

AMERICAN MUSEUM OF NATURAL HISTORY

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# THE HALL OF THE AGE OF MAN



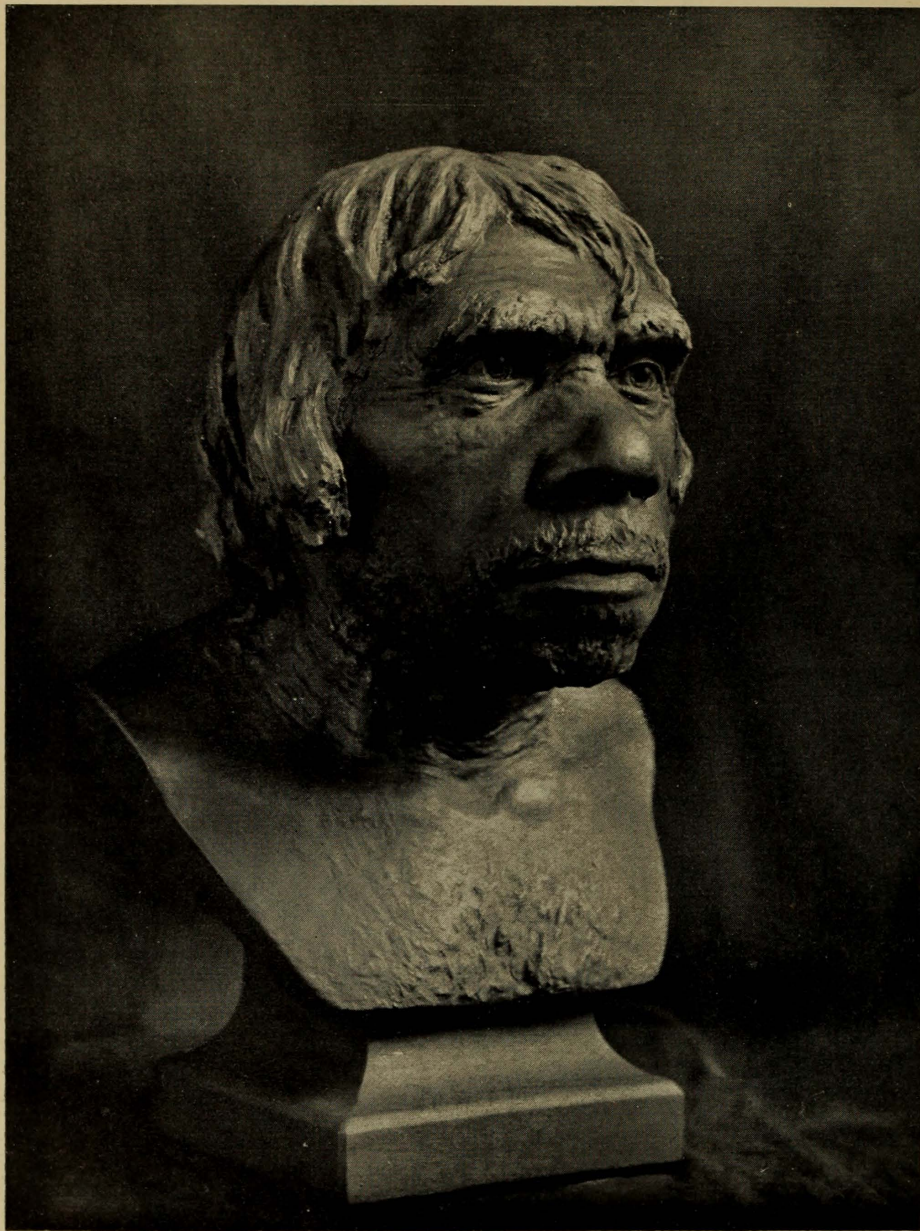
By HENRY FAIRFIELD OSBORN

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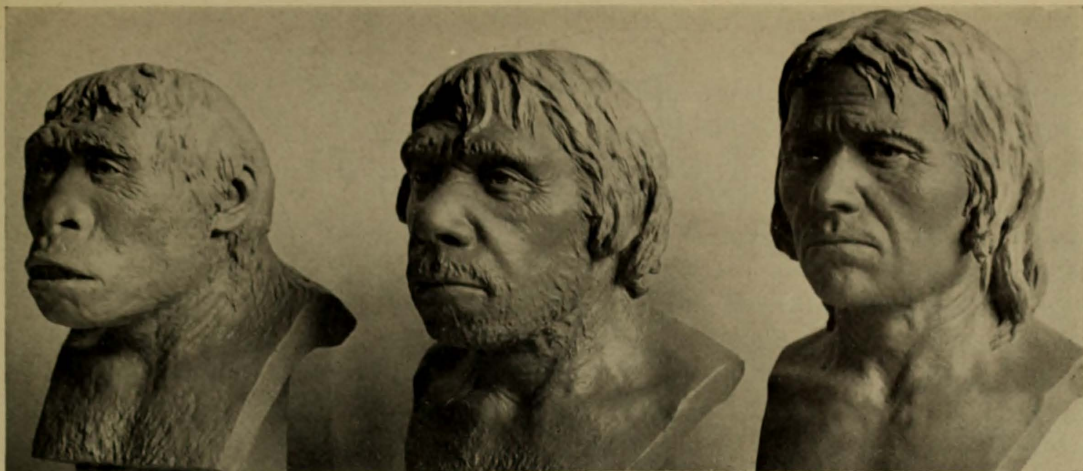






#### NEANDERTHAL MAN

Modeled by Dr. J. H. McGregor on cast of skull found at la Chapelle aux Saints, France in 1908.



From restorations by J. H. McGregor

TRINIL APE-MAN  
*Pithecanthropus erectus*

NEANDERTHAL MAN  
*Homo neanderthalensis*

CRÔ-MAGNON MAN  
*Homo sapiens*

That these three restorations of prehistoric man form a progressive series, from left to right, is evident not only by the general form and the appearance of relative intelligence appreciated by the most casual observer, but especially by definite anatomical characters such as increased prominence of the chin, reduction of the eyebrow ridges, reduction of the prominence of the lower face as a whole, increased size of skull and of brain capacity (brain capacities of the three races from left to right: 858-900cc.; 1408cc.; 1550-1880cc.)

## The Hall of the Age of Man in the American Museum

By HENRY FAIRFIELD OSBORN

Reprinted, with slight changes, from *Natural History*, the Journal of the American Museum of Natural History, for May-June, 1920, pages 228-246.

The exhibits in the Hall of the Age of Man are intended to illustrate what is known of the origin, relationships and early history of man, as deduced from his remains and primitive implements, and also to show the animals by which he was surrounded in the early stages of his existence. These animals are shown not only as mounted skeletons but in a series of large mural paintings portraying them as they appeared in the flesh amid their natural surroundings. These paintings are the result of the study of their fossil remains and their careful comparison with related existing animals, a work to which the author has devoted many years of study. Hence they give an accurate and vivid idea of the animals that were the contemporaries of man in various regions in the infancy of the world.

Five cases in the center of the hall are devoted to the story of man, and that it can be compressed into so small a space is an indication of the scarcity of his remains, for here are displayed reproductions of all the notable specimens that have been discovered. It has been necessary to use copies, for the actual specimens are few in number and scattered through many museums in many widely separated parts of the world.

THE beginning of the Age of Man, some 500,000 years ago, roughly estimated as the close of the Age of Mammals, marks in reality but the beginning of the close of the Age of Mammals. The extinction of the most superb mammals that the earth has ever produced, during the

early stages of human evolution, progressed from natural causes due directly or indirectly to the Glacial epoch. With the introduction of firearms the destruction has proceeded with increasing rapidity, and today it is going on, by the use of guns and steel traps, at a more rapid rate than ever. By the

middle of this century man will be alone amid the ruins of the mammalian world he has destroyed, the period of the Age of Mammals will have entirely closed, and the Age of Man will have reached a numerical climax, from which some statisticians believe it will probably recede, because we are approaching the point of the overpopulation of the earth in three of the five great continents.

### *The Ascent of Man*

The cradle of the human race was, in our opinion, in Asia, in regions not yet explored by palæontologists. One reason that human and prehuman fossil remains are rare is that the ancestors of man lived partly among the trees and forests; this does not mean that they were arboreal; they lived chiefly on the ground. Even when living in a more open country the ancestors of man were alert to escape the floods and sandstorms which entombed animals like the horse of the open country and of the plains. Hence fossil remains of man as well as of his ancestors are extremely rare until the period of burial began. Only two races, the Heidelberg and the Piltdown, are certainly known from the river drifts and gravels before the period of burials.

The human remains known consist principally of portions of skulls, of jaws, and teeth of members of these races. Individuals are now represented by casts in the hall of the Age of Man. The museum series began in 1915 with the gift of the J. Leon Williams Collection, and has been enriched by additions from the museums of London, Paris, and recently of the Neanderthal man of Krapina, presented by Professor K. Gorjanovič-Kramberger, also the Talgai skull from South Australia, presented by Dr. Stewart A. Smith.

### *Man as a Primate*

The ascent of man as one of the Primates was parallel with that of the

families of apes. Man has a long line of ancestry of his own, perhaps two million or more years in length. He is not descended from any known form of ape either living or fossil. One hypothetical ancestral stage, of which we have a small jaw (see middle bottom of exhibit in Case I, opposite page) found in the Oligocene of northern Egypt, is the *Propliopithecus*, which in the opinion of Professor W. K. Gregory, of the American Museum, our leading authority on the anthropoids, is at least structurally ancestral to the higher apes and man—in other words a possible prehuman link. From such an animal possibly four branches were given off leading respectively to the living oranges, the gibbons, the chimpanzees, the gorillas, and some of their fossil ancestors.

All these great man apes are distinguished from man by being more or less arboreal in habit; they are shown to be very far removed from the large-brained walking line which gave rise to our ancestors. Our own immediate ancestors did not live in trees; they were erect or semi-erect for a very long period, perhaps as far back as Miocene time. Back of this, perhaps a million years ago, was a prehuman, arboreal stage.

The Trinil ape-man, the *Pithecanthropus* of Java (see center of Case I) is the first of the conundrums in human ancestry. Is the Trinil race prehuman or not? The restored head by Professor J. Howard McGregor, of Columbia University, is designed to show its half human, half anthropoid resemblance, as suggested by the top of the cranium, the only part known, which is far more human than that of any ape cranium, and at the same time far more apelike than that of any human cranium. It is not impossible that this ape-man is related to the Neanderthal man (skull shown in Case 3).

In this exhibit of the great man apes



### MAN'S PLACE AMONG THE PRIMATES

*Case I in the hall of the Age of Man, the American Museum, showing the "Trinil race" of Java and other primates, living or extinct, which aid in reconstructing the ancestral tree of the human race*

In the right half of this case are arranged the skulls of certain anthropoid apes—gibbon (1), orang (2), chimpanzee (3), adult gorilla (4), young gorilla (5), while on the left are models of skulls of the known races of man—Pitldown (7), Neanderthal (8), Talgai (9), Crô-Magnon (10), recent (11). Between these two groups have been placed a restoration of the skull and of the head of the "Trinil" or ape-man of Java (*Pithecanthropus erectus*) and a cast of the actually discovered brain case and two of the teeth (6, 6, 6).

The ascent of man has in general paralleled that of the families of anthropoid apes, as is shown by the "tree of descent" in black lines. Man is not descended from any known ape, either living or fossil, but a hypothetical ancestor of this entire anthropoid group, founded on a jaw discovered in Egypt (see case at bottom center), is the *Propliopithecus haeckeli*. The case is ruled horizontally to indicate five periods (the most ancient, at the bottom, does not show in the photograph) of geological time (Eocene, Oligocene, Miocene, Pliocene, and Pleistocene), and below the recent apes are placed casts of the jaws or teeth of certain fossil apes, which have been discovered in deposits of these different geological periods.

On the human side of the case, immediately below No. 8, the Neanderthal skull, is shown a cast of the massive Heidelberg jaw (shown also in Case II, No. 7, representing a race which was perhaps the predecessor of Neanderthal man in Europe. Below this and on another branch are casts of teeth and fragments of jaw of a primitive fossil ape of India (*Sivapithecus indicus*), the patterns of whose molar teeth somewhat resemble those of man, but still more those of the orang. The card on the base line just left of the middle bears the drawing of the jaw with teeth of a fossil primate, *Parapithecus*, from Egypt, the most primitive of all known Old World monkeys and apes and considered to be the Oligocene survivor of an ancient type ancestral to the ancient *Propliopithecus haeckeli*

(at the left in Case I) are placed for comparison some of the known extinct or fossil races of man, each ascending along a line of its own. Copies of the most recent discoveries in various parts of the world are placed in this series; in fact, this entire exhibit is designed to show from time to time our progress in discovery, to present actual evidence in place of theories and speculations, and to show how very limited this evidence is as compared with the abundant evidence in the ancestry, for example, of the horse (shown in the hall of the Age of Mammals).

*The Most Ancient Human Races,  
Heidelberg and Piltdown*

Unquestionably the most ancient human relic which has thus far been discovered is the jaw (see reproduction in Case II, left) of the so-called Heidelberg man, a fossil which may be 250,000 years old. From it has been modeled by McGregor the Heidelberg skull, which is very similar to the Neanderthal skull. The Heidelberg man may be ancestral to the Neanderthal man (shown in Case III).

A few deep brown fragments of a skull and jaw and one tooth (see casts in Case II, at the right) represent all the remains known of the Piltdown man, discovered in England a few years ago. Two reconstructions of the Piltdown skull have been made; the original by Professor A. Smith Woodward in London, in the British Museum, the second in this country by McGregor. The problem whether the Piltdown jaw belongs to this human skull or whether it belongs to a fossil chimpanzee is still not actually settled. The skull itself is of a rather fine type, with a flat forehead like that of the existing Bushmen of South Africa.

*The Neanderthal Race, the Missing  
Link*

The Neanderthal man represents the oldest fossil human race of which the

skeleton is fully known. The remains are relatively abundant, and the American Museum owns reproductions of many skulls and parts of skulls found during the last half century in Spain, Germany, France, and Hungary. Foremost of these is the skullcap found near Düsseldorf, Germany, in 1856, which constitutes the type of the Neanderthal race itself.

Of great interest is the reconstruction by McGregor of a Neanderthal female head, based upon a skull found at Gibraltar in 1848, which gives us the head characters of the women of this very primitive race. All the remains discovered of the Neanderthal men are represented by reproductions in the American Museum excepting one, that of La Quina, France, which has just been presented by the United States National Museum.

Foremost in perfection is the skull from La Chapelle-aux-Saints, originally restored by Professor Marcellin Boule and reconstructed by McGregor. The latter distinguished American expert in the anatomy of palæolithic man is now engaged upon the reconstruction of the entire skeleton and body of the Neanderthal man. We may predict that this life-size Neanderthal model will be one of the most interesting exhibits in the American Museum when the work is finally completed after the many years of laborious study and research put upon it.

*The Neanderthal Flint Workers  
(Mural I)*

The mural of the Neanderthal group of flint workers shows in the distance, along the Dordogne River, herds of woolly rhinoceroses and woolly mammoths. The center of interest is the flint industry, which, with the chase, occupied the entire energy of the Neanderthals. This group awaits the completion of the Neanderthal body restoration by McGregor. Since the Neanderthal type is totally different



### THE MOST ANCIENT HUMAN RACES

*Case II in the hall of the Age of Man, the American Museum, showing the Heidelberg and the Piltdown man of the early part of the Old Stone age in Europe, from before 100,000 B.C. to about 45,000 B.C.*

The most ancient fossil relic of man is the massive jaw (7, just left of center) which was found near Heidelberg in deposits of the second Interglacial stage, perhaps as early as 200,000 B.C. A skull (8) has been modeled to fit this jaw by Professor McGregor. Of this skull the upper dental arch, the region of the cheeks, and the jaw articulations can be restored with a high degree of probability. The size of the brain case is more doubtful, but it was probably at least of the type of the Neanderthal skull.

The jaw is of truly remarkable size and strength and entirely apelike in form, especially in the absence of a chin, but the teeth are altogether human and small as compared with the size of the jaw.

Of very great antiquity, perhaps of 500,000 B.C., are the fragments of a skull (2) discovered at Piltdown, England, in conjunction with a number of flints and fossils—and a jaw which is still a matter of controversy. The skull and head of this Piltdown man have been restored by Professor McGregor (3, 4, 5). Number 4 shows a preliminary stage in the restoration of the soft parts of the head with clay cylinders attached to indicate the thickness of the flesh. Number 1, near the center of the case, shows casts of two eoliths, the most primitive form of rude stone implement and a primitive Palaeolithic flint implement found in strata immediately above and around the fragments of the Piltdown skull; at 1, near the end of the case, are other flint implements found at Piltdown. Numbers 6, 6, 6 mark a collection of very primitive stone implements rudely edged or pointed. A feature of the Piltdown skull which distinguishes it from those of the Neanderthal type is the absence of eyebrow ridges. Although this is the most primitive and apelike human skull that has been found, it is nevertheless well advanced along the line of characteristically human evolution and shows a brain capacity estimated as at least between 1200 and 1300 cc., equaling or exceeding that of the aboriginal Australians.





*Painted by Charles R. Knight, under the direction of  
Henry Fairfield Osborn. Copyrighted photograph*

### CRÔ-MAGNON ARTISTS OF SOUTHERN FRANCE (MURAL II)

*The work of arrangement is in progress on Case IV in the hall of the Age of Man, but is too incomplete to allow presentation of a photograph. Case IV will show the Crô-Magnon race at the climax of the Old Stone age. The mural of the Crô-Magnon artists, however, in the middle of the north wall, is completed, as shown above*

Contemporaneously with the disappearance of the last Glacial period in Europe, a highly evolved race in no respect inferior to modern man entered that continent from the east and drove out or exterminated the Neanderthal race, of which they were both the mental and physical superiors. Their cultural capacity is indicated not alone by their physiognomy and the cubic content of their brain (see bust at the right on page 229), but has also been demonstrated by the handiwork and especially the artistic productions which they have left in the caves of southern Europe. The Palæolithic murals and sculptures in relief found on the walls of limestone grottoes in France and Spain indicate greater artistic sense and ability than have been found among any other uncivilized people. The mural above, painted by Knight for the hall of the Age of Man, represents four Crô-Magnon artists at work on the famous procession of mammoths as found in the cave of Font-de-Gaume, Dordogne, France. The two half-kneeling figures are holding lamps made of hollowed-out stones. The artist standing half erect is engaged in incising the outlines of a mammoth on the limestone wall with a sharp flint; the other artist is laying on the colors, employing a shoulder bone for a pallet. The kneeling figure is preparing colors from red or yellow ochre. The clothed man to the left is a chieftain who carries a *baton de commandement* on his staff as an insignia of his rank

from any modern human type, it must be studied from models of its own. The group is very carefully arranged to show the physical characters of this man: the knees slightly bent in the peculiar standing posture, the broad heavy shoulders slightly stooped, and the massive neck and the head set well forward. In the background is the famous cavern of Le Moustier which gives its name to the Mousterian period of flint industry pursued by the Neanderthals.

*The Crô-Magnon Race of High Type*

The highly evolved Crô-Magnon race entered Europe from the east and drove out the Neanderthals. This was a race of warriors, of hunters, of painters and sculptors far superior to any of their predecessors. The original type of the Crô-Magnon head belonged to an aged individual. We are now endeavoring to secure from France replicas of the Crô-Magnon skeletons buried in the grottoes of Grimaldi near Mentone, which are by far the most perfect known. The contrast between the Crô-Magnon heads and those of the Neanderthals which precede them is as wide as it possibly could be. The Crô-Magnons were people like ourselves in point of evolution, and the characters of the head and cranium reflect their moral and spiritual potentiality.

*Crô-Magnon Artists Painting the Mammoth (Mural II)*

One of the great murals in the hall of the Age of Man (over the doorway opposite the Crô-Magnon exhibit) represents four of the Crô-Magnon artists actually painting the great fresco in the cave of Font-de-Gaume, Dordogne, France. The writer has been studying the composition of this group for years, with Mr. Charles R. Knight, artist, aided by advice of the Abbé Henri Breuil of the Institut de Paléontologie Humaine, Paris, as well as of Mr.

N. C. Nelson, archaeologist at the American Museum of Natural History.

There are six figures in the group; four are depicted partly nude to show their anatomy in contrast with that of the Neanderthals. The two half-kneeling figures are holding up small lamps to illuminate the smooth surface of the limestone wall on which the procession of mammoths is being depicted. The half-erect figure represents an artist with pointed flint incising the outlines of a mammoth on the wall. The fully erect central figure represents an artist laying on the colors. A kneeling figure is preparing the colors on a rock. The artists and their assistants have laid off part of their fur clothing in order to work more freely. This design enables the painter to show the tall, slender proportions of the men of this Crô-Magnon race. The standing figure to the left is that of a chieftain clothed in well-made fur garments, who carries on top of his staff his *baton de commandement* as the insignia of his rank. The only illumination is that of the flickering wicks in the small oil lamps.

*Men of the New Stone Age*

Men of the Neolithic, or New Stone age (see remains shown in Case V, the arrangement of which, however, is only in progress so that a photograph cannot be presented) used stone implements, partly chipped, partly polished. They hunted with the wolf dog. They brought in pottery. In central and southern France and in Switzerland they cultivated the ground and introduced cereals. Forerunners of these Neolithic men scattered over the Baltic shores and reached northern France.

*The Neolithic Stag Hunters (Mural III)*

This mural group also is in its place in the hall (at the west end), having been completed in 1919. It represents men of a northern race,



*Painted by Charles R. Knight, under the direction of  
Henry Fairfield Osborn. Copyrighted photograph*

### **"THE NEOLITHIC STAG HUNTERS," OF THE NEW STONE AGE (MURAL III)**

*Case V, in the hall of the Age of Man, illustrating the types and culture of the men of the New Stone age, is in process of arrangement*

The progenitors of contemporary man in Europe, through a transition period between Palæolithic and Neolithic times (about 7000–1500 B.C.), introduced a new culture of polished stone and crude pottery, and either absorbed or displaced their upper Palæolithic predecessors. This mural, "The Neolithic Stag Hunters," now in place in the American Museum, at the middle of the west wall of the hall of the Age of Man, portrays the end of the hunt at an encampment on the border of one of the northern beech forests. The hunters with their stone-tipped spears are resting after the chase and have thrown aside parts of their fur garments. These Neolithic invaders were a powerfully built people with brown or fair hair and narrow heads—closely related to existing peoples of Scandinavia. The rigorous climate little encouraged the fine arts, but promoted endurance, tribal loyalty, and the rudiments of family life. Rude huts were constructed to take the place of caverns and shelters, but the most important cultural change was the introduction of a rudimentary agriculture with the use of a variety of plants and seeds. The men of the New Stone age also brought with them, or domesticated from the animals they found in western Europe, many of the same types of animals as are domesticated today, and they may possibly have been attracted to Europe by the abundance of horses of the forest and Celtic types. The chief's fair-haired son in the picture is shown leading a wolf dog, the ancestor of the sheep dog of northern France

brown- or fair-haired, hunters of the stag, living along the southern shores of the Baltic in the earliest stage of the New Stone age, a stage known as the Campignian from remains of huts and rudely polished stone implements found near Campigny in France. The scene is on the border of one of the northern beech forests and represents the return from the hunt. After the ardor of the chase the hunters have thrown off their fur garments. The chieftain in the center is partly clad in furs; in the coming winter season he will be wholly fur-clad. His son, a fair-haired youth with a necklace of bear claws, grasps a bow and arrow and holds in leash a wolf dog, ancestor of the modern sheep dog of northern France. The hunters, with spears tipped with stone heads, are resting from the chase. Two vessels of pottery indicate the introduction of the new ceramic art, accompanied by crude ornamentation.

This race was courageous, warlike, hardy, but of a lower intelligence and artistic order than the Crô-Magnons; it was chiefly concerned, in a rigorous northern climate, with the struggle for existence, in which the qualities of endurance, tribal loyalty, and the rudiments of family life were being cultivated. Rude huts take the place of caverns and shelters, which are now mostly abandoned.

These were tall men with high, narrow skulls, related to the existing Nordic race, more powerful in build than the people of the Swiss Lake Dwellings. Skulls and skeletons representative of this hardy northern type are abundantly known in Scandinavia, but have not found their way to our American Museum collections as yet.

#### *The Great Mammals Hunted by Man*

The hall of the Age of Man is planned to contain four chief collections of the mammals of the world during the period of the Age of Man.

In Europe man hunted the reindeer,

the wild horses and cattle, and the mammoth. He used the hide of the reindeer for clothing, the flesh and marrow for food. He carved the ivory tusks of the mammoth. The mammoth, the northern, hairy type of elephant known to early explorers of fossil remains, was foremost among the great mammals hunted by man. The whole history of this proboscidean order is shown in the hall of the Age of Man.

The evolution of the proboscideans culminates in the mastodons and mammoths. This is one of the romances of evolution quite equal in interest to the evolution of the horse. This collection is by far the most complete in existence; it contains as much in the way of complete skeletons as those in all the other museums of the world combined. The early stages in the evolution of the proboscideans, beginning with the *Palæomastodon* discovered in the Fayûm region of northern Africa, carry us back into times far antecedent to the Age of Man, namely, into an early period of the Age of Mammals, the Oligocene. It has been deemed wise to collect here the entire history of the evolution of the proboscideans, which taken altogether is the most majestic line of evolution that has thus far been discovered.

#### *Murals of the Four Seasons in the Glacial Epoch*

The four great murals just completed on the north walls of the hall of the Age of Man represent scenes during the four seasons of the year near the close of the Glacial epoch in the Northern Hemisphere.

These four seasons belong in the same period of geologic time, namely, the final glacial stage, the period of the maximum advance of the glaciers over the entire Northern Hemisphere, of the most intense cold, and of the farthest southward extension of the northern types of mammals. This is



Painted by Charles R. Knight, under the direction of  
Henry Fairfield Osborn. Copyrighted photograph

#### THE WOOLLY RHINOCEROS IN A GLACIAL WINTER, NORTHERN FRANCE

*This mural from the hall of the Age of Man, the American Museum (on the west wall, at the right), and the three following, represent the four seasons of the year in the Old Stone Age, near the close of the fourth Glacial period. This was the period of greatest glacial advance over the Northern Hemisphere and of the most southerly extension of the northern types of mammals; it was the time of the Crô-Magnons in Europe from whose paintings we derive knowledge of the mammoth, reindeer, and rhinoceros which then flourished*

The most common of extinct rhinoceroses is the *Rhinoceros antiquitatis* or woolly Rhinoceroses of Europe and Siberia. This species was most like the square-mouthed or white rhinoceros of Africa nearly extinct today. It was protected from the wintry blasts by a heavy coat of long hair and a thick undercoat of fine wool. This brown wool was found in a good state of preservation on the side of the face of one specimen discovered in the ice fields of Siberia, and is now in the Museum of Petrograd. In the distance can be seen a group of mammoths and a line of saigas—a species of antelope still found in Siberia. The rhinoceros kept closely to the ice sheet and never wandered so far south as did the mammoth. It was a plains dweller, living on grass and herbs

the time of the Crô-Magnon race, and our knowledge of the mammoths, reindeer, and rhinoceroses is derived from the actual Crô-Magnon paintings and etchings, chiefly those found within the caverns. The murals of the four seasons are as follows:

*Midwinter.*—The woolly rhinoceros in northern France.

*Late Winter.*—The reindeer and mammoth on the river Somme, France.

*Midsummer.*—The mastodon, royal bison, and horse on the Missouri River, in the latitude of Kansas.

*Autumn.*—The deer-moose, tapir, and giant beaver, in northern New Jersey.

*The Glacial Winter in Northern France*

The woolly rhinoceros, like the woolly mammoth, was heavily enwrapped in hair, beneath which was a thick coat of fine wool. With this protection the animal was quite indifferent to the wintry blasts which swept over the steppe-like country of northern France. This golden brown wool is actually preserved on the side of the face of one specimen discovered, which is now in the Museum of Petrograd. The head of the rhinoceros was long and narrow, like that of the white rhinoceros of Africa, but the jaws were narrower and the upper lips were more pointed. It is an animal quite distinct from the great black rhinoceros still extant in Africa, which is a grazer with broad lips. In the distance in the painting are shown the saigas, antelopes which wandered over France at that time, and a group of woolly mammoths.

*Scene on the Somme River in Northern France*

The scene represents the two herds, reindeer and mammoth, migrating along the banks of the river Somme not far from one of the great encampments

of men of the Crô-Magnon race. These reindeer and mammoths are, in fact, depicted very precisely in the paintings and engravings left by the Crô-Magnon artists—especially in the cavern of Font-de-Gaume. It is a striking fact that, in the case of the mammoth, every painting, drawing, etching, and model which the Crô-Magnon man has given us exhibits exactly the same characters: the long hairy covering, the very high hump above the forehead, the notch between the hump and the neck, the very high shoulders, the short back, the rapid slope of the back over the hind quarters, the short tail. There is no doubt that aided by these wonderful Palæolithic designs, the artist, Mr. Knight, has given us a very close representation of the actual appearance of the woolly mammoth.

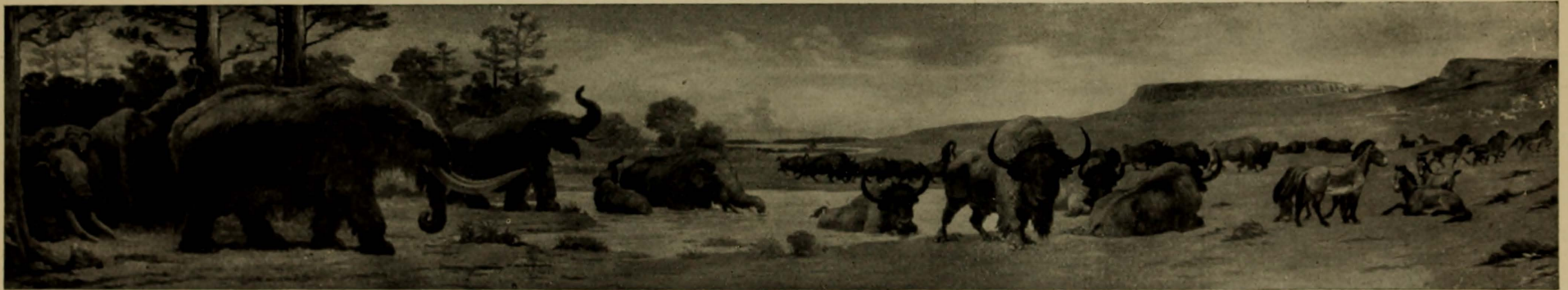
*Summer on the Missouri*

The summer scene on the Missouri River (on the parallel of Kansas) represents the region south of the farthest advance of the ice sheet. The mastodons are grouped in such a manner as to show the characteristic low, flattened head, the long low back, the symmetrical fore and hind quarters, the extremely short, massive limbs, and the very broad and massive hip region as seen from behind. In the center of the picture stands the majestic *Bison regius*, the royal bison, known only from a skull, a superb specimen, with the horn cores attached, in the collection of the American Museum. These animals were like gigantic buffalo or bison, beside which the modern buffalo would appear very diminutive. The characters of the hair and wool are not known, but it is assumed that they were similar to those of the existing buffalo, since the paintings of the bison by the Crô-Magnon artists in France all show the distinctive beard below the chin. At the right is a group of wild American horses of the period, the last of their race in this country; the



*Painted by Charles R. Knight, under the direction of Henry Fairfield Osborn. Copyrighted photograph*

Late Winter—"The Reindeer and Mammoth on the River Somme, France" (mural on the north wall at the left).—It is thought not improbable that herds of mammoths, rhinoceroses; and reindeer migrated northward and southward with the seasonal changes. As the mammoth was faithfully depicted by the Crô-Magnon artists—especially in the cavern at Font-de-Gaume), and as mammoth skeletons have been well preserved, there can be little doubt that the present representation by Knight is a close likeness, of this huge proboscidean. The woolly mammoth resembled greatly an Indian elephant but was somewhat larger, was covered with coarser hair, and had larger and differently curved tusks. Whole carcasses of these beasts have been found frozen in the ice fields of Siberia where they probably survived later than in Europe



*Painted by Charles R. Knight, under the direction of Henry Fairfield Osborn. Copyrighted photograph*

Midsummer—"The Mastodon, Royal Bison, and Horse on the Missouri River, in the Latitude of Kansas" (mural on the north wall, at the right).—This mural presents a summer scene in a region of North America south of the farthest advance of the ice sheet. The great mastodon (left) with flat, elongated head and extremely short massive legs survived in America to a time contemporary with man in Europe, but no mastodons lived in Europe at such a late period. In the center of the picture are seen the royal bison (*Bison regius*), the gigantic forerunners of our present bison. At the right is a group of the last species of native American horse (*Equus scotti*) which disappeared before the appearance of man on the North American continent.



*Detail of American Museum mural by  
Charles R. Knight. Copyrighted photograph*

### THE MASTODON

Believed to have been contemporary with early man in North America, though so far, there is no positive evidence that such was the case.



### THE MAMMOTH

A contemporary of early man in Europe, carved by him in bone and ivory and painted many times on the walls of caves.

*Detail of American Museum mural by  
Charles R. Knight. Copyrighted photograph*

species is *Equus scotti*, the skeleton of which has been discovered in northern Texas.

#### *Autumn in New Jersey*

The autumn scene in northern New Jersey embraces three very distinctive North American types of the period, all of which have become extinct. The deer-moose (*Cervalces*) (to the left) was described by Professor W. B. Scott, of Princeton, from a single skeleton found in the gravel beds of northern New Jersey, which is now preserved complete in the Princeton Museum. The American fossil tapir (in the center) is known from sparse remains, the best of which were among the earliest discoveries of the pioneers of American palæontology. The giant, beaver-like animals of the genus *Castoroides* (see two individuals at the right in the painting) are known from nearly complete skulls and skeletons discovered in Ohio and other central western states. They are not true giant beaver.

The remaining mural of this series will represent a scene in southern California, in the vicinity of the Rancho-la-Brea deposits, including the remains of the astonishing group of animals caught in the asphalt trap, so splendidly represented in the collection of the Museum of History, Science, and Art, of Los Angeles.

#### *Closely Related North and South American Mammals of the Glacial Epoch*

The most characteristic animals of North and South America that lived during the Age of Man (see the south side of the hall) are known through some of the unique remains from the famous deposits of Rancho-la-Brea of southern California, especially the sloths, saber-toothed tigers, and wolves of the period—to which it is hoped that we may add some of the less abundant forms, like the camel and the horse. So far as possible, through exploration

and exchange, this quarter section of the hall will represent the mammalian life of North America, in contrast with the mammalian life of South America during the same period of time.

The Museum is also extraordinarily rich in the great Pampean Collection presented by certain of the trustees in 1899. This collection shows the close connections between North and South America in glacial times.

One of the most wonderful fossil groups in the Museum, if not the most wonderful, is the sloth and glyptodont group (center of southern side of the hall of the Age of Man). This group is still in preparation. It includes five sloths of two varieties (the *Myiodon* and *Scelidotherium*) and three glyptodonts. These animals, so entirely different in external appearance and habits, nevertheless belong to the same order of mammals, the Edentata, which, as its name implies, is distinguished by the absence of enamel on the teeth. It is important to bring these two animals together in the same exhibit, so as to show the very wide contrasts in adaptation which may occur within the limits of a single mammalian order: the sloths covered with long hair and with vestiges of armature embedded in the skin, the glyptodonts nearly hairless, and encased in powerful bony armature, which renders them completely immune to attack by the saber-toothed tiger of the period.

#### *A Loess Storm on the Pampas of Argentina*

A mural on the western wall (at the left) of the hall of the Age of Man presents a South American scene during the Old Stone age. It depicts the ancient pampas of Argentina with the winding river La Plata in the background, and a typical extinct mammalian fauna. In the distance at the right a violent dust storm is transporting columns of fine, impalpable dust known as loess.



*Painted by Charles R. Knight, under the direction of  
Henry Fairfield Osborn. Copyrighted photograph*

#### AUTUMN IN NORTHERN NEW JERSEY DURING LATE GLACIAL TIMES

This mural (on the east wall, at the left) presents three extinct North American animals: the deer-moose or *Cervalces* (at the left), the tapir (center), and a great rodent, *Castoroides* (on the right). The rodent, much larger than a beaver, dwelt in the northern swamps. Its nearest relative is a large coypu rat of South America. The *Cervalces* had antlers neither as branching as those of the elk nor as flattened as those of the moose. An almost complete skeleton has been recovered from the gravel beds of New Jersey. Tapirs were at one time widely distributed, particularly over the Northern Hemisphere, but are now found only in restricted and widely separated more southerly regions.

The mammalian life of North America, as contrasted with that of South America during the same period of time, will be illustrated in a section of the hall of the Age of Man. The most characteristic animals of this Age—sloths, saber-toothed tigers, wolves, camels, and horses—have been taken from the deposits of Rancho-la-Brea in southern California, where they were caught and preserved in the asphalt quagmires



*Painted by Charles R. Knight, under the direction of  
Henry Fairfield Osborn. Copyrighted photograph*

### A LOESS STORM ON THE PAMPAS OF ARGENTINA

*A mural of South American mammalian life of the Old Stone age, in the hall of the Age of Man (on the west wall at the left)*

In the distance a violent storm is transporting columns of loess or fine dust (of which extensive fossil-bearing deposits are found in various parts of the world). The scene is laid along the banks of the La Plata River where many great fossils have been discovered buried in the loess. In the foreground are two very different extinct species of edentates, a group which includes the armadillo, anteater, and sloth. Those with armor at the right are glyptodonts; the long-haired ones at the left are mylodonts. In the background at the right are shown a number of macrauchenias, a three-toed, hoofed animal, while at the left are seen the rodent-like toxodonts, ungulates or hoofed animals also but as large as rhinoceroses. The American Museum has an unusually fine fossil collection from the Pampas, showing the close connections between North and South America in glacial times. Discoveries by Nordenskiöld in a cave at Last Hope Inlet, Patagonia, indicate that one species of these great ground sloths, known as *Grypotherium*, was kept in captivity, or in a state of domestication, by the primitive inhabitants of that region.





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