

# *Coendou speratus* Mendes Pontes, Gadelha, Melo, Sá, Loss, Caldara Jr., Costa & Leite, 2013 (Mammalia, Rodentia, Erethizontidae) in northeastern Brazil: Filling gaps in its geographical distribution

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**ABSTRACT:** *Coendou speratus* Mendes Pontes, Gadelha, Melo, Sá, Loss, Caldara Jr., Costa & Leite, 2013 is a recently described Neotropical prehensile-tailed porcupine from the Atlantic Forest of northeastern Brazil. It is known only from the Pernambuco Centre of Endemism. Here we present a new locality record, in the Estação Ecológica Murici (ESEC Murici), Municipality of Murici, Alagoas State, Brazil, 105 km southeast of the type locality and 60 km west from the closest record (from more than 50 yr ago), in Municipality of Viçosa, also in Alagoas State.

DOI: 10.15560/10.5.1223

The genus *Coendou* Lacépède, 1799 (Rodentia: Erethizontidae) comprises the Neotropical prehensile-tailed porcupines, which have small to medium body size (head and body length = 317–504 mm, tail length = 119–540 mm) and a dorsal pelage covered by fur and quills (Emmons and Feer 1997; Voss 2011). In Brazil, this genus is found in the Atlantic and Amazonian forests, and in forests inside the Caatinga, Cerrado and Pantanal biomes, occurring in all northeastern states, from Bahia to Maranhão (Reis *et al.* 2010; Paglia *et al.* 2012). Until the beginning of 2013, six species of *Coendou* (including *Sphiggurus*) were found in Brazil: *C. insidiosus* (Olfers, 1818) in Atlantic Forest and Caatinga biomes; *C. melanurus* (Wagner, 1842) in Amazon; *C. nycthemera* (Olfers, 1818) in Amazon; *C. prehensilis* (Linnaeus, 1758) in Amazon, Atlantic Forest, Cerrado, Caatinga and Pantanal; *C. roosmalenorum* Voss & da Silva, 2001 in Amazon and *C. spinosus* (Cuvier, 1823) in Atlantic Forest and Cerrado (Voss 2011; Paglia *et al.* 2012).

Recently, two new species of porcupine were described in northeastern Brazil: *Coendou baturitensis* Feijó & Langguth, 2013 and *Coendou speratus* Mendes Pontes, Gadelha, Melo, Sá, Loss, Caldara Jr., Costa & Leite, 2013. The former is only known from Baturité Range, State of Ceará, Brazil, so it does not occur in sympatry with the latter. However, *C. speratus* can live in sympatry with *C. prehensilis*, its larger congener (Mendes Pontes *et al.* 2013).

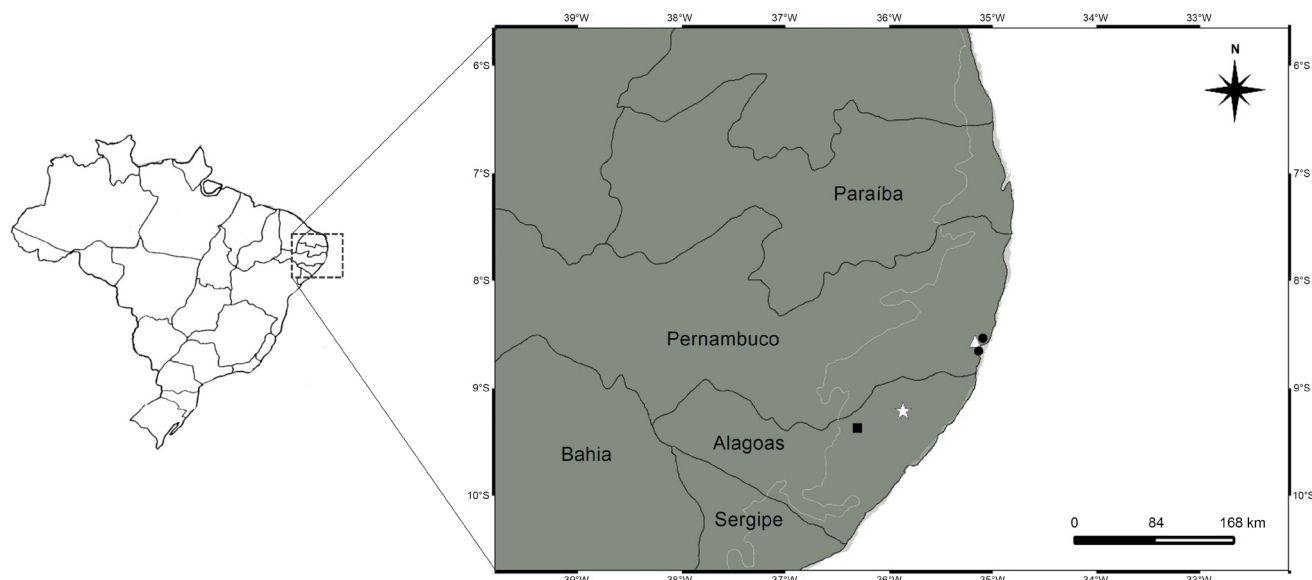
*Coendou speratus*, locally known as “coandu-mirim”, has as its type locality Mata Tauá at Usina Trapiche (08°33'46.13" S, 35°10'9.09" W), 85 m a.s.l. (above sea level), in the Municipality of Sirinhaém, State of Pernambuco, Brazil, and was described based on five specimens: the holotype (MN 72045) and four paratypes, three collected at Boca da Mata (MN 72046, UFPE 1708 and UFPE 1709) and one at Mata da Barragem (UFES 1184), also in Usina Trapiche's area. According to the

discoverers, the new species is probably endemic to the Pernambuco Centre of Endemism (*sensu* Silva and Casteleti 2003), a biogeographic unit of the Brazilian Atlantic Rainforest located north of the São Francisco River, which encompasses the states of Alagoas, Pernambuco, Paraíba and Rio Grande do Norte. However, *C. speratus* was not found during five years of surveys, since 2002, in 23 other remnants of Atlantic Forest in the State of Pernambuco (Mendes Pontes *et al.* 2013).

*Coendou speratus* can be diagnosed mainly by the brownish red tips of the dorsal quills, ventral surface covered with soft fur, condylar and coronoid processes of the mandible about the same height with a shallow and squarish sigmoid notch, and auditory bullae inflated anteriorly and kidney-shaped. Beside these characters, *C. speratus* differs from *C. baturitensis* and *C. prehensilis* by the absence of pneumatization of the nasofrontal region, which reflects on a flat dorsal profile (on a lateral view), and incisive and premaxillae not projected forward (Feijó and Langguth 2013; Mendes Pontes *et al.* 2013).

In this paper we report a new record of *C. speratus* and expand the known distribution of the species to about 105 km south from its type locality (Figure 1). A specimen from the vicinities of Viçosa, also in Alagoas State (60 km west from the new record), was collected in the 1950s during the National Plague Service (“Serviço Nacional da Peste”—SNP) and housed at the Museu Nacional, Rio de Janeiro. Besides having no collecting data or catalog number, the specimen, an adult female, was identified as *C. speratus* (Mendes Pontes *et al.* 2013). Our finding confirms not only the occurrence but the survival of this species in Alagoas State after more than 50 yr of human negative impacts on the local Atlantic Forest and, consequently, on its fauna.

The new specimen was actively collected in the Estação Ecológica Murici (ESEC Murici), Municipality of Murici,



**FIGURE 1.** Distribution records of *Coendou speratus* showing type locality (white triangle) and locality of the paratypes (black circles), in Usina Trapiche, State of Pernambuco; the other known record, from Viçosa, Alagoas State (black square) and the new record (white star) in ESEC Murici, Alagoas State. The white line represents the Caatinga/Atlantic Forest boundary.

Alagoas State, Brazil (09°12'40" S, 035°51'53" W), a Federal Conservation Unit located in the Pernambuco Centre of Endemism that has an area of 6,116 ha and elevation between 200–650 m a.s.l. Annual precipitation ranges from 800–1,800 mm and the average annual temperature lies on 25°C (Brasil-MMA 2006).

According to Veloso *et al.* (1991), the vegetation cover in the area is classified as Submontane Open Humid Atlantic Rain Forest. It is considered one of the largest remnants and most important protected areas of Atlantic Forest above São Francisco River (Brasil-MMA 2002).

External and craniodental morphological features of the collected specimen were compared to the description of *C. speratus* by Mendes Pontes *et al.* (2013) to confirm species identification. Age classification follows Voss (2011) and Caldara Jr. and Leite (2012). These authors used maxillary tooth eruption, cranial suture closure, and pelage maturation to define four heuristic ages for the genus: juvenile, subadult, adult and old adult. The specimen collected consists of a juvenile—specified by “maxillary dentition incomplete (three or fewer teeth erupted); cranial sutures still open and pelage often conspicuously immature, including long fur even in species that lack visible fur as adults” (Voss, 2011)—male (MUFAL 0048= ALN 211) (Figure 2) that was found at 08:00 AM on 21 June 2013, on a tree 5 m off the ground on the edge of the forest. We pulled the tree’s branch toward ourselves and carefully caught the animal.

The main body and craniodental measurements, based on the description of Mendes Pontes *et al.* (2013), noted in mm were: head and body length = 250, tail length = 182, hind foot length with/without claws = 57/49, ear length = 22, length of nasals = 18.23, breadth of braincase = 31.45, length of diastema = 13.60, posterior zygomatic breadth = 36.16, anterior palatal breadth = 4.84, condylo-incisive length = 56.13, zygomatic length = 21.45, breadth of nasal aperture = 9.07, height of infraorbital foramen = 6.72, length of incisive foramen = 4.67, breadth of incisive foramen = 1.90, breadth of incisor tips = 3.93, depth of incisor = 2.72, breadth of fourth pre-molar = 3.67, breadth

of first molar = 4.00, length of auditory bulla = 16.93, length of dentary = 31.73 and height of dentary = 15.32. As the third upper molars (M3) were not completely erupted, some measurements were not recorded, such as posterior palatal breadth, maxillary tooththrow length and length of molars. Also, the weight could not be recorded.

Besides skull and stuffed skin, we also collected liver tissue (preserved in 98% ethanol), quills that fell during *post mortem* manipulation and ectoparasites (preserved in 70% ethanol). Everything, including the skeleton, skull and paws, is deposited at Mammal Collection at the Museu de História Natural of the Universidade Federal de Alagoas, as MUFAL 0048.

The ESEC Murici is a Federal Conservation Unit (UC) and an important area of endemism for amphibians, reptiles and birds, and is considered of extreme biological importance for mammal conservation (Conservation International do Brasil *et al.* 2000). Despite these points, this UC and its fauna suffer from human negative impacts, such as hunting, cattle raising, culture of manioc, banana and sugar cane. The finding we report in this note highlights the limited information about this porcupine species, and the need for further surveys and conservation efforts in this and other remnants of the northeastern Brazilian Atlantic Forest.

**ACKNOWLEDGEMENTS:** We thank our colleagues from the Museu de História Natural de Alagoas, especially Selma Torquato; our Murici team: Ingrid Tiburcio, Barnagleison Lisboa and specially José Neto, for the photographs and field support; Pedro Yuri for the English review and the ICMBio-Murici (License Number 33809-2).

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**FIGURE 2.** Juvenile male of *Coendou speratus* from ESEC Murici, AL (MUFAL0048). Live specimen (A), lateral view of the mandible (B), dorsal, ventral, and lateral views of the skull (C, D and E). Pictures: (A) José Vieira Neto; (B,C,D,E) A.L.C.P. Nascimento. Scale bar = 1 cm.

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RECEIVED: December 2013

ACCEPTED: September 2014

PUBLISHED ONLINE: October 2014

EDITORIAL RESPONSIBILITY: Ana Paula Carmignotto