Cabassous unicinctus (Cingulata: Dasypodidae)

Virginia Hayssen

*Smith College, vhayssen@smith.edu*

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Cabassous unicinctus (Cingulata: Dasypodidae)

Abstract: Cabassous unicinctus (southern naked-tailed armadillo) is a nocturnal, solitary, fossorial myrmecophage that ranges east of the Andes across the central lowlands of South America. It occupies a wide range of habitats including grassland, rain forest, cultivated pastures, flooded grasslands, forest patches, disturbed habitats, and gallery forests. C. unicinctus is listed as “Least Concern” by the International Union for Conservation of Nature and Natural Resources.

Key words: anteater, armadillo, Edentata, edentate, South America, Xenarthra

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Fig. 1.—An adult male Cabassous unicinctus from the central Pantanal, Nhecolândia region, Mato Grosso do Sul, Brazil. Used with permission of the photographer, Walfrido Tomas, Embrapa, Pantanal.
Dasypus octodecimcinctus Erxleben, 1777:113–114. Type locality “in America australi.”


Dasypus multicinctus Thunberg, 1818:68. Type locality “Brasilien.”


Dasypus tatuay: Schomburgk, 1840:34. Not Loricatus tatuay Desmarest, 1804.


Dasypus verrucosus J. A. Wagner, 1844:172, footnote, 175. Type locality “dem nördlichen Südamerika (Guiana).”

Xenurus squamicaudis Lund, 1845:xxxiv–xxxv. Type locality “Rio das Velhas Floddal,” Lagoa Santa, Minas Gerais, Brazil.

Dasypus hispidus Burmeister, 1854:287. Type locality “Lagoa Santa,” Minas Gerais, Brazil.

Dasypus loricatus J. A. Wagner, 1855:174. Type locality unknown.


Xenurus loricatus: Fitzinger, 1871:239. Name combination.

Xenurus latirostris Gray, 1873:22. Type locality “Brazils, St. Catherine’s.”

Ziphila lugubris Gray, 1873:23. Type localities “Brazils, St. Catherine’s ... S. America, Demerara;” restricted to Demerara, Guyana, by Wetzel et al. (2007:152).


[Lysiurus (Lysiurus)] latirostris: Trouessart, 1898:1147. Name combination.

[Lysiurus (Lysiurus)] loricatus: Trouessart, 1898:1147. Name combination.

[Lysiurus (Lysiurus)] hispidus: Trouessart, 1898:1147. Name combination.

[Lysiurus (Ziphila)] lugubris: Trouessart, 1898:1148. Name combination.

Tatusia unincincta: Miller, 1899:2. Name combination.

Tatoua (Tatoua) hispida: Miller, 1899:5. Name combination.


[1831]) of a French term used by Cuvier and Buffon, originally from a native name, capacou (Galibi, the native language of people from French Guiana), and referring to an armadillo (Palmer 1899; Gotch 1979). The species name,
unicinctus, is from the Latin cinct, meaning girdled, and perhaps from the Latin uncia meaning 12th (Borror 1960), thus referring to the 12 bands. In addition to southern naked-tailed armadillo, other common names are mole menor and tatu de rabo (Wetzel 1982); cabassou, cabassu, lugubre, tatu-rabo-de-couro, tatu-de-rabo-mole, tatu iba, and tatuai (Emmons 1990); cabassou de orejas largas (Eisenberg 1989); armadillo rabo de carne Amazonico, armadillo de cola desnuda, armadillo rabo de trapo, cachicambo rabo de carne, carachupa, cuspa, cuspa unicinctus, thus referring to the 12 bands. In addition to southern montafiera cormin, cuspa rabo blando, metecito, Naaktstaart Gordeldier, Nacktschwanz-Giurteltier, nopeish, peji, peji cola blanda, pejichi lloron, tatu ai, tatu bola, and tatu de rabo mole pequeno (Superina and Aguiar 2006); cabasu de orejas largas (Tomas et al. 2009).

**DIAGNOSIS**

Compared with the other genus, *Priodontes*, in the tribe Priodontini Gray, 1873, *Cabassous* is smaller (condylonalas length < 125 mm versus > 170 mm; length of head and body < 495 mm versus > 700 mm) with a tail that lacks articulating bony scutes (Wetzel et al. 2007).

*Cabassous unicinctus* (Fig. 1) is morphologically similar to *C. centralis* (northern naked-tailed armadillo—Hayssen et al. 2013) but their ranges do not overlap: *C. unicinctus* occurs east of the Andes and *C. centralis* occurs west of the Andes. *C. unicinctus* is smaller than the greater naked-tail armadillo, *C. tatuai* (mean length of head and body: 382 versus 458 mm—Redford 1994; Hayssen 2014).

**GENERAL CHARACTERS**

*Cabassous unicinctus* has a dark gray dorsal carapace with 10–13 movable bands in the middle of the body (Emmons 1990). Scutes are squarish and fingernail size (Emmons 1990), some (primarily *C. u. squamicaudis*) with bristles on the posterior margins (Miller 1899). Head is broad with a blunt nose and large, round, funnel-like ears that are often frayed and can fold to cover the meatus. The body armor extends between the ears and covers the nape of the neck. The tan ventrum is hairless. The gray tail usually has a pale tip and has only small inconspicuous scutes. The feet have 5 pale claws. In the forefoot, the centermost claw is enlarged (Pine 1973; Wetzel 1980; Emmons 1990; Wetzel et al. 2007).

Females are larger than males (Carter and Encarnacao 1983; Emmons 1990). Mean (with parenthetical range, n) cranial and mandibular measurements (mm) for *C. u. squamicaudis* and *C. u. unicinctus*, respectively, were: condylonalas length, 78.1 (4.4, 67.7–85.1, 21), 85.6 (2.5, 80.5–90.0, 16); adjusted rostral length, 36.2 (2.7, 29.8–40.0, 24), 41.6 (3.2, 37.6–44.5, 18); palatal length, 45.0 (3.1, 37.5–50.3, 25), 50.4 (3.2, 45.7–54.5, 19); postrostral length, 42.1 (2.5, 36.6–47.0, 21), 44.6 (1.0, 43.0–45.9, 16); palatal width, 11.7 (1.1, 9.4–14.1, 25), 12.5 (0.6, 11.3–13.9, 21); anterior rostral width, 12.2 (0.8, 10.6–13.9, 24), 13.1 (0.6, 11.5–14.0, 20); interlacrimal width, 32.9 (2.3, 28.3–35.3, 25), 36.4 (1.6, 32.9–38.5, 21); interorbital width, 26.6 (1.4, 24.5–29.5, 25), 26.6 (1.1, 25.0–28.6, 21); zygomatic width, 43.7 (2.9, 38.7–47.1, 25), 45.7 (2.0, 40.2–49.0, 20); mastoidal width, 37.4 (2.2, 32.5–41.7, 23), 41.3 (1.7, 37.5–43.9, 20); height of cranium, 33.8 (2.1, 29.6–38.2, 24), 35.7 (1.3, 32.1–38.0, 21); length of maxillary toothrow, 27.8 (2.6, 24.3–31.1, 10), 29.9 (1.8, 27.1–33.3, 21); length of mandibular toothrow, 25.6 (2.2, 22.9–29.3, 13), 28.4 (1.1, 26.3–31.1, 18—Wetzel 1980). Mean (with parenthetical SD, range) measurements (mm) of
maxillary and mandibular teeth for 21 C. u. squamicaudis and 10–12 C. u. unicinctus, respectively, were: maxillary teeth: 4th, length, 2.9 (0.32, 2.4–3.4), 3.1 (0.31, 2.5–3.4); width, 2.6 (0.26, 2.0–3.0), 2.2 (0.23, 1.9–2.7); 5th, length, 2.8 (0.31, 2.6–3.7), 3.2 (0.41, 2.6–3.8); width, 2.8 (0.26, 2.4–3.1), 2.5 (0.16, 2.2–2.7); 6th, length, 2.7 (0.33, 2.0–3.5), 2.9 (0.27, 2.4–3.2); width, 2.7 (0.31, 2.0–3.0), 2.6 (0.24, 2.2–3.0); 7th,

**DISTRIBUTION**

*Cabassous unicinctus* ranges in South America “east of the Andes in Venezuela, the Guianas, Brazil and in the lowlands of eastern Colombia, Ecuador, Peru, and Bolivia” (Fig. 3; Wetzel et al. 2007:151). It also occurs in northeastern Paraguay (Smith et al. 2011). In Brazil, its potential geographic range includes “the Amazon, Cerrado, and Pantanal, plus a small region of the Atlantic Forest” (Anacleto et al. 2006:204). *C. u. unicinctus* extends to the southern shore of the Amazon (Anacleto et al. 2013), whereas *C. u. squamicaudis* is found north of the Amazon (Wetzel 1980). No fossils are known.

**FORM AND FUNCTION**

*Form.*—*Cabassous unicinctus* has no incisors or canines. One specimen had 9 upper and 7 or 8 lower uniform cheek teeth. The side of the lower jaw with the 7 teeth had a double-rooted premolar (United States National Museum, USNM113422/A49614—Miller 1899). Dental microwear on M6 (6th tooth from anterior end of premaxilla) from 11
animals included an average of 9.95 scratches and 55.32 pits;
gouges were present on 82% of the teeth (Green 2009).
Vertebral formula is 7 C, 12–13 T, 3-4 L, 9–11 S, 15–20 Ca,
total 46–55 (Wetzel 1980), although vertebrae intermediate
in type (thoracic-lumbar or lumbar-sacral) are known
(Varela-Lasher et al. 2011). Mean (SD) limb measurements (mm) for 8 C. unicinctus were: humeral
length, 54.6 (8.0); proximal humeral length, 38.0 (5.8); ulnar
length, 59.9 (8.9); olecranon length, 28.6 (3.0); functional
femoral length, 58.2 (9.1); proximal femoral length, 26.1
(4.5); leg length, 44.6 (6.4); midleg width, 19.6 (2.8—
Vizcaino and Milne 2002).

The salivary glands (parotid, submandibular, and
sublingual) secrete neutral polysaccharides and sialic acid
(Fava de Moraes 1965). Vascular innervation in the salivary
glands is well developed with a fine network of varicose
fibers in the adventitia of the small muscular vessels
(Rossoni et al. 1981). The veins do not form sinuses in the
red pulp of the spleen (Udroiu 2006). The placenta is
hemochorial and discoidal (Wetzel 1980).

Body armor on the crown of the head consists of 30–60
scutes that diminish in size anteriorly. Those on the cheeks
are thin and set in distinct rows, whereas those on the ears
are roundish and about 1 mm in diameter (Miller 1899).
Inner surface of the ear is naked (Miller 1899). Mean
counts (with parenthetical SD, n) of scutes for C. u.
squamicaudis and C. u. unicinctus, respectively, were:
cephalic shield, 54.0 (5.5, 14), 34.8 (2.1, 19); 1st complete
band of scapular shield, 20.1 (1.9, 10), 17.3 (1.3, 11); last
band, scapular shield, 26.3 (1.7, 10), 26.8 (1.5, 12); 3rd
movable band, 28.0 (1.3, 11), 28.1 (1.2, 9); 4th movable
band, 27.4 (1.3, 13), 27.4 (1.6, 22); 1st band, pelvic shield,
24.4 (1.6, 11), 25.6 (0.7, 12); last band, pelvic shield, 6.6
(1.0, 11), 8.4 (0.7, 12); number of movable bands, 12.0 (0.4,
15), 12.1 (0.6, 23—Wetzel 1980).

ONTogeny and reProductIon

Reproduction may be year-round (Bonato et al. 2008).
Sperm in the ductus deferens have a rouleau (stacked)
arrangement of 4–10 cells (Heath et al. 1987). The sperm
head is “flattened into a large wafer-thin spatulate shape
with a length of 18 μm, width of 16 μm, and thickness of
only 0.2 μm” (Heath et al. 1987:153). The sperm tail is 80 μm
long (Heath et al. 1987).

ecology

Two captive animals lived 4 years, 1 month and 7 years,
6 months (Weigl 2005). In a montane region of Venezuela,
density was estimated at 0.75–1.2 individuals/km² (Eisenberg
et al. 1979). In the Brazilian Cerrado, population
density was estimated as 0.27 individuals/ha (Bonato et al.
2008).

Cabassous unicinctus uses a wide range of habitats from
rain forest to grassland (Emmons 1990), including swamp
and disturbed habitats (Loughry and McDonough 1997);
cultivated pastures, floodable grasslands, forest patches, and
Cerrado savannas (Tomas et al. 2009); and areas with
complex vegetation structure such as gallery forests (Bonato
et al. 2008).

Arthropods (chiefly ants and termites) compose > 90% of
the diet of C. unicinctus (Emmons 1990; Bonato et al.
2008). Acracina and Isopota (Cornitermes, Rhynchosotermes,
and unidentified isopterans) were present in the feces of 1
animal (Anacleto 2007).

Ectoparasites include the sand flea Tunga terasoma
(Siphonaptera—Pampiglione et al. 2009) and the tick
Amblyomma pseudoconcolor (Ixodidae—Botelho et al.
1989). Endoparasites include the nematodes Aescroterakis
pulchrum and Bairdascaris dasyopedia (Vincente 1965; Sprent
1982); species within Aspidodera, Delicata (including D.
delicate, D. ransomi, D. similis, and D. unicinita), and
Moennigia (Cañascales and Guerrero 2010; Esquiaga et al.
2012); as well as Haemotrohythys ransomi and Trichohelix
tuberata (Hoppe et al. 2009). The protozoan Trypanosoma
cruzi also is present (Hoare 1972). Salmonella bacteria were
isolated from 4 of 7 animals (Loureiro 1985). One animal
was polymerase chain reaction negative for the leprosy
bacterium, Mycobacterium leprae (Pedrini et al. 2010).

Cabassous unicinctus is considered a game animal for
native peoples in the Rupununi region of Guyana (Read et al.
2010). The indigenous Awá-Guaja, Parakana, and Xavante
peoples in Brazil hunt C. unicinctus (Leeuwenberg 1997;
Fausto 2012; Prado et al. 2012). For the Parakana, hunting
has increased after contact with western culture (Fausto
2012).

behavior

Cabassous unicinctus is reported to be nocturnal and
solitary in the Neotropics (Emmons 1990) but diurnal in the
Brazilian Cerrado (Bonato et al. 2008). Activity increased
when arthropod abundance decreased (Bonato et al. 2008).
C. unicinctus emits piglike grunts when handled (Emmons
1990).

Cabassous unicinctus is primarily fossorial (Pine 1973).
C. unicinctus rotates its body as it digs, forming a round
burrow (Carter and Encarnacao 1983). In Mato Grosso,
Brazil, 22 burrows averaged 12.1 cm in width and 12.4 cm in
height (Anacleto and Diniz-Filho 2008). In Minas Gerais,
Brazil, burrows were 15–17 cm in diameter for most of their
length but became flattened (5 cm tall by 15 cm wide) at 45
cm from the entrance (Carter and Encarnacao 1983).
Burrow slope was 35.3° and the slope of the ground around
the entrance was 7.9° (Carter and Encarnacao 1983).
Burrow entrances tend to be placed such that the prevailing winds blow away from the entrance (Carter and Encarnação 1983) and 90% of burrows were in termite mounds (Carter and Encarnação 1983).

GENETICS

The diploid chromosome number (2n) is 46 with 6 large metacentric, 5 medium submetacentric, 5 medium and small metacentric, and 6 acrocentric pairs (Jacintho et al. 2009). The X is a medium submetacentric and the Y is the smallest acrocentric chromosome (Jacintho et al. 2009). Genetic sequences are in GenBank for the following: ADRA2B, BRCA1, VWF, ND1, 12S rRNA, and 16S rRNA (Barros et al. 2003; Delsuc et al. 2003).

CONSERVATION

Cabassous unicinctus is listed as “Least Concern” by the International Union for Conservation of Nature and Natural Resources (Superina and Abba 2010). Hunting and habitat loss are major threats (Tomas et al. 2009). In French Guiana, it is protected by national and regional laws (Catzeflis and de Thoisy 2012). Details on legal protection in other countries are not readily available.

REMARKS

The southern naked-tailed armadillo is part of the mythos of the Amazonian Parakaná: “In the beginning it was men who menstruated, but when the naked-tailed armadillo (Cabassous unicinctus) shot the moon with an arrow, the blood dripped onto the women, who had not heeded the advice to stay inside their houses” (Fausto 2012:186).

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