If the hollow interior be the natural condition of the *Mylodon*-like humerus under inspection, it would not belong to *Mylodon robustus*. Independently of the cavity indicated, the bone is sufficiently different in size and form to indicate a different species from the *Mylodon Harlani* of North America. The humerus from Oregon, described by Perkins (Am. Jour. Sci. 1841, xlii, 136), and referred to the latter by Prof. Owen, is not only much larger, but it is of greater breadth in relation with its antero-posterior diameter. The fragment of a humerus from Big-Bone-Lick, Ky., represented in fig. 3, plate xiv of my "Memoir on the Extinct Sloth Tribe," is somewhat smaller than the corresponding part of the Oregon specimen, and is more compressed or wider in comparison with the antero-posterior diameter.

Prof. Leidy further observed that there appeared to be a point of some significance in the anatomy of the mandible of *Dromatherium silvestre* worthy of attention, though the appearance may turn out to be a deceptive one. Prof. Emmons had discovered three isolated rami of mandibles of this most ancient of American mammals in the triassic coal of North Carolina. Of the specimens, one is represented in fig. 66 of Emmons' American Geology, repeated in outline in fig. 650 of Dana's Geology. Another specimen Prof. Emmons presented to the Academy, and is contained in our museum. The point of interest to which reference is made is the apparent absence of a condyle. This process may have been lost, but in the two specimens seen by Prof. L.—that figured by Prof. Emmons, and that preserved in our museum—a separation of the process is not obvious.

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*March 8th.*

## Dr. Carson, Vice-President, in the Chair.

Twenty-five members present.

Prof. Leidy made the following remarks:—The reptilian remains from the cretaceous formation near Fort Wallace, Kansas, presented to the Academy by Dr. T. H. Turner, and described by Prof. Cope under the name of *Elasmosaurus platyurus*, belong to an Enaliosaurian, as originally suggested by Prof. Cope. The anatomical characters of the different regions of the vertebral column, those of the shoulder and pelvic girdles, and of the preserved portions of the skull and teeth, are decidedly Plesiosaurian.

Prof. Cope has described the skeleton in a reversed position to the true one, and in that view has represented it in a restored condition in fig. 1, pl. ii. of his "Synopsis of the Extinct Batrachia and Reptilia," Pt. I, August, 1869, published in advance for the fourteenth volume of the Transactions of the American Philosophical Society. To explain the apparently anomalous and reversed arrangement of the articular processes (zygapophyses) of the vertebræ, he has supposed that those as ordinarily existing are substituted by the second set of articular processes (zygophene and zygantrum), as found in serpents and iguanians (Proc. Bost. Nat. Hist. Soc. xii, 265; Syn. Ext. Bat. and Rept. 42).

The finding of a portion of the jaws, as reported by Dr. Turner, in the vicinity of what Prof. Cope has supposed to be the cervical portion of the skeleton, and which he considers as confirmatory of the view he has taken of its position, without further consideration, is more than compensated in the opposite end of the column terminating in a coössified axis and atlas, as is the case also in the mature *Plesiosaurus*. The cup of the atlas still retains the hemispherical occipital condyle.

The Kansas saurian was wonderful for the length of its neck, far exceeding in this respect the *Plesiosaurus*. The vertebræ in the specimen form a nearly unbroken series to the seventy sixth inclusive. If we regard all as cervical until the transverse processes begin to spring in part from the spinal arch, it

will comprise the extraordinary number of seventy-two. In the different species of *Plesiosaurus*, so far as known, the number ranges from twenty-four to forty-one. The length of the neck, independent of the head, was about twenty-two feet.

The cervical vertebræ successively increase in length to about the forty-fourth, then remain nearly the same to the sixtieth, and afterwards gradually decrease. The atlo-axis is about 2¼ inches long; the third cervical is 1½ inches; the tenth nearly 2 inches; the twentieth 2¾ inches; the thirtieth 3½ inches; the fortieth 4 inches; the forty-fourth 4½ inches, and so to the sixtieth; and the sixty-eighth to the last one about 3¾ inches, which is also about the length of the succeeding four dorsals.

The imperfections in the remainder of the vertebral column of the Kansas saurian do not permit a positive estimate to be made of the comparative extent of the trunk and tail.

A comparison of the caudal vertebræ with isolated specimens from the cretaceous formations of Alabama, Mississippi and New Jersey, leaves but little doubt that *Elasmosaurus* is identical with *Discosaurus*. Such also appears originally to have been the opinion held by Prof. Cope in regard to a portion of the same skeleton, which he referred to a species with the name of *Discosaurus carinatus* (LeConte's Notes on the Geology of the Survey of the Union Pacific Railroad, 1868, p. 68).

Specimens of vertebral bodies from the New Jersey green sand, referred to *Cimoliasaurus* (Cret. Rept. of the United States, pls. v, vi), and supposed by me to belong to the posterior part of the column, are seen by comparison with the Kansas skeleton to be cervical and perhaps anterior dorsals. The difference in the proportions of the corresponding vertebræ appear to indicate the genus to be distinct from *Discosaurus*.

The imperfect vertebral specimens from Arkansas, originally referred to *Brimosaurus* (Pr. Acad. Nat. Sci. 1854, 72, pl. ii, figs. 1—3), are probably posterior cervicals of *Discosaurus*.

In the true view of *Discosaurus* and its allies, the so-called order of *Streptosauria* (Proc. Bost. Nat. Hist. Soc. 1869, 265; Synopsis Ext. Batr. and Rept., 40) fails to maintain its position.

The extensive shoulder and pelvic girdles of the Kansas saurian, 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 biped dinosaur.

Prof. Leidy subsequently exhibited fragments of a fossil mandible, upon which he made the following remarks: The specimens were obtained by Prof. F. V. Hayden from the tertiary rocks of the Bridger Group, near Fort Bridger, Wyoming. They indicate a carnivorous animal, apparently of an extinct and heretofore unknown genus. Unfortunately the teeth are lost, except portions of some of the molars. The animal was larger than our Panther, and probably was a member of the same family, but with a relationship to the Hyænas. The portion of the jaw preserved nearly agrees in form with the corresponding portion in the Cats, but its depth below the position of the teeth is proportionately greater, resembling in this respect more the condition in the Striped Hyæna.

Remains of the canine alveolus indicate a tooth of more robust proportions than in the latter animal. The symphysis pursues the course of the alveolus.