1931

EVIDENCE OF DINOSAURS IN NEBRASKA

Erwin Hinckley Barbour

BULLETIN 21 VOLUME I JULY, 1931

THE NEBRASKA STATE MUSEUM
ERWIN H. BARBOUR, *Director*

EVIDENCE OF DINOSAURS IN NEBRASKA

BY ERWIN HINCKLEY BARBOUR

Nebraska has long been a collecting ground famous for its fossil mammals, but as yet no dinosaurian bones have been reported, nor have they been expected. The distal end of a finely preserved femur, however, has recently been brought to light, supposedly occurring in position in the Dakota formation of eastern Nebraska. It was discovered, collected, and donated by Mr. J. B. White, (University of Nebraska, Law, class of 1899) on his farm two miles south of Decatur, in northeastern Burt County, near the Missouri River. It was found in undoubted Dakota sand associated with many leaf impressions. This is taken as strong evidence, rather than proof positive, that the bone was actually in position.

When received at the Nebraska State Museum the bone had the matrix adhering to and around it, and if the matrix was not Dakota in fact, it was characteristic and indistinguishable. The Dakota formation outcrops in a general north and south line across the state, exposures being common in Burt County and especially northward to Dakota City, which gave the name to this well-known formation. The bone under consideration, namely, the distal end of the left femur, is that of Trachodon, a dinosaur which occurred so much later in the Cretaceous that doubt is cast on the actual occurrence of this bone in place.

There can be no question that Mr. White found this specimen weathered out and lying upon, if not actually in, the Dakota, a formation with which he has long been perfectly familiar. Even so, the question arises, could it have been derived from overlying beds, which apparently was not the case, or could it have been carried in some unexpected way by any of the transporting agencies, say wind, water, glaciers, or perhaps pioneers, and dropped where found? With the doubtful exception of the latter agent, seemingly the only likely one, none of these appear probable.

The publication of this bulletin is made possible by funds donated by Mr. Hector Maiben for Palaeontological Research in Nebraska.

As for the pioneer it seems almost unbelieveable that any plainsman would haul such cumbersome and unprofitable material six hundred to seven hundred miles or more over prairie trails. Scattered fragments found to the north and west of Decatur in the same county a number of years before, were considered at the time to be unmistakably dinosaurian. These two occurrences may have less significance than we are disposed to attribute to them. Nevertheless, naturalists and collectors should be notified, and should be alert for evidence bearing upon the point at issue.

Genetically considered, the lineage of the Reptilia is through the ancient and extinct armored Amphibia, called the Stegocephalia. Geologically considered, reptiles supposedly arose in the Mississippian, certainly not later than the Pennsylvanian. By the close of the Permian, or not later than the Triassic, they had shown remarkable adaptive specializations. They had even progressed to the point where certain important groups, such as the cotylosaurs, proganosaurs, anomodonts, pelycosaurs, and phytosaurs, had fulfilled their long continued racial life cycles, and had become extinct. In the Mesozoic, called the Age of Reptiles, five great dominating groups arose, namely, ichthyosaurs, plesiosaurs, carnivorous dinosaurs, herbivorous dinosaurs, and pterosaurs. The largest and most spectacular of all were the dinosaurs, which are popularly, rather than literally, described as extinct giant lizards. The advent of dinosaurs is generally credited to the Triassic, their culmination to the Comanchean, called the Age of Dinosaurs, and their extinction to the very close of the Cretaceous.

Though varying in size from pygmies to giants, dinosaurs were mostly ponderous, even the hugest of all land animals. In some, more especially carnivorous dinosaurs, the fore feet were soon emancipated from the servile use, mere progression, and the creatures became bipeds, applying their hands to the more exalted uses of prehension. Progressively dinosaurs developed size, strength, fleetness, and various specializations of consequence. Some became the largest and most rapacious of all carnivorous beasts.

Unlike their amphibian antecedents, which were never wholly emancipated from gills and hence from water, dinosaurs, in common with all reptiles, were completely freed, and, therefore, fitted to live on land even remote from water. Accordingly their distribution was world wide, and the developmental stimulus consequent to life on land, was their

inheritance. Of all the vertebrates, living or extinct, reptiles are known to rank first in numbers, size, and range of specialization. They have not always been dumb victims of the inconsiderate and ill-advised heel. In their day, the organic world, vast as it was, was completely under their sway. Their dominance has been equalled by that of man alone.

Without definitely assignable cause, this extraordinary race declined, leaving but four surviving groups, namely,

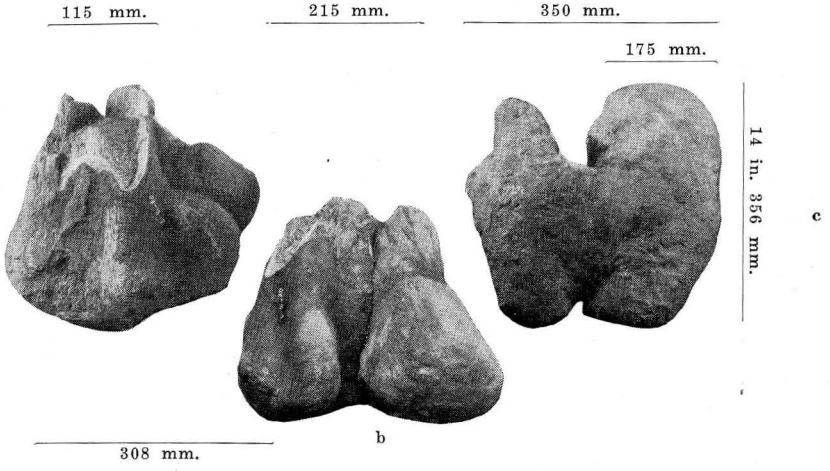

FIG. 121. Distal end of the right femur of Trachodon, a medium sized dinosaur. Specimen No. 6-8-28. The Nebraska State Museum. One-eleventh natural size.

a. Outer border.
b. Viewed from behind.
c. Viewed from below.

crocodiles, turtles, lizards, and snakes. These four representatives of the Reptilia, once a mighty host, now in racial retreat, stand subordinate and inconsequential. They have taken their last stand, and seem doomed. Because of their ponderous sizes, fabulous natures, and bizzare forms, dinosaurs have become favorite subjects for feature stories in papers and magazines. Cartoonists find them prolific sources for popular and intriguing sketches. They are truly fantastic and awesome, and furnish a thrill on the screen, where dinosaurs may be seen even in action true to life. In various

ways then, knowledge of these impressive and sensational creatures has been widely disseminated, and they have become well-known, considering the fact that they are extinct.

In order to refresh the memory, a few members of this extraordinary group are shown below, in miniature.

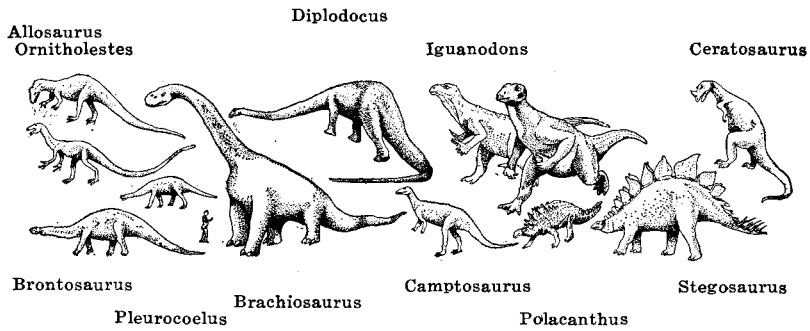

FIG. 122. A few characteristic and well-known dinosaurs.

Polacanthus and the large biped dinosaurs, Iguanodon, were European, the others North American. Allosaurus, Ornitholestes, and the horned Ceratosaurus, were carnivorous, the others herbivorous. Stegosaurus was a strange, armored dinosaur of Europe and America, famous for its diminutive brain, which weighed but 2½ ounces. Brontosaurus, 66 feet long, and Diplodocus, 87 feet long, were gigantic. Pleurocoelus was a small dinosaur, 12 feet long, while Brachiosaurus, a mountain of muscle, had a length reported to have been 120 feet. Conservatively, it probably had a length of 80 to 90 feet, and a weight of 40 tons. Its bones are found in Africa as well as in North America.

The University of Nebraska,
Lincoln, Nebraska,
Dec. 1, 1930.