

Student Handout 3-Paleontologist Views on “Elasmosaurus platyurus Cope”

1. Elasmosaurus platyurus Cope as described by Edward D. Cope

Professor Cope showed the Academy of Natural Sciences several fragments of a large Enaliosaurian discovered by the Academy's correspondent at Fort Wallace, Kansas. Dr. LeConte had previously mentioned the existence of an animal related to the Plesiosaurus, and the recovery of most of the reptile confirmed this likeness.

The remains consisted of over one hundred spinal bones, numerous portions of ribs, and the greater part of the bones supporting the spine and shoulder blade arches. In addition, there were two long bones somewhat like thigh bones, part of its jaw, nose, and teeth.

The general form was different from Plesiosaurus in the enormous length of the tail and shorter neck. The total length of the spinal bones from head to tail was about 38 feet long. The tail alone was unusually long.

He called it *Elasmosaurus platyurus* Cope. From the tail and the great plate bones of the breastbone and the bones that support the spine, he determined that the animal was a water reptile whose movement was largely accomplished by its tail rather than its paddles.

The jaws and nose showed that it was related to the Plesiosaurus. The teeth were round and located deep into the tooth cavity or pit which had a very small root canal. The exposed surface of the teeth were close together and sharply grooved to the narrowly pointed tip.

The area which appeared to be the stomach contained remains of perhaps six species of fishes, several creatures with rough-edged scales, among them a known *Enchodus*, a fish with spear-shaped teeth. Also found was a *Sphyræa*, a prickly specious plant.

**Materials adapted from Edward D. Cope, “Remarks on a new large enaliosaur,”
Proceedings of the Academy of Natural Sciences of Philadelphia 20 (March 24, 1868), 92-93.**

2. Elasmosaurus platyurus as described by Joseph Leidy

The finding of a portion of the jaws, as reported by Dr. Turner, in the vicinity of what Professor Cope has supposed to be the neck portion of the skeleton, helps him confirm his view that the long spinal bones made up the tail; therefore the shorter end was the neck. Leidy states that Cope failed to consider that on the end of the long spinal bones was a coosified axis or rotating body part and an atlas, the vertebrae or neck bone that supports the head. This structure can also be found in the mature Plesiosaurus. The cup of the atlas still retains the back of the skull.

The Kansas water reptile was wonderful for the length of its neck, far exceeding in this respect the Plesiosaurus. The neck and spinal bones successively increase in length. The length of the neck, independent of the head, was about twenty-two feet.

The extensive shoulder and pelvic girdles of the Kansas water reptile, so much like those of Plesiosaurus, were most probably provided with limbs constructed like those of the latter animal.

In its restored condition Discosaurus would appear to have resembled Plesiosaurus in its form as ordinarily represented, excepting that it possessed a much longer neck,-one indeed that exceeded that of all known animals. We may imagine this extraordinary creature, with its turtle-like body, paddling about, at one moment darting its head a distance of upwards of twenty feet into the depths of the sea after its fish prey, at another into the air after some feathered or other winged reptile, or perhaps when near shore, even reaching so far as to seize by the throat some two-footed dinosaur.