

A Reconsideration of the Tilbury Fossil Skeleton

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In studying a probably Late Palæolithic or Epipalæolithic female skull from Flint Jack's Cave in the Mendip Hills (Wells, 1958), I was impressed by its affinities with the fossil calvaria discovered during the Tilbury Docks excavations of 1883. Through the kindness of Dr. K. P. Oakley and of

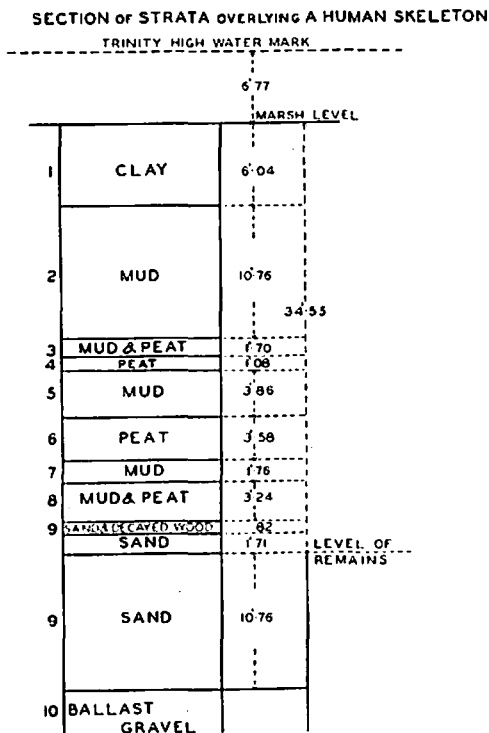


Fig. 39.—Section of strata in Tilbury excavation (Owen, 1884).

Dr. W. N. Edwards, formerly Keeper of the Geological Department in the British Museum (Natural History), I was enabled to examine the Tilbury remains in the Museum (Geol. Dept. M. 1913).

STRATIGRAPHY OF THE TILBURY FIND

The circumstances under which the Tilbury skeleton was discovered were recorded as follows by Sir Richard Owen (1884):—

“On the 1st October 1883 I was favoured with a letter from my friend Colonel Du Plat Taylor, informing me that in the course of the extensive excavations at the Dock-works at Tilbury, north bank of the Thames, portions of a Human Skeleton had been found at 34 feet below the surface in a bed of sand; above this was a bed of clay, then a bed of peat five feet thick, and between this peat and the surface was another bed of clay. The Colonel was good enough to put me in communication with Mr. Donald Baynes, the Engineer superintending the excavations, and that gentleman, bringing the remains in question for my examination, favoured me with the annexed diagram, in more detail, of the strata down to and including the one in which the skeleton was found.”

This section (*Fig. 39*) shows that the human remains lay 34·5 ft. below the modern surface, and approximately 2·5 ft. below the top of the sand bed. The overlying mud and clay contained three peaty layers, the lowest resting directly on the upper surface of the sand; the layer mentioned in Col. Du Plat Taylor's letter appears to be the middle one of the three (layer 6). Owen concluded that “the corpse . . . found its grave about three feet below the surface of sand on which he trod, such surface having since subsided to a depth of thirty feet below the marsh-level forming the present banks of the Thames at that locality”. This language suggests that Owen, anticipating Keith (1925), deemed the remains to have been deliberately buried from a former land surface at the top of the sand. Owen adds that the sand was later proved to extend to a depth of about 10 ft. below the level of the human remains, where it rested on the so-called “Ballast Gravel”.

King and Oakley (1936) state that: “. . . the main Buried Channel of the Lower Thames Valley . . . was completely filled up with fluviatile gravels to slightly above the level of the present flood-plain before the deposition of alluvium. . . . The presence of Woolly Rhinoceros and Mammoth indicates the Pleistocene age of the deposits, and therefore proves that the Buried Channel had been completely filled up before the end of Upper Palæolithic times. The thick deposits of alluvium, which have been proved to depths of up to 50 feet in the centre of the Lower Thames Valley, must occupy a subsidiary channel cut in the gravels filling the main Buried Channel.”

Owen seems not to have recognized the disconformity between the gravels and the alluvium, and therefore took the latter to be Pleistocene in age. Keith (1925) related the buried surface at Tilbury to a Post-Glacial

lowering of sea-level in the North Sea basin. This interpretation is supported by King and Oakley:—

“The erosion of this subsidiary channel may be correlated with the relative uplift of the land which converted the southern part of the North Sea into dry land in Mesolithic times and permitted the migration of the Maglemose people from Denmark to the east coast of England. This period of uplift is generally correlated with the Ancyclus Lake phase of the Baltic sequence. The filling of the inner buried channel with alluvium may be correlated with the Littorina depression which began in later Mesolithic times. . . . Beds of peat occur at three main horizons in the alluvium and mark pauses in the drowning of the valley during which the alluvial flats were occupied by peat-bogs and scrubby woodland. . . . The lower and middle peats probably date from late Mesolithic and Neolithic times. . . .”

The Ancyclus Lake can be broadly correlated with the *Boreal* climatic phase and the Littorina depression with the *Atlantic* phase. Since the Tilbury burial underlies the lowest peat layer, it cannot well be later than Atlantic in age; the filling of the channel may indeed have begun before the end of the Boreal phase. In reply to a question on this point, Dr. K. P. Oakley wrote to me:—

“The lowest part is probably Boreal, but unfortunately this has not been proved. What one really wants is a new boring from Tilbury from which samples could be obtained for analysis.”

Even if the Tilbury skeleton is Atlantic rather than Boreal in age, it almost certainly antedated the first appearance of Neolithic culture in Britain, which took place at the end of the Atlantic period; the Tilbury man is thus of later Mesolithic age.* Human remains which can be confidently assigned to this epoch are almost unknown in Britain.

Dr. Oakley in his letter also remarked:—

“The skeleton shows a high fluorine content (c. 1%). This is consistent with its being of the antiquity claimed, but as the site is on the borders of a region where the ground water is rich in fluorine, this isolated measurement is of little value. (No animal remains from the Tilbury deposits are available for testing in comparison.)” In face of this caution, it cannot be inferred from the fluorine content that the Tilbury skeleton must be more ancient than the Lloyds and Wallbrook cranial fragments from higher up the river or the Galley Hill and Baker’s Hole finds from the opposite side of the estuary (Oakley, 1951).

* Zeuner (*Pleistocene Period*, revised ed., 1959, pp. 368-9) maintains that the Tilbury channel was cut during the final phase of the last (Würm) glaciation, and that the alluvial filling covers the whole of the Post-Glacial. On this view, the Tilbury skeleton might belong to an earlier Post-Glacial stage than is assumed in the body of this paper and be of Early Mesolithic or Epi-Palaeolithic age.

CHARACTERS OF THE TILBURY SKELETON

The Tilbury remains comprise: the roof of the braincase in three fragments, the left half of the mandible, three teeth (L_2 , LC, LP_2), six fragments of ribs, the lower portion of the sacrum, the two ischia, portions of the shafts of both humeri, both ulnæ, and the left radius, the right second metacarpal, a proximal finger phalanx, the two femoral shafts with the right articular head and a fragment of the left internal condyle, the shafts of both tibiæ and the right fibula, part of the right calcaneum and the left talus and third metatarsal.

From the characters of the braincase (*Plates 12 and 13*), the skeleton is certainly male. The vault sutures are completely obliterated on the internal aspect and partially obscured externally, and there are well-marked arachnoid digitations on both sides of the sagittal suture in the mid-parietal region; it may be inferred that the Tilbury man was at least middle aged. A fracture of the left supra-orbital margin at the level of the supra-orbital notch had healed completely before death, and an injury affecting the outer table of the bone has left a small depression above the right frontal eminence. The surviving joint surfaces show slight arthritic lipping.

The three cranial fragments comprise: (1) frontal, anterior portions of both parietals, upper part of nasal bones and frontal process of left maxilla; (2) remainder of parietals, and (3) part of supra-occipital. A strip about 10 mm. broad is lacking between the occipital fragment and the remainder, but the position of this fragment can be determined almost exactly, since part of the lambdoid suture is visible on the left side of the parietal fragment and the corresponding part on the right side of the occipital fragment. The bones of the vault are only moderately thick (4-7 mm.). There is a single large (2-3 mm. diam.) parietal foramen on the left side.

As at present reconstructed, the glabello-occipital length measures 184 mm. The occipital fragment may have been brought inwards somewhat too abruptly so that the true length was a little greater, but it is unlikely to have exceeded Keith's (1914) estimate of 188 mm. Cameron's (1934) value of 193 mm., obtained as he states upon a cast, is certainly excessive. The cranial breadth I estimate as 143 mm. (Keith 142 mm.). From these measurements the cranial index lies between 75 and 78, i.e., in the lower part of the mesaticranial range. Other measurements are: least frontal breadth 101 mm. (Keith 100 mm.), external biorbital breadth 109 mm. (Keith 108 mm.), interorbital breadth 27 mm. Keith estimated that the auricular height was probably about 118 mm.

The remains of the nasal bridge indicate a narrow prominent nose of Caucasoid type. The strongly developed glabellar and superciliary eminences make the evenly rounded forehead appear lower than is really the



Plates 12 and 13 from photographs by British Museum (Natural History).

PLATE 12A and B

- A,** Tilbury calvaria, lateral view.
B, Tilbury calvaria, vertical view.



PLATE 13
Tilbury calvaria, frontal view.

case; the sincipital profile is flat. In the anterior half of the parietal region there is a distinct sagittal keel. The sides of the braincase were convex, with the greatest breadth close to the parietosquamous suture. The sharply defined superior nuchal line and prominent rough ridges on the nuchal surface indicate powerful neck muscles.

The mandibular fragment appears slender in proportion to the braincase, largely because the three molars have been lost during life and the outer alveolar wall is broken away anteriorly. Parts of the sockets of all four incisors and of the left canine and premolars remain; that of the second premolar shows evidence of periodontal inflammation, doubtless an extension of the process by which the molars were lost. The chin is projecting, with a well-defined blunt mental protuberance. The mandibular body, measured on the internal aspect at the level of the canine and first premolar teeth, is 32 mm. high. A small rounded elevation on the lingual surface of the alveolus opposite the second premolar socket represents an incipient *torus mandibularis*. The condylar and coronoid processes are broken; the minimum height of the ascending ramus (to the lowest point on the superior border) measures 51 mm., and its minimum breadth 32 mm. The crowns of the three surviving teeth are heavily worn; there are small cavities at the enamel margin on both the mesial and distal sides of I_2 and on the distal side of C.

All the limb bone fragments are robust, with strongly developed muscular markings. Both humeral shafts are slightly bowed laterally; the left humerus is not much less stout than the right. Owen remarks that the proximal part of the gluteal ridge on the femur merits by its size and prominence the name of 'third trochanter'; this elevation is strikingly larger on the left side than on the right. The articular head of the femur measures approximately 46 mm. in diameter. Both femora are only slightly platymeric (antero-posterior diameter, left 25 mm., right 26 mm.; transverse diameter, left 33 mm., right 32 mm.; index, left 75·8, right 81·2) and have a powerfully developed *crista aspera* (antero-posterior diameter at mid-shaft in both 34 mm., transverse 27 mm., index 125·9). The upper part of the tibial shaft is extremely compressed (antero-posterior diameter, left 38 mm., right 40 mm.; transverse diameter, left 21 mm., right 21 mm.; platycnemic index, left 55·3, right 52·5).

Owen estimated the length of the femur to have been 1 ft. 4·5 in. (420 mm.), which appears too short, while Keith's estimate of 446 mm. seems too long; I consider the probable value to fall between 430 and 440 mm. Keith's estimate of 345 mm. for the tibial length seems to me to be a minimum, the maximum being about 355 mm. The humerus Keith judged to have been 323 mm. long; I should take this as a maximum and 310 mm. as the probable minimum. Equations for estimating stature in American

white skeletons (Trotter and Gleser, 1952) give results ranging from 1613 mm. (63.5 in.) to 1700 mm. (67 in.); the "general formulæ" of Dupertuis and Hadden (1951) give very similar values. Thus the Tilbury man was probably of medium stature.

DISCUSSION

In my study of the female calvaria from Flint Jack's Cave I pointed out that its male counterpart should have been 187–190 mm. long and 132–135 mm. broad, with a relatively low vault and strongly developed superciliary eminences. In length, vault contour, and superciliary development the Tilbury calvaria would make a very appropriate male counterpart to the Flint Jack's Cave specimen; it is however considerably broader. Comparable breadth measurements are found in the Late Palæolithic skull II from Gough's Cave, Cheddar, which is appreciably longer than the Tilbury specimen, and in skull C from Aveline's Hole which is considerably shorter. The Tilbury skull could be regarded as linking Gough's Cave II with Aveline C, and thus fall within the total constellation of British Late Palæolithic and Epipalæolithic skulls. These skulls and their contemporaries of the Magdalenian period on the continent vary more in length and breadth than would be expected in a homogeneous group at the present day; in my previous study I suggested that such variability represents not a hybrid origin for this group but rather a plastic state out of which distinct varieties of the European type had not yet crystallized.

The Tilbury skeleton is however almost certainly later than most if not all of the Mendip skulls. The only other human remains from Britain which at present seem to be probably of later Mesolithic age are those from the MacArthur Cave at Oban, more particularly the skull known as MacArthur B (Turner, 1895). This skull is very much longer than the Tilbury specimen; it could very possibly be descended from long skulls in the Late Palæolithic group, such as Gough's Cave I and II and Aveline A.

Mesolithic man in Western Europe generally is known by three groups of remains from widely separated localities, Muge (Portugal), Teviec (Brittany), and Ofnet Cave (Bavaria), supplemented by a number of isolated individuals. Among these remains Boule and Vallois (1957) distinguish four types; this sub-division may well be excessive, since most if not all of these skulls closely resemble individual Late Palæolithic specimens. It seems probable however that at least in the Ofnet Cave group, the variations among Late Palæolithic skulls are hardening into definitely contrasted types. The Tilbury skull, as far as it is preserved, could be a typical member of the Teviec series or of the middle group from Ofnet Cave, whereas MacArthur B has a close counterpart at one extreme of the Ofnet Cave series. If the Mesolithic population in Western Europe was essentially

descended from that of the Late Palæolithic, it is not surprising that Mesolithic skulls found in Britain should resemble their continental contemporaries as well as earlier British specimens; it is to be inferred that new arrivals in Britain during the Mesolithic period were closely related to the people already living there.

If the Tilbury find supports the inherently probable supposition that the Mesolithic inhabitants of Britain were directly descended from the Late Palæolithic population of Western Europe, it poses the further question to what extent the Neolithic population was of different origin. All British Neolithic remains were formerly interpreted as "Mediterranean", but recent work has tended to indicate "North European" or even Late Palæolithic affinities. Consideration of the evidence from such sites as Coldrum, Lanhill, and West Kennet, suggests that the Neolithic population was in fact more mixed in character than has hitherto been recognized and varied considerably from place to place. It remains to be seen whether these variations can be associated with regional or chronological phases of Neolithic culture.

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