

burial ground on Arch street, above 5th. As it had to be removed on the closing up of that ground, it was thought best to replace it by a new one, and the bent stone was given to the Academy on the 15th of November, 1867. The stone is of white Pennsylvania marble and is 6 ft. $3\frac{1}{2}$ in. long, by 3 ft. 1 in. wide and 2 in thick. It simply rested on six marble posts, without being fastened to them, except imperfectly by mortar, and must have bent merely from its own weight. The posts stood on separate brick foundations under ground, but the near (northern) middle post of the picture had sunk so as no longer to touch the slab, and the other middle post had settled also. The space between the inner sides of the end posts, lengthwise of the slab, was 4 ft. $9\frac{1}{2}$ in. The stone is bent down in the middle an inch and a half from a straight line drawn from the near right hand corner to the far left hand corner (northwest and east) and half an inch from the line drawn cornerwise the other way; and lengthwise through the middle it is bent an inch and a sixteenth from straightness.

March 24th, 1868.

The President, DR. HAYS, in the Chair.

Forty-two members present.

The following was presented for publication:

"Sexual Law in *Acer dasycarpum*." By Thos. Meehan.

Prof. Cope exhibited to the Academy several fragments of a large Enaliosaurian, discovered by the Academy's correspondent at Fort Wallace, Kansas, Dr. Theoph. H. Turner. Portions of two vertebræ brought east by Dr. Le Conte from his geological survey of the Pacific Railroad route, had previously indicated to the speaker the existence of an animal related to the Plesiosaurus, and the recovery of the greater part of the reptile had confirmed this affinity.

The remains consisted of over one hundred vertebræ, with numerous portions of ribs, the greater part of the pelvic and scapular arches, with two long bones somewhat like femora. Part of a muzzle, with teeth, belonged to the same animal.

The species represented a genus differing in important features from Plesiosaurus and its near allies. These were the absence of diapophyses on the caudal vertebræ, and the presence of inferiorly directed plate-like parapophyses, which took the place of the usual chevron bones, in the same position; also in the presence of chevron-like bones on the inferior surfaces of the cervical vertebræ; further in some details of the scapular and pelvic arches. The diapophyses of the dorsal vertebræ originated from the centrum, and not from the neural arch.

In generic features it was related to the Cimoliasaurus and Brimosaurus of Leidy, so far as the latter are yet known. It differed from both of them in lacking diapophyses on the lumbar vertebræ.

The general form was different from Plesiosaurus in the enormous length of the tail, and the relatively shorter cervical region. The total length of the vertebral column sent was thirty-one feet ten inches, divided as follows: caudals 18 ft. 10 in., dorsals 9 ft. 8 in., cervicals 3 ft. 4 in.; adding for missing cervicals and cranium at least 2 ft. 6 in., we have a total of $34\frac{1}{2}$ feet. An interval of three to four feet occurred between the cervicals and dorsals as they lay in the cliff from which they were excavated, which if, as is probable, it was occupied by vertebræ in the animal, would give a length of thirty-eight feet. The caudal vertebræ had very compressed centra, and elevated neural and hæmal laminæ, and were of unusually elongate form. Neural arches everywhere on the column co-ossified. All the vertebræ considerably more constricted me-

[March,

burial ground on Arch street, above 5th. As it had to be removed on the closing up of that ground, it was thought best to replace it by a new one, and the bent stone was given to the Academy on the 15th of November, 1867. The stone is of white Pennsylvania marble and is 6 ft. $3\frac{1}{2}$ in. long, by 3 ft. 1 in. wide and 2 in thick. It simply rested on six marble posts, without being fastened to them, except imperfectly by mortar, and must have bent merely from its own weight. The posts stood on separate brick foundations under ground, but the near (northern) middle post of the picture had sunk so as no longer to touch the slab, and the other middle post had settled also. The space between the inner sides of the end posts, lengthwise of the slab, was 4 ft. $9\frac{1}{2}$ in. The stone is bent down in the middle an inch and a half from a straight line drawn from the near right hand corner to the far left hand corner (northwest and east) and half an inch from the line drawn cornerwise the other way; and lengthwise through the middle it is bent an inch and a sixteenth from straightness.

March 24th, 1868.

The President, DR. HAYS, in the Chair.

Forty-two members present.

The following was presented for publication:

"Sexual Law in *Acer dasycarpum*." By Thos. Meehan.

Prof. Cope exhibited to the Academy several fragments of a large Enaliosaurian, discovered by the Academy's correspondent at Fort Wallace, Kansas, Dr. Theoph. H. Turner. Portions of two vertebræ brought east by Dr. Le Conte from his geological survey of the Pacific Railroad route, had previously indicated to the speaker the existence of an animal related to the Plesiosaurus, and the recovery of the greater part of the reptile had confirmed this affinity.

The remains consisted of over one hundred vertebræ, with numerous portions of ribs, the greater part of the pelvic and scapular arches, with two long bones somewhat like femora. Part of a muzzle, with teeth, belonged to the same animal.

The species represented a genus differing in important features from Plesiosaurus and its near allies. These were the absence of diapophyses on the caudal vertebræ, and the presence of inferiorly directed plate-like parapophyses, which took the place of the usual chevron bones, in the same position; also in the presence of chevron-like bones on the inferior surfaces of the cervical vertebræ; further in some details of the scapular and pelvic arches. The diapophyses of the dorsal vertebræ originated from the centrum, and not from the neural arch.

In generic features it was related to the Cimoliasaurus and Brimosaurus of Leidy, so far as the latter are yet known. It differed from both of them in lacking diapophyses on the lumbar vertebræ.

The general form was different from Plesiosaurus in the enormous length of the tail, and the relatively shorter cervical region. The total length of the vertebral column sent was thirty-one feet ten inches, divided as follows: caudals 18 ft. 10 in., dorsals 9 ft. 8 in., cervicals 3 ft. 4 in.; adding for missing cervicals and cranium at least 2 ft. 6 in., we have a total of $34\frac{1}{2}$ feet. An interval of three to four feet occurred between the cervicals and dorsals as they lay in the cliff from which they were excavated, which if, as is probable, it was occupied by vertebræ in the animal, would give a length of thirty-eight feet. The caudal vertebræ had very compressed centra, and elevated neural and hæmal laminæ, and were of unusually elongate form. Neural arches everywhere on the column co-ossified. All the vertebræ considerably more constricted me-

[March,

dially than in *Brimosaurus* or *Cimoliasaurus*, and none except cervicals with such small antero-posterior diameter as the latter possess.

The general characters of the species would be presented in a special essay.

He called it *ELASMOSAURUS PLATYURUS* Cope, from the caudal laminae, and the great plate bones of the sternal and pelvic regions. It was a marine saurian, whose progression was more largely accomplished by its tail than by its paddles.

The teeth and muzzle showed it to be an ally of *Plesiosaurus*. The former were cylindric, implanted in very deep alveolæ, and furnished with a very small pulp cavity. The exposed surface closely and sharply striate to the narrowly acuminate tip.

The beds were argillaceous, with much gypsum; the latter mineral coating the bones. The age was cretaceous; perhaps, according to Le Conte, the upper middle. The matrix beneath the dorsal vertebræ contained remains of perhaps six species of fishes, several ctenoid, among them a known *Enchodus*, and a *Sphyræa*, to be called *Sph. carinata* Cope.

The complete and mounted skeleton of the fossil Irish Elk, now in the Museum, was presented to the Academy by Mr. J. A. Wright.

On motion the Academy tendered to Mr. Wright a vote of thanks for his magnificent donation.

March 31st.

The President, DR. HAYS, in the Chair.

Thirty members present.

The deaths of Mr. Thos. Earp, and Mr. C. F. Hagedorn, were announced.

On leave being granted, the following paper was presented for publication:

"On a new mineral in Cryolite, Ivigtite." By Theo. D. Rand.

The following gentlemen were elected Members:

Dr. Thomas B. Reed and Mr. Richard Peltz.

The following were elected Correspondents:

Dr. Fred'k Stoliska, of Calcutta, Maj. Geo. Clendon, Jr., of Glenn's Falls, N. Y., and Mr. R. H. Stretch, of San Francisco, Cal.

On favorable report of the Committees, the following papers were ordered to be published:

Remarks on the New Species of *OSMERUS* (*O. Sergeanti*.)

BY THADDEUS NORRIS.

At a meeting of the Academy of Natural Sciences, March 26, 1861, the writer presented "Remarks on a new species of *Osmerus* taken in the Schuylkill below Fairmount dam," describing its specific characteristics as compared with those of the Northern Smelt, *O. viridiscens*, also naming other rivers besides the Schuylkill in which it is found.

Although I was then well convinced of the difference between the two, those who composed the committee on Ichthyology could not admit sufficient peculiarity in this to constitute it a new species; I therefore suppressed the specific name given above, which I now renew; having no less authority than 1868.]

dially than in *Brimosaurus* or *Cimoliasaurus*, and none except cervicals with such small antero-posterior diameter as the latter possess.

The general characters of the species would be presented in a special essay.

He called it *ELASMOSAURUS PLATYURUS* Cope, from the caudal laminae, and the great plate bones of the sternal and pelvic regions. It was a marine saurian, whose progression was more largely accomplished by its tail than by its paddles.

The teeth and muzzle showed it to be an ally of *Plesiosaurus*. The former were cylindric, implanted in very deep alveolæ, and furnished with a very small pulp cavity. The exposed surface closely and sharply striate to the narrowly acuminate tip.

The beds were argillaceous, with much gypsum; the latter mineral coating the bones. The age was cretaceous; perhaps, according to Le Conte, the upper middle. The matrix beneath the dorsal vertebræ contained remains of perhaps six species of fishes, several ctenoid, among them a known *Enchodus*, and a *Sphyræa*, to be called *Sph. carinata* Cope.

The complete and mounted skeleton of the fossil Irish Elk, now in the Museum, was presented to the Academy by Mr. J. A. Wright.

On motion the Academy tendered to Mr. Wright a vote of thanks for his magnificent donation.

March 31st.

The President, DR. HAYS, in the Chair.

Thirty members present.

The deaths of Mr. Thos. Earp, and Mr. C. F. Hagedorn, were announced.

On leave being granted, the following paper was presented for publication:

"On a new mineral in Cryolite, Ivigtite." By Theo. D. Rand.

The following gentlemen were elected Members:

Dr. Thomas B. Reed and Mr. Richard Peltz.

The following were elected Correspondents:

Dr. Fred'k Stoliska, of Calcutta, Maj. Geo. Clendon, Jr., of Glenn's Falls, N. Y., and Mr. R. H. Stretch, of San Francisco, Cal.

On favorable report of the Committees, the following papers were ordered to be published:

Remarks on the New Species of *OSMERUS* (*O. Sergeanti*.)

BY THADDEUS NORRIS.

At a meeting of the Academy of Natural Sciences, March 26, 1861, the writer presented "Remarks on a new species of *Osmerus* taken in the Schuylkill below Fairmount dam," describing its specific characteristics as compared with those of the Northern Smelt, *O. viridiscens*, also naming other rivers besides the Schuylkill in which it is found.

Although I was then well convinced of the difference between the two, those who composed the committee on Ichthyology could not admit sufficient peculiarity in this to constitute it a new species; I therefore suppressed the specific name given above, which I now renew; having no less authority than 1868.]