

by the aid of a language he has made his own ; all animals do the same. He can articulate sounds ; other animals can imitate sounds as well as he can. He presents simply in this respect a greater development of a faculty *common* to all social animals.

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ON THE CRANIA AND BONES OF LES EYZIES ; OR,  
THE ANCIENT CAVE-MEN OF PERIGORD.\*

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No discovery could offer more interest to Anthropology than that of these bones. It is the complement—one would almost say the crowning work—of the important discoveries which Mr. Lartet, sen., and his much lamented fellow-labourer, M. Christy, made four years ago in the caverns of Perigord. The numerous objects found in these caverns have not only furnished to us the most incontestible and striking proofs of the contemporaneity of man with the mammoth, but they have revealed to us the most curious details of the life and customs of the ancient cave-men of Perigord. The anatomical characteristics of the intelligent and artistic race, whose admirable carvings and sculptures are to us a subject of astonishment, yet, however, remain to be disclosed to us. The latest researches in Les Eyzies cave, by M. Lartet, jun., permit us now to bridge this gap. No doubt can be raised as to the authenticity and high antiquity of the bones which these researches have brought to light. The stratigraphical details furnished by this gentleman, prove not only that they are as ancient as, but that they are even more ancient than the carved objects of the great cavern of Les Eyzies ; the latter correspond to the epoch in which the reindeer was already predominant among the fauna, while the former seem to approximate rather to the time of the mammoth ; and although a very long period between these two epochs might have elapsed, we are compelled to believe that the passage from one to the other took place gradually, without any ethnographical revolution ; that the same race remained without interruption in the same place ; and that, if the bones which we are about to examine, are not those of the *artistes* of the reindeer period, they are at least those of their ancestors. The remains of quaternary man that we

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\* This article is the most important part of a long Memoir by Prof. Broca, which will appear in Lartet's and Christy's *Reliquiæ Aquitanicæ*.



have examined hitherto, belong for the most part to individuals of short stature, in whom the cranium is of small capacity, and the face more or less prognathous. We should hence conclude that the primitive population of Europe either belonged to a Negroid or Mongoloid race (according to either hypothesis), in whom the stature did not much exceed that of the modern Laplanders. We consider that this opinion rests on well-ascertained facts. It rests also on a pre-conceived idea which we have for a long time opposed, viz., that there is in quaternary Europe only one single race of men. Based on the ethnographical theory that the diversity of the human race results from the influence of media (such as climate, food, soil, etc.) we admit that the typical differences must be effaced as we pass backwards in time; and when the polygenists objected that the separation of the principal groups of races was already complete from the origin of historic time, we replied, that it was not in very recent times, but in the immense and incalculable periods which preceded them, that the divergencies from the original type were manifested. Reduced to these terms, the question of the unity of the human race became adjourned to the moment when palæontology should have discovered some remains of primitive man, or at least those of races of the quaternary epoch. We should consider that these races, separated from us by thousands of ages perhaps, and of a certainty infinitely more approximated to the human origines than the most ancient of the historic races, must present, if not an absolute uniformity, at least a manifest convergance towards the type of the common mould in which we can conceive them to have been cast. But it happens here, as does so frequently happen in other things, that the facts brought to light contradict a pre-conceived theory.

The quaternary race of Les Eyzies, differs from the quaternary race of the caverns of Belgium, as much as the most dissimilar modern races differ among themselves. The contrast is complete, not only when we consider the conformation and volume of the head, but also when we consider the form and dimensions of the limb bones. The greater part of the bones which have been discovered belong to three individuals. There are three crania, of which one is perfect. Not one of the skeletons is capable of being put together, but in closing the bones of the trunk and of the members, in accordance with their shape, colour, and density, we are able to separate them chiefly into three groups, which, in respect of the character referred to, appear to belong to the three crania. There are, besides, some small fragments of a cranium belonging to an adult, and some others of one belonging to a child. The number of bodies deposited in this burying place was five; it can hardly be said that there were more. It is, therefore, not



impossible that all these individuals should have been members of one family. Of the relics of these five persons, we can only speak of three, the remains of the two others being represented by only insignificant fragments.

The author then minutely described the character of each of the bones, and said, if, in conclusion, we cast a general glance over the divers elements that we have just examined, we shall find in the race of Les Eyzies a remarkable combination of characters—some of superiority and some of inferiority. The great capacity of the brain, the development of the frontal region, the fine elliptical form of the anterior part of the profile of the skull, the orthographic disposition of the superior facial region (from which arises a considerable enlargement of the facial angle of Camper) are incontestable characteristics of superiority such as we are accustomed to meet with only in civilised races. On the other hand, the great breadth of the face, the alveolar prognathism, the enormous development of the ascending ramus of the jaw, the extent and roughness of the surfaces for the insertion of muscles, and especially of the masticators, lead to the idea of a savage and brutal race, and we are led to suspect that the woman has been slain by a blow with a hatchet, and that the thigh-bone of the old man bears traces of an old and serious injury. Examine again the simplicity of the sutures, and then probably equally simple obliterations, which pass before backwards, as in the case with barbarous peoples. Let us add, that the shape of the bones, and in particular the extraordinary development of the ridge of femur, indicate a high degree of muscular power. Let us review these three characteristics, the excessive breadth of the ramus of the jaw, the sub-coronoid curvature of the ulna, of which the coronoid cavity is extremely shallow, and above all the flattening of the tibiæ, are more or less manifestly simious; and we shall thus complete the picture of a race which in some of its characteristics attained the highest and noblest degrees of human morphology, and in others descended even below the most degraded anthropological types of the present day.

This antithesis, at first sight, appears paradoxical, but is it not the anatomical confirmation of that which the discoveries of Messrs. Lartet (senior) and Christy have already taught us concerning the life and habits of the denizens of the cave of Perigord. The men who, in the quaternary epoch were the initiators of progress and the precursors of civilisation; who developed the remarkable industry and wonderful arts of which we to day admire the products, must of necessity have combined with the intelligence which invents and brings to perfection, much strength of body and habits of war, and of the chase, which alone could then assure them security and subsistence. Now-



a-days, with our irresistible metals, with our terrible fire-arms, with our land cleared and cultivated for centuries, with all the resources which agriculture and commerce furnish us, we can live in peace the life of the civilised ; but in those days, when immense forests, which the stone hatchet was incompetent to fell, covered the greater part of the soil ; when, in default of agriculture, man was compelled to seek a subsistence by the chase alone ; when the immediate necessities of existence demanded a continual warfare against such animals as the mammoth ; and, lastly, when the hunting grounds, the sole resource of one tribe, would have to be defended against the incursions and attacks of neighbouring tribes, it behoved them, under penalty of disappearing from the face of the earth, to accommodate themselves to circumstances, and to live the violent life of barbarians. The troglodytes of Les Eyzies were, therefore, barbarians in common with all the human kind of their day, and we ought not to be astonished that such conditions should have been the cause of very marked impressions on the skeletons of these people. But these barbarians were intelligent and perfectible, and whilst continuing their struggle against nature and against their fellow-men, they managed to leave themselves sufficient leisure to increase their knowledge, to develop their industries, and even to elevate themselves to the cultivation of the arts. Such precious aptitudes, rare in all times, but truly extraordinary in regard to the period in which they were manifested, could only result in favour of an advance in cerebral organisation, such as that which has found a morphological expression in the skulls of the race of Les Eyzies. What became of this race so remarkable, which appears to us in that distant past like a bright light in the midst of darkness ? In cultivating the arts which adorn life and render it enjoyable, have such people lost the smallest quantity of that warlike energy which alone could protect them against the ferocious aggressions of surrounding savages ? And have they succumbed like those precursors who, having arrived untimely, disappeared, oppressed to death by the incompatible media into which they tried to introduce a premature progress ? or, indeed, surviving this inevitable struggle, in which their civilisation has perished, have they not escaped extermination only to fall back into universal barbarism ; and to lose, in the long run, under the influence of crossing, of social change, and of the gradual transformation of the fauna and the climate, the anatomical characters which formerly distinguished them ? It is permitted to hope that future discoveries will furnish new elements for the solution of these important questions ; but as yet we can assert one thing only—and that is, that the race of Les Eyzies is entirely different from any other race, ancient or modern, that we have ever seen or heard of.