

## DERIVATIVE FORMS OF THE *PETIT TRANCHET* IN BRITAIN

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### PART I. TYPOLOGY

The present paper is concerned with a group of flints often ignored and generally misunderstood, the *petit tranchet* or transverse arrowhead and kindred forms, including the 'halberd' and 'lop-sided' types of the collectors. Acknowledgments must be made to Callander for his paper in *P.S.A.S.*, LXII, 174, which draws attention to these forms, and further to Davies, whose paper in *Proc. Bristol Spelaeological Soc.*, vol. ii, no. 2, 168, demonstrated the organic connection between the true *petit tranchet* and the 'halberd' forms.

In this paper we are bringing in the 'lop-sided' and certain triangular forms, which together with the 'halberd' forms appear to us to belong to the same family typologically as the true *petit tranchet* arrowhead. In considering this wide range of forms we have found it convenient to distinguish various classes, which will be designated henceforth in this paper by capital letters. It may be said in parenthesis that we do not regard this or any other classification as any more than a convenience, but, although we are fully aware that all classifications are to a certain extent arbitrary abstractions, we do not hesitate to take a step necessary to the consideration of any group of objects or phenomena. At the same time the very absence of any sharp definition between many of the classes we distinguish is of itself the strongest argument for considering that they are organically connected and belong to one family.

The classes distinguished are clearly indicated in the key (Figs. 1 and 2), and before describing the distinguishing features of each it might be as well to

state in a few words what we conceive to have been the development. Our view is that classes B–F show a direct line of development from the parent class A, while classes G–I represent alternative or divergent developments from this main group. In any case, as we show in the second part of this paper, there is no perceptible difference in the chronology of any of the derivative forms B–I, class A alone antedating the whole group in its origins. As a glance at the illustrations will have indicated, the whole group of forms here studied is united in the possession of one common and basic morphological feature, a sharp primary flake edge, normally at right-angles to the pressure rings of the bulbar flake surface. Since we are studying these flints primarily to estimate their chronological value for excavators, we cannot enter into speculations as to the use of the various forms and their method of hafting. In the case of the parent form (class A), however, the discovery of specimens in their original hafting in Denmark<sup>1</sup> (Evans, *Ancient Stone Implements of Great Britain*, 2nd ed., fig. 344) and in Egypt (*ibid.*, fig. 272) shows that the sharp flake edge was transverse to the shaft of the arrow. Since classes B and C differ in such slight respects from the parent form we may reasonably assume that these were hafted in a similar manner. The asymmetry of classes D–I, however, makes us almost certain that in these cases the cutting edge was disposed obliquely when the implement was hafted, the degree of obliquity varying with different forms. In this case the hafted implement would resemble a single-barbed harpoon.

Proceeding to a description of the types we may deal first of all with class A, the parent form, otherwise known as the *petit tranchet* or transverse arrowhead. The form consists of a section of primary flake of quadrangular form, the two edges at right-angles to the main line of the flake (and by consequence of the

<sup>1</sup> A specific example from Denmark is that from Tvaermose, Eising Sogn, Ginding Herred, N. Jutland, described and illustrated by Sophus Müller, *Aarbøger*, 1917, p. 149 and fig. 1. Another from Petersfehner Moor,

Oldenburg, Germany, is illustrated by G. Kossinna in *Die Indogermanen*, 1921, abb. 40. In both cases the flint is set deep in the shaft and secured by animal fibres.

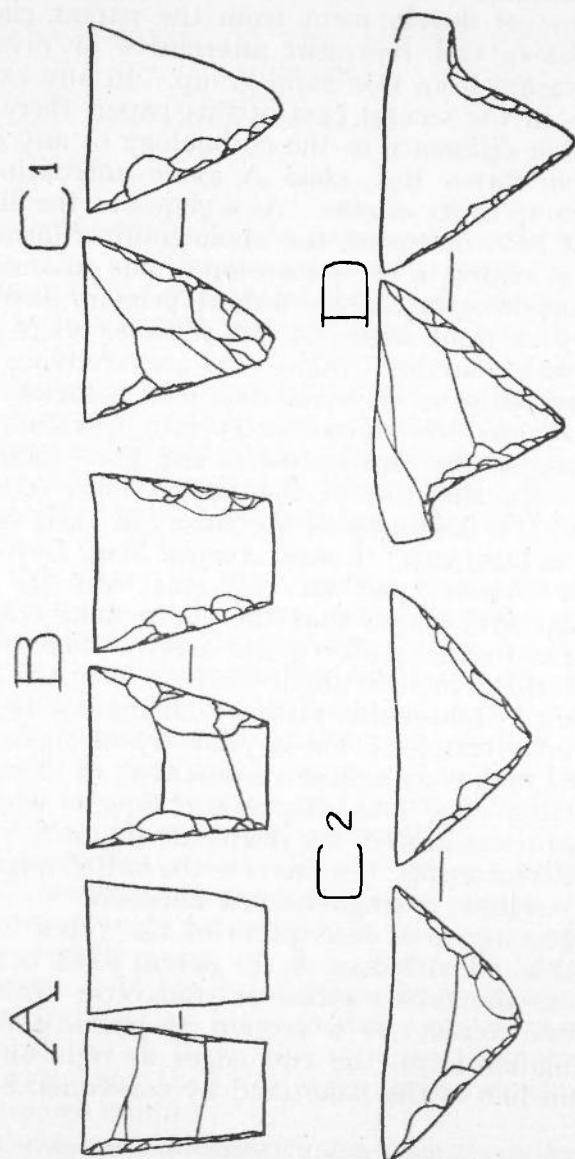
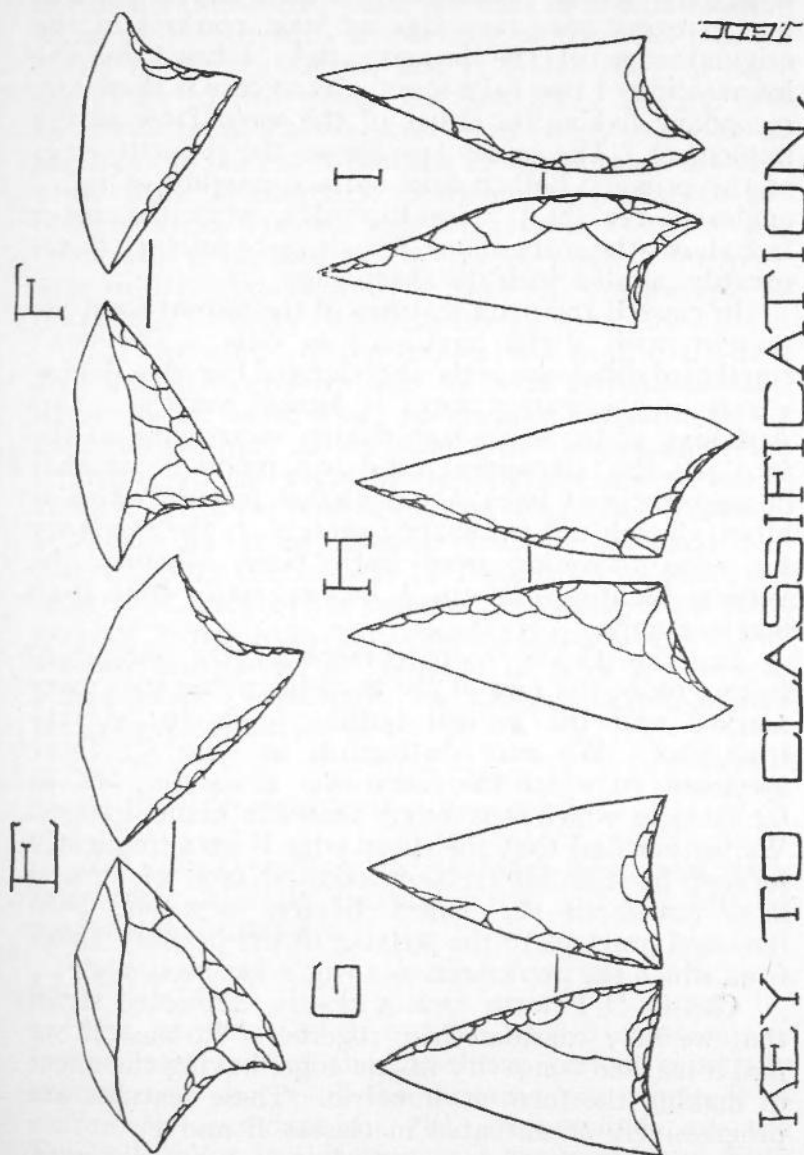


FIG. 1



pressure rings) being blunted by almost vertical secondary flaking. Occasionally a third edge is worked, but in every case one edge at least consists of the original edge of the primary flake formed by the intersection of two flake scars. In no case is there any secondary flaking on either of the main faces of the implement. The under face shows the pressure rings of the primary bulbar flake surface roughly at right-angles to the sharp chisel-like edge, while the upper face shows the scars of one, two or more primary flakes roughly parallel with the sharp edge.

In class B the main features of the parent form are present with slight modifications only. The most significant difference is the flattening of the edge flaking which in the parent form is almost vertical; this flattening of the secondary flaking encroaches on the face of the implement and so modifies another characteristic of form A. A second feature which is often, though not necessarily present, is the tendency for edge trimming from both faces, whereas the vertical blunting of form A was normally done from one face only.

In class C the encroachment of the secondary flaking on to the face of the implement becomes more marked and the general outline tends to be sub-triangular. We may distinguish as class C<sub>1</sub> those specimens in which the sharp edge is shorter, and as C<sub>2</sub> those in which it is longer than the blunted edges. We further find that the sharp edge is now frequently formed by the intersection on one face of several flake scars, all the flakes having, however, been removed previous to the striking of the primary flakes from which the implement as a whole has been made.

Classes D-F form such a closely connected series that we may consider them together. In class D we find a marked concavity in one edge, having the effect of making the form asymmetric. These features are progressively accentuated in classes E and F.

In illustrating classes G-I we have followed precedent in illustrating them with the sharp-edge vertical instead of horizontal. Morphologically, however, there is no more difference between classes G and

F than between F and E or E and D. In each of the three classes the sharp primary flake edge survives, the distinctions being that, whereas in G it is roughly equal in length with the longer of the two blunted edges, in H it is longer, and in I shorter. On some specimens of this group fine secondary flaking with narrow parallel scars is sometimes found (e.g. nos. 41 and 44). In the case of certain specimens showing such work from Bridlington, Scandinavian influence has been invoked, but we would point out that the two specimens illustrated in this paper come from Wiltshire, which detracts from the plausibility of an explanation which is in any case unnecessary.

The derivation of our classes B-I from the parent *petit tranchet* forms appears to us to be indisputable, when, as we have done, we consider the flints purely morphologically. As we have stated above, this view is merely an extension of the original observation of Davies. It is perhaps of interest that Siret traced an evolution on rather similar lines in Grenada and Almeria from the trapeze to various forms of arrow-head<sup>1</sup>. In view of the organic derivation of all these various forms from the simple transverse or *petit tranchet* arrowhead, we propose to refer to them as *Petit-tranchet* Derivatives, the variants being denoted by the capital letters B-I.

## PART 2. TIME-DISTRIBUTION

N.B.—In every case the drawings have been made from their originals, except for nos. 3, 10, 11 and 47 made from illustrations.

### CLASS A.

The *petit tranchet* arrowhead was in common use in the later half of the Mesolithic period, especially around the shores of the Litorina sea where it is extremely abundant in the shell-mounds of the Ertebolle folk. In this country it has been found fairly frequently in Sussex in almost every instance on

<sup>1</sup> *Bull. Soc. d'Anthr. du Brux.*, 1924, 220 and fig. 6.

microlithic sites such as Peacehaven<sup>1</sup>, West Heath<sup>2</sup>, Hassocks, Buxted, Isfield<sup>3</sup>, and Horsham<sup>4</sup>. Morphologically there is no clear distinction between the *petit tranchet* and the microlithic trapeze, though the former is frequently a heavier object and has its blunted edges longer than its sharp edge more uniformly than the latter. The trapeze flourished, like the *petit tranchet*, during the later half of the Mesolithic, occurring in the late Tardenoisian over a wide area of North Africa and Western Europe. In this country it is found in the late Tardenoisian of the Pennines<sup>5</sup>, in the Scottish Tardenoisian<sup>6</sup>, and at Wangford<sup>7</sup>, again with a developed geometric stage of the Tardenoisian. A typical specimen occurred near the base of the infilling of one of the late Neolithic pit-dwellings (pit 1) at Selmeston, Sussex.<sup>8</sup> The true *petit tranchet* is, however, also found in Neolithic deposits in this country, though far more rarely than in Iberia, Brittany, Northern France and Scandinavia. We illustrate a typical specimen (**no. 1**) from the Neolithic occupation layer of Whitehawk camp, Brighton.<sup>9</sup> This is the only certain association with Windmill Hill culture in this country yet recorded. The earlier occupation layer at Windmill Hill itself yielded no *petit tranchet* arrowhead of any form whatsoever. The specimen illustrated (**no. 2**) came from pit G, which also contained a leaf arrowhead, a scraper and a considerable amount of Windmill Hill pottery, together with two small fragments of Peterborough ware and some Romano-British sherds; if we regard the latter as later intrusions we can accept the *petit tranchet* as of the age of the first occupation.<sup>10</sup>

There is, moreover, evidence that the *petit tranchet* of form A continued in use into Early Metal Age times. That illustrated (**no. 3**) accompanied inhumation no. 6, one of the five primary inhumations of barr. 205

<sup>1</sup> *The Mesolithic Age in Britain*, fig. 53, nos. 10-12.

<sup>2</sup> *Appendix*, fig. 7, no. 73.

<sup>3</sup> E. Curwen, *S.A.S.C.*, lxxix, pp. 79-83.

<sup>4</sup> *Appendix*, fig. 11, nos. 195-7.

<sup>5</sup> *The Mesolithic Age*, fig. 9, nos. 26-7.

<sup>6</sup> *ibid*, fig. 27, nos. 5-7.

<sup>7</sup> *ibid*, fig. 15, nos. 26-9.

<sup>8</sup> *Ant. J.*, 1934, p. 144, fig. 4, no. 47.

<sup>9</sup> *S.A.S.C.*, lxxi, xiv, no. 14.

<sup>10</sup> Windmill Hill, mus. no. 11179.



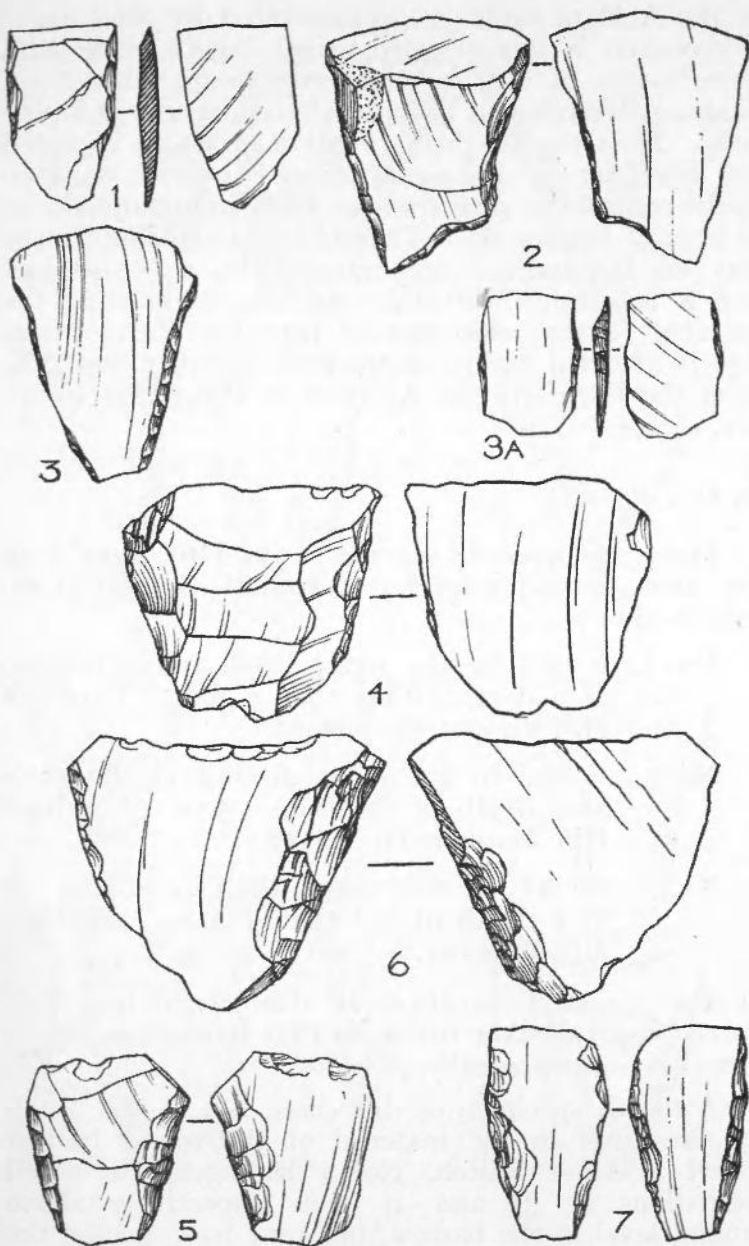


FIG. 3 (1)  
NOS. 1-3A, CLASS A; NOS. 4-7, CLASS B



of the Acklam Wold group excavated by Mortimer.<sup>1</sup> Fortunately a round-heeled metal dagger blade with three rivets of a type commonly found with A+C beakers accompanied another of the primary inhumations. Since the five primary inhumations are regarded by Mortimer as belonging to one period we may fairly regard the *petit tranchet* from inhumation 6 as at least of Beaker age. The only secondary interment was an inhumation accompanied by a food-vessel and a flint knife. Further evidence supporting the survival of the *petit tranchet* into the Early Metal Age is afforded by the degenerate specimen (no. 3A) from the Early Bronze Age site at Plantation Farm, near Ely.<sup>2</sup>

#### CLASS B. (Fig. 3).

Three specimens of class B (nos. 4-6) came from the later occupation level at Windmill Hill, Wiltshire. Details are :—

- No. 4. Found in the outer ditch in cutting 1c at a depth of less than 1 foot. Windmill Hill Museum no. 12546.
- No. 5. Found in the inner ditch in cutting xva at a depth of less than 1 foot. Windmill Hill Museum no. 18587.
- No. 6. Found in the outer ditch in cutting 1c at a depth of less than 1 foot. Windmill Hill Museum no. 12617.

The second occupation at this site dates from Peterborough-Beaker times, so that these three specimens are chronologically of value.

A fourth specimen of this class (no. 7) was found by Greenwell in the material of the round barrow cxxvi at Over Stilton, North Riding.<sup>3</sup> He noted cremations at  $3\frac{1}{2}$  and  $4\frac{1}{4}$  feet respectively above ground level in the barrow, but may have missed the

<sup>1</sup> *Forty Years Researches*, p. 88.

<sup>3</sup> *British Barrows*, pp. 336-7.

<sup>2</sup> *Ant. J.*, 1933, p. 273, no. 37.

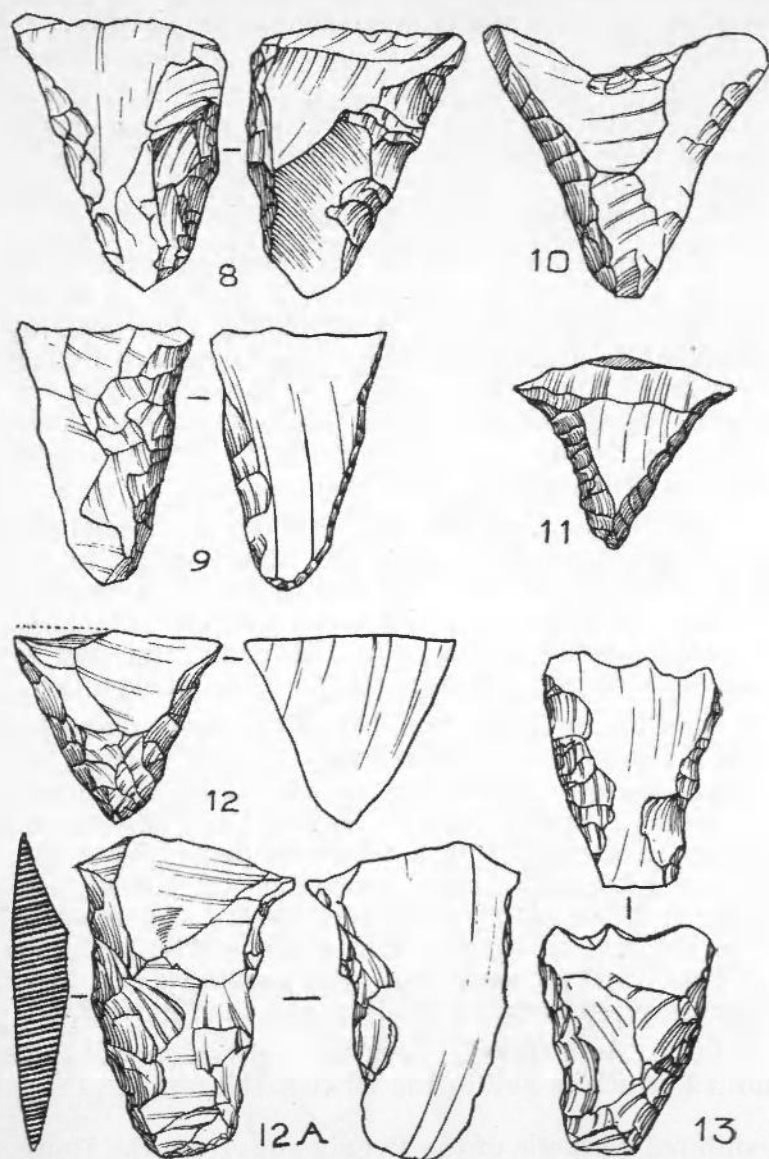


FIG. 4 (i)

CLASS C I

primary. No. 7 cannot be recorded in any more exact way than as from the material of a round barrow.

CLASS C<sub>1</sub>. (Fig. 4).

A single example of C<sub>1</sub> (no. 8) was found immediately under the turf of the outer ditch of Windmill Hill, cutting II, and belongs to the Peterborough-Beaker occupation.

A second example (no. 9) was found 'near the bones of the hand'<sup>1</sup> of an inhumation in barrow 40 of the Garton Slack group in the East Riding, excavated by Mortimer.<sup>2</sup> The inhumation was accompanied further by a flint knife, a clay button, two pieces of ochre and a small biconical cup, the latter belonging to Abercromby's Pygmy cup type 6 group.<sup>3</sup> This find dates well within the Early Metal Age.

No. 10 was found with other flints in the material of round barrow no. 236 of the Blanch group in the East Riding, excavated by Mortimer.<sup>4</sup> The primary burial, the only one found, was a cremation accompanied by a bone pin. No connection can be proved, however, between the flint and the burial.

Another specimen (no. 11) of the same class likewise derives from the material of a round barrow, the 'East Barrow' on Mendip, excavated by the Bristol University Spelaeological Society.<sup>5</sup> The mound covered a cremation in a pit accompanied by a perforated rectangular slate hone-stone or amulet, and under a stone an inverted cinerary urn (Abercromby type 1, phase 1) together with a blue segmented bead, jet beads, and a bronze awl. Once again we can prove no connection between the flint and the interments.

From Herd Howe, Yorkshire, Atkinson obtained no. 12, which is now in the British Museum <sup>76</sup>(B.M.4—10), <sub>62</sub> exhibited with one of the Pygmy cups from the Howe. There appears, however, to be insufficient evidence

<sup>1</sup> *Catalogue of the Mortimer Collection*; entry clxiii.

<sup>2</sup> *Forty Years Researches*, p. 229.

<sup>3</sup> *Bronze Age Pottery*, no. 298.

<sup>4</sup> *Forty Years Researches*, p. 325.

<sup>5</sup> *Proc. Bristol Univ. Spel. Soc.*, vol. 2, no. 2, fig. 5, no. 10.

for inferring an association beyond doubt, so that we prefer to regard the flint as though from the material of the mound.

Of more interest is **no. 12A** (National Museum of Antiquities, Edinburgh, no. EO. 101) from the chambered cairn at Camster, Caithness.

Another important association is the damaged specimen (**no. 13**) from  $4\frac{1}{2}$  feet deep in hole 5 of the

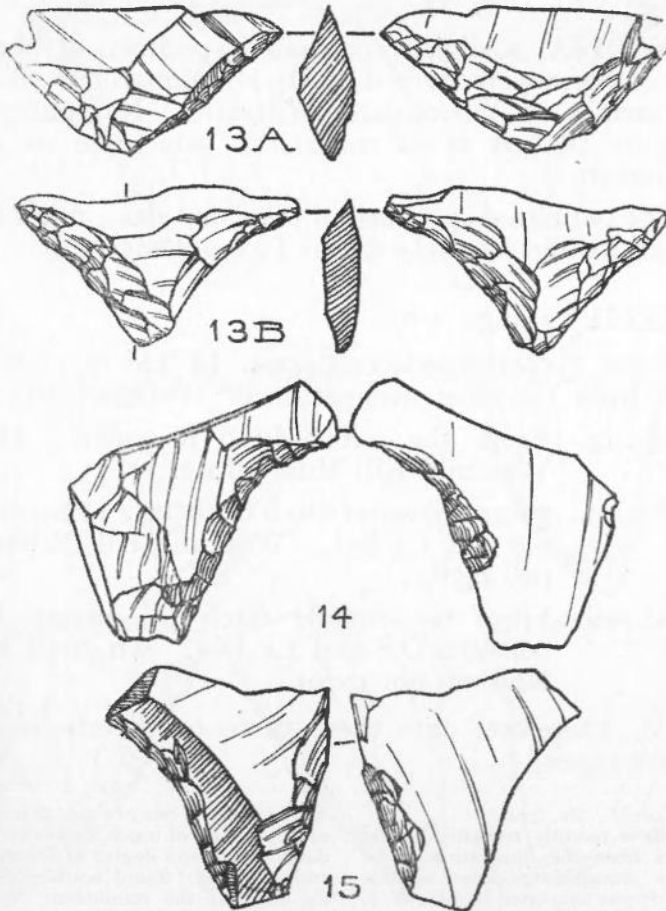


FIG. 5 (†)

NOS. 13 A AND B, CLASS C 2 ; NOS. 14 AND 15, CLASS D

Bank Holiday Ring at the Sanctuary, Overton, Wiltshire, excavated by Mrs. Cunnington.<sup>1</sup> In other holes of the same ring occurred a considerable amount of Peterborough and a few Beaker sherds. It would, therefore, appear that we may safely assign the flint to Peterborough-Beaker times. Nos. 20 and 42 also came from the same site. All the Overton specimens as well as those from Woodhenge are now in Devizes Museum.

CLASS C2. (Fig. 5).

**No. 13A**, a slightly patinated specimen of bluish grey colour, was recovered by Mrs. Cunnington from the old surface at Woodhenge, Wiltshire. Its condition suggests that it is of much the same age as the monument.

The patinated specimen of the same class, **no. 13B**, was excavated from the ditch of Woodhenge.

CLASS D.<sup>2</sup> (Figs. 5-8).

Three typical specimens (**nos. 14-16**) of class D come from the later occupation of Windmill Hill:—

**No. 14.** From the outer ditch in cutting IIIc. Windmill Hill Museum no. 18277.

**No. 15.** From the outer ditch in cutting II between 0.8 and 1.4 feet. Windmill Hill Museum no. 2476.

**No. 16.** From the middle ditch in cutting IIb between 0.8 and 1.4 feet. Windmill Hill Museum no. 10701.

We, therefore, date these three to Peterborough-Beaker times.

<sup>1</sup> *W.A.M.*, xlv, 322.

<sup>2</sup> I have recently recognised what appears from the illustration to be another damaged specimen of this class. It was excavated by Mr. W. J. Hemp, F.S.A., from the chambered cairn of Bryn Celli Ddu. See *Archaeologia*, 1930, vol. lxxx, pp. 208-9, and fig. 2, middle row right.

This piece was one of those described as not being 'of much importance or datable with any degree of accuracy,' and as being 'found scattered over the area of the monument, *mostly casual finds*.' In the absence of other dating objects it is to be regretted that the exact provenance of this key specimen is unknown.

Another specimen (**no. 17**) was obtained from the material of barrow no. 1, Martinsdown, near Dorchester, by St. George Gray.<sup>1</sup> The mound covered a primary inhumation in a chalk-cut grave accompanied by a handled food-vessel and a pygmy cup. A secondary interment, consisting of a cremation within a circle of stones and on the old surface line, was accompanied by a developed form of bronze knife dagger. One

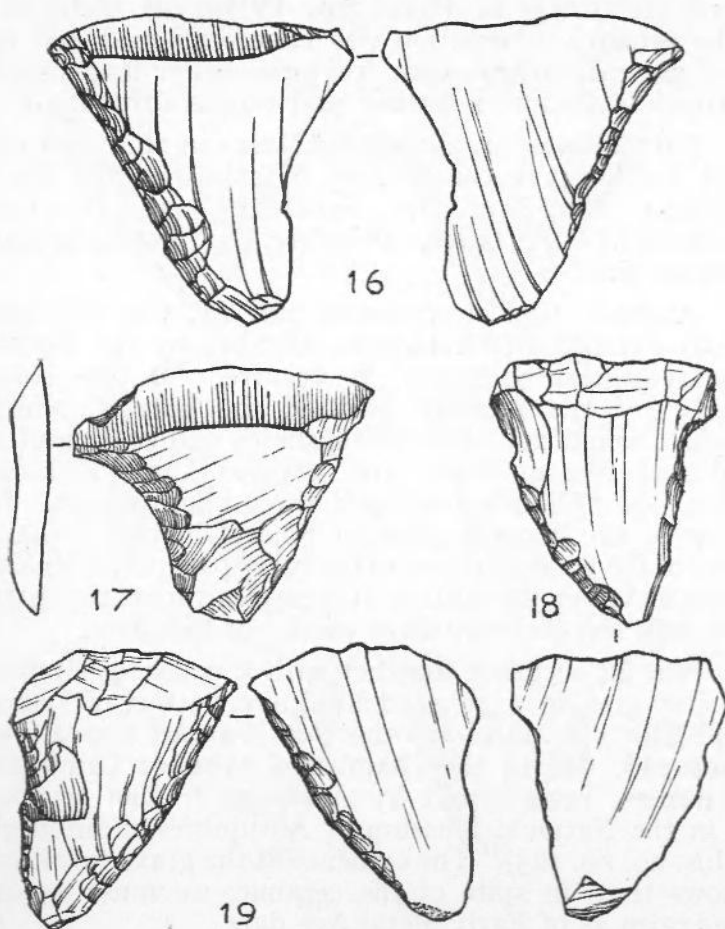


FIG. 6 (t)

CLASS D

<sup>1</sup> *Dorset. N.H. & Arch. F.C.*, xxvi, pl. iii, fig. 10.

cannot say whether the flint was associated with either of the interments.

The primary grave of barrow 41 of the Briggs Group excavated by Mortimer<sup>1</sup> contained a food-vessel. Mortimer records that 'at the base of the mound were several slightly worked flints, and a few were found in the mound'; **no. 18** was one of these.

When Mortimer re-opened barrow 150 of the Driffeld Group he found **no. 19** in the material.<sup>2</sup> The primary inhumation was unaccompanied, but on the ground surface were fragments of a food-vessel, animal bones and a barbed and tanged arrowhead.

**No. 20** was excavated by Mrs. Cunnington from '2½ feet deep in the packing of hole 6 of the Bank Holiday Ring' of the Sanctuary at Overton, Wiltshire.<sup>3</sup> It dates, therefore, to Peterborough-Beaker time.

Another typical specimen, (**no. 21**, was obtained from Tynings North Barrow, Mendip, by the Bristol Spelaeological Society.<sup>4</sup> It occurred 'in the basal mass' of the primary part of the barrow, which yielded about 200 other flints, sherds and comminuted calcined human bone, and covered three rock-cut cists, one of which contained three pygmy cups. In view of the concentration of objects in the primary part of the barrow, dated to the early part of the Middle Bronze Age by the pottery, it seems legitimate to regard the *petit tranchet* derivative as also of this date.

**No. 22** occurred together with a polished hammer of grey granite, a polished flint knife, pottery of Windmill Hill type, and two other *petit tranchet* derivatives (**nos. 45, 46**) in the chambered cairn of Ormiegill, Caithness, investigated by Anderson.<sup>5</sup> The original is in the National Museum of Antiquities, Edinburgh (Mus. no. EO. 125). The evidence of the grave furniture shows that, in spite of the ceramic, we must regard this cairn as of Early Metal Age date.

<sup>1</sup> *Forty Years Researches*, pp. 181-3.

<sup>2</sup> *ibid.*, pp. 283-4.

<sup>3</sup> *W.A.M.*, xlv, 300-335, and pl. vi, no. 2.

<sup>4</sup> *Proc. Bristol Univ. Spel. Soc.*, vol. 4, p. 67 ff, and fig. 9, no. 9.

<sup>5</sup> *Scotland in Pagan Times*, pp. 244-8.



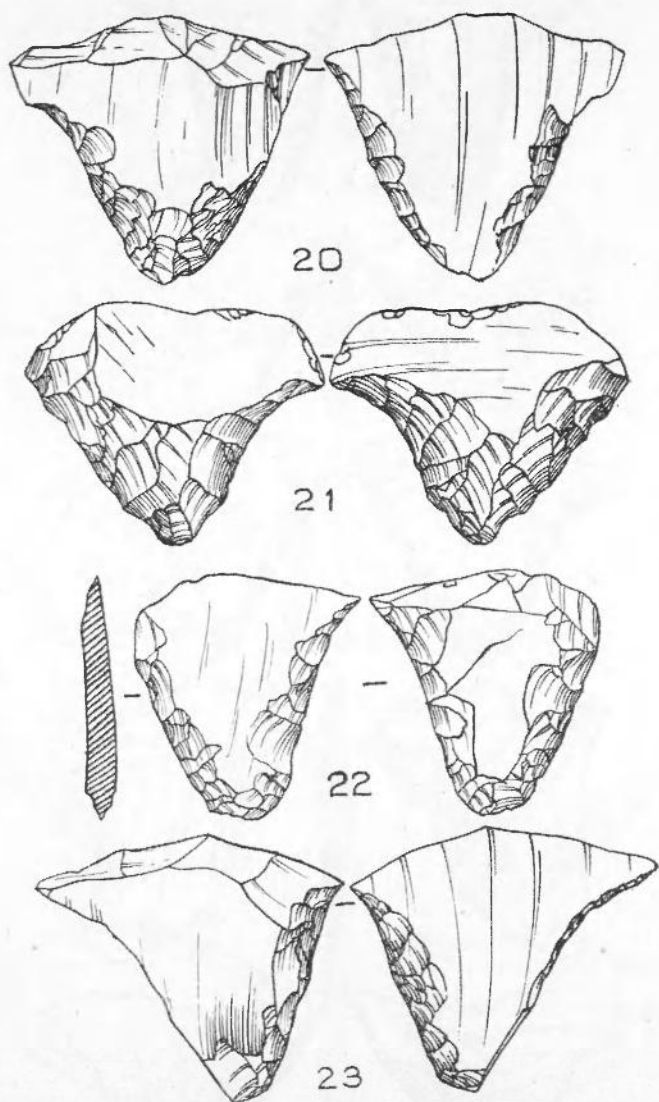


FIG. 7 (i)  
CLASS D

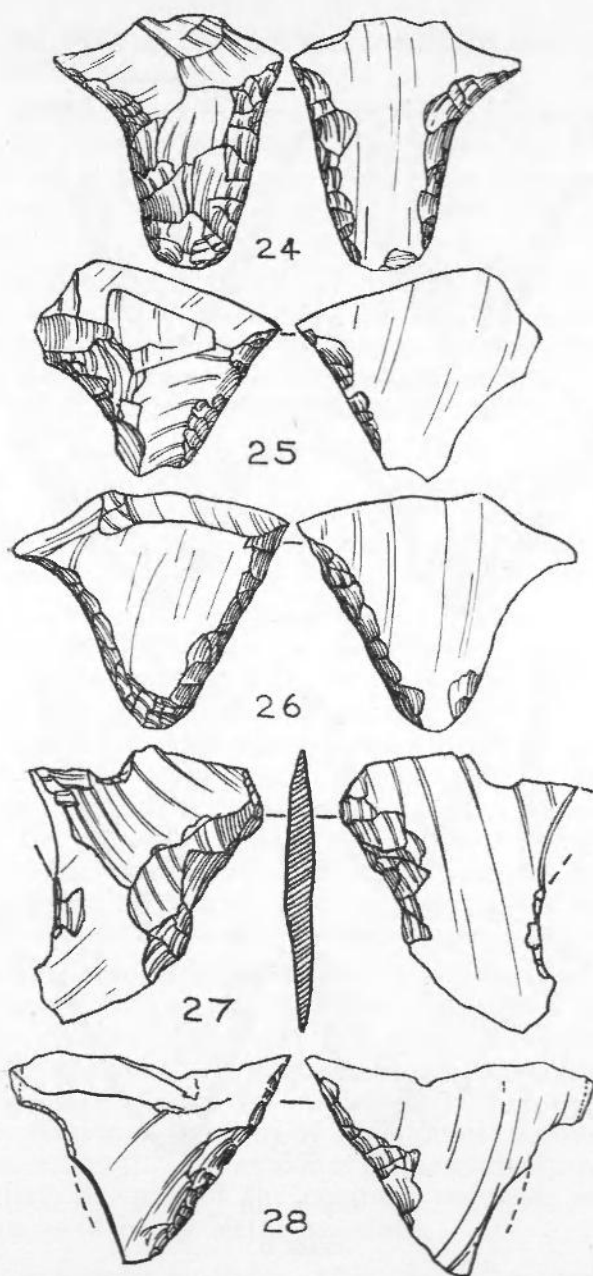


FIG. 8 (i)  
CLASS D

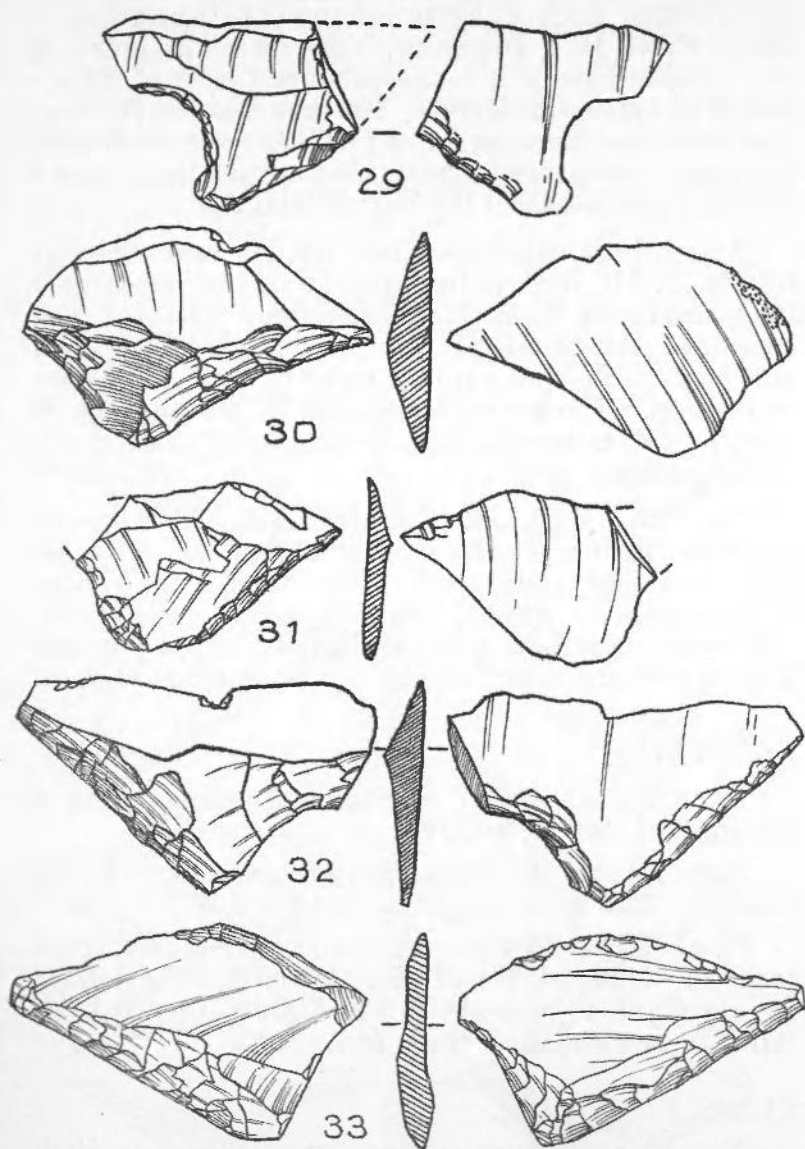


FIG. 9 (3)

CLASS E

The four specimens (**nos. 23-26**) were obtained by Mortimer accompanying inhumation C in grave A under Howe Hill, Duggleby, Yorkshire.<sup>1</sup> In grave B of the same barrow a round-bottomed bowl of Windmill Hill type was found. The fact that a polished flint knife was found in grave D on the original ground surface of the barrow suggests that in time the primary inhumations belong to the Early Metal Age.

A slightly damaged specimen, **no. 27**, was excavated by Mr. S. H. Warren from pit 12 in the submerged land-surface at Lion Point, Clacton. The pit also contained flat-based pottery decorated by grooves and blunt stabs and without trace of cord impression or incision. The pottery has a family resemblance to that from Woodhenge. Nos. 30, 31, 35 and 36 also come from this pit.

**No. 28** was obtained by Mr. Leeds, F.S.A., from pit P at Sutton Courtenay, Berkshire.<sup>2</sup> The pit also contained flint saws, part of a stone axe, a flint hammerstone, a pointed bone implement, and sherds of a ware resembling the Woodhenge-Clacton pottery. The objects are in the Ashmolean Museum at Oxford.

#### CLASS E. (Fig. 9).

From the same pit P at Sutton Courtenay came a specimen of class E, **no. 29**.

**Nos. 30 and 31** came from pit 12 at Lion Point, Clacton. (See no. 27.)

**Nos. 32 and 33** were excavated by Mrs. Cunnington from the ditch of Woodhenge, Wiltshire, the former from a depth of between two and three feet, and the latter from a depth of three feet.

#### CLASS F. (Fig. 10).

**No. 34** came from cutting XII of the inner ditch of Windmill Hill, Wiltshire, at a depth of less than

<sup>1</sup> *Forty Years Researches*, pp. 23-30.

<sup>2</sup> Since the paper was written, Mr. Leeds has published the finds at

Sutton Courtenay in *Ant. J.*, 1934, p. 264. The *petit tranchet* derivations are shown by nos. g and i on pl. xxviii.

one foot. The museum number of this specimen, which clearly belongs to the second period of the site, is no. 17807.

**Nos. 35 and 36** came from pit 12 at Lion Point, Clacton. (See no. 27.)

**No. 37** came from post-hole E.17 at Woodhenge, Wiltshire.

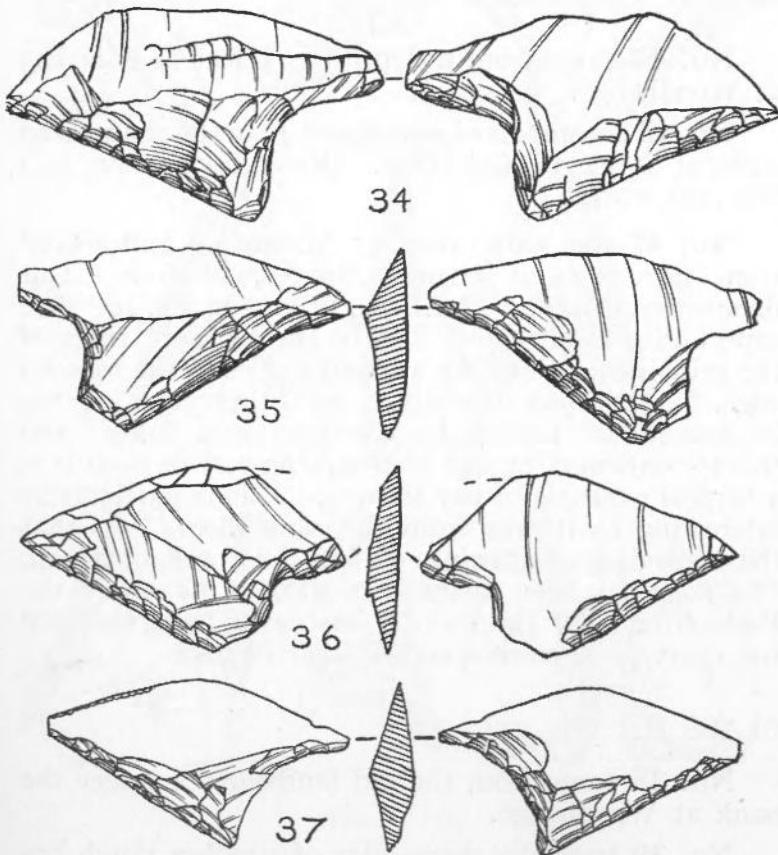


FIG. 10 (1)

CLASS F

## CLASS G. (Fig. 11 and 12).

**No. 42** came from hole 1 of the outer stone circle at the Sanctuary, Overton, Wiltshire.<sup>1</sup> (See no. 13.)

**No. 43**, which is clearly incomplete, the tip being absent, was found loose by Greenwell in the material of barrow LXV at Rudstone.<sup>2</sup> This round barrow covered a primary inhumation accompanied by a flint knife. In the infilling of this grave were fragments of 'drinking cup.' A number of flints and pieces of cinerary urn were also found in the material of the mound. B.M. museum no. <sup>79</sup><sub>12—9.</sub>  
894.

**No. 44** came from a depth of 1½ feet in hole E.3 at Woodhenge.

**No. 45** accompanied no. 22 and 46 in the chambered cairn at Ormiegill, Caithness. (Refer back to no. 22.) Mus. no. EO.124.

**No. 47** was excavated by Armstrong and Favell from floor 85c at Grimes Graves, Norfolk. Our illustration is after *P.P.S.E.A.*, iv, p. 201, fig. 10. The aspect illustrated shows clearly the pressure rings of the primary flake surface at right-angles to the *tranchet* edge. Armstrong describes the other face of the implement as 'formed by two truncated flakes,' and this is confirmed by the section. As can be seen it is a typical example of our form G. This is particularly interesting as it was from the same floor, 85c, that the engravings or drawings on flint crust were obtained. The floor has been assigned to various phases of the Palaeolithic, but the form F has never been recorded from any pre-Peterborough-Beaker deposit.

## CLASS H. (Fig. 11).

**No. 38** came from the old land-surface under the bank at Woodhenge.

**No. 39** from the sharp edge of which a notch has been subsequently chipped, was obtained by J. F. Lucas

<sup>1</sup> *W. A.M.*, xlv, pl. vi, no. 3.

<sup>2</sup> *British Barrows*, p. 252.

from a round barrow at Hungry Bentley, Derbyshire. According to Evans<sup>1</sup> 'it had been buried together with a jet ornament and beads . . . in an urn containing burnt bones.' It would appear, therefore, that the object dates from well on in the Bronze Age.

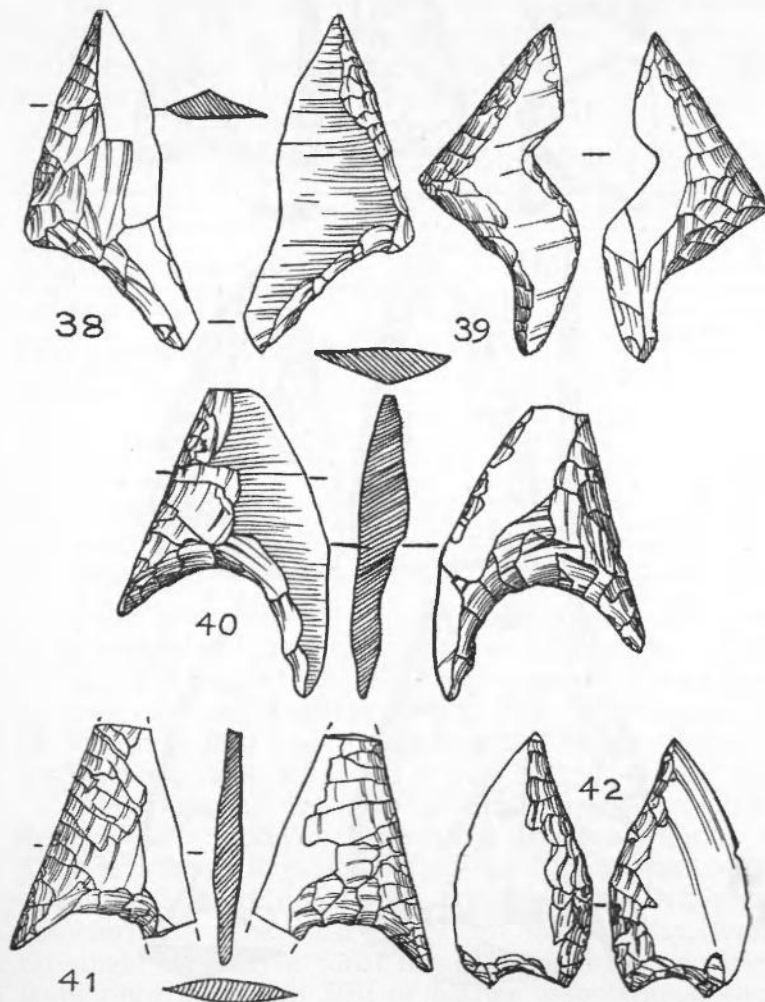


FIG. 11 (t)

NO. 42, CLASS G; NOS. 38-41, CLASS H

<sup>1</sup> *Ancient Stone Implements*, 2nd ed., p. 394.



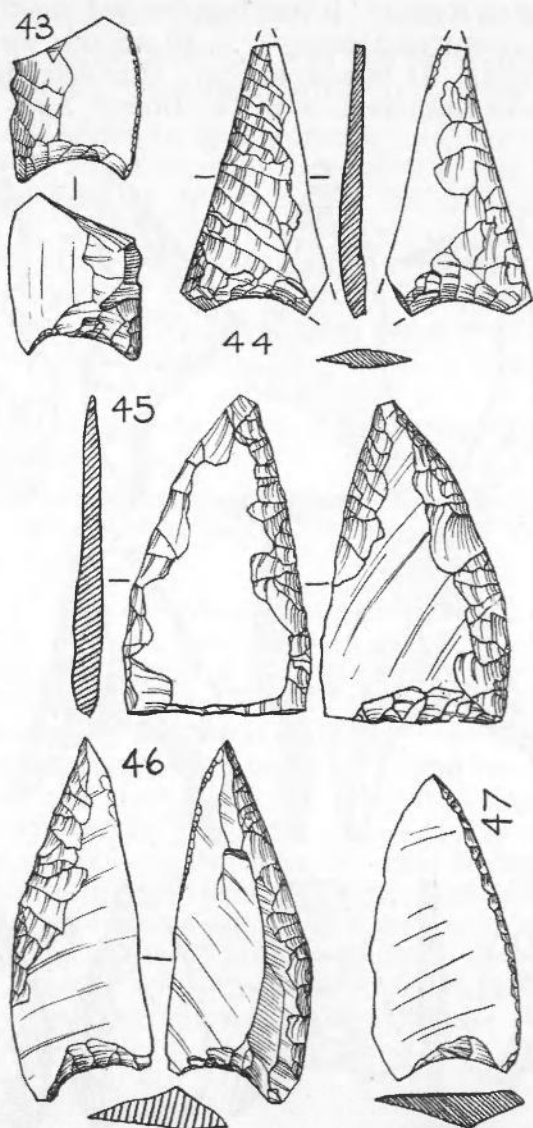


FIG. 12 (1)

NOS. 43, 44, 45 AND 47, CLASS G ; NO. 46, CLASS 8

Nos. 40 and 41 both came from Woodhenge, the former from post-hole B.16, and the latter from post-hole C.14.

# CLASS I. (Fig. 12).

The only example of class I, **no. 46**, was excavated by Anderson<sup>1</sup> from the chambered cairn at Ormiegill, Caithness. For details refer back to no. 22. The museum no. of no. 46 is EO.128.

*Table summarising the associations recorded.*

	A	B	C <sub>1</sub>	C <sub>2</sub>	D	E	F	G	H	I
Period of the 1st Occupation of Windmill Hill .. ..	2	—	—	—	—	—	—	—	—	—
Material of Long Barrows .. ..	—	—	—	—	—	—	—	—	—	—
Peterborough-Beaker period .. ..	—	3	2	—	4	—	1	1	—	—
Chambered cairns .. ..	—	—	1	—	1	—	—	1	—	1
Grooved pottery sites <sup>2</sup> .. ..	—	—	—	2	2	5	3	1	3	—
Early Metal Age <sup>3</sup> .. ..	2	—	1	—	5	—	—	—	1	—
Material of Round Barrows .. ..	—	1	3	—	3	—	—	1	—	—
Floor 85c, Grimes Graves .. ..	—	—	—	—	—	—	—	1	—	—

From this table it would appear that the true *petit tranchet* or transverse arrowhead (form A), a type dating back to the late Mesolithic, appears to have been in somewhat sparing use during the first occupation of Windmill Hill and to have persisted well into the Early Metal Age.

In considering the derivative forms (B-I) we may first of all confine our attention to those found in datable associations, excluding for the moment the chambered cairn, grooved pottery and flint-mine associations. The most important fact is that, while no single derivative form has hitherto been recorded from pure Windmill Hill or earlier associations, they

<sup>1</sup> *Scotland in Pagan Times*, 244-8.

<sup>2</sup> i.e. Woodhenge, Lion Point, and Sutton Courtenay.

<sup>3</sup> The term Early Metal Age is here used to designate that part of the

Bronze Age during which flint was still in extremely common use. It follows immediately the Peterborough-Beaker overlap.

have been noted in considerable numbers in associations ranging from Peterborough-Beaker times until well into the Bronze Age. This suggests that in this country the occurrence of the derivative forms may be taken to indicate at least a Peterborough-Beaker date. It will be noticed that throughout this paper we have used the term Peterborough-Beaker when referring to cases such as the second occupation of Windmill Hill. This is due to the fact that we have no instance of a derivative form having been found in association with Peterborough pottery without Beaker pottery also being present. It would indeed be true to say that Beaker pottery has been found with almost every major find of Peterborough pottery from a settlement site yet made.<sup>1</sup> At least there would seem to have been a very wide overlap between the cultures. It would be strictly true to say at the present time, in fact, that we have no evidence that the derivative forms of the transverse arrowhead in this country antedate the Beakers, though this does not preclude the possibility at some future date of discovering them in purely Peterborough associations if such exist. The negative evidence for the pure Windmill Hill culture is, however, based on a considerable amount of excavation and we may legitimately attach weight to it as a working rule. It is instructive in this respect that, whereas eight *petit tranchet* derivative specimens have been recovered from the material of round barrows, no single example has come from the material of a long barrow. It should be pointed out here that as between the various derivative forms we are unable as yet to make any valuable chronological distinctions. Five out of the nine derivative forms have already been recorded from Peterborough-Beaker times in spite of the relative scantiness of the evidence.

<sup>1</sup> An exception would appear to be the site recently discovered by Dr. J. F. S. Stone at Winterbourne Dauntsey. This site is not at present, however, extensive enough to provide a sound basis for argument. Excavations carried out by Mr. A. Keiller, F.S.A., subsequent to the writing of this paper, along the West Kennet

Avenue at Avebury, have revealed a purely Peterborough habitation site, which has yielded *petit tranchet* derivatives in remarkable numbers. As more purely Peterborough settlements are excavated it may prove that the *petit tranchet* derivatives date to a period anterior to the arrival of beakers.

Turning now to the associations with the grooved pottery, the relative dating of which is still uncertain, we may note at once their abundance. From the post-holes (four), ditch (three) and old ground surface (two) of Woodhenge, from the cooking-pit at Lion Point (five) and from the pit at Sutton Courtenay (two) occur typical derivative forms in association with the pottery decorated by grooves and stabs, without a trace of string or cord impression or of incision. For present purposes we shall do little more than record this fact. It is, however, legitimate to point out that on the basis of the other evidence noted above these associations seem to preclude a date earlier than the Peterborough-Beaker time for the Woodhenge-Clacton pottery.

The case of the chambered cairns of Caithness (Ormiegill and Camster) is interesting in that they have yielded examples of no less than four different classes of derivative. In view of the evidence cited this alone should be sufficient to preclude a pre-Peterborough-Beaker age for them. There is, however, independent evidence for dating them up to the Early Metal Age. Thus Ormiegill yielded a granite hammer of similar type to that found with a food-vessel at Doune, Perth,<sup>1</sup> while both Ormiegill and Camster yielded polished flint knives. Again, the Unstan Cairn in Orkney yielded a barbed and tanged arrowhead.

Finally, we have the single specimen from floor 85c at Grimes Graves. The weight of all the evidence of the 50 other specimens which we have considered above is such that there is no escape from the conclusion that floor 85c dates from Peterborough-Beaker times or later.<sup>2</sup>

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<sup>1</sup> *P.S.A.S.*, ix, 39; xvii, 453; Abercromby, food-vessel no. 263.

<sup>2</sup> See *Antiquity*, 1933, p. 166.

extensive series of these objects in the University Museum of Archaeology and Ethnology at Cambridge, and on this account I must thank Mr. Louis Clarke, F.S.A., and especially Mr. M. C. Burkitt, F.S.A., Curator of the Stone Age Collections. Mrs. Cunningham kindly placed at my disposal the specimens excavated from Overton and Woodhenge; Mr. T. Shepherd gave me access to the Mortimer collection; Mr. E. T. Leeds, F.S.A., allowed me to study his finds from Sutton Courtenay before publication; Mr. A. Keiller, F.S.A., allowed me to work on specimens excavated from Windmill Hill, in which I was assisted by Miss James; Dr. Grahame Callender, F.S.A., assisted me to draw the examples from Scottish cairns; Mr. S. H. Warren, F.G.S., kindly allowed me to study and draw unpublished specimens from Lion Point, Clacton; finally I have to thank the University of Bristol Spelaeological Society for allowing me to draw specimens from Mendip barrows, and the authorities at the British Museum for help in identifying objects in the Greenwell Collection.