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TWO NEW PERISSODACTYLS FROM THE ARSHANTO EOCENE OF MONGOLIA¹

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At the base of the Irdin Manha and Shara Murun formations are red clays generally barren, to which Berkey and Morris have given the provisional name of Arshanto formation. The only fossils found are two remarkable little perissodactyls, apparently related to the lophiodontoid

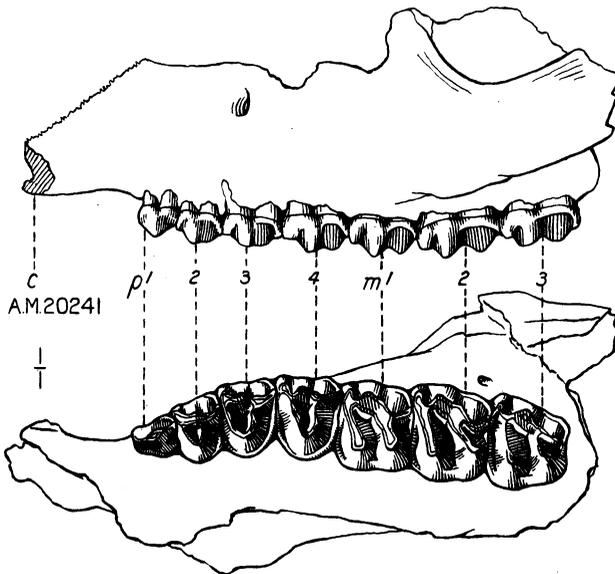


Fig. 1. *Schlosseria magister*. Upper jaw, external and crown views, natural size. Type specimen, No. 20241.

genera of the Irdin Manha and Ardyn Obo, but much more primitive. So far as the evidence goes the Arshanto may be Middle Eocene, but there is no correlation apparent with any Middle Eocene mammals of Europe or North America.

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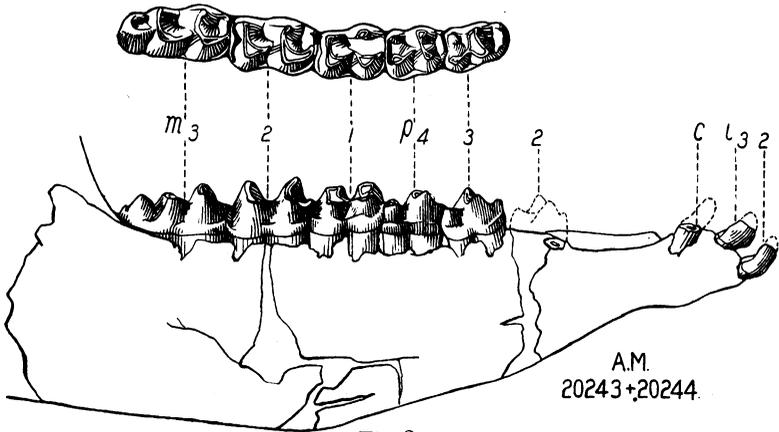


Fig. 2.

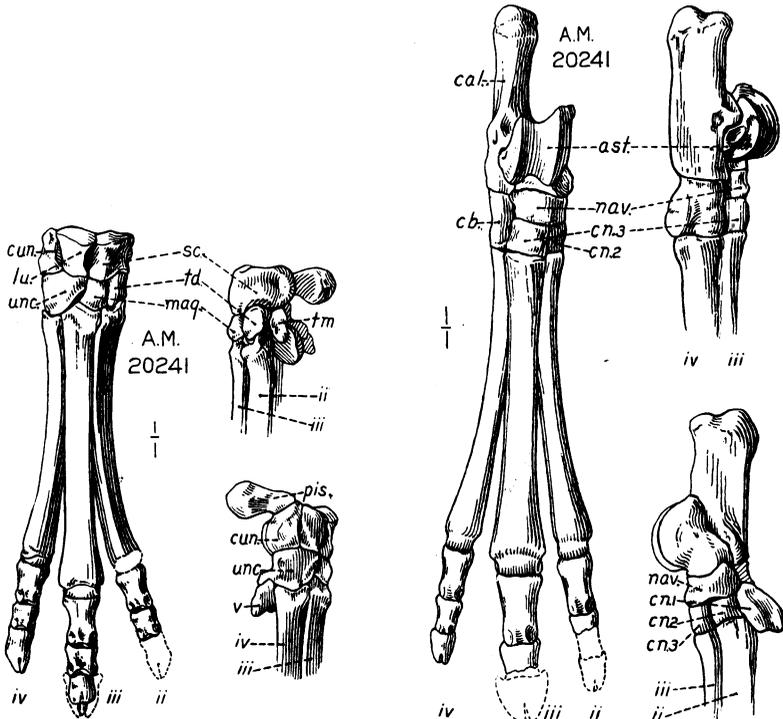


Fig. 3.

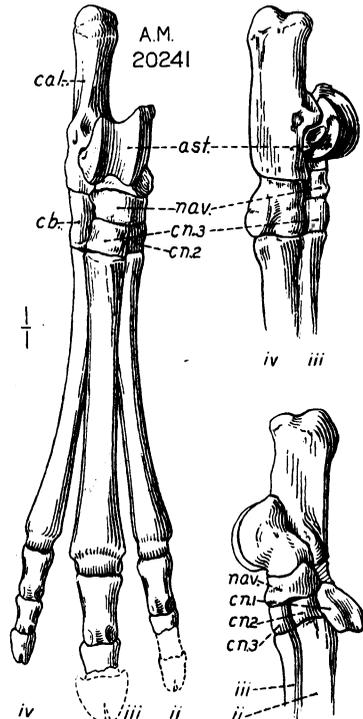


Fig. 4.

Fig. 2. *Schlosseria magister*. Lower jaw, external view and crown view of teeth, natural size. No. 20243; front teeth from No. 20244.

Fig. 3. *Schlosseria magister*. Fore foot, dorsal view; internal view of carpo-metacarpal joint; external view of same. All natural size. No. 20241.

Fig. 4. *Schlosseria magister*. Hind foot, dorsal view; external and internal views of tarsus. All natural size. No. 20241.

LIST OF THE ARSHANTO FAUNA

PERISSODACTYLA

Lophiodontidæ

Schlosseria magister. . . upper and lower jaws, fore and hind feet.

Hyracodontidæ

Teilhardia pretiosa. lower jaw.

Schlosseria magister, new genus and species

Named in honor of Max Schlosser, whose contributions to mammalian palæontology during the last half century have played so large a part in the advancement of the science.

TYPE.—No. 20241, upper and lower jaws, fore and hind feet.

HORIZON AND LOCALITY.—Lower red beds of the Irdin Manha formation, perhaps an older horizon than the Irdin Manha proper.

CHARACTERS.—Teeth patterned much as in *Helaletes*, but the metacones of molars flat instead of concave, a large looped heel on m_3 as in *Eohippus*, the oblique connecting ridges of the lower molar crests more developed than in *Helaletes*. Both fore and hind feet tridactyl, with long, slender metapodials and short phalanges. Anterior narial notch extended far backward, as in *Helaletes* and others of this family.

The size is about that of the Bridger species of *Helaletes*. Premolars more advanced in the completed wings of the protocone crescent on p^2 - p^4 and inner heel on p^1 . Second molar slightly larger than the first or third, and in all of them the transverse diameter is somewhat greater than the anteroposterior. A small vestigial nodule represents the first digit of the pes; the fifth digit of the manus is a short stout nodule strongly offset from the fourth metacarpal; the trapezium a smaller flattened nodule, similarly offset.

The teeth of this genus are in most particulars intermediate between *Helaletes* and *Eohippus*, but the molar pattern appears to relate it to the rhinocerotoid group, while the tridactyl manus distinguishes it from *Lophiodon*, *Helaletes* or the Eocene Equidæ. The only other known tridactyl genus in the Eocene is *Triplopus*, in which the teeth are more distinctly rhinocerotoid in pattern and there is no heel on m_3 . *Helaletes* appears to have a tetradactyl manus, and *Heptodon* of the Lower Eocene, very close to *Helaletes* in tooth pattern, certainly has four well developed digits in the manus.

The relationship to the Irdin Manha genus *Lophialestes* is hardly to be questioned. Although the feet of *Lophialestes* are not known, its teeth are directly derivable from those of *Schlosseria*.

***Teilhardia pretiosa*, new genus and species**

TYPE.—No. 20299, lower jaw, p_3 - m_3 r., from "lower red beds" at base of Shara Murun formation, Ula Usu, Mongolia.

CHARACTERS.—Dentition, three lower premolars, three molars, the second premolar much reduced but still two-rooted, p_3 and p_4 considerably reduced, but submolariform. Molars slightly increasing from first to third, no heel on m_3 , cross crests rhinocerotoid much as in *Cænolophus*. Posterior crests of p_3 and p_4 low and

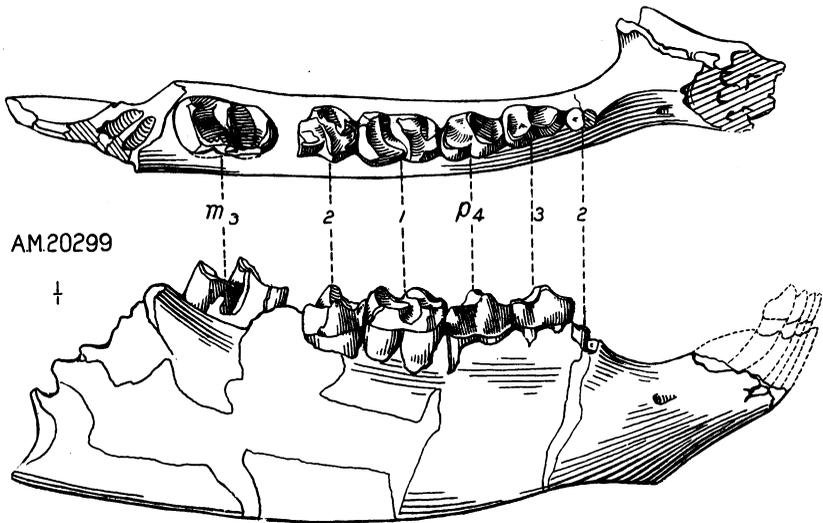


Fig. 5. *Teilhardia pretiosa*. Lower jaw, external and crown views, natural size. Type specimen, No. 20299.

imperfect, molar crests complete and rather strongly oblique, without any strong development of the internal pillars, and the external connecting crests in front of the transverse crests developed as in primitive rhinoceroses generally.

Length of premolar-molar dentition 55; of true molars 35 mm.

AFFINITIES.—This apparently is a hyracodont and suggestive of an ancestral type for *Ardynia*.

CORRELATION OF THE ARSHANTO FAUNA

It is by no means certain that the red beds at the base of the Shara Murun and those at the base of the Irdin Manha are really of the same age; nor in fact does the faunal evidence agree especially with that provisional correlation.

Schlosseria, although tridactyl, is remarkably primitive in dentition, intermediate between the Middle Eocene *Helaletes* and the Lower

Eocene *Eohippus*. It comes from the red beds underlying the Irdin Manha, and might be regarded as Middle Eocene or even as Lower Eocene.

Teilhardia, found in the Arshanto beds beneath the Shara Murun, is not closely related to any Shara Murun or Irdin Manha perissodactyls, but might be ancestral to *Ardynia* of the Lower Oligocene. There is nothing to indicate that it is older than Irdin Manha.

Until further evidence is secured, these two interesting perissodactyls are provisionally associated in the Arshanto and tentatively correlated as Middle Eocene.

