III. NOTICE OF THE POTTERY, BRONZE, AND OTHER ARTICLES FOUND IN THE EXCAVATION OF THE ROMAN CAMP AT INCHTUTHIL. By JOSEPH ANDERSON, LL.D., Assistant Secretary and Keeper of the Museum.

The number of the objects found in the excavation of the Camp at Inchtuthil is strikingly small compared with the abundance of the relics from Ardoch and the other Roman stations previously explored. This comparative paucity of casual remains of occupancy suggests that the presence of the Romans upon the site of this camp was of limited duration, though it leaves no doubt whatever of the occupancy being Roman.

Pottery.—As is usually the case on Roman sites, fragments of pottery form the most abundant class of relics. The fragments of the red lustrous ware commonly called Samian are twenty-five in number, only seven of which are decorated.

(1.) Portion, not 2 inches square, of the rim and upper part of an almost vertical-sided vessel, which must have been about 8 inches in diameter, the space between the upper moulding of the lip and the moulding above the ornamented part not plain (as is usually the case), but closely covered with fine lines faintly impressed, which are parallel and slightly oblique, and run out to a point at the upper and lower margins. Beneath the lower moulding is part of a scroll with small terminal trefoils and a small rosette in the space between the scrolls. This piece was found at the bath building.

(2.) Portion of the rim of a similar vessel, similarly ornamented, except that the fine lines on the space between the moulding of the lip and the lower moulding are parallel, nearly vertical, and do not run to a point at the upper and lower margins.

(3.) Portion of the bottom of a large bowl, the ring at bottom $2\frac{3}{4}$ inches in diameter, a plain space of $\frac{3}{4}$ inch in width outside the ring, succeeded by a band of leafy scroll ornament $\frac{1}{2}$ an inch in width.

(4.) Portion of the lip and upper part of a large bowl, with a plain space an inch in width underneath the lip moulding, succeeded by a band of the usual festoon and tassel ornament, and that by a broader space on the bulge of the bowl, with a diverging scroll of five stems and a small animal within the scroll.

(5.) Fragment of the side of a bowl of a much darker colour than the others, divided into panels, in one of which is a single figure not well defined, and in another a series of rudely conical markings arranged in rows, and their upper ends showing four or five spikes.

(6.) Fragment of the side of a similar bowl, of bright red colour, ornamented in panels, one of which has similar rows of rudely conical markings with spikes at the broad ends. In this case they are suggestive of imitations of the soles of human feet.

(7.) Small fragment of the side of a small bowl or cup divided into panels, one of which shows a nude human figure.

Eighteen small fragments of bowls and cups of the same red, lustrous, ware, unornamented.

Of the dark slate-coloured ware there are only a few fragments of rims, with a roll moulding, and sides and bottoms of jars of no great size and unornamented.

Of the thin soft red ware there are a good many fragments of jars, with flat bottoms and bulging sides and of no great size. Some of the red ware is of harder texture, however, and there is one jar with a flat bottom 3 inches in diameter, and bulging sides expanding to about 8 inches in diameter. There is also an expanding bottle-shaped neck of a similar jar, $1\frac{1}{4}$ inches internal diameter at the narrowest part, widening upwards to $2\frac{1}{4}$ inches internal diameter at the mouth. The lip is $\frac{3}{8}$ of an inch in thickness, and the exterior ornamented with four consecutive mouldings, from the lowest of which springs a broken loop handle an inch in width. There are also portions of three or four large bowl-shaped vessels with flat rims projecting half an inch on the outer side.

Of mortaria there are fragments of about half a dozen, all of red ware, except one, which is greyish white. The largest has been over 12 inches in diameter, and the lip measures $2\frac{3}{4}$ inches across.

Of amphoræ and dolia there are upwards of sixty fragmentary pieces of the usual character, and one which seems to be the lip of a large straight-sided, tub-like vessel.

As in the former excavations, a considerable quantity of fragments of jars presenting the forms and texture and the greenish or yellowish green glaze of the pottery of the late medieval period, was turned up. Many of these jars are quite similar to those found with coins of the Edwards, and with even later associations, and they represent, in all probability, the more recent occupation of the site which continued down to the time of General Roy, on whose map several cottages are shown.

Tiles.—The tiles are of various shapes and sizes, according to their different purposes. The largest is $16\frac{1}{2}$ inches square and $3\frac{1}{2}$ inches in

thickness. A smaller-sized flat tile is 12 inches square and $3\frac{1}{2}$ inches in thickness, and the smallest is 9 inches square and 3 inches in thickness. Some of these have markings impressed on one side in the soft clay, such as concentric rings, loops, etc., and some have one face covered with diamond scorings. Flanged tiles of the usual form are accompanied by curved tiles which were laid so as to cover the flanges. A piece of a tile, chipped into the form of a circular disc $2\frac{1}{4}$ inches in diameter, is marked on one face by two incised lines about 1 inch apart, crossing other two transversely, which are the same distance apart.

Iron.—The iron objects found included no weapons. The most numerous iron things are nails, varying from 10 inches to 3 inches in length. There is also a slightly oval ring 3 inches by $2\frac{1}{2}$ inches in diameter, and two staples.

Bronzes.—Of bronze objects there are very few.

A kind of circular stud, $1\frac{7}{8}$ inches in diameter, with remains of the fastening at the back. It is concave in the front aspect, with a kind of moulding round the rim, and a boss nearly $\frac{1}{2}$ an inch in diameter in the centre. The back is convex, and the front and back are separate thin plates of bronze held together by the margin of the front plate being turned over on the circumference of the back plate all round.

A circular stud, $1\frac{5}{8}$ inches in diameter, with remains of the fastening at the back. It is of very thin bronze and ornamented on the front with a slight marginal moulding, and a similar slightly raised moulding $\frac{1}{4}$ of an inch within the margin.

A ring, like a plain finger ring, $\frac{7}{8}$ of an inch in its internal diameter.

A piece of thin bronze, $2\frac{1}{2}$ by $1\frac{1}{2}$ inches, of irregular shape, bent and broken along the edges.

A small portion of a flattened rod of bronze with one end showing signs of wear, suggestive of the tongue of a buckle.

Lead.—A considerable quantity of run lead was found in lumps.

A whorl of lead, $1\frac{1}{4}$ inches in diameter, with a central hole $\frac{3}{8}$ inch in diameter, is ornamented with slightly raised double semicircles placed round the circumference, with three radiating lines in each.

An oval ring of lead, $4\frac{1}{2}$ by $3\frac{3}{4}$ inches in diameter, the body of the ring being quadrangular in section and about $\frac{3}{8}$ of an inch of a side, the outer angle more rounded off than the inner one, and about half of the perimeter on one side marked off in spaces of unequal length by shallow lines drawn across the surface of one of the sides. It was found on the floor of the stokery.

A piece of lead piping which was found in the bath as the outlet pipe is 3 feet 5 inches in length and about $2\frac{1}{2}$ inches diameter. It is made, as all Roman lead pipes were made, from a sheet of lead bent round a mandril and united along the edges by what Mr Gowland has called "autogenous soldering," or, as it is technically called, "burning" the edges together with pure lead, an operation which is described by him as follows[1]:—

"A strip of sheet lead of suitable length, breadth, and thickness was bent around a cylindrical wooden bar into the form of a pipe, the edges being turned back and brought closely together, but not touching. After being secured in that position the parts to be joined were scraped to give them a clean metallic surface. The wooden bar was then removed, and the interior of the pipe was filled with dry sand or clay. A mould of clay, or of wooden strips covered with clay, was then made on the pipe, now in a horizontal position, of the full length of the joint, and with its sides abutting against the recurved edges of the lead strip. As soon as the mould was dry it was filled with molten lead heated very considerably above the melting-point of the metal. Owing to the high temperature and comparatively large bulk of this lead, the edges of the sheet were fused and united into a solid mass with it. Thus a perfect joint was formed, with no dissimilarity in any part. After cooling, the sides of the mould were removed and the ridges were trimmed to remove some of the superfluous lead. A large excess of metal, however, was generally left, the reason for which is not obvious."

[1] See a paper on "The Early Metallurgy of Silver and Lead," by William Gowland, in *Archæologia*, vol. lvii. pp. 410–414.

A second method, which was carried out in the same way, was distinguished only by the use of an alloy of a small percentage of tin, instead of the pure lead, for the burning-on process. This slightly lowered the melting-point of the lead, and the ridge forming the joint is usually smaller than by the first process. In the case of the pipe from Inchtuthil, the edges have been brought together, but not bent back, and the ridge has been dressed down and the rougher parts cut away.

Stone. — Very few relics of stone were found, and of these there is only one which can be said to be distinctively of Roman time. It is a much used fragment of a quern of lava, like those imported from the Rhine district which are found so constantly on Roman sites in Britain. Another quern-stone is an upper stone of the native quern made of micacaceous schist, plentifully studded with garnets. It is more oval than circular, about 13 inches in diameter, with the usual central perforation, and a projection at one side having a hole sunk in its upper surface for the insertion of a wooden handle.

Four whetstones of various sizes and materials may be of any period from the Roman time downwards.

Two splinters of flint, unworked, may probably be strike lights, and are not necessarily ancient.

Glass. — About thirty pieces of glass were found, of which only one has the character of window-glass. The others show the form and character of vessels, either flat-sided with rounded corners or with curved sides, and some may be modern.

Only the half of a large melon-shaped bead of dark blue glass or vitreous paste, 1 inch in diameter, was met with. These melon-shaped beads have been found on almost every Roman site in Scotland, and also on sites with no evidence of Roman occupation.

Bone.—Several tines of antlers of red deer, sawn off from the antlers to which they belonged, and a shed antler of considerable size with a portion of the beam and the short brow-antler sawn off, were found, but no artificially fashioned implements of bone were met with.

Coins.—Only one Roman coin was found. It is of bronze and in a very bad state of preservation, but has been presumed to be an early issue of Domitian (after A.D. 73), having on the reverse a standing figure and the inscription . . . . . AVG.

A billon coin of Louis XIII. of France (1610–1643), three coins of James VI., Charles I., and Charles II., and a satirical button, probably of late eighteenth or early nineteenth century, indicate the latter occupation of the site.

MONDAY, 10*th February* 1902.

SIR THOMAS GIBSON CARMICHAEL, BART., Vice-President, in the Chair.

A Ballot having been taken, the following Gentlemen were duly elected Fellows :—

THOMAS H. BRYCE, M.A., M.D., 2 Granby Terrace, Glasgow.
ALFRED WINTLE JOHNSTON, Architect, 36 Margaretta Terrace, Chelsea, London.
HENRY LIONEL NORTON SMITH, 30 Saxe-Coburg Place.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1) By J. G. GILCHRIST CLARK, of Speddoch, F.S.A. Scot.

A collection of Antiquities of Stone, Bronze, &c., chiefly from Glenluce Sands, Wigtownshire :—

Sixty-eight Arrow-heads of flint, leaf-shaped, of which forty-three are perfect, and the rest more or less imperfect.

Twenty-eight Arrow-heads of flint, with barbs and stem, of which eighteen are perfect, and ten more or less imperfect.

Two minute Implements of flint, narrow, and pointed flakes.

Seventy-seven worked Flakes, more or less knife-like.

Eleven Saws, some finely toothed, and two which are hollow or concave in the cutting edge.

Two hundred and seventeen Scrapers of flint, of various sizes.

Ten Cores of flint, and ten Hammer-stones and Anvil-stones.

Three Rubbing-stones, and five Hammer-stones, more or less abraded at the ends.

Three polished stone Axes, viz.:—(1) of greenstone, $8\frac{7}{8}$ inches in length by $3\frac{1}{4}$ inches in breadth across the cutting face, by $1\frac{5}{8}$ inches in greatest thickness; (2) of greenstone, 7 inches in length by 3 inches in breadth across the cutting face, by $1\frac{1}{4}$ inches in greatest thickness, the cutting edge slightly oblique; (3) of greenstone, $6\frac{1}{4}$ inches in length by $2\frac{1}{4}$ inches in breadth across the cutting face, by $1\frac{1}{8}$ inches in greatest thickness, the side edges planed flat and the cutting edge slightly curved, all from Bogueknow, Colvend, Kirkcudbrightshire.

Polished Axe of greenstone, $4\frac{3}{4}$ inches in length by $2\frac{1}{4}$ inches in breadth across the cutting face, by $1\frac{1}{8}$ inches in greatest thickness, from Freugh, Wigtownshire.

Two Beads of dark blue translucent glass, and portion of a cylindrical bead of pale blue opaque vitreous paste.

Portion of a jet Ring which if complete would be $3\frac{1}{4}$ inches in diameter, with a central perforation $1\frac{1}{8}$ inches in width; and a fragment of another of nearly the same size.

Ring of jet, $1\frac{3}{8}$ inches in diameter, and parts of two discs of jet or shale.

Portions of four slender Rings of jet.

Oval Piece of sandstone, 4 by 3 inches, with a picked indented hollow on each of its flat sides.

Fragments of over twenty different Vessels of clay, mostly with the usual decoration of sepulchral urns.

Polished Axe of felstone, $9\frac{1}{8}$ inches in length by $3\frac{7}{8}$ inches in breadth across the cutting face, by $1\frac{1}{2}$ inches in greatest thickness, the edges thinned and the cutting edge semicircular, locality unknown.

Polished Axe of felstone, 4 inches in length by 2 inches in breadth across the cutting face, by $\frac{3}{4}$ inch in greatest thickness; locality unknown.

Polished Axe of brown mottled flint, $5\frac{1}{2}$ inches in length by $2\frac{1}{4}$ inches in breadth across the cutting face, by $1\frac{3}{8}$ inches in greatest thickness, the cutting edge oblique, from the Thames near Windsor.

Polished Axe of felstone, $4\frac{5}{8}$ inches in length by $2\frac{1}{4}$ inches in breadth, by $1\frac{1}{8}$ inches in greatest thickness, from the Thames near Windsor.

Polished Axe of bloodstone, $5\frac{3}{4}$ inches in length by $2\frac{1}{2}$ inches in breadth across the cutting face, by $1\frac{1}{8}$ inches in greatest thickness, tapering to the butt, and the cutting edge perfect; locality unknown.

Axe-Hammer, $5\frac{1}{8}$ inches in length by $2\frac{1}{2}$ inches in diameter, a flattened oblong, with groove for handle, from Quemada, province of Murcia, Spain.

Polished Axe of diorite, $3\frac{3}{4}$ inches in length by $2\frac{1}{8}$ inches across the cutting face, from Ballycastle, Antrim, Ireland.

Polished Axe of brownish flint, $3\frac{3}{4}$ inches in length by $2\frac{1}{8}$ inches in breadth across the cutting face, wedge-shaped, from Malmöe, Sweden.

One hundred and eight flint Implements and Flakes, neolithic and palæolithic, from various localities in England, Ireland, and France.

(2) By the Trustees of the British Museum—

Catalogue of Greek Sculpture, vol. ii.; Catalogue of Greek Coins, Lycaonia, Isauria, and Cilicia.

(3) By the Trustees of the Hunterian Coin Catalogue Fund—

Catalogue of Greek Coins in the Hunterian Collection, University of Glasgow.—By George Macdonald, M.A. Vol. ii. 4to; 1901.

(4) By the ROYAL SOCIETY OF NORTHERN ANTIQUARIES, Copenhagen—

De Danske Runemindesmaerker af L. F. A. Wimmer. Folio, vol. ii.

Affaldsdynger fra Stenalderen i Danmark. 4to; 1900.

Aarboger for Nordisk Oldkyndighed og Historie, 1900.

There were also Exhibited:—

(1) By JAMES CURLE, Jun., *Librarian*—

A finely made Axe-Hammer of diorite, from Sweden.

(2) By W. ELLIOT LOCKHART, Cleghorn, Lanarkshire—

A stone Ball with six points, found by Colonel R. Elliot Lockhart at The Hewke, Lockerbie.

(3) By JAMES ROBSON, Townhead, Denholm—

A large Scraper of black flint, measuring $3\frac{1}{8}$ by 3 inches, found at Collieford Hill, near Hawick.

The following Communications were read:—