MAMMALIAN SPECIES 812:1–4

Bradypus pygmaeus (Pilosa: Bradypodidae)

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Abstract: *Bradypus pygmaeus* Anderson and Handley, 2001, the pygmy three-toed sloth, is a dwarf bradypodid that is 1 of 4 species of *Bradypus*. It is easily distinguished from its conspecifics by its small size and restricted distribution (endemic to Isla Escudo de Veraguas of Bocas del Toro, off the Caribbean coast of Panama). *B. pygmaeus* is found exclusively in red mangroves at sea level, and it is listed as critically endangered by the International Union for the Conservation of Nature and Natural Resources because of its restricted range and declining population size that is due to hunting and tourism. DOI: 10.1644/812.1.

Key words: dwarf sloth, endangered species, folivore, monk sloth, Panama endemic, sloth, three-toed sloth

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Bradypus Linnaeus, 1758

Bradypus Linnaeus, 1758:34. Type species *Bradypus tridactylus* Linnaeus, 1758, by subsequent designation (Miller and Rehn 1901).
Tardigradus Brisson, 1762:21. Unavailable name.
Ignavus Blumenbach, 1779:70. Type species *Ignavus tridactylus*: Blumenbach, 1779 (= *Bradypus tridactylus* Linnaeus), by monotypy.
Pradypus Ledru, 1810:257, footnote. Incorrect subsequent spelling of *Bradypus* Linnaeus.
Choloepus: Desmarest, 1816:327. Part; not *Choloepus* Illiger, 1811.
Acheus F. Cuvier, 1825:194. Type species *Bradypus tridactylus* Linnaeus, by monotypy.
Achaeus Erman, 1835:22. Incorrect subsequent spelling of *Acheus* F. Cuvier.
Achaeus Gray, 1843:xxviii. Incorrect subsequent spelling of *Acheus* F. Cuvier.
Arctopithecus Gray, 1843:xxviii. Nomen nudum.
Arctopithecus Gray, 1850:65. Preoccupied by *Arctopithecus* Virey, 1819 (Primates).
Scaeopus Peters, 1864:678. Type species *Bradypus torquatus* Illiger, 1811, by monotypy.
Hemibradypus Anthony, 1906:292. Type species *Hemibradypus mareyi* R. Anthony, 1907, by subsequent designation (R. Anthony 1907:220).
Eubradypus Lönnberg, 1942:5. Type species *Bradypus tridactylus* Linnaeus, 1758, by original designation.
Neobradypus Lönnberg, 1942:10. Unavailable name.

CONTEXT AND CONTENT. Order Pilosa, suborder Folivora, family Bradypodidae. *Bradypus* is the sister-taxon to all other sloths including several groups of extinct ground sloths as well as extant two-toed sloths (*Choloepus*) based on craniodental characters (Gaudin 2004). This generic synonymy is modified from Gardner (2007). The following key to the 4 species of *Bradypus* is from Wetzel (1985) with modifications from Anderson and Handley (2001):

Fig. 1.—An adult *Bradypus pygmaeus* from Isla Escudo de Veraguas. Used with permission of the photographer Bill Hatcher.

Fig. 2.—Dorsal, ventral, and lateral views of cranium and lateral view of mandible of an adult female *Bradypus pygmaeus* (United States National Museum 579177; age class 2 of Anderson and Handley [2001]). Greatest length of cranium is 68.7 mm.

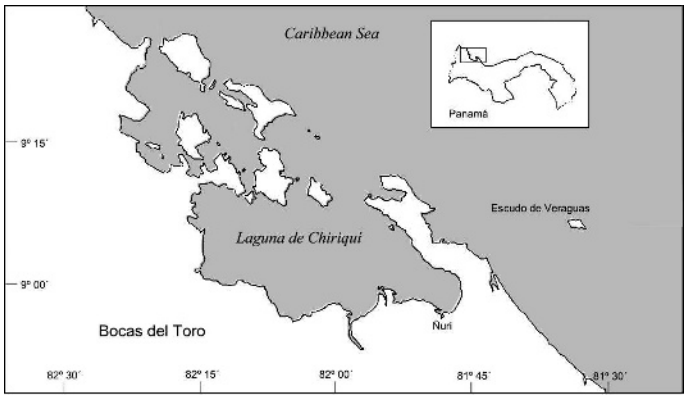

Fig. 3.—*Bradypus pygmaeus* is endemic to Isla Escudo de Veraguas east of Laguna de Chiriquí (modified with permission from Anderson and Handley [2002]).

1. Long, black hair beginning at nape of neck projects over shoulders as 2 plumes that unite on upper back; no speculum in males; skull with pterygoid sinuses distinctly inflated ..... *B. torquatus*
   No black plume on dorsum; facial hair shorter than dorsal hair and of a different color; males with middorsal yellow-to-orange speculum; pterygoids not inflated 2 2
2. Throat yellowish golden, continuous with pale color of forehead, lacking dark markings on face; foramina present in anterodorsal nasopharynx ..... *B. tridactylus*
   Throat and sides of face brown or hairs on throat only slightly frosted with golden-yellow tips, prominent dark brown forehead and orbital stripe typically present, outlining paler color of ocular area on face; no foramina present in anterodorsal nasopharynx 3
   Size small (total length, 485–530 mm); skull small (greatest length, 67–72 mm) and gracile; large external auditory meatus; known only from Bocas del Toro, Panamá ..... *B. pygmaeus*
   Size variable (total length, 485–750 mm); skull variable (greatest length, 68–86 mm) and robust; medium external auditory meatus; known from eastern Honduras to northern Argentina ..... *B. variegatus*

Bradypus pygmaeus Anderson and Handley, 2001
Pygmy Three-toed Sloth

Bradypus pygmaeus Anderson and Handley, 2001:17. Type locality "Panamá: Bocas del Toro: Isla Escudo de Veraguas, West Point."

CONTEXT AND CONTENT. Context as for genus. *Bradypus pygmaeus* is monotypic.

DIAGNOSIS

Bradypus pygmaeus is a dwarf, 3-toed sloth with a gracile skull and an auditory meatus that is large for the size of the skull (Anderson and Handley 2001). *B. variegatus* is generally larger in size than *B. pygmaeus*, with a more robust skull. The coronoid process of the mandible for *B. pygmaeus* is thin and falcate, whereas that of *B. variegatus* is thick (Anderson and Handley 2001).

GENERAL CHARACTERS

Pygmy three-toed sloths resemble *B. variegatus* except for their smaller size (Anderson and Handley 2002). The face of *B. pygmaeus* is buff to tan with a dark band across the brow and an orange wash around the dark eye stripe. Hair on the crown and shoulders is long, shaggy, and forms an obvious hood around short facial hair. The throat is agouti gray-brown and the dorsum is blotchy in color with a dark midsagittal stripe. Males have a dorsal, orange speculum with woolly hair along the margin (Anderson and Handley 2001). Average external measurements (in mm or kg) with parenthetical *SE*, range, and sample size for adults of mixed sex are: total length, 505.4 (5.71, 485–530, 7); length of tail, 49.7 (2.13, 45–60, 7); length of hind foot, 102.4 (1.96, 94–110, 7); length of ear, 10 (–, 10–10, 1), body mass, 2.9 (0.185, 2.5–3.5, 7—Anderson and Handley 2001).

The skull of *B. pygmaeus* is small and gracile with weak and often convex parietal ridges, thin pterygoids, no foramina in the anterodorsal nasopharynx, minute premaxillae barely articulating with the maxillary, an incomplete zygomatic arch with slender roots, a long, thin descending process of the jugal, and a lambdoidal crest that is continuous across the posterior edge of the occiput. Average cranial measurements (in mm) with parenthetical *SE*, range, and sample size for adults of mixed sex are: greatest length of skull, 69.0 (0.67, 67.5–72.2, 6); anterior zygomatic breadth, 41.5 (1.15, 38.3–45.7, 6); posterior zygomatic breadth, 39.5 (1.02, 36.5–42.9, 6); postorbital breadth, 21.2 (0.395, 20.2–22.4, 6); length of squamosal process, 21.5 (0.405, 20.3–22.9, 7); breadth of squamosal process, 4.3 (0.235, 3.5–5.0, 7); length of maxillary toothrow, 23.3 (0.38, 22.3–24.7, 6); postpalatal length, 34.8 (0.60, 33.3–37.0, 6); palatal breadth, 16.3 (0.245, 15.5–17.2, 7); depth of braincase, 24.5 (0.195, 23.7–25.0, 6); breadth of antorbital bar, 3.2 (0.135, 2.8–3.7, 7); length of descending jugal process, 16.2 (0.46, 14.7–18.0, 7); diameter of external auditory meatus, 5.9 (0.225, 5.3–6.7, 7); breadth of ascending mandibular ramus, 13.2 (0.46, 11.9–14.9, 7—Anderson and Handley 2001).

DISTRIBUTION

Bradypus pygmaeus is endemic to Isla Escudo de Veraguas of Bocas del Toro, off the Caribbean coast of Panama (Anderson and Handley 2001). This 4.3-km^2 island separated from the mainland about 8,900 years ago and is currently 17.6 km distant (Anderson and Handley 2001). No fossils are known.

FORM AND FUNCTION

Bradypus pygmaeus has 18 teeth, 10 on the upper jaw (2 anterior chisel-shaped teeth and 8 molariform teeth) and 8 on the lower jaw (2 anterior chisel-shaped teeth and 6 molariform teeth—Anderson and Handley 2001; Naples 1982). The upper, anterior, chisel-shaped teeth are tiny or absent and the lower ones are compressed anteroposteriorly (Anderson and Handley 2001). The morphology of *B. pygmaeus* represents rapid speciation in an insular setting (Anderson and Handley 2002).

ONTOGENY AND REPRODUCTION

Cranial characteristics define 4 age classes. Newborns and juveniles have small skulls with open sutures, small and poorly developed anterior skull elements, smooth masseter–temporal fossa, no postmastoid fossa, frontal sinuses with little swelling, and lambdoidal crest not yet formed. Immatures also have open sutures and a smooth masseter–temporal fossa, but are intermediate in size with somewhat swollen frontal sinuses, a lambdoidal crest, anterior frontal elements nearing adult proportions, and sometimes postmastoid fossae. Young adults have large skulls with open sutures; the anterior frontal elements have adult proportions and the rest of the skull has some of the following: prominent postmastoid fossae, swollen frontal sinuses, rugose masseter–temporal fossae, and a sharply edged lambdoidal crest. The large skulls of full adults have some or all sutures that are closed, fully developed anterior skull elements, rugose masseter–temporal fossae, prominent postmastoid fossae, swollen frontal sinuses, and a sharply edged lambdoidal crest (Anderson and Handley 2001).

ECOLOGY AND BEHAVIOR

Bradypus pygmaeus occurs exclusively in red mangroves at sea level (Anderson and Handley 2001). The film *Hanging with the Sloth* documents pygmy three-toed sloth behavior including terrestrial and arboreal locomotion and swimming (Ledbetter 2005). A genus-level review of captive husbandry is available (Raines 2005).

CONSERVATION

Bradypus pygmaeus is listed as Critically Endangered by the International Union for the Conservation of Nature and Natural Resources because of its restricted range and population decline as a result of hunting and tourism (Samudio et al. 2006).

REMARKS

Bradypus is from the Greek for slow-footed. The specific epithet is from the Latin *pygmaeus* meaning dwarf or pygmy (Anderson and Handley 2001). Common names are monk sloth and dwarf sloth.

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