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THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN; ITS
CLOSE ANALOGIES ON THE RHINE; ITS PROBABLE ORIGIN
IN CENTRAL EUROPE.

BY THE HON. J. ABERCROMBY.

[PRESENTED NOVEMBER 25TH, 1902. WITH PLATES XXIV-XXXVII.]

ABBREVIATIONS.

- A.S.I. = *Ancient Stone Implements of Great Britain*. By Sir John Evans.
2nd edition, 1897.
- Ar. = *Archæologia*.
- Ar. J. = *Archæological Journal*.
- A. W. = *Ancient Wilts*. By Sir Richard Hoare, 1812.
- Bateman, 10 Y.D. = *Ten Years' Diggings...in the counties of Derby, Stafford and York from 1848-1858*.
- Bateman, Vest. = *Vestiges of the Antiquities of Derbyshire, etc.* By Bateman and Glover. 1848.
- B.B. = *British Barrows*. By Wm. Greenwell, M.A. 1877.
- Cr. Br. = *Crania Britannica*. By Drs. Thurnam and Davis. 1856.
- Č.P. = *Čechy Prehistorické*. By Dr. J. L. Píř. 1899.
- G.G. = *Gravhøje og Gravsfund*, Pl. X, 99. By Madsen. 1896.
- Götze, G.u.O. = *Die Gefäßformen u. Ornamente d. neolith. schurverzirt. Keramik im Flussgebiete d. Saale*. By Dr. A. Götze. 1891.
- Montelius, Ch. B.Z. = *Die Chronologie d. ält. Bronzezeit*. 1900.
- P.S.A.L. = *Proc. Society of Antiq. of London*.
- P.S.A.S. = *Proc. Society of Antiq. of Scotland*.
- S.P.T. b & s. = *Scotland in Pagan Times: Bronze and Stone Ages*. By Dr. Joseph Anderson. 1886.
- V.F.G.M. = *Vorgeschicht. Funde aus d. Grafschaft Mansfeld*. By Dr. Grössler. 1898.
- W.A.M. = *Wilts Archæolog. Magazine*.
- Z.E. = *Zeitschrift für Ethnologie*.
- No. followed by a number refers to a beaker.
- Fig. " " " ornament.

I.

As about a century has elapsed since Sir Richard Hoare laid the foundations of archaeology in this country by the systematic excavation of ancient tumuli in Wilts, and as in that space of time a considerable body of prehistoric pottery has accumulated in our museums, the time has arrived when some attempt should be made to arrange this early ceramic in approximately chronological order. Hitherto hardly anything has been done in this direction. Thirty-one years ago the late
a

Dr. Thurnam did inestimable service to this branch of archaeology by his remarkable monograph on "British Fictile Vessels."¹ But his object was first to classify the material with reference to interment by cremation or inhumation and then to describe the chief typical forms proper to each class, rather than to explain how each class and type arose in order of time. He began with vessels of cinerary types, and finished with "food-vessels" and "drinking cups," thereby leading the reader to suppose that he held the former to be first in order of time, especially as he distinctly assigned a very late date to the "drinking cup."

Canon Greenwell in his introduction to *British Barrows* written five-and-twenty years ago, also describes the cinerary urns first, though he considers it a well-established fact that cremation and inhumation were contemporary methods of interment, and he was of opinion the round barrows "belong to a period which centres more or less in B.C. 500."²

Before proceeding further I propose to substitute for the double-barrelled name "drinking cup," the compacter term "beaker," defined in Dr. Murray's new dictionary as "a large drinking vessel with a wide mouth, an open cup or goblet." It has also the advantage of corresponding in form with the Swedish *bägare*, Danish *bæger*, and German *Becher*, words that are used to designate a class of vessel very similar to our "drinking cup" by the archaeologists of Germany and Scandinavia.

Since the investigations of Rolleston, Thurnam, and Davis, it is generally agreed that the introduction of bronze into Britain coincided with the advent of a people of a new stock, distinguished from the older neolithic inhabitants by taller stature and a moderately brachycephalous head. Here I take it for granted that they interpreted correctly the evidence upon which they founded their statements to this effect. As beakers have sometimes been found with brachycephalous skeletons it is clear that the new-comers brought with them from the continent a new type of vessel, very different from any neolithic pottery as yet found in Britain. It must certainly be a matter of the greatest interest to the archaeologist and the ethnologist to be able to trace, as I propose to do, this type of ceramic art across the Channel, and thus to ascertain from what quarter the new stock of immigrants came. If it is asked how we know that the new tribes that introduced the beaker into Britain entered it at the beginning of the Bronze period and not at the end of the neolithic age, the answer is that the difference of form and ornament between a beaker like No. 2 and Nos. 1, 6, 14, is not sufficiently great to lead us to suppose that any great interval of time separates them. Bronze no doubt was rare but it was in use.

I believe that the recorded finds of the last hundred years are sufficient to establish the fact that the beaker is the oldest form of fictilia in the Bronze Age of this country, and I will shortly lay before the reader the proofs of this conviction. Its importance is great; for once accepted as an undeniable fact it throws on the

¹ *Ar.*, vol. 43.² *B.B.*, p. 131.

early history of Britain a ray of light, which may penetrate to about 1500 B.C. or even earlier. From the time of the introduction of the new ceramic, which has its tap-roots in the neolithic period on the Continent, we can trace on the whole a gradual degeneration of form and manufacture, though often coupled with increased development of ornament. During the earlier part of the period we are able to watch the introduction of cremation, while in the later part of it we see the beaker being gradually supplanted by a totally new type of vessel, though this too was a concomitant of interment with inhumation. Before these changes could be accomplished the lapse of several centuries may well be postulated. If we could see good photographs of all known examples of the beaker and of the ornament that envelopes them, we should be able to form an opinion as to the artistic tendencies of the new people when left to itself, and from the art thus revealed various deductions of an interesting nature might be made. In the limited space at my disposal it is impossible to exhibit so many photographs, though those about to be presented form about a fifth of the total number known to exist in Great Britain.

Before doing so, however, it is necessary to give a brief description of the types into which Thurnam divided this class of fictilia. For though he was undoubtedly mistaken in supposing that beakers were in use at a time when Roman culture could act upon them, even indirectly, his classification of them is excellent. He recognized three types and distinguished them as α , β , γ , chiefly by the character of the brim or neck.

" α . High-brimmed globose cup.

" β . Ovoid cup with recurved rim.

" γ . Low-brimmed cup.

" α . The body or lower part is more or less globular; the upper part separated from the lower by a constriction, frequently very defined, spreads out like the calix of a flower and forms a brim that almost equals the lower part in height. The sides of this brim, whether more or less erect or sloping, are straight and not recurved at the lip. The ornament is profuse and elaborate. This is the prevailing type in South Britain to which four-fifths probably of known examples belong.

" β . In this type there is no distinct demarcation between the body of the cup and the brim, but one glides into the other by a gradual curve. The brim is of slight elevation and in the Wilts examples is curved outwards at the lip. The body instead of being globular is oval. More attention seems paid to the fabric than to the decoration. The walls are thinner than in any other variety of British fictile vessel and as they have been well fired, the colour is red, almost as bright as that of Samian ware. In general the ornament is simple and confined to horizontal bands, in lines, dots, and chevrons, alternating with plain bands. As a type it is relatively rare.

" γ . This may be regarded as a debased variety of our first type and prevails in Scotland and Northumberland, north of the Roman Wall."¹

¹ *Ar.*, vol. 43, pp. 391-4.

The great importance of Thurnam's classification consists in his separation of the types *a* and *β*, for I shall attempt to show later on that these must have a different secondary origin and that the differences between them in form and ornament did not arise in this country.

Type *a* will best be understood by the photographic illustrations (Pl. XXV, XXVI). The ornament, however, will be taken separately when all three types have been made familiar to the reader.

No. 1 from barrow 39, Stonehenge, Wilts, is $8\frac{1}{2}$ inches high (216 mm.) and now in the Devizes Museum. It was found with a fine flint dagger measuring $7\frac{1}{8}$ inches by $2\frac{1}{8}$ inches (270 by 54 mm.) of the same type as one figured by Sir John Evans.¹

No. 2 from barrow 93, Durrington, Wilts, measures $7\frac{1}{2}$ inches (191 mm.) in height, and is now in the Devizes Museum. It was found with the primary interment, but no other details are given.² In connection with this may be mentioned what is probably a contemporary beaker of the same height, though less globular below, also ornamented round the neck with a row of saltires, separated by narrow vertical bands. It was found by Sir R. Hoare under a small barrow at East Kennet, Wilts, in a grave 5 feet (1.52 m.) deep. With it was a beautiful perforated axe of limestone and a flat bronze dagger $5\frac{1}{2}$ inches long (140 mm.) and $2\frac{3}{8}$ inches wide (86 mm.) provided with three rivets.³ The beaker and dagger are figured by Thurnam,⁴ but where they now are I have not been able to discover.

No. 3 from barrow 5, Winterbourn Stoke, Wilts, is only $5\frac{3}{4}$ inches (145 mm.) high, and now in the Devizes Museum. It was found in a large barrow in a large grave 5 feet deep (1.52 m.), at the foot of a skeleton. With it was a "pulley ring" and a large, round jet button $1\frac{1}{2}$ inches in diameter (38 mm.).⁵

No. 4 from barrow 36, Stonehenge, measures $7\frac{3}{4}$ inches (197 mm.) in height and is now in the Devizes Museum. It was found at a depth of 6 feet (1.82 m.) below the natural surface,⁶ which is enough to show that the interment belongs to an early period, though nothing accompanied it but a skeleton.

No. 5 from Longbarrow 170, Wilsford Down, Wilts, is 8 inches high (203 mm.) and now in the British Museum. Under what circumstances it was found I do not know, but in form and ornament it so greatly resembles two beakers found together in a cist at Winterbourn Monkton, North Wilts, that they must belong to the same period of time. The pair of beakers are figured by Thurnam and Davis,⁷ and were found with a finely chipped, recurved flint knife $3\frac{1}{2}$ inches (89 mm.) long; two large and one small jet button, the largest being almost 3 inches (76 mm.) in diameter, with a V-shaped perforation at the base; and a so-called jet "pulley ring," ornamented with fine raised lines. A shale "pulley ring" was found by Sir R. Hoare under a large sarsen stone near

¹ *A.S.I.*, p. 349, Fig. 264.

² *Ar. J.*, xxiv, pp. 28, 29.

³ *A. W.*, 118.

⁴ *A. W.*, 168, Pl. XVIII.

⁵ *Ar.*, vol. 43, Figs. 83, 156.

⁶ *A. W.*, 163.

⁷ *Cr. Br.*, ii, p. 58 (2).

Durrington Walls with a flint dagger $6\frac{1}{2}$ inches (165 mm.) long by $1\frac{1}{4}$ inches (45 mm.) wide; a whetstone; a conical jet button with the V-shaped perforation and two small discs of flint.¹ This makes it probable that No. 5 belongs to the earlier part of the bronze-age, though the curvature of the lower part is already becoming flattened. A "pulley ring" from Yorkshire is figured by Canon Greenwell and Sir J. Evans.²

No. 6 from barrow 37, Garton Slack, East Riding, is now in Mr. Mortimer's museum at Driffield, Yorkshire. It was found at the centre of the barrow, about 1 foot below the natural level and with it was a very fine flint dagger 7 inches long (178 mm.), and a perforated axe-hammer.

No. 7 from Seven Barrows, Lambourn Down, Berks., is $7\frac{1}{4}$ inches high (197 mm.) and now in the British Museum. From the similarity of its ornamentation with that of No. 1 it is possibly of the same age, but, for reasons to be shown in the sequel, it represents, I believe, the original type *a* better than No. 1. Among the objects sent to the British Museum with this beaker as having been excavated at Seven Barrows is a fine flint dagger figured by Sir John Evans,³ several beautiful flint arrowheads and some very small bronze knives. It is not impossible, though not certain, that the flint dagger accompanied No. 7.

No. 8 from a long barrow at Figheldean, Wilts, is $7\frac{1}{4}$ inches (185 mm.) high, and now at the British Museum. It was found with a secondary interment,⁴ but is interesting for its ornament, and does not appear to be later than No. 3 for instance.

No. 9 from a barrow on Haddon Field, near Bakewell, Derbyshire, is $6\frac{1}{2}$ inches (165 mm.) high, and preserved in the Sheffield Museum. At the centre, under a cairn of large stones lay the only interment, a few inches above the natural surface of the rock. At the back of the skeleton was this beaker, a partly incinerated flint arrowhead, a small bronze awl with the remains of its wooden handle, and a "mesh-rule" of deer's horn, $6\frac{1}{4}$ inches (159 mm.) long and rounded at the ends. The cephalic index of the skull is 79.2.⁵

No. 10 from a large barrow at Castern, near Wetton, Staffordshire, is $8\frac{3}{4}$ inches (223 mm.) high, and now in the Sheffield Museum. The barrow was 8 feet (2.432 m.) high, and under it was a square grave cut out of the rock, the bottom being lined with stiff clay. The skeleton had a cephalic index of 85.6 and belonged to a person above the middle height.⁶

No. 11 from a small barrow at Dowel, near Sterndale, Derbyshire, is $6\frac{3}{4}$ inches (171 mm.) high, and now in the Sheffield Museum. The grave was cut 3 feet (912 mm.) into the sandstone rock, and was filled with grit stones. At the bottom lay a skeleton, this beaker, a conical jet button with the V-shaped perforation, and two flints, one of them an arrow-point.⁷

¹ *A. W.*, 172.

² *A.S.I.*, Fig. 264.

³ Bateman, 10 *F.D.*, 106.

⁴ Bateman, 10 *F.D.*, 38.

⁵ *B.B.*, Fig. 123; *A.S.I.*, Fig. 372.

⁶ *Ar.*, vol. 42, p. 197.

⁷ Bateman, *Vest.*, 87, 88.

No. 12 from a barrow at Bee Low, Youlgreave, Derbyshire, is 6½ inches (.165 m.) high, and preserved in the Sheffield Museum. Some 9 feet or 10 feet (2.736 to 3.040 m.) from the centre was an irregular grave cut in the rock, the bottom of which was 4½ feet (1.368 m.) below the surface of the barrow and paved with chert stones. It contained the skeleton of a young person with a cephalic index of 73.3. Near the knees lay this beaker, and close to it a very fine instrument of white flint over 4 inches (.011 m.) long, which may have been a saw or a knife.¹

No. 13 from Smerril Moor, Derbyshire, is nearly 9 inches high (.228 m.). It was found in a large irregular grave 5 feet (1.52 m.) deep, under a small tumulus, surrounded by an irregular circle of large stones. The grave was coated with stiff clay and filled with stones. At the bottom was the skeleton of a tall young man. Behind the pelvis lay this beaker, a bone netting-rule 12 inches long (.304 m.); a flint dagger 4¾ inches long (.121 m.), a flint spear-head 3 inches long (.076 m.)—both of these are now lost—and four other flint implements.² The beaker is now in the Sheffield Museum.

No. 14 from Green Low, Alsop Moor, Derbyshire, is 7¾ inches high (.197 m.). The barrow was heaped up over a rocky uneven surface in which a hole had been cut to serve as a cist. At the bottom was a male skeleton. Behind the shoulders lay this beaker; a piece of spherical pyrites; a flint implement with a circular head and a splendid flint dagger 6 inches long (.152 m.). Lower down were three barbed arrowheads, beautifully chipped, and seven other flint implements of inferior work; three bone instruments, neatly rounded at one end, much like a mesh-rule for netting. Near the pelvis lay the remains of an infant and across the pelvis a bone pin. All the flints had undergone the action of fire.³ The beaker is now in the Sheffield Museum.

No. 15 from a barrow at Mouse Low between Deepdale and Grindon, Staffordshire, is 8¼ inches (.210 m.) high, and now at the Sheffield Museum. At the centre of the barrow was a cist of three large stones containing the skeleton of a very large, strongly built man, having a cephalic index of 78.7. Near the head were four beautifully barbed flint arrowheads; a rudely chipped spearhead and a roughly circular flint implement.⁴

No. 16 from barrow 243, Folkton, East Riding, is 7¼ inches (.184 m.) high, and preserved in the British Museum. It was found with a child-burial in an oval grave 13 feet (3.950 m.) from the centre, the grave being 1½ feet deep.⁵ Its form and ornament show that it must be classed among the latter examples of type *a*.

No. 17 from barrow 21, Ganton, East Riding, is 6¾ inches (.172 m.) high, and now at the British Museum. It was found about 9 feet (2.736 m.) from the centre, and 3½ feet (1.064 m.) below the natural surface with the body of a

¹ Bateman, 10 *F.D.*, 72; *Vest.*, 35.

² Bateman, *Vest.*, pp. 59, 60.

³ *Ar.*, vol. 52, p. 11.

⁴ Bateman, 10 *F.D.*, pp. 102-3.

⁵ Bateman, 10 *F.D.*, 115, 116.

young man. The barrow had a diameter of 60 feet (18.24 m.) and was 3 feet (.912 m.) high. At the centre was a grave containing two skeletons, a food-vessel of ill-determined type, and a barbed flint arrowhead. At a higher level and 7 feet (2.128 m.) from the centre was the body of a child and another food-vessel of different form. Eight feet (2.43 m.) from the centre was a grave containing a third food-vessel, somewhat differing in form from the last. About 12 feet (3.64 m.) from the centre lay the body of a child with beaker No. 18.¹ These interments show that beakers of the later period, when the lower part had become flattened and the constriction at the waist was becoming obliterated, were contemporary with some forms of the food-vessel.

No. 19 from barrow 63 Rudstone, East Riding, is 5¾ inches (.150 m.) high, and now at the British Museum. It was found in a hollow only 4 inches (.102 m.) below the natural surface at a distance of 16 feet (4.86 m.) from the centre of the barrow with the body of a very young child. At the centre, but with a secondary interment, 6 inches (.147 m.) above the natural surface, was the body of a man about 55 years of age. With the body was a food-vessel and a beautifully barbed flint arrowhead.² The food-vessel, of a very common type in Derbyshire, Yorkshire, Scotland, and occasionally met with in Ireland, has at the shoulder a groove with five perforated stops or ears. The contents of these two barrows leave the impression that the beaker was now thoroughly decadent, and was being replaced by a newer type of ceramics—the food-vessel.

No. 20 from Eckford, Roxburgh, is 8¼ inches (.210 m.) high, and now in the National Museum at Edinburgh. It was found in a small cist lying east and west, but no other details are recorded.³ In spite of its form its ornament belongs to type *γ*, and it is evidently later than the earlier examples from South Britain. For in these a triangle is always shaded with straight lines, while on No. 20 the lines of shading are broken. In Scotland the examples of type *a* are but few in number.

The results may now be briefly summed up. Out of twenty examples of type *a*, three were found with large flint daggers; five with objects such as the button with a V-shaped perforation, the "mesh-rule" and the "pulley ring," which have been found associated on more than one occasion with a flint dagger. But in two cases I cannot exhibit the beakers themselves, only two that greatly resemble them in essentials. In other words eight beakers belong to a time when bronze was so rare that flint daggers were still in use. A ninth example (No. 2) is extremely like a beaker found with a flat, plain, bronze knife-dagger and a perforated axe-hammer. Four examples were brought forward to show the type of skull that was prevalent when the beaker flourished, for the objects found with them are all of an early type. Three examples from Yorkshire illustrate the decline of the beaker, when it was gradually being replaced by the food-vessel. The earliest Scottish examples, though only one is exhibited, seem to be later than those from Wilts.

¹ *B.B.*, 161-166.

² *B.B.*, 245-51, Fig. 29.

³ *P.S.A.S.*, xxv, 29.

Hence it is reasonable to suppose that a period of some duration elapsed before the beaker reached Caledonia.

TYPE β (PL. XXVII, XXVIII).

No. 21 from Roundway, Wilts, is $6\frac{1}{4}$ inches (159 mm.) high, and now in the Devizes Museum. It was found in an oval grave sunk to a depth of $5\frac{1}{2}$ feet (1.67 m.) below the surface of the ground, with the skeleton of an old man; a bronze tanged dagger 10 inches (254 mm.) long; a stone bracer or wrist-guard with a pair of holes at each end and a flint arrowhead.¹ The white incrustation in the lines that compose the design of the ornament is very noticeable, and though so common in neolithic pottery on the Continent, is very unusual in Great Britain.

No. 22 from Mere Down, Wilts, is 6 inches (152 mm.) high, and now in the Devizes Museum. It was found in a low barrow at a depth of $3\frac{1}{2}$ feet (1.06 m.) with two skeletons; a small tanged knife-dagger, flat, plain and bevelled at the edge, measuring 5 inches by $1\frac{3}{8}$ inches (127 by .035); a stone bracer with one perforation at each end; and 2 discs of gold leaf, very thin and rather larger than a shilling, bearing a cross with equal arms and a row of dots round the circumference.²

No. 23 from Brickyard, Oxfordshire, is now in the Ashmolean Museum at Oxford.

No. 24 from Lambourn Down, Berks, is $5\frac{3}{4}$ inches (141 mm.) high, and now in the British Museum.

No. 25 from Dunrobin Park, Sutherland, is 7 inches (178 mm.) high, and now in the museum of Dunrobin Castle. While digging for gravel a small stone cist was encountered at a depth of 2 feet (606 mm.). It contained the skeleton of a young woman about eighteen years of age, lying on her right side with the knees drawn up. Behind the body were eighteen quartzose beach-rolled pebbles; at the feet lay 118 small shale discs about the size and thickness of a silver threepenny piece. Of these, six were perforated. Complete measurements of the skull were made, of which I give the indices only:

Cephalic index	..	...	...	...	...	82.4
Vertical	"	...	...	...	...	69.8
Nasal	"	...	...	...	...	51.1
Orbital	"	...	...	...	...	90.0 ³

This beaker is interesting as the most northerly example, preserved entire, of the three types of beaker in Great Britain.

No. 26 from barrow 99, Goodmanham, East Riding, is $5\frac{3}{4}$ inches (141 mm.) high, and now in the British Museum. It was found with the body of a young woman in a large grave measuring $10\frac{1}{2}$ feet by 5 feet by $5\frac{1}{4}$ feet deep

¹ *W.A.M.*, iii, 185-6; Montelius, *Ch. B.Z.*, Figs. 479-481.

² *A.W.*, 44, Pl. II.

³ Communicated in a letter from the Rev. J. M. Joass of Golspie, Curator of the Museum at Dunrobin.

(3.19 by 1.52 by 1.59 m.). Beside her was the body of a child with another beaker. Both these interments had disturbed an earlier one. Two feet (606 mm.) north of her head lay beaker No. 33, which was not associated with any skeleton in particular.¹ If, as there is reason to suppose, these three beakers are contemporary, it may be affirmed with certainty that Nos. 26, 33, do not belong to the earliest period of type β . The reason is this. The third beaker belongs to type γ and the triangles of the upper row of ornament are shaded with broken, not with straight lines.

No. 27 from barrow 161, Normanton, Wilts, is $7\frac{1}{4}$ inches (184 mm.) high, and now at Devizes. It was found in a grave nearly 6 feet (1.82 m.) deep with a skeleton.²

No. 28 from Winterslow Hut, Wilts, is $8\frac{1}{2}$ inches (216 mm.) high, and now in the Ashmolean Museum.³

No. 29 from barrow 3, Upton Lovel, Wilts, is $6\frac{3}{8}$ inches (162 mm.) high, and now in the Devizes Museum. It was found in a low barrow with a skeleton.⁴

No. 30 from Driffild, Yorkshire, is 7 inches (178 mm.) high, and now in the British Museum. It was found under a large barrow in a cist, covered by a very heavy cap-stone. The cist contained a very large skeleton with a stone bracer about 6 inches (152 mm.) long, having two gold-headed bronze rivets at its extremities, and near it was a very small bronze buckle. A portion of a thin, flat bronze dagger in a wooden sheath lay beside the body, as well as three large conical amber beads with the V-shaped perforation at the base. The body had been wrapt in linen from head to foot.⁵ It would have been better perhaps to have classed this under type α .

No. 31 from Beggar's Heaven barrow, Devil's Dyke, Brighton, is 5 inches (127 mm.) high, and now in the British Museum. It was found with a necklace of thin bronze leaf, rolled into small cylinders, and beads of very small, perforated discs of lignite.

No. 32 from barrow 62, Rudstone, East Riding, is $7\frac{3}{4}$ inches (197 mm.) high, and now at the British Museum. This beaker is specially interesting as it was found with a cremated interment. At the centre of the barrow was a large grave, 9 feet (2.736 m.) in diameter and $10\frac{1}{2}$ feet (3.19 m.) deep, with two stone cists at the bottom. In one cist was the body of an old man accompanied by beaker No. 35. At the centre of the other cist was a deposit of burnt bones belonging to an adult male, and in one corner lay a beaker of the same type as No. 32. Between the east side of the grave and the first cist lay No. 32 with the burnt bones of a strong adult male. None of these interments are primary.⁶ The fringe of diagonal lines above and below the bands of ornament on No. 32, show that it does not belong to the earliest part of the bronze period.

Sir Richard Hoare⁷ mentions two instances in which he found beakers with

¹ *B.B.*, 308-9.

² *Ar.*, vol. 43, p. 341.

³ *Ar.*, vol. 34, pp. 254-5.

⁴ *A.W.*, 205.

⁵ *A.W.*, 75, Pl. IX.

⁶ *B.B.*, 238-244.

⁷ *A.W.*, 121, 199.

burnt interments. Unfortunately all three—for two were found together in one instance—are now lost, though two “incense cups,” that accompanied the pair of beakers, are at present in the Devizes Museum. Judging from these, the interment could not have belonged to a very early period of the Bronze age.

[No. 33 was found with No. 26 and is described on p. 381.]

No. 34 from Brandon Fields, Suffolk, is $3\frac{3}{8}$ inches (.099 mm.) high, and now at the British Museum. This small beaker, a food-vessel not unlike a beaker and a stone bracer with three perforations at each end, were found together in a bed of drift, extensively worked for flints, on the banks of the Little Ouse. There was no tumulus and no bones accompanied the vessels.¹

[No. 35 was found with No. 32 and is described on p. 381.]

No. 36 (Pl. V), from Clifton, Westmorland, is 7 inches (.178 mm.) high, and now in the Carlisle Museum.

To sum up. Out of sixteen examples of type β three have been discovered with tanged bronze daggers or knife-daggers, including in one instance amber heads with the V-shaped perforation. A fourth was found with a stone bracer or wrist-guard; a fifth with a bronze leaf necklace of early type and on two occasions small objects of gold were associated with the bronze daggers. In several cases no details of the finding of the beaker have been preserved. But on the whole type β seems rather younger than type α , and that was Thurnam's conviction, though he gave no special reason for it. Yet though of later introduction into Britain than type α , having been brought over by a fresh wave from the Continent, both types must be in a large measure contemporary.

TYPE γ (Pl. XXIX, XXX).

No. 37 from Glenforsa, Isle of Mull, is $6\frac{1}{2}$ inches (.165 mm.) high, and now in the Museum at Edinburgh. It was found with a bracer of hard, polished green-stone, $3\frac{1}{4}$ inches (.083 mm.) long, with a perforation at each end; also with fragments of a thin triangular bronze blade.²

No. 38 from Collessie, Fife, is 9 inches (.228 mm.) high, and now in the Museum at Edinburgh. It was found in a stone cist on the natural surface, nearly at the centre of a huge cairn of stones about 120 feet (36.24 m.) in diameter and about 14 feet (4.25 m.) high. The cist contained a skeleton in a contracted position. About 12 feet (3.64 m.) from the centre of the cist was an oval pit, 6 feet (1.82 m.) deep, and at the bottom lay No. 48 in fragments, embedded in gravel, ashes or charcoal. This beaker is 7 inches (.178 mm.) high. About 25 feet (7.6 m.) from the centre of the cist another hole was discovered, but only 4 feet (1.21 m.) deep. It contained fragments of burnt human bones, among which lay a thin, triangular bronze blade, 6 inches (.152 mm.) in length, and near it was the gold mounting of the handle. Both of these are figured by Dr. J. Anderson as well as the two beakers.³

¹ *P.S.A.L.*, 2 Ser. V, 271-2.

² *P.S.A.S.*, ix, 537; *S.P.T. b & s.*, Figs. 10, 11.

³ *S.P.T. b & s.*, 3-4, Figs. 2-5.

Nos. 39, 52 from Ellon, Aberdeenshire, are $5\frac{1}{2}$ inches and $4\frac{1}{2}$ inches (.130 and .114 mm.) high, and now in the Museum at Edinburgh. They were acquired with four flint arrowheads, stemmed and barbed, and perhaps all were found together.¹

No. 40 from Bellingham, Northumberland, is $6\frac{1}{2}$ inches (.175 mm.) high, and now in the British Museum.

No. 41 from Nether Moor, Hunsonby, Cumberland, is now in the Museum at Carlisle.

No. 42 from Caick Muir Hill, Borthwick, Mid Lothian, is $7\frac{1}{2}$ inches (.191 mm.) high, and now in the National Museum at Edinburgh. It was found in a stone cist at the top of the hill, but nothing more is known of its discovery.

No. 43 from Caick Muir Hill, Mid Lothian, is $6\frac{3}{4}$ inches (.171 mm.) high, and now in the Museum at Edinburgh. It was also found in a stone cist on the top of the hill, but whether in the same cist as the above is not stated.²

No. 44 from Lanark Moor, Lanarkshire, is $6\frac{3}{4}$ inches (.171 mm.) high, and now in the Museum at Edinburgh. It was found in a sand pit.³

No. 45 from Crawford, Lanarkshire, is 6 inches (.152 mm.) high, and now in the Museum at Edinburgh. It was found in a stone cist under a cairn with a stout bronze ring, 3 inches (.076 mm.) in diameter and flattened on the inner surface. Both are figured by Dr. J. Anderson.⁴

No. 46 from Juniper Green near Edinburgh, is $6\frac{1}{2}$ inches (.165 mm.) high, and now in the Museum at Edinburgh.

No. 47 from Windy Mains, Humby, East Lothian, is $6\frac{1}{2}$ inches (.165 mm.) high, and now in the Museum at Edinburgh. It was found in a cist while digging for sand.⁵

[No. 48 was found with No. 38, and is described on p. 382.]

No. 49 from Dairsie, Fife, is $7\frac{3}{8}$ inches (.193 mm.) high, and now in the Museum at Edinburgh. It was found in a cist about $2\frac{1}{2}$ feet (.760 mm.) below the surface in a sandpit in a low knoll overlooking the Eden. With it were four flint arrowheads with barbs and stems.⁶

No. 50 from Clintery Kinellar, Aberdeenshire, is $7\frac{3}{8}$ inches (.197 mm.) high, and now in the Marischal College Museum at Aberdeen. It was found in a cist with flint arrowheads, a small flint borer and charred wood. With them was a large fragment of a bone ring in shape like a napkin-ring with three deep grooves round it, and one perforated stop in the central groove. The arrowheads and the borer were retained by the donor and are not now in the Museum.

No. 51 from Inveramsay, Chapel of Garioch, Aberdeenshire, is $7\frac{1}{4}$ inches (.184 mm.) high, and now in the Museum at Edinburgh.⁷

[No. 52 from Ellon, Aberdeenshire, is described with No. 39 above.]

No. 53 from Fyrish, Evanton, Ross-shire, is 6 inches (.152 mm.) high, and now in the Museum at Edinburgh. It was found in a short stone cist with a brachycephalous skeleton and a wristguard or bracer of polished felstone $4\frac{1}{2}$ inches

¹ *P.S.A.S.*, xxvi, 262.

² *Ibid.*, ii, 482.

³ *P.S.A.S.*, V, 214.

⁴ *S.P.T. b & s.*, Figs. 64, 65.

⁵ *P.S.A.S.*, iii, 51.

⁶ *P.S.A.S.*, xxi, 132.

⁷ *Ibid.*, iv, 165.

TABLE A.

No.	Flint daggers.	Stone hammer axes.	Flint arrow-heads.	Buttons, V-perforated.	"Pulley rings."	"Mesh rules."	Disc beads.	Stone bracers.	Bronze knife dagger.	Bronze awl.	Bronze necklace.	Bronze bangle.	Gold.
1	+	+
2 = East Kennet
3
5 = Winterbourn, Monkton
6
9
11
13
14
15
Avebury (Proc. Arch. Instit. 1849, p. 110).
Doubtful type, Limalthen, Forfar
21
22
25
30
31
34
37
38, 48
39, 52
45
49
50
53
25 interments.													

To these may be added two more instances in which the beaker is lost. One was found at Sutton Veny, Wilts, with a bracer having six perforations (A. W., 103, Pl. XII); the other at Hummanby, Yorkshire, with jet buttons with a V-shaped perforation and a bangle of bronze wire (Ar., vol. 52, p. 19).

(114 mm.) long having a pair of perforations at each end. It is figured by Dr. J. Anderson.¹

To sum up. Out of seventeen examples of type γ , two have been found with stone bracers; three with knife daggers, one of which had a gold mounting for the haft; two, perhaps four, with flint arrowheads; and one with a stout bronze bangle. As the amount of bronze found with type γ is proportionally greater than that found with α , we have reason to assume that as a type the former is the younger of the two, and this conclusion tallies with what we arrived at from typological considerations. Yet as both types lasted for a long space of time they must have been partly contemporary. Though no buttons with the V-shaped perforation happened to have been discovered with beakers in North Britain, they have been found by themselves in a cist or otherwise.

The proof of the great antiquity of the beaker may now be reduced to a tabular form, Table A, including some examples I only know from illustrations. It will be observed that eleven interments, out of twenty-five tabulated, contain objects directly inherited from the neolithic period, such as flint daggers (3), conical buttons with the V-shaped perforation (3), and stone wrist-guards or bracers (6). I know of no cinerary urns or food-vessels that have been found with any of these objects, with the exception of two food-vessels of uncommon type, each supposed to have been found with a conical button in two adjoining cists at Great Tosson, Northumberland.² Though the evidence is not altogether satisfactory, it may pass, as we have already learnt that some forms of food-vessel came into use before the beaker became obsolete. At Keith Marischal, in East Lothian, while sinking a cistern on the top of a knoll, two interments were found. One consisted of a skeleton in a cist below the centre of the knoll with an urn (lost) about 6 inches high, which must have been a beaker. The other interment consisted of a large cinerary urn set round with boulders, but in fragments. Among these were three jet buttons with the V-shaped perforation.³ I believe a mistake has crept into the report, which only came from workmen, and that the buttons were found with the beaker and the skeleton, not with the cinerary urn. Cinerary urns and food-vessels are sometimes found with stout daggers, but never with the thin, flat knife-dagger; with small, flat knives of uncertain age; with bronze bangles, gold objects, and perforated axe-hammers; but never with any direct legacy from the neolithic past save the axe-hammers, which, under one form or other, survived for a very long time. Hence the evidence seems overwhelming that the beaker, regarded as a class, is the oldest Bronze-age ceramic in Great Britain. Though it is true that before it became extinct it was contemporary with certain forms of cinerary urns and food-vessels.

The Distribution of the Beaker (Pl. XXIV.)

The distribution of the beaker in Great Britain is shown on the map, which makes no pretension to being complete, and it only indicates the locality of the

¹ P.S.A.S., vi, 233; S.P.T. b & s., Fig. 12.
² P.S.A.S., xxxiii, 68-9.

³ B.B., 431.

finds, not the number of beakers unearthed. For in Yorkshire especially the tumuli frequently occur in groups in which several specimens have been found in the same group. The large gaps that appear are to be explained in various ways. In the south-east, where the land has been under cultivation for centuries and where the Saxons established themselves in force, and had no hesitation in appropriating grave-mounds that did not belong to them, it is hardly a matter of wonder that no specimens of the older ceramic have survived. In the south-west only one beaker is assigned to Cornwall, and I doubt if it really belongs to the class. It has the appearance of a dwarfed cinerary urn of the globular type and was found with a cremated interment; in fact no interments with inhumation are known in Cornwall. So for the present we cannot say for certain that Cornwall was occupied by the people that introduced the beaker. And Cornwall at any rate has been fairly well explored from an archaeological point of view by the Borlases. The example from Culbone in the extreme west of Somerset belongs to type β , which we have found reason to believe came later into Britain than type α . The centre of England is a complete blank at present. Perhaps it was little inhabited, to judge from the very few stone and bronze implements recorded by Sir John Evans in his *Ancient Stone Implements and Ancient Bronze Implements* as coming from the eight counties of Hereford, Worcester, Warwick, Northampton, Huntingdon, Salop, Leicester, and Nottingham.

Turning to North Britain there are still better grounds for believing that the north-west part of it was practically uninhabited. In the National Museum at Edinburgh there is not a single stone implement of any kind whatsoever from the western half of the counties of Sutherland, Ross, and Cromarty. And there are only two bronze instruments: one flat axe from the west end of Loch Assynt in Sutherland, and an axe with a slight stop-ridge and flanges from Loch Hope on the north coast of Sutherland. The Rev. J. M. Joass informs me that he only knows of two flint arrowheads from the north-west of Sutherland: one from Stoer (lost), and one from Achmore at the south-east end of Loch Assynt. Again, although duns and fortified hills are distributed nearly all over Scotland, except in the mountainous parts, in the map to his *Early Fortifications in Scotland*, Dr. Christison does not show a single native fort along the coast from Loch Alsh, opposite Skye, northwards to Thurso, nor anywhere inland till the east coast is reached.

Although type β is much less strongly represented numerically than α , γ , its geographical range is far greater. The two most northerly examples on the mainland of Scotland from near Dornoch and from Dunrobin, both in Sutherland, both belong to it, and if the fragments, preserved in the Museum at Edinburgh, from Unst in Shetland, are parts of a beaker, it was also of this type. The genuineness of a beaker, said to have been discovered at Mount Stewart, county Down, is disputed, but supposing the representation of it to be fairly correct—the original is lost—it belonged to type β . And so far as I can judge from a rough sketch of an example from Moytura, county Sligo, kindly sent me by Mr. George Coffey, this must also be included in the type.

ORNAMENTATION.

Type α (Pl. XXXV, 1-22).

The study of ornament is a matter of great importance, as by means of it the relative date of two vessels can sometimes be established, when the form, considered alone, might leave us in doubt. Here only a few examples can be given to show older and later developments. The ornament is disposed in three—very rarely two—or more broad horizontal bands or zones, separated by much narrower plain bands to serve as a contrast. The patterns on the first three lines from Figs. 1-16 and also Fig. 20 belong to the oldest period; those that follow are less early. Figs. 1-4 are from the three beakers found with a flint dagger. The usual technique employed to produce the ornament was to stamp the moist clay with a thin slip of notched bone or wood; but sometimes the pattern was merely scratched—often very rudely as in Figs. 3, 4, 21—with a pointed instrument. The use of the cord to produce an impression is very uncommon; but the use of a hollow stalk or cylinder to produce small circular depressions, as in Fig. 1, is still rarer. The only other case I know of is on No. 7 beaker. This method of ornamentation is also found on some neolithic pottery from Denmark.¹

The saltire pattern of Figs. 2, 8 is interesting, partly because we find it on foreign examples and partly because it is wanting in type β . The fringe of short diagonals, as already mentioned, is a sign of a latter period; it is never to be seen on the oldest beakers and is very common in type γ . In Fig. 18 the hexagonal pattern is evidently a development of the older lozenge and an innovation, as well as the shading by cross-hatching. It is enough to prove that No. 16, from which the ornament is taken, belongs to a later period. In Fig. 19 the broken lines used to shade the triangles, as has already been pointed out, indicate a later development, as in the oldest examples the shading is always produced by straight lines or by dots. Fig. 21 is almost the only example of triangles arranged along two parallel lines, so as to produce a lozenge intersected by a narrow band. In β , γ , this arrangement is common enough, and perhaps in this case the idea has been borrowed from another type and badly executed.

Type β (Pl. XXXV, 23-37).

The examples here shown give a rather exaggerated idea of the ornament proper to type β . As a rule it consists of narrow bands, alternately plain and ornamented in the simplest manner with oblique lines or lattice ornament. Figs. 23, 24, are good examples of the lozenge pattern intersected by a band. The simple lozenge, such as we find in Figs. 3, 4, 11-15, hardly occurs in type β ; the hexagon does not occur at all; nor do the elongated triangles so characteristic of α , γ .

¹ G.G. (1896), Pl. X, 99.

Type γ (Pl. XXXVI, 38–59).

Although the lozenge is a favourite motive, as in type *α*, now it is always bisected either by a single line or by one or more narrow bands, as in *β*. Sometimes the triangles, instead of forming a lozenge, are arranged to form a bold zigzag as in Fig. 54. Not infrequently the horizontal band of ornament is broken by narrow vertical strips or compartments, each filled with a different arrangement of lines as in Figs. 46, 47, 52, 57. This principle of discontinuous ornament in the same band or zone is very characteristic of some beakers on the continent, as will be seen in the sequel. Sometimes the lines, as in Fig. 46, are of extreme fineness and the pattern very minute. The fringes on Figs. 38, 40–48, 50, 51, all point to a later date, and we have to draw the same conclusion as that on page 380, that the beaker after being brought to Britain travelled but slowly from south and north. Although on the whole the ornament of *γ* may be considered as a development of that of *α*, some of it seems to be adopted from *β*.

ii. *TYPE β ON THE RHINE.*

After this brief survey of the three types of the beaker as it occurs in Britain, it is time to pass on to the second part of this paper. We must now look beyond the Channel and compare our type *β* with very similar beakers on the continent. The foreign examples are found on both banks of the Rhine between Coblenz and Mannheim; or to define the northern and southern limits in geographical terms, about half a degree north and south of Lat. 50°, where it cuts the Rhine at Mayence.

Here are exhibited (Pl. XXX) eleven examples of Rhenish beakers and five additional British ones (Pl. XXXI), so that their forms may be better compared. The rather angular outlines of Nos. 55, 59, from Andernach and Urmitz, recur on Nos. 27, 67, 68, from Wilts, Oxford and Aberdeen. The rounded forms of Nos. 54, 56, from Andernach and Urmitz, may be compared with Nos. 21, 23, 26, 29, 66, from Wilts, Berks, Oxon and Yorkshire. The outline of No. 63 from Urmitz does not differ much from No. 69 from East Lothian; nor No. 57 from Herrensheim from Nos. 34, 65, from Suffolk and Sutherland. And the outlines of Nos. 61, 62, 64, from the Palatinate are very similar to No. 22 from Wilts. It will be allowed, I think, that allowing for a possible difference of time between the two sets, and taking into consideration the distance that separates them, which can never be less than 400 miles as the crow flies, there is a substantial agreement between them. It seems too great to be the result of pure accident. They must have a common ancestry in the past. The tribe that introduced the earliest beakers of type *β* into Britain must at one time have lived on the Rhine. For the type exists not only in the Central Rhine, but also near its mouth. Dr. Pleyte in his large work *Nederlandsche Oudheden* figures three beakers from the district of Veluwe in Guelderland and one from Rolde in Drenthe, which are quite comparable in form and ornament with some British and Rhenish examples. A fifth from Veluwe might be classed as type *γ*, and this is ornamented with a row

of saltires, spaced by five vertical lines on each side. The Batavian examples seem later than the Rhenish, and they must be coeval with the British, as Dr. Pleyte places them at the beginning of the Bronze age.

Since writing the above, Dr. Pleyte has very kindly sent me eighteen photographs of beakers from Holland, twelve of which are reproduced in Plates XXXIII, XXXIV, Nos. 84, 85 from Beilen, Drenthe, though narrower at the base, resemble some German and Bohemian varieties in which the ornament is not carried below the middle of the vessel. No. 86, from Borger in Drenthe, is quite British in form, but is ornamented by means of a cord. No. 87, from Emmen in Drenthe, is also quite British, and its ornament is typical of type *β* in Britain. All the others, Nos. 88–95, belong to type *γ* in so far as the neck is short, and there is a constriction where the neck and the lower part meet, but they differ in general aspect, in ornament and proportion from the Scottish beakers. For instance, the ornament on Nos. 88, 89, is quite unlike anything found in North Britain. On the other hand, the rows of saltires separated by groups of vertical lines on Nos. 92, 93, 94 are found on type *α*, though here they are more complicated than in Britain and the lozenge pattern, brought out by shaded triangles on each side of it (No. 91) also belongs to the same type. Other likenesses in the ornamentation are also apparent, but on the whole it may be said that the Batavian type *γ* has had no effect upon the British type, and it seems to have been a parallel development.

The ornament of Rhenish type β (Pl. XXXVI, 60–69).

In Figs. 60, 62, 63 from Urmitz and Andernach we find the same arrangement of triangles along two parallel lines, so as to form either a bold zigzag or a lozenge pattern as in Figs. 23, 24 of type *β*, and in 54, 55, 59 of type *γ*. But in the British examples there is a greater complication of line, showing progressive development. For instance, in Fig. 59 there are three parallel bands inserted between the triangles that form the zigzag. Another small difference is that the Rhenish potter often shaded the zigzag or lozenge patterns, so that they appear dark against a light ground. The British potter, on the other hand, shaded the adjacent parts so that the lozenges or zigzags stood out light on a dark ground. But as the lines of shading in foreign examples were frequently filled with a white composition, the effect would be a whitish zigzag or lozenge contrasting with the darker colour of the ware. So the difference between Rhenish and British pottery in this respect is not very great.

The only other designs that call for remark are those on the central parts of Figs. 67–69. They present the principle of discontinuity. That is to say, the horizontal band of ornament, instead of being uniform and continuous, is broken up into plain and decorated compartments, each of which differs in pattern and arrangement from its immediate neighbours. We have already seen this principle illustrated by Fig. 36 (*β*) and by Figs. 46, 47, 52, 57 (*γ*). Here the most salient feature is the enframed X, partly shaded and separated from the next one by plain and ornamented panels. The decoration on these is often a zigzag in white on a

shaded ground; or a series of vertical and horizontal lines arranged to form a pleasing contrast.

Although the enframed X, as a motive, does not occur in British type β and the forms of the beakers, Nos. 61, 62, from which they are taken are very feebly represented in Britain, yet this variety of the type is of the greatest importance. The special ornamentation on Nos. 61, 62 (Figs. 67, 69), is not obligatory, as Nos. 64, 75 prove, but it enables us to link Nos. 61, 62, 64, 75 with a different class of beaker of older type, found a long way east of the Rhine in what may be termed Central Europe.

iii. *The Bell-shaped Beaker* (Pl. XXXI).

The different class of beaker to which I refer is often called the "Bell-beaker," from its caliciform or bell-shaped form. Nos. 70-74 are examples of it, and it is evident that the motives (Pl. XXXVI, 67-69) are derived from vessels of the bell-beaker type. Comparing the vessels Nos. 61, 62, from which these are taken, with Nos. 70-74 we observe that the former are taller and the swell of the body is less pronounced. They are later than the bell-beaker, and the difference in height and form is either the result of the independent spontaneous modification which naturally follows with lapse of time or it is the outcome of the influence of taller beakers of different origin, such as Nos. 54, 56, 59. In technique and form No. 74 differs from the rest; first in having a round bottom, and secondly, because part of the ornament is produced by a small triangular punch, which has been applied so as to produce a zigzag in apparent relief. It is preserved in the Museum at Halle and is believed to come from near Bitterfeld.

This type of beaker occurs in Moravia, Bohemia, and Thuringia, especially in the region of the Saale, a western tributary of the Elbe. It is always believed to be an imported ware. In form and partly in ornament a similar ceramic is found sporadically in Spain, Portugal, the south of France, Brittany, and the Channel Islands. But the ornamentation that specially characterizes the Central European bell-beakers, that is to say the enframed X, coupled with discontinuity of motive, is very different. It does not occur, so far as I am aware, west of the Rhine valley, south of the Danube, east of about the longitude of Vienna, or north of the latitude of Berlin. It must therefore have developed within that area.

With regard to their age, a bell-beaker, in size and wall curvature rather like No. 61 from Ober Olm, near Mainz, was found at Stelčoves, in North Bohemia, with a thin triangular bronze blade $4\frac{1}{8}$ inches (105 mm.) long. From the line of the greatest width the butt end gradually narrows, just as in a flint dagger, and towards the lower end the edges are slightly beaten up, the better to retain the handle, for there are no rivets.¹ It has the appearance of being a very early example of the knife-dagger. With it was a stone bracer or wrist-guard with three perforations at each end like that from Brandon Fields (No. 34).

The bell-beaker from which the ornament of Fig. 72 is taken, was found near

¹ Pic, *C.P.*, i, 83.

Eisleben, and is now in the Museum of that town. It was accompanied by a copper knife dagger of rude make, $4\frac{1}{8}$ inches (105 mm.) long. In outline it has the appearance of a broad tanged dart or arrowhead; for from the line of greatest width the sides curve sharply inwards to join the tang.¹

Nos. 70, 72, from Rothleben, Schwarzburg, Rudolstadt, were found with a stone bracer of slightly curved section having a pair of perforations at each end. The lines of ornament on the beakers are filled with white inlay.²

As no bronze knife-daggers from British graves seem nearly so old as these, we have reason to believe that the bell-beaker on the Continent is older than any type of beaker in Britain. And this must apply to such of the Rhenish type β as are ornamented with the enframed X motive on account of the likeness of form between the beaker from Stelčoves, which is not very typical either in form or ornament, and that from Ober Olm. This, however, is certainly later than the Bohemian example, so that it and its congeners such as Nos. 60, 62, 64, 75 must be intercalated between the bell-beaker and British type β in sequence of time.

Ornament of the Bell-beaker (Pl. XXXVII, 70-83a).

Here Figs. 70, 71, 75, 81-83 are from Bohemia, the remainder from Thuringia or from places not far distant. Nearly the whole of it has parallels in British ceramic.

The "Cord-beaker" and its offshoots (Pl. XXXII, XXXVII, 84-91).

Up to this point we have traced one element of the Rhenish type β directly back to the bell-beaker of Central Europe. But this leaves out of account another constituent part of it, characterized by slenderer form, greater height and a somewhat angular profile, Nos. 54, 55, 56, 59, 63. And it still remains to suggest a possible origin for type a . These two points can be treated in some measure simultaneously.

In Germany there is a class of ceramic that goes by the name of *Schnurkeramik*, from its being almost exclusively ornamented by means of cord-impressions. It is very well characterised by the "amphora" and the "cord-beaker" (*Schnurbecher*), which are constantly associated in the same interment and always with inhumation. This type is very well developed in Thuringia³ and Bohemia, though not exclusively confined to these areas. In time it is partly contemporary with the bell-beaker, though as a type it may be older. An example of the "cord-beaker" is given in Pl. XXXII, No. 79, from Polleben, Mansfelder Seekreis, which is 8 inches (230 mm.) high, and now in the Museum at Halle. It differs in form from the ordinary beaker in that the neck forms a distinct part, united by an offset with the swell of the belly. The ornament too (Pl. XXXVII, 84-91) is invariably confined to the neck with the exception of a fringe, carried along the upper side of the globular part. In this example the ornament is disposed in bands or zones, but in earlier examples it is continuous.

Early British forms of the beaker such as Nos. 1, 4, 7, 14, from Berks, Wilts and Derbyshire seem to show that originally the lower part was globular, or nearly

¹ Grössler, *V.F.G.M.*

² *Z.E.*, xxx, 21.

³ Götze, *G.u.O.*

so, but in time gradually flattened, as in Nos. 15, 16, and in most examples of type γ . And a form like No. 7 with its nearly upright neck, taken in conjunction with the sharply defined constriction as in Nos. 1, 6, 13, 14, suggest the idea that in the prototype the neck was regarded as a separate structural part, sharply distinguished from the nearly globular belly. Dr. Götze¹ gives illustrations of three beakers, all descendants of the cord beaker, as the absence of ornament on the belly or on the greater part of it shows. One from Merseburg and another from Atzdorf—or Querfurt as they told me at the Halle Museum—though only about $5\frac{1}{2}$ inches (135 mm.) high, might serve as prototypes for No. 7. The other from Merseburg with its wide neck might serve the same purpose for Nos. 4, 5 and others of like form.

No. 76 from near Querfurt is $7\frac{1}{8}$ inches (181 mm.) high and now in the Halle Museum. It has lost a good deal of the characteristic form of the type; the decoration is executed with the point, not with the cord; but it preserves the older tradition of entirely covering the neck with a simple design. It seems a good deal later than the preceding example.

The very imperfect series of beakers that follows, though all that I can procure at present, exhibit modifications with lapse of time. This is quite certain as far as No. 82,² because in all these the ornament stops short of the bottom in conformity with ancient traditions. These beakers are termed by Dr. Götze *zonen-schnur-becher* or "cord-beakers with ornament in zones." His theory is that in many places the "cord-beaker" and the *zonen-becher* (= the bell-beaker) have reacted upon each other and that this fusion of types has given rise to the *zonen-schnur-becher*. It takes its slender form, as in Nos. 76, 78, and frequently the separation of neck and belly from the "cord beaker," but the designs and the system of ornamentation (Pl. XXXVII, 92-99) are derived from the *zonen-becher* = bell-beaker.³ This seems to me a very reasonable hypothesis and accordingly I have adopted it and applied it to British forms which Dr. Götze had not included.⁴

No. 78 from Mittlehausen, Weimar, is $6\frac{1}{2}$ inches (165 mm.) high. No. 77 from Aeberode, Salzmünde, is $5\frac{1}{4}$ inches (133 mm.) high. Nos. 81, 82 from Eisleben are only $3\frac{1}{4}$ inches and $2\frac{3}{8}$ inches (.083 and .060 mm.) high. No. 83 from Nieder Schmon, Querfurt, is 4 inches (110 mm.) high, but has quite the form of a beaker of type β . It comes from the same part of the country as No. 76. All these beakers are in the Museum at Halle.

Nos. 62, 80, from Horschheim, near Worms, and from Frankenthal, south of Worms, between it and Mannheim, are now in the Museum at Mainz.

Although the list might be considerably increased if I had the photographs to show, perhaps it is sufficient for the purpose. The time that elapsed between

¹ *Z.E.* (1900), 263.

² Excepting No. 80.

³ *Z.E.* (1900), p. 260-2.

⁴ It ought to be mentioned that Dr. P. Reinecke in *Westdeut. Zeits.* (1900), pp. 259, 260, classes the beakers from Urmitz and Andernach, Nos. 54-56, 58, 59; from Herrensheim, No. 57; Oberolm, No. 61; Horschheim, No. 62; Gabsheim, No. 73, and Frankenthal, No. 80 and many others, under the comprehensive title of *Glockenbecher* or bell-beakers.

the flourishing period of the cord-beaker and the end of the Rhenish type β may be estimated probably at several centuries, during which modifications of some sort were bound to take place. The art of pottery was carried on by tradition and memory. In an out-of-the-way place, where life was stagnant, the women who probably made the pots would carry on the tradition far truer than those that lived in more frequented districts or were migratory in their manner of life. In the first case the woman imitated as well as she could the few examples she had seen or could remember. In the other case she would vary her designs if she had seen new ones that struck her fancy. The more she had seen, the more she would change her old style. Tradition and memory would act on the potter with respect to her art just in the same way as it acted upon her with respect to the folk-stories and tales she was accustomed to repeat. The more stories she had heard and the more incidents she knew, the more would interchanges of incidents take place between one tale and another in her repetitions of them, partly from carelessness, partly from forgetfulness. In a story the essential and invariable part is the plot or framework, for many incidents are variable and inessential. In pottery the form is the equivalent of the plot and is therefore relatively stable, much more so than the ornament, the equivalent of the incident. This explains how the earliest examples of type α such as No. 7 can retain so much of the old form, while in many respects its system of ornamentation is quite different from its supposed prototype the cord-beaker, and why some varieties of type β take more after the offshoots of the cord-beaker than after the bell-beaker from which their system of ornament is almost entirely derived.

Type α then descends or seems to descend from offshoots of the cord-beaker that retained much of the old form, but had adopted from the bell-beaker the principle of ornamentation in alternately plain and decorated bands. And it may have retained from the cord-beaker its fondness for elongated triangles as a decorative motive, Fig. 87.

Type β seems to have two distinct lines of descent which eventually converged. One starts from offshoots of the cord-beaker which had been greatly modified by contact with the bell-beaker, far more so than is the case with type α , and on that account we may say that they have a different secondary origin. The second line started from the bell-beaker and has possibly been modified by contact with beakers that belong to the first line, though that does not seem to me quite certain.

Such, it appears to me, may have been the history of the British beaker. It arose in Central Europe. In the region traversed by the Saale, a western affluent of the Elbe, there is an area between 80 and 90 geographical miles square, where the cord-beaker, the bell-beaker and their derivatives are all found. The same is true of Northern Bohemia. Either of these two localities may have served as a starting point. The movement was first in a westerly direction and eventually reached the Middle Rhine, though the intermediate stations cannot at present be traced. From the Central Rhine the movement was directed partly northwards

into Batavia, partly north-westwards into Britain. Here again the intermediate stages are effaced and cannot be marked by archæological finds on a map. Yet in spite of this it is impossible to believe that the British types α , β have their first origin in Britain itself.

Lastly, I have to express my grateful thanks to Mr. Charles Read of the British Museum; to Dr. Joseph Anderson of the National Museum at Edinburgh; to Mr. Arthur Evans of the Ashmolean, Oxford; to the Curators of the Devizes Museum; to Mr. E. Howarth of the Sheffield Museum; to Mr. L. Hope of the Carlisle Museum; to Dr. Reid of the Marischal College Museum, Aberdeen; to Dr. Götze of the Royal Ethnographical Museum, Berlin; to Dr. Lehner of the Bonn Museum; to Dr. Lindenschmit of the Mainz Museum; to Major Dr. Förtsch of the Halle Museum, and to Dr. W. Pleyte of the Museum of Antiquities at Leyden, for kindly allowing me to obtain photographs of such beakers in their charge as were necessary for my purpose.

DISCUSSION.

Mr. C. H. READ said:—Mr. Abercromby's paper is a useful contribution to prehistoric literature, and the method is in the main a sound one. A few points, however, seem to lend themselves to friendly criticism.

1. The very title of the paper is in itself a *petitio principii*, for a comparison with continental types, and reference to continental authorities, would seem to show that the examples used by Mr. Abercromby are not admittedly of the Bronze Age (*see* for instance Koenen, *Gefässkunde*, 1895, Pl. III, Figs. 4-6). These can only be Mr. Abercromby's "beakers"; they were found in barrows near Wiesbaden, and are set down by Koenen explicitly as of the Stone Age (p. 28). Neither Lubbock nor Greenwell go so far as to maintain that all barrow pottery is of the Bronze Age, but are rather in agreement with Koenen, who, moreover, gives authorities (*e.g.*, Klopffleisch, Naue, and others). If Mr. Abercromby wishes to maintain the contrary opinion, he also must produce his evidence.

2. The second point to which I would call attention is connected with the first, viz., the uncertainty as to the metal of which many of the barrow "bronzes" are made, whether they are strictly bronze or only copper, perhaps naturally impure. One difficulty in settling this question is found in the rarity of the implements themselves and their consequent value, or in their decayed state, which leaves but little metal to deal with. If of copper, they might still reasonably be assigned, according to Montelius, to the last or even the third of the four stages into which he divides the neolithic period. If they should be of true bronze, the fact would be in Mr. Abercromby's favour; but he himself produces cases in which no bronze, but only stone, implements accompany the human remains.

3. It is questionable whether mere angular ornament can be safely used to differentiate culture periods. The analogy of modern savages would seem to prove the contrary. I would therefore urge that mere varieties of angles should not be used as substantive evidence, but taken as corroboration in suitable cases.

4. In formulating a type series for the purposes of classification, the one essential is that the types shall be easily distinguished from one another. This is

scarcely the case with Mr. Abercromby's types β and γ , which are far too much alike.

Mr. ABERCROMBY, in reply said:—1. In reply to Mr. Read's criticism I would remark that if I have not stated specifically that the Rhenish types belong to the end of the neolithic period, it was through inadvertence and through supposing that the fact was generally known. For I have supposed that they were earlier than the British types, and I know that Koenen and other German archæologists place them at the end of the neolithic period or in the age of copper. What I intended to suggest was that the Bronze Age beakers of type β in Britain are united by unbroken inheritance with neolithic beakers of the same type on the Rhine and ultimately with beakers of still older type in Central Europe. The fact seems to be that no exact terminus for the Stone Age or exact beginning of the Bronze Age can possibly be found. Like the colours of the spectrum, the two civilizations shade off into each other so gradually that no absolute line of demarcation can be drawn between them. This transition stage doubtless lasted for a long time. The first migration to Britain very probably took place during this period of transition, when bronze was very rare and stone was still employed for weapons and cutting tools. But as the British beaker types certainly persisted far into the Bronze Age, I thought it more convenient to designate the whole series as belonging to the Bronze Age, though I think the earliest examples might be more exactly placed in the transition period.

2. With regard to the possibility that the bronze instruments I have mentioned are in reality of copper, I cannot say much; only an analysis of each article can settle the question. But the earliest types of copper daggers with a long narrow tang, terminating in a hook, and those with a broad tang without rivets, such as are found in the second settlement of Troy, and also here and there in Europe, never, I think, reached Britain. So the type with three rivets and no tang, to which the British thin, flat knife-dagger belongs, must be a good deal later, and for that reason we may suppose for the present that they are of bronze and not of copper.

3. It would not be legitimate to compare the ornament on British beakers with ornamental designs found on vessels of a very different class from a remote part of the world. But it seems to me quite fair and right to do so, as corroborative evidence, when the vessels belong to the same type and are found at no enormous distance from our shores. Form and ornament supplement one another and must be taken together. Here they are so intimately connected that when the beaker disappeared all its most characteristic ornamentation died with it, for it is not found on the food-vessels and cinerary urns that succeeded it in time.

4. Though Thurnam's definitions seem clear enough, it is not always easy to apply them in practice. A few beakers are amphibolous; taking the right hand profile into consideration the beaker belongs to type β , while the left profile shows that it belongs to type γ . So I regard Thurnam's three types as provisional. When I have obtained photographs of all or nearly all the beakers in Britain it will become necessary to make some changes in his arrangement of them and to increase the number of types, sub-types and varieties.

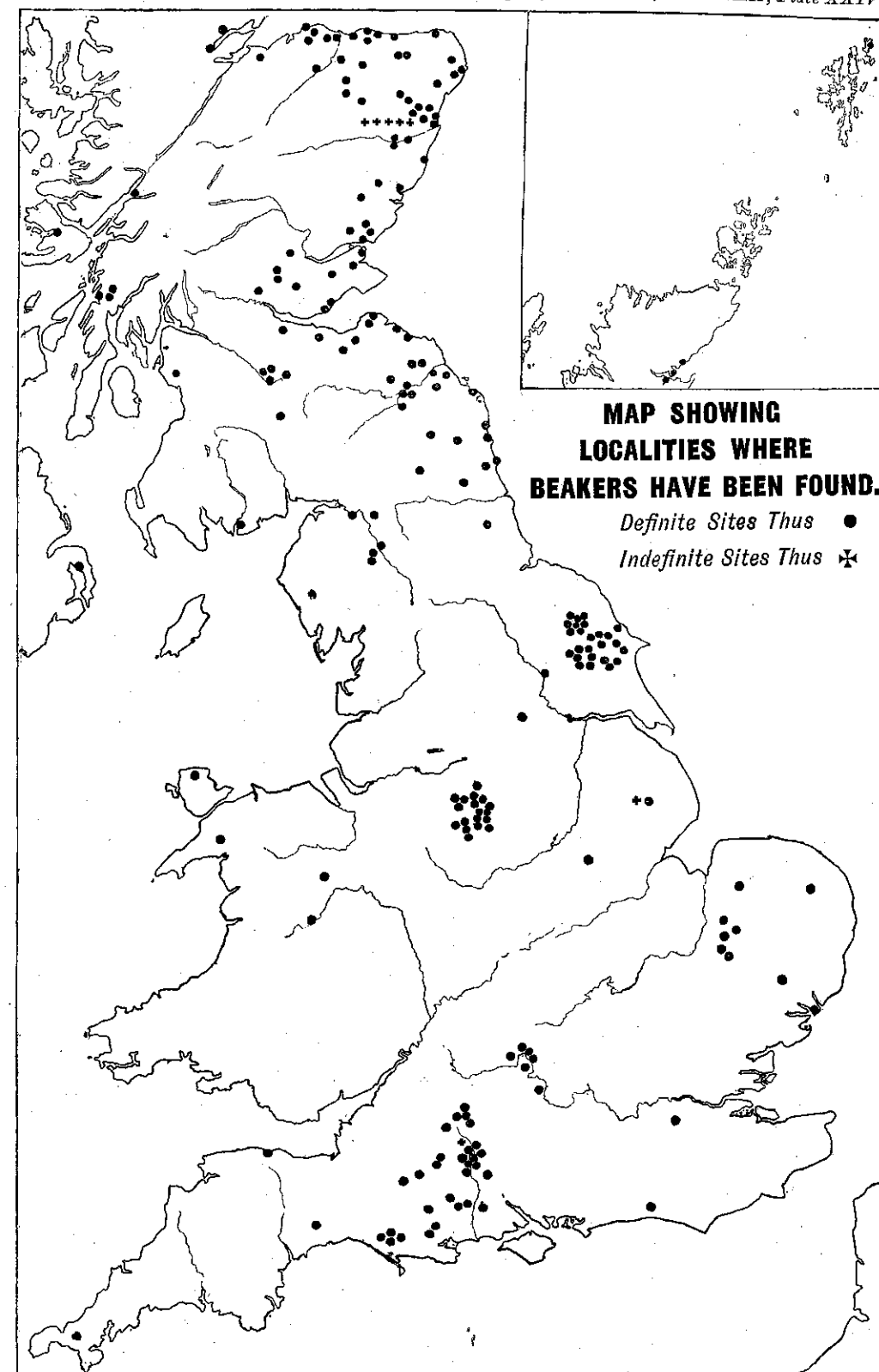
NOTE ON MR. ABERCROMBY'S PAPER.

At a meeting in Section H of the British Association for the Advancement of Science, held on September 12th, 1902, at Belfast, in the discussion which followed the reading of this paper, Dr. T. H. BRYCE said:—

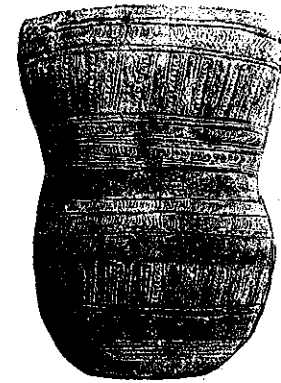
Not the least interesting feature of Mr. Abercromby's valuable paper is the way in which his conclusions conform with the general trend of the evidence derived from the study of skull forms. Wherever the beaker has been found in this country, associated with human remains, the skull has been brachycephalic in proportions, and the region from which he derives this ceramic is within the area of the "Alpine" broad-headed type. It is now generally argued that the dolichocephali in Western Europe were, in purity, confined to the extreme western verge—in the later Stone age, while there was spreading from the eastward into Central and North-east Gaul, an intrusive brachycephalic race or races. It is interesting to find that the pottery associated with the remains of the dolichocephali, and intrusive brachycephali of early Britain, bears out the deductions from this general distribution of skull form. In a recent paper I had occasion to describe a number of examples of the earlier round-bottomed pottery—and I have been much interested to hear that Mr. Abercromby's results for the oldest Bronze age type, and my own for the neolithic type, form the complement of one another. I was led to the conclusion that the earlier type was imported direct from the south by way of the Dolmen track along the coast route to the north, and that the pottery of the corresponding cultural phase in Denmark and Sweden presented elements foreign to the western series.

Thus if the conclusions regarding the neolithic and earliest Bronze age ceramic types be well founded, they form a complement hitherto wanting, to the conclusions regarding the early races in Britain which have been reached from the study of their skull forms—and Mr. Abercromby's results are important in pointing to, at any rate, the more immediate origin of the brachycephalic race which reached Britain about the end of the Stone age, and about which there has been more room for difference of opinion than about the earlier Iberian race.

Mr. COFFEY congratulated the author of the paper on the interesting results he had obtained. He was glad that the chronology of our sepulchral pottery was at last being investigated on systematic lines. With regard to the scarcity of bronze in the early interments, it must be remembered that bronze was rare in interments even in the fully developed Bronze age. At the same time, the table drawn up by Mr. Abercromby, which showed a progression of type in the objects found with the pottery, together with the general evidence on the subject, was, in his opinion, conclusive as to the succession of the types of beakers *a*, *β*, *γ*. It was remarkable that the beaker type should be almost unknown in Ireland. The supposed beaker from Mount Stewart, co. Down, was not, he believed, of that class. It is figured as one of a group of urns in the *Dublin Penny Journal*, 1832, p. 108. Two of the vessels in this group are the two urns figured in the *Ulster Journal of Archaeology*, vol. ix, Plate I. If the figures are compared it will be seen that the drawing of these urns in the *Dublin Penny Journal* are very incorrect. From the apparent thickness of the lip, and the ornament on the inside of the lip, and the general



THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



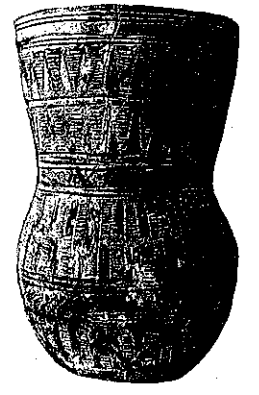
1. Wilts.



2. Wilts.



3. Wilts.



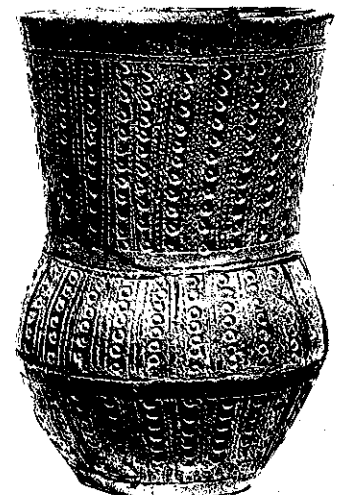
4. Wilts.



5. Wilts.



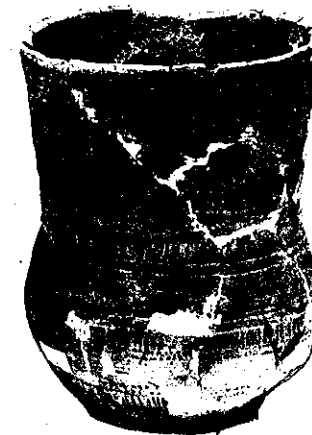
6. East Riding.



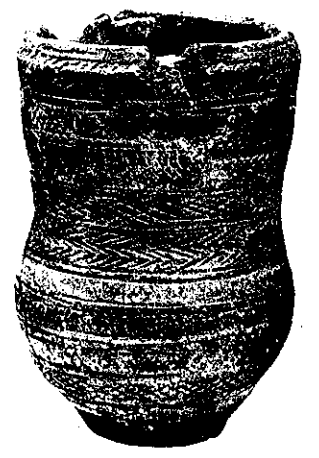
7. Berks.



8. Wilts.

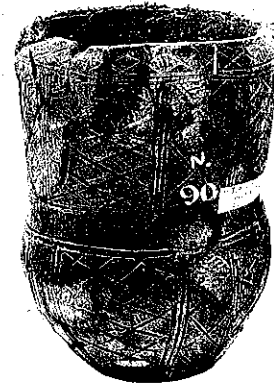


9. Derby.

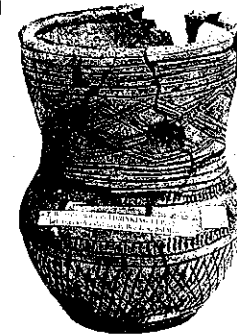


10. Stafford.

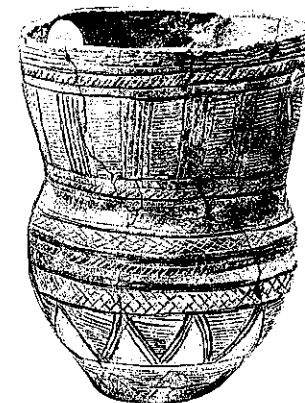
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN. TYPE α .



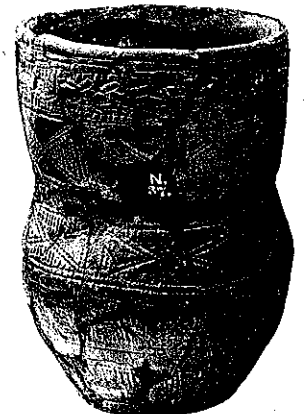
11. Derby.



12. Derby.



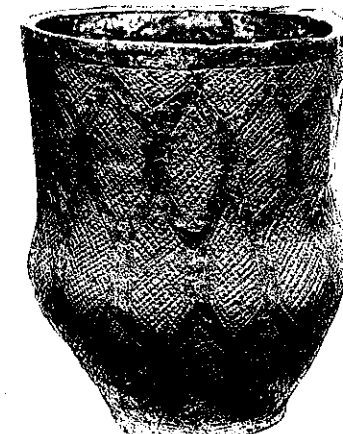
13. Derby.



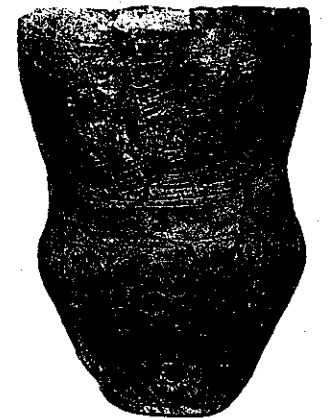
14. Derby.



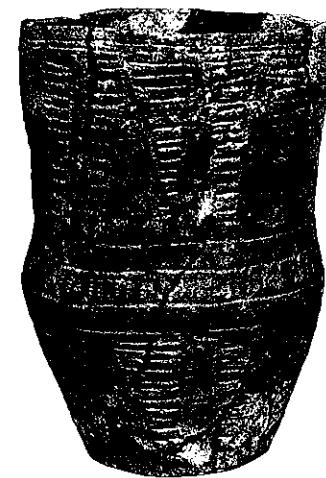
15. Staffordshire.



16. East Riding.



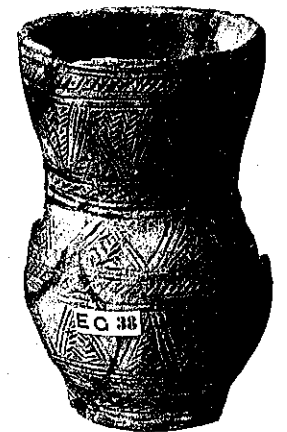
17. East Riding.



18. East Riding.



19. East Riding.



20. Roxburgh.

THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN. TYPE *a*.



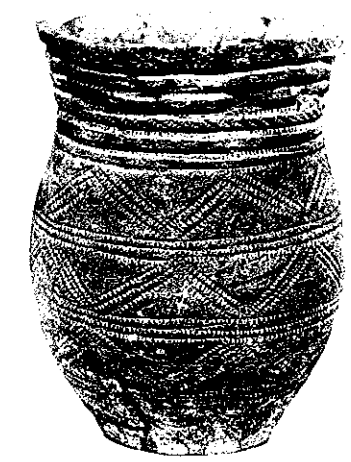
21. Wilts.



23. Oxford.



22. Wilts.



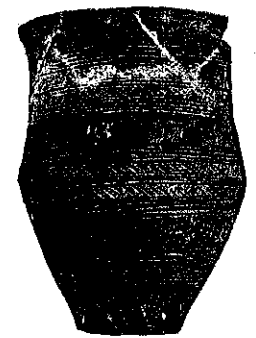
24. Berks.



25. Sutherland.



26. East Riding.



27. Wilts.

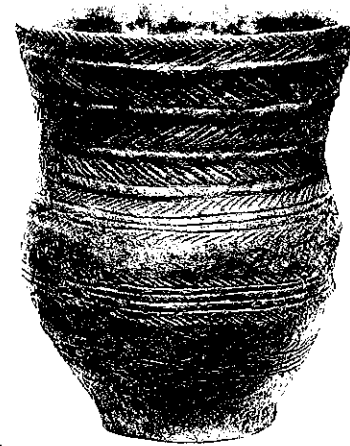


28. Wilts.



29. Wilts.

THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN. TYPE B.



30. East Riding.



31. Sussex.



32. East Riding.



33. East Riding.



34. Suffolk.



35. East Riding.



37. I. of Mull.



38. Fife.



39. Aberdeen.

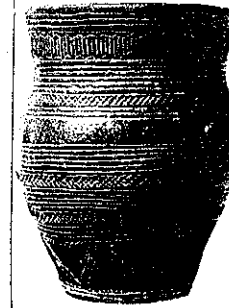


40. Northumberland.

THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN. TYPES β , γ .



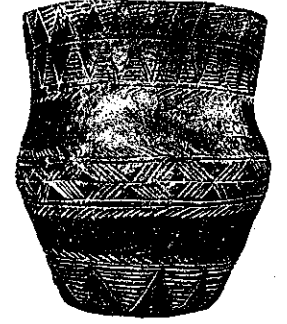
36. Westmoreland (Type β).



41. Cumberland.



42. Mid Lothian.



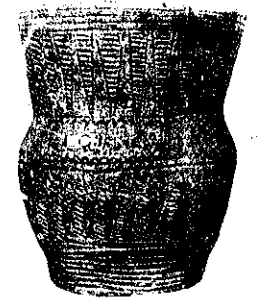
43. Mid Lothian.



44. Lanark.



45. Lanark.



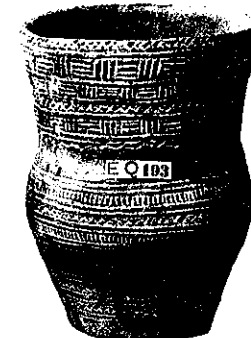
46. Mid Lothian.



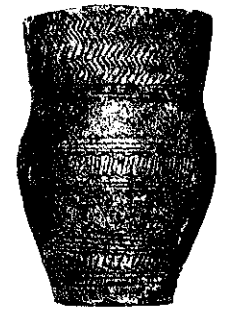
47. East Lothian.



48. Fife.



49. Fife.



50. Aberdeen.



51. Aberdeen.



52. Aberdeen.



53. Ross.

THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN. TYPE γ.



54. Andernach.



56. Urmitz.



55. Andernach.



57. Herrnsheim.



59. Urmitz.



58. Andernach.



60. Unknown.



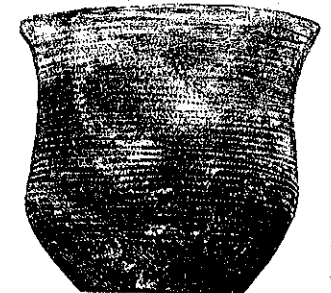
61. Ober Olin.



62. Horchheim.



63. Urmitz.



64. Unknown.

ELEVEN RHENISH BEAKERS OF TYPE β .
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



65. Sutherland.



66. Berks.



67. Aberdeen.



68. Oxford.

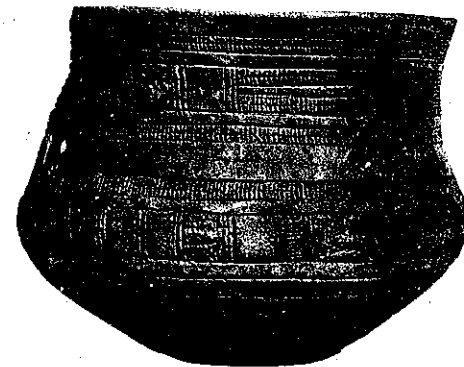


69. East Lothian.

FIVE ADDITIONAL BRITISH BEAKERS OF TYPE β FOR COMPARISON WITH THE ELEVEN RHENISH BEAKERS ON PLATE XXX.



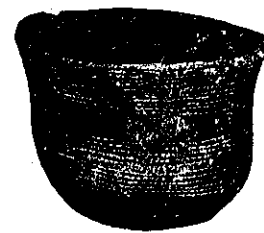
70. Rudolstadt.



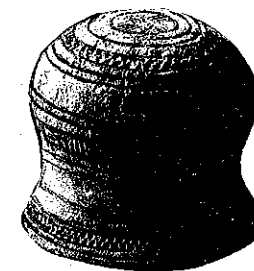
71. Wanzleben, Pr. Sachsen.



72. Rudolstadt.



73. Gabshein.

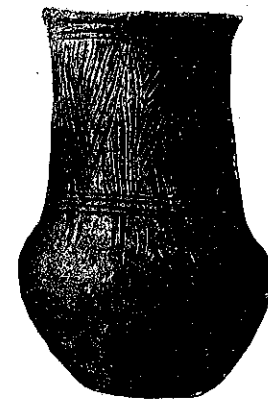


74. Bitterfelt.

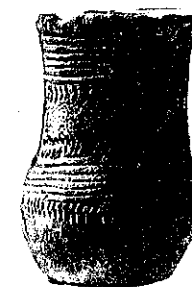


75. Horchheim.

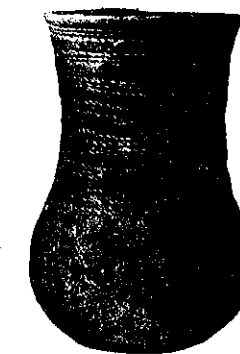
BELL-BEAKERS FROM CENTRAL EUROPE.
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



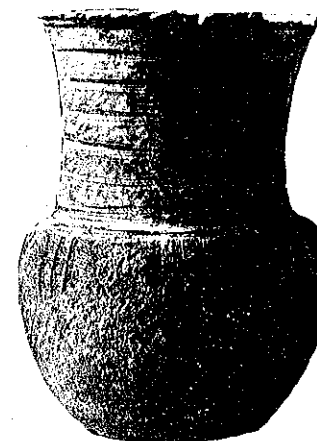
76. Querfurt.



77. Salzmünde.



78. Weimar.



79. Polleben.



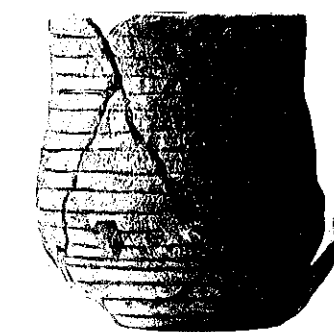
80. Frankenthal.



81. Eisleben.



82. Eisleben.



83. Querfurt.

CORD-BEAKERS FROM CENTRAL EUROPE.
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



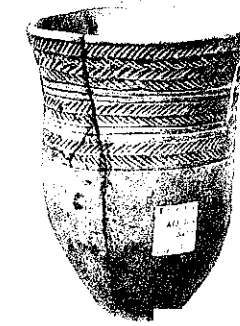
88. Uddel.



89. Kootwijk.



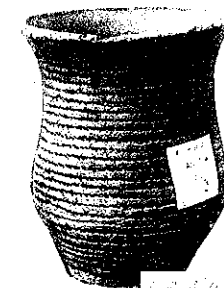
84. Beilen.



85. Beilen.



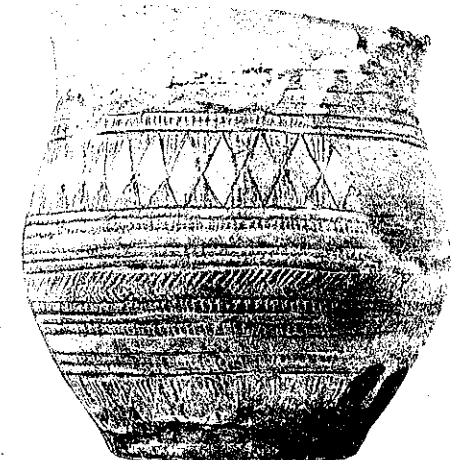
90. Epe.



86. Borger.

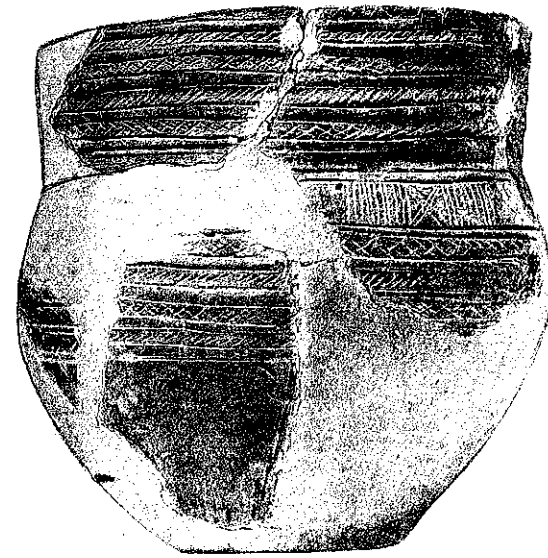


87. Emmen.

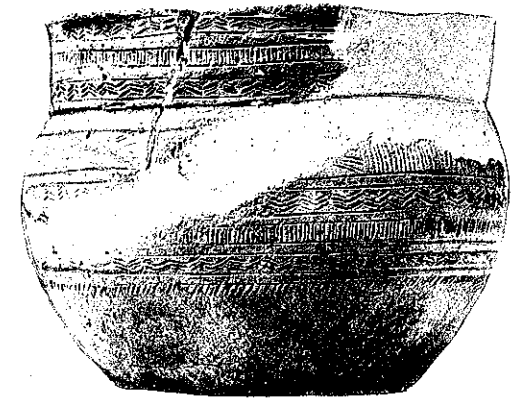


91. Bleekbergen.

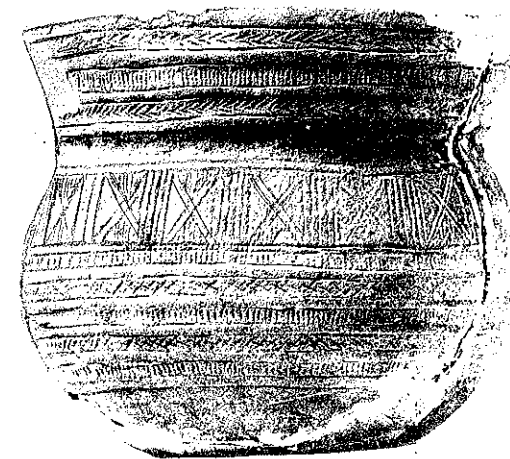
TWELVE BEAKERS FROM HOLLAND: TYPES β AND γ .
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



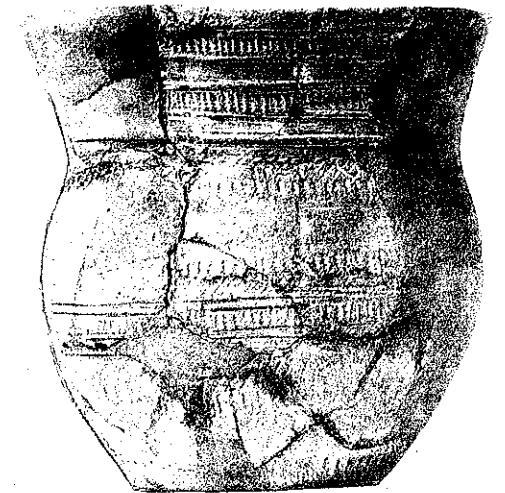
92. Epe.



93. Epe.



94. Brummen.

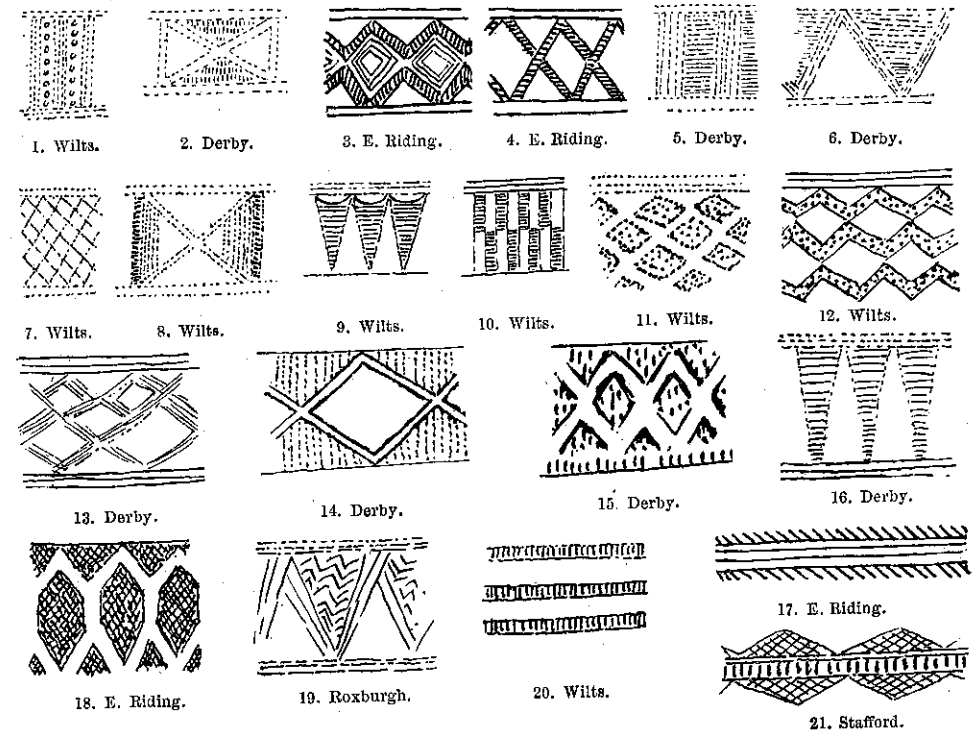


95. Wageningen.

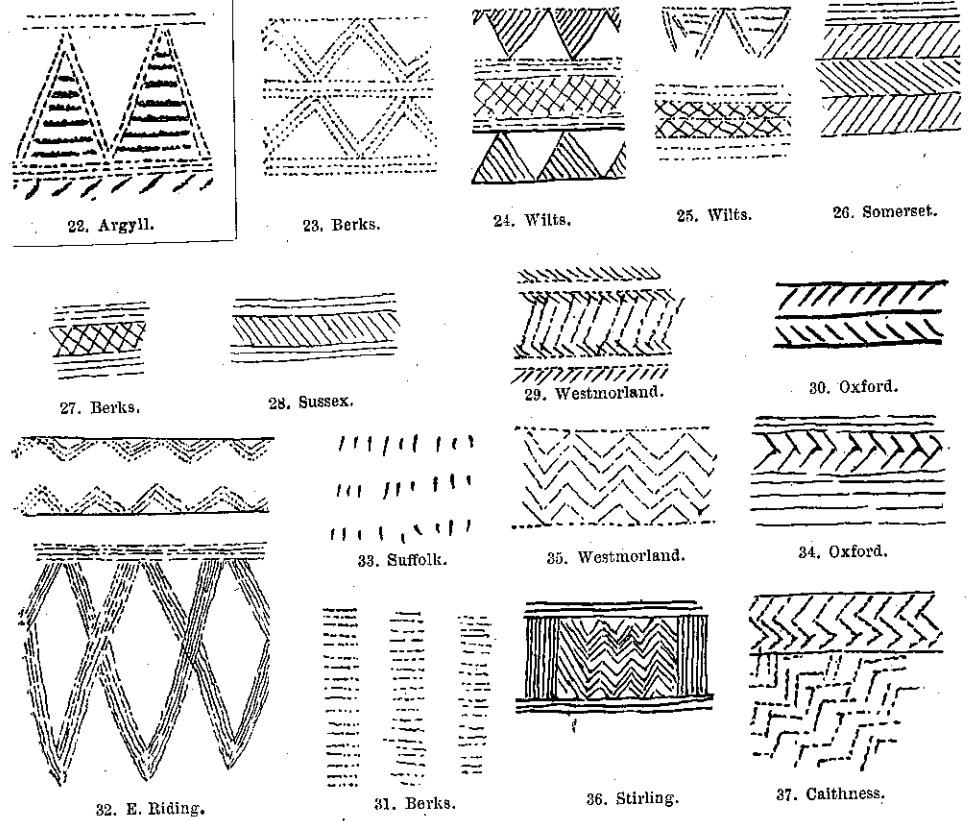
BEAKERS FROM HOLLAND: TYPES β AND γ .

THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.

TYPE a. Nos. 1-22.

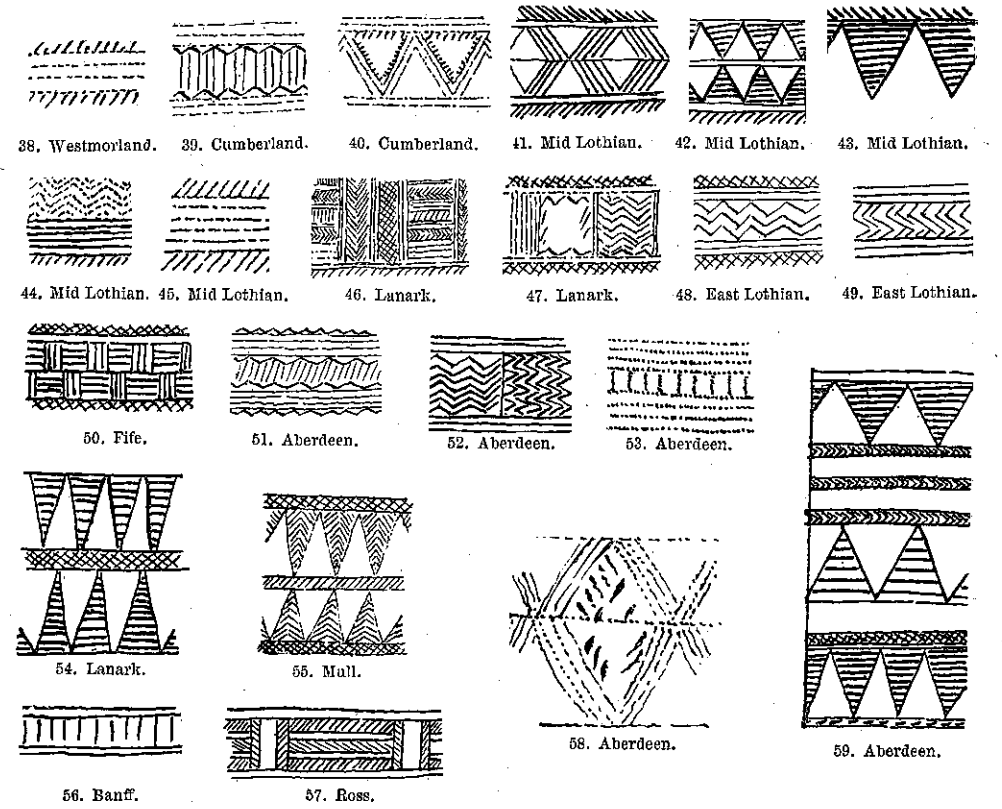


TYPE β. Nos. 23-37.

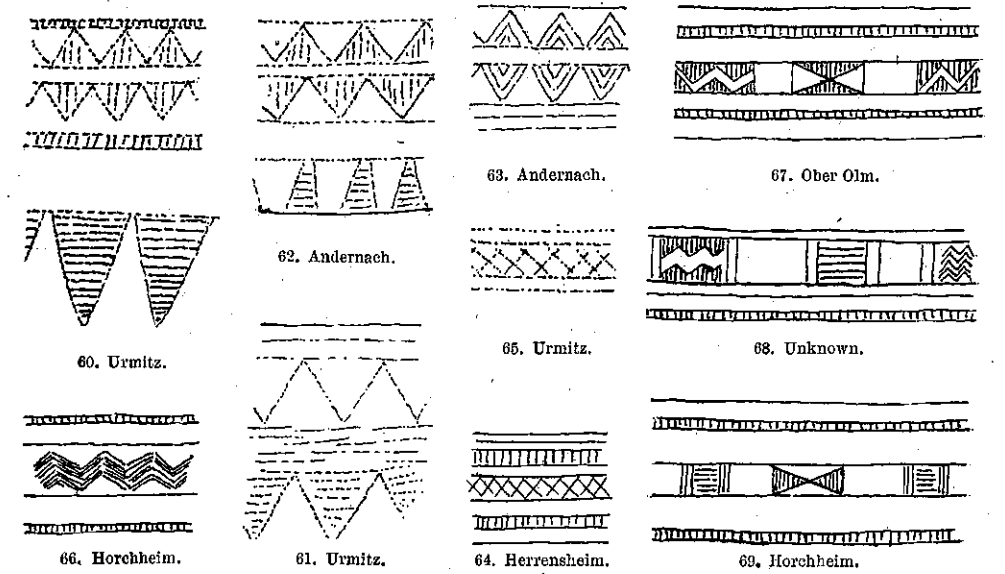


THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN: ORNAMENTS.

TYPE γ . Nos. 38-59.

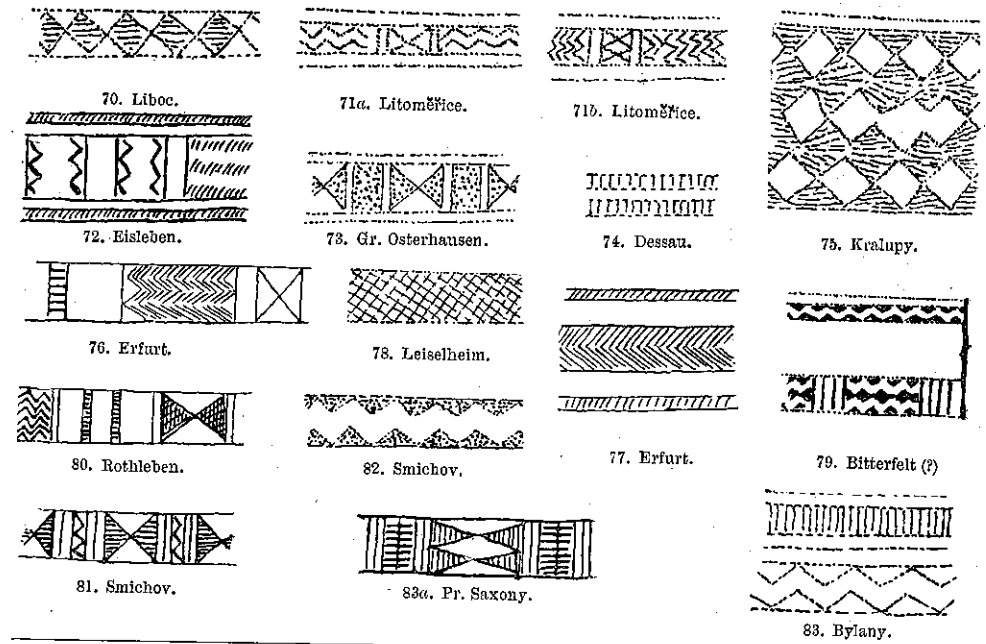


TYPE β : FOREIGN. Nos. 60-69.

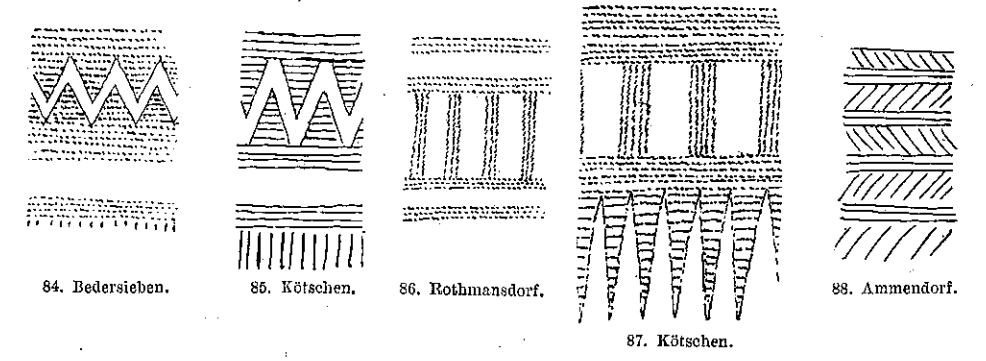


THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.

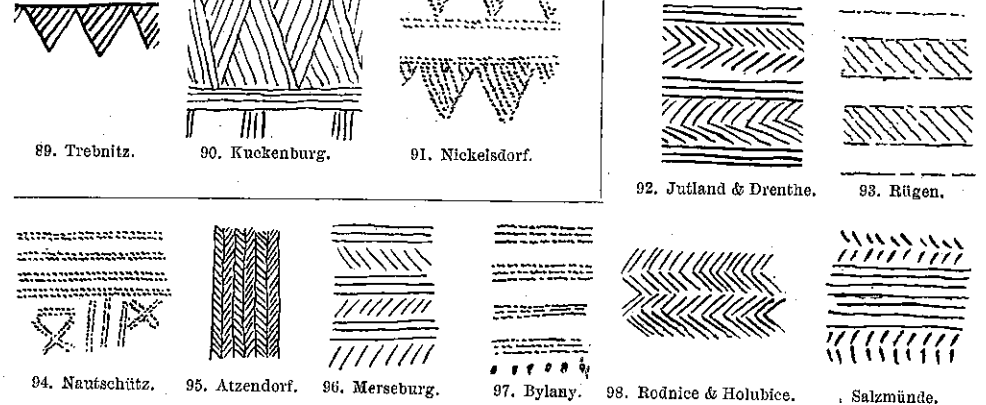
BELL-SHAPED BEAKERS. NOS. 70-83a.



CORD BEAKERS. NOS. 84-91.



BEAKERS WITH ZONE ORNAMENT. NOS. 92-99.



THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.

character of the ornament which covers the entire outer surface of the vessel, as shown in the drawing in question, he suspected that the form of the vessel was incorrectly drawn, and that the original belonged to a different class of vessel. He thought it well to place this opinion on record, as the question of distribution may sometimes become important in reference to Ireland. The fragment from Moytirra, co. Sligo, mentioned by Mr. Abercromby, is one of a number of fragments from the same cist found by Colonel Wood-Martin, and now in the Dublin Museum. They consist of fragments of at least three distinct vessels of the beaker class (Wood-Martin's *Rude Stone Monuments of Ireland*, Figs. 146-148). These are certainly of the beaker class, and are of the fine paste and characteristic ornament of type β . They are all from the one grave, and are the only examples which can at present be referred with certainty to Ireland.

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