

APPENDIX.

ART. XLII.—*Notice of new Tertiary Mammals.* V; by
Professor O. C. MARSH.

THE remains here described are from the Eocene of the Rocky Mountain region. They include a new genus of Equine mammals, allied to *Orohippus*, but an earlier and less specialized form, apparently in the direct ancestral line, and hence of much interest. All the specimens described are preserved in the Museum of Yale College.

Eohippus validus, gen. et sp. nov.

This genus is very nearly related to *Orohippus*, but may be readily distinguished from it by the dentition, the last premolar above and below being similar to the next premolar in front, and not like the adjoining true molar, as in *Orohippus*. In other respects, the teeth in the two genera are very much alike, and the dental formula is the same for both. The feet, also in their main features, are very similar, there being in each genus four well developed toes in front and three behind, but *Eohippus* has a rudiment of the outer, or fifth, metatarsal, and may have had a similar remnant of the first digit in the fore foot. The radius and ulna, and the tibia and fibula were distinct, and entire, and in most other respects the skeleton resembled that of *Orohippus*.

The present species is based mainly upon a fragmentary skeleton, with the principal teeth well preserved. These remains indicate an animal about as large as a fox, but of rather more robust proportions. Some of the more important measurements are as follows:

Extent of three lower true molars	25·4 mm.
Antero-posterior diameter of last lower molar.....	11·2
Transverse diameter	5·4
Antero-posterior diameter of last lower premolar	7·
Transverse diameter	5·4
Antero-posterior diameter of first upper true molar	7·
Transverse diameter	9·5

The known remains of this species are from the *Coryphodon* beds, or lowest Eocene, of New Mexico. This horizon is below that in which *Orohippus* occurs.

Eohippus pernix, sp. nov.

A smaller species of the same genus is indicated by fragmentary remains of several individuals. Most of these fossils are in excellent preservation, and among them are some of the most characteristic portions of the skeleton. The distal end of the tibia is remarkably like that of the modern horse. The astragalus, also, is quite equine in type, but the anterior portion is more elongated. It has a small facet for the cuboid, as in the horse. The molar teeth are similar in pattern to those of *Orohippus*.

The following are some of the principal measurements :

Extent of three lower true molars	20· mm·
Antero-posterior diameter of first lower true molar	6·
Transverse diameter	5·
Depth of lower jaw below first true molar	11·
Antero-posterior diameter of distal end of tibia	13·
Transverse diameter	10·
Length of astragalus	15·5
Transverse diameter in front	10·

The remains here described are from the *Coryphodon* beds, or lowest Eocene, of Wyoming.

Parahyus vagus, gen. et sp. nov.

An interesting genus of suilline mammals is represented by a nearly perfect lower jaw and a few other remains in the Yale Museum. This jaw, which has most of the teeth well preserved, shows a near affinity to *Elotherium* Pomel, and to *Helohyus* Marsh, but it may easily be separated from those genera, as it has one less premolar. It differs from the former genus, moreover, in its last lower molar, which has a well developed posterior lobe. In other respects, the teeth are very similar to those of *Elotherium*. The present genus affords an interesting example of an extinct form outside of the ancestral line which terminated in existing suillines. A similar example is seen in *Anoplotherium*.

The specimens preserved pertained to an animal about the size of a modern wild boar, but the jaws were proportionately shorter and stouter. The canine was large, and the three premolars were all compressed, and each had two roots.

The dimensions of this specimen are as follows :

Extent of six molar teeth	138· mm·
Antero-posterior diameter of last lower molar	34·
Transverse diameter	17·
Antero-posterior diameter of first true molar	19·
Transverse diameter	13·
Depth of lower jaw below first true molar	46·

The only specimens of this species now known are from the lower Eocene of Wyoming.

Dromocyon vorax, gen. et sp. nov.

A new and remarkable carnivorous mammal about the size of a large wolf is represented in the Yale Museum by a nearly complete skeleton. In the form of the skull, and general character of the jaws and teeth, the genus resembles *Hyænodon*. In the present specimen there were apparently but two lower incisors in each ramus. There are seven lower molar teeth, and the last lower molar is small. The top of the skull supported an enormous sagittal crest. The brain was small and convoluted. The lower jaws are long and slender, and the condyles low.

The femur has a small third trochanter and the astragalus a facet for the cuboid. There were but four toes in front, and four behind.

Some of the more important dimensions of this skeleton are as follows :

Length of skull from occipital condyles to front of pre-maxillaries	280· mm·
Distance from foramen magnum to top of sagittal crest ..	80·
Extent of lower molar series	131·
Extent of three true molars	70·
Antero-posterior diameter of last lower molar	15·
Transverse diameter	9·
Length of third metacarpal	78·
Length of third metatarsal	88·

The remains of this species at present known, are from the Eocene of Wyoming.

Dryptodon crassus, gen. et sp. nov.

The present genus belongs in the order *Tillodontia*, and is apparently most nearly allied to *Stylinodon*. It is based upon the nearly perfect lower jaws, with most of the teeth preserved, and some fragmentary remains of the skeleton of the same individual. These specimens indicate an animal nearly as large as a Tapir. The lower jaws are very short, and massive, especially in the anterior portion. In each ramus there were ten teeth, forming a continuous series. Three of these are clearly incisors, the two anterior being small and cylindrical, and the outer one of enormous size, compressed, faced in front with enamel, and growing from a persistent pulp. Next to this, was a small tooth which may have been a canine, and immediately behind this a series of six similar molars. The latter are cylindrical, and their sides nearly or quite covered with enamel. Three are apparently premolars, and the large incisor extends beneath them.

The principal measurements of this specimen are the following:

Extent of dental series	135 [·] mm.
Extent of six lower molars	95 [·]
Antero-posterior diameter of large incisor	37 [·]
Transverse diameter	17 [·]
Antero-posterior diameter of last premolar	16 [·]
Transverse diameter	15 [·]
Depth of lower jaw below canine	80 [·]
Depth below first molar	60 [·]
Depth below last lower molar	50 [·]

The specimens above described are from the lower Eocene of New Mexico.

Yale College, New Haven, Oct. 23, 1876.