

II.

TWO SHORT CISTS AT UPPER BOYNDLIE, TYRIE, ABERDEENSHIRE.

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On the farm of Upper Boyndlie, in the Parish of Tyrie, Aberdeenshire, in the fields near the farmhouse, there are two prominent natural mounds, marked on the Ordnance Survey Map as the Castle Hills. These mound-like hills adjoining each other and rising up from the level of the 300-foot contour line are known as the East Castle Hill and the West Castle Hill respectively. Almost in line with the Castle Hills, but fully 100 yards to the south-west, is another elevation called the Rebel Hill. Those hills would appeal to our prehistoric ancestors; from the summits the prospect is extensive—to the north-west is seen New Aberdour and Aberdour Bay, almost due north Rosehearty, and to the north-east Fraserburgh and Kinnaird's Head.

Evidence of the prehistoric occupation of the district is seen in the number of cists that from time to time have been recorded. On the Ordnance Survey Map "Stone Cist found" is marked on the West Castle Hill and "Site of Cairn" on the Rebel Hill.

In the *Proceedings* of the Society for 11th January 1909, Mr J. Graham Callander¹ recorded the finding of three cists on the south-eastern face of the East Castle Hill. Each of these cists contained a drinking-cup urn; in two of the cists unburnt human skeletal remains were found, while in the other cist, which was very small—not more than 15 inches square—there is no record of the presence of skeletal remains. Further, I excavated and fully recorded² the discovery of two short cists within two miles of the Castle Hill, one found at Auchlin, Aberdour, in November 1904, and the other at Blackhills, Tyrie, in July 1905.

¹ *Proc. Soc. Ant. Scot.*, 1908-9, vol. xliii, p. 79.

² *Proc. Anat. and Anthrop. Soc. of the Univ. of Aberdeen*, 1904-6, pp. 126-147.

1. CIST ON THE WEST CASTLE HILL.

On the 24th December 1932, while a farm-worker was ploughing on the West Castle Hill, the plough displaced the corner of a large flat slab, which proved to be the cover of a stone cist. Recognising the importance of the "find," Mr Alexander B. Cruickshank, the tenant of the farm, took great care to have the cist and its contents kept undisturbed. On the 27th December I went to Upper Boyndlie, and with the assistance of Miss A. M. Clark of the Anatomy Department, and the willing help of Constable James E. Reid, New Aberdour, and Constable Thomas Cruickshank, New Pitsligo, excavated and made a detailed record of the discovery.

The site of the cist is on the south-west aspect of the rounded top of the West Castle Hill.

Over the cover-stone at its north-east end there is a depth of about 15 inches of soil, while the opposite end is quite near the surface, the south-west corner having been broken across at some previous time.

The cover of the cist is a large slab of somewhat irregular shape, 5 feet 4 inches in its greatest length, 4 feet 1 inch at the greatest breadth, and about 4 to 5 inches in thickness.

On the removal of the cover-stone the limb bones of a skeleton were seen covered by a deposit of fine soil. From the disposition of these bones it was evident that they must have been disturbed at some previous time.

The bones were cleared of soil and their position noted. Although the limb bones had been disturbed, the seven cervical vertebræ lay in a natural position at the north-east end of the cist, and resting on the front of two of these vertebræ was the right half of an ossified thyroid cartilage. No trace of a skull could be found—not even a tooth—a most unusual circumstance. All the evidences indicated that the skull had been removed when the cist had been opened, probably a good many years previously.

The contents of the cist were removed, all soil being carefully examined, and from the floor of the cist was recovered two pieces of what had probably been a highly polished perforated stone hammer. The floor of the cist was formed of rather coarse gravel, and on this lay a number of water-worn pebbles, 2 to 3 inches in diameter, and among the pebbles were pieces of dried red clay, suggesting that the floor of the cist may have been paved with pebbles embedded in clay. The cist was nearly rectangular, and its main axis lay north-east and south-west. The inside measurements were: Length along the north-west side 3 feet 2 inches and along the south-east side 3 feet

5 inches; breadth at the north-east end 1 foot 10 inches and at the south-west end 2 feet; depth 1 foot 4 inches.

The sides and ends of the cist were formed of four slabs from 7 to 8 inches thick, set on edge, the two end slabs being inserted within the ends of the sides. To level up the wall of the south-west end two additional flat stones about 3 inches thick were used; at several places in the joints between the slabs were pieces of red clay. All the stones used in the construction of the grave were of andalusite schist (knotted schist).

As already stated, it was evident that the cist had been opened at some previous time and the skull removed.

Mr J. Graham Callander,¹ in his record of the three cists on the East Castle Hill, makes the following reference to the cist indicated on the Ordnance Map: "Previous to 1876 a skull from this grave was presented to the Anatomical Museum at Marischal College, Aberdeen, by the late Mrs John Charles Ogilvie Forbes. From his old gamekeeper, Andrew Young, Mr Ogilvie Forbes heard that all the bones except the skull were replaced in the cist, which was left *in situ*."

In 1902² I described a series of the contents of short cists preserved in the Anatomy Museum of Aberdeen University. In that series was a single skull with Museum label "Skull from Boyndlie, Tyrie, presented by Mrs Ogilvie Forbes of Boyndlie. The skull was found in a rude cist formed of slabs. The body had been laid on its left side, with knees bent and head to the north-east." There is a further record of this skull from West Castle Hill, Boyndlie, having been presented in 1872. The skull is still preserved in the Museum and is that of a male advanced in years. The limb bones of the skeleton contained in the cist now unearthened are those of a man, and that he was well advanced in years is borne out by the recovery of the right half of a male thyroid cartilage completely ossified.

There is no doubt that the skull presented to the Anatomy Museum in 1872 and the bones recovered from the cist now reopened belong to one and the same skeleton.

CONTENTS OF THE CIST.

The Skeleton.—The skeleton is, on the whole, in a good state of preservation, though many of the bones are imperfect, due to portions having decayed away.

The Skull.—The skull with lower jaw is well preserved, except that there is a deficiency in the left temporo-parietal region and of both

¹ *Proc. Soc. Ant. Scot.*, 1908-9, vol. xliii. p. 38.

² *Proc. Anat. and Anthropol. Soc. of the Univ. of Aberdeen*, 1902-4, pp. 8-35.

zygomatic arches. The sutures of the skull are all obliterated except the squamo-parietal and masto-occipital.

The skull is light in weight, rather thin-walled, and with an internal capacity of 1580 c.c. of mustard seed; Turner¹ gives 1478 c.c. as the mean capacity of seventy-three modern Scottish male skulls. The muscular markings are well developed, the glabella and superciliary



Fig. 1. Profile view of Skull from Short Cist, West Castle Hill, Upper Boyndlie, Tyrie.

ridges are prominent, the upper margins of orbits thick, and the mastoid processes stout.

In profile view (fig. 1) the vault is relatively high. From the prominent glabella the frontal bone passes backwards, ascending with a rather steep curve but with a certain amount of sinking-in at the ophryon. The vertex is flattened, and the posterior curve passes sharply down to the lambda so that there is practically no projection of the occipital pole—there is marked parieto-occipital flattening.

The skull, viewed from above, is broadly oval and is brachycephalic

¹ Turner, Sir Wm., "A Contribution to the Craniology of the People of Scotland," *Trans. Roy. Soc. Edin.*, 1903, vol. xl. p. 547.

with a length-breadth index of 80.4. The view from behind shows a distinct sagittal elevation from which the vault inclines on each side to the parietal eminences, below which the sides of the cranium are flattened, giving an "ill-filled" appearance.

The face (fig. 2) is broad with a quadrate outline; and while the angles of the mandible are everted, the malar bones are not specially prominent; the nasal aperture is rather broad and the orbits narrow. The chin is protuberant, but there is no prognathism—the gnathic index is 90.4.

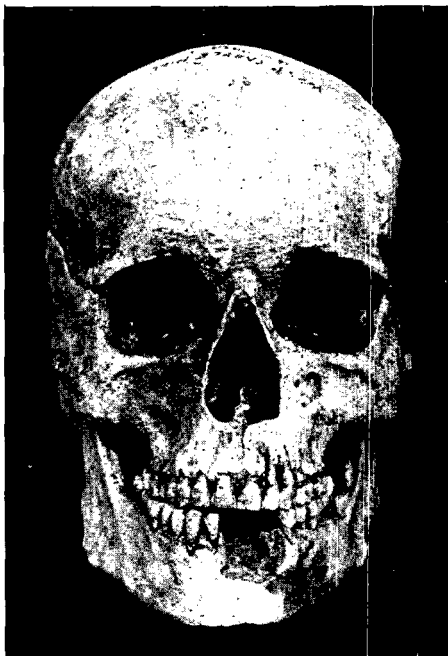


Fig. 2. Frontal view of Skull from Short Cist, West Castle Hill, Upper Boyndlie, Tyrie.

Teeth.—The jaws are particularly well developed, with wide palate and dental arches. In the upper jaw all the teeth are present except the two last molars, which have been present but dropped out after death. In the lower jaw all the molars and premolars are present, and the right canine and lateral incisor—the left canine, left lateral, and two central incisors are missing, having fallen out after death owing to decay of this part of the alveolar margin. The condition of the teeth is very good, and there are no signs of caries or other disease. As is usual in short-cist skulls, the crowns of the teeth are

very much worn, the enamel being worn off on the opposing surfaces and the dentine exposed. The upper and lower incisors have met "edge to edge."

Thyroid Cartilage.—The complete right half of the thyroid cartilage is preserved (fig. 3). The thyroid cartilage in a young individual is cartilaginous, but as age advances patches of it become ossified in a somewhat irregular manner. In the present instance the preservation of the right half of the thyroid cartilage is due to its having become completely ossified—the first example I have seen of such a specimen being recovered from a short cist. It is so well preserved that the small ridges and impressions for the attachment of ligaments and muscles are readily defined. An X-ray photograph shows the beautiful tracery formed by the arrangement of the bony spicules.

Bones of the Trunk and Limbs.—The bones of the spine are represented by all the seven cervical vertebræ, ten thoracic vertebræ more or less complete, and a fifth lumbar vertebra fairly complete; parts of three other lumbar vertebræ and the first segment of the sacrum.

As regards pelvis, the hip-bones are rather fragmentary, but with the piece of sacrum, which is intact, it is possible to get an idea of the outline and size of the pelvic brim. This aperture is oval with a circumference greater than in the modern male pelvis. It is a characteristic male pelvis, with deep, narrow, sciatic notches.

Part of the first piece and the whole of the body of the sternum is preserved, as also ten rather imperfect ribs, all belonging to the right side.

The long bones of the limbs are such as would have belonged to a very muscular male of medium stature.

Detailed measurements and indices of the intact bones are given in Table II.

Both clavicles are comparatively straight, stout bones.

The right humerus is complete, and so also the left except for its head. The development of the bones and the diameters of the head of the right humerus leave no doubt that they had belonged to a powerful man. A feature of the humeri is the amount of torsion, which is considerably greater than in modern bones.

Of the forearm bones the ulnæ are practically complete, as also the radii except for their lower ends. Of the hand-bones there are only the third and fifth right metacarpals and a middle phalanx; they are rather short and slender bones.

Both femora are complete except for erosion of the medial condyle of the right and the lateral condyle of the left. The bones show the following features: a very massive great trochanter; the attachments of the lesser gluteal muscles are more developed than usual; the crista hypotrochanterica for the attachment of the gluteus maximus is very prominent; there is a high grade of *platymeria*—flattening of the upper end of the shaft; the angle of torsion is greater than the average angle in modern bones—the head and neck being directed forward to a greater degree than usual.

The tibiæ are in a fair state of preservation except for some erosion

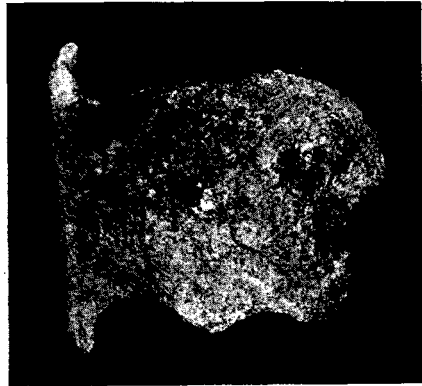


Fig. 3. Right half of Thyroid Cartilage (ossified) from Short Cist, West Castle Hill, Upper Boyndlie, Tyrie. (Natural size.)

of their extremities. Both bones show marked *platycnemia* and torsion of their shafts.

The right fibula is complete and is a stout bone with its borders well developed and the transverse diameter almost as great as the antero-posterior diameter.

Of the foot bones there only remain the two astragali and the medial half of the right os calcis.

The skeletal remains are therefore those of a man of at least sixty-five



Fig. 4. X-ray negative of upper end of Right Thigh-bone from Short Cist, West Castle Hill, Upper Boyndlie, Tyrie.

years, of very good muscular development, and of a calculated stature of 5 feet 8 inches.

The head form is that recognised to be characteristic of the short-cist builders of Aberdeenshire—skull broad and relatively high, outline of face quadrate with cheek-bones not specially prominent, nasal aperture rather broad, and orbits narrow. The stature is greater than usual—5 feet 8 inches as contrasted with 5 feet 4 inches, the average height of Short-cist Man in Aberdeenshire.

A detailed examination of the bones of the skeleton can tell us much of the individual to which they belonged and of his environment, and gives us a clue to the kind of life our ancestors led. The thigh-bone differs in many details from a modern thigh-bone; it is gracefully

curved and moulded, almost breathing of agility and endurance. An X-ray negative (fig. 4)¹ of the upper end of the thigh-bone shows how the bony lamellæ are disposed along the lines of greatest pressure and tension. Again, although the crowns of the teeth are much worn, from the gritty nature of the food, X-ray photographs of the jaws show the teeth to be exceptionally well developed and with no trace of caries or other disease.

Short-cist Man was an agriculturist who lived in the open and grew patches of oats, and ground these in his primitive stone quern and thus obtained the full benefit from the vitamins and inorganic substances which the nutritional physiologists tell us are so necessary for health.

Two pieces of what had probably formed a polished stone hammer were recovered from the floor of the cist. The stone is epidiorite, which is less compact than granite and rather unstable—this specimen tends to break up readily. The larger piece is $1\frac{1}{8}$ inches in length, 1 inch in breadth, and $\frac{1}{8}$ inch in thickness. The piece has been highly polished and shows about one-third of the circumference of a perforation with a diameter of $\frac{3}{4}$ inch. The other piece is smaller—only $\frac{3}{8}$ inch by $\frac{2}{8}$ inch—and is polished on two surfaces.

2. CIST ON THE EAST CASTLE HILL.

While proceeding to the West Castle Hill we observed a small sand-pit on the south-eastern aspect of the base of the East Castle Hill. On the face of the bank of sand which was being excavated there was apparent the edge of a flat stone, and we remarked that possibly it indicated the site of a cist. After excavating the cist on the West Castle Hill we returned to this sand-pit and found it an easy matter to expose from the side what proved to be a small cist quite intact.

The covering-stones of the cist lay at a depth of 39 inches from the surface of the ground. The cist was rather rudely made, roughly rectangular, and with its main axis lying north-east and south-west; it was covered by two irregular flat stones each measuring about 24 inches in greatest length, 20 inches at the greatest breadth, and varying from 3 to $5\frac{1}{2}$ inches in thickness. These slabs lay across the mouth of the cist, but as the contact between the slabs was irregular, the interval was covered over by a third flat stone about 18 inches square and 4 inches in thickness—in addition there were three smaller packing-stones.

The cist was completely filled with sand, which had trickled through

¹ For this X-ray negative I am indebted to Dr A. C. Fowler, D.M.R.E., Radiologist in the Anatomy Department, Aberdeen University.

the crevices between the stones. The sand was carefully removed, and in the north corner of the cist a beaker was exposed standing on its base but with a slight tilt inwards (fig. 5). No traces of bone, charcoal, or other relics were found.

The inside measurements of the cist were: Length along the north-

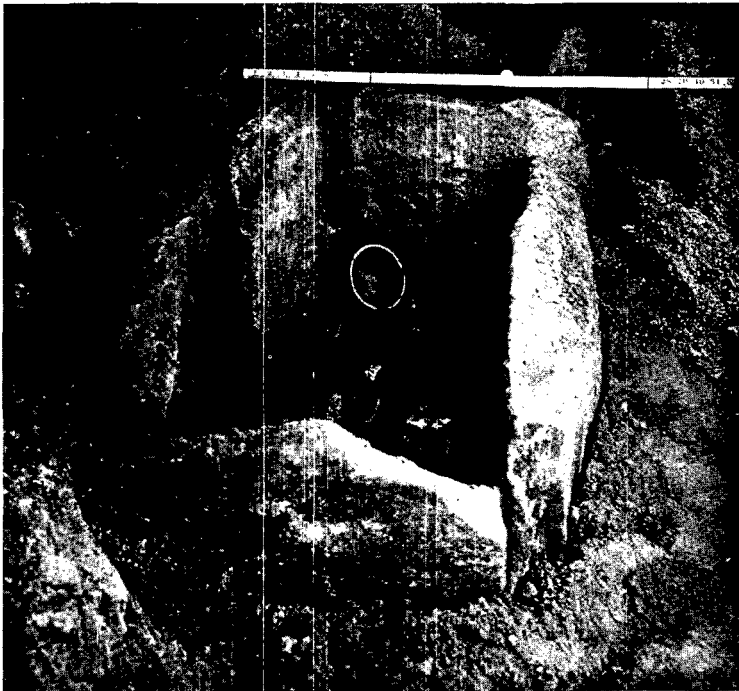


Fig. 5. Short Cist, East Castle Hill, Upper Boyndlie, Tyrie.

west side 28 inches and along the south-east side 26 inches; breadth at the north-east end 13 inches and at the south-west end 15 inches; depth 13 inches. The two ends and the south-east side of the cist were each formed of a single flat stone set on edge; the north-west side was formed of two overlapping slabs also set on edge. Of the stones used in the construction of the cist, the north-east end stone was of granite similar to that quarried at New Pitsligo, a few miles distant; all the other stones were of granulitic gneiss, which is common in the district.

The floor of the cist was paved with water-worn pebbles, 2 to 3 inches in diameter, many of them white quartz.

The beaker (fig. 6) measures $4\frac{3}{8}$ inches in height, $4\frac{1}{2}$ inches in diameter at the brim, $4\frac{1}{10}$ inches at the neck, $4\frac{1}{2}$ inches at the bulge, $3\frac{1}{8}$ inches at the base; the thickness of the wall is $\frac{3}{10}$ inch and of the base $\frac{3}{8}$ inch; the capacity is 24 fluid ounces.

The paste is of a light brown colour on the exterior of the urn, but darker on the interior surface, which shows numerous rather noticeable granular pieces of quartz; both surfaces are comparatively smooth. The outer surface is decorated with three main horizontal zones of ornamentation separated by plain bands. The ornamentation has a "herring-bone" effect and has been produced by impressions stamped on the soft clay with a narrow slip of notched wood or bone. The beaker is of the low-brimmed type and is an example of a sub-type which seems to be confined to the north-east of Scotland.

Samples of sand from the floor of the cist and from the interior of the urn were examined microscopically but no particles of bone or charcoal were found. Chemical analysis of the sand showed distinct evidence of the presence of phosphate and calcium, presumably due to the presence of bone ash, but both samples are contaminated with limonite—a common feature in the area—and this might account for the phosphate.¹

It has already been mentioned that in 1908 Mr J. Graham Callander recorded the finding of three cists on the eastern face of the East Castle Hill. These were arranged in a triangular fashion, each cist being within 8 yards of the other, and from an examination of the site it is evident that the cist now unearthened lies within that area.

The proprietor, J. C. M. Ogilvie Forbes, Esq., of Boyndlie, Aberdeenshire, has presented the contents of both cists to the Anatomy Museum, University of Aberdeen.

¹ For interesting information in regard to the geology of the locality, I am indebted to Mr Philip A. T. Bate, B.Sc., of Aberdeen University, who is at present engaged in a special study of the geology of the Tyrie district.



Fig. 6. Beaker from Short Cist, East Castle Hill, Upper Boyndlie, Tyrie.

