

II.

GLASS ARMLETS IN BRITAIN.

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(Read 11th April.)

While discoveries of glass armlets in Scotland are widely known, the extent of the local manufacture of such ornaments is by no means fully appreciated, despite the existence of the published accounts of the Traprain Law excavations. Further, ideas of their distribution and of the period covered by the various forms are somewhat vague: inadequacy of the data from sites other than Traprain Law has been responsible for whatever confusion still exists. Anyone scanning some of these published reports from the pens of the older antiquaries must be discouraged by the scant reference which has been made to the discovery of glass armlets, and particularly to their find-spots, if indeed reference has been made at all: it would almost seem as though to them glass armlets were of no account.

In the present paper the author has brought together as many as possible, if not all, of the known specimens of glass armlets found in Britain; he also ventures to put on record his opinions as to the periods during which the various forms were made, and to indicate the lessons to be learnt from the distribution of the specimens examined.

Not the least interesting feature of the glass armlet is to be found in its infinite variety, not only of form, but also of colour, and of combinations of colours. There is also a marked variation in diameter and in weight. There is, for instance, the heavy, plano-convex (almost half-hooped) type, which is, perhaps, the most striking form of all: at the other extreme there is a small slender form, with an internal diameter of only $1\frac{1}{8}$ inch, formerly hailed as an armlet,¹ but which, in reality, is a pendant (as will be explained later). Faced with so many contrasting forms, it seemed desirable to divide up our large collection of glass armlets into various type-series. It has been found possible to distinguish three main types in the varied and somewhat heterogeneous collection at our disposal. This division into three main types was arrived at by analysing form, technique of manufacture, and colours utilised. Thus, the heavy armlets illustrated in figs. 1 and 2, with

¹ *Arch. Æl.*, vol. xxv, p. 286.

their bands of enamel covering cores of uncoloured translucent glass, could hardly be confused with any of the succeeding armlets: they are therefore said to belong to a single type—Type 1. The armlets illustrated in fig. 3 are different from the foregoing: they have cord mouldings applied horizontally to glass cores which have no applied bands of enamel, but the glass of which is itself either coloured or left uncoloured. These armlets also present a contrast to the succeeding examples, so that they may be claimed to belong to a second type—Type 2. With the remaining armlets the task is not so easy: there is such a wide variation in cross-section and in colour, or in combinations of colours, that at first it might seem as if many types were represented here: actually, however, a little careful study will reveal that in reality they belong to a single, third type—Type 3—because it will be seen that all have the same form in cross-section, so that variation is really confined to colour, or to combinations of colours. The choice of colour, however, was by no means a haphazard one: a single colour, or a single combination of colours, might be faithfully reproduced half a dozen, or indeed a hundred times, and these facts enable us to isolate at least 10 sub-types amongst armlets which, in so far as form is concerned, belong to a single type. These sub-types have been labelled Type 3, A–J.

Type 1.—The heavy, plano-convex type of glass armlet is undoubtedly the earliest form, as will be demonstrated later on. So far as is known there are 19 fragments of this heavy type: 13 from Traprain Law, 1 from Maxton, Roxburghshire, 1 from the Roman fort at Camelon, Stirlingshire, 1 from Monquhitter, Aberdeen, 2 from the Culbin Sands, and 1 from Dun Beag, Struan, Skye. Generally speaking, all these fragments have a core of translucent glass which has been coated with obliquely set bands of enamel in yellow, in dark crimson, and in dark blue. In fig. 1, Nos. 1 and 3 (from Traprain Law) have been coated with bands of chrome yellow and dark crimson enamel: in the case of fig. 1, No. 2 (from Traprain Law), there are spots of dark crimson enamel set in the band of yellow enamel, as well as a narrow band of dark crimson. In fig. 1, No. 4 (from Traprain Law), a spot of yellow enamel has been set in the middle of the band of crimson enamel set between bands of chrome yellow. In fig. 1, No. 5 (from Maxton, Roxburghshire), and in No. 6 (from Traprain Law), the bands of enamel are of chrome yellow and dark blue; and in both cases spots of yellow occur in the middle of the blue band. Fig. 1, No. 7 (from Dun Beag, Struan, Skye), is unique: the core of translucent glass has been coated

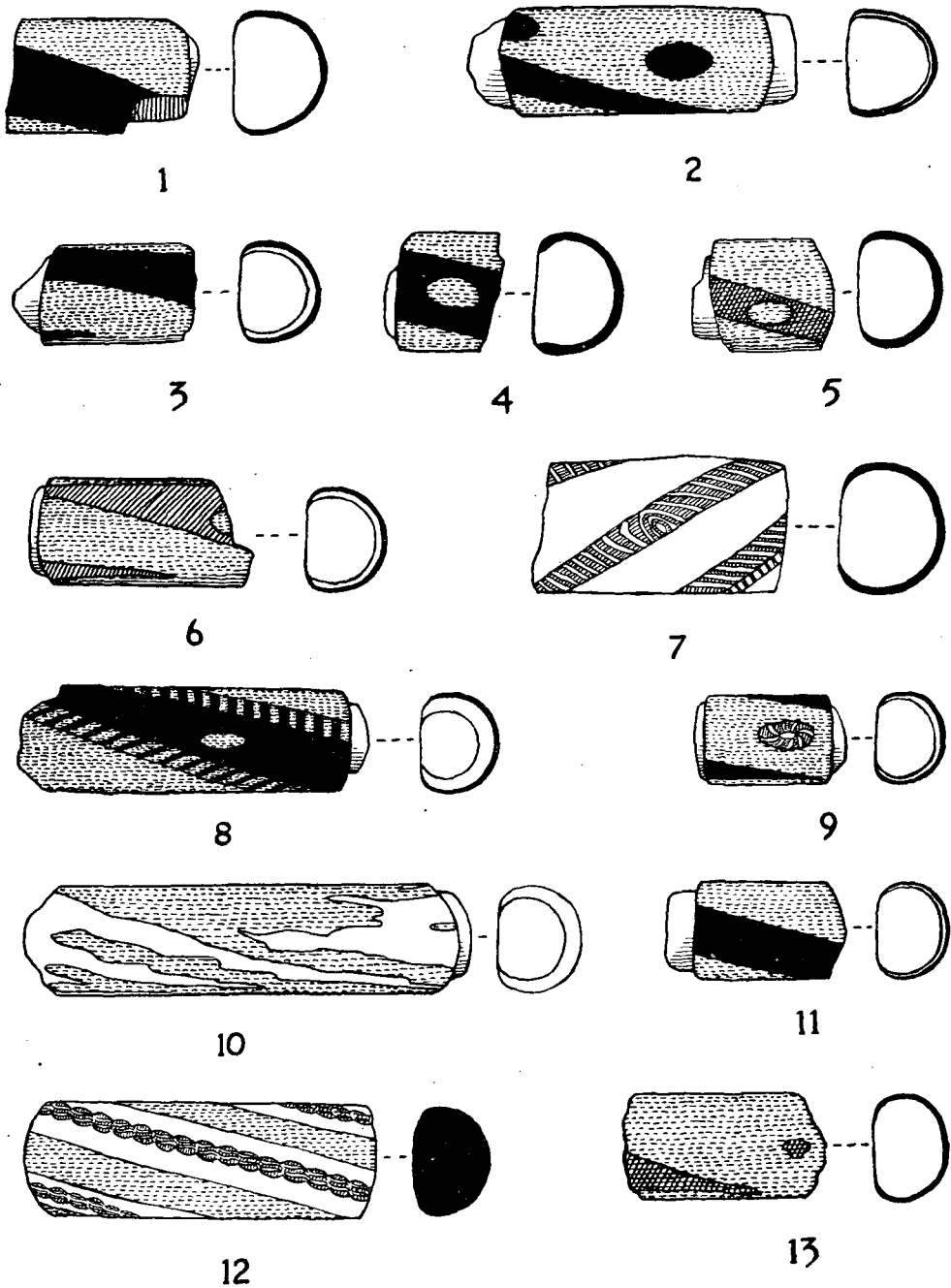


Fig. 1. Glass Armlets of Type 1. Nos. 1, 2, 3, 4, 6, 8, 9, 10, 13, Traprain Law, E. Lothian; No. 5, Maxton, Roxburghshire; No. 7, Dún Beag, Struan, Skye; No. 11, Camelon, Stirlingshire; No. 12, Monquhitter, Aberdeenshire. (†).

with bands of white enamel separated by cord mouldings of white and honey colour which have subsequently been ground down to make a smoothly rounded surface: the mouldings do not protrude. A somewhat similar fragment, though in different colours, comes from Traprain Law (fig. 1, No. 8), a fragment which has bands of chrome yellow and dark crimson enamel. In the middle of the band of dark crimson there is a spot of yellow enamel, and on either side of the same band there is

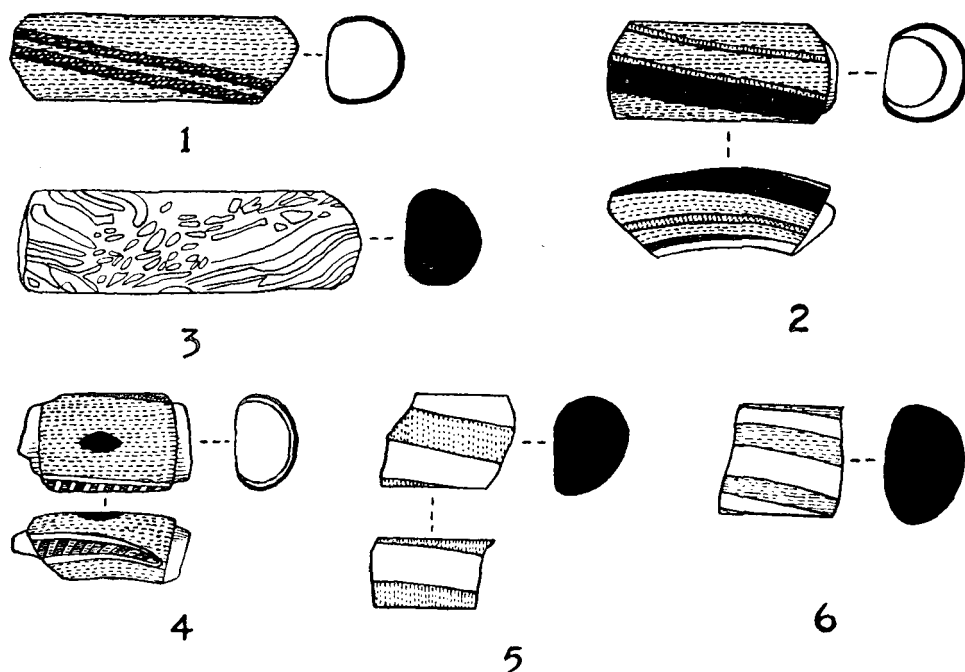


Fig. 2. Glass Armlets of Type 1. Nos. 1, 2, 3, 4, Traprain Law; Nos. 5, 6, Culbin Sands, Morayshire. (†).

a cord moulding of yellow and crimson which, as in the case of the Dun Beag armlet, has been ground down to make a smoothly rounded surface. Fig. 1, No. 9 (from Traprain Law), has a band of chrome yellow bordered on either side by wedge-shaped bands of dark crimson enamel. In the centre of the yellow band there is set an oval formed of a cord pattern of blue and white surrounding a yellow centre. A somewhat similar fragment (also from Traprain Law) is shown in fig. 2, No. 4. Here, however, a spot of crimson enamel takes the place of the oval formed of a cord pattern (as above), whilst the places of the wedge-shaped bands of crimson (of fig. 1, No. 9) are here taken by a

cord pattern, the cord being of yellow and blue, and ground down to make a smoothly rounded surface. One other specimen (fig. 1, No. 13, from Traprain Law) has a wedge-shaped band, this time in blue enamel: the remaining enamelled surface is in yellow, and there is a small spot of blue enamel. Fig. 1, No. 11 (from Camelon, Stirlingshire), has bands of dark crimson and chrome yellow enamel. Fig. 2, No. 1 (from Traprain Law), has been coated with chrome yellow enamel, and is traversed obliquely by two parallel lines of dark blue separated by a yellow line. In fig. 2, No. 2 (also from Traprain Law), the translucent glass core is enamelled in bands of chrome yellow, dark crimson, and green—the green being introduced in the form of thin stripes.

Nos. 10 and 12 of fig. 1, and Nos. 3, 5, and 6 of fig. 2, exhibit slight variations in technique of manufacture, although they are of precisely the same type. Fig. 1, No. 10 (from Traprain Law), has a core of translucent, yellowish-green glass which has been enamelled with chrome yellow, not in bands, but in a purposely haphazard fashion, leaving parts of the core uncovered. In No. 12 of fig. 1 (from Monquhitter, Aberdeen¹) we have spaced, obliquely set bands of chrome yellow enamel, leaving visible the yellowish-green translucent core. Set directly into this core, however, are cord mouldings of white and yellow, ground down subsequently to make a smoothly rounded surface—the mouldings do not protrude. The same technique in manufacture has been followed in the case of the two examples from the Culbin Sands (fig. 2, Nos. 5 and 6), but there are no cord mouldings: in the case of No. 5 the bands are of sage green, and in the case of No. 6 of golden yellow, whilst in both cases the cores are of yellowish-green translucent glass. A very unusual, and indeed unique, kind of armlet is the example of schmelze glass of a purplish tint, from Traprain Law (fig. 2, No. 3).

It will be appreciated that these armlets are remarkably uniform in type—with the exception of the two specimens from the Culbin Sands, which not only differ in the matter of the colours employed, but which, in view of their irregular shape, seem to be the work of an artificer not well used to turning out this kind of object. Almost certainly they are local productions.

In regard to fig. 1, Nos. 1, 2, 3, 4, 5, 6, 8, 9, 10, and 11, and fig. 2, Nos. 2 and 4, it will be observed that, in each specimen, either one or both ends have been cut, or ground down so as to produce a neck. Dr A. O. Curle has very ably suggested that the reason for such treatment would be for the purpose of applying a metal collar or mount in order to join together two segments:² he further suggests that this

¹ *Proc. Soc. Ant. Scot.*, vol. lxxvi. p. 295.

² *Ibid.*, vol. I. p. 105.

idea may have evolved after the armlets got broken, in order to prolong their period of usefulness. Some of the segments so treated are small, as, for instance, fig. 1, No. 9: and the fact that such treatment was resorted to presupposes a particularly long life for a fragile article, and it may be that the segments which we now possess were those which fell out of their mounts and got lost. It is as well that we should bear these points in mind when studying the contexts in which the specimens from Traprain Law were found. Of the 13 specimens from Traprain Law, 5 were found in the bottom level, 7 in the third level, and 1 in the second level, as the following table will show:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
		No.	No.	No.
Fig. 1	1
	2	..
	3	..
	4	..
	6
	..	8	..	..
	9
Fig. 2	10	..
	13	..
	1	..
	2	3
	4
Total Armlets	1	7	5

The other relics (and especially the pottery) from Traprain Law show that the bottom level is a late first- and early second-century level, whilst the third level is a second-century one.¹ It thus becomes obvious that armlets of this type were being discarded or lost as early as the latter half of the first century A.D.: the second-century examples might well have been survivals from the first century. This view gains support from the fact that the type is practically unrepresented on Roman sites—a somewhat significant fact when it is remembered that the type is

¹ Lack of space forbids a full discussion in regard to the dating of the various levels at Traprain Law, but the periods assigned to these same levels are based on the published reports of the excavations in *Proc. Soc. Ant. Scot.*, vols. xlix., 1., and liv.-lviii.

fairly widespread:¹ as we have seen, these armlets penetrated as far north as the Culbin Sands, as far west as Skye, but no farther south than Maxton, Roxburghshire. Type 1 is unknown in England—a matter of some importance. And only a single fragment has been found on a Roman site—at Camelon—another significant fact. But, as Sir George Macdonald has proved,² at Camelon the abundance of early pottery picked up in the immediate neighbourhood of the fort shows that there was a prolonged occupation of the site during the Agricolan epoch, and thus the discovery of this single fragment of armlet of Type 1 on a Roman site is still consistent with the view which we wish to propound, namely, that the actual manufacture of the heavy, plano-convex type of glass armlet was entirely confined to the latter half of the first century A.D. That being so, perhaps we have here the explanation of the failure of the armlets of Type 1 to penetrate southwards: the Roman advance into north Britain probably rendered trade in that direction difficult, if not impossible. On the other hand, one of the northern examples (that from Monquhitter) was found in a cairn along with Roman relics,³ which, although apparently undatable,⁴ were nevertheless acquired at a time when it was possible to export such objects to the north of Scotland.⁵ It seems, therefore, that armlets of Type 1 were made over a short period during the latter half of the first century A.D., and that manufacture of the type had ceased before the inhabitants of Traprain Law gave their allegiance to the new military power, and before the hill-top town became a flourishing centre of Romano-British culture.

Type 2.—An equally ornate, though slightly less heavy, type of glass armlet succeeded the armlets of Type 1; and that armlets of Type 2 quickly succeeded those of Type 1 is almost proved by No. 1 of fig. 3 having a ground-down neck for the reception of the usual metal mount, and by No. 5 of fig. 3 being, in section, very much akin to the heavier type which we have just studied. Fig. 3, No. 1 (from Traprain Law), is a fragment of a very beautiful armlet of cobalt blue translucent glass, bearing along each side and at the apex cord mouldings of blue and white. Alternating between the mouldings are yellow spots. Fig. 3,

¹ Type 1, as we shall presently discover, has a wider distribution than any other type of glass armlet.

² *Jour. Roman Studies*, vol. ix. p. 130.

³ *Proc. Soc. Ant. Scot.*, vol. lxvi. p. 295.

⁴ It is worth noting that one of the objects was of schmelze glass, and might well have been made during the same period as the fragment of armlet of similar glass from Traprain Law.

⁵ This must have occurred during the first century, since none of the later types of armlet (some indubitably of second-century date) ever penetrated north of the Forth.

No. 2, which is a surface find from Newstead, is of similar form and colour, but the three cord mouldings are grouped together at the apex.

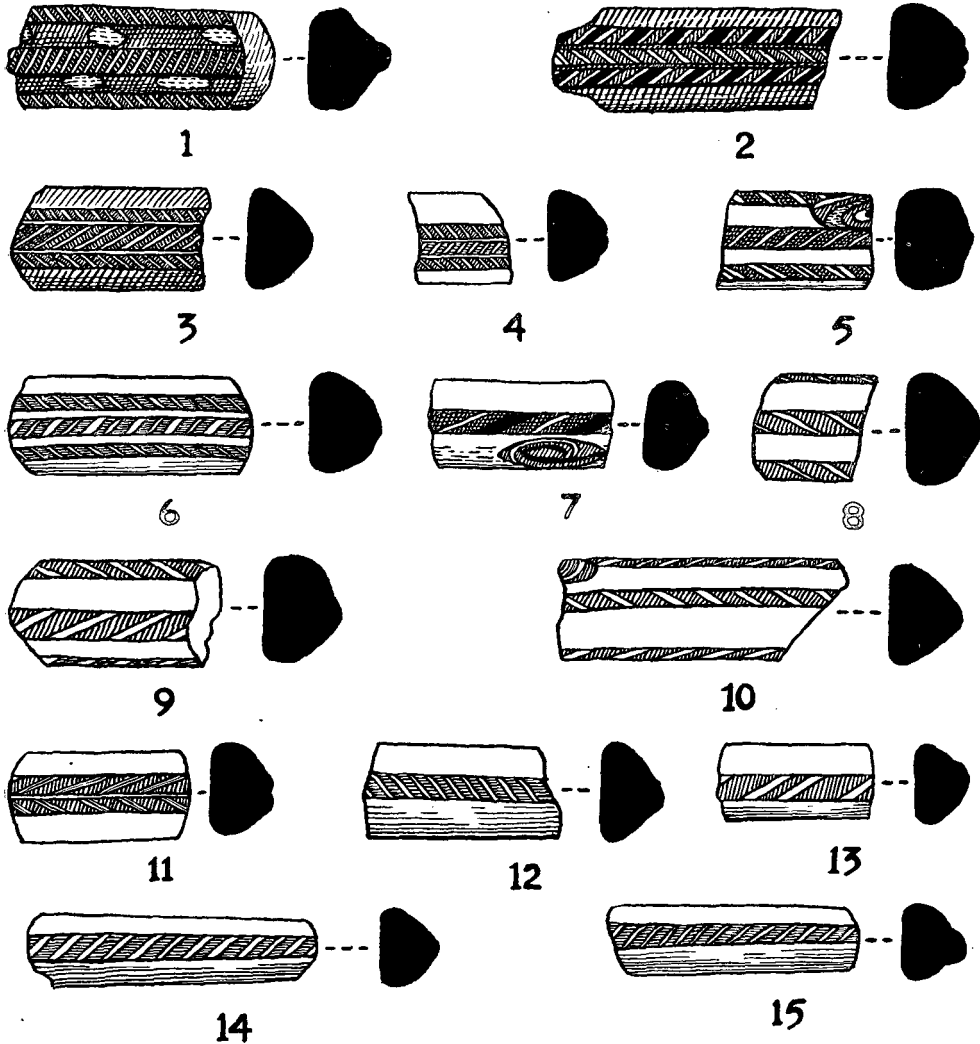


Fig. 3. Glass Armlets of Type 2. Nos. 1, 3, 6, 8, 9, 12, 13, 14, Traprain Law; Nos. 2, 4, 11, 15, Newstead, Roxburghshire; No. 5, Whitehall, Earlston, Berwickshire; No. 7, Chesterhall, Bowden, Roxburghshire; No. 10, Borness Cave, Kirkcudbright. (‡).

The middle cord moulding is in white and blue, but the other two cord mouldings are in red, white, and blue. A fragment of a similar armlet

was found in the Roman fort at Manchester.¹ It will be noticed that in these examples the cord mouldings protrude slightly above the surface of the armlets: no attempt has been made to grind them down. But, in the case of fig. 3, No. 3 (from Traprain Law), which is also of cobalt blue, the cord mouldings of white and blue have been considerably ground down, so that the surface of the armlet is almost smoothly rounded. A fragment of a similar armlet was found at Verulamium,² but the blue and white cord mouldings stand out in relief. The colours and the grouping of the cord mouldings of fig. 3, No. 4 (another surface find from Newstead), are identical with those of the foregoing specimen, but the armlet itself is of translucent, uncoloured glass—the light bottle-green colour, which is also typical of the succeeding armlets of Type 2 (with the exception of fig. 3, No. 5), being the natural colour of the glass. In fig. 3, No. 5 (from Whitehill, Earlston, Berwickshire), the cord mouldings have been more widely spaced, and there is also a spot in blue, yellow and white enamel. The armlet itself is of light blue translucent glass. In the case of fig. 3, No. 6 (from Traprain Law), and of a similar example from the Roman fort at Housesteads, Northumberland,³ the cord mouldings are of white and blue, but the single cord moulding of fig. 3, No. 7 (from Chesterhall, Bowden, Roxburghshire) is in red, white and blue; there is also an oval spot of blue enamel, bearing red and white spirals. In fig. 3, Nos. 8 and 9 (from Traprain Law), the cord mouldings are of white and blue: a fragment of a similar armlet was found on Donald's Isle, Loch Doon, Ayrshire. Fig. 3, No. 10 (from Borness Cave, Kirkcudbright), has cord mouldings and a spot of enamel in white and blue. In the case of fig. 3, No. 11 (from Newstead), the number of cord mouldings (in this case in blue and white) has been reduced to two, whilst in Nos. 12–15 there is but a single cord moulding in blue and white. This reduction in the number of cord mouldings was brought about by the diminution in size of the armlets themselves. It is doubtful whether or not Nos. 14 and 15 were armlets at all. No. 12 of fig. 3 is from Traprain Law: identical fragments of armlets were found at Caddonlea Camp, Selkirkshire, and at Newstead.⁴ No. 13 of fig. 3 is from Traprain Law: identical specimens were found at Newstead, and at Corbridge, Northumberland. No. 14 of fig. 3 is from Traprain Law: an identical specimen was found in the Roman fort at Elslack, Yorkshire.⁵ No. 15 of fig. 3 is from Newstead: others like it were found at Traprain Law, and also at the Roman fort at Chesters, Northumberland.

¹ Bruton, *The Roman Fort at Manchester*, pl. 42.

³ *Arch. Æl.*, vol. xxv. p. 286.

⁵ *York. Arch. Journ.*, vol. xxi. p. 152.

² Wheeler, *Verulamium Report*, p. 210.

⁴ Curle, *Newstead*, pl. xci.

The following table shows the contexts in which the Traprain Law specimens were found:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
			No.	No.
Fig. 3	1	..
	3	..
	6	..
	8	..
	12	..
	13
	14
			like 15	
Total Armlets	6	2

The evidence from Traprain Law is thus in favour of a second-century date for Type 2, since the majority of the fragments found on that site came from the third level. Whether or not this is a true indication of the period in which this type of armlet was in favour is not very clear. It would almost seem that this dating is too late, in view of our previous remarks in regard to form. In addition, we have to face the fact that the Elslack specimen, a later form than No. 1 of fig. 3, was found at a depth of 5 feet on a site which is probably Flavian in date, since a large proportion of the pottery is attributable to the first century. Reconstruction apparently did not take place before 210, and that date does not accord well with the Traprain Law evidence. The matter is further complicated by the discovery of the Verulamium specimen in the third-century debris over the "triangular" temple.¹ The Newstead finds were mostly surface finds, whilst the specimens from Corbridge and Chesters are unlocalised, and therefore cannot be dated. The Housesteads specimen, however, is said to have been found in a secondary clay floor in barrack room vi, 2.² Mr I. A. Richmond informs the author that the pottery from this floor cannot now be traced, otherwise it would have been possible to date this specimen. Even so, it would perhaps be as well to assume that the levels in which the Traprain Law specimens were found give us the period when armlets such as these were either lost or discarded, and that armlets of Type 2 were really manufactured in the latter part of the first century and the first half of the second century.

The type has a rather curious distribution. It did not penetrate

¹ Wheeler, *Verulamium Report*, p. 210.

² *Arch. Æl.*, vol. xxv. p. 286.

north of the Forth, is chiefly found in the district between the Antonine Wall and Hadrian's Wall, but single specimens found their way to Elslack, Manchester, and even to a site as remote as Verulamium. This distribution is the very antithesis of the distribution of Type 1: conditions in the country must have been reversed; from a supposed trade barrier originally having been in the south (as seemed evident from the absence of armlets of Type 1 even in the Hadrian's Wall district), by the time that armlets of Type 2 were being made a second trade barrier seems to have been where the Antonine Wall is situated. At least one fact emerges from a study of this distribution: the Roman invaders had already established dominion over the Lowlands, and Romans or Romano-Britons were at least carrying glass armlets southwards on their persons, although they were not engaged in trading these objects.

Type 3.—The remaining armlets which will now come under our notice may be said to belong to a single type. That this is so can be easily seen from the standardisation of form which is throughout apparent: we have only got to ignore the differences in colour to observe that we are dealing with what is essentially the same type of armlet. Even the methods employed for decorating a plain surface, not by bands of enamel or by cord mouldings, but by inlay of various colours, done at first in the form of artless meanders, is the same throughout. But, since a single combination of colours is so often repeated, each armlet bearing such a combination of colours can be said to belong to a sub-type of Type 3.

In section, armlets of Type 3 are roughly triangular: but variations on the standard form occur, owing to the fact that sometimes one angle is apt to be rounded-off, and sometimes all three angles are so treated. But the armlet is, nevertheless, essentially triangular in section, in spite of these minor changes. Further, these minor changes in form were not purely accidental, because it so often happens that a single variation in the strictly triangular form is frequently repeated: this may be due, in some degree, to the fact that a single mould (and it seems that stone moulds were used) might have been responsible for the shaping of numerous examples on a single site; but it is further to be observed that specimens found on fairly widely separated sites also show exactly the same characteristics. Even so, a suitable explanation might be provided by the assumption that all these specimens exhibiting similar characteristics possessed a common origin, an idea which we find rather attractive.

In any case, it is extremely doubtful whether or not we are justified

in attributing any typological significance to these minor changes: except in so far as we have distinguished three main types, and a certain number of sub-types of one of these main types, typology may be regarded as being of little assistance to us in our present study.

Amongst the several sub-types of Type 3 there is little justification for choosing one rather than another for primary consideration; but we pick upon the opaque white armlet, because, not only is it the commonest form of all glass armlets, it is also one of the few forms which can be dated, even if only approximately. This, then, is our first sub-type—Type 3, A.

Type 3, A.—A complete armlet from Flanders Moss, Stirlingshire, is shown in fig. 4, No. 1. Its internal diameter is $2\frac{5}{16}$ inches, and it is

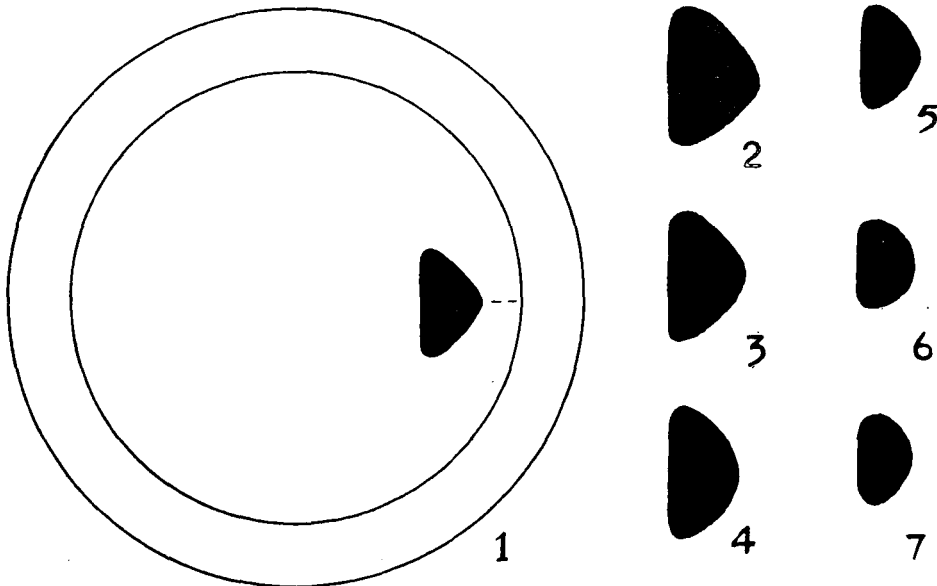


Fig. 4. Glass Armlets of Type 3, A. No. 1, Flanders Moss, Stirlingshire; No. 2, Borness Cave, Kirkcudbright; No. 3, Traprain Law; No. 4, Archerfield Cave, Dirleton, E. Lothian; Nos. 5, 6, 7, Traprain Law. (†).

triangular in section. A fragment of an identical specimen was found in the Roman fort at Corbridge, Northumberland. Obviously, since armlets of Type 3, A, are so common (88 fragments were found at Traprain Law), it is only possible here to illustrate a few representative sections. There are, of course, as we would expect, very slight variations in other specimens from the examples selected; but, in general,

it may be said that the six sections illustrated in fig. 4 are actually representative of the 104 specimens which have come under our notice. In view of the almost complete absence of intermediate forms, the remarks set down above apply with particular force to the opaque white glass armlet.

With the change of section, the gradual diminution in size is notable. The heaviest known fragment is the example from Borness Cave, Kirkcudbright (fig. 4, No. 2). A less heavy, though similar, form is No. 3 of fig. 4, which is well represented at Traprain Law (where 18 examples were found), and fragments of armlets of this form were found also in the Dowalton Loch crannog, Wigtownshire,¹ in the broch of Edin's Hall, Berwickshire,² in the Roman fort at Corbridge, Northumberland, and in the very remarkable native settlement situated between the Roman Wall and Vallum at Milking Gap, High Shield, in the same county.³ A fragment of what may have been a similar form was found at Greaves Ash, Linhope.⁴

Deviating little in respect of form, but decreasing in weight, armlets of Type 3, A (as in fig. 4, No. 5) continue to be well represented at Traprain Law, where a further 20 examples were found: an identical specimen was found on the Glenluce Sands, Wigtownshire. Henceforth we note that attention was turned to rounding-off the angles: in the case of fig. 4, No. 4 (from Archerfield Cave, Dirleton, East Lothian), it was the apex which was rounded-off. There are seven examples of this form from Traprain Law, whilst others were found in the Dowalton Loch crannog, and at the Roman fort at South Shields, Co. Durham. Next, all three angles were rounded, as in fig. 4, No. 6. Ten fragments of this form were found at Traprain Law, and a single specimen at Birrenswark, Dumfries.⁵ The steady decrease in weight of the armlet brought about a still further rounding-off of the angles, as in the case of fig. 4, No. 7 (10 examples from Traprain Law), until finally we have the opaque white glass ring pendant, slender and light in weight, a form which is fairly widespread, and a complete example of which is illustrated in fig. 5, No. 1. Its internal diameter is only $1\frac{1}{8}$ inch, which seems to have been a standard size, as we shall see presently. No less than 19 fragments like it were found at Traprain Law, whilst 1 was found at Birrenswark, Dumfries, 3 at Housesteads, Northumberland,⁶ and 1 at Corbridge, in the same county.

Bosanquet thought that these diminutive examples were children's

¹ *Arch. Coll. of Ayr and Galloway*, vol. v. p. 103.

² *Arch. Æl.*, 4th series, vol. xv. p. 345.

³ *Proc. Soc. Ant. Scot.*, vol. xxxiii. p. 247.

⁴ *Proc. Ber. Nat. Club*, 1879-81, pl. iv.

⁵ *Proc. Ber. Nat. Club*, 1857-62, p. 293.

⁶ *Arch. Æl.*, vol. xxv. p. 286.

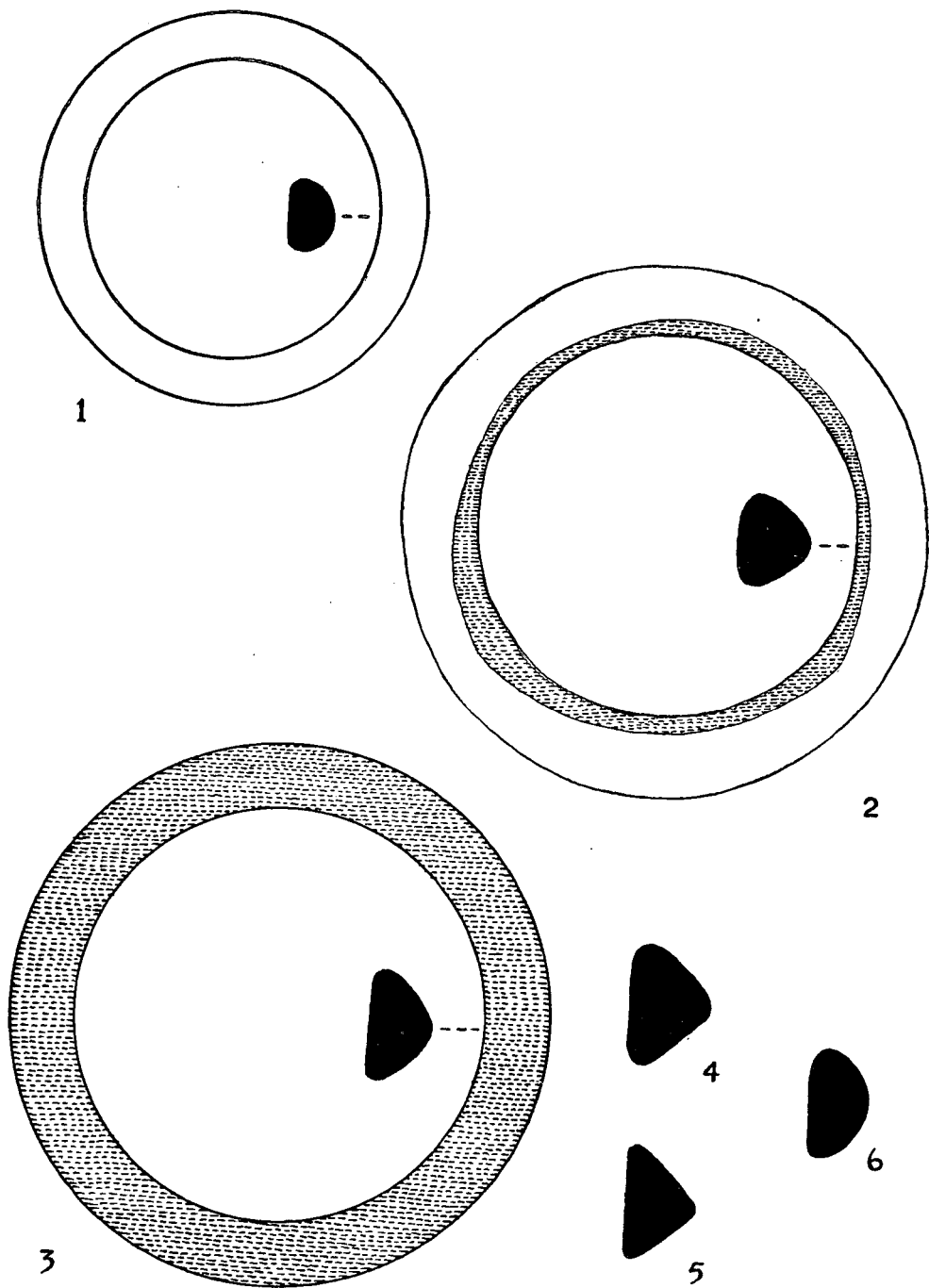


Fig. 5. Glass Armlets of Types 3, A-B. *Type 3 A*: No. 1, Traprain Law, E. Lothian; No 2, Boghead, Kintore, Aberdeenshire. *Type 3 B*: No. 3, Dowalton Loch Crannog, Wigtownshire; Nos. 4, 5, 6, Traprain Law. (†).

armlets, an ascription which need not be taken seriously. They were ring pendants, as we have said: they were probably suspended from a torc. Slightly heavier examples, dating from la Tène I. times, are known on the Continent: Déchelette¹ figures specimens from Ciry-Salsogne, Aisne, and these show clearly the manner in which they were suspended from the torque.

The following table shows the contexts in which the Traprain Law specimens were found:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
Like fig. 4, No. 3 . . .	3	3	5	6
„ „ „ 4 . . .	1	1	3	4
„ „ „ 5 . . .	1	6	6	7
„ „ „ 6 . . .	1	6	3	..
„ „ „ 7 . . .	..	..	4	6
„ fig. 5, No. 1 . . .	3	7	5	5
Total Armlets . . .	9	23	26	28

Collectively, it would seem that armlets of Type 3, A, were made over a period of some length—in fact from the first till the fourth century, there being a greater output during the first and second centuries than at any other time; but we do not feel happy about the late dating of several of the armlets, unless, of course, they really were made long after all other types had long been forgotten. So far, we have no support from elsewhere for the late dating: but positive evidence is forthcoming for an early second-century dating, and even for a first-century dating, if we can place any reliance in the published statement with regard to the three fragments from Corbridge, which are said to have been found in the so-called sanitary ditch.² This ditch is supposed to be contemporary with the “early fort”; but whether or not the term “early fort” applies to the Flavian foundation is not very clear: Mr Eric Birley counsels the author to treat the evidence with extreme reserve. The specimens from Dowalton Loch were found in a crannog which also yielded a rim of samian of form 37,³ so that the armlet might conceivably belong to the early second century. But the most positive evidence comes from

¹ *Manuel*, II. p. 1322.

² *Arch. Zbl.*, vol. xii. p. 235.

³ *Arch. Coll. of Ayr and Galloway*, vol. v. p. 101. See also *Proc. Soc. Ant. Scot.*, vol. lxvi. p. 284.

the native settlement at Milking Gap, High Shield, Northumberland. Here occupation of the site was from A.D. 122 to 180, but was most intensive from 122 to 150.¹ It would therefore probably be correct to assume that the armlets of Type 3, A, found there belong to the first half of the second century. On the other hand, the single specimen found at Elslack might have got there some time after the reconstruction of the fort had been carried out in the early third century.

Like the armlets of Type 2, those of Type 3, A, are chiefly confined to the district between the Antonine Wall and Hadrian's Wall. The southernmost example is that from Elslack.

Type 3, B.—The Dowalton Loch crannog yielded another armlet (shown completed in fig. 5, No. 3) which is identical in every way with the armlets of Type 3, A, except that, instead of being opaque white, it is opaque yellow. Armlets of the new type are scarcer than those of Type 3, A, and they do not seem to have been manufactured for so long a period as the opaque white type.

There are 17 fragments of armlets, exactly like the Dowalton Loch specimen, from Traprain Law: others like it were also found at Birrenswark and at Corbridge. There are 2 fragments like fig. 5, No. 4, from Traprain Law. No. 5 of fig. 5 is a curious specimen, triangular in section: this and another like it were found at Traprain Law. There are 4 fragments of armlets like fig. 5, No. 6, from Traprain Law, and another was found in Borness Cave, Kirkcudbright.

The contexts in which the Traprain Law specimens were found seem to suggest that armlets of Type 3, B, were not favoured for so long a period as were those of Type 3, A.

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
Like fig. 5, No. 3	2	7	8
" " " 4	2
" " " 5	1	1
" " " 6	2	2	1
Total Armlets	4	10	12

¹ *Arch. Zbl.*, 4th series, vol. xv. p. 341.

Thus the evidence from Traprain Law suggests that armlets of Type 3, B, belonged chiefly to the late first and to the second century. The fragment from the Dowalton Loch crannog may be said to be contemporary with the fragment of Type 3, A, found there, and this fact tends to emphasise an early second-century date for the fragment of opaque yellow armlet. The distribution of armlets of Type 3, B, seems to be the same as that of armlets of Type 3, A.

A very curious complete armlet is the specimen from Boghead, Kintore (fig. 5, No. 2). Compared with the above armlets, it appears to have been rather crudely made; it is also somewhat irregular in form, whilst the surface is unusual—it lacks the high gloss which is so characteristic a feature of the armlets considered above. Also, its section is like none of the armlets which we have so far considered. In general, the Boghead armlet is opaque white, but the inner surface has been enamelled with opaque yellow, as may be seen from the illustration. So queer a result and so irregular a form can only be the work of a local artificer, who seems to have been relying on memory for the pattern which he was endeavouring to imitate. These details are, however, significant, as we shall show later on.¹

Efforts were made to relieve the tedium of a plain opaque white surface. Presently, therefore, we find that some armlets of our Type 3, A, begin to bear upon their outer surfaces scrolls of blue or yellow. These scrolls, which are in the form of inlay, were at first applied in a haphazard fashion: these remarks apply in particular to the opaque white armlets decorated with blue inlay, which form another sub-type of Type 3—Type 3, C. When, however, we come to a fourth sub-type—Type 3, D—consisting of opaque white armlets with yellow inlay, it will be noted that the scrolls of the inlay are not quite so aimless, but are tending to assume a standard form typical of all the later armlets.

Type 3, C.—All of the known specimens of this type, with one exception, are illustrated in fig. 6, Nos. 1–11, and fig. 7, Nos. 1–4. It will be noted that the scrolls are as varied as are the sections of the armlets. The sections themselves cover all the forms which we have already noted in dealing with the armlets of Type 3, A. Fig. 6, No. 1, is half of an armlet from the crannog in Dowalton Loch. Fig. 6, Nos. 2–5 and No. 8, and fig. 7, Nos. 1–4, are from Traprain Law. Fig. 6, No. 6, is from Peel Crag Turret, on Hadrian's Wall, and fig. 6, No. 8, is from High Shield Turret, near-by. Fig. 6, Nos. 10 and 11, are from Corbridge.

¹ See p. 394.

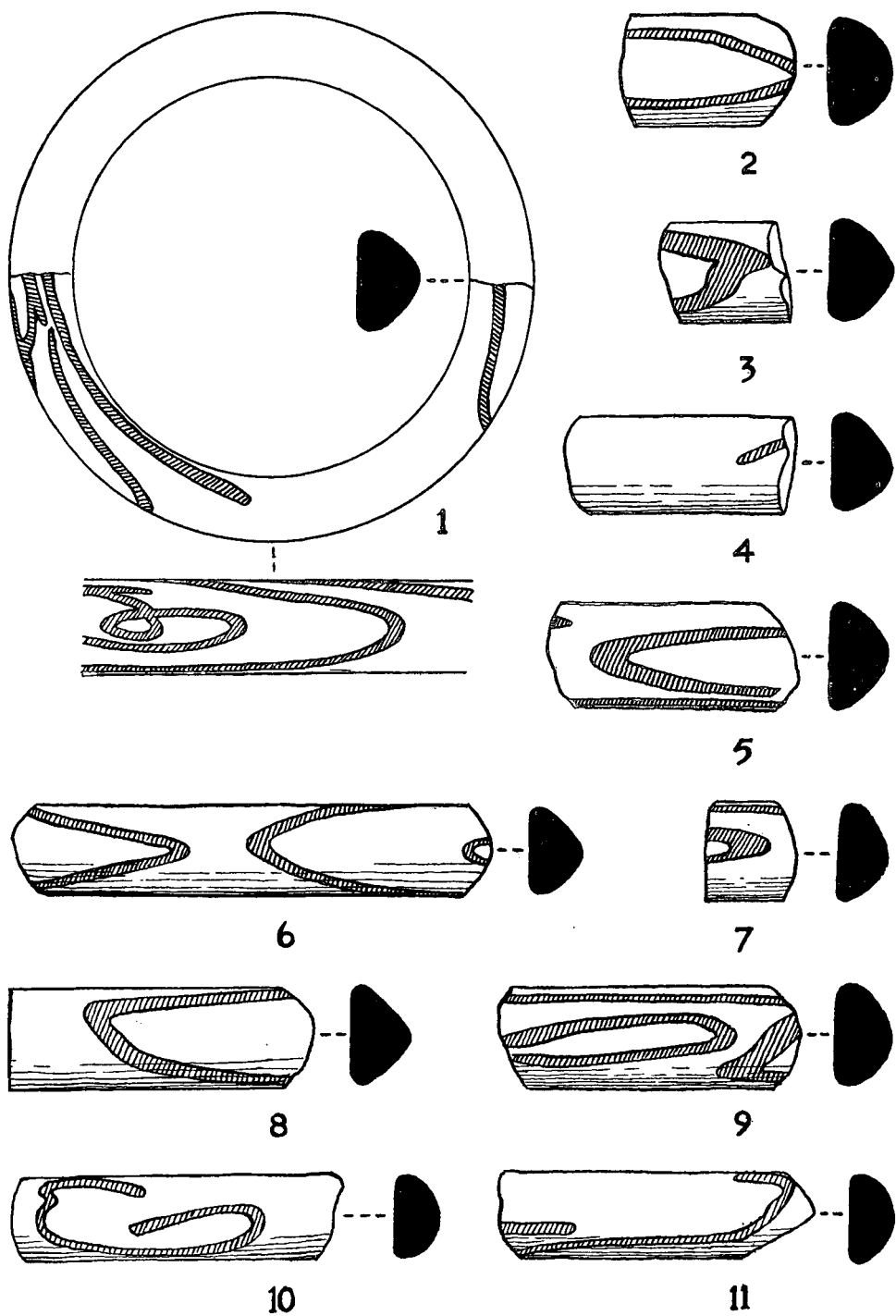


Fig. 6. Glass Armlets of Type 3, C. No. 1, Dowalton Loch Crannog, Wigtownshire; Nos. 2, 3, 4, 5, 7, 8, Traprain Law; No. 6, Peel Crag Turret, Hadrian's Wall; No. 8, High Shield Turret, Hadrian's Wall; Nos. 10, 11, Corbridge, Northumberland. (†).

None of the four last-named fragments is datable, but the Traprain Law examples were found in the following levels:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
	No.	No.	No. 2	No.
Fig. 6	..	..	.. 4	.. 3
	..	..	.. 5	..
	..	7	..	..
Fig. 7	..	..	.. 1	..
	..	..	.. 3	.. 2
	4	..	..	..
Total Armlets	1	1	5	2

If the Traprain Law evidence be acceptable, it would seem that the idea of relieving a plain surface with coloured inlay is almost as old as Type 3, A, itself. This view finds support in the discovery of a fragment of an armlet of Type 3, C, in the Hyndford Crannog, Lanarkshire,¹ where, in addition, fragments of samian bowls of forms 29, 30 and 37, and cups of forms 27 and 35 were also found,² pottery which is unmistakably of Flavian date. Such a discovery is valuable in that it shows that the glass armlet industry was already well established when Agricola advanced into Scotland.

Armlets of Type 3, C, are only found in the district between the Antonine and Hadrian's Walls.

Type 3, D.—Opaque white armlets bearing yellow inlay are not so common as are those of Type 3, C. But, since they are so very similar to the armlets of Type 3, C, except in the matter of the colour of the inlay, only a selection of three examples is shown in fig. 7, Nos. 5–7. Nos. 5 and 6 are from Traprain Law: there are other four examples, similar in every way, from the same site. No. 7 is from Birrenswark.

The various levels at Traprain Law yielded the following numbers of fragments of armlets of this type:—

¹ *Proc. Soc. Ant. Scot.*, vol. xxxiii. p. 384.

² *Ibid.*, vol. lxvi. p. 381.

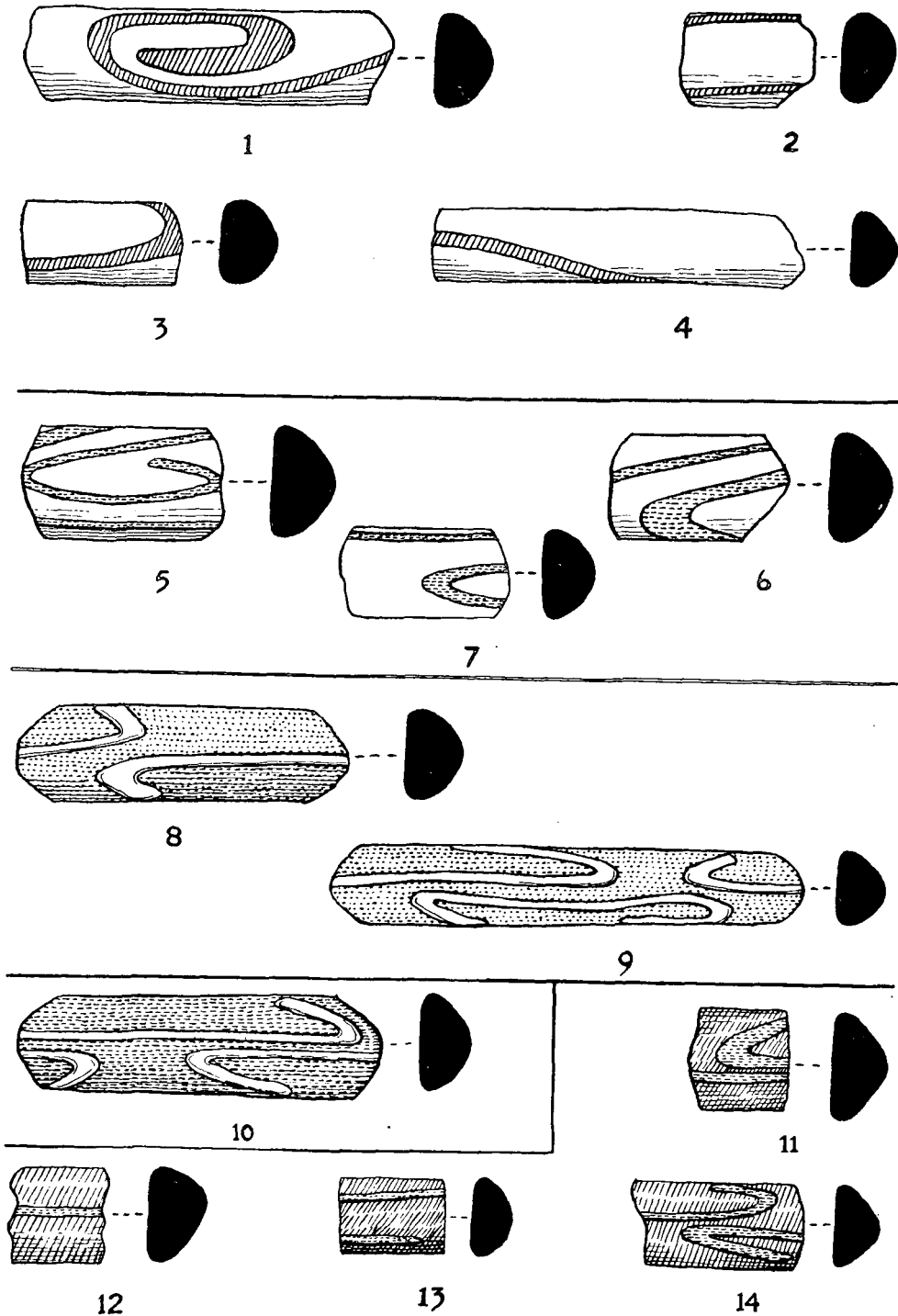


Fig. 7. Glass Armlets of Types 3, C-E, and J. *Type 3, C*: Nos. 1-4, Traprain Law. *Type 3, D*: Nos. 5, 6, Traprain Law; No. 7, Birrenswark, Dumfriesshire. *Type 3*: Nos. 8, 9, Traprain Law. *Type 3, E*: No. 10, Traprain Law. *Type 3, J*: Nos. 11, 12, Traprain Law; No. 13, Sandyknowe, Roxburghshire; No. 14, Throp, Gilsland, Cumberland. (†).

Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
1	..	3	2

Thus, the armlets of Type 3, D, tell much the same story as did those of Type 3, C. It should also be remembered that the Birrenswark specimen may possibly be dated by the leaden glandes which were found there, glandes which are thought to date from Flavian times.¹ This association of the armlet and the leaden glandes perhaps lends support to the earlier Traprain Law dating.

Type 3, E.—Strangely enough, only a single fragment of an opaque yellow armlet bearing inlay has so far been discovered: it was found in the second level at Traprain Law (fig. 7, No. 10). The inlay is of opaque white. Here, for the first time, we have the inlay applied in a standardised form, a form that remained unaltered for almost the whole of the remaining history of the glass armlet.

Two apparently unique fragments from Traprain Law (fig. 7, Nos. 8 and 9) belong to armlets of a dark olive-green colour. They bear inlay in opaque white. No. 9, amounting to almost half the armlet, was found in the fourth level, whilst No. 8 came from the third level.

Type 3, F.—These armlets are of uncoloured translucent glass with opaque white inlay. Sometimes the glass looks very like Roman bottle-glass, and sometimes it is as colourless as modern window-glass. A selection of armlets of this type, which is fairly widespread, is shown in fig. 8, Nos. 1–6. No. 1 is from the Roman fort at Newstead; No. 2 is from Traprain Law, and there are two other specimens like it from the same site. No. 3 was found in the Roman fort at Castlecary, Stirlingshire: there are six other fragments like it from Traprain Law. No. 4 is from the Roman fort at Corbridge, Northumberland: two other specimens like it were found at Traprain Law, and two more at the Roman fort at South Shields, Co. Durham. No. 5 was found on the site of the Tullie House Museum, Carlisle. No. 6 is half of a glass ring pendant; it was found at Traprain Law, and there are 16 fragments like it from the same site. A fragment, similar in every way, was found

¹ *J.R.S.*, vol. ix. p. 134.

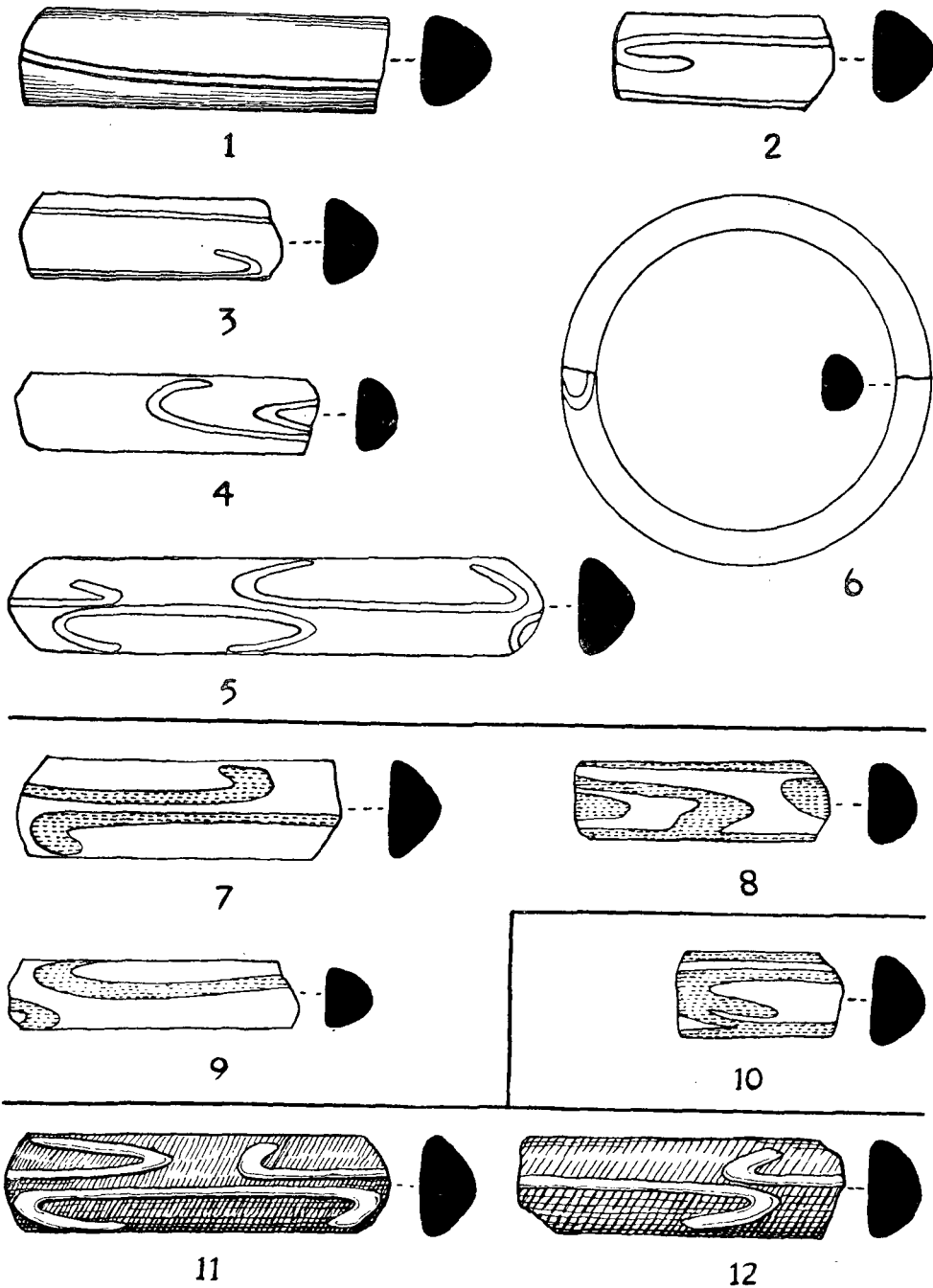


Fig. 8. Glass Armlets of Types 3, F-I. *Type 3, F*: No. 1, Newstead, Roxburghshire; Nos. 2, 6, Traprain Law; No. 3, Castlecary, Stirlingshire; No. 4, Corbridge, Northumberland; No. 5, Tullie House, Carlisle, Cumberland. *Type 3, G*: Nos. 7, 9, Corbridge, Northumberland; No. 8, Traprain Law. *Type 3, H*: Torwoodlee, Galashiels, Selkirkshire. *Type 3, I*: No. 11, Milking Gap, High Shield, Northumberland; No. 12, Camelon, Stirlingshire. (†).

at Newstead, and two others at Corbridge. The internal diameter of these glass pendants is precisely the same as that of the pendants of Type 3, A—namely, $1\frac{1}{8}$ inch.

The specimens from Traprain Law were found in the following levels:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
Like fig. 8, No. 2 .	1	1	1	..
" " " 3 .	..	1	4	1
" " " 4 .	1	..	1	..
" " " 6 .	3	6	5	1
Total Armlets .	5	8	11	2

On this evidence it seems that the manufacture of armlets of Type 3, F, may not have been begun before the beginning of the second century. Particular notice should be made of the contexts in which the glass ring pendants (like fig. 8, No. 6) were found, because the dating of the pendants belonging to Type 3, F, seems to be precisely the same as that of the pendants of Type 3, A.

Armlets and pendants of Type 3, F, are better represented on Roman sites than any of the preceding or following types. But, like all armlets of Type 3, they are found only in the district between the Antonine Wall and Hadrian's Wall.

Type 3, G.—A variation in the colour of the inlay is provided by the fragments of armlets illustrated in fig. 8, Nos. 7–9. Here we have the same translucent, uncoloured glass armlet, but the inlay, instead of being opaque white, is opaque yellow. No. 7 is from the Roman fort at Corbridge. No. 8 is from Traprain Law, and there is another fragment like it from the same site. No. 9 is also from Corbridge, and there are two other fragments like it from the same site.

Of the Traprain Law specimens, two were found in the second level, one in the third level, and one in the fourth level.

Type 3, H.—Fig. 8, No. 10, is a fragment of a rare type; it was found in the brooch at Torwoodlee, Galashiels, Selkirkshire. A minute frag-

ment of an exactly similar armlet was found in the native settlement at Milking Gap, High Shield, Northumberland.¹ The armlets of this type are like those of Type 3, G, in every way, except that the glass of the armlet itself is of a peculiar yellowish-green tint.

The Milking Gap fragment can definitely be dated to the second century, whilst the Torwoodlee fragment may possibly be dated by the first-century samian which was found within the broch.²

Type 3, I.—Another very characteristic though rather rare sub-type is constituted by the armlets of deep, translucent cobalt blue with white inlay. The only three examples which we possess are widely separated: one was found in the Roman fort at Camelon, Stirlingshire (fig. 8, No. 12), a second was found in the native settlement at Milking Gap, High Shield, Northumberland (fig. 8, No. 11), whilst the third fragment was found in the Roman fort at South Shields, Co. Durham.

The Milking Gap fragment can definitely be dated to the second century,³ and almost certainly to the first half of that century. There is a possibility that the Camelon fragment may be contemporary with the occupation of the fort in pre-Antonine times.

Type 3, J.—There remains but one further sub-type of Type 3—blue armlets with opaque yellow inlay. The blue of the glass is much paler than the deep cobalt blue of the armlets of Type 3, I; it might almost be termed a mid-blue. All the known examples of Type 3, J, are illustrated in fig. 7, Nos. 11–14, and fig. 9, No. 1. Nos. 11 and 12 of fig. 7 were found at Traprain Law; No. 13 is from Sandyknowe, Roxburghshire; No. 14 is from the Roman fort at Throp, near Gilsland, Cumberland. No. 1 of fig. 9 is from the Roman fort at Corbridge.

The Traprain Law specimens were found in the second and third levels, but the fact that they were found in these levels can hardly be an accurate guide to the date of the armlets of this sub-type, seeing that the specimen from Throp came from a site that seems to have been occupied during the reign of Hadrian; a fort that was probably erected in about 110.⁴ Probably the armlets of Type 3, J, belong to the second century.

Lastly, there are four curious examples that call for attention: they are illustrated in fig. 9, Nos. 2–5. In each case the armlet is of the same mid-blue which was typical of the armlets of Type 3, J. But fig. 9,

¹ *Arch. Æl.*, 4th series, vol. xv. p. 346.

² *Proc. Soc. Ant. Scot.*, vol. lxvi. p. 367.

³ *Arch. Æl.*, 4th series, vol. xv. p. 341.

⁴ *Trans. C. and W.*, n.s., vol. xiii. p. 374.

No. 2, has both yellow and white inlay; No. 3 has white spots and a marginal inlay of white; No. 4 has white spots with blue centres, and white inlay on the apex of the armlet; No. 5 has white inlay and blue spots with a white spiral. Nos. 2 and 3 were found at Corbridge, No. 4

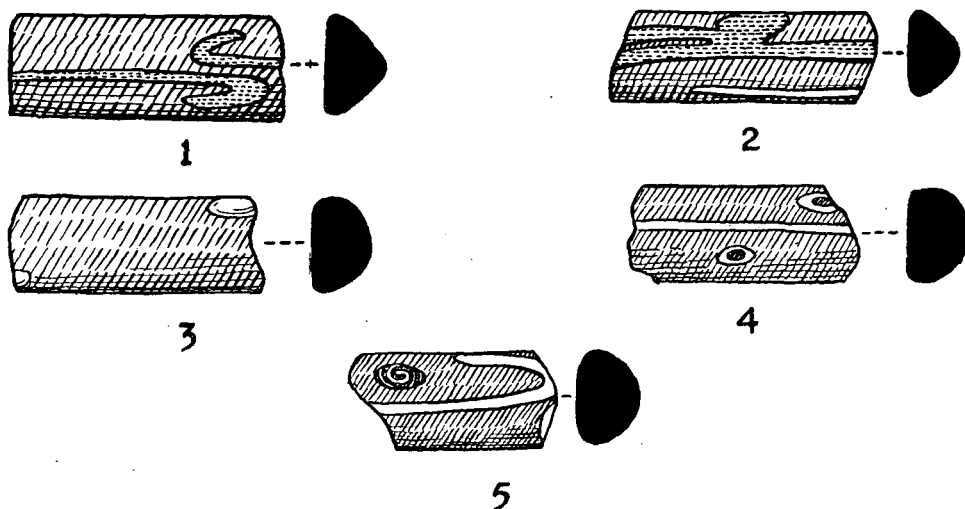


Fig. 9. Glass Armlets of Type 3. Nos. 1, 2, 3, Corbridge, Northumberland; No. 4, Traprain Law; No. 5, Newstead, Roxburghshire.

at Traprain Law, and No. 5 at Newstead. There is another specimen from Traprain Law, and it is like No. 2.

The two Traprain Law specimens were found in the bottom and third levels.

DISCUSSION.

We have examined roughly 270 fragments of glass armlets. We have divided them up into three main types, and the third type into ten sub-types. We have tried to reach conclusions in regard to the period in which each of the three main types was made, and we decided that the armlets of Type 1 were manufactured in the latter half of the first century A.D., but preceding the time of Agricola's advance into Scotland; that the armlets of Type 2 were probably made during the early years of the Roman occupation of the Lowlands; and that the armlets of Type 3 were most favoured during the second century, but that the type was known in the late first century, and, indeed, the first-century armlets of Type 3 seemed to us to be very nearly contemporary with those of Type 2: that was shown by the association of a fragment

of an armlet of Type 3 with a late example of Type 2 at the Hyndford crannog, both fragments being dated to the time of Agricola's advance into Scotland. This association of two types at the Hyndford crannog only served to emphasise what had seemed to us probable when dealing with the Traprain Law evidence: namely, that the armlets of Type 3 were first manufactured at a time when the apparently short history of those of Type 2 was drawing to a close. The armlets of Type 2 fill a comparatively short gap in time which exists between the period when armlets of Type 1 were being made and the advent of the first armlets of Type 3.

We also studied the distribution of each of our three main types, and we discovered that the armlets of Type 1 occur north of Hadrian's Wall and as far north as the Moray Firth and Skye; that the armlets of Types 2 and 3 have more or less the same distribution and, in contrast, are almost entirely confined to the district between the Antonine Wall and Hadrian's Wall. We can understand why it was that armlets of Type 1 never got farther south than Roxburghshire: the Roman advance into North Britain could hardly be expected to stimulate trade with the south. But it is difficult to understand why it was that, when Roman authority had been forced upon the natives in the Lowlands, neither armlets of Type 2 nor those of Type 3, all of which were made after Agricola's advance into Scotland, ever penetrated into the country south of Hadrian's Wall. We have just the two fragments of armlets of Type 2 which were probably carried south as curiosities, but, especially when we consider the armlets of Type 3, which were made at a time when conditions in the country may be said to have improved, we are at a loss to know why it was that armlets of Types 2 and 3 did not penetrate at least as far south as the Midlands. It is true that armlets have been found on sites a mile or two south of the Wall, like Corbridge, but that fact makes little difference to the general conclusions which are forced upon us.

Last year the present author was severely criticised because he had remarked, when dealing with the evolution of the penannular brooch with zoomorphic terminals, that Hadrian's Wall seemed to have formed an effective barrier to free trade between north and south in the second century.¹ That thought was frankly regarded as a heresy. Of course, it must be admitted that numbers of objects of Roman origin were being exported to Scotland² (or at least they were being acquired in the north), but the thesis should have enlarged by emphasising that what was really

¹ *Proc. Roy. Irish Acad.*, vol. xliii., section C, p. 393.

² As a matter of fact, the volume of trade with Scotland was considerable.

meant was that, chiefly during the second century, Hadrian's Wall seemed to have formed an effective trade barrier against native-made products proceeding southwards. And the fact remains. As we saw last year, not a single Lothians-made zoomorphic penannular brooch of the *northern developed form* ever found its way beyond the Wall, yet brooches of this type reached Northern Ireland and even a country as remote as Shetland. On the other hand, we find an Irish-made specimen of the same type of brooch, and dating to approximately the same period, at Bravoniacum, Westmorland. This quite obviously means that it was a far easier matter for the inhabitants of the north of England to acquire an Irish-made brooch of this particular type than it was for them to acquire an example made in Caledonia. That fact is significant. But that is not all: we have four Lothians-made zoomorphic pins at Chesters, and one at Hunnum, both sites being on the Wall itself, yet not a single specimen of this type of pin, which is also contemporary with the brooches in question, has ever been found farther south.

And now that we have concluded our examination of the glass armlets, we find that here again the story is substantially the same. We have all these glass armlets from the district between the Antonine Wall and Hadrian's Wall, yet, except for Elslack, we look in vain for them south of the Hadrian's Wall area. We can understand why it is that we do not find any specimens north of the Antonine Vallum, because that wall was a boundary between the virile native north and the Romanised district to the south. But the history of Traprain Law had seemed to teach us that that site, as a Romano-Caledonian tribal capital, had enjoyed comparative prosperity, indeed perhaps its period of greatest prosperity, at a time when Roman rule was more or less firmly established in the Lowlands, and we therefore assumed that the inhabitants, seeing that they continued to flourish in their hill-top town, must have done so with Rome's permission. We pictured their behaviour as being satisfactory to the Romans. That being so, it might have been thought that they would have been at liberty to enjoy uninterrupted trade relations with other Romano-Britons south of Hadrian's Wall, yet the verdict is forced upon us that they enjoyed no such privileged position.

We are not assuming, of course, that Hadrian's Wall was purely a military barrier: we wish to draw a distinction between a military barrier and a trade barrier. We believe that it was chiefly the latter, and Romans and Romano-Britons used it to their own advantage, because it permitted southern-made things to be exported to the north, but it prevented objects (such as brooches, pins and glass armlets) made in

Scotland from penetrating southwards. We must accept that fact if we assume that the abundance of Roman ware found on Traprain Law was purchased by the inhabitants rather than that most of it was stolen. The Romans, with the virtual dominion of the Lowlands in their hands, could hardly be expected to tolerate in their midst flourishing banditti.

On the other hand, we must not overlook the fact that the district between the two Walls was never other than a military district. We look in vain for remains of a settled urban life: there are no traces of buildings other than those required for the occupation of a military force. This means that, although the Romans managed to retain their hold on the Lowlands for the best part of a century, they could never have felt very secure. There must have been cause for constant anxiety, as the history of the Antonine Vallum tends to demonstrate. It is instructive, also, to survey the conditions during the same period of the natives themselves; to compare the conditions of those living just to the south of Hadrian's Wall with those living north of the same Wall. The differences are striking. South of the Wall the natives, little affected by contact with Roman civilisation, led such a sheltered existence in the second century that they formed themselves into small farming communities, and lived in clachans that were entirely innocent of any means of defence. There are actually one or two of these settlements in Northumberland a few miles north of the Wall, but the large majority are in Cumberland and Westmorland. In contrast, what are the conditions in the Lowlands generally? We look in vain for any northern equivalent of the undefended clachans so commonly found south of Hadrian's Wall. And to complete our mental picture of conditions in the Lowlands, we have only to recall to mind the disaster of 196; with what obvious satisfaction the northern tribes seized on a moment of weakness on the part of those who had endeavoured to pursue their civilising mission amongst the Caledonians in order to vent their fury against the dominant power.

Hadrian's Wall was thus a dividing line, dividing a peaceful south from a turbulent north, even during the second century. It is obvious that everyone who wished to cross the frontier must have been subjected to strict examination—especially those coming from the north. This makes it difficult for us to accept the view that numbers of cattle, wild animals, slaves, and quantities of leather, fur, and so forth were constantly being exported from Caledonia into England.¹ It is obvious that the whole conception of trade across the frontier needs drastic revision. It was a one-way trade, if trade it was. Even modern tariff walls cannot

¹ Collingwood, *Roman Britain*, p. 245.

keep out foreign-made objects; and yet Hadrian's Wall effectively kept out of England to the south what was made in Caledonia to the north.

These considerations make it even more necessary for us to set down an opinion as to the position of the original source of the glass armlets. Actually, we believe that they were made at Traprain Law. The bulk of the examples which we have considered were found there, but that fact in itself is insufficient to demonstrate the probability of that statement. But we have already hailed Traprain Law as a Romano-Caledonian tribal capital, and of that fact there can be little doubt; and it is a common thing for industries to flourish in tribal capitals, where trade is brisker. But we have to admit of other tribal capitals coming within our purview. It is therefore instructive to see what are the conditions in another tribal capital—namely, Corbridge—which is rather conveniently situated for the purpose of our argument. On counting up the number of glass armlets found there we find that the total is 16 fragments. Armlets of Type 1 are absent, whilst the only specimens of Type 2 found there are two late fragments of that type. This evidence is significant, because other finds, such as metal objects, were particularly numerous. We can therefore at least be certain that glass armlets were not made in the Hadrian's Wall district. There is a possibility, of course, that excavation may yet reveal another Romano-British tribal capital in the southern Lowlands, although it is improbable that more than one capital will be found. But since the necessary evidence is lacking, we shall be content meantime in assuming that the factory was at Traprain Law.

One last aspect of the problem remains to be dealt with. Seeing that on the Continent glass armlets were made during all three phases of the La Tène period, it is perhaps surprising that neither the armlets themselves nor the method of making them ever reached England.¹ Not a single glass armlet made in England has yet been discovered. Yet, in the first century of our era, glass armlets suddenly appeared in Scotland. They were not produced by way of experiment: the earliest armlets (our Type 1) are mature both in the matter of form and of decoration. It is difficult for us to find parallels for these armlets, but the only specimen of Type 3 found in the north of Scotland—the armlet from Boghead, Kintore—has nothing approaching a parallel except on the Continent. It can be distinguished from the other armlets of that type by its surface treatment and slight irregularities in manufacture that

¹ Fräulein Thea E. Haevernick has kindly drawn the author's attention to the La Tène glass armlet from Castle Dore, Cornwall, an armlet unknown to the author at the time this statement was written.

are not apparent in the other armlets of the same type. These same slight irregularities seem to be common to some of the Continental glass armlets. In addition, the Boghead armlet has yellow enamel on its inner surface. It is difficult to appreciate the point of enamelling the inner surface, as, once the armlet was on the wearer's arm, the yellow enamel would naturally be hidden. But Déchelette figures two armlets from Montefortino, Prov. de la Marche, Italy,¹ each of which possesses a band of yellow enamel on the inner surface: but the armlets themselves, instead of being opaque white (like the Boghead example), are of uncoloured translucent glass. In the case of these Italian specimens it is easy to see what was the purpose of the band of yellow enamel: seen from the outside it would appear many times magnified by the glass of the armlet; in fact, the glass would tend to throw the colour into relief. It seems that the maker of the Boghead armlet may have had this point in mind, but he failed in his purpose because he made the armlet of opaque white glass. He also seems to have worked in something approaching isolation. But the very fact that he tried to imitate a trick current on the Continent in La Tène I. times at least points to the possible source of his inspiration.

By whom was the technique of manufacture of glass armlets brought from the Continent, as we must assume that it was, direct to Scotland?

I wish to thank those colleagues who gave me every freedom to examine armlets in the collections under their care: the late Dr J. Graham Callander; Mr A. J. H. Edwards, Director of the National Museum of Antiquities, Edinburgh; Mr Eric Birley, Secretary to the Trustees of the Chesters Museum; Mr J. D. Cowen, Curator of the Blackgate Museum, Newcastle, who was also good enough to send me sketches and particulars of the specimens in that Museum; Mr W. Percy Hedley, Secretary to the Trustees of the Corbridge Museum. Thanks are also due to Mr T. Gray and Mr R. Hogg, of the Tullie House Museum, Carlisle, for giving me access to, and particulars of, the specimens in that Museum.

¹ *Manuel*, II. p. 1323, fig. 579, Nos. 1 and 2. Another armlet of the same type was found at Monte Rolo S. Vito.