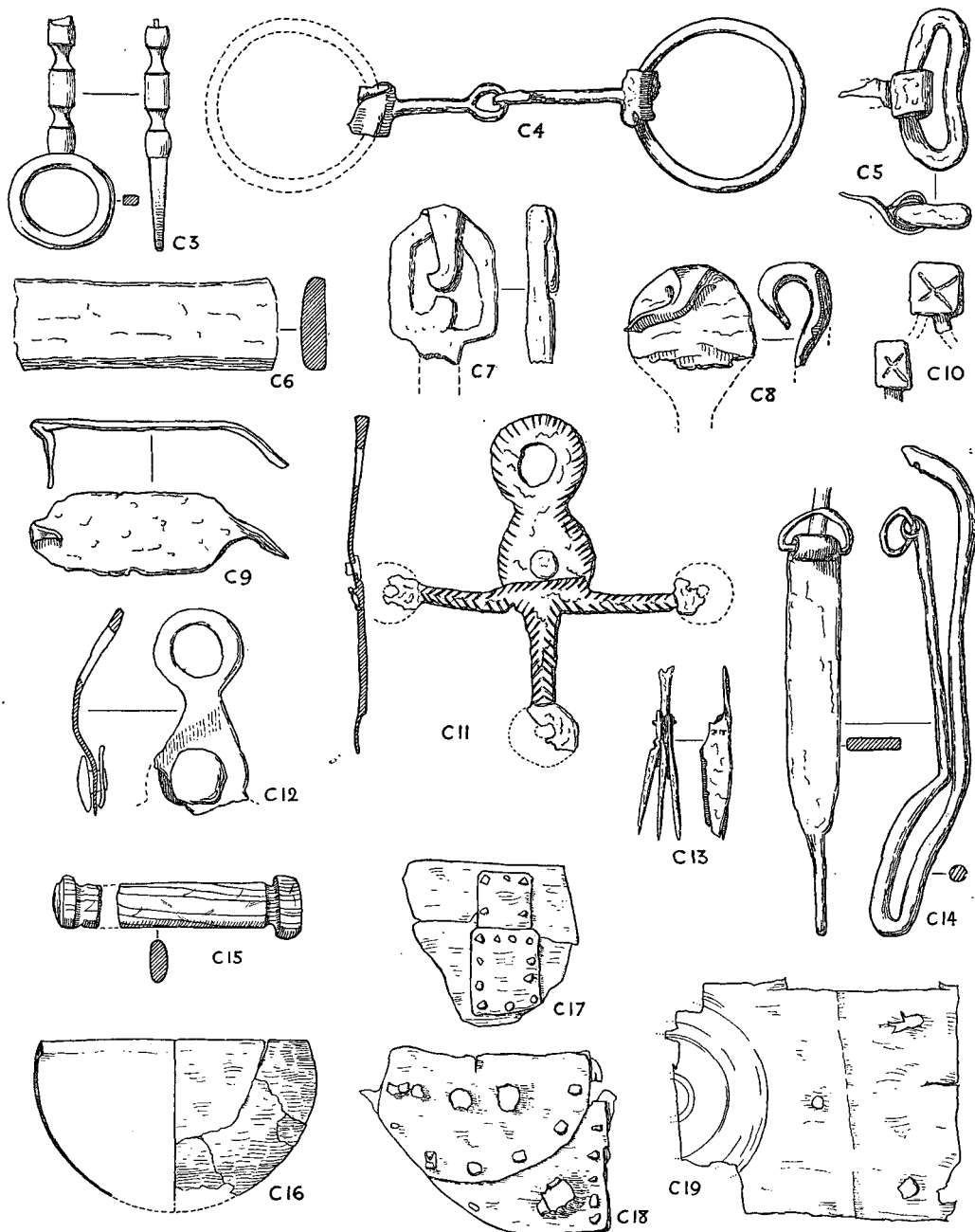
Fig. 8. Objects of iron (C. 3–C. 14), wood (C. 15) and bronze (C. 16–19) from Carlingwark Loch. (⅓.)

C. 13. **PADLOCK-SPRING,** iron, fragmentary, 1·9 by 0·8 ins. overall.   (DW 85a.)
    The spring padlock was a common Roman type (cf. Pitt-Rivers, Prim.
Locks and Keys (1883); Verulamium, pl. lxv, 16).

C. 14. **LATCH-LIFTER,** iron, contorted, now 8·1 by 1·3 ins. overall.   A rod of
iron, flattened at the tip, is flattened into a strip 1·3 ins. wide for 5 ins. of its
length, which is folded over to hold a D-shaped loop.   The whole object has
been folded upon itself.   (DW 48.)
    This appears to be a latch-lifter of common Early Iron Age type.   For
list of examples known to 1917 see Glastonbury, II, 375; many more could
now be added.

C. 15. **HANDLE** (?), wood, in two fragments, 2·0 and 0·8 ins. long, 1·0 in.
maximum width.   A small wooden bar of oval section, the ends grooved
and widened beyond the grooves.   The original illustration in P.S.A.S., VII
(1866–8), pl. i, 17, shows that a further portion existed beyond one widened
end, but does not suggest its purpose.   Perhaps a handle of some object.
(DW 78.)

C. 16. **BOWL,** bronze, fragmentary, 4·4 ins. diameter at mouth and c. 2·9 ins.
high.   The bowl has not been hammered out of sheet metal but is cast
or spun.   Type and technique of manufacture indicate a Roman date (cf.
Hawkes, Aspects of Arch., 185).   (DW 3.)

C. 17. **BRONZE SHEET,** fragment, with repairs by patching and riveting, 2·8 by
1·2 ins. overall.   (DW 6.)

C. 18. **BRONZE SHEET,** fragment, with repairs of two periods by patching and
riveting, 4·3 by 3·0 ins. overall.   (DW 7.)
    Both these fragments are probably from cauldrons of the type of C. 1
above.

C. 19. **FRAGMENT OF BRONZE CASKET-MOUNTING** (?), folded, but originally
(as shown in drawing) 4·8 by 3·8 ins. overall.   This is a piece of bronze sheet
with three rivet- or nail-holes and half a concentric circular design embossed
at the broken end.   (DW 16.)
    This seems likely to be a piece of sheet-bronze ornamental mounting
for a wooden box, of Roman type, as at Richborough and Woodcuts (both
3rd century A.D.; Richborough, IV, 142; Excav. Cran. Chase, I, pls. xix, xx).

C. 20. **SAW,** single-edged, iron, 6·5 ins. long.   The tool is broken at the point,
and 4·0 ins. of the blade survives, with backward-pointing teeth on one edge.
The tang is 0·9 in. wide, with two rivet-holes.   (DW 17.)
    The well-known iron saw with its original wooden handle from Glaston-
bury is an accurate parallel [Glastonbury, II, pl. lx, p. 371, with other examples
quoted.   Cf. also Bredon (Arch. J., XCV (1938), 78; Maiden Castle, p. 274;
Hunsbury (Arch. J., XCIII (1936), 66)].   In Scotland there are fragments of
a large saw from the Lochlee Crannog (Munro, Anc. Scot. Lake-Dwellings
(1882), 87), and a double-edged saw from Newstead (with original bone
handle) is comparable (Newstead, pl. lxviii, 6).

C. 21. **SCYTHE-BLADE FRAGMENT,** iron, 4·6 ins. long by 1·5 ins. maximum
width.   (DW 29.)

C. 22, 23. PROBABLE SCYTHE-BLADE FRAGMENTS, not illustrated. (DW 30, 32.)
All these appear to be fragments of large knife- or scythe-blades; C. 21 has been cut at both ends with a cold chisel, and has a heavy thickened back and medial ridge as the Newstead scythes (*Newstead*, pl. lxii). The scythe appears to have been a Roman introduction to native economy in Britain as in Scandinavia (Steensberg, *Anc. Harvesting Imps.* (1943), 101; *cf.* notes on field-anvil from Eckford, E. 19 above).

C. 24. KNIFE-BLADE, iron, single-edged, 4·0 ins. long by 1·4 ins. wide, broken short of handle. (DW 31.)

C. 25. KNIFE-BLADE, iron, single-edged, 7·1 ins. long by 1·3 ins. wide, broken near handle. (DW 28.)
Both these knives, with a straight back and curved cutting edge, differ from the curved, flame-shaped knives as at Glastonbury and surviving at Newstead (*Newstead*, pl. lx, 2, 7, 13). Nor do they resemble the Roman form (*ibid.*, 5, 14). A knife from Lochlee (*Anc. Scot. Lake-Dwellings*, fig. 129) approximates more nearly in outline.

C. 26. TIP OF SWORD-BLADE, iron, 6·9 by 1·4 ins. maximum width. (DW 25.)

C. 27. TIP OF SWORD-BLADE, iron, 5·8 by 1·3 ins. maximum width. (DW 23.)

C. 28. TIP OF SWORD-BLADE, iron, 6·0 ins. long by 2 ins. maximum width. (DW 18.)

C. 29. TIP OF SWORD-BLADE, iron, 5·2 ins. long by 1·7 ins. maximum width. (DW 24.)

C. 30–33. TIPS OF SWORD-BLADES, not illustrated. (DW 19, 22, 21, 20.)
All these fragments are from the tips of swords, and no blades or hilts are represented, suggesting deliberate selection and not casually accumulated scrap metal. None has a mid-rib, and the narrower examples are certainly likely to be from native rather than Roman weapons (cf. *Newstead*, pp. 183 ff.), but the wider examples (*e.g.* C. 28) do not resemble Roman Legionary types, which have mid-ribs. Comparison with the wider Iron Age type (Piggott, *P.P.S.*, xvi (1950), 1–28) may be made, and the possibly comparable fragments from Lochlee (*Anc. Scot. Lake-Dwellings*, p. 125) may be noted. The best parallels (without mid-ribs and with the same range of width as the Carlingwark fragments) are the Llyn Cerrig swords (*Llyn Cerrig*, pl. xxxiv), suggesting that the Carlingwark series are probably native.

C. 34. FERRULE, iron, 2·8 ins. long. (DW 85*g*.)

C. 35. FERRULE, iron 1·7 ins. long. (DW 84.)
These indeterminate forms are probably of Roman origin.

C. 36. LOOP or BUCKLE, iron, 2·7 by 2·4 ins. (DW 85*f*.)
This D-shaped loop is probably of Roman manufacture.

C. 37. SICKLE, iron, tanged, 5·9 ins. long, broken. (DW 35.)
This is a "balanced" sickle of well-known Early Iron Age type (*Llyn Cerrig*, p. 86, for comment), but appearing also in Roman contexts (e.g. *Newstead*, pl. lxi, 2, 5). *Cf.* the Blackburn Mill sickle, no. B. 34 below.
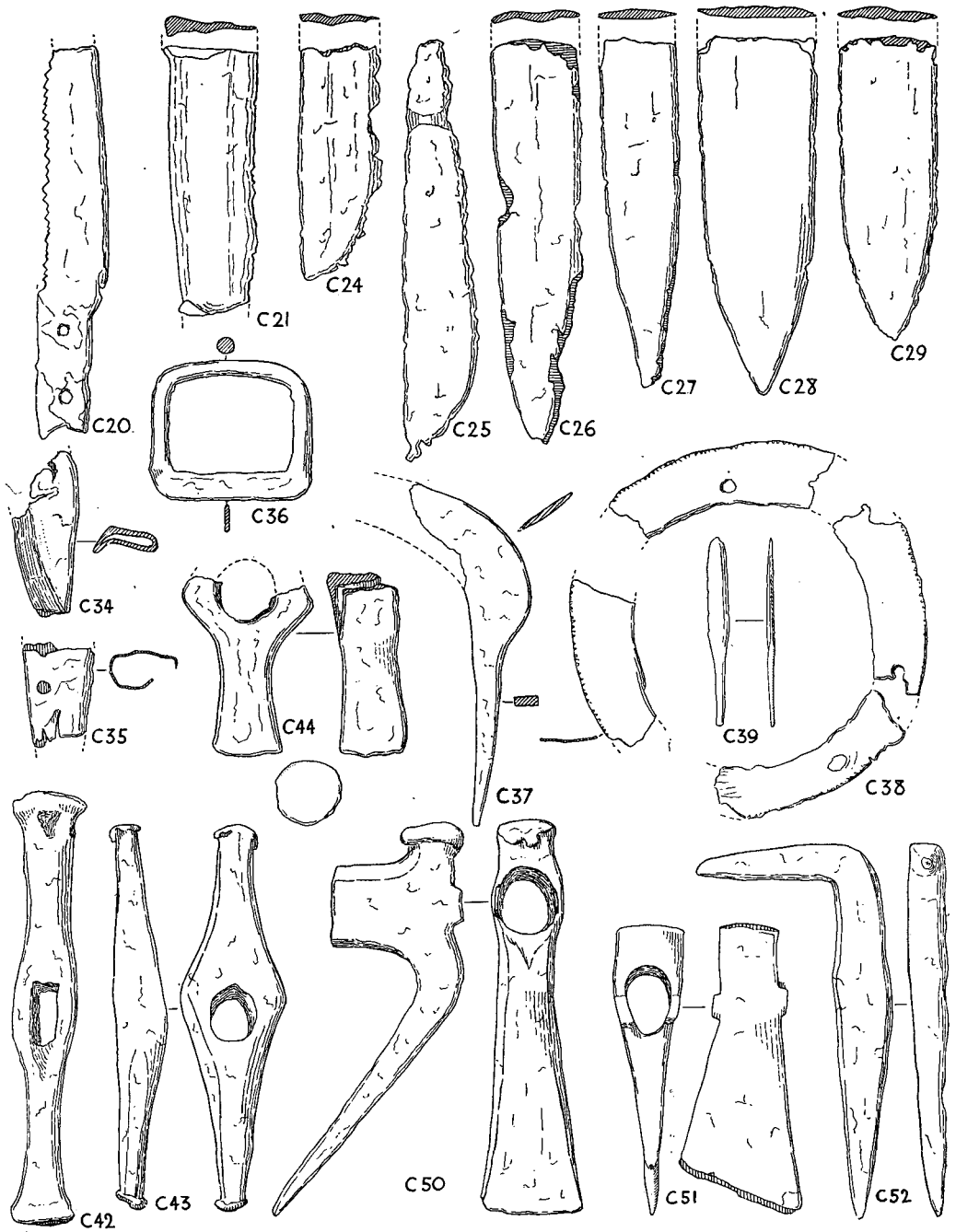
Fig. 9. Iron objects from Carlingwark Loch. ($\frac{1}{3}$.)

C. 38. **CIRCULAR MOUNTING,** iron, broken, but originally *c.* 4 ins. internal diameter. It is of thin metal plate with remains of at least 3 nail or rivet-holes, and has decorative nicking on the outer edge. (DW 85*h.*)

This may be the rim of a circular shield-boss of Roman type, as that in bronze, but similarly nicked, from Copthall Court, London. (Wheeler, *Lond. in Rom. Times* (1930), 31, fig. 3.)

C. 39. **TANGED BLADE,** iron, double-edged, 3·2 ins. long. (DW. 26.)

Such small blades might be for veterinary or surgical purposes and are likely to be Roman.

C. 40. **TANGED BLADE,** iron, double-edged, not illustrated. (DW 27.)

C. 42. **HAMMER-HEAD,** iron, double-ended, 7·3 ins. long by 1·3 ins. maximum width at burred ends. The body of the hammer is narrow, and has a slit as the opening for the haft. (DW 8.)

This is a version of the Early Iron Age hammer-heads discussed in connexion with those from Bredon Hill (*Arch. J.*, xcv (1938), 73), with characteristic oblong hafting-slit.

C. 43. **HAMMER-HEAD,** iron, double-ended, 6·6 ins. long, 1·8 ins. wide at centre, with circular shaft-hole. (DW 9.)

C. 44. **HAMMER-HEAD,** iron, broken, 2·4 ins. long by 2·3 ins. maximum width at shaft-hole. (DW 12.)

C. 45, 46. **HAMMER-HEADS,** iron. Not illustrated. (DW 10, 11.)

C. 47–49. **HAMMER-HEADS,** iron, fragments. Not illustrated. (DW 13, 14, 15.)

All these hammers are of Roman type, with markedly expanded centre and circular shaft-hole (*Newstead*, pl. lxiii, 3, 5, 11).

C. 50. **ADZE-HAMMER,** iron, 6–8 ins. overall, blade 1·8 ins. wide, tubular shaft-hole of oval plan and heavily burred hammer-butt. Side-clips or projections on upper edge of shaft-hole. (DW 4.)

This is an adze-hammer of a type regarded by Collingwood as typically Roman (*Arch. Rom. Brit.* (1930), 269; fig. 65, p.). It does not occur at Newstead, but is known from Richborough (*Richborough*, IV, 154), and a similar tool was in the Eckford find (E. 15 above).

C. 51. **AXE-HEAD,** iron, 4·8 ins. long, with squared butt and side-clips at upper and lower edges of shaft-hole. (DW 5.)

A typical Roman form (cf. *Newstead*, pl. lxi, 1, 4).

C. 52. **HINGE-STAPLE,** iron, 6·1 ins. overall. (DW. 47.)

This **L**-shaped staple presumably supported an iron hinge similar to that in the Eckford hoard (E. 12 above).

C. 53. **STAPLE (or HANDLE),** iron, 4·8 by 2·1 ins. overall. The top edge is nicked, perhaps with the intention of ornament. (DW 61*a.*)

C. 54. **STAPLE,** iron, 4·2 by 1·7 ins. overall. (DW 61.)

Both are probably of Roman origin (*cf.* no. C. 9).

C. 55. **HOOK,** iron, 4·7 by 2·5 ins. overall. (DW 54.)

C. 56. **HOOK,** iron, 3·9 by 1·2 ins. overall, with adherent corroded chain-mail (*cf.* C. 74). (DW 59.)

C. 57. **HOOK,** iron, 5·5 by 1·5 ins. overall, with flattened perforated head. (DW 60.)

C. 58. **HOOK,** iron, 3·3 by 2·3 ins. overall. (DW 55.)

C. 59. **HOOK,** bronze, 3·2 by 1·3 ins. overall. (DW 81.)
These are all presumably Roman and some may be meat-hooks (cf. *Newstead*, p. 288). The possibility of large fish-hooks for some must be considered, however (cf. *Richborough*, IV, 155, and pl. lxii, 348).

C. 60. **DRAW-KNIFE,** iron, broken, 8·8 ins. long, blade 1·4 ins. wide. (DW 36.)
Paring-knives or draw-knives of this type are acknowledged Roman types: *cf.* Silchester (*Archæologia*, LIV (1894), 139 ff. and fig. 17).

C. 61. **LOOP,** iron, 3·0 by 1·7 ins. overall. (DW 68.)

C. 62. **LOOP,** iron, 3·4 by 1·2 ins. overall. (DW 71.)

C. 63. **LOOP,** iron, 3·5 by 2·5 ins. overall. (DW 69.)
Such loops, with the pointed ends beaten out at right angles, are presumably for attachment to wood and have good Roman parallels from Newstead (pl. lxvii, 10, 11, 13). There is one in the Blackburn Mill find (B. 24 below).

C. 64. **PUNCH,** iron, 4·5 ins. long. (DW 41.)

C. 65. **PUNCH,** iron, broken. Not illustrated. (DW 82.)

C. 66. **PUNCH,** iron, 4·4 ins. long. (DW 40.)

C. 67. **PUNCH,** iron, 5·3 ins. long. (DW 42.)
These are simple blacksmiths' tools (cf. *Newstead*, pl. lxvi, 16, 17).

C. 68. **FILE,** iron, broken, 3·8 ins. long by 0·3 in. wide. (DW 46*a*.)

C. 69. **FILE,** iron, 9·5 ins. long by 0·9 in. wide. (DW 46.)
Files are known in British and Continental Early Iron Age contexts (*Glastonbury*, II, 374; Déchelette, IV, 881, fig. 608), but indistinguishable tools occur on Roman sites (*Newstead*, pl. lix, 5).

C. 70. **BAR,** iron, rectangular section, 14 ins. long, 1·5 ins. maximum width, tapering at one end. (DW 83.)
This may be a rough-out for a cold chisel or blacksmith's scrap. *Cf.* the bars in the Tiefenau find (*Jahrb. Schwiez. Ges. Urgesch.*, XXI (1929), fig. 3).

C. 71. **GRIDIRON,** iron, broken, originally *c.* 6·7 by 6·0 ins. overall, 1·5 ins. high. A common Roman type (cf. *Newstead*, 274, pl. liii, 2). (DW 86.)

C. 73. **TRIPOD,** iron, 4·0 ins. diameter and 3·5 ins. high. (DW 53.)
This again is a Roman type as Curle pointed out (*P.S.A.S.*, LXVI (1931–2), 311–3).

C. 74. **CHAIN-MAIL,** iron, fragments (DW 2.)
Pre-Roman finds of chain-mail are known on the Continent and in Britain, *e.g.* Tiefenau, Berne (*Jahrb. Schwiez. Ges. Urg.*, XXI (1929), fig. 4, 10); Hjortspring, Denmark (Rosenberg, *Hjortspringfundet* (1937), 47); Lexden,
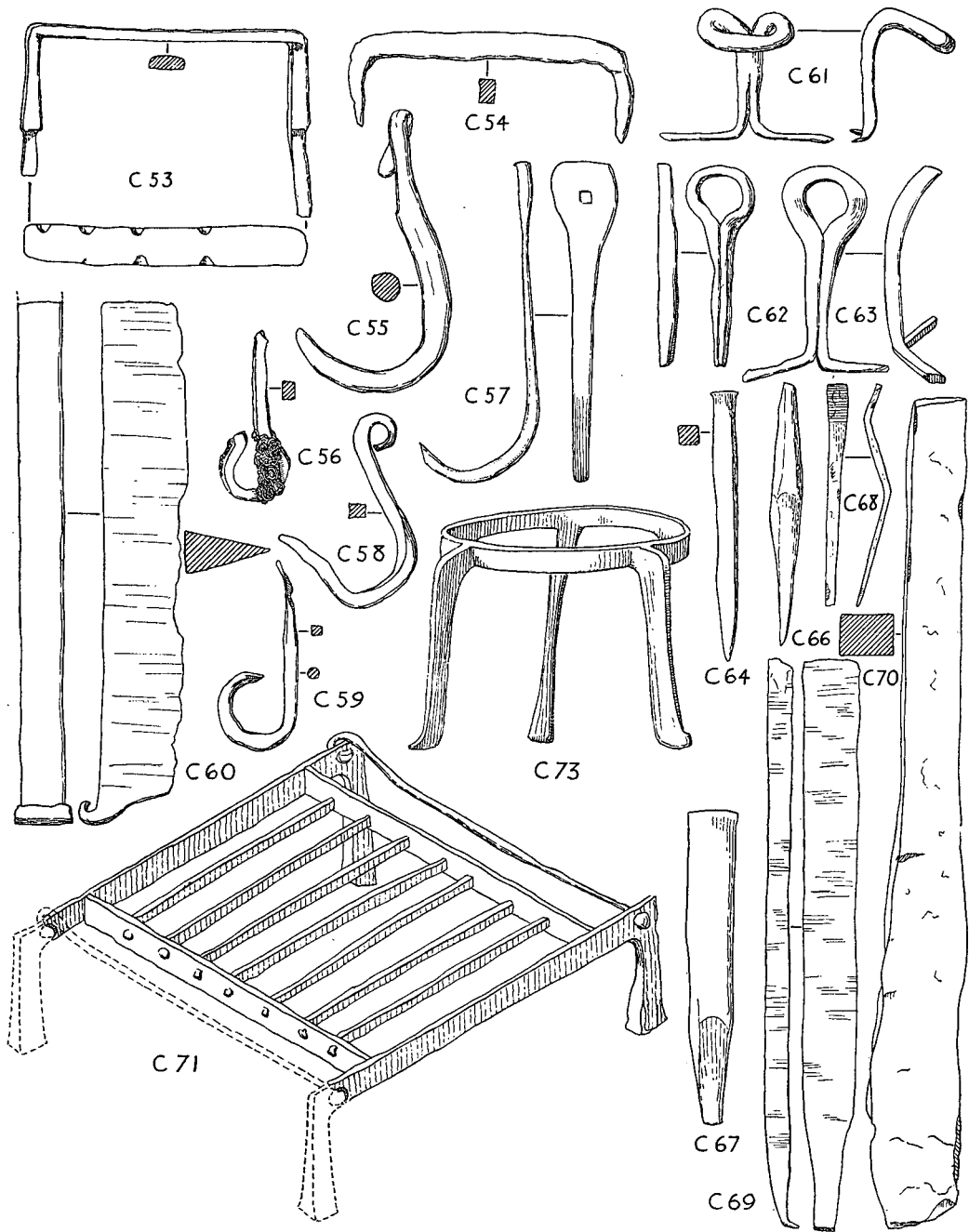
Fig. 10. Objects of iron and bronze (C. 59), Carlingwark Loch.   (⅛.)

Essex (*Archæologia*, LXXVI (1927), 248); Stanwick, Yorks (*Brit. Mus. E.I.A. Guide* (1925), 142). Diodorus Siculus refers to Gaulish chain-mail (v, 30), and Varro attributes its invention to the Gauls (*De ling. lat.*, v, 24, 116), while a Gallo-Roman sculpture from Vachères, Basses-Alpes, shows a mail-clad chieftain (Déchelette, IV, 661; Lantier and Hubert, *Les Origines de l'Art Français* (1947), fig. 85). But it is also characteristically Roman, and found for instance at Newstead (*Newstead*, p. 161): the "Belgo-Roman" fragment from Maiden Castle could conceivably be regarded as native (*Maiden Castle*, p. 284). For the technique of manufacture, cf. Burgess in *Ant. J.*, XXXIII (1953), 48. Further corroded fragments at Carlingwark adhere to a hook (C. 56). A technical report on the Carlingwark mail by Mr Burgess is given in an Appendix (p. 50).

C. 75–103 are not illustrated, and are in many instances nondescript or broken pieces of iron. Some small **BARS** (C. 76, 77, 79, 80, 98) may be pieces of punches or chisels; possible fragments of **HINGES** (C. 84, 85); two **HOOKS** of the type of C. 55–59 (C. 86, 91); two small **HANDLES** (C. 88, 89) to drawers, etc.; three **LOOPS** of the type of C. 61–63 (C. 92, 93, 94); two probable **AWLS** (C. 96, 97) and a small **RING** (C. 100) can be identified.

III. THE BLACKBURN MILL (COCKBURNSPATH) FIND.

B. 1. **CAULDRON,** bronze, globular, 15·2 ins. diameter at mouth, 18 ins. at bulge, 10 ins. high. The vessel is of thin beaten bronze, and has had an iron rim now vanished, and two handles held by three-riveted attachments. It has been extensively repaired in antiquity, the whole central area of the base being replaced by patches riveted on. (DW 87.)

B. 2. **CAULDRON,** bronze, globular, 12·4 ins. diameter at mouth, 14 ins. at bulge, 8·5 ins. high. The vessel is of spun bronze with a small plugged hole in the centre of the base, and has had an iron rim and two handles held by three-rivet attachments. There are no repairs. (DW 88.)

Globular cauldrons of these types have been discussed and listed by Fox (*Llyn Cerrig*, p. 88) and Hawkes (*Aspects of Arch.*, pp. 172 ff.). Our B. 1 represents the pre-Roman type, heavily repaired and evidently old when the hoard was deposited (cf. the Carlingwark cauldron, C. 1 above), and B. 2 the same form made by the Roman technique of spinning on a metal-workers' lathe, and incorporated in the find before it needed patching (cf. B. 14 below).

CAULDRONS OF BATTERSEA TYPE.

Site.	Reference.	Comment.
Abercairney, Perthshire.	Perth Mus.	Rim-band missing; 27½ ins. max. diameter; patterning of oval hammer- or punch-marks.
Battersea, London.	*Llyn Cerrig*, 88.	Iron band on rim; 14·75 ins. diameter.
Blackburn Mill.	Present paper.	

Cauldrons of Battersea Type—continued.

Site.	Reference.	Comment.
Ewartly Shank, Alnham Moor, Northumberland.	Blackgate Mus., Newcastle-on-Tyne.	Rim-band missing, *c.* 24 ins. max. diameter.
Ipswich, Suffolk.	*Llyn Cerrig,* 88.	Fragments.
Kyleakin, Skye.	*P.S.A.S.,* XIX, (1884–5), 309.	Rim-band missing; 18 ins. diameter; found 7½ ft. deep in peat near kegs of bog-butter.
Llyn Cerrig Bach, Anglesey.	*Llyn Cerrig,* 88.	Fragments.
Walthamstow, Essex.	*Ibid.*	Similar type and dimensions as Battersea cauldron.
Whitehills Moss, Lochmaben, Dumfriesshire.	*P.S.A.S.,* XXIV (1889–90), 16.	Rim-band missing, 15 ins. max. diameter; pattern on base as on Abercairney cauldron.

B. 3. **TIRE,** iron, four fragments, of which the largest is 12·2 ins. long, 1·1 in. wide and 0·15 in. thick.   (DW 96 *a–d.*)

B. 4. **LINCH-PIN,** iron, 5·4 ins. long, with spatulate head 2·0 ins. across, and hooked top.   (DW 123.)
    This type of linch-pin was recognised by Ward-Perkins as related to his crescent-headed Romano-Belgic type (*Ant. J.,* XXI (1941), 67), but its distribution and associations have never been studied in the detail they deserve.   Examples are known from the Continent [*e.g.* Saalburg (Jacobi, pl. xxxxii, 1, 7) and Zugmantel (*O.R.L.,* XXXII (1909), pl. xv and fig. 44)], and from southern England.   In the North, examples may be noted from Newstead (pl. lxx, 1, 3, 6), Mumrills (*P.S.A.S.,* LXIII (1928–9), 561), and The Laws of Monifieth in Angus (Nat. Mus. Ant.) in Scotland; Corbridge (Corbridge Mus.) and Chesters (Chesters Mus.); and Brough, E.R., Yorks (*Trans. E. Riding Ant. Soc.,* XXVIII (1939), pl. iii, fig. 10, 8).   The spatulate-headed form as at Eckford (E. 4) is probably related.

B. 5. **TERRET,** iron, with ring 2·3 ins. external diameter, broken at base. (DW 111*a*).
    The ring-terret set on a base with spreading wings is a Roman type not uncommon in Britain.   There is a more elaborate example in bronze from Newstead (pl. lxxv, 12) (*cf.* Woodcuts, *Excav. Cran. Chase,* I (1887), pl. xvii, 6, and xviii, 14 (? part of one object), with other examples cited on p. 60).

B. 6. **CAP of LINCH-PIN,** bronze, one of a pair, 1·9 ins. high and 1·3 ins. diameter at top, with sub-classical mouldings.   (DW 92, 93.)
    The significance of these caps, appreciated by James Curle, can now be taken further.   They represent a native Iron Age type derivative of the Arras (Yorks) type (Ward Perkins in *Ant. J.,* XX (1940), 358; XXI (1941), 64, supplemented by *Llyn Cerrig,* p. 78; *Camulodunum,* pp. 329–31).   The Belgic types as at Westhall and Colchester come nearest to the Blackburn Mill pair. They are mid-1st century A.D. (cf. *Llyn Cerrig,* 20).

B. 7. **LINKS of BIT,** iron, broken, 4·2 ins. overall.   (DW 111.)

B. 8. **LINK of BIT,** iron, broken, 1·8 ins. long.   (DW 149.)
> For comment on iron bits of this type, see under the Carlingwark find, C. 5.

B. 9. **KEY,** iron, broken at top end, 4·2 by 1·8 ins.   (DW 117.)
> This is an **L**-shaped slide-key of Wheeler's classification (*London in Roman Times* (1930), 69; pl. xxx, A, 3 for exact parallel) and is a well-known Roman type (cf. *Newstead*, pl. lxxviii, 1, 2).

B. 10. **HANDLE,** iron, semicircular with hooked ends, 9·0 ins. across the chord. (DW 122.)

B. 11. **HANDLE,** iron, with tanged ends and central loop, 6·2 ins. overall. (DW 153.)

B. 12. **HANDLE,** iron, twisted with hooked ends, 5·2 ins. overall.   (DW 145.)

B. 13. **HANDLE,** iron, twisted, fragment, not illustrated.   (DW 145.)
> These are likely to be Roman and may have belonged to tubs, or to bronze camp-kettles of Roman military type (cf. *Newstead*, pl. liii).   They survive into Dark Ages contexts (e.g. *Lagore*, p. 114).

B. 14. **CAULDRON-RIM,** bronze, with iron edge, broken, 4·5 ins. long, with part of handle-attachment.   (DW. 148*a*.)
> This is probably a fragment of an iron-rimmed cauldron of Santon or Carlingwark type, since the side does not bulge below the rim in the manner of the globular cauldrons B. 1 and B. 2.

B. 15, 16. **PAIR OF TUB-HANDLES,** iron, consisting each of a **T**-shaped looped attachment, 6·5 ins. in each dimension, with nails for fastening to a wooden vessel some 0·75 in. thick, and a ring 4·6 ins. external diameter in one and 4·3 ins. in the other.   (DW 94, 95.)
> These roughly-made handles are difficult to parallel, but are likely to be of native workmanship.

B. 17. **PART of CAULDRON-CHAIN,** iron, c. 40 ins. long overall.   This is the central member, designed to make an inverted **Y**-junction for the three component chains of the apparatus.   It consists of a rectangular block 1·5 by 0·9 by 0·7 ins., from which spring two pairs of hooks and two pairs of decorative spirals, both of bent rods 0·3 and 0·2 in. diameter respectively, and at right angles to one another.   The hooks are curved round in almost complete circles and their ends are capped with pine-cone-shaped knobs. The upper pair carry a double loop forming the lowest of a series of 15 such links making up a chain: the links are made of a 0·2 in. diameter rod.   The lower pair would originally have held the two divergent chains ending in hooks for attachment to the cauldron-handles.   The decorative spiral twists form a symmetrical rectangular pattern 4·0 by 3·5 ins.   (DW 97.)
> While unique in itself, this object is recognisably a member of the Type II (Great Chesterford) series of cauldron-chains (above, under E. 6–9). These chains do not employ rods except for the hooked terminals of the two arms, and are composed mainly of links which may be doubled (as in the Blackburn Mill example), or pinched into figure-of-eight form (cf. *Llyn Cerrig*, pp. 38, 85 on such links).   The Blackburn Mill type of link is found on the Great Chesterford chain and on the Type I chain from Over Fen II (above, under E. 6–9).   It appears again on gang-chains of Early Iron Age type in the Lagore crannog (*Lagore*, pp. 115–7), and in the Roman fort of the
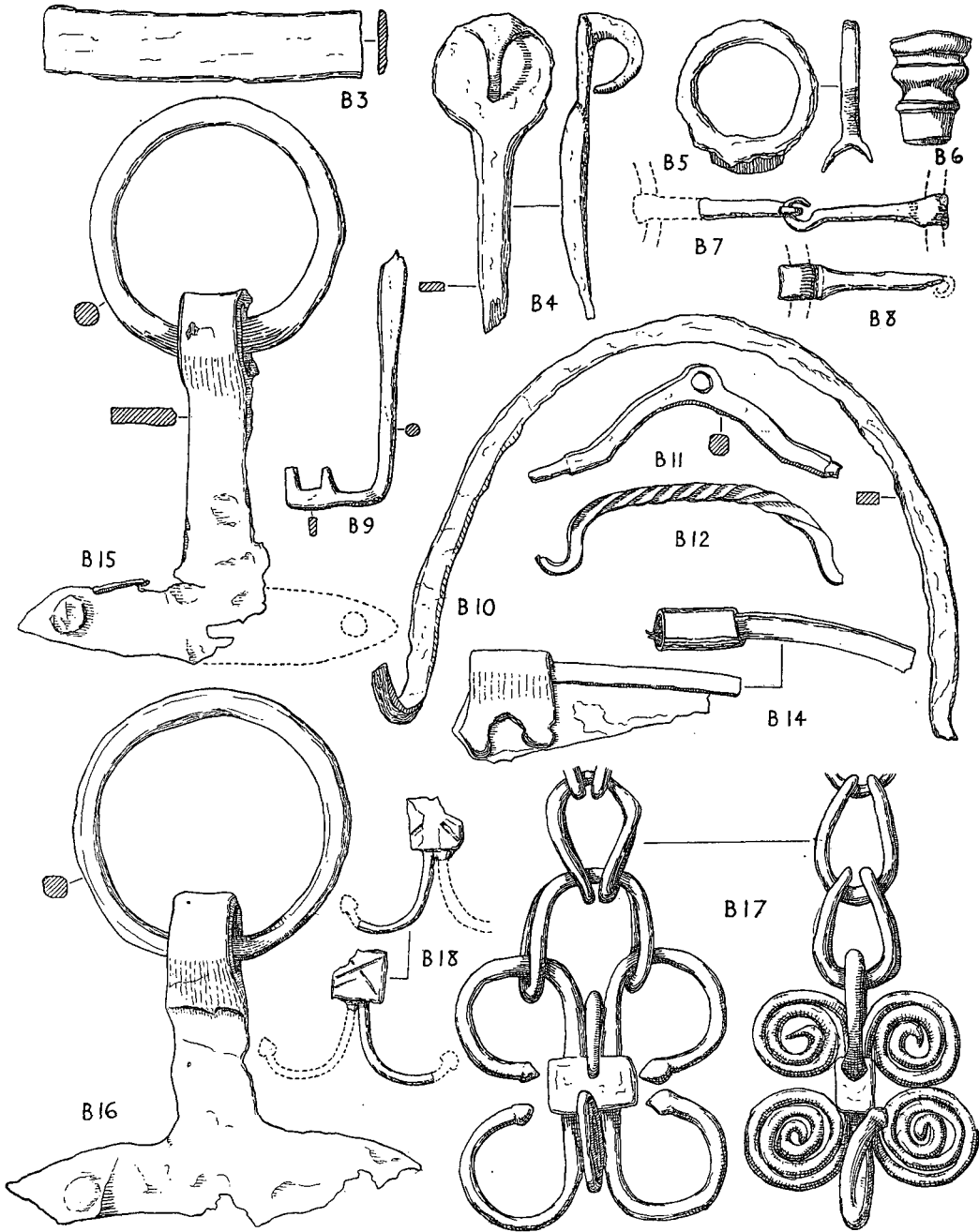
Fig. 11. Objects from Blackburn Mill (all iron except B. 6, bronze; B. 14 bronze and iron). (⅓.)

Saalburg (Jacobi, pl. lxvii, 10).   The upper part comprises a large suspension ring, below which is a decorative open-work feature of twisted rods and hooks.   The Y-junction may be elaborated, as at Great Chesterford, where it is an elaborate four-looped device of rods intertwined in a reef-knot and having a pair of spiral terminals.   The double links are identical, and the uppermost part of the Type II chains is formed by an elaborate feature incorporating two blocks from each of which spring four knobbed hooks of Blackburn Mill type.   In the Great Chesterford chain itself, spirals are incorporated in the elaborated Y-junction-piece (fig. 2).   For a similar use of spirals in iron, cf. the Lochlee flesh-hook (*Anc. Scot. Lake-Dwellings*, fig. 139), early 2nd century A.D.   A version of the Type II cauldron-chain was found at Newstead in an Agricolan context (*Newstead*, pl. lxiv, 3; from Pit XVI).   A fragment, possibly of a hooked block from a Type II chain, came from Carlingwark (C. 10; cf. B. 18 below).

CAULDRON-CHAINS OF TYPE II (GREAT CHESTERFORD TYPE).

Site.	Reference.	Comment.
Bartlow, Cambs.	*Arch. J.*, xiii (1856), 5.	Found with "Roman remains," 1854.
Blackburn Mill, Berwick-shire.	Present paper (B. 17).	
Carlingwark Loch.	Present paper (C. 10).	Probably broken fragment of hooked block.
Cirencester, Glos.	Corinium Mus., Ciren-cester.	Complete chain very similar to Great Chesterford. Presumably Roman in date.
Fenhouse Farm, Brandon, Norfolk.	Cambridge Mus. of Arch. and Ethn., unpublished.	Fragments of chain and hooks of Great Chesterford type.
Great Chesterford, Essex.	*Arch. J.*, xiii (1856), 1–13; pl. 3, no. 32.	Part of a large ironwork hoard of Roman date.
Ickleton, Cambs.	*Arch. J.*, xiii (1856), 5.	Found in a Roman building, 1848.
Newstead, Roxburghshire.	*Newstead*, pl. lxiv, 3.	Part of chains and Y-junction. From Pit XVI: Agricolan.
Rotherley, Wilts.	*Excav. Cran. Chase*, ii (1888), pl. cv, 7.	Probable example; fragment of Y-junction and figure-of-eight chain. Found on bottom of main circle ditch and so early 1st cent. A.D. and pre-Roman (Hawkes in *Arch. J.*, civ (1948), 36–42).
Silchester, Hants.	*Archæologia*, lvii (1901), 246.	Fragments of at least three chains from the Insula XXIII hoard, with one of Type I. Roman, not before c. A.D. 100.

B. 18. **CHAIN-JUNCTION** (?), iron, broken. This consists of a block originally 0·9 in. square with rough crosses incised on two faces, with remains of two divergent rods springing from one edge.   (DW 98.)

B. 19. **KNIFE ROUGH-OUT,** iron, tanged, 5·2 ins. long.   (DW 144*d.*)
      This appears to be a blank for a knife, with the edges not yet hammered or ground.

B. 20. **HIPPO-SANDAL FRAGMENT,** iron, with hook, 4·0 by 4·0 ins. overall. (DW 115.)

B. 21. **HIPPO-SANDAL,** broken, 6·0 by 4·5 ins. overall.   (DW 114.)
      These both represent objects characteristic of Roman Gaul and Britain, discussed by Wheeler, *Verulamium*, 220–1.   His pl. lxiii, 3, 4, show very similar examples to our B. 21 with central opening and side-hooks; these are the latest type, dated at Verulamium to 4th or 5th century A.D. The Blackburn Mill hippo-sandal is furnished with spikes on the bottom in the manner of certain Continental examples—*e.g.* from Dieppe and Valentigney (*Rev. des Musées* (1928, 141); *cf.* the crampons of the Continental Iron Age (Déchelette, IV, 899)—presumably to give the horse a surer footing under ice-bound conditions.

B. 22. **TWISTED ROD,** iron, broken, with expanded and flattened end curved in as if to clip some object, 5·0 ins. overall.   (DW 155.)

B. 23. **ROD,** iron, broken, with flattened end bent over to form a socket, 5·0 ins. long.   (DW 154.)
      The use and affinities of these two related objects is unknown.   They may be some form of elongated ox-goads.

B. 24. **LOOP,** iron, 2·6 ins. overall.   (DW 126.)
      A Roman type as at Carlingwark (C. 61–63, 92–94).

B. 25. **EYED HOOK,** iron, 2·8 ins. overall.   (DW 151.)
      Probably a Roman type.

B. 26. **LAMPSTAND,** iron, 7·5 ins. high.   (DW 99.)   A Roman type (cf. *Newstead,* pl. lxxix).

B. 27. **STAPLE or CLEAT** (?), iron, broken, 2·8 ins. overall.   (DW 136.)
      A Roman type (*cf.* Carlingwark, C. 9 above.)

B. 28. **HINGE-STAPLE** (?), iron, 8·9 ins. overall.   (DW 157.)
      A Roman type (*cf.* Carlingwark, C. 32 above).

B. 29. **SHEARS,** iron, broken, 7·9 ins. long, with blade 0·6 in. wide.   (DW 128.)
      This half-pair of shears represents a type common in the Continental Early Iron Age (Déchelette, IV, 789), but in Britain there seem few certainly pre-Roman examples except those from Fifield Bavant, Wilts. (*Wilts. A.M.,* XLII (1922–4), 482), and the pair from Colchester of Period I (*c.* A.D. 10–43) (*Camulodunum,* 343, pl. cv, 7).   Specimens in Romano-British contexts are frequent: *e.g.* Woodcuts (Pitt-Rivers, *Excav. Cran. Chase,* I, pl. xxii, 1, 5, 8); Richborough (*Richborough,* II, 51, pl. xxiv, 67; IV, 154, pl. lx, 337); Newstead (pl. lxviii, 5); Traprain (*P.S.A.S.,* LIV, 83, fig. 15, 3); Lochlee (*Anc. Scot. Lake-Dwellings,* fig. 138).   The shears from the Ashgrove Loch crannog,
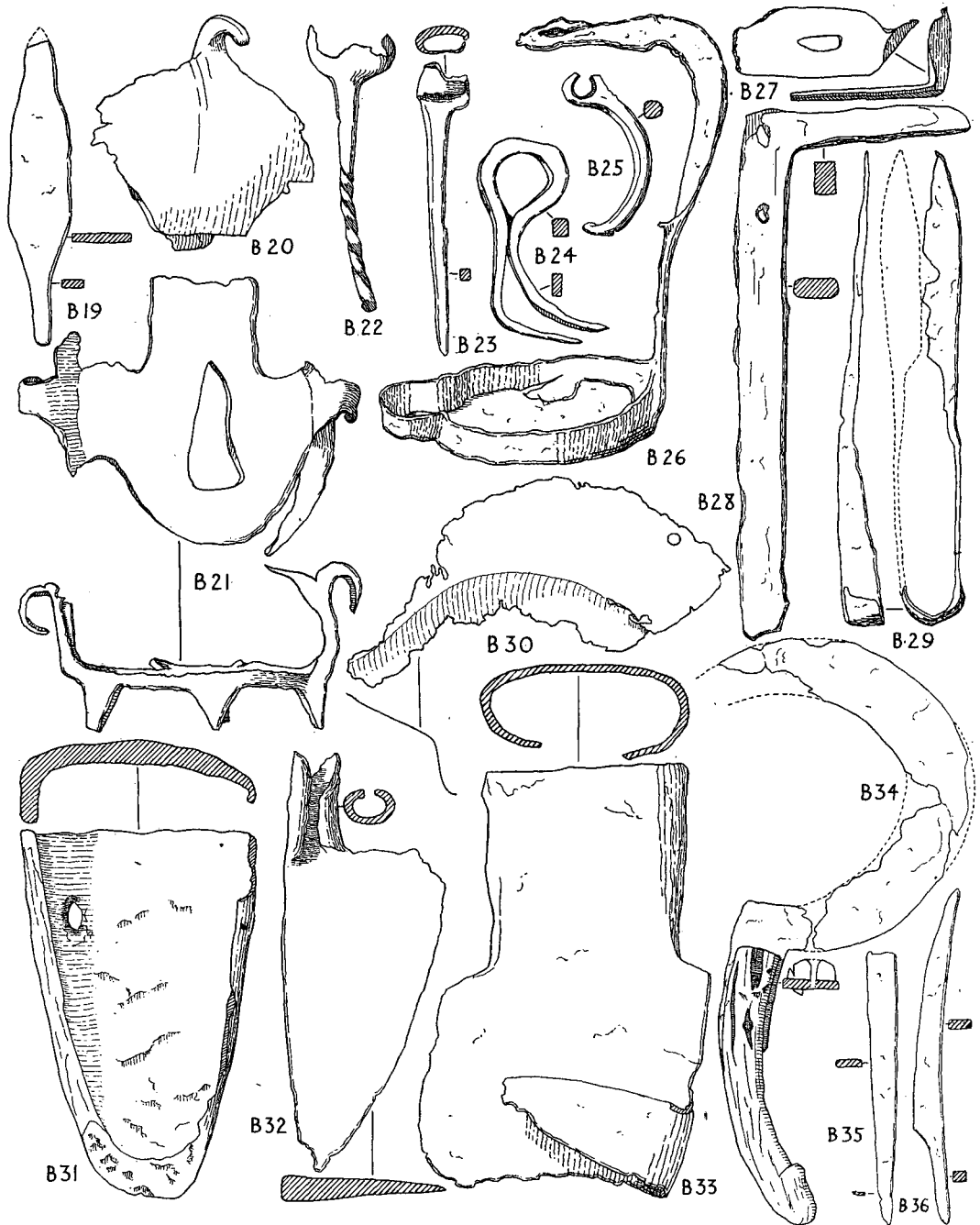
Fig. 12. Iron objects from Blackburn Mill (B. 34 with wooden handle).   (⅓.)

Stevenston, are undated, and could be Dark Ages or later (*Arch. Coll. Ayr, and Gall.*, VII, 56–61; cf. *Lagore*, 112; Ward Perkins, *Medieval Cat. London Mus.* (1940), 153).

B. 30. **SHIELD-BOSS** (?), iron, fragment, 6·5 by 3·0 ins. overall, with remains of circular flange with one surviving rivet or nail-hole and beginning of dome. (DW 148.)

    This appears to be part of a circular iron shield-boss of a type known in late La Tène Europe (Déchelette, IV, 678; *Germania* XXX (1952), 334; *Bayerische Vorgeschichtsblatter*, XX (1954), 45), and probably represented by the curious iron bosses, some with spikes, from Hunsbury (*Arch. J.*, XCIII (1936), 67, no. 26). Bronze circular bosses are of course well known (Fox, *Arch. Camb.* 1945, 200). But such iron bosses are also a Roman type (cf. *Newstead*, p. 181, pl. xxxiv, 3; *Verulamium*, p. 219, pl. lxiv, 3, 5), and the Blackburn Mill specimen is as likely of Roman as of native origin.

B. 31. **PLOUGHSHARE,** iron, broken, 6·2 by 4 ins. overall. (DW 113.)

    Ploughshares of this type have been discussed by Payne (*Arch. J.*, CIV (1948), 82) and associated with Belgic and Romano-Belgic agriculture. *Cf.* comment on the Eckford share E. 10. Other comparable examples come from Traprain and Oxnam in Scotland; Bigbury, Silchester, London and Box (Wilts.) in southern England.

    The "other plough fittings" in the Blackburn Mill hoard, referred to by Payne (*loc. cit.*, 99) are the hippo-sandals, our nos. B. 20, 21, as their Museum catalogue numbers quoted in his footnote 56 show.

B. 32. **BUTCHER'S KNIFE,** iron, socketed and with triangular blade, 7·1 ins. long. (DW 106.)

    A common Roman type with straight back, triangular blade, and right-angled junction to handle. Cf. *Newstead*, pl. lx; *Verulamium*, pl. lxiv (socketed and tanged forms).

B. 33. **PEAT-SPADE BLADE,** iron, with folded edges to form socket and foot-rest now bent in, 7·3 ins. long, breadth of blade 4·5 ins., foot-rest (broken) 3·3 ins. long, socket 3·2 by 1·2 ins. (DW 108.)

    There seems no doubt of the identity of this object; it is the blade of a turf-spade or slane of a recent type well known in Scotland and Northern Ireland (*cf.* Colin Sinclair, *Thatched Houses of the Highlands* (1953), 73; Evans, *Irish Heritage*, pp. 136–8, figs. 86–89). Generically it bears a close resemblance to the Eckford ploughshare (E. 10), with the addition of the foot-rest.

    Its presence in a Romano-British context is surprising and one suspects intrusion. B. 33a (DW 109) is a less complete example of similar type, lacking the foot-rest and in its corroded state resembling the plough-share E. 10 from Eckford. If contemporary with the rest of the hoard, it constitutes the earliest evidence of peat-cutting in Britain. Peat was used as fuel from Neolithic times in Scotland; for evidence of Iron Age peat-cutting in Denmark, see Becker in *Fra Nationalmuseets Arbejdsmark* (Copenhagen), 1948, 92–100.

B. 34. **SICKLE,** iron, crescentic blade 1·1 in. wide, with flat tang 2·0 ins. wide, held by two rivets to wooden handle, 4·75 ins. long, slotted to receive it. The handle is carved in the form of a phallus. (DW 107.)

A "balanced" sickle comparable to the tanged example from Carling-wark (C. 37). The phallic form of the handle implies a Roman origin and the association of Priapus with the sickle and harvesting. Naturalistic phallic representations are not characteristic of the Early Iron Age (*cf.* Hawkes, *Ant. J.*, XXVIII (1948), 166–9).

B. 35. **FLAT BAR,** iron, 4·6 ins. long and 6·4 ins. wide. (DW 144*f.*)
       Probably a blank or rough-out for a small knife (?) (*cf.* B. 19 and B. 36).

B. 36. **ROUGH-OUT FOR KNIFE or RAKE-PRONG** (?), iron, 5·7 ins. long and 0·5 in. maximum width. (DW 144*e.*)
       This was ingeniously interpreted by Curle as a rake-prong, as *Newstead*, pl. lxi, 7. But it may be a blank for a single-edged knife, as *ibid.*, pl. lx, 2 (*cf.* B. 19).

B. 37. **SMALL PICK,** iron, 6·4 ins. long, 1·3 ins. maximum width, with large oval shaft-hole. (DW 102.)
       A Roman type as at Eckford (E. 13, 14).

B. 38. **FIELD-ANVIL,** iron, 7·3 ins. long, 1·2 ins. diameter at head. (DW 101.)
       Another Roman type, also represented at Eckford (E. 19).

B. 39. **ADZE-BLADE,** iron, 7·2 ins. overall, cutting edge broken, socket 1·5 by 1·1 in. (DW 100.)
       Adzes are a common Early Iron Age type (*Glastonbury*, II, 373), and as adze-hammers are known in Roman contexts (*cf.* Eckford, E. 15; Carling-wark, C. 50). The present example, without hammer-butt, comes nearer to Iron Age than to known Roman types.

B. 40. **SOCKETED GOUGE,** iron, 9·3 ins. long, broken at edge. (DW 103.)
       Socketed gouges for wood-working are types common to Early Iron Age and Roman carpenters' equipment: e.g. *Glastonbury*, II, 386, with references to examples from that site, Bigbury, Hod Hill and Woodcuts; *Newstead*, pl. lix, 3; also Silchester (Reading Mus.) (*cf.* no. B. 50).

B. 41. **HINGE FRAGMENT** (?), iron, a flat bar 7·2 ins. long, with one end expanded and perforated. (DW 121.)

B. 42. **SPIKE,** iron, 9·8 ins. long, rectangular section with head turned at right angle. (DW 120.)

B. 43. **PERFORATED MOUNTING,** iron, broken, 8·2 ins. overall. An iron plate of uncertain original form with terminal perforated expansion and curved outling. (DW 156.)
       This appears to be part of an iron mounting of the type of *Newstead*, pl. lxv, 3, though half its size.

B. 44. **TANGED CHISEL** (?), 5·2 ins. long, bent. (DW 137.)

B. 45. **PUNCH,** iron, 3·8 ins. long. (DW 144*b.*)

B. 46. **PUNCH,** iron, 3·8 ins. long. Not illustrated. (DW 144*a.*)

B. 47. **PUNCH,** iron, 4·9 ins. long. (DW 144*c.*)
       Cf. Carlingwark, C. 64–67; *Newstead*, pl. lxvi, 16, 17.

B. 48. **BAR,** iron, 5·0 ins. long, D-section, perforated.   (DW 129.)

B. 49. **BAR,** iron, broken, 6·0 ins. long, oval section and slightly burred end.
(DW 118.)
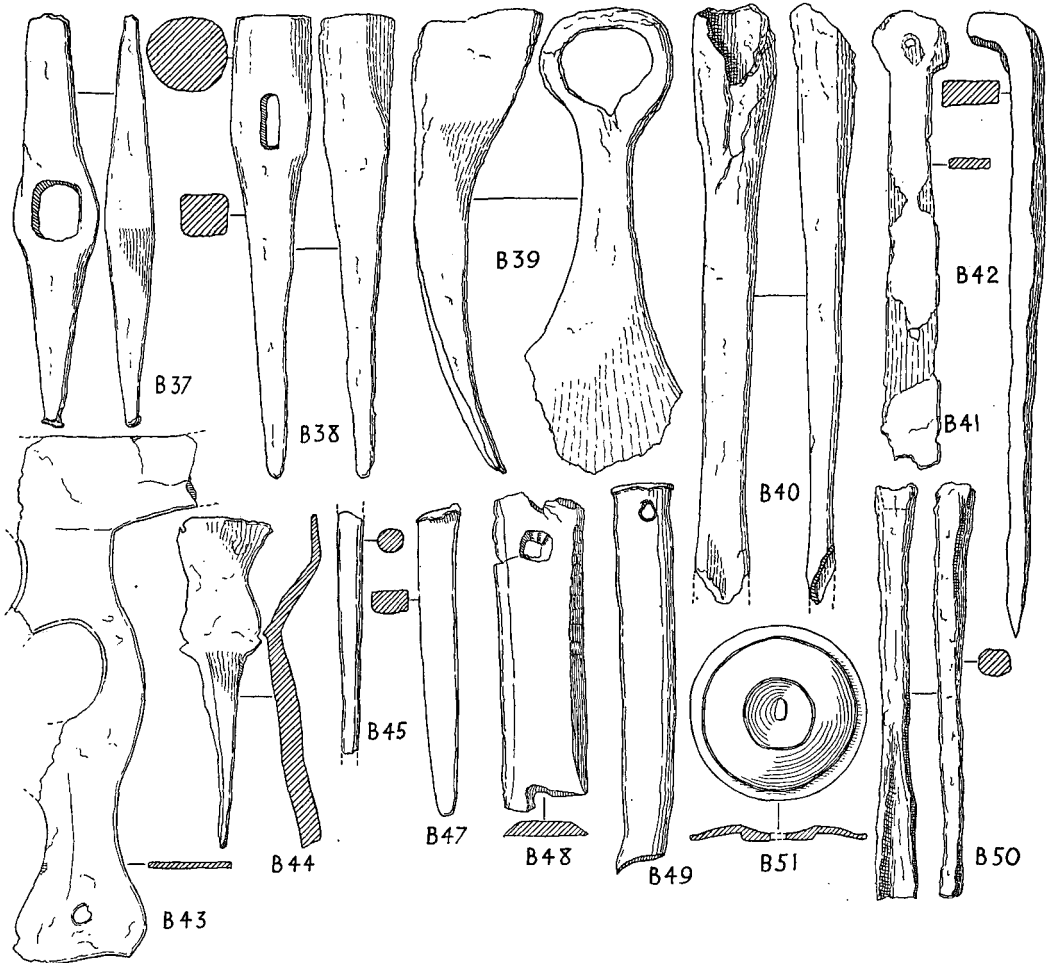Probably part of a punch or cold-chisel of Roman type.

Fig. 13. Objects of iron (B. 37–49; B. 50) and bronze (B. 51) from Blackburn Mill.   (¼.)

B. 50. **SOCKETED GOUGE,** iron, 6·4 ins. long.   (DW 104.)
Cf. B. 40 above.

B. 51. **DISC,** bronze, 2·8 ins. diameter, moulded, with oblong slit slightly off
centre.   (DW. 91.)
This is presumably a Roman harness-mount of the type of *Newstead,*
pl. lxxiv, especially no. 9.

B. 52. **PATERA,** bronze, with handle missing.   Not illustrated.   (DW 89.)
      This characteristically Roman object was discussed and illustrated by
Bosanquet (*P.S.A.S.*, LXII (1927–8), 246–54, fig. 1, 1) and Curle (*ibid.*, LXVI
(1931–2), 300, fig. 12, 1), the former assigning the inception of the particular
type represented at Blackburn Mill to A.D. 120–150.

      B. 52–65 are not illustrated, and comprise miscellaneous broken frag-
ments including iron **HOOKS** (B. 52–54);   iron **STRIP** (B. 57, 58, 63);
small iron L-shaped **STAPLES** (B. 140–142), and an **INGOT** or cake of
bronze, circular, 3·4 ins. diameter (B. 65;   DW 90), illustrated by Curle,
P.S.A.S., LXVI (1931–2), 315, fig. 22, 33.   This is a smaller version of the
circular copper ingots of the type illustrated by Curle, *loc. cit.*, fig. 37, from
Carleton, Wigtownshire, or the half-cake of bronze from Dundonald (Dick
Institute, Kilmarnock).

APPENDIX.

Technical Note on the Fragment of Iron Mail from Carlingwark Loch (C. 74).

By E. MARTIN BURGESS.

   The fragment examined is composed of alternate rows of riveted links and
whole links.   *The whole links* are punched from an iron sheet.   Holes were
punched with a small punch and then a larger punch was used to cut out the
rings;   this gives the whole rings their somewhat square wire section.
      Wire thicknesses: 0·056, 0·045, 0·039, 0·046, 0·047 inches.
      External diameter: 0·267, 0·271, 0·273, 0·274, 0·272 inches.
These links are quite circular, as would be expected.

   *The riveted links* have dimensions as follows:—
      Wire thickness: 0·033, 0·042, 0·035, 0·032, 0·039 inches.
      External diameter (parallel to rivet joint): 0·292, 0·286, 0·304,
            0·307, 0·323 inches.

The wire of these links is rather flatter in section than the wire of the whole
links.   The former have a slight ovality, the major axis being parallel to the
rivet joint which to some extent accounts for their greater diameter.
      The real interest of the riveted links lies in the fact that the rivets are domed
on both sides and are made from cylindrical wire, as opposed to the usual medieval
wedge type rivet which is much more practical for use and for production.   Some
of the cylindrical rivets have gone through too far and are bent over on one
side, while on the other side hardly any rivet shows.   In my experience this
is very likely to happen with the cylindrical rivet however much care is taken
in closing it.   There is no visible "water-shed" formation round the rivet area
which has been simply spread out before punching.
      The alternate riveted and whole rings are in no way unusual.   Examples are
the Newstead fragments (Curle, *Newstead*, 161; pl. xxxviii, 10) and those
from the Thorsbjerg find in Denmark (Engelhardt, *Denmark in the Early Iron
Age* (1866), Pl. 6, nos. 2, 3).
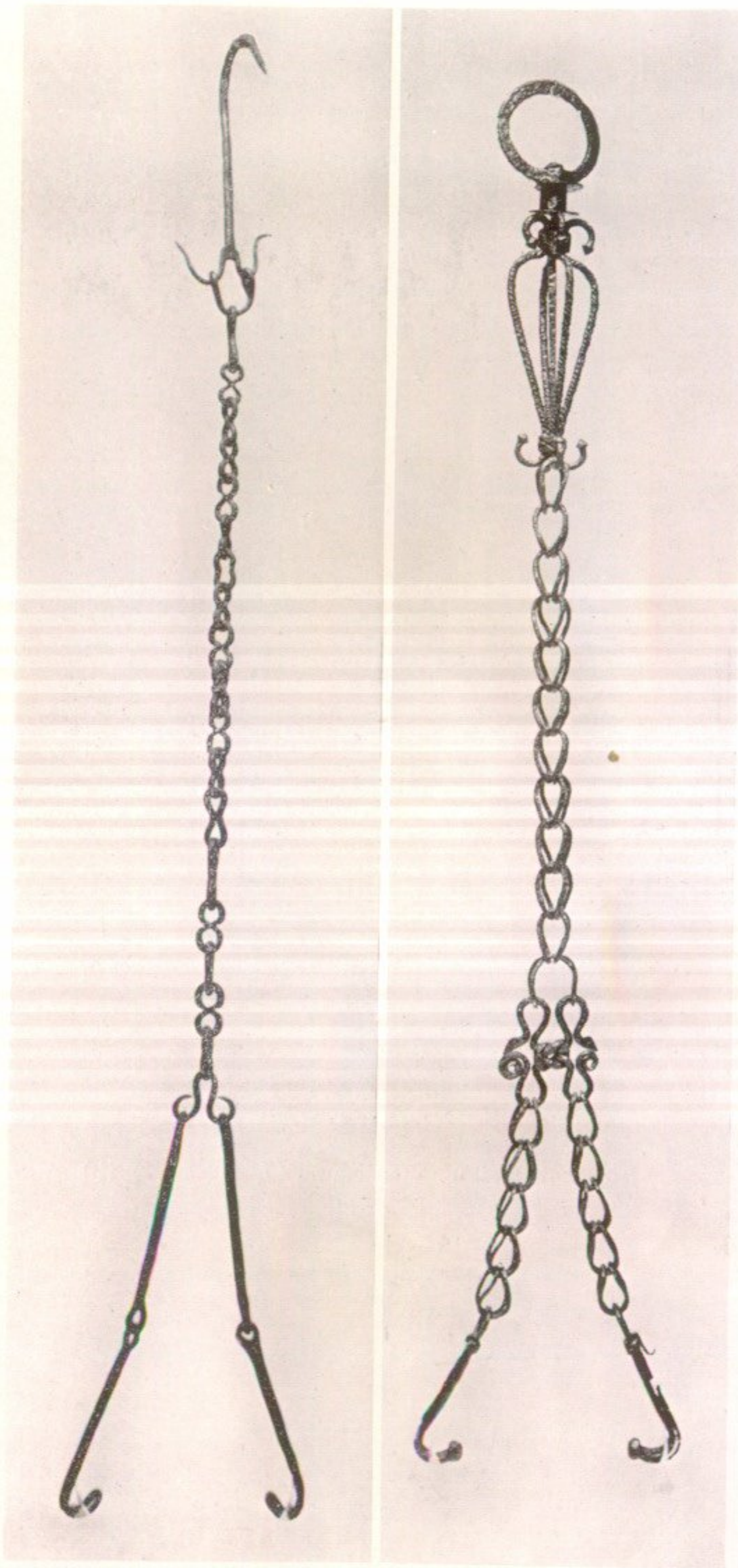
Iron cauldron-chains from Overton, Cambs. (left) and
Great Chesterford, Essex (right).

Stuart Piggott.
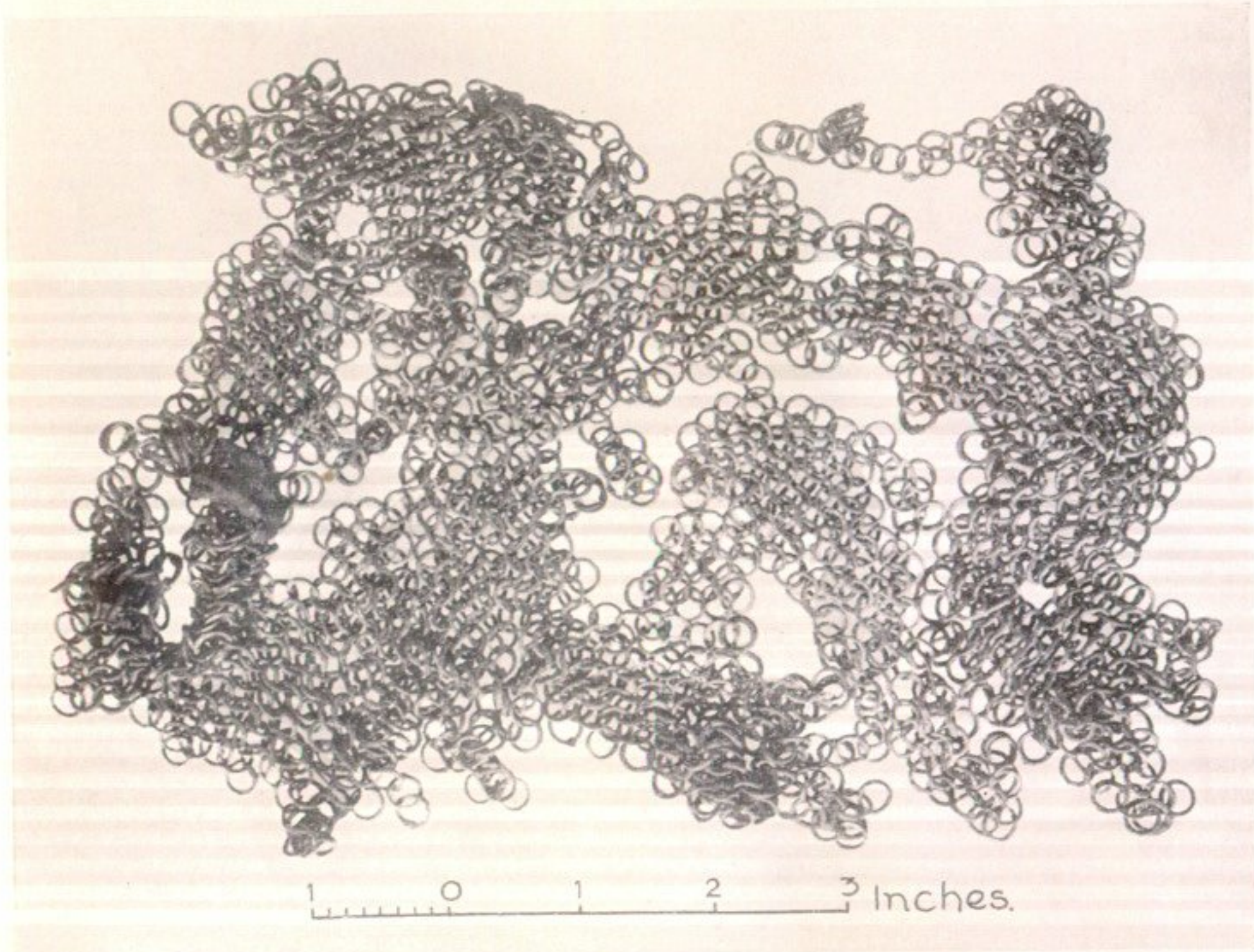
Iron chain-mail from Carlingwark Loch (C. 74). (½.)

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