

PRESIDENT'S ADDRESS.

LADIES AND GENTLEMEN,—When Lucretius wrote :

*“Arma antiqua, manus, unguis, dentesque fuerunt
Et lapides et item sylvarum fragmina rami,
Posterioris ferri vis est virtusque reperta
Sed prior aeris erat quam ferri cognitus usus”*—

then he made a statement which modern research has demonstrated to be absolutely true.

The topic on which it is my privilege and pleasure on this occasion to address the Devon Association, is the prehistoric ethnology and archæology of Devon, especially of Dartmoor.

In approaching this subject, I ask to be allowed very briefly to sketch the history of man in our isle, as revealed by the relics he has left to testify to his presence, so far as has been ascertained by a comparison of these remains in different places, and a determination of their relative antiquity.

But, in order to do this, I cannot expect to be able to afford you a good grip of the subject, unless I go back to a period when man's traces first appear—not, indeed, on Dartmoor, but in our limestone caverns; and if in so doing I have to traverse ground familiar to students, I ask their forbearance on behalf of such as are not acquainted with the subject, but whom I desire to interest in it, and whom I trust to put in such a position as to be able to appreciate the results of recent discovery in the field of prehistoric archæology, and whose observation I hope to direct to the ethnology of our county, the material for collecting notes for the elucidation of which passes before their eyes every day.

The latest geological deposits are those which are termed Quaternary, and these were preceded by the Tertiary.

The Tertiary beds overlie those which are Secondary, and these latter consist in the Triassic rocks, the Jura limestone, and the chalk.

No human remains, no traces of man's handiwork, have ever been found in the Secondary formations. But it was the chalk, with its flint deposits, that furnished man for long ages with the material out of which he fabricated his tools and weapons, and which enabled him to battle with Nature and with the beasts for his existence on the earth.

The Tertiary beds have in places a depth of 3000 feet, and are divided into the Eocene—gravels alternating with clay, and sand mixed with rolled pebbles, due to salt-water action; then the Miocene—formed of much the same material, but deposited in great fresh-water lakes; lastly, the Pliocene, the topmost of the three stages, at the formation of the deposits in which occurred considerable volcanic action. The fauna and flora of Tertiary times belonged to hot climates. The palm and the bamboo grew in the steamy plains, and the mastodon, the gigantic stag, and the megatherium browsed on the rank vegetation, and wallowed in the festering ponds.

Then came the Quaternary, or Pleistocene age, at the beginning of which the temperature was sufficiently elevated to permit in Britain of the growth of a tropical flora, and the development of a tropical fauna. The mammoth, tiger, cave bear, and rhinoceros prowled over the country, and made their dens in the caves, or waded in the rivers and lakes.

About the middle of this epoch, the glaciers made their appearance on all high ground. Their extension was not sudden, but slow and progressive. When the glaciers reached their maximum of extension, the whole of the Scandinavian peninsula, Denmark, and all lower Germany and Holland, were covered with ice; and the Alps formed another nucleus whence glaciers extended to the Jura and the Black Forest. In Scotland, Wales, Westmoreland, and Cumberland, the mountains were enveloped in ice. That Dartmoor was covered with snow can hardly be doubted, but this tract did not nourish extensive glaciers, so far as we are aware.

Arctic animals—the reindeer and seal—made their appearance, and left their bones beside those of beasts that now occupy a tropical climate, showing that there was considerable variation of temperature, as also that there was no interruption of land-communication between Britain and Gaul, and between Spain and Africa.

It has been a question hotly disputed, whether man made his appearance in the Tertiary period, or only first showed himself in that which succeeded.

The partisans of Tertiary man point to the cracked flints of Thenay and Puy-Couray, found by the Abbé Bourgeois, in mid-Tertiary deposits. Although the enormous majority of these fractured flints show no traces of Secondary working, yet, in a few instances, they do bear token of having been retouched to convert them into scrapers, but it is precisely these of which we cannot determine whether they were found *in situ* in the Miocene bed, or had been extracted from it, and worked by men at a later period.

It has been asserted that the cracking of the flints is in itself evidence that they had been put in a fire to break up the nodules, and that, if thus fire-split, men must have existed to light the fires into which they were put. But, if so, certainly charcoal would have been discovered associated with these crackled flint nodules, but none has been discovered. Moreover, it is quite possible to explain their peculiar appearance from natural causes. I may be allowed on this point to quote the experience of M. Delvaux, as reported to the Society of Anthropology at Brussels. This gentleman one winter day had watched the cutting through of a bed of flints in a hill near Renaix. As the workmen carried on the trench, they threw out the flints. The day was one of frost. Next morning M. Delvaux revisited the cutting at an early hour, and stood in the sun, observing the men. He was surprised to hear a singular crackling sound about him, and, on looking round, he saw the recently excavated flints jumping and apparently exploding. The sun was rising over the hill, and as the hot rays fell on the frosted nodules, these latter flew to pieces, or fell apart in flakes. Those in shade remained unfissured and intact.

The evidence in favour of Tertiary man is still too insufficient and too doubtful for us to admit that it is even probable that he coexisted with the dinothereum and the mastodon.

But it is quite another matter when we come to the Quaternary period. Towards the close of this age man abounded, and apparently occupied the land for a very considerable period. He has left behind him vast accumulations of the remains of his industry. Indeed the amount is quite astounding. This, the first man, is distinguished as Palæolithic; not a trace of his presence on Dartmoor has been found, nor should we expect to find any, because at the time

of his existence it was completely covered with snow. At this period the great floods from the moor carried the china clay into the basin of Bovey Heathfield, and left the stream tin in the river bottoms on the granite. This was the age of the Drift in Eastern England. It was a period when valleys were scooped out, and gravels were left in terraces on the hillsides.

The Palæolithic epoch was one of much change in temperature and oscillation in the glaciers, that now extended to their furthest limits, and then retreated from the rubble-strewn plains.

Throughout Europe not a single instance of a Palæolithic tool has been discovered where lay the icefields in the later Glacial Age, that is to say, in Norway, Denmark, Sweden, and North Germany, from the Elbe to Warsaw; nor again in Scotland; nor in France above the points where the glaciers left their terminal morrains.

In Central Europe, in the wide district left bare by the retreat of the ice, that which is now covered by the löss, the comminuted fretting of rock by the glaciers as they retreated, hardly half-a-dozen finds of Palæolithic objects have been made. That some have, is due to the fact that men advanced their settlements as the ice retreated; and that they are so few is because the ground thus abandoned by the ice remained sterile for centuries.

In the Brixham Caves and in Kent's Hole we have evidence that man lived in Devon in the Quaternary period, and from almost its beginning, through several climatic changes that occurred.

I will now sum up briefly what is known of the stages of the development of culture in Palæolithic man. This age is divided into two main epochs.

The most ancient is that of the maximum of climatic change—when were deposited the great alluvial beds, sands, gravels, china clay. The characteristic fauna of that age consisted of the hippopotamus, the rhinoceros, and the hairy elephant. To this period belong the first tools fashioned by man—large, clumsy, almond-shaped instruments, variations of one kind, and called Acheuléan, or Chellean, after the classic deposits at S. Acheul, near Abbeville, and Chelles in Seine et Marne. These tools were probably held in the hand, and may have been used to break the ice, so as to form holes for fishing, or through which to spear the seals, as also for the purpose of scooping out canoes, and even to be used as weapons of warfare. There is difficulty in understanding how they can have been fitted into handles. No well-defined



3



WW

4



WW

1



WW

2

TYPICAL SHORT-HEAD
From Cowlam.

(GREENWELL'S *British Barn*)



c



WV

d



WV

a



WV

b

**TYPICAL LONG-HEAD
From Rudstone.**

(GREENWELL'S British Barrows.)

beds of kitchen-refuse, with hearths and the *débris* of feasts belonging to this period, have been found. Probably the men of this time lived in snow igloos during the winter, and in tents of skin during the summer.

Of the men who made these rude tools—the men of the River Drift—no skulls have been found, and we cannot tell what manner of men they were. It has been assumed that certain skulls of very peculiar formation, found at Neanderthal, Cannstadt, Engis, &c., belonged to this people; but this is pure conjecture—in no single instance have such heads been found in association with the characteristic tools of the Chelles industry. There is something, however, to be said in favour of this view. The type reappears in Europe now and again; S. Mansuetus of Toul, and King Robert Bruce, whose skulls we have, had these shaped heads. And in East Friesland the type is still at home. But, on the other hand, Professor Virchow has pointed out that in the Neanderthal, and other like skulls, there is evidence of malformation in early youth, due to rickets, and *cave-gout*, a complaint to which the cave bear is subject; and prognathism is often due to the exaggerated size of the tongue in the *crélin*. In a book recently published—Mr. Trevor Battye's *Icebound in Kolguev* in the White Sea, among pure-blooded Samoyeds, is a portrait of one Tima-Fè, who has a head and face precisely that of the Neanderthal man; but this is due, not to admixture of strange blood, but to arrested development through disease in childhood.

Tools of the S. Acheul type have been found in the lowest bed, the breccia of Kent's Hole, and from corresponding beds in other caves, as that of Wookey, in Somerset. They abound in the river drift of Hoxne and Newington. Tools precisely similar to these that are associated with bones of the straight-tusked elephant, the woolly rhinoceros, the mammoth, spotted hyæna, and lion, have been found in India, on the plateaux of Egypt, left there before the Nile valley was scooped out, and in Palestine, as well as in Europe; and this extensive distribution can hardly be accounted for, unless we allow to the man of this period a considerable duration of time on the face of the earth.

Great climatic changes and alteration of surface of the land took place before man reappears, and then his remains are found at a higher geologic level than those of the Chelles period. The French divide the second period of Palæolithic culture into three stages. But without denying that these stages exist, it is probable that some conditions of culture and

manufacture were more rude in one group of natives than in another, and that the fabricators of the tools of one type may have coexisted along with those who fashioned tools of another. But we shall not be wrong in regarding the second expansion of man, in the Palæolithic period, as being one of steady progress from the rudest flint tools and weapons to the abandonment of flint for spear and arrow heads, and the adoption of bone and ivory in the place of silex, which latter, indeed, remained in use, but almost wholly for scrapers, borers, saws, and knives, by means of which the bones were shaped and pierced. Numerous articles of manufacture of this period have been found in Britain; there are several from Kent's Hole and the Brixham Cavern in the museum at Torquay.

At this period the reindeer and horse were abundant, and were eaten. The mammoth was common at the beginning of the period, but became rare towards the close. The reindeer was not as yet extensively domesticated; perhaps here and there young reindeer calves were reared and tamed, but the cave men had no droves of this deer, nor had they sheep and cows. They lived by fishing and by the chase. They had no dogs, and they knew not the use of pottery. On the other hand the artistic faculty was developed in them to an extraordinary extent, and the sketches made by them on bone, ivory, and slate were not artistically surpassed till we reach the classic period in Greece.

How long did the Palæolithic man of this second age exist? That we cannot tell; we have not sufficient data on which to found an estimate. He saw great changes take place in the land: he felt that the cold was ceasing and a more temperate climate was becoming general in Europe. He was not intellectually stationary; he advanced with great strides in culture. He clothed himself in skins, he knew the use of fire, he employed iron pyrites and flint for kindling it. He—or perhaps rather his wife and daughters—were not insensible to personal adornment. He painted his face with red ochre, and hung cowries and pierced wolf-teeth about his neck.

Among the animals which composed the Quaternary fauna, some—as the mammoth, the cave bear, and the woolly rhinoceros—are extinct; others, as the hyæna, the tiger, and the lion, have migrated to warmer climates; others again, the musk ox, the marmot, and the reindeer, have retreated to the north. Happily sufficient numbers of skeletons and skulls of the cave men have been recovered,

for us to know what kind of men they were. They were tall, and their heads were *dolicho cephalous*, long or boat-shaped, like the heads of newly-born children. Of brains there was abundance, as much as in any average head of the present day, and the profile was orthognathous.

We come now to the Neolithic period. A vast change had come over the land. Intense cold, alternating with heat, yielded to an equable temperature. The glaciers disappeared, except in the Alps and the spinal range of Norway. The chamois and marmot retreated to the mountain-tops, the reindeer, glutton, and grey bear turned their muzzles towards the Pole, and the hyæna and large feline beasts disappeared from Europe. The configuration of the land became what it is at present. The Mediterranean was united with the Atlantic, and the English and Irish Channels were formed. The vast alluvial plain of the Severn and the Seine, that extended beyond Ireland, sank under water, and the ice left Ireland, Scotland, and Wales.

That man lived on from the latest Palæolithic period into the Neolithic age is probable. In the kitchen middens of Denmark, in the cave interments of the Lozère, we have evidence that these men of the long head and of Palæolithic culture moved, by slow progression, towards Neolithic culture, and recently Don Candace y Pizzaro has shown reason to believe that he never disappeared from Spain.

At the same time we cannot allow that he was the ancestor of the Neolithic man, whether of the long or the short head. We must not suppose that the art of grinding and polishing stone, in place of simply flaking and chipping it, was a peculiarity of one race. It was not so. The stone-grinding marks a stage in culture reached by races of totally distinct cranial formation; but it was not a stage reached by the Palæolithic man through his own efforts after improvement. If he used ground tools instead of chipped ones, it was because he was brought in contact with another race that had discovered how to shape tools by friction. The races that employed ground stone unquestionably acquired their skill in a country where flint was unknown, and they were driven to the manufacture by force of circumstances.

That the men of Neolithic culture had passed through the stage of chipping flints is possible, and the art of grinding and polishing was probably, if not certainly, acquired when they occupied seats where flint was unobtainable, and they could form tools and weapons of the only available stones, by no other means. But we do not know where it was that

they passed through this stage. That is one of the secrets reserved for the future. Probably when Central Asia and Siberia have been investigated by competent archaeologists, we shall there find evidence of the orderly and upward progress of the races, round-headed and long-headed, which appear in Europe, with ground and polished tools already in their possession, and civilized to a degree unknown by the Palæolithic cave-dwellers.

It is now generally accepted that the nursery of the Aryan stock is not to be sought in Central Asia, but in North-Eastern Europe, or more probably in Siberia. This Aryan race was round-headed, and to it belong the interesting and instructive remains of the Lake dwellings of Austria and Switzerland. When these men arrived and built their villages on platforms above the surface of the water, they were in the bloom of Neolithic culture. In the off-fall from these villages we have a chronological record of gradual but sure progression from the stage of Neolithic development, through the periods of bronze and iron to historic times. But nowhere has been found the chronicle of the march of man from the Palæolithic epoch to that of the ground tool. When the round-headed Aryan appeared in Europe, he was already highly civilized. He knew how to make pottery, how to weave garments, he had domestic animals, and he cultivated grain. Probably enough, these new-comers encountered the lingering remains of the reindeer hunters, but they looked on them much as, later, the Scandinavians regarded the cave-dwellers, whom they found in Norway, when they arrived and occupied it—as beings belonging to another order and blood, to be exterminated, and not even enthralled. These cave-dwellers, the Jötuns of Norse legend, very probably were lingerers of the retreating Neolithic race.

The round-headed Aryans multiplied and swarmed through Europe—German, Scandinavian, Slav, Greek, Roman, Celt, such were the swarms. But as they moved from their ancestral home, they encountered another race—short, sturdy, long- or boat-headed, holding very definite religious views, and having very decided social characteristics, a race which had entered Europe from the high table-land of Central Asia. One great branch extended through Syria, which it strewed with monuments indistinguishable from those in Cornwall and Brittany; then passed into Arabia, where, to his astonishment, Mr. Palgrave lighted on *réplicas* of Stonehenge; and thence crossed into Africa.¹ Another

¹ See note at the end of Address.

branch threw itself over the Himalaya, and covered India with identical monuments. A third turned west; it traversed Asia Minor, reached the Crimea, and then struck for the Baltic. It strewed Mecklenburg and Hanover with its remains, occupied Denmark and Lower Sweden, crossed into Britain, and took complete possession of the British Isles. Other members of the same swarm skirted the Channel, and crowded the plateaux and moors of France with their megalithic remains. The same people occupied Spain and Portugal, the Balearic Isles, Corsica and Sardinia, and Northern Africa, and are now represented by the Koumirs and Kabylla. To this race the name of Iberian, Ivernian, or Silurian has been given. When it reached Europe, before its branches had separated to east and west, and south and north, its religious doctrines and its practices had become stereotyped, and almost ineradicably ingrained into the consciousness of the entire stock.

If we desire to understand what their peculiar views were, what were the dominant ideas which directed their conduct, we must go to China. I do not say that the Chinese proper, and Annamese, are another branch of the same mighty tree that stretched east, but it is possible that it may have been so. At any rate, mentally, psychologically, the filiation is direct.

The Palæolithic inhabitants of Europe have left us little evidence of profound reverence for the deceased. I do not doubt that they buried their dead, but, with the burial, all concern for the departed came to an end. But with the Iberian race, in a state of Neolithic culture, the relation of living to dead was of paramount importance. It formed its religion, it coloured all its ideas, affected all its customs.

Let us for a moment look into China at the present day. At first sight, the Chinese strike us as being not only geographically our antipodes, but as being our opposites in every particular—mental, moral, social; in language, as in ideas.

The Chinese language is without an alphabet, and without a grammar. It is made up of monosyllables, that acquire their significance by the position in which they are placed in a sentence. In customs the Chinese differ from us as much. In mourning they wear white; a Chinese dinner begins with the dessert, and ends with the soup; a scholar, to recite his lesson, turns his back on the teacher. But it is chiefly in the way in which the living and the dead are regarded as forming an indissoluble commonwealth, that the

difference of ideas is most pronounced. Regard for the dead is the first of obligations to a Chinese. A man of the people who is ennobled, ennobles, not his descendants, but his ancestry. The duty of the eldest son of the family is to maintain the worship of the ancestors. Denial of a sepulchre is the most awful punishment that can be inflicted; a Chinese will cheerfully commit suicide, to gain a suitable tomb, and cult after death. The most sacred spot on earth is the mausoleum, and that is perpetually inviolable. Consequently, if this principle could be carried out to the letter, the earth would be transformed into one vast necropolis, from the occupation of which the living would be in time entirely excluded. It is this respect for graves which stands in the way of the execution of works of public utility, such as canals and railroads; and it is the imperious obligation of maintaining the worship of ancestors that blocks conversion to Christianity. It is resentment against lack of respect for the dead, neglect of duty to the dead, which has provoked the massacres of Christians. A Chinese, under certain circumstances, is justified in strangling his father, but not in omitting to worship him, after he has throttled him.

On the great Thibet plateau geographically contiguous to the Chinese, and under the empire of China, the Mongol nomads are so absolutely devoid of a grain of respect for their dead, that, without the smallest scruple, they leave the corpses of their parents and children on the face of the desert, to be devoured by dogs and preyed on by vultures.

If we look at the Nile valley, we see that the ancient Egyptians were dominated by the same ideas as the Chinese. To them the tomb was the habitation *par excellence* of the family. Of the dwelling-houses of the old Egyptians, the remains are comparatively mean; but their mausoleums are palatial. The house for the living was but as a tent, to be removed; but the mansion of the dead was a dwelling-place for ever.

Not only so, but just as the ancient Egyptian supposed that the *Ka*, the soul, or one of the souls of the deceased, occupied the monument, tablet, or obelisk set up in memorial of the dead, so does the Chinese now hold that a soul, or emanation from the dead, enters into and dwells in the memorial set up, apart from the tomb, to his honour.

Now if we desire to discover what was the distinguishing motive in life of the long-headed Neolithic man, we shall find it in his respect for the dead; and he has stamped his mark everywhere where he has been, by the stupendous

tombs he has erected, at vast labour, out of unwrought stones. He cannot be better described than as the Dolmen Builder; that is to say, the man who erected the family or tribal ossuaries that remain in such numbers, wherever he has planted his foot.

In China, it is true, there are no dolmens, but for this there is a reason. Before the descendants of the Hundred Families who entered the Celestial Empire had reached and obtained possession of mountains whence stone could be quarried, many centuries elapsed, and forced the Chinese to make shift with other material than stone, and so formed their habit of entombment without stone; but the frame of mind which, in a rocky land, would have prompted them to set up dolmens, remained unchanged, and so remains to the present day.

The exploration of dolmens in Europe reveals that they were family or tribal burial-places, and were used for a long continuance of time. The dead to be laid in them were occasionally brought from a distance, as the bones show indication of having been cleaned of the flesh with flint scrapers, and to have been rearranged in an irregular and unscientific manner, a left leg being sometimes applied to a right thigh. Or it may be that on the anniversary of an interment the bones of the deceased were taken out, scraped and cleaned, and then replaced.

The dolmen builders were people with flocks and herds, and who cultivated grain and spun yarn. Their characteristic implement is the so-called celt, in reality an axe, sometimes perforated for the reception of a handle, most commonly not. The perforation belongs to the latest stage of Neolithic civilization. Their weapons, or tools, were first ground. In about a score of places in France polishing rocks exist, marked with the furrows made by the axes when worked to and fro upon them, and others that are smaller have been removed to museums. At Stoney-Kirk, in Wigtownshire, a grinding-stone of red sandstone, considerably hollowed by use, was found with a small, unfinished axe of Silurian schist lying upon it. In the recent exploration of hut circles at Legistor a grindstone was found in one of the habitations, and on it an incomplete tool that was abandoned there before it was finished.

After grinding, these implements underwent laborious polishing by friction with the hand or with leather.

At the same time that these artificially-smoothed tools were fabricated, flint was used, beautifully chipped and

flaked, to form arrow and spear heads and swords. The arrow heads are either leaf-shaped, or are barbed.

The pottery of the dolmen builder is very rude. It is made of clay mingled with coarse fragments of stone or shell, is very thick, and badly tempered; it is hand-made, and seems hardly capable of enduring exposure to a brisk fire. Hitherto the pottery of the Neolithic period has been known only from funeral urns, some employed for holding the ashes of the dead when the fashion for incineration set in; others for holding food laid in the tomb for the consumption of the deceased. The vessels were invariably handmade; the use of the wheel was unknown. They have generally a projecting roll round their part way down from the lip, or have lugs, often perforated, for the purpose of suspension. Very frequently, but not invariably, the bottoms of these vessels are rounded, and, to enable the pots to stand, they were sunk in hollows scooped to receive them. The Roman amphora was a perpetuation of the same idea of not setting the vessel on a flat surface, but of planting it in the soil. The shape of the Neolithic fictile ware is peculiar, and one form is specially associated with incineration in the Bronze Age. This consists of a vessel, broad-mouthed, with overhanging rim, like a turned-back cuff, and below this the vessel rapidly slopes away. Ornament is usually applied to this broad rim, which is two or three inches deep. I do not know of vessels of this peculiar character having been made at any other period, and it is remarkable that the same type should be found in every part of the British Isles associated with the same relics of Neolithic culture at the period when bronze was first imported. I have no hesitation in attributing the vessels recently found in the hut circles on Dartmoor, judging only from their shape, to this period, and the peculiar decoration found on them is conclusive in the same direction. The ornamentation of pottery of the Neolithic and early Bronze periods is constant everywhere. It consisted of zigzags, chevrons, depressions made by twisted cord, and finger-nail marks in rings round the bowls. It was not till considerably later in the Bronze Age that circles and spirals were adopted.

On the continent of Europe, in the Neolithic period, there was a great admixture of races. There were long heads and short heads. Comparative craniology has made such advances in late years, and material for the formation of opinion has so accumulated, that we are now able, with

some degree of accuracy, to sketch the succession in which the waves of immigration entered Europe.

The type of the skull of Palæolithic man of the second stage, but late in that, is pretty well established; and it is still represented in the Lapp and Esquimaux. We know that he did not wholly disappear from the face of Europe, but retired to the elevated plateaux or lingered about the coast; but the bulk of the population unquestionably followed the reindeer in its retreat northward by way of the Baltic.

The brachycephalic people of Aryan race spread south-west, and their heads are named after a typical skull found at Grenelle. Several are figured in Canon Greenwell's *British Barrows*; but it must be understood that in Britain they arrived after the others, whereas in Central Europe the reverse was the case.

The dolichocephalic people, who were dolmen builders, are of the so-called Genay type; examples of these are figured in Canon Greenwell's book. Here we have two distinct and pure races. On the Continent there are three, the earliest being the dolichocephalic man of the Beaumes-Chaudes—the man of Palæolithic culture.

In Britain the round-headed Grenelle man was not at home. When the dolmen builder arrived, to the best of our knowledge, he found no one in the British Isles. On the Continent, on the other hand, he not only clashed with the Aryan round-heads, but also here and there he stumbled on the lingering remains of the reindeer hunters, with long heads. The fusion of blood abroad resulted in a modification of skull, in the so-called Furfooz type.

In Britain the dolmen builder had it all to himself. He spread over the land, erected his megalithic monuments wherever he found stone that was suitable, from Kitscotty House, in Kent, to the Meinibirion of Holyhead Island, and from the Chûn Quoit in Cornwall to the chambered barrows in Orkney. The dolmen builder, called Iberian in Spain, Ivernian in Ireland, and Silurian in Wales, has persisted in asserting himself. Though cranial modifications have taken place, the swarthy skin and the dark eyes and hair, and somewhat squat build, have remained in the Western Isles, in Western Ireland, in Wales, and in Cornwall. It is still represented in Brittany. It is predominant in South-Western France, and in Spain and Portugal. The Basque is the purest remaining representative of this people.

After a lapse of time, of what duration we know not,

Britain was invaded by men with round, bullet heads; doubtless this was the first wave of the Celtic immigrations, that of the Goidels, which also swept France and gave it the name of Gaul; in Scotland it has retained the name as Gael. These people subjugated the Ivernian inhabitants, and rapidly mixed with them, imposing on them their tongue, except only in South Wales, where the Silurian retained his individuality, when conquered by Agricola in A.D. 78. The invasion of Spain by the Celts resulted in nothing like so complete a conquest as in Gaul and Britain. The round skull in Spain is found only in the north and north-east. In France, in the dolmens and elsewhere, the round heads are found thickly congregated about the Seine, and in the south between the Rhone and the Cevennes.

Probably the dolmen builders were acquainted with bronze before the arrival of their conquerors, but it was a valuable commodity, and was employed mostly for personal ornament, for brooches, and armlets. The use of the bronze fibula, composed of a spiral twist, originated the spiral ornament which was now introduced on pottery, and which, from henceforth, decorated bronze weapons.

With the round heads came in the round barrows, in place of those which are long. We have no long barrows in Devon and Cornwall. There can be no doubt that the long barrow represents the earliest form of interment. In it metal is never present, pottery is rarely found, and every head is dolichocephalic; whereas, in the round barrows, pottery is common, bronze is occasionally found, and the skulls found are of both types, and show modification of shape, due to intermixture of blood. In the long barrows interments were carnal; in the round, those by incineration most common, and where apparently there has been carnal burial, some charcoal near the body indicates that an attempt has been made to burn it, or perhaps a flame has been applied as a mere formality.

The examination of the earthworks on the Yorkshire wolds, by General Pitt Rivers, shows that the conquering race came from the east; it advanced steadily westwards, establishing forts as it advanced, to control the subjugated long-heads. What happened in Yorkshire happened throughout England. The subjugation of our island by the Anglo-Saxons in historic times, was but a repetition of what had taken place before the curtain rises.

But if the Goidel invaders subjugated the Ivernians, they were in their turn conquered by them, though in a different

manner. The strongly-marked religious ideas of the long-headed men, and their deeply-rooted habit of worship of ancestors, impressed and captured the imagination of their masters, and as the races became fused, the mixed race continued to build dolmens and erect other megalithic monuments once characteristic of the long-heads, often on a larger scale than before. Stonehenge and Avebury were erections of the Bronze period, and late in it, and of the composite people.

If we look at the physique of the two races, we find a great difference between them. The Ivernian was short in stature, with a face mild in expression, oval, without high cheek-bones, and without strongly characterised supraciliary ridges. The women were all conspicuously smaller than the men, and of markedly inferior development. The conquering race was other. The lower jaw was massive and square at the chin, the molar bones prominent, and the brows heavy. The head was remarkably short, and the face expressed vigour, was coarse, and the aspect threatening. Moreover, the women were as fully developed as the men, so much so that where all the bones are not present, it is not always easy to distinguish the sex of a skeleton of this race. What Tacitus says of the German women—that they were almost equal to the men both in strength and in size—applies also to these round-head invaders of Britain; and, indeed, the same writer says of the Britons in the time of Boadicea, that it was *solitum feminarum ductu bellare*, shows us that the same masculine character belonged to the women of British origin. The average difference in civilized races in the stature of men and women at present is about four inches, but twice this difference is very usually found to exist between the male and female skeletons of the Polished Stone period in the long barrows. The difference is even more strikingly shown by a comparison of the male and female collar-bones; and we are able to reproduce from them in picture the Neolithic woman of the Ivernian race, with narrow chest and drooping shoulders, utterly unlike the muscular and vigorous Goidel women who were true consorts to their men when they came over to conquer the island of Britain.

After a lapse of time the long head began to reassert itself, and the infusion of its blood into the veins of the dominant race led to great modification of its harshness of feature. The Mount Batten skull, described by Mr. R. N. Worth in the *Transactions* of 1891, belongs to this mixed blood, to whatever date the skull may belong; it unmistakably

shows the union of characteristics of the two races. It is dolichocephalic, yet has the beetle brows and knotty features of the round-headed men. The Cattedown skulls are too fragmentary to tell us much ; but they probably belong to the same type.

When iron was introduced into Britain, whether by peaceable means, or whether the Cymbrian or Brithon, the second invader of Celtic blood, came in armed with it, we do not know, but when Caesar landed in Britain, B.C. 55, he found that iron was in general use. It was manufactured in the great forest of Anderida that covered the weald of Sussex and Surrey. We may suppose that its introduction took place two or three centuries before the Christian era. The silence maintained by Caesar and other writers relative to the megalithic monuments, and the way, moreover, in which, as at Carnac, they have been utilised in the construction of Roman camps, leads us to believe that the erection of dolmens and cromlechs had ceased long before the Roman conquest of Gaul, and subsequently of Britain, and that these monuments had lost their significance and sanctity. Silver is never found in them, iron rarely ; the introduction of coins into Britain took place not before B.C. 250, yet coins are never found in association with burials in these monuments, except where introduced by those who, in Roman times, violated the tombs in search of spoil, or where a late interment has been made in the side of a barrow of earlier construction. The pottery, weapons, implements, ornaments found in the round barrows, in kistvaens and cromlechs, show not the slightest trace of Roman manufacture or even of Roman influence. At the same time, it is by no means improbable that, in out-of-the-way places, and indeed in Ireland and parts of Scotland, perhaps even in Cornwall, early customs as to interment may have continued till within historic period, and that iron may have been excluded because of superstitious hatred of the metal to which the amalgamated Gael and Ivernian owed defeat by the invading Brithon. The introduction of iron into Britain, and the close of the Bronze Age, may be placed at about B.C. 250. But for how long previous to that bronze had reigned, that we do not know. In Denmark the peat bogs give us an opportunity of obtaining an approximate estimate of the duration of each age, and they instruct us as to the sequence with rigorous certainty.

In these bogs we have evidence of a change in the growth in the forests, from the beginning to the present day. At the

bottom of all is found a bed of sub-Arctic moss and other plants belonging to the period of the end of the Glacial Age, and associated with them are reindeer bones and horns. Then there sprang up, first the aspen, then a rank growth of pine-trees, forming a very thick bed. Above these comes the oak, and, lastly, the alder, and on the fringe of these bogs is the beech, of which the Danish forests consist at the present day.

At the close of the Arctic reindeer period the pines began to manifest themselves, growing stunted; gradually the climate became more favourable, and they grew into fine trees. Among the trunks and the mat of spines and fir cones have been found remains of the urus, and in the bones still adhering, the stone arrows and axes of Neolithic man. Moreover, many of the trees have been hewn down, and scorched with fire. Above the dense bed of remains of pine, and traces of the presence of Neolithic man, comes the bed of oak, and along with the logs, leaves, and acorns, are found bronze implements. Then the oak ceases, and we reach a thin bed of alder and beech, in which occur iron weapons and tools. Danish archæologists place the end of the Stone Age as at least 1000 B.C. We can hardly give Neolithic culture a shorter duration than a thousand years; it was probably very much longer.

Such estimates can only be approximate, but the discoveries made by various explorers throughout Europe in beds where one deposit overlies another, as in caves and terramares, and lacustrine off-falls, all lead to the same conclusions. It must be remembered that there may have been tribes lagging behind the culture that existed elsewhere—there unquestionably always have been such people, yet it is very remarkable to observe the singular unity of type in the pottery throughout the British Isles, both in texture, shape, and ornamentation, in Neolithic times. Not only so, but with it agrees, with small local variation, the pottery found in similar monuments and barrows, and with similar personal ornaments, and tools, and weapons, in Portugal, and Spain, in France, Denmark, Sweden, Germany, and Scotland, Ireland, and England. Canon Greenwell says:

“Though there are many and varied patterns of vessels in different districts, yet in their main features, of fabric, shape, and ornamentation, the sepulchral vases show a wonderful resemblance throughout the whole United Kingdom. The weapons, implements, and ornaments also bear clear testimony to the same fact; nor is the identity one which would have been produced merely by human brains and human hands operating on a common

material and for a common purpose, whilst living under very similar circumstances, and being in much the same conditions of progress and cultivation. On the contrary, they show such an individuality in form and manufacture, as well as in the style of the ornamentation, and the way in which it has been applied, as to imply not only a near race-connexion, as manifested in the process of mental development and by a well-defined idiosyncrasy in respect to art application, but also an intercourse both constant and continued."¹

It is matter of regret that in Devon and Cornwall we have not the same opportunities of examining the skulls of pre-historic men, that are given to those who search the barrows strewn over the limestone wolds and the chalk downs. The vegetable humus on the granite is wholly devoid of lime, to such an extent that cattle suffer unless removed from the moor occasionally to pastures that are over lime rock. The fibres of the roots are so ravenous after lime, that bone rapidly disappears, whereas on limestone and chalk it remains unaltered for thousands of years, losing nothing save its gelatine.

Nor have we, on Dartmoor, burial mounds that have not been rifled. All have been torn open, and that at an unknown period. Perhaps the grant made in 1324 by the Crown to Robert Beupel to open barrows after treasure, provoked by a report that valuables had been found in them, may have stimulated a general exploration; more probably they were ransacked by treasure-seeking miners who worked the streams for tin in the Middle Ages. There are scarcely any barrows intact; such as are, are so small and insignificant that they can have been erected only over poor and obscure personages. They yield at most a few flint flakes and some ashes, collected in a hollow scooped out in the "calm." The barrows that are found on the moors in North Devon have not been examined with any system, or to any extent; and it is much to be desired that they should be subjected to a very careful and thorough investigation. But that the Dartmoor cairns and kistvaens contained bronze is more than probable. It is difficult to understand why they should have been so pillaged, if the seekers did not anticipate finding in them something worth having; and if the excavators of half-a-dozen had been rewarded no better than by finding a few bits of flint and some potsherds, they would speedily have tired of the work. Moreover, a cairn on Hameldon, examined by Mr. Spence Bate, did actually yield a bronze dagger, with amber pommel studded with gold pins. A stone hammer was found in a tumulus on Broadbury, and in another an amber bead that had been exposed to fire.

¹ *British Barrows*, 1877, p. 128.

In the *Transactions* of 1883 will be found a representation of one of the characteristic cinerary urns of the early Bronze Age, found in a cairn on Berry Down, but singularly, by mistake it is represented inverted, he who made the sketch having mistaken the characteristic rim for the lower part of the vessel. In the *Transactions* of 1889 will be found a plate representing the ornamentation of vessels of the period, found in barrows and kistvaens in Devon and Cornwall. Now this ornamentation accompanies interment with bronze ornaments and sometimes bronze weapons, and we may therefore be sure that if such pottery has been found in the barrows, bronze has also been discovered there at some time, and bronze was always sufficiently valuable to induce men to dig into a cairn after it.

Canon Greenwell, in his *British Barrows*, asserts that the cinerary and food vessels found in the tumuli were expressly made for funeral purposes, and were unlike the pots for domestic use. Since 1877 further investigation has led to the reversal of this doctrine, and the recent finds in the Dartmoor hut circles entirely dispose of it. The cooking pots, so badly burnt as to be useless in a fire, were sunk in holes in the soil, and cooking was done in them by means of heated pebbles. They show no sign of exposure to fire outside, but are darkened with animal matter within. They have rounded bottoms, and are identical with the cinerary urns found in the round barrows. A second kind of vessel discovered in the hut circle is, as far as can be judged from the fragments, precisely like the food vessels that were placed with the dead in their graves. Such vessels in the huts held the meat or grain for the living, and such were placed in the barrows with the dead. As man in living had his meat baked in round-bottomed cooking-pots, when he was roasted himself, his remains were crammed into one of these self-same pots.

I will now say a few words, but only a few, on the megalithic remains in Devon, that were erected by the long-headed Ivernian, or by the composite race of which he formed the substratum, till the time of the introduction of iron, probably by the Briton, at a date of about 250 years before Christ, from which date the erection of dolmens and cromlechs ceased almost entirely—except, perhaps, in places where the Brython did not prevail, and the native population held very tenaciously to its ancestral worship.

I shall say nothing of the camps of earth or of stone that are so numerous in the county, because that is a subject

demanding much closer investigation than has been given to it; but I may say that probably they belong in Devon, as on the Yorkshire wolds, to the conquering Goidel, who was everywhere a great castle builder. I will confine myself to (1) the dolmen, (2) the kistvaen, (3) the stone circle, (4) the stone row, (5) the menhir, (6) the hut circle.

I. Of the characteristic dolmen, which we in England, perhaps improperly, call cromlech, we have but a single good example, that at Drewsteigton. Cornwall possesses numerous and fine specimens; they abound in Wales and in Ireland. But although we have one only remaining, it can hardly be doubted that formerly there were others, wherever the name of Shillstone (Shelfstone) remains, as near Modbury, and in Bridestowe.

The dolmen belonged to the period before bodies were burnt. It was the family or tribal ossuary. As it became crowded with skeletons, the earliest were unceremoniously thrust back to the rear, to make room for the last comers. The *allée couverte* in France, and the chambered barrows of Denmark, North Germany, Scotland, Ireland, and England, are but extensions of the dolmen to hold a larger number of the dead. The dolmens usually have a hole at one end, or a footstone that is removable at will, to allow for food to be passed in to the dead, and for the introduction of fresh applicants for house-room in the mansion of the dead.

Some of these holed dolmens have the stone plugs for closing the holes still extant. On Dartmoor in the kistvaens a small stone at foot or side was placed, to be removed at pleasure.

II. The kistvaen, or stone chest, is a modification of the dolmen, and is usually of a later date; when incineration was become customary, the need for such enormous mortuary chapels, or tombs, as the dolmens and *allées couvertes*, ceased. The dead could be packed into a much smaller space when reduced to a handful of ash. Nevertheless, it is probable that some kistvaens belong to the period of carnal interment, and were erected for the reception of single bodies, which for some reason or other could not be conveyed to the family mausoleum. In Derbyshire carnal interment is found in cists, which are miniature dolmens, or kistvaens, sometimes standing alone, sometimes congregated together like cells of a honeycomb, each containing its crouched skeleton. On Dartmoor we have hundreds of kistvaens, but I do not know of a single instance of one that has not been rifled, and we are consequently left in the dark as to their exact period,

whether they belong to the Neolithic period pure, with carnal interment, or to the Bronze with incineration. In the fine kistvaen at Merivale Bridge, plundered and mutilated though it had been, a flint knife and a polishing stone were found; and flint flakes have been picked out of the ploughed soil round the Drewsteignton cromlech. At King's Oven is a ruined circle surrounding a demolished kistvaen, of which, however, some of the stones remain. A fine flint scraper was found wedged between two of the encircling stones.

III. The stone circle is called by the French a cromlech. The purport of this is conjectural. Undoubtedly interments have been found within them; but none, so far, in those on Dartmoor. In the great circle on Penmaen-mawr, there were interments at the foot of several of the monoliths, and, indeed, one of these served as the backstone of a kistvaen. Stone uprights surround many cairns, in the midst of which is a kistvaen; but such circles as the Grey Wethers, Scaur Hill, and that on Langstone Moor, never enclosed cairns or kistvaens, and must have had some other purpose. Among semi-barbarous tribes, it is customary that the tribe and the clan shall have their places of assembly and consultation, and these are marked round by either stones or posts set up in the ground. Among some of these tribes, if one of the constituent clans fails to send its representative, the stone set up where he would sit, is thrown down. It is possible that the circles of upright stones on Dartmoor, not connected with cairns, may have served such a purpose. They are usually placed on the neck of land between two rivers. There are, on Dartmoor, about a dozen.

IV. The stone row is almost invariably associated with cairns and kistvaens, and clearly had some relation to funeral rites. The stone settings are often single, sometimes double, or are as many as eight. They do not always run parallel. They start from a cairn, and end with a blocking stone set across the line. In Scotland they are confined to Caithness. The finest known are at Carnac, in Brittany. It is probable that just as a Bedouin now erects a stone near a fakir's tomb as a token of respect, so each of these rude blocks was set up by a member of a tribe, or a household, in honour of the chief buried in the cairn at the head of the row. It is remarkable how greatly the set stones vary in size. Some are quite insignificant, and could be planted by a boy; while others require the united efforts of three or four men, with modern appliances of three legs and block, to lift and place them. Usually the largest stones are planted near the

cairn, and they dwindle to the blocking stone, which is of respectable size. There is no known district so rich as Dartmoor in stone rows. They have been catalogued and described by Mr. R. N. Worth.

V. The menhir, or tall stone, is a rude, unwrought obelisk. In some cases, it is nothing other than the blocking stone of a row which has been destroyed. But such is not always the case. There were no rows in connection with the menhirs at Devil's Tor and the Whitmoor Stone.

That the upright stone is a memorial to the dead can hardly be doubted; it was continued to be erected, with an inscription, in Brito-Roman days, and its modern representative is in every churchyard. The menhirs, locally termed longstones, or langstones, must at one time have been numerous. Those round the moor have been carried away to serve as window-sills, door-jambs, even church pillars. Several places and moors, by their names, assure us that at one time these monuments were there.

Menhirs are still erected by the dolmen builders on the Brama-pootra, the Khassias, and always in commemoration of the dead. The Chinese hold that the spirits of the deceased inhabit the memorials set up in their honour; and the carved monoliths in Abyssinia, erected by the same race when it passed from Arabia to Africa, have carved in their faces little doors, for the ingress and egress of the spirits. Holed menhirs are found in many places.

VI. Hut circles. The cairn and kistvaen were the places of burial of the dead, but the hut circles were the habitations of the living. So many of them have been explored during the last three years, that we may safely draw conclusions as to the period to which they belong. They were occupied by the Neolithic population that at one time thickly covered Dartmoor. No trace of metal has been hitherto found in them, though there can be no manner of doubt that many, if not most of them, belong to the Early Bronze period. Bronze was then as precious and rare as is gold now; it was an import, and no home manufacture till later, and even then it is doubtful if the amalgam was made in Britain. We can, then, hardly expect to find bronze in the huts of a poor, pastoral people. The Dartmoor Exploration Committee has given so full an account of the structure and arrangement of these huts, as well as of the relics found in them, that I need not here say more than that they yield flint knives and scrapers, and pottery of the distinguishing shape and decoration of the Early Bronze period.

Of the paved causeways found on Dartmoor I will say nothing, as they have not been subjected to searching examination to determine their approximate date, and to whom they owe their construction.

I have ventured to give to the Devon Association this summary of the prehistoric ethnology and archaeology of the county, with special reference to Dartmoor, in the hopes of stimulating inquiry into a matter of great interest, and of collecting material. We are hindered in making great way by the absence of skulls and skeletons of prehistoric man in our barrows on the granite and the clay. Nor can we expect to find them. But the present inhabitants of the county are with us, and perhaps not altogether indisposed to be observed and commented upon. They are the lineal descendants of the men who set up the rude stone monuments, and tomahawked each other, first with stone axes, and then with bronze celts. There have been infusions of foreign blood. The Ivernian long-head was conquered by the short-headed Gael, and then the Gael and Ivernian, melted into one, were invaded by the Brython, who differed only from the Gael in dialect. Then came the sturdy Saxon, who took the land and called it after his own name: but the Saxon colonists cannot have been so numerous as to swamp the previous inhabitants; they remained as a ruling class, as great landed thanes. The great bulk of the population remained unchanged; to this day the mixed type remains. We have in this county none of the square faces, heavy jaws, and rugged features that are found in Yorkshire and Scotland, but on the other hand the Celt has introduced among us fair hair and grey and blue eyes and a clear complexion. There are still parts of the Damnonian peninsula where the dark-grained type of the Ivernian prevails, as about Veryan and at the Land's End; and in Devon, at the roots of Exmoor. I believe that in two villages, only some seven miles apart in the folds of Broadbury—that is to say, North Lew and Germansweek—there the types remain singularly distinct; in the former place fair hair prevails, in the latter the complexion is swarthy and the hair dark.

In conclusion, I would urge on the Devon Association the importance of collecting statistics relative to the shape of heads, the colour of eyes and hair, and the complexion of the children in our schools.

The railway is rapidly distributing our population, and breaking up the little clusters of families that have remained

in one district for centuries. Particulars regarding the characteristics of our people—in skull, and build, and coloration—should be taken in hand at once.

The schoolmasters of our Board and National Schools are men of marked intelligence and culture, and perfectly competent to undertake the task. They would indubitably take an interest in the matter if it were brought before them, and their attention directed to it.

I would suggest to the Association the expediency of drawing up tables of questions for the acquisition of information in this matter, and of inviting the schoolmasters to answer the questions and fill in the desired details. We would then have a most important and reliable record, such as would go far to show us which is the prevailing type in our county, and in which parts of the county the several types remain purest. More than that, if these enquiries were made at intervals of, say, twenty or fifty years, we would learn what modifications our Devonians were undergoing.

I feel confident that our schoolmasters, if appealed to, would respond with alacrity in the interest of science, understanding and appreciating the value of the task imposed upon them.

In conclusion, I trust you will allow me to express the sincere grief I feel at the loss of Mr. R. N. Worth, who has been so long a member of this Association, and whose knowledge of the matter under consideration in this address was great. The loss is one that not only touches me closely as a friend, but is one that affects the Devon Association and the entire county; for he was one who, perhaps above all others, has worked to elucidate its past history, and whose research went back beyond historic into prehistoric times, and beyond them, into the geologic ages; and in all he was equally well-read, observant, and valuable as an authority.

NOTE.—I quote from Palgrave's *Narrative of a Year's Journey Through Central Arabia*, 1865, vol. i. 251:—"Hardly had we descended the narrow path, when we saw before us several huge stones, like enormous boulders, placed endways perpendicularly, on the soil, while some of them yet upheld similar masses, laid transversely over their summit. They were arranged in a curve once forming part, it would appear, of a large circle, and many other like fragments lay rolled on the ground at a moderate distance; the number of those still upright was, to speak by memory, eight or nine. Two, at about 10 or 12 ft. apart one from the other, and resembling huge gate-posts, yet bore their horizontal lintel, a long

block laid across them; a few were deprived of their upper traverse, the rest supported each its headpiece in defiance of time and the more destructive efforts of man. So nicely balanced did one of these cross-bars appear, that in hope it might prove a rocking stone, I guided my camel right under it, and then, stretching up my riding-stick at arm's length, could just manage to touch and push it; but it did not stir. Meanwhile the respective heights of camel, rider, and stick, taken together, would place the stone in question full 15 ft. from the ground. These blocks seem, by their quality, to have been hewed from the neighbouring limestone cliffs and roughly shaped, but present no further trace of art, no groove or cavity of sacrificial import, much less anything intended for figure or ornament. The people of the country attribute their erection to the Dārim, and by his own hands too, seeing that he was a giant. Pointing towards Raas, our companions affirmed that a second and similar stone circle, also of gigantic dimensions, existed there; and, lastly, they mentioned a third towards the S.W., that is, in the direction of Henakeeyah."