
ELEPHAS AMERICANUS.

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THE tooth, or grinder, presented this evening for examination is that of a mammal, which is known to naturalists only by its remains. The animal to which it belonged is designated in the catalogue of extinct fauna by the name *Elephas Americanus*, or *Mastodon Giganteus*, Great Mastodon. It belonged to the same family of animals with the elephant now existing, which it much resembled, but surpassed it in size and massiveness of frame, as the remains of it now in the museums of the country fully attest. The tubercular projections which you observe upon this molar suggested to naturalists the name mastodon, from two Greek words: *Mastos*, a woman's breast, and *Odontos*, a tooth. This specimen, on its face, or surface which came in contact with the molar in the opposite jaw, measures $7 \times 3\frac{1}{2}$ inches, and weighs four pounds and six ounces. It was found by a son of Wesley Irvin, on a small creek called Limestone, about one mile and a half west of the village of New Virginia, in the southwest part of Warren county, Iowa.

Many of the remains of this particular species, *Elephas Americanus*, have been found in the United States, sometimes under circumstances and in geological position, showing that it co-existed with man upon this continent. The anatomy of the animal is now quite thoroughly known to naturalists, from the fact that several almost entire skeletons have been exhumed from their positions in what were evidently marshes at the time of their entombment.

It was an herbivorous animal, its food consisting largely of the young twigs and buds of the resinous trees that flourished profusely at the period in which it lived and reigned as a monarch among the mammalia of America. This is shown by the contents of its stomach, which have been identified, as well as by its anatomical structure. Its skin was pachydermous, like that of the elephant and the rhinoceros. Like the elephant he was provided with a trunk, or proboscis, which doubtless served similar purposes. Indeed his habits of life as well as his general anatomy, were quite similar to those of the elephant of the present day.

The specimen molar of this animal now before us appears to be partially petrified, and to this fact is due its excellent state of preservation, as well as its gravity, or heaviness. The enameled portions of a tooth are the last to decay, appear indeed, almost indestructible, and in this specimen, as you see, are quite perfect. Those portions of the tooth (the roots) by which it was attached to the jaw are somewhat deficient. Being softer they doubtless yielded to decay before the process of petrification could preserve them. Were its roots entire the specimen would doubtless be twice its present size. Only two species in any way related to the great family of the mammoth, that in ages past ranged over a great portion of the earth, exist to-day, the Asiatic and the African elephant. In all the forests and boundless wastes of this continent not a single individual of this modern family of the mammoth exists, or has existed, since the Europeans first landed upon these shores, except as they are imported, or descended from those imported from Asia or Africa. But there was a time, probably in the Miocene or middle epoch of the Tertiary Period, when the climate of America was congenial to their habits, when they roamed over the vast plains and through the forests of America, where their remains are now found. Nor did they become extinct until a still later age than the Tertiary, as the geological position of many of the remains would indicate. This mammillary-toothed elephant had its home in Iowa long before her prairies were darkened by herds of buffalo, and in an age when the land was covered by

a vegetable growth of a type quite different from that of the present time. Nature has traced and handed down to us her record of an extinct flora as well as fauna, on tablets of stone. We would fain interpret the hieroglyphics traced over the tombs of Egypt's ancient kings, or the scrolls found in her catacombs, while we still remain in doubt as to the actions of Osiris, Sesostris, and Cambyses, whether they were real heroes or only myths, but we read nature's lithologic record with absolute certainty of its truth.

This animal was of a type, the representatives of which at the present day are all confined to the warmer portions of the globe, indicating that the climate of America as far north as its remains have been found was sufficiently mild to render it a congenial habitat for animals of its peculiar organization. That the *Mastodon Giganteus* lived cotemporaneous with our savage human predecessors, is shown by the fact that its remains have been found in connection with arrow-heads and other rude weapons of the primitive hunters of this continent. They have also been found associated with the remains of man himself, human bones being mingled with those of the mastodon. It is thus shown that he did not become extinct until after the advent of man upon this continent.

The remains of the *Elephas Americanus* are usually found in our river-gravels and in the deposits now termed by geologists loess, a sedimentary formation peculiar to river valleys. Although surviving to a later time, they especially belonged to that wonderful age of geological time known as the Tertiary Period, an age of gigantic mammals and luxuriant vegetable growth. This particular species is thought by geologists to have abounded especially during the latter portion of the Tertiary Period, in the Pliocene epoch, and just preceding glacial time.

The *Elephas Americanus* appears to have been closely allied to an extinct animal of gigantic size whose remains have been found in Europe and Asia, and known as the *Elephas Primigenius*, or the great Siberian elephant. This latter animal is supposed to have lived in Asia during the latter part of the Tertiary Period, and to have passed over into

Europe in the Quaternary. Its remains have been found in Asia as far north as Siberia, and in nearly all countries of Europe. It is quite likely that it survived the mastodon of this continent, and during its existence ranged over such portions of pre-glacial Europe as were not still under the sea, but disappeared in glacial time.

It may be asked how it can be that the remains of an animal have been preserved through such a vast duration of time! We observe that, ordinarily, decomposition and decay of the animal organism takes place in a very few years. But this is not always the case, for under certain circumstances we know that animal, as well as vegetable organism, has assumed an almost indestructible condition, as when petrification takes place. Where entire, or almost entire, skeletons have been preserved, they have generally been found in beds of peat—the swamps and marshes of the period in which they lived—and the antiseptic properties of the peat have preserved them to become the wonders of our museums. Where a single specimen has been preserved perhaps millions have decomposed, been absorbed by the elements, and passed through the combinations and changes common to matter under ordinary circumstances. Man erects an edifice which he intends shall endure for centuries. In some secure recess he deposits specimens of the coin of the period in which the builders lived. A thousand years may pass away and in that time nations may have been born, flourished, declined and then perished. The edifice itself becomes ancient, and at last yields to the disintegration and change common to matter. The workmen of another age, speaking a new language, remove the rubbish of the ancient edifice, once grand, spacious and beautiful, and in so doing they recover and bring to light the long hidden coin of an age unlike their own. So it is that nature has carefully laid away in the secret recesses of her grand temple a few choice specimens of her ancient handiwork, that after ages may read and know the story of her wonderful processes and evolutions.

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