

SMITHSONIAN MISCELLANEOUS COLLECTIONS
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GEOCAPROMYS CHAPMAN

(WITH ONE PLATE)

BY

GERRIT S. MILLER, JR.

Curator, Division of Mammals, U. S. National Museum



(PUBLICATION 3029)

CITY OF WASHINGTON
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In his "Revision of the Genus *Capromys*" (Bull. Amer. Mus. Nat. Hist., Vol. 14, pp. 313-323, Nov. 12, 1901) Mr. Frank M. Chapman established a sub-genus *Geocapromys* (p. 314) to include *Capromys brownii* J. B. Fischer, *C. thoracatus* True and *C. ingrahami* J. A. Allen, animals that were supposed to have skulls and teeth essentially like those of the species of true *Capromys*, but to have unusually short tails and poorly developed thumbs. Sixteen years later Dr. Glover M. Allen raised *Geocapromys* to generic rank and added to its characters the presence of a small supplemental reentrant angle near the front of the lingual side of the first mandibular molariform tooth (Bull. Mus. Comp. Zool. Vol. 61, p. 9, Jan., 1917). In 1919 Mr. H. E. Anthony noticed that the course of the upper incisor of *Geocapromys* is clearly shown on the face of the maxillary as a prominent swelling on the wall of the antorbital foramen, while in *Capromys* no such swelling is present (Bull. Amer. Mus. Nat. Hist., Vol. 41, p. 631, Dec. 30, 1919). In his 1917 paper Dr. Allen, misled by Chapman's imperfect specimens of *Geocapromys columbianus*, made his own better material of the Cuban animal the basis of the new name *G. cubanus* (p. 9), and proposed (p. 5) the generic name *Synodontomys* for the original *C. columbianus*. These errors he later recognized and corrected (Bull. Mus. Comp. Zool., Vol. 62, p. 145, May, 1918). When preparing the copy for my "List of North American Recent Mammals 1923" I concluded that the dental features pointed out by Allen and Anthony did not warrant the generic separation of the group from *Capromys*. Not knowing of any other characters I relegated *Geocapromys* to subgeneric rank again. More recently, while examining broken skulls from caves in Cuba, I found that there are important and constantly present features of both skull structure and tooth arrangement that fully justify the generic separation of the two groups. The diagnostic characters may be tabulated as follows:

- Preorbital bar of maxillary sloping obviously forward; root capsule of upper incisor terminating in contact with outer half of anterior border of alveolus of pm^4 ; bases of alveoli of right and left pm^4 separate, not encroaching on floor of narial passage; pm_4 with only two reentrant angles on lingual side. *Capromys*
- Preorbital bar of maxillary vertical or sloping slightly backward; root capsule of upper incisor terminating above and ectad to anterior half of outer border of alveolus of pm^4 ; bases of alveoli of right and left pm^4 in contact, encroaching on floor of narial passage; pm_4 with a small third reentrant angle on lingual side *Geocapromys*

REMARKS ON GEOCAPROMYS

Skull.—The ascending branch of the maxillary dividing the orbit from the antorbital foramen is vertical (*G. ingrahami*) or backward-sloping (*G. brownii* and *G. thoracatus*) in relation to alveolar line instead of conspicuously forward-sloping as in *Capromys* (pl. I, figs. 1 and 2). By this character alone any one of the three living species can be distinguished from any of the four living *Capromys*. (I have not seen a specimen of the extinct *G. columbianus* in which the ascending branch is preserved). The backward slope in *Geocapromys* is never so strong as the forward slope in *Capromys*, but the difference is obvious when the general direction of the ascending branch is compared with the line of the alveolar margin.

Teeth.—Root of upper incisor encapsuled in the lower half of the maxillary wall of the antorbital foramen (see pl. I, fig. 1), the distance between the outer surfaces of the very obvious incisor capsules of opposite sides greater than that between the outer sides of the basal capsules of the opposite first molars. In *Capromys* the root of the incisor terminates opposite the antero-inner edge of the lower lip of the antorbital foramen (pl. I, fig. 2), and the transverse diameter of the rostrum through the scarcely evident capsules is less than that through the bases of the first molars. The base of pm^4 , which is hidden by the incisor capsule in *Geocapromys*, often forms an obvious external swelling in *Capromys* (as in pl. I, fig. 2).

These characters indicate that the members of the two genera have been developing along consistently different lines. In *Capromys* the incisor root has pushed back to a position where more advance is prevented by contact with the base of pm^4 ; in *Geocapromys* its position is such that it could be extended much farther back in a capsule lying along the outer surface of the molar shafts as in *Spalacopus*. The *Capromys* condition is nearly paralleled in *Octodontomys*. In correlation with the position of the incisor roots the molar roots are

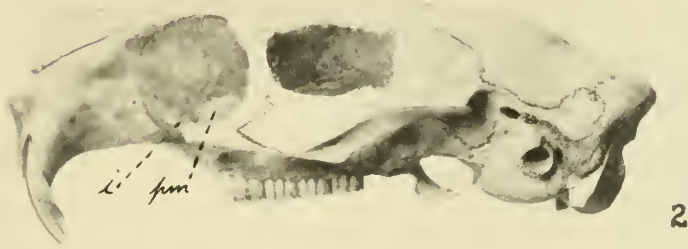
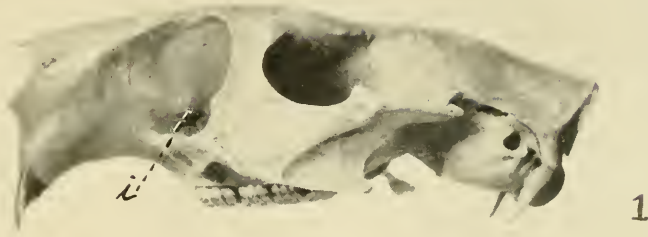
farther apart in *Capromys* than in *Geocapromys*. This character is not visible in complete skulls, but is evident in the broken-away palates so often found in caves. The upper surface of such a fragment of the maxillary (lower floor of nares) in the region between the anterior zygomatic roots is traversed by a deep median sulcus in *Capromys* occupying the space between the rather widely separated bases of the opposite premolars; in *Geocapromys* there is no median sulcus between the premolars, but the maxillary rises as a broad flat plate to the level of the connate bases of these teeth. Immediately behind this level the groove begins, passing backward to the posterior nares between the progressively more separated roots of the molars.

The genus *Geocapromys* contains four species—the living *G. brownii* (Fischer) of Jamaica, *G. thoracatus* (True) of Little Swan Island, Gulf of Honduras, *G. ingrahami* (Allen) of Plana Keys, Bahamas, and the extinct though geologically Recent *G. columbianus* (Chapman) of Cuba (with its synonym *G. cubanus* G. M. Allen).

EXPLANATION OF PLATE

All figures natural size

- FIG. 1. *Geocapromys brownii* (Fischer). Adult female. No. 143851, U. S. Nat. Mus. Jamaica. *i* = base of incisor capsule.
- FIG. 1a. *Geocapromys brownii* (Fischer). Adult male. No. 141908, U. S. Nat. Mus. Jamaica. Palate cut away from skull and viewed from above. *pm* = base of premolar, *i* = base of incisor capsule.
- FIG. 2. *Capromys pilorides* Desmarest. Small individual, No. 103884, U. S. Nat. Mus. Cuba. *pm* = capsule at base of premolar, *i* = base of incisor capsule.
- FIG. 2a. *Capromys pilorides* Desmarest. Large individual. No. 253232, U. S. Nat. Mus. Palate cut away from skull and viewed from above. *pm* = base of premolar, *i* = base of incisor capsule.
- FIG. 2b. *Capromys* sp. No. 254679, U. S. Nat. Mus. Cuba (cave deposit). Palate cut away from skull and viewed from above. *pm* = base of premolar, *i* = base of incisor capsule.



- 1. *Geocapromys*.
- 2. *Capromys*.

(All figures natural size)