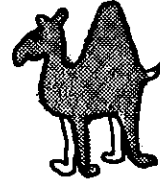
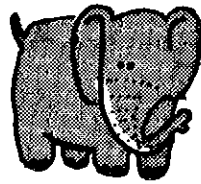




# animal talk



ZOOLOGICAL SOCIETY OF MILWAUKEE COUNTY

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News Letter # 47

Volume III

March, 1977

Walter E. Kroening, Editor...7857 North Lake Drive...Phone 352-9272

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## ART AND SCIENCE ALA 1874

Recently I was singularly fortunate in the acquisition of a two-volume edition of "Johnson's Natural History Illustrating and Describing The Animal Kingdom," (See page 3), published in 1874. The "nearly 1500 imperial octavo pages" of text are illustrated with about 1550 S.G. Goodrich "lifelike" engravings which I found to be of such uniqueness, quality and anatomical correctness that I wanted to share them with the members of the Milwaukee Zoociety. I hope you enjoy the following 14 pages of full-size reproductions of selected subjects. Included are two examples of the special typography employed a century ago in the layout of title page and frontispiece - see pages 2 and 3. Besides the four full-page engravings of: Giraffe (p.4) - Emu (p.13) - Seals (p.14) and Imperial Eagle (p.15), the bone structures of present and prehistoric animals are shown. The latter are of: The Vertabrata (Man, Bird, Fish, Frog and Lizard) on p.5 - Chimpansee (p.6) - Kangaroo (p.7) - Mastodon (p.8) - Megatherium (p.9) - Mylodon (p.11) and Elephant (p.12).

The texts applicable to each of the subjects have been included in the page reproductions. I found the reading both interesting and informative. Please excuse the several imperfections at the inner edges (the binding side of the book page) - I did not wish to damage the book spine by undo pressure on the book in the process of copying.



JOHNSON'S  
NATURAL HISTORY,  
Comprehensive, Scientific, and Popular,  
ILLUSTRATING AND DESCRIBING THE  
ANIMAL KINGDOM,

WITH ITS  
WONDERS AND CURIOSITIES,  
FROM MAN, THROUGH ALL THE DIVISIONS, CLASSES, AND ORDERS, TO  
THE ANIMALCULES IN A DROP OF WATER;  
SHOWING  
THE HABITS, STRUCTURE, AND CLASSIFICATION OF  
ANIMALS,

WITH  
THEIR RELATIONS TO AGRICULTURE, MANUFACTURES, COMMERCE, AND THE ARTS.

BY  
HON. S. G. GOODRICH,  
AUTHOR OF A "HISTORY OF ALL NATIONS," ALSO "HISTORY OF ENGLAND," "HISTORY OF FRANCE,"  
"HISTORY OF ROME," "HISTORY OF GREECE," AND OTHER BOOKS,  
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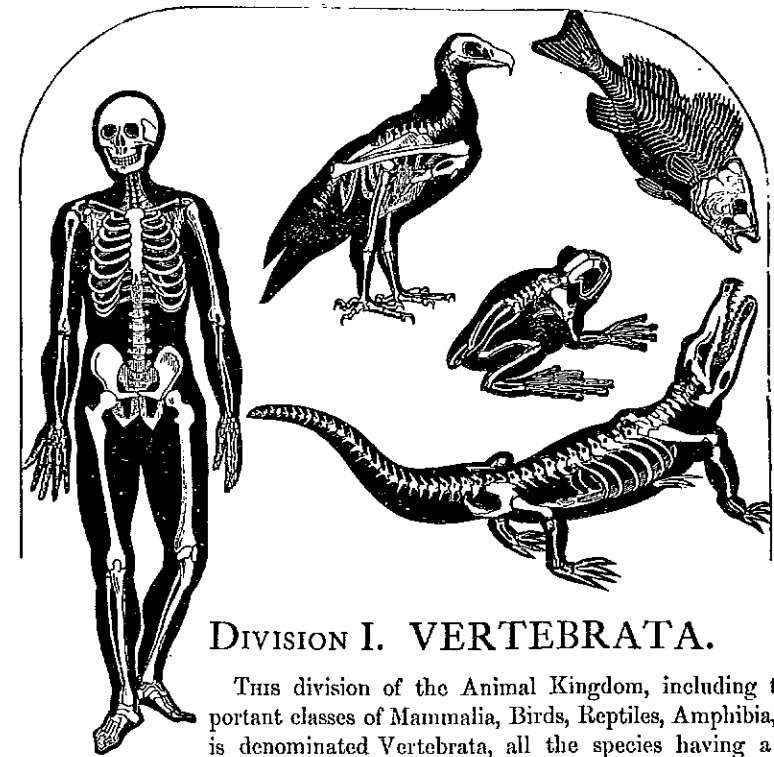
WITH SPECIAL CONTRIBUTIONS FROM  
PROF. E. L. YOUMANS, A.M., M.D., PROF. J. H. SEELYE, D.D., AND  
PROF. SANBORN TENNEY, A.M.

SET IN NEARLY 1,500 IMPERIAL OCTAVO PAGES.

VOLUME I.

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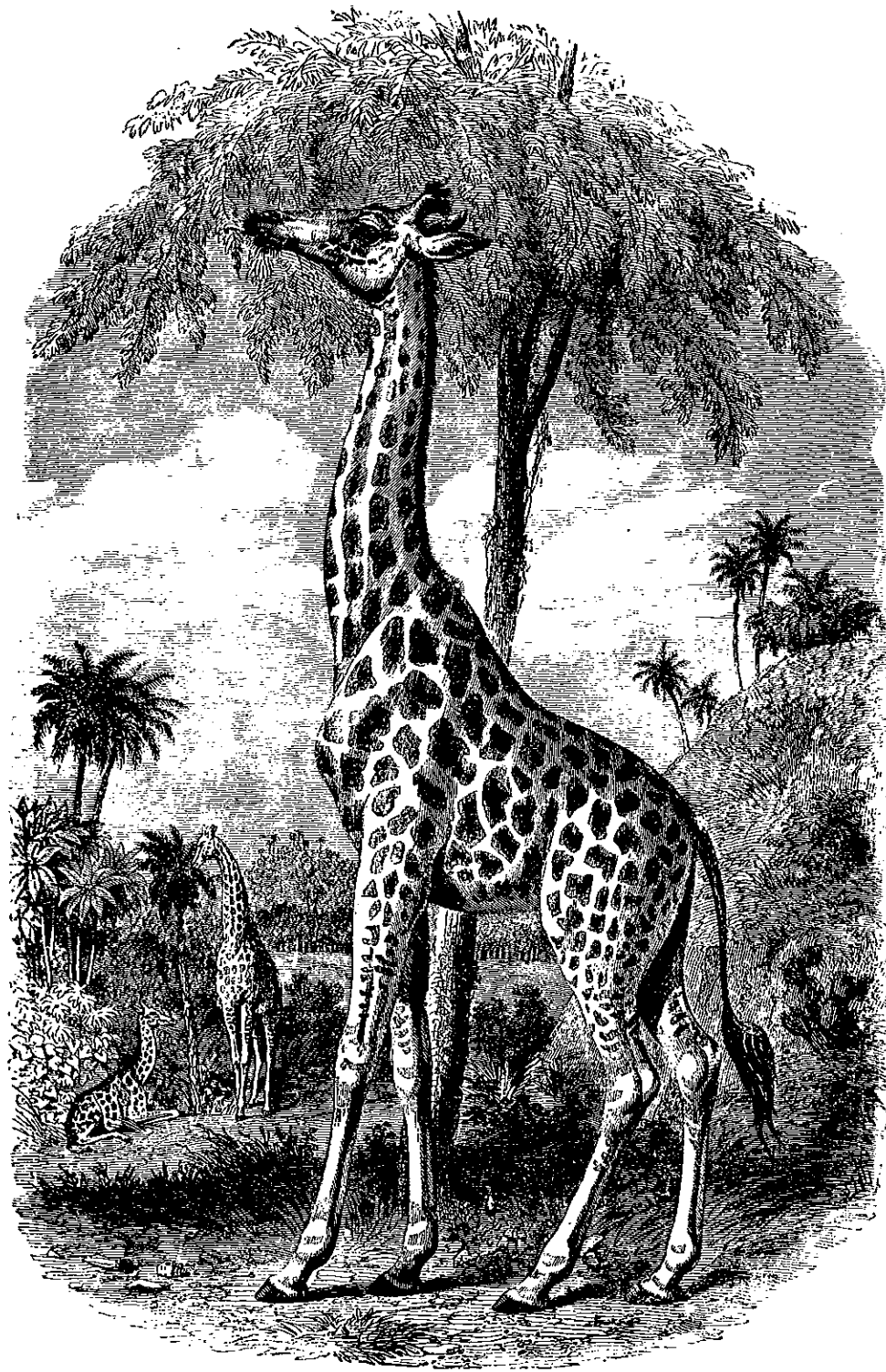


## DIVISION I. VERTEBRATA.

This division of the Animal Kingdom, including the five important classes of Mammalia, Birds, Reptiles, Amphibia, and Fishes, is denominated Vertebrata, all the species having a vertebrated column, called the backbone, constituting the basis of the entire skeleton. They are distinguished by having the nervous matter, the instrument of all intelligence, concentrated in a single mass, which may, however, be considered as consisting of two parts—viz, the *spinal marrow*, running through the length of the body, and a greatly enlarged mass in the head, called the *brain*. To protect this most delicate and precious substance from external violence, it is incased in a strong bony covering. That part which defends the spinal marrow consists of a number of perforated bones, called vertebrae, joined to each other by cartilage, so as to make a continuous tube; while the casing of the brain consists of a box, more or less globular, called the *skull*.

Through orifices at various points in these bones, ramifications of nervous matter proceed to all parts of the body, these being the medium of sensation. The organs of the higher senses, as sight, hearing, taste, and smelling, are situated in the immediate vicinity of the brain: the organs of the sense of touch are usually distributed over the surface of the body, being more particularly active, however, in certain parts of the skin.

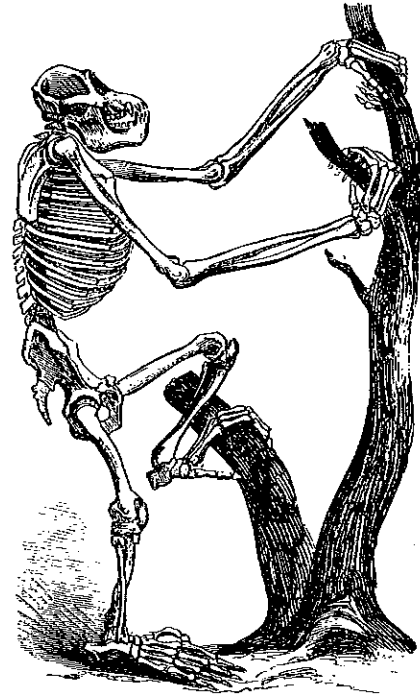
For voluntary change of situation, or power of motion, most animals of this division are furnished with limbs, usually four in number, and ranged in pairs on the two sides. These, however, vary in form and function in the different classes. In man, the limbs consist of two legs and two arms, the latter terminated by hands; in the monkey tribes, the arrangement is similar, but all the four limbs are used for progression. In the bats, the arms and fingers are prolonged into wings. In the cetacea, the limbs are used for swimming only; in the seal tribe, for swimming chiefly, though they also serve for moving on the land in an awkward manner. In quadrupeds, the four limbs are legs only; in birds, there are two legs and two wings. In serpents, the limbs are wanting. In fishes, the limbs consist of fins. It will be observed that in all these species, without exception, this vertebral column, or backbone, is present, though in a few cases among the lower members of the division, as the skate, for instance, it becomes cartilaginous, and in a few



THE GIRAFFE

**Genus CHIMPANZEE, or Kimpanze, Troglodytes.**—Of this genus there are two species—the common Chimpanzee and the Gorilla.

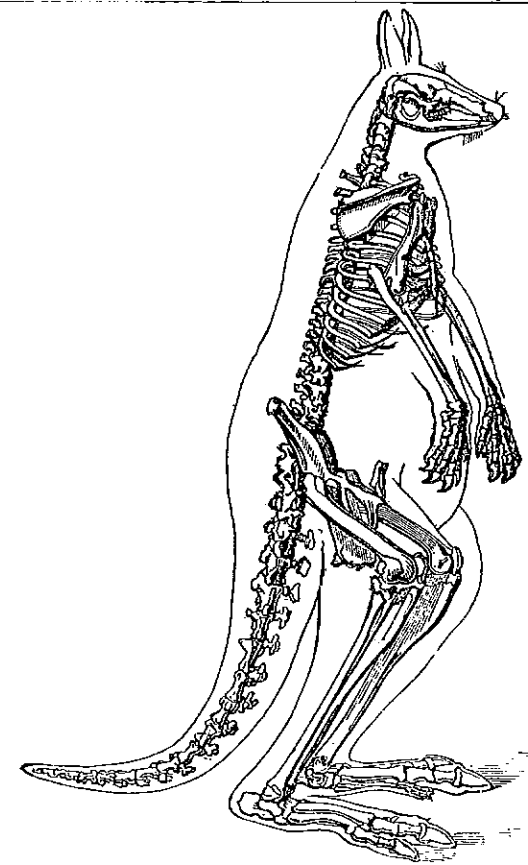
The CHIMPANZEE, *Troglodytes niger*—sometimes called the *Black Orang*—is a native of Guinea and the adjacent country, and has been long known in Europe. It is more like the human species than any other of the animal tribes. "Indeed, every one," says M. Boitard, "on observing a chimpanzee for the first time, is struck with his great resemblance to mankind, not only in his form, but in his actions, his gestures, and even some of his habits. The various names he has received in his native country are proofs of this fact. The negroes call him *Pongo*, which is also the name of one of their great fetiches, a sort of forest genius; in Angola, they call him *cojas mouro*, which in their language signifies *Man of the forest*; in Congo, he is called the *Eujoko*, which in the language of the country is the imperative of the verb to hold one's tongue—that is, '*Eujoko*, hold your tongue!' We conceive the origin of the name, in the fact that the negroes of Congo imagine that the chimpanzee does not speak because he does not wish to do so, for he fears he should be made a slave, and forced to work. But all these words are merely epithets added to the word *kimpanze*, under which title he is known to all the natives on the coast of Guinea. The traveler Levaat calls the name *kimpézey*, and G. Cuvier *chimpanze*." We may further remark, that the chimpanzee is the only one of the quadrumana that can walk erect with tolerable ease.



SKELETON OF CHIMPANZEE.

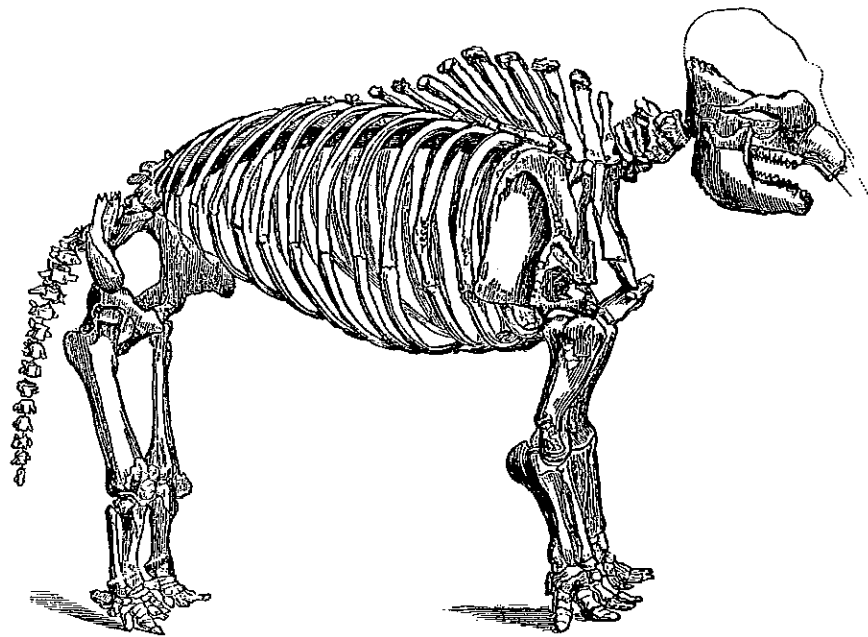
Its nose is quite flat, and the nostrils open upward. The mouth is wide, and the lips thin. The ears are large, thin, and naked. Its height is about four and a half or five feet, when it stands up; its body is covered with black hair, except the face, which is nearly naked, and approaches the color of flesh. In youth, the shape of its skull greatly resembles that of man, but as it advances in age, the facial angle grows more acute, until at full maturity it resembles that of the baboon. Its character seems to undergo corresponding changes, for while young it is gentle and docile, yet becomes fierce and intractable when it has attained its full growth,—a remark that is equally applicable to the other apes. Most of the accounts which we have had of the chimpanzee, giving it a high character for docility and amiableness, have reference to young specimens.

The habits of this species in a state of nature have been imperfectly known, and hence the subject has been embellished with a multitude of curious marvels. It appears that they live in small troops in the deep forests, and subsist mainly on vegetable food. They construct for themselves huts of branches and leaves, in the trees. These are, however, very slight and rude, and are not roofed over,—a circumstance which subjects them to the scoffs of the negroes. These cabins are only occupied during storms and in cases of sickness. At other times, these creatures sleep in the open air upon the branches of trees, sitting on their hind-legs, the body bent forward and the head resting on the breast. They are, in fact, like other members of the family, arboreal animals, though it may be said that the chimpanzee is more at home on the ground than any other species. They run on their lower extremities without difficulty, holding up the arms, or grasping the thighs with their hands, though this is not their usual mode of progression. They are said to unite in pairs. The female is very careful of her young, caressing it with the utmost tenderness. She carries it on her arms, in the manner of a nurse, when she has but a short distance to go; but if she has a journey to perform, she places the little one on her back, where it clings to its mother precisely in the manner of the little negroes. She is fondly attached to her young ones,



SKELETON OF THE GIANT KANGAROO.

and the upper lip is cleft. The dentition consists of six incisors in the upper jaw, but only two in the lower; the canines are always deficient in the lower jaw, and very small in the upper, where they are also sometimes wanting or concealed by the gums, so that there is always a considerable space between the incisors and the molars, which are five in number on each side, and of a more or less quadrangular form. The anterior feet are furnished with five toes, each of which is armed with a claw; the hind-feet, on the contrary, only possess four toes, the inner one or great toe being deficient. Of these the two outer are the largest, and are terminated by strong, hoof-like nails, while the inner ones are united together as far as the root of the nails. The stomach is of a complex structure, being divided by constrictions into several compartments, and Professor Owen has observed a sort of rumination to take place in some species. The kangaroos are almost entirely confined to Australia and Van Diemen's Land, but species are found in the adjacent islands, and even in New Guinea. They are entirely herbivorous, and live for the most part in the grassy plains; but some species are found in rocky places. They are timid creatures, but when seized defend themselves with violent strokes of their hind-feet, which, from their great power and the strength of their nails, constitute formidable weapons. Unlike the generality of herbivorous animals, however, they do not usually collect into flocks, although they may sometimes be seen in considerable numbers together. In feeding they rest upon the fore-feet, and when thus engaged, the young, which frequently retreat to the abdominal pouch long after they are able to graze like their parents, may often be seen protruding their heads, and cropping the herbage at the same time with their mother; they also sometimes run on all fours when pursued by dogs. Their ordinary mode of progression, however, consists in long leaps, effected by the



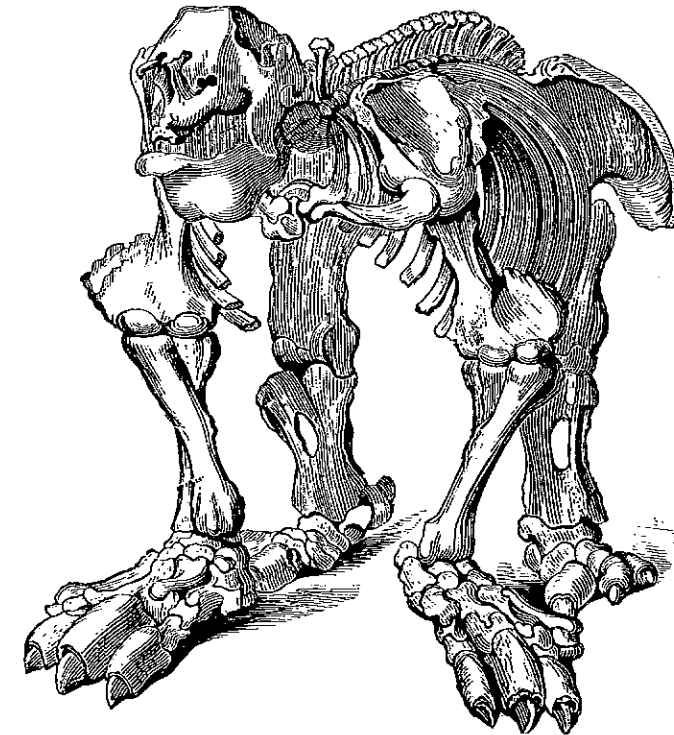
SKELETON OF A MASTODON.

and a multitude of other animals of various species, which have now ceased to exist. In the United States the bones of an animal resembling the mammoth, but in some respects different, have been discovered in various places, mostly in alluvial deposits, and near the salt-licks of the Western States. This species has received the name of MASTODON, *Mastodon maximus*. Several skeletons of this, more or less perfect, exist in the United States. One of the largest and most complete was found in 1845 near Newburg, Orange County, New York, and belonged to the late Dr. John Warren, of Boston. The remains of about a dozen other extinct species of Mastodon have been discovered.

### THE RHINOCERIDÆ.

The animals of this family are covered with a hard, naked, rough skin, in some cases laid in large folds, seeming like huge bucklers. The head is elongated and triangular, and from the upper surface of the muzzle there springs a single or double horn, composed of a solid mass of horny fibers resembling whalebone, supported upon a broad, bony protuberance of the nose. These horns, which are powerful weapons of defense, and which are also sometimes used to tear away tangled branches and obstructions, are of considerable size, measuring frequently two feet and a half in length, and sometimes much more. They are of an elongated, conical form, and are usually more or less curved backward; but in the British Museum there are two horns which are evidently curved in the opposite direction, and probably belonged to a species of which nothing further is at present known. The same collection contains another horn, which is more slender than usual, and curved backward almost in a semicircle, which probably was a mere peculiarity of one individual. When two horns are present, they are placed one behind the other, and the hinder one is much shorter than the anterior. Only two sorts of teeth, incisors and molars, are

and a marvelous wonder.\* In the Museum of Madrid, in Spain, is the skeleton of an enormous animal found twelve miles southwest of the city of Buenos Ayres, about the year 1789; and other similar skeletons, more or less perfect, have since been discovered in the same region. These have been



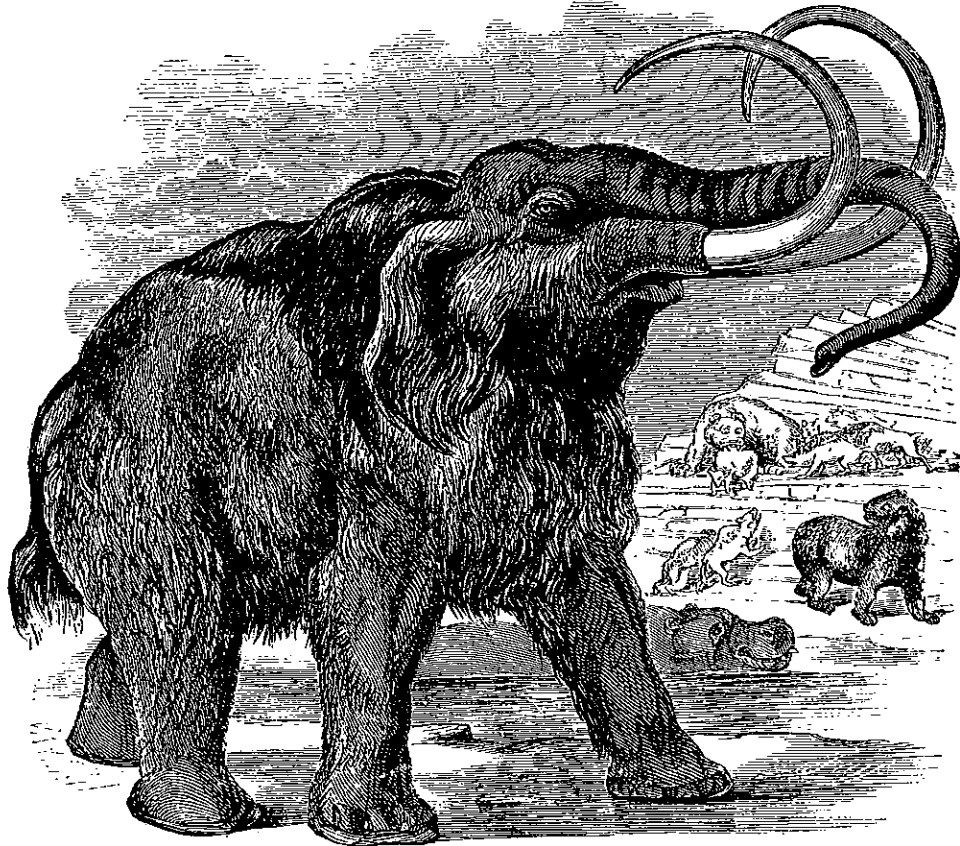
SKELETON OF MEGATHERIUM AT MADRID.

carefully examined by scientific men, and especially by Cuvier, and have been referred to a race of animals of gigantic proportions, once living in South America, but now extinct, to which has been applied the name of *Megatherium*. Of this Dr. Buckland gives the following eloquent sketch:

\* The size of the *Megatherium* exceeds that of the existing *Edentata*, to which it is most nearly

\* REMARKS ON FOSSIL REMAINS.—It does not come within the scope of this work to treat the subject of *Fossil Remains* much beyond the mere mention of the most important species. We have already given (see p. 7.) some general views on this subject, but at this point it may be well to add a few observations, suggested by the facts immediately before us. We have stated (p. 10.) the number of species of extinct animals, definitely classified, to be 25,000; Professor Bronn, of Heidelberg, has, however, given a much larger list of species actually discovered. Probably at this time (1858.) 35,000 may be known. The striking fact is disclosed by these discoveries, that in several classes of animals there are more fossil species than are now known to exist of the same genera. It seems probable that it will be found, in the further researches of science, that the same is true in respect to most or all classes of animals. Yet it is to be observed, that while the great types of animal creation are thus preserved through successive geological ages, doubtless embracing millions of years, nothing is to be found which supports the theory of a transmutation of one animal species into another, in a constantly improving and ascending scale, as has been suggested by some able writers. On the contrary, every animal seems to be of a distinct species, and must therefore have had a distinct existence. If a species dies out, though its semblance may remain, and perhaps in many forms, yet that is the end of its existence; it does not continue or revive in any manner or degree in any of the succeeding generations of its class. Nor does it appear that one species of animal is in any way connected with any other, except as analogous types in the Creative Mind. While the origin of things is generally hidden from human sight, we are here able distinctly to see, from period to period, the Act of God, extinguishing the lights of life and kindling others, similar indeed, but





FOSSIL ANIMALS RESTORED: MAMMOTH, HIPPOPOTAMUS, CAVE BEARS, TIGERS, AND HYENAS.

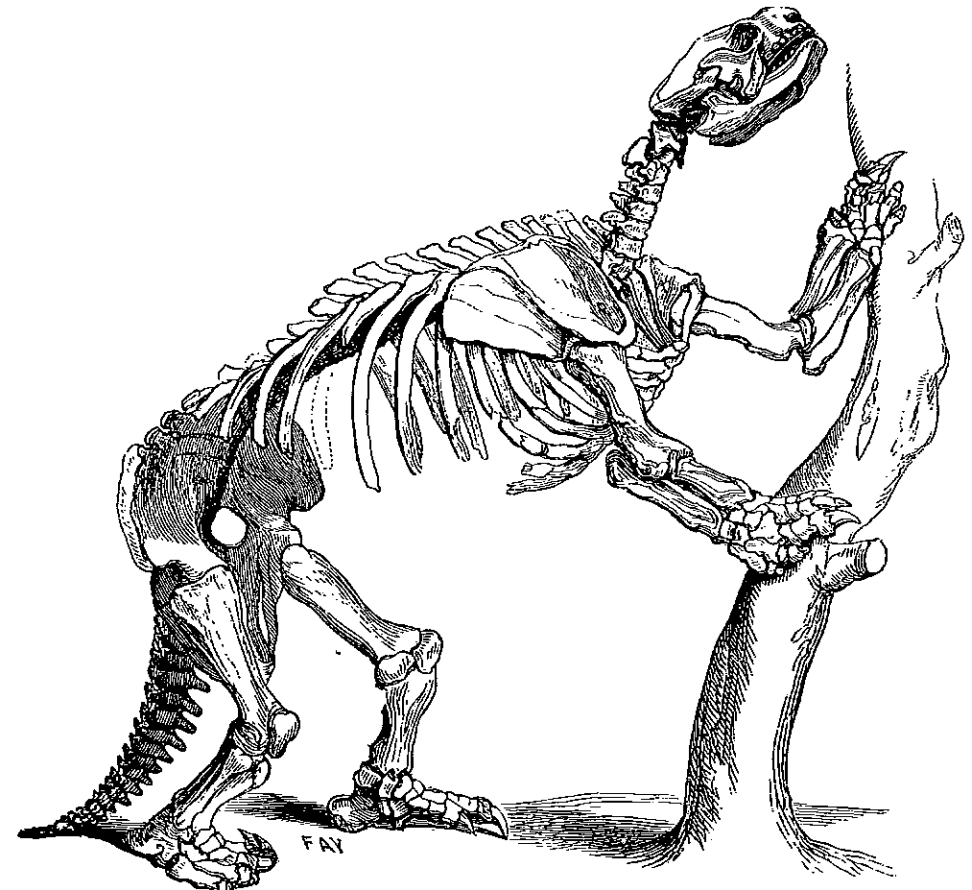
that region. One day he saw among the blocks of ice a shapeless mass, but did not then discover what it was. In 1800 he perceived that this object was more disengaged from the ice, and that it had two projecting parts, and toward the end of the summer of 1801 the entire side of the animal and one of his tusks were quite free from ice. The summer of 1802 was cold, but in 1803 part of the ice between the earth and the MAMMOTH, for such was the object, having melted more rapidly than the rest, the plane of its support became inclined, and the enormous mass fell by its own weight on a bank of sand. In March, 1804, Schumachoff came to his Mammoth, and having cut off the tusks, exchanged them with a merchant by the name of Adams for goods of the value of fifty rubles. For some years the flesh of this animal was cut off for dog-meat by the people around, and bears, wolves, gluttons, and foxes fed upon it till the skeleton was nearly cleared of its flesh. About three-fourths of the skin, which was of a reddish-gray color, and covered with reddish wool and black hairs eight inches long, was saved, and such was its weight that it required ten persons to remove it; the bones of the head, with the tusks, weighed four hundred and sixteen pounds. The skeleton was taken to St. Petersburg, where it may be seen still in the Museum of Natural History; twenty-six pounds of the hair, which was secured, can also be seen. The height of the skeleton is nine and a half feet and the length of the body is sixteen feet. This animal must have been twice the size of the existing elephant, and weighed at least twenty thousand pounds!

This species has received the name of *Elephas primigenius*. Bones of this and many other extinct elephantine animals, forming several species, are met with in different parts of the world; they are found associated with the huge bones of the *Hippopotamus major*, the Cave Bear, *Ursus spelæus*, the Cave Hyena, *Canis Hyæna spelæus*, and an enormous tiger, *Machairodus latidens*,

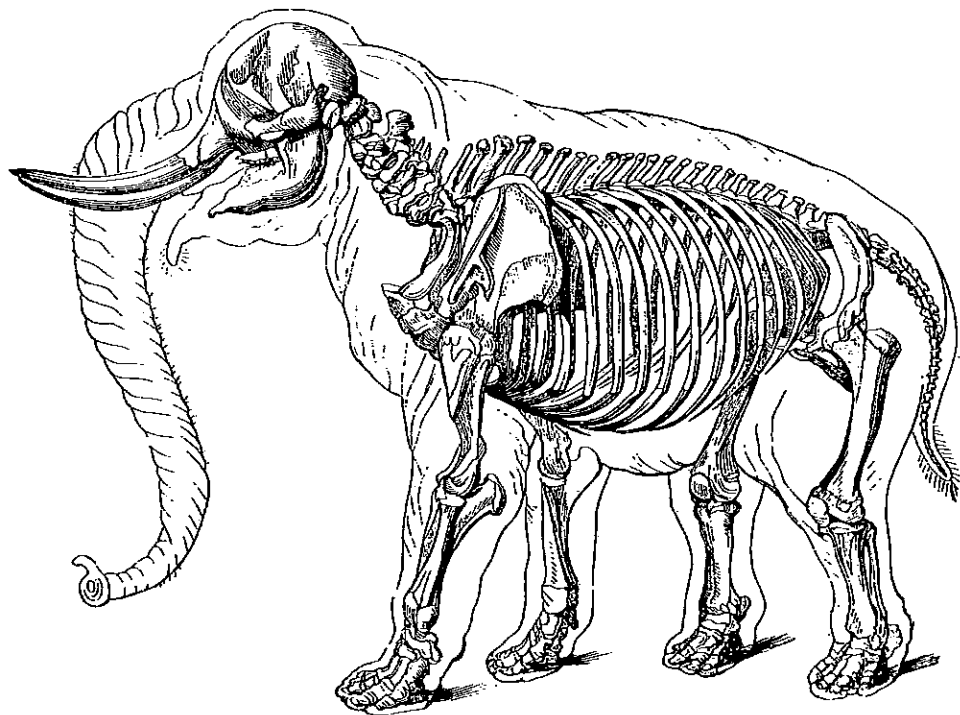
imperishable monuments of the consummate skill with which they were constructed. Each limb and fragment of a limb formed co-ordinate parts of a well-adjusted and perfect whole, and through all their deviations from the form and proportion of the limbs of other quadrupeds, afforded fresh proofs of the infinitely varied and inexhaustible contrivances of creative wisdom."

But this animal, which must have greatly exceeded the elephant in size and weight, was not the only geological wonder of this part of the world. The bones of an extinct animal, called by geologists the *Myiodon*, and nearly the size of a hippopotamus, have been discovered at various places in South America, and a complete skeleton has been obtained and placed in the Hunterian Museum of London. This is eleven feet long from the snout to the end of the tail. It has been proved that this creature fed on vegetables, and probably pulled down trees of considerable size and fed on the leaves and branches. It seems to have combined something of the organization of both the sloth and the armadillo, but in some respects it was unlike any known animal. It is probable that there were several species of *Myiodon*.

Another geological curiosity, belonging to the Edentata of this quarter of the world, was the *Glyptodon*, a species of gigantic armadillo, the remains of which have been found in various places. The entire length of one of these creatures was probably fourteen feet. The carapace of



SKELETON OF THE MYIODON.

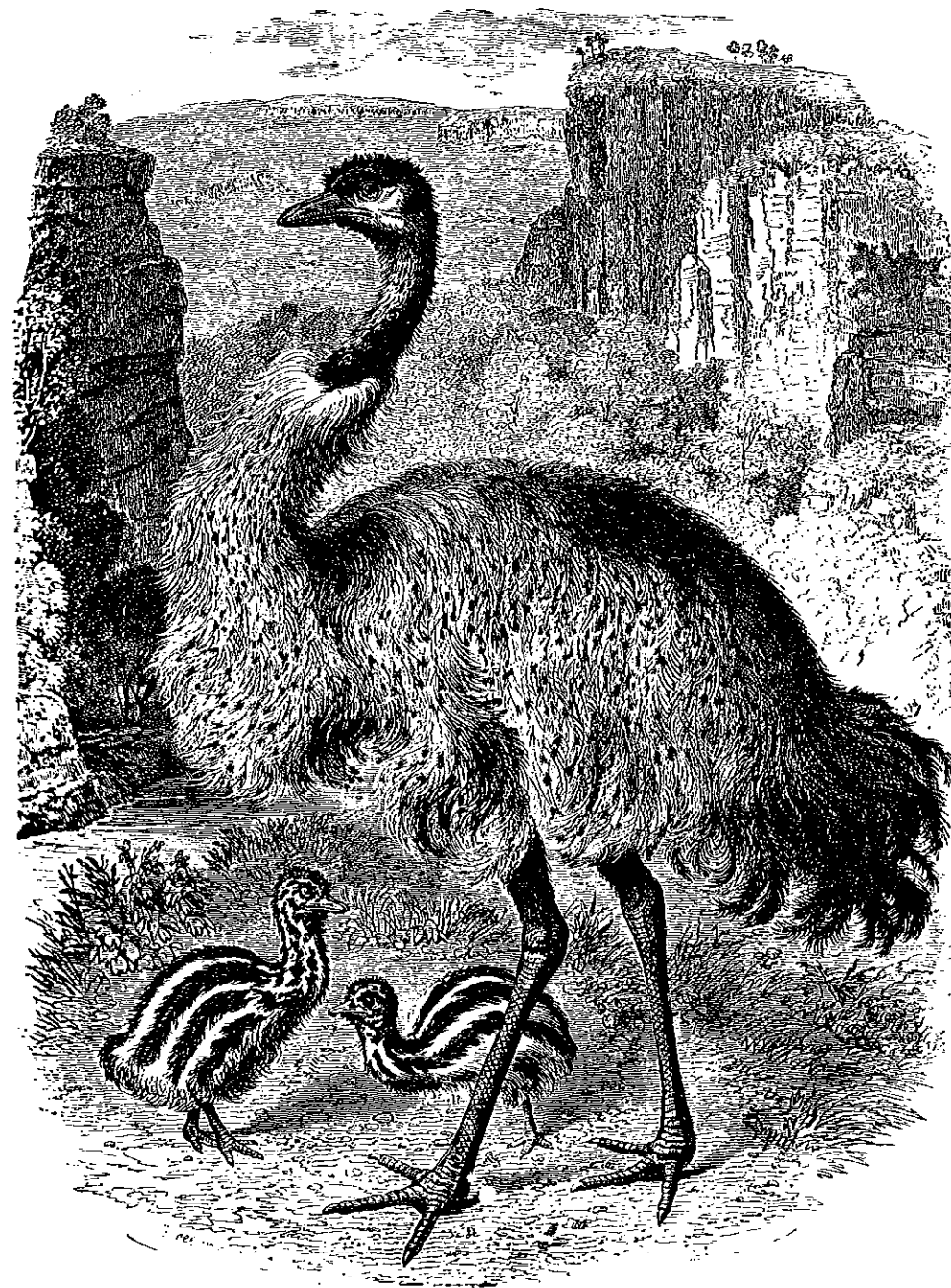


SKELETON OF AN ELEPHANT.

the grateful remembrance which it long retains of benefits conferred, or of the tenacity with which it "treasures up a wrong," and though the instances of its docility, both ancient and modern, are very extraordinary, we agree upon the whole with Cuvier, who says that after having studied these animals a long time, he never found their intelligence to surpass that of a dog or of many other carnivorous animals. It is imposing to see such a mountain of vitality obedient to the voice of its keeper, and performing feats at his dictation; and the massive gravity of its physiognomy assists the impression.

These huge animals live in considerable troops, seeking moist situations, where the vegetation is abundant and vigorous. They feed on large succulent plants, and as the quantity they devour is enormous, they are frequently obliged to change their places to obtain supplies. They are fond of the sugar-cane, and sometimes do immense damage in the plantations. The herds are usually led by an old male, who seems to exercise general influence over them. They are fond of marshes, and traverse rivers, being excellent swimmers. Excessive heat and cold are alike unfavorable to them. They have a rapid trot, and it requires a fast horse to follow them when at their greatest speed. In running, they keep flapping their large ears as if they were wings. In their flight they turn with difficulty, and are very slow and clumsy in descending rapid declivities. The general color of this species is an earthy-gray; the skin, which is tough and hard, is nearly naked, having only a few short hairs scattered here and there. Some of these animals are albinos, and are white, tinged with rose-color. Some of the natives along the Ganges believe these to be held in regard by the spirits of the ancient kings. The kings of Siam, Pegu, and other countries of Farther India, add to their titles, "Lord of the White Elephant!" They keep these animals in their palaces, causing them to be sumptuously harnessed and served by a large number of domestics.

The size of this species varies from seven to ten feet high, eight feet being the average; the length of the body from the mouth to the insertion of the tail is ten to fifteen feet. They attain their full size at about twenty-four years of age; the average of life is about seventy-five years,



THE EMEU

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IN MEMORIAM:: The death of Allen "Red" Williams on February 1 is a loss to the Zoological Society of one of its most valued members. He was a director since 1954, served as Secretary - Treasurer from 1957 thru 1962, Vice President from 1962 thru 1966 and President in 1967 and 1968. He has been chairman of a number of important committees and was particularly effective in the \$500,000 fund raising program in 1956. At the time of this writing (February 14), our zoo office has received \$1,085.00 from 40 friends to be used for a special zoo acquisition in his memory. Anyone wishing to add to this fund may send checks to:

Allen Williams Memorial Fund  
Zoological Society  
10001 W. Bluemound Road  
Milwaukee, Wisconsin 53226