

Wales the old beach is 1,300 feet above the present sea level, and yet it is quite impossible that the accumulation of rolled pebbles and shells so far above the sea can have been deposited in any other way than by slow accumulation at the sea level, at a time when the sea was limited by an ancient coast and cliff, now a mountain side. The whole has since undergone elevation, which has brought the beds up to their present level. As a matter of fact all the way round our own coast, on various parts of the coast of Scandinavia, along the western parts of Europe, and in the Mediterranean, there are unmistakable evidences of change of level going on, although it is difficult to understand how such changes could have gone on without producing great breaks. There is, however, no break in the succession of life; the animals that belong to one part of the period are traced through all the series of deposits, or else have died out gradually as we get nearer to the new deposits. The raised beaches generally contain shells which we would find at the present day on the actual beach adjacent. There is no possibility of these shells having been carried there by man, for they often cover several square miles of surface, and occupy exactly such level portions eaten by the sea waves out of a cliff which could be easily covered before the elevation. The cliff often presents a succession of steps, produced by the alternate elevation and repose during the time I have alluded to. Raised beaches, therefore, mark great changes during a long time, and the sands, gravels and marls indicate the time during which such changes were going on. Since, however, we can trace the history of cliffs for hundreds of years, and find the change very small, it becomes difficult to imagine that the same causes can have acted for a sufficient period to effect the amount of change we see. The remains of animals belonging to the period in question are some of them such as are now only to be found in Africa. We know, indeed, that such animals can live in much more extreme latitudes, and we have a remarkable proof of this in the discovery of the complete carcase of an elephant in the Arctic Seas, provided with a warm coating of hair, showing the adaption of those animals to a climate perhaps not at all warmer than we have now. However the case may be with regard to climate, we have the remains of the elephant, the rhinoceros, the bear, and the hippopotamus, lions, tigers, and hyenas, and also other animals now altogether extinct, remains of several large kinds of cattle, antelope and deer, one approaching to the reindeer, and others diverging from that type, but all belonging evidently to climates admitting a considerable amount of vegetation, but not necessarily warm.

We come next to the other contents of the caves. Associated with and among the bones of these animals that are almost all extinct, so far as this country is concerned, are found such specimens as are on the table before you. These three, for example [the Professor pointed to some trays before him], contain a number of specimens of flints found among the bones in these localities. When you examine these, I think it will be impossible for you to come to any other conclusion than that they were formed by human agency. Some of the specimens, taking them alone, would be sufficient to show that they were constructed by a number of blows probably of another flint, each blow chipping away a small portion. It is possible, though barely so, that one such specimen should have been formed accidentally; but, if you observe them, you will find all are chipped away in the same manner, and by a peculiar method. They have been formed by blows, one striking on the right, and the other on the left; they all have very definite shapes, being rounded at one end and pointed at the other; and, generally spreading, they have a depression on the under part. If, as is the case, we find such

specimens, not only here and there, but in masses of fifty or a hundred together in one locality, the accumulated evidence evidently derived from their artificial character is quite sufficient to show that they were formed by some intelligent being. We know that no animals are formed in a way as to be able to construct these flints, and we are therefore bound to consider that they were formed by human agency. It is not necessary to detain you with any account of the peculiarities of these things, but it may be interesting just to allude to the way in which flints used to be manufactured for muskets; and these will show you how precisely the same effect is produced by artificial means. I have also here a specimen of one of the weapons used by the natives of Port Essington, in Australia, which is of a similar character. Another specimen [showing one] was broken off by a gun-flint maker; and looking carefully at it, you may recognise the artificial character of the fractures. Next let us take up a number of the flints recently found in gravel and caverns. I think you will not be inclined to doubt, when you see them, that they must have been the weapons and instruments used by men; and no one, I believe, can honestly arrive at any other conclusion. Seeing their evidently artificial character, we are bound to assume that they are human productions, and that is a point which I shall take for granted.

We must now consider what proof there is that they were really found accumulated in the gravels belonging to a period very different from our own. You may say they were perhaps made by the Druids or the Celts, or the inhabitants of England immediately preceding the Danes, Saxons, or Romans. Now, it is a singular fact, that there was found, and carefully described and figured in a well-known antiquarian work, in the year 1797, an implement so exactly like those I am showing to you, that if you had it before you would not be able to distinguish one from the others; and since then several others have been found in the same locality. This deposit is in Suffolk, and the bed containing the flints is covered with sands and marls and red brick-earth. About twenty years after this discovery, a gentleman living at Amiens had a sort of instinct that there existed human remains in the gravel in his country, and he made up his mind to find them, and did find them. The three diagrams to which I now direct attention show the condition under which the remains were found, and several of the specimens themselves are before you. Where these were found the underlying rock is chalk; above the chalk is a series of beds of various kinds; and in the lowest of these beds about 100 feet above the present valley of the Somme, are found the objects in question. A gravel similar to that in which they occur is accumulated in various patches all over the country. It is not necessary to mention the different places where they occur. It is enough to know that there are at least half-a-dozen places in the same neighbourhood, where patches of gravel have been found containing similar worked flints. These beds contain also remains of Elephants, hippopotamuses, and rhinoceroses, in some abundance. There appear, in some cases, to have been pieces of wood immediately associated with the specimens themselves, presumed to have been the handles buried with them, and decayed. Pieces of bone found in the neighbourhood are supposed to show, in some cases, actual marks of weapons; and it is said that they could not have been broken accidentally in the way in which they are found, as they are bruised and broken with a dent, as if by stone knives or similar instruments. Above the beds containing the flint remains are several newer deposits, some of the uppermost of which contain other human remains, not of the same kind, though certainly belonging to a very ancient race. In the lower beds the weapons are roughly hewn, with other stones;