

A NEW FOSSIL RODENT FROM THE OLIGOCENE OF SOUTH DAKOTA¹

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Among some fragmentary jaws of *Ischyromys* from the Bad Lands of South Dakota two species are represented; a large-toothed animal resembling *Ischyromys typus* Leidy, but probably related to *Ischyromys chrysodon* (Cope), and a small-toothed form which may be named and described as follows:

Ischyromys parvidens sp. nov.

Type.—Imperfect right mandibular ramus containing all four cheekteeth (pm_4 in place, moderately worn), No. 9134, U. S. National Museum. Collected in the Oreodon Beds of the White River Oligocene, "Bad Lands," Washington County, South Dakota, by J. B. Hatcher.

Diagnosis.—Mandible and teeth in general like those of *Ischyromys typus*, but teeth relatively smaller, the length of the entire toothrow about equal to that of three teeth of the larger animal.

Mandible.—In form the mandible agrees with that of *Ischyromys typus*. It is not thickened as in the species which we suppose to be related to *I. chrysodon*, nor reduced in depth as in *Titanotheriomys veterior*. Region of masseter attachment resembling that of *I. typus* in the position of its anterior border, beneath hind margin of m_1 , and in the relative distinctness of its outline (more clearly defined than in the other large-toothed species).

Teeth.—Incisor, so far as can be judged from the fragments, robust like that of the other members of the genus, not slender as in *Titanotheriomys*. Its posterior termination lies against the inner surface of outer wall of the base of the ascending ramus, at alveolar level and separated from posterior border of m_3 by a space about equal to the length of this tooth. In *I. typus* the incisor appears to end at the same point in the jaw, but the large size of the cheekteeth brings the posterior border of m_3 back nearly to a level with it. Size of cheekteeth both actually and relatively much less than in *Ischyromys typus* and resembling that in *Titanotheriomys veterior*. The length of the toothrow slightly exceeds the depth of the mandible at front of m_1 while in *I. typus* it is about one and one-half times this depth. The enamel pattern shows no important peculiarities.

Specimens examined.—Five imperfect mandibles.

Remarks.—The only described member of the family *Ischyromyidae* in which the teeth are as small as those of *Ischyromys parvidens* is the *Titanotheriomys veterior* of Matthew. In this animal the lower jaw is noticeably more slender than in any of the known species of *Ischyromys*. Hence there should be no difficulty in distinguishing between fragmen-

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tary mandibles. While the material which we have examined is not sufficient to form the basis of a revision of the group it indicates the existence of at least four species as shown in the following key:

- Length of first three molariform teeth about $\frac{8.5}{8.5}$
 Depth of mandible at middle of m_2 , about 8. *Titanotheriomys veterior*
 Depth of mandible at middle of m_2 , about 10. *Ischyromys parvidens*
- Length of first three molariform teeth about $\frac{10.0}{10.0}$
 Area of muscle attachment in front of antero-external root of pm^4 a well defined, rounded pit. *Ischyromys chrysodon*
 Area of muscle attachment in front of antero-external root of pm^4 an ill defined shallow depression. *Ischyromys typus*

The form described by Cope as *Colotaxis cristatus* appears to have been based on jaws of *Ischyromys typus* with the narrow-crowned milk premolar in place. We have not seen jaws of true *Ischyromys chrysodon* from Colorado, but those of the nearly related and perhaps identical species occurring in the Bad Lands differ from those of *Ischyromys typus* in their obviously greater breadth; about 7-8 mm. instead of about 5.5 mm. at level of posterior cheektooth.