

Neanderthal (Mousterian) Man

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RESTORATION OF A NEANDERTHAL FAMILY
Group by Friederick Blaschke in Ernest R. Graham Hall

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Neanderthal (Mousterian) Man

The earliest type of man of which complete skeletons have been found is that known as Neanderthal or Mousterian man. Men of this race lived chiefly in western Europe and survived there through a period perhaps as much as 100,000 years in duration.

The first skeletal remains of this race were found in 1856 in a little valley in Germany known as the Neanderthal. In 1908 a complete skeleton was found at Le Moustier, France. From these two type localities the names given the race and their artifacts have been derived, the human remains being generally regarded as belonging to a separate species of man, to which has been given the name *Homo neanderthalensis*, while the cultural objects are classified as Mousterian. The type skull found at Neanderthal was only a skull cap or calvarium, but it showed the peculiar characters of prominent supraorbital ridges and low, receding forehead which were found later to mark the race as a whole. Associated near by were bones of the rhinoceros and cave bear of Europe the species of which had become extinct long before historic times.

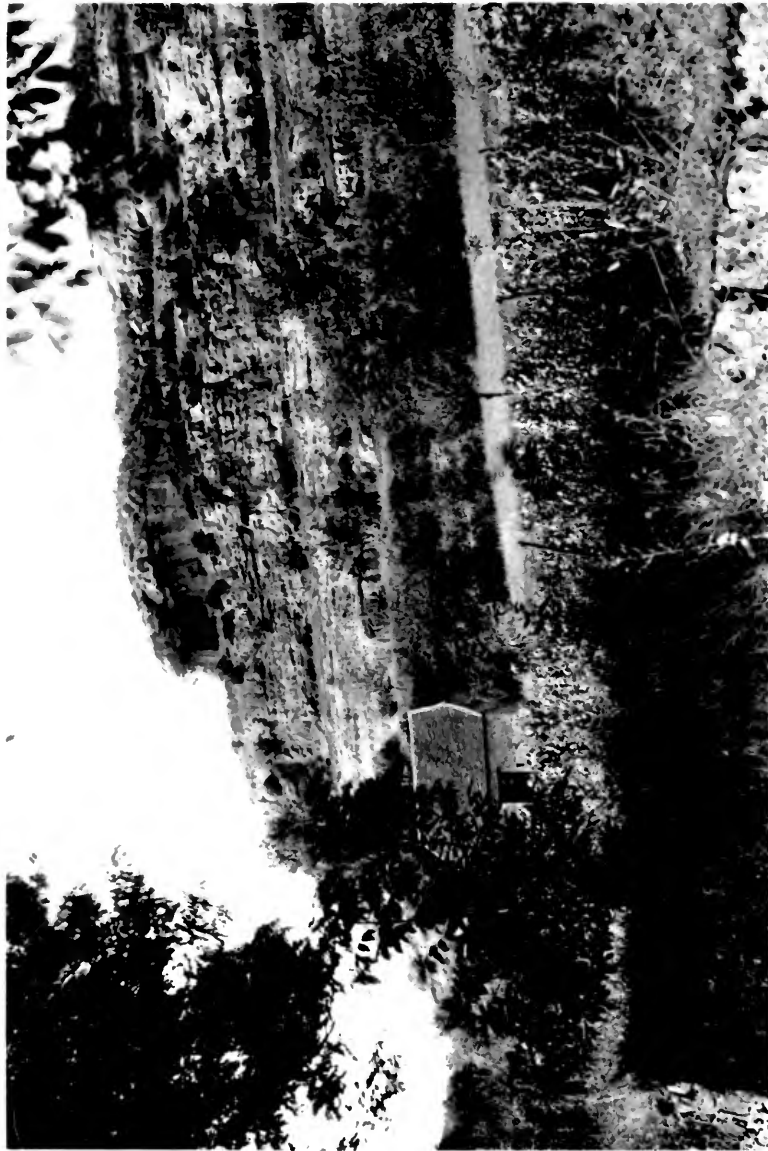
The exact interpretation of the human skull was for a long time a matter of dispute, some authorities regarding it as that of an abnormal individual of an existing race of man, while others believed it to be that of a primitive man of a stage intermediate between man and the anthropoid apes.

Since the first find, remains of a large number of members of this race have been discovered in various localities and their racial characteristics have become well established. The distinctive features of their culture are also now well known. Many of the most important discoveries of the remains of these people have been made in southwestern France, where a widely distributed, cavernous limestone gave them shelter. At Le Moustier, in France, the first find indicating the existence of early man was made in 1863 by Messrs Lartet and Christy. This consisted of various worked flints. Later, in 1908, at a depth of five feet below the floor of the cave, a human skeleton was found, accompanied by flint artifacts of the Mousterian period. As described by Sir Arthur Keith in his book, "Antiquity of Man":—

"Further excavation was stopped until the autumn, when surrounded by a company of German anthropologists, in the heart of France, the skeleton was finally extracted from its ancient bed, with expert eyes looking on to bear witness to its authenticity and antiquity. The skeleton was that of a lad of perhaps sixteen years of age; his canine teeth and third molars were not fully erupted; the growth lines of the long bones were unclosed. There could be no question: he had been deliberately buried. Near his right hand was a hand-axe of the Acheulean culture, but typical implements of the Mousterian period were near by. Charred remains of the ancient ox—the urus—were noted. The body had been laid on its right side, with the face turned down, and a pillow of stones placed under the head."¹

On August 3, 1908, in a rock shelter near La Chapelle-aux-Saints, a few miles east of Le Moustier, the most complete skeleton of this type of man that had been discovered up to that time was unearthed by the Abbés

¹This skeleton was later purchased from Dr. O. Hauser by the Museum of Ethnology in Berlin for the sum of 125,000 francs.



ROCK SHELTERS INHABITED BY NEANDERTHAL MAN AT LE MOUSTIER, DORDOGNE, FRANCE

The entrance to the upper rock shelter is shown at the upper left of the photograph



Bouyssonie and Bardon. The skeletal parts found included a remarkably well-preserved skull, almost the entire backbone, twenty ribs, bones of the arm and part of the leg and many bones of the hands and feet. This individual was evidently a male, between fifty and fifty-five years of age and his burial had without a doubt been of a ceremonial nature. Associated with the skeleton in such a way as to leave no doubt that they were contemporaneous, were chipped flint points and scrapers of typical Mousterian technique.

In the following year at La Ferrassie, France, another skeleton which proved to be Neanderthaloid was discovered by M. Peyrony. This skeleton was removed with accurate recording of the data by Peyrony and his scientific collaborators and in the following year another skeleton was found in the same cave. Since the bones of the second skeleton showed fewer traces of muscularity and were smaller, it was considered to have been that of a female.

Besides these places, many others in which bodily remains of Neanderthal man were found have been located. These localities are distributed widely over western Europe. The more important are shown on the accompanying map, Pl. VIII. Implements of Mousterian type, the type attributed to this race, have a far wider range of distribution. They have been found in Britain, France, Spain, Gibraltar, Italy, Germany, Moravia, Russian Poland, Croatia, the Crimea, Asia Minor, North Africa, Palestine, Syria, North Arabian Desert, Iraq and China.

From the skeletons of this race which have been found it is now possible to form a definite idea of the general appearance of its individuals. They were short in stature, the average height of males rarely exceeding 5 ft. 4 in. They were thick-set in build, with large heads and short

limbs. The concave curvature of the back was continued in that of the neck so that the head and shoulders were habitually bent forward. It was impossible for them to stand fully erect. The knees, also, on account of the shape of the thigh bones, were continually bent forward and could not be straightened. Heavy, overhanging brows were a dominant feature, as were also low foreheads, long upper lips and receding chins. The teeth and jaws were extraordinarily massive, corresponding with the general massiveness of the skull. The nasal apertures were broad and flat. The low forehead reduced the space for the development of the frontal lobes of the brain; but this reduction in size was compensated by the protrusion of the occipital region at the base of the skull. In size their brain was surely human, but, as is well known, cranial capacity alone is no criterion of intelligence. According to Boule and Anthony the brain of Neanderthal man had many primitive characteristics. Thus the pre-frontal area, which is the seat of the higher faculties, is not fully developed in Neanderthal man and has a protuberance as in the brain of the anthropoids. Also, the lobe associated with the power of speech is but little developed as compared with that in modern man. The hands of the Neanderthalers were large and their thumbs lacked the power of opposition against the fingers. The feet were also large and the great toe offset to some extent as in anthropoids. The foot, moreover, had but little heel as compared with that of modern Europeans, the calcaneum being but little developed.

The Hall of Historical Geology of the Museum, designated, in honor of its chief patron, as Ernest R. Graham Hall, is devoted to exhibits illustrating in chronological order, the life of the earth in successive periods of the earth's history. The exhibits consist chiefly of the fossil remains on which our knowledge of the ancient plants and animals is based, but in order to further vivify the creatures



RESTORATION OF A NEANDERTHAL MAN
From the group by Frederick Blaschke in Ernest R. Graham Hall

of earlier days, several groups reproducing their bodily forms have been or are being prepared. For that representing Man, Neanderthal man was chosen, since this is the earliest human type of which complete skeletons are known. The work of designing and modeling this group was intrusted to the able sculptor, Frederick Blaschke of Cold Spring-on-Hudson, New York. A small-size model of a group was first constructed. This model consisted of a reproduction of one of the caves or rock shelters inhabited by Neanderthal man and near or within it, an adult male figure bearing some trophy of the chase and two female figures, one of them carrying a child.

After completing the sketch model, Mr. Blaschke and the junior author went to Europe in order to observe the known skeletons and other remains of Neanderthal man preserved there and to visit some of the caves or rock shelters known to have been inhabited by him. Messrs. Blaschke and Field first visited London, where they enlisted the cooperation of the celebrated anatomists Professor Sir Arthur Keith, President of the Royal College of Surgeons and Professor G. Elliot Smith of University College. These distinguished authorities were most generous in their advice and suggestions, and Mr. Blaschke made small scale models of a prehistoric man and woman under their personal supervision. Sir Arthur Keith's interest was so engaged that he personally supervised a reconstruction of the adult female Neanderthal (Mousterian) skull which had been found at Forbes Quarry, Gibraltar, in 1848, the original specimen of which is in the collection of the Royal College of Surgeons. A cast of this skull was obtained through the courtesy of the British Museum and over this Sir Arthur Keith directed Mr. Blaschke's moulding of clay to represent the flesh and skin, while the original specimen lay before them. In this manner modelling of a head proceeded slowly and carefully until at the end of several days the details of

the skin, nose, ears and other fleshy parts had been completed. Sir Arthur Keith, furthermore, directed the modelling of a one-fifth life-size scale model of a male figure, and laid particular emphasis on many important points which were to be taken into account.

Professor Elliot Smith made several suggestions with regard to the angle of the head in relation to the vertebral column. He also remarked that in Neanderthal man the angle of the big toe in relation to the rest of the foot was much more accentuated than in modern man (*Homo sapiens*).

In France Mr. Blaschke discussed his work from time to time with the Abbé Henri Breuil, Professor at the Institute of Human Paleontology, Paris, probably the greatest living expert on prehistoric man. Professor Breuil remained with the Field Museum¹ expedition nearly two months and rendered invaluable services. The Museum representatives, accompanied by the Abbé Breuil and an artist and photographer, then proceeded to the rock shelter of Le Moustier (see map) in the Dordogne region of southwestern France.

While at Le Moustier Mr. Blaschke made a small scale model of the uppermost rock-shelter and the artist prepared color sketches to assist in reproducing the landscape. The photographer took a number of both still and motion pictures under Mr. Blaschke's direction. A quantity of flint chips and floor debris from the once inhabited rock-shelter were collected, also several blocks of stone from the shelter to serve as patterns for the color and texture of the cave. The Museum party then visited many other caves of the Dordogne region in company with the Abbé Breuil in order to absorb as much as possible of the prehistoric atmosphere, and to hear the Abbé reconstruct in vivid terms the life of the prehistoric hunters

¹Captain Marshall Field Archaeological Expedition to western Europe—1927-1928.



RESTORATION OF A NEANDERTHAL MAN IN PROFILE
From the group by Frederick Blaschke in Ernest R. Graham Hall

and artists who had roamed over that region many thousands of years ago.

Altogether, the party obtained not only casts of the various excavated Neanderthal (Mousterian) skeletons, but examined all the important literature on the subject and had the personal direction and supervision of the most famous anatomical experts on prehistoric man in the world.

In October 1927, Mr. Blaschke returned to his studio at Cold Spring-on-Hudson, New York, to execute the life-size models for the group.

The head of the male figure he modelled over a cast of the La Chapelle-aux-Saints skull, while for the details of the body he followed the lines suggested by the European anatomists. The calvarium of the Neanderthal (Mousterian) child from Devil's Tower, Gibraltar, excavated by Miss Dorothy Garrod in a fragmentary condition in 1926, was used as the basis of the reconstruction of the child. The original calvarium was restored at Oxford by Mr. L. H. Dudley Buxton. Field Museum acquired a cast of this specimen through the courtesy of Professor Arthur Thomson of the University Museum, Oxford.

Other casts of Neanderthals skeletal remains were carefully examined and measurements from them were used in making the figures. As to anatomical details therefore, it is believed that a remarkably accurate reconstruction of several different individuals such as would form a Neanderthal family has been made. Unfortunately for the completion of the restorations there are no data from which information as to the type, quality, and quantity of the hairy covering of the heads and bodies of people of this race could be obtained. Inasmuch, however, as the primitive men of Australia have several Neanderthaloid characters, including heavy brow ridges, it was decided to follow their hirsute type.

In the group exhibited at the Museum, a portion of the rock shelter inhabited by people of the Neanderthal race at Le Moustier has been reproduced in full size. The scenery about the cave is represented by a painted background showing the valley of the Vezere river as seen from the vicinity of the cave. The scene is based on sketches made at the locality with such modifications as the climate of the glacial period might have produced. The flow of water from melting glaciers is represented as having raised the river above its height at the present day. Beyond the river patches of snow on the hills and scrubby vegetation indicate a sub-arctic climate. The surface of the hills is broken by escarpments which are changed little in outline from those of the present day. A small herd of reindeer is represented as feeding in the vicinity. The man of the family is shown just returned from a successful hunt. A reindeer which he has slain with a stone axe is lying at his feet. Emerging from an inner portion of the cave, one of the women of the family is seen with a baby in her arms. A small fire of burning sticks occupies a central place in the shelter. Beside it an older woman is cleaning meat and fat from a reindeer skin with a stone scraper and near her a boy of about ten years of age is gnawing on a bone. Flint chips from the locality and undoubtedly made by the occupants of the cave thousands of years ago, are strewn about on the floor. The environment of the cave shows some of the reasons for its choice as a shelter, since it was near water and sufficiently elevated to give a good view of the surrounding country. Over the neighboring hills, too, roamed animals available for food. The flint associated with the limestone of the region also furnished excellent material for stone implements.

The determination of the period at which Neanderthal man lived is gained chiefly from two lines of evidence—one the nature and location of the deposits in which his

remains occur and the other the species of animals in connection with which his remains are found. From a study of these it has been learned beyond doubt that it was during the Great Ice Age that Neanderthal man inhabited Europe and that of the four great glacial advances and retreats which characterized this Age, he chiefly existed during the time after the Third or Rissian and through that of the Fourth or Würmian, (the last great glaciation).

Beginning with the earliest, the four periods of advance of the continental glacier in Europe are known as the Günz, Mindel, Riss and Würm. The two latter are cotemporaneous respectively with what are known as the Illinoian and Wisconsin stages in North America. Two occurrences of human remains may be mentioned as showing unmistakably the connection of Man with the Third Interglacial and Fourth Glacial periods. The first occurrence is that at the cave of Bouicheta, Ariège, France, where drift known to be of the Third or Rissian glacier age is deposited. Superimposed upon this deposit, implements of Neanderthal man have been found, indicating that his occupancy was later than the Third or Rissian glaciation. The second is the finding of Neanderthal man remains in the cave of Cotencher in Switzerland. This cave is about 2,000 feet below the height reached by the ice of the Fourth or Würmian glacier and a mile within its moraines. It could not have been occupied by man during the later epoch because the cave was then filled with ice; hence it must have been earlier, in the epoch preceding the last glaciation.

The remains of animals found in connection with those of Neanderthal man include the mammoth, bison, reindeer, wild horse and cave bear. These sufficiently indicate a cold climate. There were also among smaller animals the Arctic fox and hare and the northern banded lemming. Not only did Arctic birds and mammals follow the glacia-

tion southward but the Arctic flora prevailed as well. Such animals as the woolly mammoth, Scandinavian reindeer, Arctic hare etc. being accustomed to feeding on the mosses and other growths of the northern tundras, probably found similar growths on which to subsist as the glaciation slowly moved southwards.

Doubtless the coldness of the climate had much to do with causing Man of that period to choose caves or rock shelters as a dwelling place. Such caverns or grottoes afforded protection from the biting winds, snow and rain and also enabled some storage of supplies to be made. Often it was probably necessary to drive out animals which had already availed themselves of these shelters and many a battle of this sort must have been fought before a man could gain a desired domicile. The cave bear was probably especially troublesome in this respect as he also had chosen grottoes for his natural home. Once gained by man, such a home was easily defended, as the entrance was often narrow and could be barricaded. The locations chosen were also usually on eminences whence a view of possible enemies could be obtained. Fire was also a weapon that could be used to advantage against wild beasts. The chief disadvantages of such shelters were probably their dampness and lack of proper draught for fire, making them moist and smoky.

The stone implements made by Neanderthal man show marked improvement in design, workmanship and technique over those of their predecessors. Two implements were especially typical of the Neanderthal (Mousterian) design and manufacture. One was a point, the other a scraper. Both are distinctive in being flakes struck off from a larger nodule rather than made by dressing one in its entirety to a required size. To make these later implements, one face only of the nodule was trimmed over its entire surface and from this the desired flake was detached probably by one well-directed blow.



RESTORATION OF A NEANDERTHAL WOMAN AND CHILD
From the group by Frederick Blaschke in Ernest R. Graham Hall

This flake was then trimmed to give it a sharp cutting edge and sometimes retouched to render it less fragile. The "point" used was spear-shaped and from 1 to 4 inches in length. It could be used for cutting, piercing and sewing. A double point was also used. This was likewise spear-shaped and may have been employed in hunting.

Of the scraper there are several varieties, the general form being crescentic and having an edge on the outward curve. Other forms have straight edges. These scrapers were probably used for removing meat and fat from animal skins and perhaps for cutting up an animal. Another implement used was a borer, a long flake with one end finished to a very fine point. Evidences of the use of these implements are found in the kitchen-middens or refuse heaps of these people. The bones contained in the refuse show scorings such as would be produced by using the rough edges of the scrapers as saws, while scratches made by scrapers in taking off meat and cuts made by flint knives in disarticulating the joints are also frequently seen. Bruised cuts on some of the bones seem to show that they were used as anvils or chopping blocks. Crude tools of bone were also found in some of the Mousterian caverns of Switzerland. These implements were made from the small leg bones (fibulas) of the cave bear, by breaking them obliquely near the center and smoothing the broken surfaces. They were used for skinning and preparing hides. Teeth and other bones of the bear also showed signs of use as points and scrapers. At one locality, La Quina, in Charente, many small, spherical balls of lime-stone shaped by the hand of man were found. It is thought that they may have been used as are the bolas employed by the Indians of South America today for hobbling and thus capturing wild animals.

Remains found in the cave at Sirgenstein in Würtemberg give important suggestions as to the probable food

and habits of the people. Hearths that had been used by them were uncovered at two levels at this locality.

The following description of the remains found there is given by Prof. W. J. Sollas in his book "Ancient Hunters,"

"The embers of extinct fires lay upon the soil, just as they had been left by the inhabitants, stone implements were found plentifully strewn about and so were also broken bones of the animals which had served as food. These bones were those of big game. The cave-bear (*Ursus spelaeus*) was by far the commonest; this animal was the universal "care-taker," occupying the caves during the absence of the hunters, and receiving short shrift when they returned. It was also a favorite food, as is shown by the great number of bears' bones which are massed together near the threshold of the cave as well as plentifully scattered about. No one cave could have supplied so many bears, and the hunters must have ransacked the surrounding district in pursuit of them. Most of the bones belonged to young animals, which were, no doubt, an easier prey as well as more delicate eating. Bones of the wild horse and the reindeer were also included in the refuse as well as those of the mammoth, rhinoceros and bison; the remains of the last-named animals are, however, comparatively rare. After the hunters had scraped the flesh from the bones, no doubt with their stone implements, they broke them to extract the marrow, and afterwards threw them on the fire; as they were rich in fat they provided a sort of fuel—probably very malodorous. At Sirgenstein no wood charcoal was found in the hearths, only the charred remains of the bones.

In Sicily, where the warm fauna (*Elephas antiquus* and *Rhinoceros Merckii*) seems to have survived into Mousterian times, the hippopotamus furnished abundant food. In the Grotto de San Ciro, near Palermo, the bones of this animal were found in such quantity that, according



RESTORATION OF A NEANDERTHAL WOMAN CLEANING A REINDEER SKIN
From the group by Frederick Blaschke in Ernest R. Graham Hall

to a careful estimate, they must have represented the remains of at least 2,000 individuals."

Prof. Sollas says further—

"The debris of the caves shows man of that day to have been a successful hunter, courageously maintaining his existence amidst a crowd of competing beasts of prey. But in one instance, at least, we seem to discover signs of a more ogreish disposition; for the hearth at Krapina in Croatia contains the charred bones of numerous human beings, both young and fully grown men, women and children. This impressed its discoverer, Gorjanovic-Kramberger, with the idea of cannibalism. Considering that the evidence is confined to this single cave and that we meet with nothing similar, or at least so definite, on the Mousterian horizon in other parts of Europe, we may regard this for the present as an isolated instance. There is no reason to suppose that cannibalism was common or widespread, and still less reason for assuming that the human race has passed through a cannibal stage."

On the contrary, two observed instances of ceremonial interment of the dead seem to give evidence of reverence for the departed and belief in a future life. One of these instances is in connection with the skeleton already mentioned as found at La Chapelle-aux-Saints. This lay in a shallow grave extended from east to west. Around it were a great number of well-worked implements of Mousterian type, fragments of red ochre and broken bones. Over the head were several long bones lying flat, and one of them still in connection with some of the smaller bones of the foot and toes, suggesting that it was clothed with flesh at the time it was placed in this position. Here was apparently then a ceremonial interment accompanied by offerings of food and implements for the use of the deceased in the spirit world.

The second instance is that of the skeleton already mentioned as having been found at Le Moustier. This

lay on a carefully arranged pavement of flint implements. It was resting on its right side, with the right arm bent under the head and the left arm extended. Burnt bones and Mousterian implements were disposed about the skull and a large implement, beautifully dressed on both sides, lay just within reach of the left hand.

After maintaining an existence in Europe for a period estimated to have been possibly 100,000 years in length, the race of Neanderthal (Mousterian) man became, as is generally believed, extinct. Some authorities regard certain characteristics of this race as detectable even in some types of modern man, but this view is not generally held. Neanderthal man was succeeded by taller, long, narrow-headed peoples, the Aurignacians,¹ who developed a remarkable artistic sense and moved upward along the path to modern civilization. The Neanderthalers had perhaps contributed to man's future mastery of his world a further knowledge of the uses of fire,² a greater variety and better pattern of stone implements, the beginnings of family and communal life and some rudiments of a religious belief.

OLIVER C. FARRINGTON.

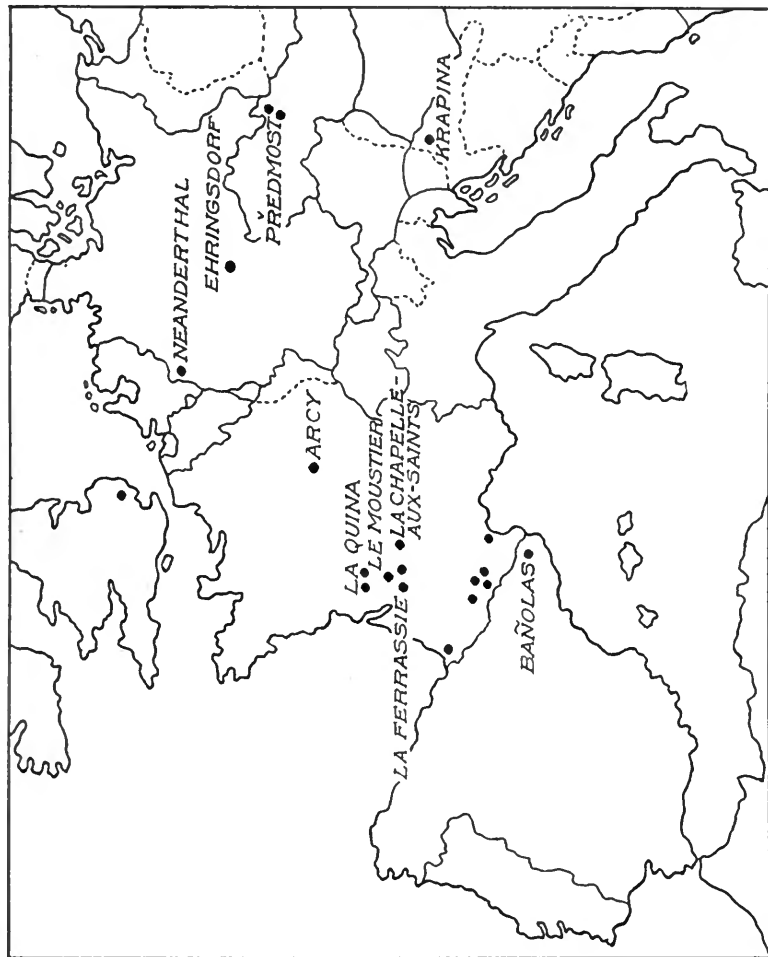
HENRY FIELD.

¹For the chronology and order of succession of the races of prehistoric man in western Europe see the Museum Leaflet, Anthropological Series, No. 26, page 16.

²Charred wood and bones found in the industrial deposits of an earlier culture, the Acheulean, are, according to Osborn, the first positive evidences of the use of fire.



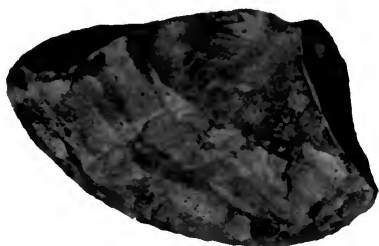
RESTORATION OF A NEANDERTHAL BOY
From the group by Frederick Blaschke in Ernest R. Graham Hall



Map of western Europe, showing the principal localities at which remains of Neanderthal (Mousterian) man have been found

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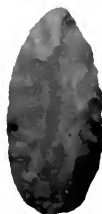
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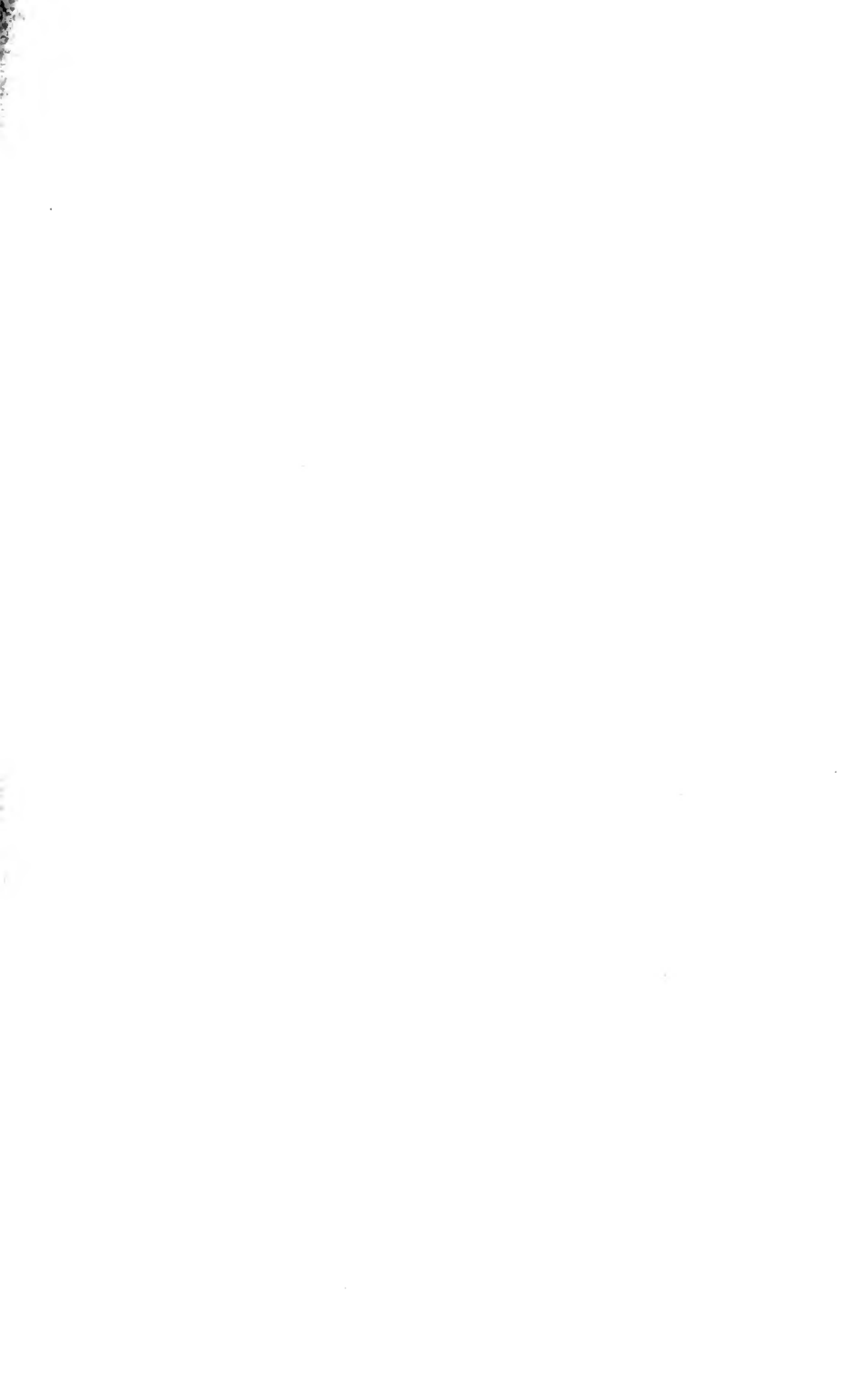
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FLINT IMPLEMENTS OF NEANDERTHAL MAN

1. Large side scraper from La Quina, France. 2. Double side scraper from La Quina, France. 3. Triangular point from Le Moustier, France. 4. Long narrow point from Le Moustier, France. 5. Oblong lanceolate point from La Quina, France. All one-third natural size. Field Museum Collections.



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