MAMMALIAN SPECIES 839:1–9

Bradypus tridactylus (Pilosa: Bradypodidae)

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Abstract: *Bradypus tridactylus* Linnaeus, 1758, is commonly called the pale-throated sloth. Males have a middorsal speculum. *B. tridactylus* is endemic to rain forests of northeastern South America. Like other sloths, *B. tridactylus* is a high-canopy folivore. It has a commensal relationship with the algae and invertebrates that live in its abundant pelage. It is listed as "Least Concern" by the International Union for Conservation of Nature and Natural Resources because of its distribution in pristine areas of the Amazon Basin. It does not adapt to zoo settings. DOI: 10.1644/839.1.

Key words: commensal, Edentata, edentate, folivory, sloth, South America, Xenarthra

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Bradypus tridactylus Linnaeus, 1758
Pale-throated Sloth

[*Bradypus*] *tridactylus* Linnaeus, 1758:34. Type locality "Americae meridionalis arboribus;" restricted to "Surinam" by Thomas 1911:132.

[*Ignavus*] *tridactylus*: Blumenbach, 1779:71. Name combination.

Acheus aï Lesson, 1827:306. Type localities "Brésil, à Cayenne, à la Nouvelle-Espagne, dans toute l'Amérique intertropicale."

Bradypus cuculliger Wagler, 1831:column 605. Type localities "Surinamo, Cayenna et Guiana."

[*Bradypus* (]Acheus[)] *cummunis* Lesson, 1840:268. Type locality "Le Brésil."

B[*radypus*]. *tridactylus* (*Guianensis*) de Blainville, 1840:figs. 3, 4, 6. Type locality unknown.

Bradypus gularis Rüppell, 1842:138. Type locality "die Wälder von Guiana."

Arctopithecus gularis: Gray, 1850:70. Name combination.

Arctopithecus Blainvillii Gray, 1850:71. Type locality "Tropical America;" restricted to Brazil by O. Thomas (1917:354).

Arctopithecus flaccidus Gray, 1850:72. Type locality "Venezuela."

[*Arctopithecus flaccidus*] Var. 1. *Dysonii* Gray, 1869:365. Type locality "Venezuela."

[*Arctopithecus flaccidus*] Var. 2. *Smithii* Gray, 1869:365. Type locality "Para" = Pará, Brazil.

Arctopithecus blainvillei Gray, 1871:439. Incorrect subsequent spelling of *blainvillii* Gray, 1850.

Arctopithecus cuculliger: Gray, 1871:440. Name combination.

Fig. 1.—Adult male *Bradypus tridactylus* from Suriname showing the sex-specific dorsal speculum. Used with permission of the photographer M. Pool.

[*Bradypus tridactylus*] Var. *Blainvillei*: Trouessart, 1898:1095. Name combination.

[*Bradypus tridactylus*] Var. *flaccidus*: Trouessart, 1898:1096. Name combination.

Bradypus didactylus Elliot Smith, 1899:296, fig. 11. Incorrect subsequent spelling of *tridactylus*.

Bradypus flaccidus: Krumbiegel, 1941:55. Name combination.

Bradypus flaccions Sanderson, 1949:783. Incorrect subsequent spelling of *flaccidus* Gray, 1850.

Arctopithecus blainvilii Cabrera, 1958:208. Incorrect subsequent spelling of *blainvillii* Gray, 1850.

Bradypus [(*Bradypus*)] *infuscatus flaccidus*: Cabrera, 1958:209. Name combination.

Bradypus tlaccidus Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1987:appendix II. Incorrect subsequent spelling of *flaccidus* Gray, 1850.

Context and Content. Order Pilosa, suborder Folivora, family Bradypodidae. *B. tridactylus* is monotypic. Synonymy is modified from Gardner (2005, 2007).

Nomenclatural Notes. The generic name, *Bradypus*, is from the Greek for slow-footed. The species name, *tridactylus*, refers to the 3 claws present on both the forefeet and hind feet. Common names include ai-ai and preguiça de bentinho (Wetzel and de Avila-Pires 1980), yellow-throated ai (Gray 1871), and son-loiri (Sanderson 1949). Some researchers incorrectly referred to *Bradypus variegatus* as *Bradypus tridactylus*, but *B. variegatus* has a much wider distribution (Hayssen 2009). Thus, much literature that reportedly describes *B. tridactylus* actually pertains to *B. variegatus*. For instance, the National Center for Biotechnology Information (www.ncbi.nlm.nih.gov/) provides a gateway to genetic and other molecular sequences but does not include geographic information; thus, sequences attributed to *B. tridactylus* may actually be for *B. variegatus* and cannot be used.

DIAGNOSIS

Bradypus tridactylus is sympatric with both two-toed sloths *Choloepus didactylus* and *C. hoffmanni*. *B. tridactylus* has 3 digits on the manus that are partially fused and hairy volar pads, whereas both *Choloepus* have only 2 unfused digits and hairless volar pads (Mendel 1985; Pocock 1924). *B. tridactylus* has 8 or 9 cervical vertebrae compared with 6 in *Choloepus hoffmanni* (Mendel 1985). Compared with *B. variegatus*, *B. tridactylus* has a yellow throat (that of *B. variegatus* is brown) and distinct foramina in the anterodorsal nasopharynx (lacking in *B. variegatus*—Wetzel and Avila-Pires 1980); however, the 2 species are difficult to distinguish in the field.

GENERAL CHARACTERS

Adults are blackish with close, large, black spots on shoulders, back, and haunches and have a yellow head and throat (Gray 1871). Males have a dorsal orange-yellow patch with a broad, tapering, black central streak and a black spot (Fig. 1; Gray 1871). Juveniles are grayer than adults (Gray 1871).

Males are smaller than females (Beebe 1926). External measurements (mm) for 500 adults (*SD*, range) from French Guiana were: length of head and body, 548 (42, 450–755); length of tail, 59 (11, 22–110); shoulder height, 457 (31, 300–540); length of hind foot, 91 (7, 40–116); length of head, 84 (11, 60–150); length of ear, 13 (3, 5–21); mass (kg), 4.62 (0.59, 3.42–6.50—Richard-Hansen et al. 1999). In French Guiana, length of head and body of females is 8 mm longer than that of males, whereas shoulder height in males is 5 mm longer than in females (Richard-Hansen et al. 1999). In Suriname, external measurements (mm) for 2 males and 3 females, respectively, were: total length, 475, 555; length of tail, 65, 51; length of hind foot, 83, 75; length of ear, 17, 19; mass (g) 3,233, 2,949 (Sanderson 1949). External measurements (mm) of males and females, respectively, from Suriname at Naturalis (Leiden) were (mean, *SD*, range, *n*): length of head and body, 508.1, 33.03, 445–550, 9; 527.4, 17.92, 505–550, 7; length of tail, 48.4, 9.40, 39–65, 9; 44.3, 10.55, 31–65, 7; length of hind foot (without nail), 100.4, 11.13, 90–120, 8; 102.1, 5.64, 95–108, 7; mass (g), 3,925.0, 913.4, 3,250–6,000, 8; 4,164.3, 565.47, 3,750–4,500, 7.

Average cranial (Fig. 2) measurements (*SE*, range, mm, as illustrated by Anderson and Handley [2001]) for 5 adults of mixed sex (from the United States National Museum) were: greatest length of skull, 72.59 (2.87, 69.88–76.84); anterior zygomatic breadth, 44.59 (1.63, 42.89–47.30); posterior zygomatic breadth, 40.28 (1.63, 37.54–41.86); postorbital breadth, 23.59 (0.94, 22.01–24.51); length of squamosal process, 25.61 (0.577, 24.93–26.53); breadth of squamosal process, 5.54 (0.544, 4.57–5.84); length of maxillary toothrow, 23.75 (1.37, 22.29–25.92); postpalatal length, 36.69 (1.965, 34.46–38.60); palatal breadth, 16.92 (0.887, 16.08–18.40); depth of braincase, 31.52 (1.795, 29.64–33.75); breadth of antorbital bar, 4.32 (0.693, 3.42–5.30); length of descending jugal process, 17.58 (2.10, 14.46–20.31); diameter of external auditory meatus, 5.16 (0.435, 4.72–5.66); breadth of ascending mandibular ramus, 15.66 (1.534, 13.70–17.06).

DISTRIBUTION

Bradypus tridactylus lives in the northern Neotropics in Venezuela, Guyana, Suriname, French Guiana (Guyane), and northeastern Brazil (Fig. 3; Wetzel and Avila-Pires 1980) from the delta of the Orinoco River to the Amazon River along both banks of the Amazon from the Negro

Fig. 2.—Dorsal, ventral, and lateral views of skull (with atlas attached) and lateral view of mandible of an adult female *Bradypus tridactylus* (United States National Museum 362241) from the upper Takutu River region of Guyana. Greatest length of skull is 69.96 mm.

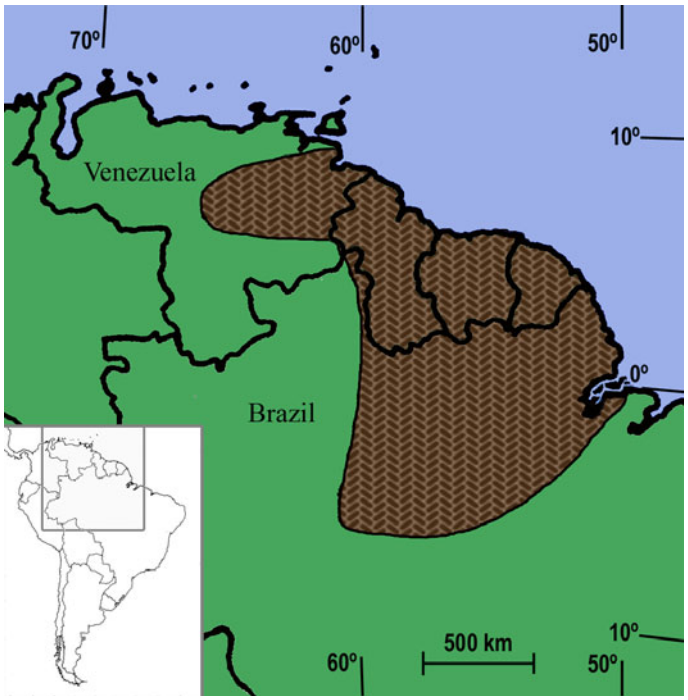

Fig. 3.—Geographic distribution (brown, hatched) of *Bradypus tridactylus* in Venezuela, Guyana, Suriname, French Guiana (Guyane), and northeastern Brazil (modified from Gardner 2007).

River to the mouth (Wetzel 1982). No fossils are known (Patterson and Pascual 1968).

FORM AND FUNCTION

Pelage color of *Bradypus tridactylus* provides good camouflage (Sanderson 1949). The fur has long guard hairs and a fine, wavy undercoat (Beebe 1926). "The long hairs are flattened to an oval or almost a ribbon, presenting very distinctly broad and narrow sides. The longer, white hairs are more than twice as wide as they are deep averaging .25 by .11 millimeter. … The hair as a whole grows very closely together from small tufts, closely resembling the down of nestling birds. These are .2 to .6 of a millimeter apart, and each clump consists of six to twenty separate hairs. … The relative average lengths of the short and long hairs are twenty five and fifty millimeters … between the eye and ear the hair is thirteen millimeters long, while its maximum length is on the nuchal cape, and on the upper arm, where it may reach one hundred millimeters" (Beebe 1926:28–29). Hairs of *B. tridactylus* have neither a medulla nor pigment granules (Aiello 1985). Individual hairs have moderate transverse cracking (Aiello 1985). Algae colonize the outer hair but not the underfur (Aiello 1985). Alga occur between the cuticular scales (Aiello 1985). The surface of the hair becomes mucilaginous and sticky when wet (Aiello 1985).

Vertebral formula for *Bradypus tridactylus* is 9 C, 16 T, 3 L, 6 S, 11 Ca, total 45 (Narita and Kuratani 2005). The dorsal–ventral flexibility of the head and neck is 270°; the lateral flexibility is 330°. Forelimbs are more flexible than hind limbs. The body can curl forward into a ball but a back bend is not possible. The tail is mobile up through its tip (Beebe 1926). The myology of the limbs has been detailed (Humphry 1870).

Eyes are set about 30 mm apart and look forward (Piggins and Muntz 1985). One eyeball was 14 mm in diameter (Beebe 1926). Eye movements were not observed but blinking was. Eyes are of moderate size with a wide, convex cornea and a rounded, crystalline lens. Irises are medium brown and centrally located; they contract to a pinhole pupil under daylight conditions and the pupil is circular as it contracts. The horizontal monocular fields were 70° with a binocular overlap of 35°. The retina has only rods (Piggins and Muntz 1985). Pinna are small, circular, and buried in fur (Beebe 1926). The hyoid is dissected from the ear with difficulty (Beebe 1926). *B. tridactylus* has acute hearing (Hoke 1987). Smell is used during locomotion to detect rotten branches (Beebe 1926). Details of ocular anatomy, retinal histology (Piggins and Muntz 1985), ear region (Patterson et al. 1992), encephalon (Pouchet 1869), and telencephalon (as *B. tridactylus*—Anthony 1953) are available.

The oral cavity is adapted for folivory (Beebe 1926). The lips are thick, leathery, with low tubercles as well as 2 larger projections that hold leaves in place while foraging. The tongue is large (11 by 35 mm), thick, soft, with deep longitudinal furrows, shallow transverse grooves, minute, backward-directed spines (25/mm^2—Beebe 1926), and 2 vallate papillae (Sonntag 1923). The palate is rugose. The oral cavity except the tongue is black. Each upper jaw has 5 teeth: 4 molarlike and 1 peglike anterior tooth. The anterior teeth are separated by an 8-mm gap. Each lower jaw has 4 molarlike cheek teeth (Beebe 1926).

The esophagus is small and short but the stomach is large (100 by 120 mm; 60 mm thick) and complex (Beebe 1926). A detailed description of the anatomy of the complex stomach is available in German (Klinkowström 1895). A large cecal diverticulum is present. The small intestine is 1,925–3,825 mm long, and the large intestine is 80–120 mm long ($n = 2$). The trilobed liver is small (55 by 75 mm or 80 by 90 mm; 20–25 mm thick) with closely united lobes (Beebe 1926).

Gut contents of 6 individuals were 17–37% of body mass; rate of fermentation was 6–12 mmol l^{-1} h^{-1}; and mean retention time for particle and liquid markers was 147–152 h (Foley et al. 1995). Dung pellets are small, dense, angular or ovoid, and about 8–12 mm in diameter (Waage and Best 1985). About a cup of pellets is defecated in a pile (Waage and Best 1985). The bladder can be up to 120 mm in diameter (Beebe 1926).

Lungs of an adult female were 85 mm long, the larynx was 55 mm long, and the recurved tracheal loop was 36 mm long (Beebe 1926). Respiration is irregular; after swimming about 30 m, one animal exhaled 25 times in 25 s (Beebe 1926).

A small clitoris is present; the vagina is duplex (Klinkowström 1895). The simplex uterus is pear shaped (Benirschke and Powell 1985). Fallopian tubes of 1 pregnant female were 7.5 cm long, and ovaries were located in a 8-by-3-cm bursa (Benirschke 2008). One pregnant uterus was 12 by 5 cm (Benirschke and Powell 1985). An 11-by-7-cm (greatest diameters), fundally implanted, near-term placenta was 60 g with about 20 nodular discs held in place by membranes and fetal vessels (Benirschke 2008; Benirschke and Powell 1985). The amnion lacks nodules and is firmly attached to the chorion (Benirschke and Powell 1985). An umbilical cord from a near-term pregnancy was 15 cm long, was diffusely keratinized, and had 2 arteries and 1 vein (Benirschke and Powell 1985). Histological images of the placenta have been published (Benirschke and Powell 1985). Males, attributed to *B. tridactylus*, have rudimentary seminal vesicles, a disseminate prostate gland, and a pair of bulbourethral glands (Klinkowström 1895 in Engle 1926). Testes are abdominal (Klinkowström 1895).

The early literature contains extensive details and illustrations of hair (Sonntag and Duncan 1922), musculature (Zieger 1925), muscles of the limbs including forefeet and hind feet (Jouffroy et al. 1961; Miller 1935; Vassal et al. 1962), digestive tract including histological sections (Sonntag 1921; Sonntag and Duncan 1922), brachial plexus (Harris 1939), and brain (Elliot Smith 1899). This literature is primarily from animals attributed to *B. tridactylus*, but which may actually be *B. variegatus*. The source of the animals is unclear because most were transported from locations unknown to the scientist.

Bradypus tridactylus is somewhat poikilothermic (Kredel 1928). Two animals reported as *B. tridactylus* had normal clinging and climbing locomotion after removal of their cerebellum (Murphy and O'Leary 1973).

ONTOGENY AND REPRODUCTION

Litter size is 1 (Beebe 1926). Two reports of gestation length are divergent: 106 days (Hoke 1987) and 6 months (Taube et al. 2001). In French Guiana, pregnant females were found in March–September (Richard-Hansen and Taube 1997) or January–April (Taube et al. 2001). In Guyana, mating occurs in March and April and 10 births occurred in July–September (Beebe 1926). In Suriname, a pregnant female was collected in March (Naturalis 10460, Leiden). Lactating and nonlactating females do not differ in body mass (Taube et al. 2001). Lactating females are found April–September in French Guiana (Taube et al. 2001). Females can gestate and lactate simultaneously (Taube et al.

2001). First solid food is licked from the mother's lips at 3 weeks, and leaves are 1st eaten at 5 weeks (Beebe 1926). Lactation continues for ≥1 month (Beebe 1926). Physical characteristics of semen, but not the morphology of spermatozoa, differ in wet and dry seasons (Peres et al. 2008).

Late-term embryos are nearly identical to neonatal sloths up to 1 or 2 weeks old (Beebe 1926; de Beaux 1931). ''The hairs are very soft and fine, even softer than in the adult. As to length, on the top of the head the length is 23 mm, at the elbow 30, on the midbreast 26, on the knee 23, and on the midback 30 mm. With the exception of the nostrils, the sub-nasal lip area and a narrow line down the sole, from claw base to heel, every part of body and limbs is clothed densely with hair'' (Beebe 1926:45). Adrenals of a near-term fetus had a large cortex (Benirschke and Powell 1985). A full-grown male fetus was 185 g in mass and 27 cm from snout to tail (Benirschke and Powell 1985). Newborns have fur and open eyes; they cling to their mothers immediately (Hoke 1987; Sanderson 1949). ''The normal position of the infant after birth is flat upon the mother's ventral body, with limbs wide-spread sideways, gripping her long hair on the sides of the body. From this point of vantage, by a turn and twist of his mobile neck, he can reach either breast, the glands being placed high up and well to each side of the middle line. … On the sixth or seventh day the young sloth begins a series of gymnastics, by freeing one or both his front limbs and leaning backward, sometimes completely reversed or also stretching far to one side … often hanging with his head dangling far out between the mother's knees and body'' (Beebe 1926:46). Young will take chewed food from their mother's mouth at about 3 weeks (Beebe 1926). The following measurements are from a 4-week-old male: diameter of eyeball, 8 mm; weight of skin, 75 g; weight of skinned body, 235 g; total weight, 310 g; tongue 23 by 10 mm; a square millimeter of tongue contained 72 ''teeth'' for a total of about 17,500 on the entire tongue; heart, 21 by 44 mm; 8 teeth per jaw (the 2 upper anterior teeth not functional); lungs, 31 mm wide by 13 mm thick by 25 mm long anteriorly and 44 mm long posteriorly; larynx, 35 mm behind snout with 2 concave cartilages against the roof of the mouth; trachea, 95 mm long with about 100 tracheal rings 3 mm in diameter; bladder (diameter, 33 mm; length, 55 mm) fills the lower half of the coelom; large intestine, 35 mm long; small intestine 800 mm long and 5 mm in diameter; liver, trilobed and 43 mm long by 33 mm wide by 12 mm thick; and kidneys, 18 by 13 mm (Beebe 1926). Head–body length versus body mass data were plotted for 500 animals up to 7 kg; head–body length (20–55 mm) curves convexly downward from 0 to 3.5 kg, then slowly increases to 65–70 mm with animals up to 7 kg (Richard-Hansen et al. 1999). Sexual maturity is at about 3 years for both sexes (Taube et al. 2001).

Young seldom leave their mother's ventrum during the 1st month or so of their lives, after which the infant will crawl all over her body (Beebe 1926). Play has been observed (Beebe 1926). Young have long, soft, flaccid, gray-brown fur with a mottled whitish dorsum, a yellowish face and throat, a black eye-streak, and a black circumference around head and neck (Gray 1871).

ECOLOGY

In French Guiana, density of *Bradypus tridactylus* was 1.7 individuals/km^2 and the species is sympatric with *Choloepus didactylus* (Taube et al. 1999). In Guyana, density was 31 individuals/km^2 (Beebe 1926). In Suriname, *B. tridactylus* accounts for 14.7% of the nonvolant, terrestrial, mammalian biomass (Walsh and Gannon 1967 in Eisenberg and Thorington 1973:table 1). *B. tridactylus* is sympatric with *B. variegatus* along both banks of the Amazon River from the Río Negro to the Río Tapajós and along the left bank to the mouth of the Amazon (Wetzel and Avila-Pires 1980). In Manaus, Brazil, sex ratio of *B. tridactylus* was 1:1 (Jorge et al. 1985). *B. tridactylus* readily eats leaves of *Cecropia* (Cecropiaceae), *Ceiba sumauma* (Bombacaceae), *Elizabetha paraense* (Leguminosae), and *Hevea viridis* (Euphorbiaceae—Carvalho 1960).

Endoparasites include *Endotrypanum schaudini* (from 1 of 23 animals—Shaw 1985). *Trypanosoma rangeli* occurred in a wild animal (Dereure et al. 2001) as did an unidentified *Trypanosoma* (Miles et al. 1983). The internal parasite *Pneumocystis carinii* occurred in a captive animal reported to be *B. tridactylus* (Lainson and Shaw 1975; Poelma 1975). External parasites include ticks (*Amblyomma geayi* [Waage and Best 1985] and *Amblyomma varium* [Marques et al. 2002]), mites (*Edentalges bradypus*, *Lobalges trouessarti*, and *Psoralges andrei* [Fain 1965]), mosquitoes (*Aedes serratus* [Pinheiro et al. 1962]), and Acaridada (Waage and Best 1985). In Manaus, most (99%) of *B. tridactylus* were infested with an average of 33 ticks/individual (females, 32.9 ticks/individual and males, 34.7 ticks/individual—Waage and Best 1985).

Bradypus tridactylus has a commensal relationship with sloth moths (*Cryptosis choloepi* [Hoke 1987], *Bradypodicola hahneli*, *C. rufipictus*, and *C. waagei* [Sanderson 1949; Waage and Best 1985]). Sloth moths inhabit the fur of *B. tridactylus* and their larvae feed on dung. Trace elements for *B. tridactylus* are obtained by incidental ingestion of cecropia ants (*Azteca*—Hoke 1987). The beetle *Trichillum adisi* resides near elbows and knees deep within the fur, and larval stages are found within dung pellets (Waage and Best 1985). Other beetles (*Uroxys batesi* and *U. besti*) also occur in the fur (Waage and Best 1985). The mites *Macrocheles impae* and *M. uroxys* are part of a complex commensal relationship between mites, dung beetles, and *B. tridactylus* (Waage and Best 1985).

Fig. 4.—Adult female in typical arboreal habitat in Suriname showing the ability to turn the head 180°. Used with permission of the photographer M. Pool.

Bradypus tridactylus is vulnerable to cats (jaguar [*Panthera onca*] and margay [*Leopardus wiedii*]), snakes (anaconda [*Eunectes*]), and harpy eagles (*Harpia harpyja*—Beebe 1926; Hoke 1987; Izor 1985). *B. tridactylus* is difficult to keep in captivity except where the animal is endemic (Hoke 1987). They succumb to viral infections and trace element deficiencies (Hoke 1987). Electroejaculation has been successful (Peres et al. 2008).

BEHAVIOR

Bradypus tridactylus is not active; 1 animal slept an average of 18.5 h/day (Beebe 1926). The crook of a tree is the preferred sleeping location. The preferred sleeping posture is to sit on the horizontal branch, hold the vertical stem with the rear limbs, curl the head and neck flat on the breast, and curl both forelimbs around the head and body (Beebe 1926). *B. tridactylus* suns itself, stretched out, on top of canopy vegetation (Hoke 1987). It readily swims, with propulsion coming mainly from the forefeet. When swimming, three-fourths of its head and much of its dorsum are out of the water. When foraging, *B. tridactylus* suspends itself beneath branches hanging by its claws. It can straighten its claws (Beebe 1926), but claws remain flexed in death (Beebe 1926).

Bradypus tridactylus is predominantly solitary (Beebe 1926; Hoke 1987; Taube et al. 1999). Aggression occurs between members of the same sex and is predominantly striking with claws and rarely by biting (Beebe 1926).

An observed mating sequence was arboreal, with 3 copulations of 1.5–3 min, and mating occurred either face-to-face or with the male on the female's back (Richard-Hansen and Taube 1997). An observed birth included the mother pulling the neonate from her vagina, severing the umbilical cord with her claws, and grooming and massaging the neonate (Sanderson 1949). A dependent young (3–4 months old) remained on the female's venter during the sequence (Richard-Hansen and Taube 1997).

Bradypus tridactylus is curious and will explore minutia in its surroundings (Hoke 1987). It learns the spatial location of, for example, food and nest trees quickly but these engrams are lost if the animal is moved (Beebe 1926). While foraging, leaves are hooked by the claws and brought to the mouth or the head is moved directly to the leaves. Chewing is continuous with 1–2 bites/s; swallowing does not interrupt chewing. During chewing the bite is direct with no lateral movement of the jaws. Leaf tissue is moved by forward and back movements of the tongue (Beebe 1926). Foraging may occur at any time of day but is more frequent morning and afternoon (Beebe 1926).

Predator defense includes the animal staying very still and letting its well-camouflaged, alga-rich fur hide the animal among arboreal vegetation (Hoke 1987). *B. tridactylus* also lives most of its life high in the canopy (Fig. 4) often on small-branched trees and moves very slowly (Beebe 1926). They are aided by their tough skin and broad ribs (Beebe 1926). Behavioral defenses are not effective against most predators (Beebe 1926). If the weather is dry, *B. tridactylus* defecates on the ground using its tail to dig a hole. Defecation is from above during rain (Hoke 1987).

The sole documented vocalization is a whistle represented as "ai" or "ai-ai." This whistle is described as bird- or cicadalike and ventriloquial (Beebe 1926; Hoke 1987).

GENETICS

Bradypus tridactylus has a diploid number (2n) of 52 chromosomes with 5 metacentric pairs, including X and Y, and 21 acrocentric pairs generating a fundamental number (FN) of 56 (Dobigny et al. 2005; Jorge et al. 1985; Jorge and Pereira 2008). C- and G-banded karyotypes have been illustrated (Dobigny et al. 2005). A 1,200+-base pair sequence of exon 28 of the von Willebrand factor gene has been sequenced (attributed to *B. tridactylus*—Porter et al. 1996), as has the αA-crystallin of a putative *B. tridactylus* (Van Dijk et al. 1999). The 16S mitochondrial DNA from 3

B. variegatus and 1 *B. tridactylus* estimates a split between the lineages 0.4 million years ago (Barros et al. 2003).

CONSERVATION

Bradypus tridactylus is listed as Least Concern by the International Union for Conservation of Nature and Natural Resources (2008) because of its distribution in pristine areas of the Amazon Basin, where it is locally abundant (Aguiar and da Fonseca 2008; Arita et al. 1990; Chiarello et al. 2006).

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