

The Pottery.

ON nearly all sites of classical antiquity the pottery and other objects of earthenware form one of the most important parts of the excavator's harvest. This is due partly to the fact that in early times clay was commonly employed for almost all utensils of household use and furniture, and partly to the fact that, however fragile an earthenware vessel may be in itself, its fragments, if only it has been properly fired, are practically indestructible. They offer little temptation to the treasure-hunter and are far less liable to destruction by time and the elements than are wood and most of the metals. One may therefore be sure of finding abundance of pottery on almost all ancient sites, and it thus becomes one of the best sources of evidence for determining the date of the site and its relations to contemporary civilization.

At Melandra, indeed, the importance of the pottery is limited by the fact that we are dealing with a fortified camp occupied merely by an Auxiliary cohort (see pp. 12 f.) where one cannot expect to find either any distinctive local fabric or any considerable number of vases of the finest type. Moreover, the length of time during which the camp was occupied prevents one from having any such fixed date to assign to the vases found as one has for example in the case of the camps recently excavated at Haltern and Hofheim in Germany. What we do get is just a representative collection of vases or fragments illustrating the fabrics commonly in use during the Roman military occupation of Britain, and its interest lies not in any beauty of variety of ware but rather in its forcible

illustration of the homogeneity of Roman civilization even in the small details of common life and at the far outposts of the Empire.

For the general study of Roman pottery in Britain it is convenient to refer to Mr. H. B. Walters' *History of Ancient Pottery* and to Mr. F. Haverfield's articles on the *Roman Remains* in the various volumes of the Victoria County History of England. Of foreign works the most important are Déchelette's *Les vases céramiques ornés de la Gaule romaine* and the articles of Dragendorff in the *Bonner Jahrbücher* and *Bericht über die Fortschritte der römisch-germanischen Forschung* (1904). The latter works treat of Roman provincial pottery in general and of Britain only incidentally. In the present article nothing more has been attempted than a provisional classification of the fabrics represented at Melandra with a brief account of each fabric and of the more important fragments.¹ In a later report it is hoped that this present account may be supplemented by the analyses of clays and glazes which have been most kindly promised by Mr. William Burton, whose researches in ceramic chemistry and wide practical experience will give them an unusual authority. It has been impossible to illustrate many fragments by photographic reproductions since the damp, clayey soil of Melandra has had a most destructive effect upon the pottery, not only spoiling the surface but even in many cases rotting the clay body itself.²

1. All the laborious task of first sorting the fragments was carried out by Mr. Hamnett with his usual indefatigable zeal. To Mr. Walters' book the indebtedness of the present article is too obvious to require statement, but I would gratefully acknowledge the personal help given by the author in dealing with the Melandra pottery.

2. The line drawings of the fragments here reproduced are by Mr. Robert Duddle of the Manchester School of Art. The more complete vases are shown in section also by means of heavier black lines.

The pottery at Melandra falls naturally into two main divisions: (A) the fine red ware with embossed ornamentation, known as *Terra Sigillata*, which is certainly imported, and (B) the plainer wares which to a very large extent at any rate were made in Britain itself and may be loosely termed *Roman-British*. To these are appended in the present article notices of the *Tiles* and of the *Glass*.

A. TERRA SIGILLATA.

This is the ware long known as *Samian* and identified with the "vasa Samia" of Latin literature.³ The old name has now been abandoned, since it wrongly suggests that Samos was the chief centre in which the vases were made, and the new term *Terra Sigillata* (seal clay), denoting the fine, consistent, red clay of which the ware is made, has been generally adopted. The characteristics of the ware are (1) the red clay, which was no doubt originally a natural ferruginous clay but was probably later coloured artificially by an admixture of certain ochres, (2) the fine transparent varnish in which the vases were dipped to give them their smooth lustrous surface, (3) the embossed ornamentation, produced by pressing the vase into a mould while the clay was still soft, with occasional variations such as casting small pieces of the design separately and applying them to the vase with slip. The real origin of the ware is perhaps to be sought on the coast of Asia Minor. Recent excavations at Priene and Pergamon have shown that vases of similar technique were there manufactured in direct continuance of the late Hellenistic pottery imitative of metal-work. It is even possible that further excavation may show some real historical justification for Pliny's use of the word "Samia."

3. Cf. Pliny, *Nat. Hist.* xxxv. 46; Plautus, *Menaechmi* i. 2, 65 and *Bacchides* ii. 2, 22, etc.

In Italy the manufacture of Terra Sigillata seems to date from about 40—30 B.C. and had its principal centre at the Etruscan town of Arretium, whence is derived the name of *Arretine* (“*vasa Arretina*”) given to the Italian vases in general. This Italian fabric produced by far the finest examples known to us of red relief vases, and in the Augustan period the Arretine vases were not only used in Rome and Italy but were exported throughout Gaul and Germany.

The manufacture of Terra Sigillata in the Western provinces (*Provincial Terra Sigillata*) began about the close of the first quarter of the 1st century A.D., and developed with extraordinary rapidity. Partly by the greater convenience of the provincial factories as centres of distribution, and partly by the greater cheapness of the ware, it rapidly ousted the finer Arretine vases from the markets of Western Europe.⁴ The earliest factories were in the territory of the Ruteni⁵ (Southern Gaul) at the modern Graufesenque, Montans and Banassac, and until the later part of the 1st century A.D. this “Graufesenque ware” is predominant throughout Gaul and Germany. It is found even in Italy, at Rome, Pompeii and elsewhere, and reached as far as Britain to the north-west. By the time of Hadrian, however, the factories of what is now Lezoux, somewhat to the north of Graufesenque, were rapidly overtaking it in public favour, and during the 2nd century

4. Thus at Haltern (dated 11 B.C.—17 A.D.) there is, according to Dragendorff, nothing but Arretine, with the exception of a few fragments which may be from a provincial branch of some Italian factory. At Hofheim (dated 40—60 A.D.), to judge by the potters’ names, Arretine has wholly ceased and there is nothing but Gallic ware of the “Graufesenque” type.

5. The views here put forward are those of M. Déchelette, l.c., which are based upon an unequalled knowledge of the local remains and museums of Southern France.

and the first half of the 3rd the Lezoux ware must have been manufactured and exported in enormous quantities. There were other factories at Rheinzabern and Westerdorf in the Rhine valley, but the potters' names are conclusive evidence that the bulk of the good Terra Sigillata vases in Western Europe came from the workshops of Southern and Central Gaul. The manufacture of the ware seems to end about 260—270 A.D., probably when Gaul was overrun by ruder Teutonic invaders.⁶

This Gallic ware, as a whole, is coarser than the Arretine both in technique and design, although the classical forms of ornament still survive unaffected by the late Celtic art of Gaul. The distinction between the *Graufesenque* and the *Lezoux* fabric can be drawn by comparison of the potters' names, which are often impressed with a stamp on either the inside or the outside of the vases, by the types of ornament, and by the characteristic shapes of the vases most commonly made at the two centres. The method of ornamenting the vases with reliefs by pressing them into a mould necessitates that the common form should always be that of an open bowl decorated on the outside. Three principal types of bowls are found, outlined in Fig. 1, which in accordance with Dragendorff's enumeration of shapes are known as nos. 29, 30 and 37. No. 29 is characteristic of Graufesenque; no. 30 is common in the first century B.C., but also is used later; no. 37 is in general characteristic of Lezoux, though early forms appear at Graufesenque.

There is no evidence for any manufacture of Terra Sigillata in Britain, and the examples of the ware that have been found at Melandra probably all come from Gaul. Bowls of shape 29 are found in Britain as far north

6. Cf., e.g., Gibbon, *Decline and Fall*, chapter 10.

as York, but beyond York (*i.e.*, in the parts of Britain occupied later than 80 A.D.) only bowls of shape 37. As this agrees with the evidence from Gaul and Germany one is justified in assuming that the occurrence of shape 29 on any site is good evidence for its occupation as early as 80 A.D. In the following list of Terra Sigillata fragments from Melandra nos. 1—4 are of shape 29; no. 7 is of shape 30; nos. 8—14 seem all to belong to bowls of shape 37, though the fragments are not in all cases large enough to give the shape with certainty. The evidence of these

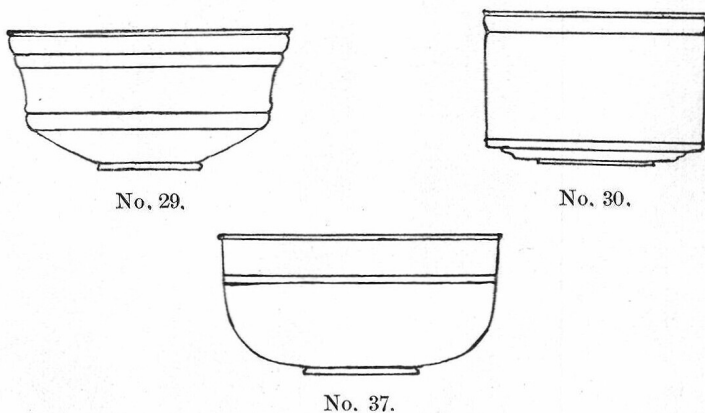
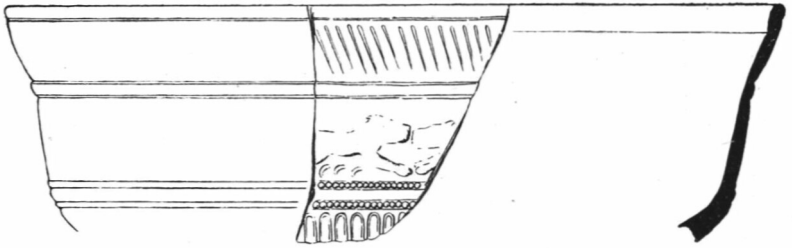


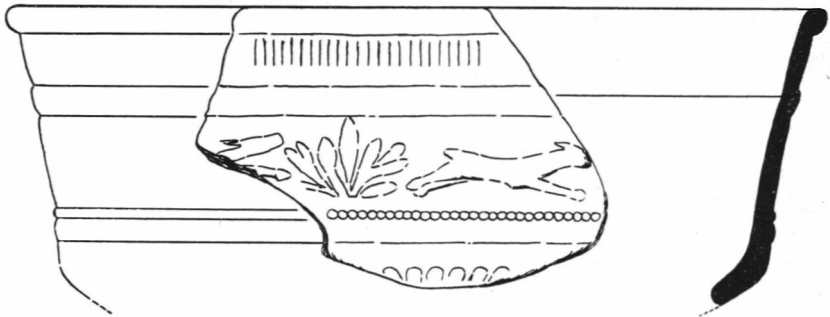
Fig. 1.—Shapes of Terra Sigillata Bowls.

shapes for determining the date of the camp is important. Nos. 1—4 of the list are of shape 29 but belong to its later period when it is already tending to the less elaborate form of shape 37. The exterior mouldings of the vase are less pronounced than in the earlier examples, and the frieze of animals and plants has succeeded to the purely formal designs of the earlier period. On the other hand no. 8 in the list is certainly a very early form of shape 37. In the more fully developed examples of the shape the plain band below the rim is quite flat and usually much

PLATE I.



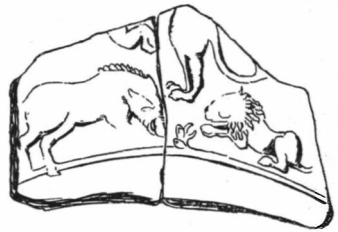
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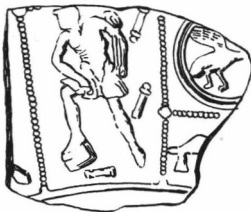
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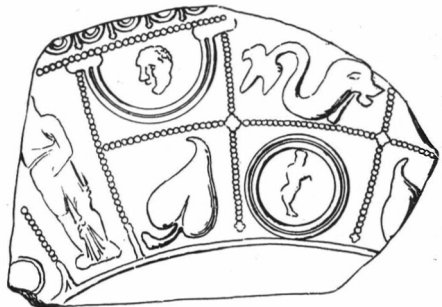
3.



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6.

Terra Sigillata.

To face p. 8

deeper, and the foot also loses the subsidiary moulding. The method too of arranging the ornament in two principal friezes is natural to shape 29 where the moulding of the vase breaks up the surface into two principal fields, but is a less appropriate arrangement for the simple curve of shape 37. The design of both friezes seems to be distinctively "Graufesenque" (*cf.* Déchelette, *l.c.* vol. i., pl. vi. 5, and viii. 1). Fragment no. 14 again is closely allied to no. 8, coming apparently from a bowl of the same shape and the same arrangement of friezes. The design too is classed by Déchelette as "Graufesenque" (vol. i., pl. vii. 24). It is necessary therefore to class these two examples of shape 37 (nos. 8 and 14) as roughly contemporary with the examples of 29 (nos. 1—5) and to assign them to the close of the Graufesenque potteries, about 80 A.D.⁷

To much the same date probably belongs no. 7. Bowls of shape 30 are common to both Graufesenque and Lezoux, though they occur more frequently at the former, and both the form and the cruciform ornament of the Melandra bowl are of a transitional type. In nos. 9—12 the designs are those of the Lezoux vases but in no case need belong to a very late period of the fabric.

The evidence of the pottery would therefore suggest that the most important occupation of the camp was about 80 A.D., and that it continued in use for a considerable time after that date.

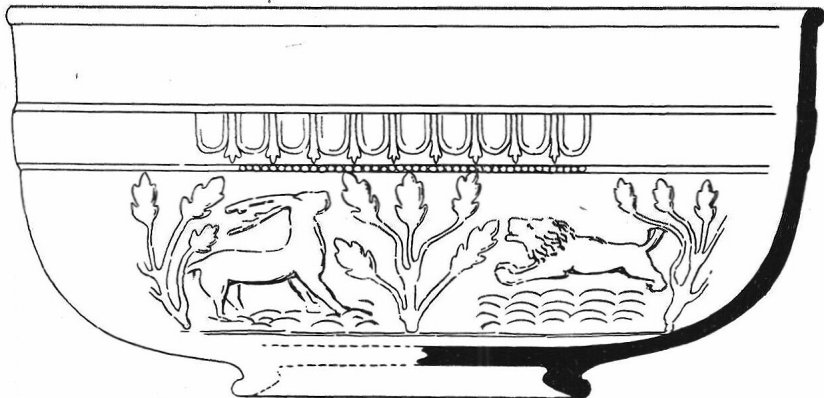
List of the more important fragments of Terra Sigillata from Melandra:—

1. Fragment of bowl of shape 29. "Engine-turned" pattern below rim: frieze of animals and plants: tongue pattern. Plate I., 2.

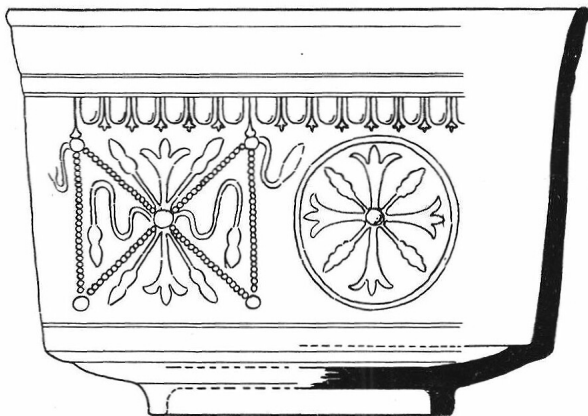
7. There is a striking correspondence between these "late Graufesenque" bowls from Melandra and those found at Pompeii. The Pompeii vases are presumably those in use in 79 A.D.

- 2, 3, 4. Three fragments from similar vases (one in Plate I., 1).
5. Several fragments from a bowl of similar shape, but embossed from very poor moulds. The design is shown in almost flat outline without modelling, and the mouldings of the bowl are also much flattened. The design apparently contained human figures in panels. The style seems to belong to the very end of the Graufesenque fabric.
6. Base of small bowl stamped on interior ITNO, probably to be restored as OF. PONTI (*i.e.*, Officina Ponti). This same potter's name occurs on a bowl of Graufesenque type found at Buxton (Vict. Count. Hist. of Derby. p. 225, Fig. 27). It occurs also at York and London, in Germany, and five times at Graufesenque itself (C.I.L., vii. 83—87, and xiii. 1545).
7. Shape 30. Narrow plain band below rim: "egg and dart" pattern: cruciform patterns in rectangular panels and circles. Plate II., 2.
8. Several fragments forming an almost complete bowl of shape 37. Narrow plain band below rim, slightly moulded: "egg and dart" pattern: frieze of festoons and tassels, with leaves on long, winding stalks within each festoon: frieze with running design of volutes and foliage: wreath pattern. Plate II., 3.
9. Fragments forming a similar bowl. Plain band below rim: "egg and dart" pattern: "free" design of trees (oaks), stags and lions. Plate II., 1.
10. Fragment with beaded lines dividing panels. One panel contains a well-known figure of Vulcan, clad in exomis and pileus, the right foot raised on a base, with the right arm resting on the thigh, the left hand holding his smith's pincers: uncertain objects in the field. The head has apparently been obliterated with a square stamp. The other panel contains a bird with raised wings within circle. Plate I., 5.
11. Fragment of "free" design with large and small lions and boar. Plate I., 4.
12. Fragment with two bands of panels, containing ivy-leaf, sea monster, concentric circles and semi-circles enclosing mask of a bearded male head, and another, doubtful object. In a larger panel is a draped female figure, much damaged. Plate I., 6.
13. Fragment with "egg and dart" pattern, and hares within semi-circular festoons.

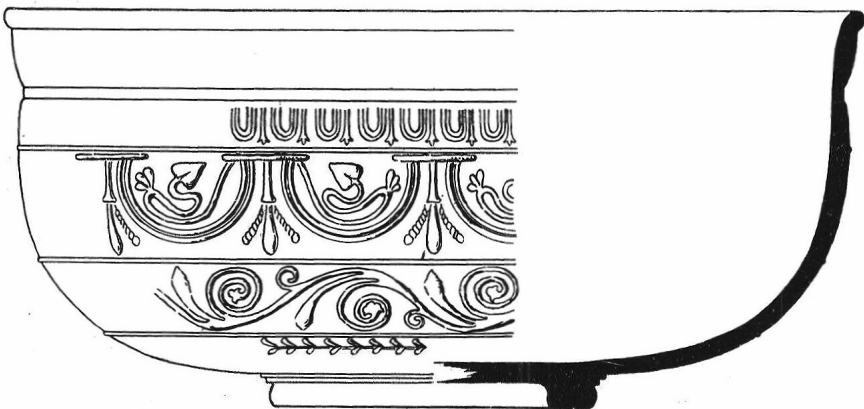
PLATE II.



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3.

Terra Sigillata.

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14. Fragment containing (*a*) band of panels with festoons within which are a bird and a volute, (*b*) a wreath pattern below. Plate I., 3.

15. Part of base, with raised boss in centre. Dull brown clay with black engobe on interior and reddish-brown on exterior. Remains of potter's stamp on interior, perhaps to be read . . . ATULXUS (only the last three letters are certain).

16. Fragments of a base with roughly incised inscription under the foot M TYRI.

17. A large number of bases, mostly from bowls or from flatter vessels with low, almost vertical sides. Many of the latter bases have a raised boss in the centre on which the potter's name was stamped, though the stamps are now destroyed. Often with band of "engine-turned" pattern on interior. Two fragments of stamps have (*a*) O NI (*b*) ❖ O.

18. A large number of fragments of rims from bowls of shape 37. Also rims of flatter vessels, as above. In a few cases the engobe is black instead of red.

19. Various other fragments from bowls of shape 37 with remains of ornamentation.

20. Saucer with ivy-leaves embossed on rim by the "en barbotine" method.

21. Fragments of vases with sides expanding in a double curve. Plate III., 1.

Miscellaneous Fragments.

The following fragments, though not of Terra Sigillata, may be most conveniently mentioned here:—

1. Fragment of base. Pale pink clay, very friable: covered with dark red engobe which easily peels from the soft body. Apparently an imitation of Terra Sigillata.

2. Several small fragments of leather-coloured clay with surface either polished or covered with dark brown engobe: from very thin-sided carefully moulded vases. Two fragments are from open vessels with the outside delicately fluted in horizontal bands. Probably from South Gaul.

B. ROMAN-BRITISH WARES.

CASTOR WARE.

The finest of the Roman-British wares is that which was made in the kilns at Castor, the site of the Roman

Durobrivae, in Northamptonshire. Vases of this type are found in Northern Gaul as well as in Britain and it is probable that Castor was the chief rather than the only centre where such ware was manufactured. There is much variety in the Castor vases but the general characteristics of the fabric may be summed up as being (1) a pale, white to buff or red, clay with black or dark engobe, and (2) ornamentation in relief done either by the "thumb" or the "barbotine" process. In the former process the surface of the vase is worked by the potter's fingers while the clay is still soft into various projections and indentations, sometimes in regular patterns of knobs, semicircles, etc., and sometimes merely producing an irregularly broken surface. In the barbotine process the design is executed by applying a thick slip of the same light-coloured clay as the body and thus stands out in relief, and often also in colour, against the dark engobe of the vase. The slip is applied while the clay is still only leather-hard and the vase is afterwards completely fired.

The date of the ware is uncertain. Much of the characteristic "floral scroll" design seems to be derived from late Celtic forms, and it may well be that the ultimate origin both of the design and of the methods of technique is earlier than the Roman conquest.

The fragments of Castor Ware at Melandra are:—

1. Lower part of small vase on stem. Buff clay with brown-black surface. Rough workmanship. Band of floral scrolls round the body in "barbotine" technique. Plate III., 2.

2. Fragments forming an almost complete vase in form of an open-mouthed jar. Red clay with black engobe. Good workmanship. The rim is reeded on its outer surface. An incised groove separates plain band below rim from lower surface ornamented with "thumb" decoration of small irregular

projections resembling "rough-cast." Flat base without basering. Also fragments of smaller vases of similar type.

3. Neck of jug (Plate III., 3).⁸ Buff clay with black engobe.

PLAIN WARES.

The plainer wares of Roman Britain have not yet been classified on any satisfactory system that is both convenient and scientific. The simplest method for the present is to arrange the vases according to the general characteristics of the clay-body. By this method one gets four principal wares, the *Black*, *Grey*, *Red* and *Pale* Wares. Of these the first two are closely related in the shape and technique of the vases, and also the last two; but between these two wider groups there is practically no overlapping. The second group employs a decidedly more elaborate and stereotyped series of vase-shapes which seems to have come fully formed into Britain with the Roman invaders, whereas the simpler and more experimental shapes of the Black and Grey Wares seem to be rather those of the native British pottery. The names of vessels mentioned in Latin literature, so far as they can be attached to existing vase-shapes, seem all to belong to the group of Red and Pale wares.

Black Ware. This ware often receives the name of *Upchurch* from its occurrence in large quantities near Upchurch in the Medway marshes, but the style is not distinctive enough to limit it to any one locality. The body of the vases is black throughout, the clay being apparently permeated by smoke in the process of firing.

8. Necks of this shape are found on small jugs with globular body that come from the New Forest (Crockhill). This "New Forest Ware" is closely related to Castor in many respects but is usually fired at a greater heat, which often produces a surface with a metallic lustre and an almost maroon colour. It is possible that the neck at Melandra comes from the kilns at Crockhill rather than from those of Castor.

Where ornamentation occurs it consists either of very faintly indented lines crossing diagonally and forming a lattice pattern or of various groupings of small projecting knobs, incised zig-zag and wavy lines, etc.

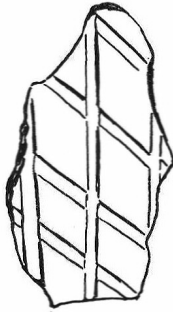
A large quantity of the Melandra fragments belong to this type. They are, for the most part, of coarse clay and rough workmanship. Sometimes the surface seems to have been polished to give it a slight lustre, but in general it has the natural texture of the clay. In one or two fragments at Melandra where portions of the vase have missed proper firing the clay is a pale buff. The decoration in almost all cases consists of the intersecting diagonal lines faintly impressed in the clay by some blunt instrument and showing rather as smooth markings on the rougher surface of the clay than actual incisions (Plate IV., 2 & 6). A few fragments have a band of more deeply impressed parallel zig-zag lines (Plate IV., 9). Most of the fragments are from open-mouthed jars, the sides of which are more or less vertical and turn in to the foot almost at an angle. The bottom of the vase is usually flattened without any basing. The rims of these jars show much variety in the angle and curve at which they turn outward from the vase. Besides the jars there are examples of circular flat-bottomed dishes, the bottom of which is decorated on the outside with a faintly impressed line carried in loops over the whole surface. These dishes have small projecting handles ornamented with incised concentric circles (Plate IV., 11 and 11a).

Two fragments of black ware are of somewhat different character from the rest. Both surface and body are a deep metallic black and the clay is very harsh in texture with hard firing. The vases must have been fired in a true "smother-kiln." One fragment is from the rim of a large globular vessel with frilled pattern under the rim: the

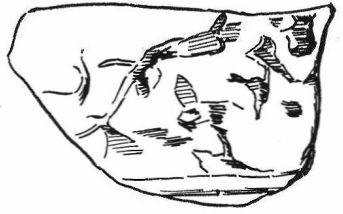
PLATE IV.



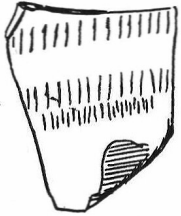
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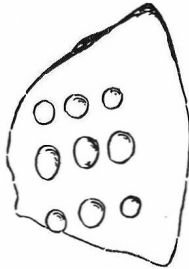
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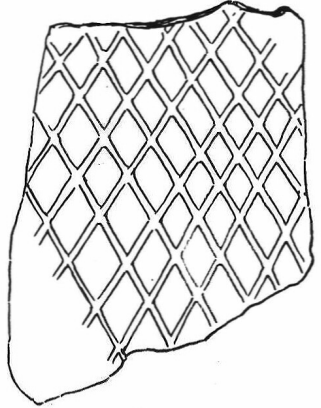
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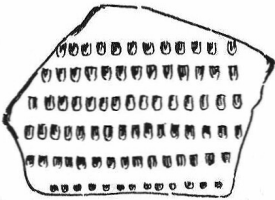
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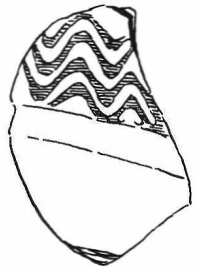
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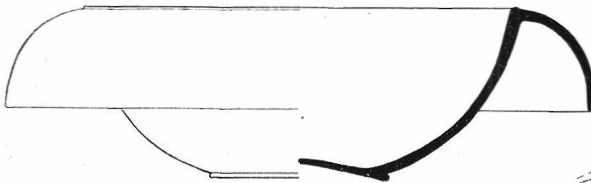
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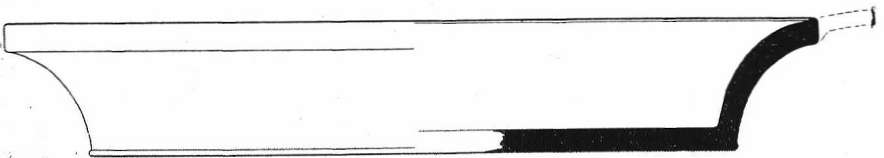
9.



10.



11a.



11.

other is a neck of similar shape to that represented in Plate III., 3.

Grey Ware. This ware is distinguished from the Black Ware by the colour and texture of the clay. The vases are closely related to those of black clay in shape and general character but the clay is always dull grey in colour and of a curiously soapy texture apparently very lightly fired. Even in the few cases where the clay is fired so hard as to be gritty and brittle it never becomes black. The vases vary from very delicately moulded and thin-sided forms to the roughest types of cooking utensils but the commonest shape is the same sort of wide-mouthed jar that prevails in the black ware, though it is usually more delicately moulded. The foot of this jar shows all stages intermediate between the merely flattened bottom and the fully formed base-ring. The rim is occasionally moulded to receive a lid, and a few saucer-shaped lids have been found. There is seldom any attempt to ornament the vases, but in a few cases little projecting knobs of clay are stuck on the vase or the surface is worked with the thumb into irregular ridges and hollows (Plate IV., 3 & 5).

A very fine and delicately executed example of Grey Ware is a bowl with a wide overhanging rim. Its shape would enable it to float in water and it may therefore have been used as a wine-cooler (Plate IV., 10).

Pale Ware. The clay is light and hard, varying in colour from white to cream or pink, and it is clearly distinguishable from the brick-red clay of the Red Ware. It is less easy to distinguish the vases by shape, nearly all the principal shapes of vases being common to both the Red and the Pale wares. Certain shapes, however, may be taken as being more distinctive of one ware than of the other. That which is more characteristic of the Pale Ware (though one or two examples in red clay have been found)

is the so-called mortarium or pelvis, an open vessel with large rim and spout, which was apparently used as a mortar since the inside is set with tiny pieces of flint and potsherds to give a rough surface for trituration. The rim frequently bore a potter's stamp, but in many cases the letters are undecipherable or meaningless. The following fragments with stamps have been found at Melandra:—

1. Fragments reconstructed to form a complete vessel. Stamp on rim at either side IIV. (Plate VI., 2).

2. Fragment with stamp FECIT in good letters.

3. Three fragments with doubtful stamps (Plate V., 1—3).

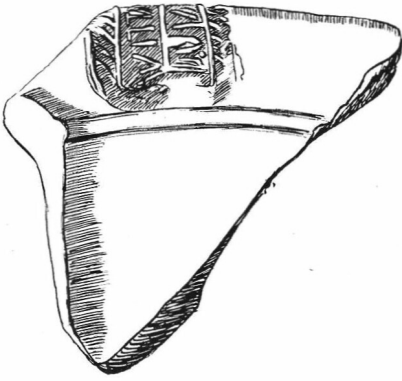
Red Ware. The clay is usually soft in texture and of a brick-red colour. The principal shapes of vessels are:—

(1) "Amphorae," large vessels chiefly used for holding wine. The bases are pointed for sticking the vase upright in the ground. Plain vertical handles on either side of the neck reach from rim to shoulder. The fragments come from vessels of very large size, the diameter of the mouth being as much as $7\frac{1}{2}$ inches, and the girth of the handles 6 inches. On one handle is a rough stamp SGA. Some of the large fragments may have come from open-mouthed storage jars (dolia) rather than from amphorae. Many fragments are of pale clay.

(2) Jugs or bottles, of which two chief types occur. One is that of a flat-sided lenticular flask with foot and two handles, probably rightly identified with the "ampulla" (Plate VI., 1). The other is a jug with globular body, tall neck and single handle, probably a "lagena" (Plate III., 4). These jugs occur in pale as well as red clay and show much variety in the shape of the lip, in several cases the soft clay having been pinched together across the mouth so as to form a covered spout (Plate V., 4 & 5).

A few thinly moulded fragments in red clay seem to come from square-sided bottles with pressed-in sides.

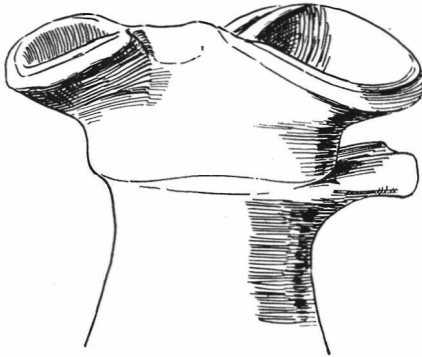
PLATE V.



1.



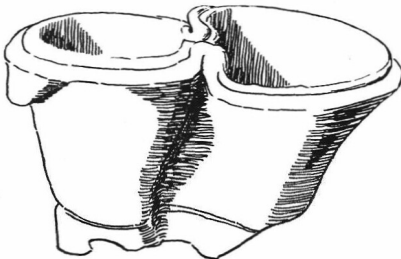
1a.



4.



2.



5.



3.

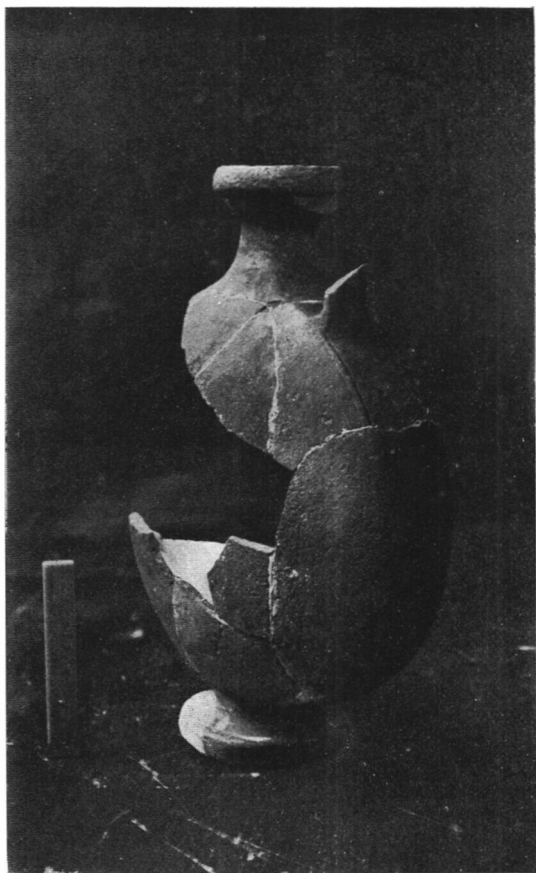
Pale Ware.

1-3 Mortaria Stamps.

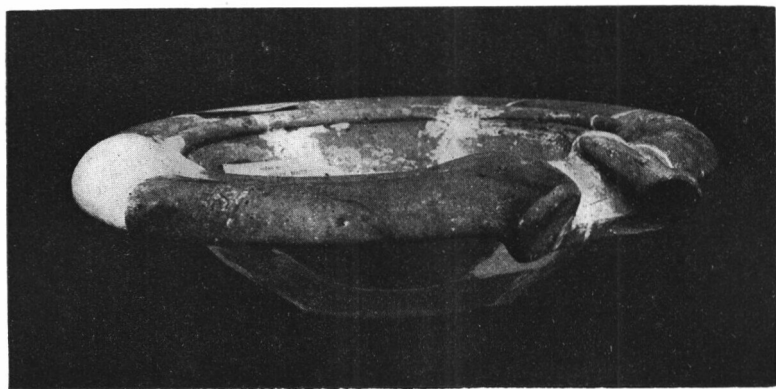
4-5 Necks of Jugs.

To face p. 90

PLATE VI.



I.

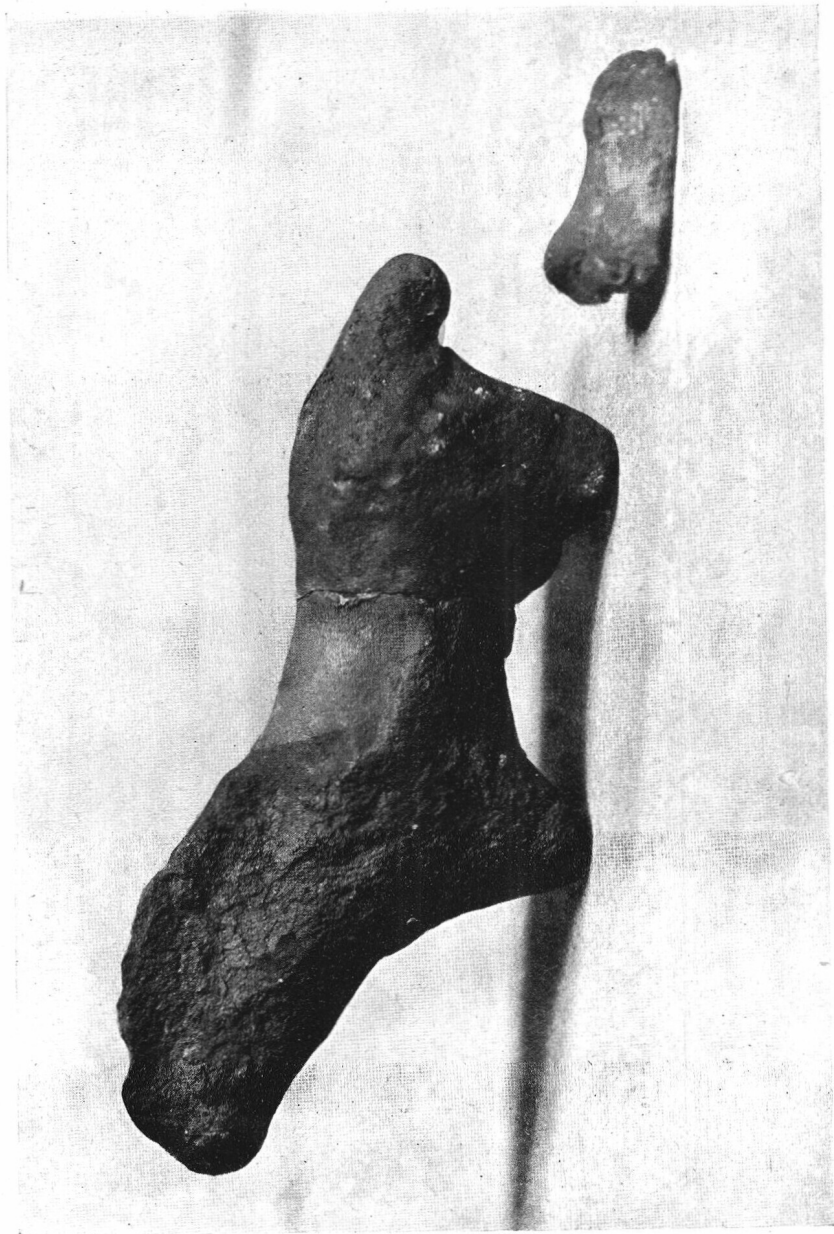


2.

1. Two-handled Flask.

2. Mortar.

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Clay Figure of Horse and Packsaddle.

(3) Strainers. Three fragments are from flat disks of clay perforated with small holes, and were perhaps wine-strainers. A larger perforated vessel was perhaps for squeezing fruit. It is a bowl of pink clay having a raised boss in the centre surrounded by three concentric ridges. Each of the hollows between these ridges is drained by four drain-holes.

(4) Open vessels such as flat-bottomed bowls and wide-mouthed jars. The fragments of these are not very numerous. Some vessels were slightly ornamented, as for example with a roughly executed "engine turned" pattern or with a wavy band of clay applied round the vase. A common form of ornament is that of circular "thumb" markings, either impressed or in relief, accentuated by incised circles around them.

Of unique type is a small open bowl of hard red clay with a projecting "false rim" ornamented with curved lines and dots in light-coloured slip (Plate III., 5).

Miniature Clay Figure of a Horse. This may be mentioned here as being of the same red clay as the vases. The legs are broken and the whole figure is very much damaged. Part of the surface of the back is better preserved than the rest, having apparently been covered by some sort of saddle. A much damaged object of red clay, found near the horse, seems to be the remains of this saddle, as it fits neatly to the back of the horse. It was apparently in the shape of a pack-saddle and attached by strings. The horse may have been a child's toy, or perhaps more probably a dedicatory offering for some shrine.

[For another suggestion see p. 71, note 38. The two views are not very far removed, as a solemn dedication on behalf of some *ala* quartered in the camp might, later on, come to share the sanctity of the shrine. In that case one would guess that the trappings of the little beast once held more valuable offerings. The conjectures are especially interesting because so far not a single other trace of any possibly religious object,

save the rude and problematic "Mithras" scratches (page 29) have appeared in the camp.

It is worth while also to record the statement of Professor William Ridgeway, the author of "*The Early Age of Greece*," "*The Origin of the Thoroughbred Horse*," etc., who visited the camp in 1905, that he could recall no other extant model of an *ephippion*.—ED.]

GLASS.

Unlike the pottery, the glass at Melandra is well preserved. It therefore lacks the iridescent beauty of decaying glass and retains the colours given to it in the process of manufacture. These colours are either various shades from brown to yellow or pale translucent greens and blues. In one case a deep, almost opaque, blue is used. Like most Roman glass the fragments from Melandra contain numerous small air-bubbles, flaws which cannot be avoided in the use of small furnaces such as those found at Warrington,⁹ where it is likely that much of the local glass was made.

The different forms of glass found at Melandra are:—

(1) Window glass. This was evidently cast by pouring the molten material on a flat stone, for the under side of the sheet of glass reflects the roughness of the stone, while the upper side has a smooth and somewhat wavy surface and a naturally bevelled edge.

(2) Small button-shaped discs of glass. These too are made by pouring a small quantity of molten glass on a flat stone so that the lower side is flat and slightly roughened, whilst the upper side is rounded and smooth. Most of the disks are of either black or white opaque glass, but there is one example of clear green glass. The disks may have been used as counters in some game, or else for ornament (as they are used on mule harness in Greece at the present day).

9. Cf. *Warrington's Roman Remains* by T. May, p. 37 seq.

(3) Glass vessels. The principal fragments are necks of square or cylindrical bottles with broad reeded handle joining rim and shoulder. The attachment of this reeded handle to the shoulder shows especial care and skill in glass-working.

One fragment is of deep blue glass with "pillar" mouldings.

TILES.

A number of complete tiles and a large quantity of fragments have been found at Melandra. All are of the red clay commonly used for tile-making, though owing to differences in firing the clay varies from an orange to a purple-red. The tiles vary in shape according to the use for which they were intended.

Floor tiles are square in shape, about $2\frac{1}{2}$ inches thick, and with sides varying from $6\frac{3}{4}$ to $10\frac{1}{2}$ inches. Several have semi-circular lines impressed upon one side of them, either to form a key for plaster or to give a clue for their arrangement. On three tiles VV has been incised with a sharp instrument while the clay was still soft. It is a potter's mark and not an official legionary stamp, but in view of the fact that it occurs three (perhaps four) times at Melandra and that it must have been universally recognised as the monogram of the XX. Legion 'Valeria Victrix' (see p. 114) it would be hardly reasonable to give it any other significance here. Another tile still bears the footprint of some small animal that ran across it while the clay was soft. Certain fragments have holes somewhat roughly pierced through them, perhaps for drainage. They differ from a thinner oblong tile where the holes are pierced at regular intervals and seem to be intended for the passage of hot-air in a hypo-

caust. One floor tile has had the edge bevelled all round after firing but for what purpose is not clear.

Roof tiles include both the large flat "tegulae" and the "imbrices" in the shape of a half cylinder. Their arrangement is shown in Fig. 2. The larger tegulae are about $18\frac{1}{4} \times 14\frac{1}{4}$ inches and 1 inch thick. They are oblong in shape, with a projecting ridge along each side which held the imbrices in place. This flange is discontinued for about 2 inches at the top of the tile so as to allow for the overlapping of an upper row of tiles. Close to the top

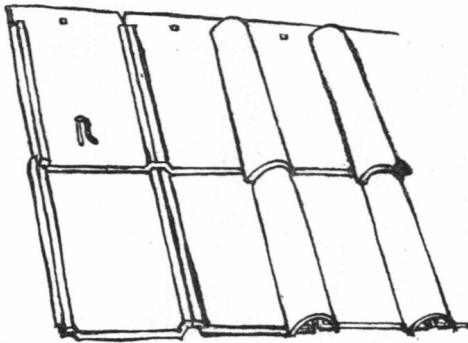


Fig. 2.—Roof Tiles.*

edge of the tile is a square hole for the nail which held the tile in position on the roof. On the under side the roof tiles are scored with diagonal incisions to form a key for plaster. The upper surface seems often to have been washed over with a slip of finer clay which takes a somewhat deeper red than the clay body. The lower edge of the tile is in several cases marked with an R roughly inscribed with the finger or some blunt instrument. On one fragment there is a V inscribed in the same way.

* To show the arrangement of the tiles I have been glad to borrow the scheme used by Mr. Ward, *Geltygaer*, p. 28.

Another has IHS or INS rudely incised with a pointed instrument. The tile is broken in front of the first letter. The lower edge of this tile being bevelled it may well have belonged to the lowest row on the roof where an inscription would be most visible.

With the abundance of good building stone available in the district, tiles would not be required for wall construction. One tile, however, is in the shape of a voussoir of an arch.

J. H. HOPKINSON.