

II.

A THIRD SHORT CIST AT RUMGALLY, FIFE. BY J. TENNANT
GORDON, O.B.E., J.P., F.S.A.SCOT. WITH NOTES ON THE SKELETAL
REMAINS BY PROFESSOR DAVID WATERSTON, M.D., F.S.A.SCOT.

Close by the site recorded in the *Proceedings*, vol. lxvi. p. 67, where two short cists were uncovered in April 1931, another has been brought to light. Through the agency of Mr Charles A. Roger, the proprietor of the farm of Rungally, parish of Kemback, and some three miles east from Cupar-Fife, the find was reported on 17th December 1932.

A ploughman felt his plough come into contact with an obstruction and informed Mr Roger. With his knowledge of the former two cists he had the soil cleared away, when the large cover-stone of a cist was found. The site was about midway between the two burials referred to, some three yards from the one and four yards from the other.

Intimation of the discovery was conveyed to me very timeously, and I notified Professor David Waterston, M.D., F.S.A.Scot., of the Bute Medical School, St Andrews University, who with a party of assistants attended the disinterment on 19th December 1932. Mr Roger with much forethought had caused the earth to be cleared from the sides of the grave, which enabled the investigators to at once proceed with their work.

The cover-stone of irregular shape was roughly 5 feet in length by 2½ feet in width (it was triangularly split, no doubt by the plough), and 3 to 4 inches in thickness, which is very much less than the usual thickness of such stones. The side stones were about 5 feet long and massive, averaging 9 inches in thickness. One unusual feature was observed, namely, that the end stones did not fully cover the spaces between the side stones and that smaller stones had been inserted in the four angles. The inside measurement was 48 inches long, 24 inches broad at one end and 23 inches at the other, and 18 inches deep. The compass bearing of the grave showed the longer axis to lie south-west by west, by north-east by east, and the skeleton was lying with the skull at the south-west end.

On the cover-stone being removed it was found that the cist was full to the very top of rough sand and small gravel, which proved to be the sole constituent. The sand and gravel were carefully sifted, but

nothing of any moment was found until the bones were exposed. The body had been placed on the right side with the legs flexed upon the body and the arms towards the face. The skull, vertebræ, and larger bones were in a wonderful state of preservation, and Professor Waterston is to report upon these.

A very fine flint knife some 3 inches long was found close to the bones. It is interesting to note that in this small cemetery, in the former two cists there was found in one, along with a food-vessel, an end scraper of grey flint, and in the other a knife of yellow flint. The flint scraper found in the latest uncovered cist is of blackish hue.

REPORT ON THE SKELETON. By Professor DAVID WATERSTON,
M.D., F.S.A.Scot.

The loose earth and fine gravel which filled the cist were carefully removed and put through a riddle.



Fig. 1. Cist at Rungally, Fife.

As the excavation approached the bottom of the cist a flint implement was found, and the surface of some bones was exposed. The soil was adherent to the bones, which were slightly moist and soft and required careful handling.

Eventually a complete skeleton was exposed, and the photograph

shows the posture in which it lay (fig. 1). The head was to the south-west end of the cist, the skeleton on its right side, and the lower limbs drawn up and bent acutely at the hip- and knee-joints.

Some portions of the skeleton had undergone disintegration; many of the bones were partially disintegrated, and they were all very fragile. After exposure, however, they dried, and as the moisture left them they became firmer and could be removed without further damage.

SKELETON.

The skeleton proved to be that of a man of about fifty years of age, and between 5 feet 5 inches and 5 feet 6 inches in height. There were no indications of ante-mortem injury nor of disease, beyond slight roughening and nodular growths around some of the articular surfaces.

The principal cranial sutures were obliterated on the inner surface of the skull, but not to any extent on the external surface; the teeth with one exception were present, and healthy except in one instance.

The skull was characteristically of the round-headed type—index 85, with all the other features of form and proportions which characterise the short cist people of Fife and Aberdeenshire. The lower jaw was underhung—the face short and rather small—the orbits low and wide. The capacity of the skull as estimated from measurements was 1470 c.c.

DETAILED EXAMINATION OF THE SKELETON.

Skull and Mandible.—The left side of the skull, which had lain uppermost, was almost complete, but the right side, which lay below, was partly disintegrated. A considerable part of the right side of the vault, and the bones forming the walls of the right orbit and of the temporal and infra-temporal fossæ, had crumbled away.

The hard palate was complete, the nasal bones and the nasal processes of the maxillæ were present, and sufficient of the skull remained to allow the principal features of anthropological interest to be made out.

The accompanying photograph of the left side of the skull in profile shows the general form of the skull (fig. 2).

Male characters were shown in the prominent supraciliary eminences and the general muscular relief.

Sutures.—The sagittal suture was open on the external surface except for short patches near the bregma, and about 30 mm. above the lambda, where the suture was obliterated for a few millimetres.

The lambdoidal and coronal sutures were apparent on the external surface and unobliterated except for small portions of the left lambdoidal suture, 35 mm. lateral to the lambda itself, and of the left coronal suture near the bregma. The portion of the coronal suture between the pterion

and stephanion had become closed on the left side. Its condition on the right side could not be ascertained from bony deficiency.

On the internal surface of the cranium there was complete closure of the sagittal and coronal sutures in their whole extent, and of almost the whole length of the lambdoidal suture except for a short distance at the lateral extremity of the right lambdoidal suture. Closure of the sutures on the internal surface does not usually begin until about forty years of age.

Thickness of the Skull.—The wall of the skull was thin, the vertical portion of the frontal bone measuring only 6 mm. in thickness, while the parietal bones were even thinner, measuring some 4 mm. in thickness, and the occipital bone in the regions of both the upper and lower fossæ was only 3 mm. thick.

This unusual thinness may be ascribed partly to surface disintegration of the bone of the cranial vault post-mortem, but the smooth surface of the interior showed that there had been no attrition of this surface, and the appearance of the bones suggested that the skull wall had been thin during life.

In its form and proportions the skull was to the eye typical of the Bronze Age type in Aberdeenshire described by Reid and by Low. The specimen was of special interest to myself, for its general form reproduced very closely that of the specimen from Peekie Farm, near St Andrews, which I have described and figured in the *Proceedings* of this Society (vol. i., 6th series, 1926-7). The close resemblance is brought out by measurements and by the indices.

The general form of the skull in its different aspects presents the following features:—

Norma verticalis.—Viewed from above, the cranium is short and wide, its maximum width below the parietal eminences and behind the mid-point, between front and back, the outline uniformly rounded, and not assignable to any of Sergi's groups.

Norma occipitalis (fig. 3).—This aspect of the skull is distinctive.



Fig. 2. Rungally Cist Cranium with Mandible.
Norma lateralis.

The occipital surface is flattened, and not drawn out into a raised conical form; its outline is quadrilateral, the upper margin, slightly domed, rises only gently to the middle line from its lateral margins. The lateral margins are almost vertical and straight, inclining slightly outwards above. The lower margin shows the full rounded curve of the occipital bone.

Norma lateralis.—From this viewpoint the shortness and height of the cranium is obvious (fig. 3). The forehead is slightly sloping, there is

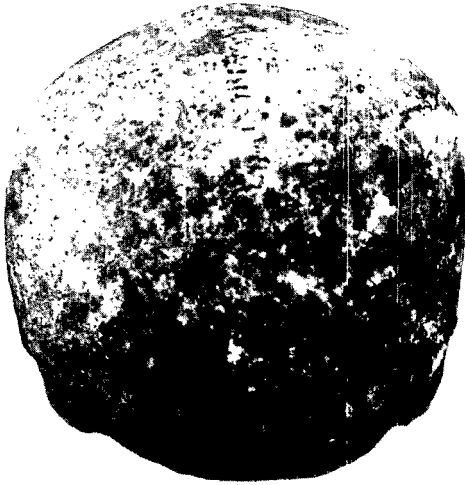


Fig. 3. Rungally Cist Skull, norma occipitalis, showing characteristic form.

slight post-coronal depression, and the posterior wall of the cranium is almost vertical in direction, from a point 45 mm. above the lambda, the whole occiput being flattened. The mastoid process is rather slender, and the face orthognathous.

Norma frontalis.—The incompleteness of this portion of the skull renders its full description impossible, but the portion which remains gives the impression of a large and rather wide cranium with a short and rather narrow upper face. The mandible, however, is strong and wide, and gives additional width to the lower part of the face.

Measurements of the Skull.—

The maximum length of the skull (glabella-occipital) was 176 mm. and the maximum width 149 mm., and the cephalic index from these figures is 85. The basi-bregmatic height was 136 mm., giving a height index of 77.

In these diameters and in their relative proportions the skull reproduces closely the average measurements of the male short cist skulls in Reid's Aberdeen University Collection, which I have given in a former communication to this Society and which need not be repeated here.

Other measurements which were available were as follows:—

The longitudinal arc from nasion to opisthion measured 362 mm., of which the frontal segment measured 127 mm., the parietal 123 mm., and the occipital 112 mm. The large relative size of the parietal segment is unusual, and the large size of the parietal portion of the vault is evident to the eye.

The foramen magnum measured 37 mm. in antero-posterior diameter, the basi-nasal length was 103 mm. and the basi-alveolar 98 mm. The face is therefore orthognathous.

The total face length from nasion to alveolar point was 70 mm. The width of the face could not be determined.

Nose, Orbits, and Palate.—The nasal bones and the nasal processes of the maxillæ remained intact. The nasal bones are small and short, set at an acute angle at the internasal suture, causing a finely rounded prominence of the root of the nose.

The length of the right nasal bone was 13·9 mm. and its width 7·7 mm., and the measurements of the left closely corresponded. The nasal aperture (apertura piriformis) was long and rather narrow, but the margins were slightly eroded and accurate measurements were not obtainable.

The orbits were low and rather wide, measuring 39 mm. in width and 33 mm. in height, with an orbital index of 85 (mesoseme).

The palate was very broad, the palatomaxillary length being 51 mm. and the width 65 mm., giving a palatal index of 127 mm. (brachyuranic).

The basi-nasal length of 103 mm. and basi-alveolar of 93 mm. give a gnathic index of 90, so that the face is very markedly orthognathous.

The Teeth of the Upper Jaws.—The right canine and the left central incisor were not found. The left first molar had disappeared during life, and its alveolar socket had filled in, but a gap remained between the last premolar and the second molar.

No definite evidence of caries was present in these teeth.

The crowns were worn in characteristic Bronze Age fashion. The crowns of the incisors and canines were worn flat by edge to edge bite, and the pulp cavity was exposed and filled with secondary dentine.

The premolars were slightly worn, and also the two last molars, while the crown of the first molar (right) showed a much greater degree of wear; the tubercles were entirely flattened, and a large surface of the pulp cavity filled with secondary dentine was exposed, the dark brown tissue which had formed being surrounded by a narrow rim of original dentine.

The surface was concave, and sloped upwards from the labial and lingual side.

Measurements of Molar Maxillary Teeth: Right side.—1st molar, breadth 10·9 mm. (side to side), length 8·4 mm. (antero-posterior); 2nd molar, breadth 11 mm., length 9·2 mm.; 3rd molar, breadth 10·4 mm., length 7·2 mm.

Left side.—1st absent; 2nd molar, breadth 9·9 mm., length 9·9 mm.; 3rd molar, breadth 11·0 mm., length 9·0 mm.

Mandibular Teeth.—All the teeth were present. There was a deep carious cavity on the surface of the crown of the first left molar—otherwise they were healthy (fig. 4). They corresponded in wear to the teeth of the upper jaw, the incisors and canines flattened and worn on the cutting surface. The central incisors were very small. The masticating surface of both right and left first molars showed much greater wear than did the others. Of the left tooth this surface was partly excavated by an irregular carious cavity, while wear had obliterated the tubercles and the primary dentine of this surface of the right one, and the surface was uniformly concave but smooth and formed of secondary dentine.

On the other molars the wear had gone through the tubercles only.

Measurements of Mandibular Molar Teeth: Left side.—1st molar, breadth 10 mm., length 10·4 mm.; 2nd molar, breadth 9·6 mm., length 10·4 mm.; 3rd molar, breadth 9·8 mm., length 8·9 mm.

Right side.—1st molar, breadth 9·7 mm., length 10·7 mm.; 2nd molar, breadth 9·5 mm., length 10·0 mm.; 3rd molar, breadth 9·0 mm., length 9·3 mm.

Vertebral Column: Atlas.—Transverse processes were absent. Lateral masses and arches were massive, and the space which they enclosed narrowed transversely. The articular pillars were deep, and the superior articular surfaces



Fig. 4. Mandible from Rungally Cist, with carious cavity on first left molar, and worn crown of the first right molar tooth.

markedly concave from before backwards and faced more medially than usual. Vertical thickness of lateral masses 24 mm.

Axis.—Depressions associated with the attachment of rectus cap. post. maj., sup. oblique, and long. colli muscles were well marked. These indicate strong neck muscles.

Cervical Vertebrae 3-7.—Grooves for post. primary division of spinal nerves particularly well marked in C. 3 and 4. The remaining portions of the spine were fragmentary.

Bones of the Upper Limbs.—Of many of these only fragments remained, and they showed no features of special interest.

The left clavicle was complete except for a short distance at the acromial end. The bone was comparatively slender and straight for a male.

The left ulna was complete, its greatest length 274 mm., the physio-

logical length 239 mm., and the circumference of the shaft at the narrowest part 44 mm. The ridge for the origin of supinator brevis and that bounding the attachment of pronator teres medially were well marked.

Lower Limb Bones.—Of these only the left femur remained in a condition permitting adequate examination, and the head and antero-medial part of medial condyle were absent.

Neck.—Crescentic exostosis was present on posterior aspect of neck adjacent to intertrochanteric crest near its medial extremity.

Superior cervical tubercle on intertrochanteric line was markedly developed.

Shaft.—Platymeria present; glutæal ridge very prominent, and a well-marked ridge continued the insertion of glutæus minimus on to the shaft for a distance of 35 mm.

The ridge supporting lateral half of patellar articular surface was continued upwards on to the shaft for a distance of 45 mm. The measurements were: greatest length 447 mm. (approx. head reconstructed), greatest length in natural position 443 mm. (approx.), sagittal diameter of middle of shaft 24 mm., transverse diameter of middle of shaft 27 mm., circumference at middle of shaft 85 mm., upper transverse diameter of shaft 36 mm., upper sagittal diameter of shaft 26 mm.

The Platymeric index was 72 (hyper-platymeria), and the Pilastric index 89 (no pilastering, but *linea aspera* eroded).

Left Tibia.—Part of its upper extremity and proximal half of shaft were present.

The transverse diameter of shaft at level of the nutrient foramen measured 26 mm., the sagittal diameter at the same level 33 mm., and hence the "Cnemic index" was 79, indicating that there was no "platycnemia."

Stature.—Estimation of the stature from the length of long bones could be made from the left femur and left ulna. The latter bone was complete, but the head of the femur had perished and it was necessary to reconstruct it in plasticene.

Accuracy was ensured by comparison with other femora of similar build, and I think the results may be accepted as reliable.

Using the formula introduced by Karl Pearson and Dr Alice Lee, the stature from the femur proved to be 165 cm. Manouvrier's formula, which is perhaps less reliable, gave 167 cm. from the femur and 172 cm. from the ulna. This merely means that the ulna was rather longer than usual, and the stature can safely be stated as from 165 to 167 cm.