

bronze period. I could mention other cases where the old circular wall has been partly eaten away by the encroachments of the sea in very sheltered bays and in situations showing great antiquity. Therefore, without expressing a decided opinion, I think it is quite an open question, and it is to my mind quite conceivable that almost savages might have constructed these dwellings though working with very rude instruments. I have always thought that the best clue to what savages would do is to see what children do. Children will constantly build beautiful round towers with even stones; but the same children, if they had nothing but the unequal instruments of Caithness would have had great difficulty to get the beautiful cutting tools that you see there. That does not affect the to my mind conclusive evidence of these excessively rude weapons being found buried in graves and similar descriptions of stones being found invariably.

The discussion was adjourned till the 20th instant.

DECEMBER 20TH, 1864.

CAPTAIN R. F. BURTON, V.P., IN THE CHAIR.

THE minutes of the last meeting were read and confirmed. The names of the following gentlemen who had been elected Fellows were announced; F. R. Izard, Esq.; Robert Marshall, Esq.; Captain Samuel R. J. Owen; E. Tinsley, Esq.; Dr. J. Hillier Blount; G. C. Rankin, Esq.; C. Plummer, Esq.

The following presents were announced, and the thanks of the Society given to the donor (Mr. Conrad Cox). Kirkpatrick, "Account of the Kingdom of Nepaul;" Hodges, "Travels in India;" Turner, "Embassy to Thibet;" Isenberg and Krapf, "Journals in Abyssinia."

Mr. C. CARTER BLAKE stated that a letter had been received from Mr. Pengelly in reference to some remarks in the discussion on his (Mr. Blake's) paper on Kent's Hole in the Journal of the Society. The following is the letter referred to.

To the Editor of the Journal of the Anthropological Society of London.

DEAR SIR,—Having taken an active part in the cavern researches which, at various times during the last twenty years, have been made in this county, I was much surprised on reading the following statement in the last (the November) number of the Journal, page cclxxv (mis-paged cclxv in my copy), viz.—"Mr. Roberts said that about four years ago the sum of £450 was granted by the Royal Society for the complete examination and clearing out of Kent's Hole, and a committee was appointed for the purpose; but owing to the gentlemen who composed it residing so far from the spot, and to other circumstances, they did not do much towards the accomplishment of the desired object. The chief thing they did was to discover about twenty flint implements in the mud of the cave, the whole of which were in his possession. He was afraid that nothing else was done by that committee, etc."

I may remark in passing, that I know of no cavern in Devonshire in which it is possible "to discover about twenty flint implements" without doing a great deal towards clearing out the cavern itself.

Having heard nothing of the labours, or indeed of the existence, of such a committee, I concluded the statement to be altogether inaccurate, and this conclusion was confirmed by inquiries which I at once made in the proper quarters. The Guide to Kent's Hole—without whose knowledge and consent no one can enter it—assures me that he has never been applied to by or for any committee, and that, with the exception of a few desultory diggings which he has himself made, there has been no investigation of the cavern since the partial one undertaken by the Torquay Natural History Society in 1846. The Assistant Secretary of the Royal Society, in a letter on the subject, says "the Royal Society never voted money for an exploration of Kent's Hole, nor have I ever heard that they were ever asked for money for that purpose."

It has been suggested that the error probably originated in confounding Brixham Cavern with Kent's Hole; but even on this hypothesis the statement is singularly incorrect, as the following facts will show:—

In 1858 the sum of £100 was granted by the Royal Society for the complete examination and clearing out of the Windmill Hill Cavern, at Brixham, and a committee was appointed for the purpose by the Council of the Geological Society of London. The committee entrusted the superintendence of the work to one of their number who resided in the neighbourhood, and they also appointed a local committee consisting of gentlemen residing at Torquay and Brixham.

The work was commenced about Midsummer 1858, and was carried on with so much success that, early in the following year, the Royal Society granted a second sum of £100, and liberal contributions were received from Miss Burdett Coutts, Sir J. Kay Shuttleworth, and the late Mr. R. Arthington of Leeds. A large number of bones and upwards of thirty flint implements were discovered, and, at the termination of the exploration, at Midsummer 1859, when the cavern was completely cleared out, these, together with numerous samples of the deposits and stalagmites, were forwarded to the apartments of the Geological Society, Somerset House, London, where they have remained ever since in the care of the Brixham Cave Committee, of which Dr. Falconer is chairman.

I do not seek to know how the mistake originated; but, believing it to be your wish that such errors as, notwithstanding your care, may creep into the Society's Journal, should be at once corrected, I beg to request you to read this letter at the *next* meeting of the Anthropological Society, and to print it in the February number of the Journal.

A line in reply will greatly oblige yours very truly,

WM. PENGELLY, Loc. Sec. A.S.L.

Lamorna, Torquay, December 14th, 1864.

The adjourned discussion on Mr. Laing's, Mr. Roberts's and Mr. Carter Blake's papers was then continued.

Dr. J. HUNT said that at the last meeting, when the paper by Mr. Laing, giving an account of the interesting remains and skulls he had found in Caithness, and the communication from Mr. Roberts on the remains found in a kist in the Shetland islands, were read, he had moved the adjournment of the debate, as it was a subject that required deliberate consideration. Remarks were made on that occasion, on the resemblance of the crania found by Mr. Laing to the Negro and also to the Australian type. Since that meeting there had been letters on the subject in the public papers and discussions in other Societies, therefore the question now came before them in an enlarged form. At the last meeting they had not time to discuss the resemblance between the skulls brought from the kist in Caithness and those of the Negro, which question should be fully considered. They had now the opportunity of hearing what those resemblances were. Mr. Laing said that the skull marked No. 1 bore a general resemblance to the Negro type, and he hoped that they should have heard something to confirm that opinion, but they had not. Professor Owen pointed to a skull that resembled an Australian, and it was often said that there is a general resemblance between one skull and another, but it was necessary to have something more specific than a general resemblance. Professor Owen was stated to have said, that one of the skulls brought from Caithness bore a general resemblance to Australian skulls, but he had merely said that it resembled them in the depth of the supranasal notch. No progress could be made if they merely took general resemblances, which account for very little, for the same might be said of almost any skull. What they had to consider was, whether the skulls on the table threw any light on the question of the primitive inhabitants of this country. It was a most important subject, and should be discussed in a scientific manner, without reference to general resemblances. What they wanted to find out was, who were the primitive inhabitants of this island? With regard to the antiquity of these remains, it was important to know the exact position in which each one was found. There was one, for example, which had certain marks that might have been made by a sharp cutting instrument, and if they could ascertain its date by the stratification in which it was deposited, that sawn antler was no doubt of great value. There could be no doubt that Mr. Laing's communication was most important, and there could be no question respecting the great care with which he had pursued his investigations; but as to the antiquity of the skulls, the determination of that question must depend on the results of further similar researches, and he hoped that Mr. Laing, when he resumed his investigations, would endeavour, particularly by an examination of the stratification, to ascertain whether the remains were comparatively modern or ancient. There appeared to be very distinct marks in the skulls of different races. He was inclined to think that this collection of skulls was more in accordance with what was wanted to correlate them with those described by ancient historians as the form of the head of the ancient inhabitants than any before discovered.

Mr. HIGGINS observed, that of the skulls exhibited by Mr. Laing

two differed very much from the rest, and might have belonged to any Englishman of the present period. Those marked 1 and 5 differed the most from them; and they might be placed with those classed by Professor Daniel Wilson as kumbekephalic, and which he considered to be the type of the skulls of the ancient inhabitants of Scotland. The principal difference consisted in the prominent parietal tubers. Those skulls also resembled the "river bed" skulls. Dr. Thurnam, in the paper read before the society during the late session, attributed the round form of skull to the Celtic races, and the long form to a pre-Celtic race, and the skulls found by Mr. Laing, which were of that form, might, therefore, belong to the most ancient race. They bore considerable resemblance to some of those figured in the *Crania Helvetica*, particularly to the mixed form called Hohberg-Disentis. Several authorities were quoted by Mr. Higgins in confirmation of the opinion that the Hohberg form of skull was that of the old Roman; but he thought there was good evidence that, although this form of skull was introduced into Switzerland during the Roman period, it belonged to a pre-Celtic people from a distance. In an ancient grave in Northern Prussia similar skulls had been found. All these skulls were characterised by occipital dolichocephalism, and belonged to the same class as the Basque skulls which have been referred to Africa, it might therefore be conjectured not unreasonably that the primitive population of Scotland came from Africa.

Mr. MACKENZIE made a few observations on the speculations of various authors as to the peopling of the whole of Western Europe from India, especially from Affghanistan.

Mr. C. CARTER BLAKE said he would offer no excuse for entering into technical details in considering the subject, for though that was not "a meeting of anatomists" the only effectual method of investigating the subject was that which anatomy afforded. The anatomist had his task lightened, however, on that occasion by the accuracy and care with which Mr. Laing had laid the evidence before them. Dividing his remarks into sections, he would first speak of the animal remains, which had been identified by Mr. Roberts, Mr. Davies, and himself. There were among the bones those of a horse. The characteristics by which it could be distinguished from the *Equus caballus*, or from the fossil horse (*E. fossilis*), were very small, and it was difficult to say whether the horse, the remains of which were found in the Caithness shell mounds, was recent or extinct. There were other animal remains still more interesting. There was the *Bos longifrons*; the descendants of that species of ox still exist, but the dental characters of those from Caithness indicated that they were identifiable with the *Bos longifrons* of the pleistocene deposits. There were among the bones many jaws of a smaller ruminant which at the first glance it was possible to class as those of the sheep or goat. There were certain marks, however, which showed that they belong to the goat of the recent deposits and the pleistocene, and by which they were very distinguishable from those of the existing sheep. There were some zoologists who might wish to show that these Caithness bones were of

a more recent date, and who desired to prove them to be those of sheep, carrying out the aspiration of the old poet—

“Inter oves locum præsta,
Et ab hædis me sequestra !”

but he could not agree with that opinion, and on the authority of Mr. Davies, fully believed that the bones on the table were the remains of the domestic goat. He would next consider the skulls. Referring to one on the table, he observed that it appeared to be almost brachycephalic, and bore a strong resemblance to those found in the round barrows of Great Britain, and agreed closely with those denominated by Dr. Thurnam the ancient British type. It agreed in its measurements also with a skull found at St. Acheul, near Amiens, by the President. If they accepted the cranium in the old French cemetery to be that of a civilised Celt, they must consider the one to which he now referred to belong to the same race; for the differences between them were indeed very small. The next division was very different. The skulls numbered 2 and 3 had since their last meeting been compared with the skulls found in English river-beds. He could not agree in thinking they belonged to that class. Mr. Blake then proceeded to describe the peculiarities of the river-bed skulls, as they have been defined by Professor Busk and other authorities, and he pointed out the differences between the skulls on the table and those from Mewslade, Muskham, Blackwater, the valley of the Thames, and other places, which have been considered types of the crania from the river beds, in scarcely any of which particulars he said did the skulls brought by Mr. Laing from Caithness agree. To go into details. The Mewslade skull (found in an ossiferous fissure) had been selected as a type of the river-bed skulls, but the elevation of its forehead, and the horizontal line on the vertex, were markedly different from the shape of the true river-bed type. Then we have the Muskham skull, in which Mr. Blake felt a peculiar interest, as he had the honour to describe it in the *Geologist* of June 1862, in detail. The Muskham skull had large supraciliary ridges; Mr. Laing's skull had none. The Muskham skull had a deep supranasal notch; none was exhibited to us by Mr. Laing's specimens. The occipital foramen, it is true, was slightly oblique in one of the Caithness skulls; but of a totally different shape to that which the Muskham skull presented. There it was very narrow and of great backward extent, whilst a more circular form was assumed in the skulls from Caithness. The Muskham skull has a ridge along that part of the sagittal suture where the Caithness skulls exhibit a depression. The squamosal bone is developed posteriorly in a trapezoidal form in the Muskham skull, while in the Caithness skulls it is rounded. The Muskham skull has an unusually large union in the centre of the superior semicircular line, but even in those Caithness skulls wherein the muscular attachments were strongly marked, there was no such protuberance. The Borris skull, from the bed of the Nore in Ireland, had a much longer and more produced occiput than the Caithness skulls, and the Blackwater skull further departed from them by its greater height, and the larger proportional prominence of the *tubera parietalia*. The skulls from Towyn y-Capel in Anglesea, had never been described and figured; but,

judging from the inspection which Mr. Blake had made of them at the Royal College of Surgeons, the differences between them and the Caithness skulls were very great. The Eastham skull from the banks of the River Lea, also differed in minor respects; Mr. Blake would only again refer to his own memoir, in which measurements of this skull were given. Alluding to the erroneous deductions which he conceived had been drawn from some alleged similarity in the skulls from Caithness with the river-bed skulls, Mr. Blake observed that any two objects may be taken which appear to bear some resemblance *inter se*, inasmuch as they may both have a specific gravity greater than water; they may be both opaque, and neither of a dark colour; yet they may be as essentially different as chalk and cheese. The skull marked No. 1 had been said to be of a degraded character, to be almost ape-like in its palate, and to be that of a female. In the size of the molar teeth and in the proportion of the nasal ridge, it did not, however, agree with that of the Negro, and in many other respects it was entirely different. Comparing it with that of an Australian, it might be said to bear some resemblance. There are two types of Australian skulls; in one of which there is a distinct elevation on the sagittal suture, and in the other the skull is more flattened, and resembles some skulls from Port Essington. He next considered the anatomy of the pelvis, on which great stress had been laid when the subject was discussed elsewhere. The pelvis belonging to the skull marked No. 8, he regretted to say, was not on the table. It had been stated that the measurement of that pelvis was contrary to the normal conditions, and that it differed from the pelvis of an European in having the antero-posterior diameter greater than the transverse. In that respect it differed, according to the researches of Dr. Joulin, not only from the European, but from all known races of man, the transverse invariably exceeding the antero-posterior diameter. The abnormality was certainly very remarkable, but it should be remembered that it is at present confined to two instances. The next question to be considered was the probability of the existence of cannibalism amongst those ancient people. On the former occasion, when the subject was discussed, there was exhibited the jaw of a child of five years of age, the lower edge of the horizontal ramus having been chipped away, and other abrasions being present which had been attributed to the action of knives. Professor Owen, who has had great experience in observing the jaw-bones of animals which have been eaten, told them on that occasion that the fracture of the jaw agreed with those on the jaw-bones that had been gnawed away to suck out the dental marrow. Mr. Laing had originally formed the same opinion. The correctness of such a conclusion had, however, been denied, on the ground that the quantity of dental pulp to be obtained from the jaw was not sufficient to induce the ancient people of Caithness to take the trouble to break the bone to extract it. That weak argument was offered by those who had described the Australians as living principally on a grub found in their forests. Except on the supposition that the jaw had been chipped for the purpose of extracting the marrow, it was difficult to account for its having been broken in

that manner. Two blows of a flint implement would have been sufficient for the purpose; and if the jaw had been gnawed either by a carnivorous or rodent animal, the marks of the teeth would have been left. He agreed, therefore, with Mr. Laing and Professor Owen in considering that the appearance of the jaw-bone indicated cannibalism. The general conclusions at which Mr. Blake said he had arrived from an examination of the skulls from Keiss were, that they afford no evidence of more than one "race" of man, however the word race may be defined. There were so many characters in common among them—for instance, the breadth between the orbits and the absence of anything approaching a supraorbital notch—which would lead to the inference that the presumed diversity between the two types of skull was very slight. Similar instances of the concurrence of an extremely brachycephalic with an extremely dolichocephalic type were frequent, as was seen in the graves of Etruria. It might be said, that the two types of skull differed in cranial characters as much as the European and Australian of the present day; but we know of no such intermediate links between the European and Australian as exist throughout the series of Caithness skulls. He regretted, therefore, that the comparison which he had been enabled to make did not qualify him to solve many of the disputed points relative to these skulls. He could not tell aught of the mental or moral phenomena of those individuals. He should be loth to inform them, for example, whether the skull of No. 1 was that of Hermia or of Helena, or whether or not it was the skull of a virago; and he preferred also not to carry those poetical comparisons so far as to infer from the evidence before them whether or not those skulls were affined to those of the river beds. These deficiencies, however, were probably the result of the plain, unimaginative, materialist education which he had received, and he would prefer to leave to such a meeting of enquirers as the Anthropological Society provide, the task of solving the probable affinities of the skulls from Caithness. In conclusion, Mr. Blake remarked that, although he was not an advocate of the Aryan theory, yet he had seen skulls of almost as negroid appearance from localities in Nepál, and considered it perfectly possible that they all belonged to one common Indo-European race, susceptible of elevation up to the level of the modern intellectual European race, of degradation down to the stature of the Caithness mound builders. No real affinity was disclosed between these remains and those of the dark races of man, in Western Africa or Australia.

Mr. MILLER said he had recently visited Keiss, and had examined the strata on which the barrow excavated by Mr. Laing had been constructed. A brook near the spot cuts through the strata, and enabled him to ascertain that the barrow was more modern than the boulder clay. The latter rests on the uppermost of the series of rocks; on the clay there rests about twelve or eighteen inches of peat moss, and on the top of the moss the barrow had been constructed. He was not able to form a definite opinion as to the age of the human remains, but he thought it was possible they might belong to the beginning of the Christian era. Some similar remains had been found on the east coast of Scotland, and on one of the skeletons

there were the remains of hair, which shewed that they were not of very great antiquity. As to the question of cannibalism, he differed from Mr. Blake, and having been born within twelve miles of Keiss, he felt a personal interest in the matter, as the allegation of such a practice he considered a reflection on his ancestors. He thought the evidence of cannibalism was very slight indeed. If it had been the practice of the people to eat human flesh, the evidence of it would have been more abundant, and not limited to the finding of a single jaw. He said he looked upon Mr. Laing as a first-rate discoverer, and he hoped he would take an early opportunity to pursue his investigations on a more extended scale. He believed the houses had been the habitations of the ancient Picts, who had been destroyed by the Northmen in about the year 900.

Mr. PRIDEAUX said, that with regard to the skulls, he conceived many of the opinions which had been expressed were erroneous. As to the one marked No. 7, he agreed with Professor Huxley, that it was superior to the others; but he differed from him in thinking that it was a British skull. The predominating type was that of the Roman. He had seen skulls identical with those on the table taken from ancient Roman burial grounds in France. Instead, therefore, of those skulls being of the ancient British type, he believed that so far as the present state of our knowledge extends, they must be considered Roman, or at best Gallo-Roman. What is certain about them is, that their type does not enter largely into the composition of the crania of the existing English people; but some of the Scotch, especially near Aberdeen, bear some resemblance to them. In confirmation of his opinion he referred to the *Crania Britannica*. The British skull was longer, and the central portions of the head offered a contrast to the skull No. 7. The other skulls had been said to resemble the "river bed" skulls and the skulls of Australians, but with neither of those opinions could he agree. Mr. Prideaux then alluded to the distinguishing characteristics of Australian skulls, for the purpose of showing their dissimilarity from those of Caithness, and he said that he conceived the most important part of the skull, as indicative of difference of races, is the base. In his opinion the only mode of successful research for the origin of human races was to read the past by the light of the present, and to trace the chain of connection backwards. It was only by obtaining correct measurements of the skulls of all existing races that they could obtain, as it were, the power of recreating the past.

Mr. MACLEAY said that as to the question of cannibalism he thought with Mr. Miller that the verdict should be the Scotch one of "not proven." He considered it not improbable that the jaw had belonged to some child who had been devoured; but it appeared to be a solitary instance, and it was not sufficient to support the general charge of cannibalism against the whole of the people. He presented for inspection a stone "celt" found at Thrumster, not far from the place where the remains on the table had been discovered. It was found at the bottom of a drained lake covered with fifteen feet of marl; nothing else being near it except two skulls of the *Bos longifrons*. It was a well made "celt," finished and polished in a superior manner,

and was the most perfect specimen of the kind. The discovery of this highly finished weapon so near the place where Mr. Laing had excavated the rude implements at Keiss, would imply that the latter must belong to a very remote period.

Mr. MACKENZIE stated that a few years ago, when on the shores of the Baltic, he opened several barrows, in one of which was a skeleton with a long sword by its side. The whole of the jaw-bone had fallen away, but there were distinct traces upon it of some kind of action which he was disposed to think was chemical. It was possible, therefore, that some portion of the abrasion noticed in the jaw of the child found by Mr. Laing in the shell-mounds might have been produced by chemical action.

Mr. REDDIE feared the question of cannibalism, respecting which the amount of proof was very small, would be rendered more obscure if they introduced the probability of the abrasion of the bone being produced by chemical action. He thought it likely that the cleavage of the jaw-bone was produced by accident. When they saw so large a number of remains carefully collected from kists, the testimony they afforded was, not that of a people who ate the dead, but the contrary. There was evidence that the chief of the tribe and numbers of others had been buried with great care, and if the people were so careful of the bodies of the dead in general, why should a child have been selected to be eaten? As to the general question involved in the discovery of these remains, he must say he had been much delighted with the minute manner in which Mr. Blake had explained the affinities and dissimilarities of the different skulls. Professor Owen had recognised the similarity presented by the skull marked No. 1 with that of a Negro, and by another to that of the Australians, but he did not connect these remains together in the way he had subsequently done in a letter in *The Times* of 9th December. Mr. Reddie then proceeded to read this letter.

"**SIR.**—The remarks which, at Mr. Laing's request, I made on the human crania from Caithness, and on those exhibited by Mr. Blake from Shetland, were to the effect that the general characters of the former showed affinity with the oldest Southern or Aryan type; those of the latter, with an old Northern type, combining Teutonic features with the roof-shaped calvarium and supranasal depression of the Eskimaux. The lowest skull in the Caithness series of an ancient stone period resembled that of a West African negro, but with marked distinction in the proportions of the teeth, nasal bones, etc., such as may be seen in some Hindoo and Egyptian mummy skulls; the lowest of the old Shetland skulls similarly resembled the Australian, but with equally decisive differences, the resemblance in both instances in the small cranium and prominent jaws being due to undeveloped intelligence, and perhaps to a prolonged period of suckling; while the identity in the essentially human cranial characters in all the skulls supported the inference of unity of species. The fact of chief interest deduced from the examination of the remains of the animals affording food to the ancient Caithness people was the presence of bones of the great auk (*Alca impennis*), now deemed extinct by ornithologists, but thus clearly proved to be entitled to a place in the records of British birds.

"Athenæum, Dec. 8.

"RICHARD OWEN."

For his own part, he believed the whole of the human race sprang from the same origin, and that the variety of skulls among ourselves and in these from the kists in Caithness, presented evidence of the unity of the species.

Mr. BENDYSHE said it could not be disputed that cannibalism was

known in Scotland since the Christian era. He referred to the authority of S. Jerome as distinct proof of that fact; for he stated that, when a young man, he saw some prisoners brought by the Romans from Scotland feed on human flesh, and that they selected some parts of the body in preference to others, and relished them as "tit bits."

Mr. REDDIE observed that the evidence of S. Jerome did not refer to pre-historic times.

Mr. HIGGINS remarked that the question of the antiquity of the remains from Caithness must depend on the nature of the weapons and implements; and the discovery among them of spinning-wheels indicated no very remote period.

Mr. MILLER observed that the account given by S. Jerome related to a distinct tribe who had no connection with Caithness. His own opinion, founded on his knowledge of the Picts' houses, was that they are more modern than is commonly supposed. He did not think much of the antiquity of the "kitchen middens" of Caithness, the upper portions of which might have been accumulated without supposing that there were persons dwelling in the houses. Referring again to the question of cannibalism, as indicated by the jaw-bone, he said the child might have been murdered by the Northmen who subdued and mixed with the Picts, or it might have been devoured by wolves; which animals were not extinct in the north of Scotland until the end of the seventeenth century.

Captain BURTON said he appeared before the meeting almost for the first time as their president since the early days of the Society, when it consisted of not more than ten or twelve members; but now, he was happy to state, they numbered 454, and were rapidly increasing. It was the duty of every one to proselytise, and he had no doubt, in a short time, the Anthropological Society would complete the number of 1500, and become one of the most numerous and prosperous of the scientific societies in London. He appeared before them merely as a traveller, and he could not enter into the anatomical consideration of the skulls on the table. As to the question of cannibalism, his experience led him to believe that that was a state through which all mankind must pass before they arrived at a state of civilisation. In that respect it was like atheism, slavery, and polygamy in the progress to an enlightened condition of society. With regard to Caithness, however, they must, in deference to the gentlemen present from that part of the kingdom, make an exception. Far be it from him to accuse the ancient inhabitants of Caithness of cannibalism; but it was only in Caithness that the practice had not been general. With regard to the "celt" which had been exhibited by Mr. Macleay, he must say that it had a very modern appearance. The men who made it must have arrived at great power of manipulation to enable them to bore a hole through the hard stone, wherein to fix the handle; the plan adopted in all the ruder works of the kind being to make a hole in the handle to fix the stone into. As to the question of unity of species, it was one of great difficulty, and could not be decided with the facility that Mr. Reddie appeared to consider practicable. With respect to the spinning whorl found among the remains

in the shell mounds, he stated that it was exactly the same as he had seen used by the women in central Africa.

Mr. J. FRED. COLLINGWOOD made a few observations to explain the cause of the absence of those objects to which Mr. Blake had adverted in his speech from amongst the specimens upon the table. He said that they had been sent to Professor Huxley for his inspection, and that, in consequence of the absence of that gentleman from the Government School of Mines, they could not be procured, though they had been applied for several times. He was anxious to exculpate the secretaries from any imputation of negligence in not having them exhibited that evening.

Mr. H. BURNARD OWEN said,* in the valuable specimens from Caithness, submitted by Mr. Laing, a very striking similarity is presented in the stone weapons of races apparently entirely unconnected with each other, and this similarity is not confined alone to implements of war or hunting, but extends to the rites of sepulture. In a very marked manner is this shewn in the spear and arrow heads, and maces or axes, and the weapons which, until recently, when the rifle and the knife supplanted them, were for ages in use amongst the Red Indian of the Far West. That man in the rudest state, where his sustenance depended almost entirely upon the chase, or such waifs and strays as his simple means could procure from the sea-shore, should, even in different lands, to a certain extent adopt somewhat similar devices for obtaining food, clothing and shelter, is obvious to all; but when we see that in the weapons, whether of the chase or war, of two peoples 2,000 miles apart a resemblance so exact, we are led to the conclusion that there must have been something more than a mere coincidence, and that from a common source must have been derived even the simple art of manipulating these rude materials. As habits of comparison and reflection enable the anatomist to recognise in the fragments of a bone the animal of which it once formed a part, so may not these, at first appearance, trivial resemblances form the connecting links in that chain of evidence which shall establish the relationship and once close intercourse of nations now widely separated? In the spear and arrow heads from Caithness, the resemblance to the American is so close in material, shape and size, and especially in the fashioning of the parts attached to the shaft, that it would be almost impossible to distinguish them. In the Indian arrow and smaller spear head, flint and quartz are most commonly used; in the larger, the common bluish-grey stone, which admits of being worked thinner, with a finer cutting edge. Some of the specimens I have seen were narrow and elongated, whilst others were more lancet-headed. The maces, clubs, or battle-axes appear in both cases to have been adapted with little labour bestowed upon them, but to have been selected from those stones where attrition had, in the centre, rendered the fixing and retention of the handle a more easy task. Nor does it appear that in the majority of cases a *cutting* and *penetrating* edge was so much regarded as the *weight* and *crushing power* of the instrument. With these brief remarks, I now pass on to the mode of sepulture.

* Owing to the lateness of the hour, it was merely possible to hand these remarks to the reporter.—EDITOR J.A.S.L.

With the Celts, as with other northern races, the plainest interments were observed. Cremation, and the Roman mode of disposing of the remains of the dead was never entirely adopted, even by the mixed race sprung from intermarriage, whose nearest approximation to the costly and elaborate tomb of the Roman was a grave cut in the rock or chalk bed, or, where these were wanting, a simple sarcophagus of the rudest workmanship. So general was the custom of placing the bodies east and west, that deviations have only been sufficient to establish the rule; and in those instances where a north and south line was discovered, the fact of the remains being of those who had fallen in a neighbouring battle, and upon whose interment there would naturally be less care and time bestowed, affords a sufficiently reasonable explanation of the exception. As in the remains described by Mr. Laing, numerous instances can be cited where, in addition to the easterly inclination of the skeletons, the feet being pointed in that direction, the bodies were found lying on their right sides, and the faces were consequently thus directed towards the east and south. The arms were also crossed, the right hand placed against the left shoulder, whilst the hand of the left arm was placed against the right elbow. In an interesting paper on the remains at Towyn-y-Capel, read by the Hon. W. O. Stanley at the annual meeting of the Archæological Society in 1846, the disregard to the compass points, and the indiscriminate interment of the bodies, was assigned, as in other instances, to the effects of battle, which in the kistvaens he describes took place between the Irish and Welsh, resulting in the defeat of the former and the death of their chieftain. The custom of regarding the east in the burials of the dead is not confined alone to the Christian, but in a greater or less degree appears to have been observed in the funeral rites of the most ancient nations, as well as to have descended to those of later times. From the position of the skeletons, as described by Mr. Laing, being on their sides, I am inclined to believe that the date of interment must have been *subsequent to the introduction of Christianity*, yet so close upon it that its influence had not yet been sufficiently felt, as with the still uncivilised Indian, to eradicate the pagan tenets of their ancestors. In reference to the observation of Sir Charles Nicholson, that in the interments of the middle ages imitation weapons and ornaments were deposited in the grave of the deceased, the practice, I venture to believe, was isolated, and arose in all probability from the costliness of the materials and value of the jewels which adorned them. That in ancient kistvaens, both here and in America, the practice did not prevail we are assured, from the discovery of implements and remains of animals in the graves of the departed, which pointed either to their prowess in the battle, or their success in the chase, and as alike in the oyster shells of Caithness graves we find the old idea of the support supposed to be needed in the journey to other lands, where the spirit shall enter upon the re-enactment of the happiest scenes of former existence, so in the corn and food deposited with his favourite weapons in the tomb of the western warrior, do we find the belief of the spirit's requirements in its passage to the "happy hunting fields," where the fondest aspirations of his wild life shall be realised, and where,—

"Admitted to that equal sky,
His faithful dog shall bear him company."

In the one case we have the mind unimbued with the doctrines, and unenlightened by the precepts of Christianity; in the other, we discover the mind only just awakened from its sleep of ignorance, and in the reception of truth still clinging to the superstitions of a bygone age. In regard to the absence of any vestiges of canoes, I think we must not expect here to find any similar to those discovered in districts anciently better supplied with timber, but to consider the great probability that such boats as they possessed would, like the British coracle, be constructed of more easily procurable osiers, the very alightness of whose fabric would leave but little, if any, distinguishable traces at this distance of time, unless preserved by petrification. I should be reluctant to place so low an estimate upon the skill and ingenuity of the inhabitant of Caithness as to suppose he would rest content with the chances of fish in various stages of decomposition washed up on the shore, instead of endeavouring, like his not far distant contemporaries, to secure an unfailing and ample supply of more palatable food. Concluding these brief remarks, I venture to offer for the consideration of the Society the coincidences here noticed; and when we follow the traces of habits and customs, alike pertaining to the Red man and the ancient inhabitant of Caithness, may we not be led, step by step, till we arrive at the oriental source from which both alike sprang. It is not my purpose to enter into a discussion of the effects produced by climate and other changes, but to draw attention solely to certain facts in the arts of two races we have been accustomed to consider as so totally distinct.

Mr. LAING replied to the observations that had been made during the discussion. In the first place he said he would advert to the episode of cannibalism which had been introduced. He had merely referred to it in his paper as stating the facts that had been made known. The evidence of the practice was, that the jaw-bone of a child had been found among a mass of shells and bones which were obviously the remains of substances that had been used as food. In another mound a human tooth had also been found. In those two instances, at least, they had the evidence of human remains with those of animals that had been eaten. It was, indeed, quite possible that a dog might have dragged the jaw from a grave and eaten it, but the bone did not present the same appearance of having been gnawed by dogs, which was seen in those bones that had been so gnawed; and, from the experience of Professor Owen, it was evident that the breaking of the bone to extract the nerve-pulp shewed design. There was, therefore, strong evidence that cannibalism had been at least occasionally practised. The question of the antiquity of the remains was, however, the important point to be considered. It had been observed in the earliest Danish middens that the skulls were round, resembling in that respect the skulls of modern Esquimaux, indicating an arctic origin. If they were to take the authority of Professor Agassiz, the skulls in the Danish middens were altogether distinct from those of the arctic character. The skulls from the burial mound in Caithness, however, exhibited different and even opposite characters; for two of

them were round, and the facial angle corresponded with that of Europeans, while the greater number exhibited the indications of the skulls of savage tribes in the tropical regions. In their extreme prognathism, the flatness of the sides, and in other characters, they approached the African type, but there were differences to distinguish them from the genuine Negro. The strongest evidence of the antiquity of the remains was, however, to be found in the implements from the shell-mounds, and in the kists, and not in the skulls, especially when the types were so various in some of the sepultures. The force of the evidence of great antiquity rested almost entirely on the extreme wildness of the implements. In the shell-mounds there was a mixture in the upper strata of house implements and the finer kind of pottery. In the kists themselves were found the rudest of the stone weapons, and the evidence of their great antiquity was strengthened by the discovery by Mr. Anderson of similar instruments of corresponding antiquity buried with skeletons in kists, which showed more clearly that they were weapons intended for actual use and not mere models, as had been conjectured. That supposition he believed to be quite unfounded; for the most costly instruments were commonly found buried with the dead. Then came the question, Could a people who used weapons of that very rude description have had a knowledge of anything more advanced? Even the degrees of art exercised on the various stone implements indicated different stages of civilisation. In the Museum at Copenhagen, where the implements from the *kjökkenmöddings* were deposited, the arrangement of them according to comparative dates was based on the fact that greater rudeness of construction implies greater antiquity. The implements were classified from the rudest to the finer kinds of stone implement; then the stone period died out, and it was succeeded by that of bronze; and that was succeeded by a period when iron instruments were used. If they discarded that evidence no standing point seemed to be left. Was it conceivable that a people at all unacquainted with the use of metals would use such rude implements of stone and bone as those found in the mounds? In the later stone period the hammers and "celts" had holes in them for the attachment of a handle, and there were also attempts at ornament; but in those discovered in Caithness there was nothing of the kind. They were simply fragments of the sandstone of the district of the rudest kind ever witnessed. There was also a perfect identity in those implements found in the kists with those in the lowest stratum of the shell-mounds, which proved their antiquity. A mere inspection of the things on the table would show that they belonged to the earliest stone period. With regard to those objects which were considered to have been spinning-whorls, he doubted whether they had been used for the purpose of spinning; they might perhaps have been ornaments. They were certainly not very well adapted for spinning. If they were regarded as indications of a more advanced state of civilisation, it was important to determine on what part of the mounds they were deposited. On that point, however, he could not be quite certain; but he knew they were considerably lower than the artificial deposits, and that they were at least as low as the secondary strata

in the mounds. The main argument that had been advanced against the great antiquity of the skulls was the mode of interment. It was quite true, that when the Pagan method of disposing of the dead by cremation went out, burial in a crouched position was introduced, and though extended burial might perhaps in many places belong to a comparatively modern period, the notion that it did so generally was refuted by the practice in the north of Scotland, at least. There it is certain that the rudest implements were found in the extended kists. That was a known fact, and it might have been assumed that such would be the case, for extended burial was the simplest and easiest mode of disposing of the dead. The irregular directions in which the bodies had been laid on the ground also afforded evidence that they had not been interred by men professing Christianity. In Christian interments the head was always laid towards the west; but in the kists of Caithness the head was laid in no particular position: the bodies being sometimes extended towards the north and south. In his opinion, no objection to the great antiquity of the remains could stand against the distinct evidence of the very rude construction of the implements found in the kist. If they departed from the self-evident rule of classification adopted in the Copenhagen Museum, they would be led into inextricable confusion. He did not mean to assert that these remains went back to a period of ten thousand years; probably they did not go back more than a few hundred years before the Christian era. He thought, however, that they had in those remains relics of the original population of Britain, and that some portions of them lingered on in the north of Scotland, until overtaken and extirpated by a people more advanced in civilisation.

Some further Notes upon Pre-historic Hut-circles. By GEORGE E. ROBERTS, F.G.S., Hon. Sec. A.S.L.

IN continuation of this subject, illustrated by myself in a paper read before the Anthropological Society last session, and by an article published in the *Popular Science Review* for May, I propose to notice, briefly, some newly-discovered sites of these ancient dwelling-spots; and others, which although previously known, have been wrongly interpreted. My friend, the Rev. Mr. Joass of Eddertoun (Ross-shire), has been prosecuting similar researches to my own with great vigour, and he has kindly placed at my disposal the material he has obtained. His notes of exploration are so exceedingly interesting that I prefer incorporating them in their entirety, rather than making extracts.

“During a recent visit to Strathnaner, in the north of Sutherland, I discovered a great many hut circles, almost invariably in pairs, and surrounded by groups of tumuli of sepulchral origin. These circles are about forty feet in diameter, and twenty or thirty yards apart. In Rogart, also, I found similar pairs of circles associated with tumuli, which latter are connected, in the traditions of the district, with battles fought between the McKays and Sutherlands within the historic period. Such stories frequently spring up to suit the circumstances of particular localities. The kists of these tumuli indicate that they were not the hurriedly-got-up graves of those who fell in battle, but the burial-places of detached settlements scattered over