

APPENDIX.

ART. XLIX.—*Notice of New Tertiary Mammals.* III; by
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AMONG the remains described in the present paper are those of several *Edentates*, the first detected in this country in the Tertiary formation. The numerous extinct species of this order previously known, both from North and South America, are all from more recent deposits.

Morotherium gigas, gen. et sp. nov.

The present genus appears to be most nearly related to *Megalonyx* and *Myiodon*. From the former, as well as from *Scelidotherium*, it may readily be distinguished by the humerus, which has no supra-condylar foramen; while from the latter genus, it differs in the femur, which is without a depression for the round ligament. The more slender femur, and the concave ulnar articulation of the humerus separate it likewise from *Megatherium*. The skull of the present genus is not known.

In this species, the femur is stout, and in its general proportions resembles that of *Megalonyx Jeffersonii* Harlan. The head of the femur is hemispherical, but slightly expanded in an antero-posterior direction. The great trochanter is massive, and rugose, and is raised slightly above the neck. It is somewhat recurved, and encloses a deep pit, as in the elephant. The third trochanter is represented only by a rugosity, mainly on the lower half of the shaft. On the posterior surface, there is a prominent ridge extending from the great trochanter obliquely across the shaft toward the inner condyle. The trochlear surface for the patella is broad and shallow, and is separated by a deep groove from each of the condyles; the inner groove being about twice the width of the other. The humerus is expanded at its distal end. The olecranon cavity has little depth, and there is no perforation above the inner condyle. The latter has its articular face concave transversely, as in *Myiodon*. The outer and inner deltoid ridges unite below, terminating in a double tuberosity.

Measurements.

Length of femur,-----	450 ^{mm} .
Transverse diameter at proximal end,-----	217.
Antero-posterior diameter of head of femur,-----	106.
Transverse diameter,-----	98.
Least transverse diameter of shaft,-----	130.
Least antero-posterior diameter,-----	55.
Width of trochlear surface,-----	82.
Vertical extent,-----	50.
Transverse diameter of outer condyle,-----	78.
Least transverse diameter of shaft of humerus,-----	93.
Antero-posterior diameter of ulnar condyle of humerus,---	70.
Transverse diameter,-----	63.

The known remains of this species indicate an animal about two-thirds the size of *Megalonyx Jeffersonii* Harlan. The specimens here described are from Pliocene strata, in Central California.

Morotherium leptonyx, sp. nov.

A smaller species, apparently of the same genus, is indicated by some fragmentary remains, the most characteristic of which is an ungual phalanx of the third digit of the fore-foot. This resembles most nearly in form the corresponding bone in *Megalonyx Jeffersonii* Harlan, but differs from it in the much less developed ungual sheath, and in the presence of a large rounded tubercle on the lower side, instead of a flat basal plate. The articular facets are quite unequal, the inner being considerably larger and deeper than the outer. The ridge between them is obtuse. The ungual sheath has its greatest development on the inner side. There is a large vascular foramen on the outer side at the base of the tubercle, and on the opposite surface this is replaced by several smaller orifices. This phalanx, when entire, was about 90^{mm} in length. It is 42^{mm} in vertical diameter through the basal tubercle, and 24^{mm} wide across the articular facets. The specimen was found in the Pliocene beds of Idaho, and has been kindly loaned to me for examination by my friend, Prof. J. S. Newberry, of Columbia College.

Stylinodon mirus, gen. et sp. nov.

A new extinct mammal of great interest is represented by portions of both jaws with teeth, and a few other remains, which were obtained by the writer last autumn in the Eocene deposits of Wyoming. These specimens resemble in some respects the corresponding parts of the genus *Toxodon* Owen, from the Quaternary of South America; but may, perhaps, have some more affinities with the Edentates. The lower

jaw preserved is massive and deep, and contained six molar teeth, all essentially alike, and inserted in deep sockets. They all grew from persistent pulps. In form, they are nearly cylindrical, with an approach to a quadrate outline in transverse section. The outer and inner faces are covered with a thin layer of enamel. A portion of a large incisor was found with this jaw, and evidently pertains to the same animal. This tooth was large, and somewhat curved. Its outer face was coated with enamel, marked with transverse lines of growth, and vertical striae.

Measurements.

Extent (approximate) of six lower molars,	75 ^{mm} •
Antero-posterior diameter of third lower molar,	11•
Transverse diameter,	12•3
Width of external layer of enamel,	9.
Thickness,	1•
Length of inserted portion of upper molar,	41•
Depth of pulp cavity,	20•
Width of band of enamel on incisor,	22•

The only remains of this species now known are from the upper Eocene of western Wyoming. They belong to a single individual, which was about as large as a Capybara.

Tillotherium latidens, sp. nov.

A second species of the peculiar genus *Tillotherium* is indicated by some remains from the same geological horizon in which the type species, *T. hyracoides* Marsh, was found.* The most characteristic of the new specimens is a last upper molar with its crown unworn, and in perfect preservation. This tooth has essentially the same crown-structure as the corresponding molar of the above species. It differs, however, in having a prominent buttress attached to the posterior side of the postero-external cusp, and a small elevated tubercle on the outer margin of its base. On the posterior side of the crown, the basal ridge thickens into a high crest, which unites with the single inner cone. The enamel of this tooth is coarsely rugose. The close resemblance of the true molars in *Tillotherium* to the premolars in more specialized forms is an interesting fact, and indicates for this genus a primitive type of dentition.

Measurements.

Antero-posterior diameter of last upper molar,	22 ^{mm} •
Antero-posterior diameter through outer lobes,	26•
Antero-posterior diameter through inner cone,	23•

* This Journal, v, p. 485, June, 1873.

Transverse diameter through center,.....	36 ^{mm} •
Transverse diameter through anterior lobe,.....	41•
Height of crown through antero-external cusp,	14•
Height through inner cone,.....	14•5

The type specimens of this species are from the upper Eocene of Wyoming. They indicate an animal about the size of a Tapir.

Elotherium bathrodon, sp. nov.

The largest species of this genus hitherto discovered in the West is represented by a few remains in the Yale College Museum from the Miocene of Dakota. Among these specimens is a perfect lower molar tooth, apparently the last, which belonged to an animal at least double the bulk of *Elotherium ingens* Leidy, from the same region. This molar differs essentially from the same tooth in the other known species of this genus, especially in having the anterior pair of tubercles much larger than the posterior pair, and elevated high above them. There is also a distinct basal ridge, which at the posterior end of the crown thickens upward into an obtuse heel. This ridge nearly disappears on the sides of the crown, but is well marked in front. The enamel is rugose.

Measurements.

Antero-posterior diameter of last lower molar,.....	47•5 ^{mm} •
Transverse diameter through anterior cones,.....	34•
Transverse diameter through posterior cones,.....	28•
Height of crown in front, ..	28•
Length of fang in front,.....	55•
Height of crown at heel,.....	13•5

This species must have been nearly as large as a *Rhinoceros*. The only species of the genus that approached it in size is *Elotherium leidyanum* Marsh, from the Miocene of New Jersey.

Yale College, New Haven, April 20, 1874.