

THE PONCA WONDER.

The Fossil Remains from the Bank of the Missouri—A Valuable Communication from Mr.

J. C. C. Hoskins.

EDITOR JOURNAL: I wish to call the attention of geologists to the fossil remains recently discovered in the bank of the Missouri, some three miles above Ponca, in Nebraska, about thirty miles from this city, and now in the possession of Messrs. Reineman, Heath and Leach, just across the river at Covington. In company with Judge Hubbard and several other gentlemen I examined these remains yesterday afternoon with a great deal of interest, and earnestly hope that they may come to the notice of some person competent to decide upon their character and the age when they existed. Having been solicited to give my own opinion upon them, I have to say that my knowledge of such things is very general and superficial, but perhaps sufficient to form an opinion for myself, which I give for what it is worth.

I think that there are remains of two reptiles—the larger, a *Pythonomorpha*, probably the *Mosasauros Missouriensis*. There are, as I reckon, forty-four separate and well preserved caudal vertebrae, making a length of tail twelve feet six inches. From the appearance of the smallest vertebrae I judge that several are missing and that this animal's tail was about fifteen feet in length. I find thirty seven lumbar and dorsal vertebrae, measuring sixteen feet and four inches, but I cannot give the number of each, as they are less perfect than the caudal, and some are much loaded with stone attached. The cervical vertebrae and head appear to be missing. The two enormous flippers or paddles characteristic of *Pythonomorpha* are almost entirely present, though much broken, compressed and distorted. One scapula

is in fine condition, and a humerus is not only entire, but is scarcely petrified in the least. On one of the paddles may still be seen a foot square or more of thick skin, of course completely petrified. I am unable to determine to my satisfaction whether any dorsal vertebrae are missing, but judge that none of the cervical are present, though in the condition of the remains that cannot be settled except by some geological expert, as the smaller reptile lies across the larger at an acute angle, and the remains of both are broken and cemented with a considerable mass of stone.

This *Mosasauros* was a true sea serpent if any creature be entitled to that name, and no doubt in its day was the tyrant of the bay or sound which was its abode. Its entire length was probably about forty feet, but individuals have been found that exceeded seventy feet in length.

The smaller reptile lay across the *Mosasauros* in such a position that the head, neck and upper part of the body, including the forward flippers, had probably been washed away by the river. It seems to me to belong to the *Sauropterygia*, as there is remaining in very good condition the larger portion of a hinder paddle, of which the *Pythonomorpha* were destitute. There were found twenty-six vertebrae, of which probably sixteen are caudal, extending to the extreme tip of the tail. I estimate the entire length of the creature to have been about twenty feet, of which the

missing rock was full one-half. The *Sauropterygia* were characterized by short stout bodies, rather short tails, and necks extremely long and slender, with small heads, and are supposed to have moved on or near the surface of the water with heads raised high on slender, curved and flexible necks, and eyes on the alert for prey in the air above or in the water below. Both of these reptiles were carnivorous, and rapacious, and made prey of every living creature that came within reach.

I have not seen the exact locality where they were found, but from description of the rocks I have no doubt they belong to the lower portion of what is known as the Fort Pierre division of the cretaceous formation. If so, this discovery has additional interest as that

division has been hitherto supposed to run out above the mouth of the Niobrara River, and indeed for some distance above Fort Randall has been observed only near the summit of the hills.

If my informants are correct, and my recollection of the ground agrees with their account, this formation comes down nearly to the water of the Missouri, more than forty miles this side the Niobrara.

I wish to add that the discoverers are confident that the remains all belong to one animal, and that one gentleman for whose judgment I have much respect, agrees with them, supposing it to be a *Plesiosauroid*, perhaps an *Elasmosauros*, counting what I reckon to be the tail of the larger reptile to be the neck minus the head, and what I call the tail of the smaller reptile to be the usual short tail of that genus. If so, the two flippers which I assign to the *Mosasauros* are the forward ones and the other is one of the hindmost. The difference between cervical and caudal vertebrae is so marked that I must adhere to my own opinion until otherwise convinced by undoubted authority.

These relics of the past have a great interest for every thinking man, and particularly for geologists; and it is to be hoped that they will be carefully preserved and soon find their way to the cabinet of some institution where they can be intelligently studied and compared with other like remains. There are doubtless many institutions that would gladly receive and care for them, but, considering the locality where they were found, I would suggest that the State University of Nebraska would be a peculiarly appropriate place of deposit; and I have no doubt the faculty of that institution would be exceedingly grateful to the present owners, and perhaps reimburse their expenses at least, should they see fit to consign these fossils to their care. I am sure the Iowa State University or the Smithsonian Institute would be glad to receive them on those terms.

I cannot close without saying that I do not feel at all competent to give an authoritative opinion of these remains, but have written this article in hopes to attract the attention of competent geologists and secure a careful and intelligent examination.

J. C. C. Hoskins.