

ART. X.—*On the Discovery of Prehistoric Remains at Clifton, Westmorland.* By MICHAEL W. TAYLOR, M.D.

Read at Workington, June 16th, 1880.

IN our explorations along the Valley of the Eamont we have had frequent occasion to consider the line of that river, as having been crossed by the great routes of thoroughfare and traffic going north and south from the very earliest times. The area which extends from fifteen to twenty miles across the country, from the edge of the mountain piles of the Lake District on the west, to the Crossfell range and the extensive tracts of inhospitable wilds, which lie between the upper waters of the Tees and the Tyne, on the east, presents an interspace, or plain expanse, which has been always seized upon, for considerable occupancy, by successive conquerors and colonists. Over this ground, embracing as it does the northern part of Westmorland, obvious abiding traces remain of such successive settlements.

In a paper published in the first volume of the Transactions of this Society, entitled "The Vestiges of Celtic Occupation near Ullswater," I detailed the evidences of the habitancy of an early people, as manifested by the remains of their strongholds and sepulchres found around the *embouchure* of that lake. Proceeding lower down the river, we have the remarkable and well-known enclosure of Mayburgh. Now, if we accept the construction of Mayburgh as having been the work of the pre-Roman British, it argues that this district must have been very extensively populated in Celtic times. The amount of hand labour necessary for the formation of the huge mound which encircles that enclosure must have been enormous, for it meant the movement of some thousands of tons of soil
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and of water-worn stones from some considerable distance. It has been raised by the patient industry of streams of tribesmen carrying the material in their baskets and brats or aprons; so that these folk must have been thickly settled in the district.

The only evidences remaining of the habitations of these people in this immediate vicinity are about a mile and a half from Mayburgh, at Lowther Woodhouse, in the old Yanwath domain. Here we have lines of streets and hollow ways, and inclosures, indicating the former existence of an extensive British settlement, and this, doubtless, was associated, in point of time, with a circular stronghold consisting of a lofty mound defended with deep encompassing ditches and ramparts, called Castlesteads, situated about half a mile further up in Lowther Wood. But if, with the exception of these excavations and raised structures, all the vestiges of the bee-hive huts and wigwams of these people have been obliterated, yet we have remaining to us their graves. At least, there is every reason to assume that the same primitive tribes who erected the colossal defensive mounds and strongholds, to which I have referred, such as Dunmallet, Castlesteads, and Mayburgh, were also the builders of the round earthen barrows and stony cairns, and also of the sepulchral circles of unhewn stones which are numerous in the neighbourhood. The conclusion naturally suggests itself, that the same contrivances and patient application of labour and skill in heaping up earth and stones for defensive purposes, could be readily turned, by the people who practised these usages, to the raising of a tumulus in honour of the dead.

A considerable number of these sepulchral memorials still exist on the high ground along the line of the river Eamont. The well-known remains on Moor Divock have already been described in the paper in these Transactions to which I have alluded. Besides these, there are a very perfect undisturbed cairn, near the old British village at
Woodhouse,

Woodhouse, and several barrows, some of which have been explored, in the Lowther parks. Several have been opened into from time to time at Whinfell and Moorhouses; and very lately a stone circle was examined by our member, Mr. Joseph Robinson, at Leacet Wood, on the edge of Whinfell, which was very fruitful in results, the particulars of which have been reported to us.

Of course, on the low ground almost all earthen mounds have disappeared under the progress of agriculture, but in the spring of this year a barrow was opened at Clifton, and prehistoric remains of great interest were brought to light. The value of the discovery consisted in the finding of two kist-vaens, and also mortuary urns and the bones of the skeleton and cranium, whereby a clue was afforded to identify the type of their inmates.

As it is manifestly the duty of all who concern themselves in these exhumations, faithfully, and with as much precision and accuracy as possible, to record the results, I will endeavour in the following description to discharge the obligation thus incurred.

The place in which these cists were found is near the north boundary of the parish of Clifton, about a mile from Mayburgh, and two and a half miles from Penrith. It lies in a field about seventy yards to the right of the great turnpike road leading to Shap and the south, just beyond the point of cross roads which is known by the name of Clifton Cross. The field is the second to the north of the homestead of Clifton Hall, the property of the Wybergh family, and it marches with the right bank of the river Lowther.

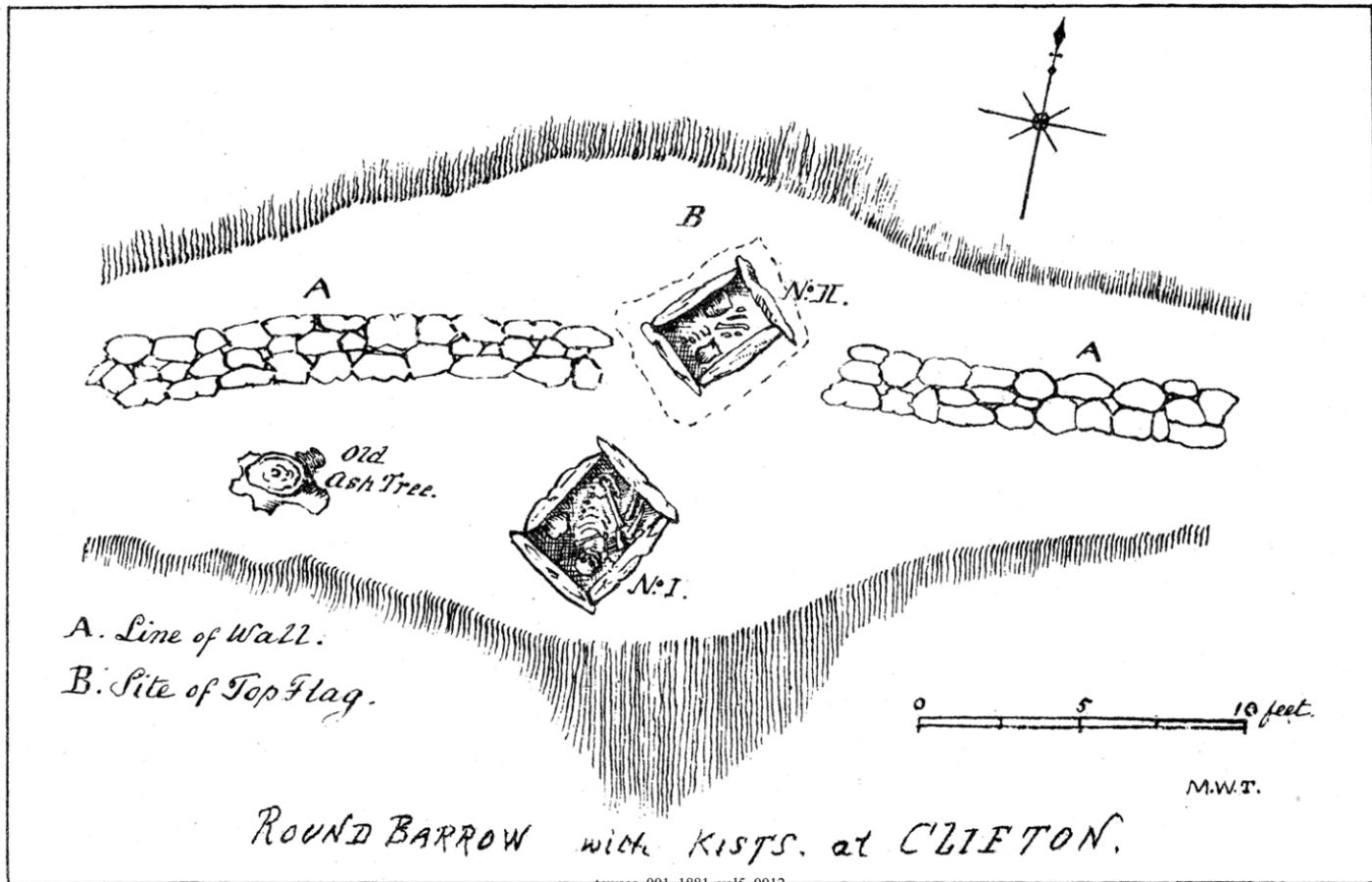
This land must have been under arable culture for several generations, and it would seem that the original enclosure, probably a stone wall of very ancient construction, was carried over and surmounted the mound, so as to leave half of it in the field to the north, and half in the field to the south. In the northern field the ploughshare has come up to within two feet of the fence, and over the ploughed

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surface

surface on this side it cannot be said that there is any trace of any elevation at all, so entirely has the soil been scarped away; but it is evident that the undisturbed surface on which the foundation of the wall rests, describes a long curvature in its elevation from the level of the field, the centre of which is the point near which the cists were discovered. The extent and rise of this mound are better appreciated when we survey it from the other side, or southern aspect of the wall; because here, until this last spring-ploughing, the outside furrow had not approached within five feet of the fence, in consequence of the obstacle presented by the presence of the barrow. The object of gaining two or three more furrows in the length of the field was the inducement to the farmer, Mr. Middleton, to cut away a portion of this long bank which lay alongside the fence. For this purpose recourse was had to the pick and spade, and it was in the course of these operations that the cist No. 1 was opened into.

Now the site of the barrow occupies the crown of a ridge which slopes down to the valley of the river below, and it is impossible to say with accuracy where the rise of the natural hill ended, and where the artificial elevation commenced, but, speaking roughly, I would estimate the length of the barrow, in the line of east and west, as being eighty-two feet. There are still less physical evidences and opportunities left to measure its diameter on the opposite points of the compass, north and south, any further than that on the south side the eye can detect a certain mammary swell in the ground to a considerable distance, which impresses even an ordinary observer with the idea that it must have possessed a round or bowl-shaped contour. The highest point of the mound is about three and a half-feet, from which the curve descends with a gradual and even slope until it merges insensibly with the natural surface of the ground. Over this gentle swell the stone wall dividing the fields runs almost in a straight line; it is
constructed



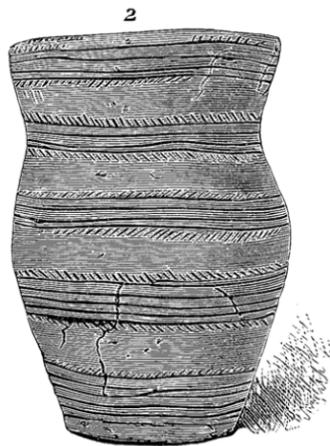
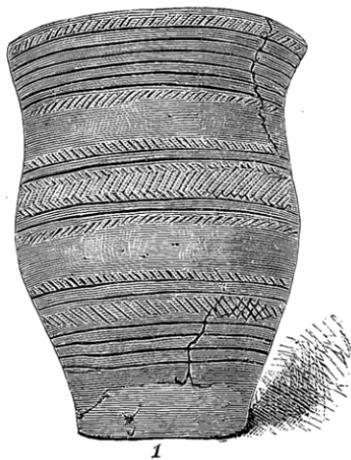
constructed in the manner usual in the country, of loose unmortared rubble resting on large blocks sunk a few inches below the surface, which have been the foundations of a more ancient structure.

On the 9th of February, Mr. Middleton, junior, was engaged in paring away this bank, and on arriving about the centre he came on an obstacle in the shape of a large slab of stone, lying in a horizontal position, which to the stroke of the pick emitted a sound which indicated to him that it covered a hollow space. He bared it of the superincumbent soil and stones, and carefully raised it and exposed to view the stone cist and interment. In company with Mr. Middleton, on the same day, I made an inspection of the place with everything *in situ*.

1st. In regard to the formation of the cist:—it was a stone box, of a rectangular figure, formed by four flags, four inches thick, set on edge, upright, those at the ends overlapping. The interior of the cavity was thirty-eight inches long, twenty-five inches wide, and about twenty inches deep. The top stone or cover was six inches thick, and from forty-six inches to forty-nine inches long, not being truly squared, and about thirty-two inches broad. The slabs were composed of a kind of bastard freestone, known in the neighbourhood. They had been split, and the inside surface wore a clean cleavage. The bottom of the grave was not flagged, but consisted of gravel and small cobble stones, mixed with soil, and had been sunk slightly below the surface. The long direction of the cist lay S.S.W. and N.N.E., and it was situated about two feet to the south of the centre of the barrow, which rose at the inner extremity of the top stone to the height of about thirty-six inches, and sloped down to about a foot at the outer extremity. Within the cist, at about half its depth, reposing on a smooth bed of fine black mould and sand lay the interment. The perfect and undisturbed condition of the bones of the skeleton enabled one to note exactly the disposition of the
body

body. It lay on its right side, with the head to the south and the face looking to the east; the knees were doubled up to the chin, and the inferior extremities of the tibiae in a line with the pelvis; the elbows were flexed and hands pointing towards the face. The cranium and long bones composing the upper and lower extremities were well preserved; the vertebræ, ribs, and pelvis were fragmentary; and the small bones composing the hands and feet still more so. From the measurements and examinations of the remains, the particulars whereof will be given afterwards, it appeared to me that the body was that of a small person about five feet one inch, from thirty to forty years of age, and of the brachy-cephalic, or round-headed type, such as prevailed generally during the period of the round barrows. In front of the knees, and laying on its side with its mouth looking inwards, lay a vessel of pottery, afterwards to be described.

The find, thus far, had been highly satisfactory; but I felt confident that we should be rewarded by a further exploration, from having noticed a heavy flat sandstone slab projecting from underneath the foundations on the other or north side of the wall. Accordingly, on a visit a few days afterwards, in company with Mr. R. S. Ferguson, F.S.A., operations were commenced to remove this flag by Mr. Middleton, junior, and we had the felicity of opening into another cist. The axis of this cist lay a little more to the west than the first-found one, and the head of the one was separated from the foot of the other by about three feet, and both lay pretty much on the same level, each being but slightly sunk under the natural surface of the ground. This cist was constructed in the same way as the first, with side stones set on edge. The dimensions of the floor were:—length, three feet three inches; breadth, eighteen inches; depth, eighteen inches. At the top the breadth was only fourteen inches, one of the side stones having fallen slightly inwards from the pressure of
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URNS FROM CLIFTON, WESTMORLAND.

the wall. The cist has been so weather-proof that the interior was perfectly dry and clean, and the appearance and cleavage of the sandstone were as fresh as if it had been built yesterday. Notwithstanding this, the body which had been deposited therein had gone nearly all to decay, except a few fragments of bones lying chiefly about the centre of the cavity. Amongst these could be discerned portions of the leg bones, and the shaft of the right femur, nine inches long, and portions of the calvarium, one about two inches in diameter. From the size and thickness of the femur, and the ruggedness of its *linea aspera*, which gives attachment to the muscles of the leg, I judged it to be that of a man. The bones reposed on a layer of fine snuff-like mould, eight inches beneath the cover. On each side of them was deposited an urn; that with the broken rim, urn No. 2, on the west, laying on its side, with mouth looking north. A search was made amongst the *debris* within and about these graves, but no potsherds, nor charcoal, nor implements were found, except a bone pin, two and a half inches long, slightly curved, in cist No. 1. This, it may be assumed, was the pin used for securing the cloth or skin in which the body had been wrapped.

Having completed the history and details concerning the graves, I will now proceed to give a description of the vessels of pottery which were exhumed.

Urn No. 1. This piece, when taken out of the cist, was in a fine state of preservation, except the bottom which was in a friable condition. It is eight inches high, six inches wide at the mouth, and three inches at the bottom; the outline presents very elegant and correct proportions. The rim, which is everted, falls with a gentle curve inwards for two inches; it then swells outwards towards the centre of the vase, which is five and a half inches in diameter, the outline then slopes rather sharply to the bottom. The lip, which is two and a half inches in thickness, has a narrow chamfer on its outer edge, and a deeper
bevel

bevel on its inner aspect, which is scored in a zig-zag pattern. The outward ornamentation consists of a series of encircling markings at three places,—at the top, at the middle, and at the bottom of the urn. On the outside of the rim, there is a row of parallel diagonal lines three-eighths of an inch, made with a notched instrument, below which there are five plain encircling bands divided by lines, and this section is finished off by a fringe of diagonal notches similar to and inclining in the same direction as those in the higher row. The middle of the vase is encompassed by a series of three bands, the higher and lower being plain, quarter of an inch deep, and fringed with notch marks sloping in reverse directions; the central band, which imparts individuality to piece, has a space three-quarters of an inch deep, which is filled in with parallel diagonal lines, with cross lines intersecting them at top and bottom, so as to form a double zig-zag. The lower section of urn has six encircling lines forming five bands, four plain and one double the width of the others, filled in with dotted lines crossing each other, forming a fretty pattern. The urn is of a pale brick colour, of good manufacture, the paste being of fine quality, well burnt with a hard smooth surface both inside and outside, the markings are even and regular, and the ends of the thong used in making the circular lines have been accurately co-adapted at the point of junction. Altogether, it is a superior specimen in form, material, and workmanship of this description of pottery. It contained to one-third of its capacity a fine black non-adhesive mould. Above one half of the side which lay uppermost is encrusted with a rough stalactite deposit, which is found on analysis to be carbonate of lime.

Urn No. 2. Height, $7\frac{1}{2}$ in.; width at mouth, 5 in.; width at bottom, $3\frac{1}{4}$ in.; lip of the urn rounded and impressed with notches in zig-zag. The character of the ornamentation is the same from top to bottom, and consists of five series of encircling bands, the three upper ones formed by four

four encompassing lines, the fourth by five lines, and the lowest one by six lines; all being fringed above and below with rows of oblique notches. This urn is not quite so fine in quality of paste, and the workmanship is coarser than in Urn No. 1.

Urn No. 3. More ovate and bell-shaped, and not so tapering in form as the two last. Stands $7\frac{1}{8}$ in. high, $5\frac{1}{4}$ in. wide at the mouth, 3 in. at the bottom, thickness $\frac{3}{8}$ in. The edge of lip is rounded without chamfer inside. The ornamentation commences just below the edge by a band of intersecting lines, forming a fretty pattern, below which there are six plain narrow encircling hoops. At the shoulder of the vase there is a band one-inch deep, which contains the specific embellishment of the piece. This consists of a series of chevrons or dancette lines placed one above another to the number of seven, the margins of the section being picked with a fringe of oblique depressions made with a pointed stick or the thumb nail. At the bottom of the urn there are eight circular encompassing lines. A sample of an urn exactly of same pattern found at Collessie, in Fifeshire, is contained in the Edinburgh Antiquarian Museum. The circular lines in the ornamentation of these urns do not represent the impression of a string or twisted thong, but a series of square dots about ten to the inch, divided from each other by a septum very nearly vertical. These ring courses, I conceive, must have been effected by an instrument, three or four inches long, elastic, so as to take the curve of the vessel, such as a thin narrow plate of bone, with a straight edge and a series of nicks cut on it.

We next come to the scrutiny of the posthumous remains of the individuals interred in these cists, so as to define as near as may be the type and the race of people to whom this barrow appertained.

From the examination I have made, and the measurements which I will give, I feel pretty safe in my conclusions;

sions; but as some difference exists in the practice of Craniographers as to the mode of these measurements, and as to the exact points whereat they are taken, I have sent these bones to Professor Rolleston, to be submitted by him, to the same standard of admeasurement which he has employed throughout Canon Greenwell's series of crania, now in the Oxford Museum.* So that I hope to have the advantage of appending to this paper the notes of this distinguished ethnologist.

MEASUREMENTS OF SKULL.

Fronto-inial line	6'8"
Extreme breadth	5'25"
Vertical height (Rolleston)	5'5"
Absolute height plane of Foram: Magn:	5'25"
Minimum frontal width	4'1"
Maximum frontal width	4'7"
Occipital width	4'5"
Circumference	19'7"

LOWER JAW.

Depth at symphysis	1'2"
Width of ramus on level of grinding surface of molar teeth	1'1"
The extreme length of right Femur	16 $\frac{3}{4}$ inches.
The extreme length of right Tibia	13 $\frac{7}{8}$ inches.
The extreme length of right Humerus	11 $\frac{3}{8}$ inches.

Although the skull has lost its basi-cranial bones, and a portion of the temporal and of the parietal bone on one side, yet it was otherwise so entire as to admit of the important measurements to be taken, and these, as well as its contour, display the brachy-cephalic type. The feminine character is expressed by the shallowness of the superciliary ridges, the small size of the mastoid process, and the comparative feebleness of the lower jaw. The lower jaw was very perfect, the teeth were all *in situ* and complete,

* "British Barrows," By W. Greenwell, M.A. See "Appendix" by Professor Rolleston.

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except the wisdom teeth, which were absent; they were small in size, regular, and without a spot of caries; the grinding surfaces were, however, considerably and evenly worn down, from which we infer that the owner had been about the "early middle period" of life, that is between thirty and forty years of age. It is conjectured that this wearing out of the enamel at a comparatively early age was promoted amongst savage nations by the abnormal admixture of sand in their farinaceous food, from imperfect milling. The limb bones of the right side, being in the best state of preservation, had been retained for examination. The femur was $16\frac{3}{4}$ in. long; the cancellated texture at the head of the bone had decayed away, but the condyles were well shown. Now, one rule for determining the stature when the femur only is available, is to estimate the length of the femur as being 27.5 to 100 of the entire length of the body. But we had the right tibia as well, perfect. Its length was $13\frac{5}{8}$ in. Now, another rule is to add together the length of the femur and tibia, and multiply by two, and to the sum add one inch to allow for the thick integument and cushion of the heel, and that also will give the height of the body.

We had the right humerus also in a state of entirety: its length was $11\frac{3}{8}$ inches, and the method to calculate the height from that bone alone is to take the length as being 19.5 to the stature as 100. The mean derived from these different procedures of calculation will give us the height of this person as having been under five feet two inches. This individual must have been of slight conformation, and an undersized specimen of the tribe; for the brachycephalic British have been recognised as big-boned and muscular, and of large cranial capacity; and a stature of five feet eight and a half inches has been assigned as an average by Dr. Thurnam, from an examination of twenty-seven femora.

They afford a remarkable contrast with the dolichocephalic

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cephalic race—the people with long, narrow skulls—their predecessors in this part of Britain, whom they conquered and finally supplanted. These latter people were of small stature, their bones were slighter, presenting less rugged lines, and asperous processes for the attachment of muscles; if we seek for the type of dolicho-cephaly at the present day, we shall find the most pronounced form in the aboriginal black of South Australia. These long narrow-headed people were the race who erected the long barrows, and the chambered tumuli; who buried their dead, as a rule, by burning them in trenches on the spot over which the mound was raised; and it is generally believed that they lived in the polished stone period, and did not survive as a dominant race unto the age of Bronze.

In no long barrow, I believe, has there ever been found any remains of the brachy-cephalic people, occurring as a primary interment; although in the round barrows, dolicho-cephalic burials occur alongside of brachy-cephalic, shewing that a proportion of the former survived during the ascendancy of the latter race. The occurrence of the long barrow in this part of the country is rare, compared with the prevalence of the round or bowl-shaped barrow and stony cairn. Canon Greenwell has met with a few on the Yorkshire Wolds, and one on Crosby Garrett and on Asby Fell. There is also one still standing in Newton Reigny Parish, near Penrith. I believe no pottery has ever been found in the long barrow, and certainly no implements of Bronze.

On the other hand, as it is well-known, grave mounds of the round type, both with or without enclosing circles, are very numerous; and probably no part of the country, except the wolds of Yorkshire, are more prolific than some of the high uncultivated tracts of hilly ground in Westmorland. In these, it has been found, that both modes of burial, by cremation and by inhumation, have been used, it would appear indiscriminately, and so far as we know, contemporaneously



No. 4.

contemporaneously by the same race of people. And again, when the body was buried without burning, it was almost invariably in the doubled-up position, and generally inclosed in a cist, made of stone slabs, in the way I have described in the Clifton burial, though in other instances they are found sunk in cavities in the ground, or placed in the mound without any further special protection. When cremation was employed, it seems to have been conducted in a somewhat different manner to what had been the practice in the era of the long barrows. It is true it was done on the spot within the circle of stones; we see that well exemplified in the digging made the other day by Mr. Robinson, at Leacet Wood, in which the area within the circle shewed a large quantity of charcoal. But the bones, after being burned, were not always, but very often, gathered into an urn, and deposited in a hole in the ground, not in one invariable mode of procedure, but sometimes at the foot of a stone on one side of the circle, and sometimes on another; sometimes with a form of protection, at other times without any; sometimes with the urn upright, at others with it inverted. It is certain that the bones must have been gathered together with great care after the burning; they must have been raked up, for it is unusual to detect amongst the bones any charcoal, or cinders of clay or stone. Now, these cinerary urns differ in a very marked manner from the articles of pottery found in the cists, such as I have described from the Clifton discovery—the food vessels, or drinking cups, as they are indifferently called by Archæologists.

The cinerary urn, No. 4, of which I shew you the full-sized drawing, is the more common type of this class of pottery, and as it has not been hitherto described or figured, I will append the account of it to this paper.

This mortuary vessel was found on March 17th, 1869, on Moorhouses Farm, in the large arable field adjoining the stackyard. Whilst this field was undergoing spring cultivation,

cultivation, a large flat stone was found in the middle of it, which presented an obstacle to the plough, and a labourer was employed to remove it. On lifting this stone it was seen that it rested on the tops of three large cobble stones, which inclosed a space of two and a half feet in diameter. On clearing away the soil, which had fallen in, the urn came into view, standing upright, and resting on some round stones which formed the floor. No charcoal nor implements were found within the cavity. The urn was quite full to the top with burnt bones in fragments of various sizes, pertaining to an adult. The urn was in good preservation, and though fractured at the rim, the pieces were recovered. It is eleven inches high, eleven inches wide at the top, and four inches at the bottom, and thirty inches in circumference at the shoulder. The walls are five-eighths of an inch thick, the inner half of the fractured section of which has a black charred appearance; externally it is of a dull pale ochre; it is made of a coarse paste which contains in the interior pounded granite, shewing the particles of mica and sharp angular fragments of quartz and felspar, the size of a pea and downwards. It has a rim three inches deep, which overhangs the body of the vase; an arrangement most usual in these large cinerary urns, I conjecture, to afford a grip to the fingers in lifting them. The inside of the lip is chamfered, and is marked with a row of oblique impressions.

The principal ornamentation is confined to the rim, which is covered by an alternate series of parallel, vertical, and horizontal lines, made by impressions of twisted string; below the rim, as far as the shoulder, there are oblique linear indentations arranged in three rows, herring-bone fashion. Below the shoulder the vase is plain.

Of course it requires a vessel of considerable capacity to receive the whole of the calcined bones of a body, so that the cinerary urns are much larger in size than the food vessels. They are also made of a coarser quality of clay,
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amongst which was purposely mixed a quantity of pounded stones or gravel, to add to the firmness and strength of the walls of the vessel. Some of them have been sun dried merely ; but in this example the tempering by some amount of firing is apparent. The study of these ancient interments in this part of the country seems to indicate that the practice of inclosing the calcined bones in an urn, and that of depositing the burnt remains on the ground without an urn, were contemporaneous. It would appear also that the ceremony of cremation, and that of inhumation and cist burial were both practised by the same races, at the same period of time. It might be said even that these separate usages were practised indifferently by the same people ; at least it does not seem clear how we are to differentiate the conditions which determined the selection of one order of interment or the other, for it is not very unusual to meet with both burnt and unburnt remains, side by side, as it were, in the same barrow.

And here, within a space of a few square miles, within which has been found these kist-vaens at Clifton, with their unburnt skeletons, we have the numerous examples of cremation and urn burial, to which allusion has been made.

Since the reading and printing of the foregoing paper, I have been favoured by Dr. Rolleston with the valuable observations on the skeleton which follow. I am happy to observe that his measurements accord very closely with those given in the text, and that he confirms my inferences in regard to the age and size of the individual. The question of identification of sex is fully discussed, and from the perusal of the careful analysis by so proficient an ethnologist, it would appear that under the sparse subjective conditions presented by the case verification becomes rather difficult.

APPENDIX.

Notes on Human Remains from a Barrow at Clifton, near Penrith. By GEORGE ROLLESTON, M.D., Oxon., F.R.S., &c., Linacre Professor of Anatomy and Physiology, and Fellow of Merton College, Oxford

In March last I was favoured by Dr. Michael Taylor, of Penrith, with two packages of human bones, purporting to have come from two cists, in a mound at Clifton, near Penrith.

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The bones from cist No. 1 consisted of a calvaria with a lower jaw but no upper jaw, an all but perfect tibia, a femur, and a humerus in a less perfect condition. The calvaria was more perfect on the right than on the left side, the long bones sent were all right-side bones, the skeleton was reported to have been found on that side; no pelvic nor other bones came with them.

I may perhaps do well to state first the general impression which the details of the examination (next appended) of these bones have made upon me. I think these bones may have belonged to a man of unusually short stature, only some trifle above, if at all above five feet and one inch, of the brachycephalic type, and of no very great muscular strength. The forehead sloped gently backwards from a plane considerably posterior to that of the eyebrows, which were implanted upon solid supra-orbital ridges, which might have been expected to have been found to be underlaid by frontal sinuses. The highest point in the roof of the skull lay in the transverse plane cutting the two parietal tuberosities; and from this line the posterior halves of the parietals sloped in their turn gradually into the bones constituting the *receptacula* for the posterior cerebral lobes, which bones were two enormous and abnormal *ossa Inca*, one on each side the much reduced triangular superior occipital squama.

The line of demarcation between the part of the occipital bone which lodged the cerebellum and that which lodged the tips of the cerebral hemispheres was well marked externally by a transverse bony ridge representing the so-called "superior semi-circular lines;" and if we clothe (in imagination) the lateral or profile contour thus made up with scalp and hair we shall reproduce for ourselves a head not very rare amongst us at the present time. On the hypothesis of this skeleton being that of a male, it is curious that at a time in which physical superiority was so usually correlated with the pre-eminence which an interment in a tumulus testifies to, we should find a man of such short stature and puny development in such surroundings. And this tells in favour of the sex having been female. Still mind may have been recognised even in the bronze age as a force worth securing for places of trust, or at least of rule; and we know it was so in the iron age of Tydeus, as well as that of Ulysses, which immediately succeeded and had not forgotten that age.

The second package contained fragments of a femur, a tibia, and a humerus, and one lime-encrusted fragment of the calvaria. There is no need to describe any of these bone fragments in detail; they shew much the same marks of development that the bones from cist No. 1 shew with greater clearness; but it is noteworthy that the tibia is distinctly platycemic, as is so often the case in Prehistoric Skeletons, especially of the Stone Age.

I will append to these general statements, firstly the measurements which I have been able to take of the bones from cist No. 1, and secondly statements of the facts which appear to me to bear upon the questions as to what the age and sex of the individual concerned were.

I. Measurements—

Extreme length	6·7"
Fronto-inial length	6·6"
Extreme breadth	5·3"
Vertical height	5·6" approximately.
Absolute height	5·2" " "
Circumference	19·8"
Frontal Arc	4·9"
Parietal Arc	4·6"
Occipital Arc	4·2"
Minimum Frontal width	3·8"
Maximum " "	4"
Tibia	13·5"

Length-Breadth Index=79 ("Cephalic")*

Antero-posterior Index=53

(i) As regards the age of the skeleton found in cist No. 1, Clifton near Penrith;—

As regards the age of this first set of bones with the calvaria; I may observe firstly, that the very considerable development of the supra-orbital ridges, both in the segments usually underlaid by the frontal sinuses and at their external or "ectorbital" terminations, gives us an impression of considerable age to which the presence of a very deep Pacchionian pit in the left parietal bone may seem likewise to testify. On the other hand there is but one such pit, and the channels for the meningeal arteries are but shallow as is usually or invariably the case in young skulls, and the internal surface of the skull which those arteries really feed, their name notwithstanding, still retains traces of the *impressiones digitatae* made on it by the as yet growing brain. The patency of the other sutures is balanced by the all but complete closure internally of the coronal suture.

Dealing with the teeth I may observe that we have only those of the lower jaw before us, and that of these the wisdom teeth and one second molar are absent, of the remaining the second molar and the

* Skulls elongate a little as they dry, and consequently the cephalic or Length-Breadth Index is a little less, as the skull has been measured, than it would have been normally.

premolars

premolars are comparatively little worn when compared with the incisors, canines and first molars. That the third molars or wisdom teeth had been present is proved by the presence of empty fang sockets for them.

The coalescence of the epiphyses of the long bones and notably of the upper epiphysis of the tibia with its shafts proves by itself alone that the owner of this small skeleton was at least from 20 to 24 years of age.

On the whole I should not say that the bones available to me for examination enabled me to say no more than their owner was not above thirty years of age.

(ii) As regards the sex of the owner of the skeleton in cist No. 1;—

Speaking generally we may say that in the human subject the skull offers certain peculiarities of form and development which are more or less distinctive of one or other sex, but which are not always to be absolutely to be relied upon.* Some uncertainty attaches to the assignment in this particular case. As regards peculiarities of form. I incline to hold that a sloping forehead is an eminently male point, For as Professor Cleland has so well pointed out, Phil. Trans. vol. clx., 1870, the sloping forehead very usually is correlated with a powerful and heavy lower jaw, allowing as it obviously does by its sloping of the brain being rotated backwards so as to counter-balance the weight of the jaw, and make the work of maintaining the balance of the head on the spinal column less for the nuchal muscles. In this particular case the slope of the forehead is considerable, even though the lower jaw is not specially powerful.

A second point which the *norma lateralis*, or the view of the skull in profile, gives us as more or less positively indicative of the male sex, is a similar obliquity in the posterior halves of the parietals. In male skulls this region, together with that constituted by the superior squama of the occipital bone, form an oblique slope; whilst in female skulls, it forms an abrupt dip. In this skull, though the foramina emissaria are distinctly on the posterior rather than on the upper surface of the cranial vault, the parieto-occipital slope has still such a degree of obliquity as to suggest that its owner may have been of the male sex.

Viewed in the *norma basalis* this skull shews great tumidity in the single *conceptraculum cerebelli* which is left, and the globular shape of this portion of the skull is considered by some authorities to be indicative of the female sex. As I have elsewhere (British Barrows

* For the risk of falling into error in assigning a skull to one or other of the two sexes see "British Barrows," p. 565.

pp. 569, 650) stated, I am inclined to explain this convexity as being due to the downward pressure of the cerebral hemispheres which must often be considerable in skulls of the brachycephalic type, and with the considerable altitude which this skull exhibits.

A fourth point in male skulls is the great size of their muscular and other ridges as compared with those of female crania. In this skull the superior occipital ridges form a very fairly pronounced horizontal ridge being continuous across the middle line, as is not very rarely the case in skulls of savage races, without the interposition of any mesially-placed occipital spine, except in the shape of a rudimentary tubercle placed a little inferiorly or anteriorly to it. But the non-muscular supra-orbital ridges are even more significant; they are not burrowed into by the frontal sinuses, but as shewn by sawing out a prismatic section, are bony substances, two tables, an outer and thicker one, and an inner and thinner one next the brain separated by diploe. This is a rare thing, said to exist in Australian skulls, but certainly not constant in even them. I incline very strongly to doubt whether this peculiarity would ever be found in a female. The mastoids are lost, but it is clear that the one the base of which is left was of but feminine proportions. The lower jaw, also, is small, a fact of much significance telling in the same direction.

Leaving the head, and coming to the limb bones, it is true, that such a diminutive stature as a couple of inches or less over five feet, is more likely in rough times and among rough people, to be found among the softer than among the stronger sex. The pelvis is not available, or the matter might have been decided positively. As it is, I did at first incline to consider this skeleton to have belonged to a man. But there is much room for questioning this allotment.

(iii) As regards the stature of the individual to whom the skeleton from cist No. 1 belonged,

I have to say, that I have only one perfect long bone, the tibia, to calculate from, and the length of this bone being only 13'5" the stature of its owner (the tibia being 22'15 to 100 of the entire stature), cannot have been much above five feet one inch or so; a tiny stature for a man of the bronze age, or at any rate for a man of the governing classes of those days.