

Sioux City Iowa May 20th 1873

Prof. James D. Dana
New Haven Conn.

Dear Sir

The remains of an enormous reptile have lately been discovered near here; so remarkable in size and character, that I thought it worth while to bring them to your notice.

About thirty miles above this place, on the Nebraska side of the river, near Ponca Nebraska, the bluffs come down to the very edge of the river, and rise above it precipitously to the height of one hundred and fifty feet, or more. This reptile was found at the foot of one of these bluffs, between high and low-water marks, imbedded in a hard slate like rock, which here forms a stratum stretching far up the side of the bluff, if I am correctly informed. I did not learn the nature of the superior strata. Owing to the refractory character of the rock, they were obliged to blast, and take the remains out piece-meal. No doubt the search was carelessly, or at least ignorantly conducted, and many parts are missing which might have been found under more skillful management. It was purchased by some

speculators for a trifle, and brought to a little called Covington just across the river. I refer you to the accompanying sketch for its shape and position.

The whole length is thirty six feet, divided into sixty one pieces, some of them, at the two extremities, complete vertebrae; others, in the body, irregularly broken in getting them out. All the vertebrae, which could be examined are bi-concave: those between 1 and 2 (via sketch) have a ridge like process on their upper sides; are slightly hexagonal in their circumference, and the ends are perpendicular to the plane of the sides. At the other extremity, marked 8, the vertebrae are rounder, more flattened, without the ridge, and the ends are inclined. At 9 there is a thin plate inserted between the adjoining vertebrae. The body is so covered with stone that only the upper surface is exposed; showing the spinal processes. 4 a large mass showing in places the texture of the bone plainly; for the most part covered with stone supposed by some to be petrified fish. This is the part which Mr. Hopkins, whose article I enclose, calls a paddle. From 13 to 14 there seems to be a bone, its broken end projecting at 13. 12 is a slight projection rough as if from breaking. 5 is a bone, I think a femur, enveloped in stone; the projection just below it forms a part of the piece marked 10. 6 is a part of

a paddle having four bones; one with six joints, the remaining three with four joints each. There are, in addition, a number of detached pieces, for which no place has been found. Among these are pieces of ribs; what I think are teeth or casts of teeth, about four inches long, one inch in diameter, ^{at the base, tapering to a point} (15 in sketch). The ribs are hard, black, and polished, the supposed teeth, gray in color and rougher in texture. 16 a thin black bone of an irregular shape Mr. Hopkins' Scapula. 17 a bone of a similar character. No part of the head has been found, though doubtless there are portions of it among the scattered fragments.

The animal as it lies upon the floor bears a striking resemblance, ^{to} the engraving of the Plesiosaur given in your manual. Mr. Hopkins, you will observe, thinks there are two animals lying across one another at 5, that the two slender extremities are both tails. But I think his position untenable.

Hoping that this may prove of some interest to you I remain
very respectfully Your former pupil

E. H. Hubbard

Class of 1872