

## AN EXTENSION OF THE GEOGRAPHICAL DISTRIBUTION OF *DACTYLOMYS DACTYLINUS* DESMAREST, 1822 (RODENTIA, ECHIMYIDAE)

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**ABSTRACT** – The geographical distribution hitherto known for *Dactylomys dactylinus* was practically restricted to the western Amazon. New data on occurrence and habitat use were collected during field trips to Marajó Island, Pará, and to the state of Maranhão, Brazil. These data include visual and auditory observations, collection of specimens, and reports from local inhabitants. Seven new locality records are presented, indicating the presence of this species in habitats with different degrees of environmental disturbance. The geographical distribution of the taxon is enlarged to the East as far as the eastern border of the Amazonian forest.

**KEY WORDS:** Rodentia, Echimyidae, *Dactylomys dactylinus*, Amazon bamboo rat, Inventory, Brazilian Amazon.

**RESUMO** – A área de distribuição geográfica até agora conhecida para *Dactylomys dactylinus* se restringia praticamente à Amazônia Ocidental. Novas informações sobre ocorrências e uso de habitat foram

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levantadas durante uma série de expedições ao arquipélago de Marajó, Pará, e ao Estado do Maranhão. Os dados consistem de observações visuais e auditivas, coleta de espécimes e relatos de moradores locais. Sete novas localidades de ocorrência são apresentadas, indicando a presença da espécie em habitats com variados graus de degradação ambiental. A área de distribuição geográfica do táxon é ampliada em direção leste até a borda oriental da floresta amazônica.

PALAVRAS-CHAVE: Rodentia, Echimyidae, *Dactylomys dactylinus*, Rato toró, Inventário, Amazônia Oriental.

## INTRODUCTION

The Amazon bamboo rat, *Dactylomys dactylinus*, is one of the least studied Neotropical mammals. Walker *et al.* (1968) reported that “little is known about habits and natural history” of this rodent. Since that time little has been added to the knowledge of this taxon (see, for example, Eisenberg & Redford 1999; Nowak 1999). Apart from the anecdotal reports compiled by Tate (1935), the available information about the habits of *D. dactylinus* is restricted to the observations of LaVal (1976) in Ecuador, Emmons (1981) in Ecuador and Peru, and Santos & Silva (1987) in central-western Brazilian Amazonia. The species’ geographical distribution has also been quite vaguely defined (e.g., Tate 1935; Ellerman 1940; Moojen 1952; Cabrera 1958; Eisenberg 1989; Nowak 1991, 1999).

According to Emmons (1990, 1997), *D. dactylinus* is distributed in patches, being restricted to suitable Amazonian forest environments. The recorded localities were not published, but according to the geographical distribution map proposed by Emmons (1990, 1997), corrected in the second edition, *D. dactylinus* occurs mainly in western Amazonia, extending, nevertheless, to the East as far as the Tocantins River mouth, in a narrow zone along the Amazon River. In this context,

the areas located to the north and to the south of the Amazon River, all of the Marajó Island archipelago, eastern Pará state and all of Maranhão state are excluded from this species’ geographical distribution.

This paper aims to increase the current knowledge about geographical distribution and habitat use by bamboo rats, based on new data obtained in Eastern Amazonia.

## MATERIAL AND METHODS

During several field trips to the Marajó Island archipelago, Pará (Caviana and Mexiana Islands) and to the state of Maranhão, new data about geographical distribution and habitat use were collected. Visual and auditory observations were gathered, and specimens were collected. Reports by local people were used to direct the searches in each locality, this being the single available data source for Caviana Island. Collected specimens were compared with those deposited in the main Brazilian museum collections, and the new specimens were deposited in the mammal collection of the Museu Paraense Emílio Goeldi (MPEG, see Appendix).

## RESULTS AND DISCUSSION

The presence of *D. dactylinus* was confirmed in seven new localities, two in the state of Pará and five in the state of Maranhão (Figure 1). Table 1 indicates the habitat types and sources of data recorded during fieldwork in each locality. Visual observations were difficult, due to the species’ cryptic appearance and behavior. All observations were done at night, except at Palmeiral where the odor of animals was detected twice (on different days) during the day. Collection of specimens in this locality was done with an improvised whistle that imitates the species’ vocalization. The animals answered promptly to the calls, coming in direction of the sound source.

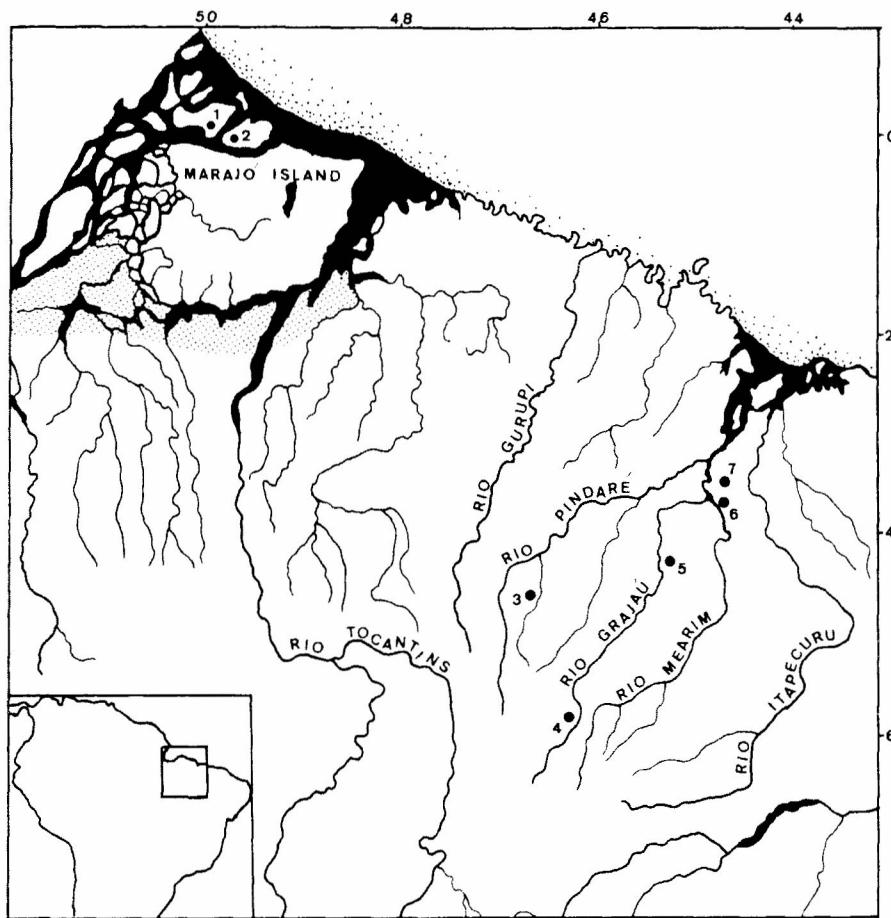


Figure 1 - New localities for *Dactylomys dactylinus* in eastern Amazonia, plotted on the species' geographical distribution map (part, dashed area) as proposed by Emmons (1997): Brazil: State of Pará: 1. Fazendas São Luís, Caviana Island, Marajó Archipelago, Chaves,  $00^{\circ}10'N$ ,  $50^{\circ}10'W$ ; 2. Fazenda Santana, Mexiana Island, Marajó Archipelago, Chaves,  $00^{\circ}02'S$ ,  $49^{\circ}35'W$ ; State of Maranhão: 3. Palmeiral, Matões,  $03^{\circ}40'S$ ,  $44^{\circ}27'W$ ; 4. Lago Verde, right bank of the Mearim River, São Mateus, about  $04^{\circ}01'S$ ,  $44^{\circ}27'W$ ; 5. Fazenda Mapisa, Buriticupu,  $04^{\circ}36'S$ ,  $46^{\circ}30'W$ ; 6. near Grajaú,  $05^{\circ}49'S$ ,  $46^{\circ}08'W$ ; 7. near Lago da Pedra,  $04^{\circ}19'S$ ,  $45^{\circ}08'W$ .

Table 1 - Habitat types and record types at each new locality for *Dactylomys dactylinus* in the Brazilian states of Pará (PA) and Maranhão (MA).

Locality	Habitat	Record Type
1. PA, Caviana Island	Lightly disturbed unflooded forest	Information from local residents
2. PA, Mexiana Island	Lightly disturbed unflooded forest	Specimens
3. MA, Fazenda Mapisa, Buriticupu	Lightly disturbed unflooded forest	Observations; Vocalizations
4. MA, Grajaú	Moderately disturbed unflooded forest	Vocalizations
5. MA, Lago da Pedra	Moderately disturbed unflooded forest associated with babassu palm groves	Observations; Vocalizations
6. MA, Lago Verde, São Mateus	Strongly disturbed riverside forest associated with babassu palm groves	Vocalizations
7. MA, Palmeiral, Matões	Moderately disturbed unflooded forest associated with babassu palm groves	Specimens; Observations; Vocalizations

According to Emmons (1981, 1990, 1997), in the majority of the regions where it occurs, *D. dactylinus* shows a preference for environments containing bamboo patches and dense riverside vegetation. In fact, bamboo patches were present in all inventoried localities of the present study, although the animals were observed directly in this vegetation type only on Mexiana Island, Grajaú, and Palmeiral. In spite of all localities presenting periodically flooded areas (riversides or lake margins), only in Lago Verde were traces of the animals detected in these flooded areas. With the exception of Lago

Verde, all localities had slightly or moderately disturbed forests with large stretches similar to primary forest. In the easternmost localities (Palmeiral, Lago Verde, and Lago da Pedra) the Amazonian environments are associated with extensive babassu palm groves called "babacuá" (*Orbygnia* palm tree forests), typical of the eastern border of the Amazon forest. No observations were conducted in these babassu palm groves, that is where there is an absolute predominance of babassu palm trees in diverse stages of growth. Nevertheless, this vegetation type was present near the points where the animals were detected in these three localities. In all localities, vestiges of *D. dactylinus* presence were observed in vine tangles of secondary forests.

The new records established in this study imply an enlargement of the geographical distribution of *D. dactylinus*, equivalent to more than a quarter of the area proposed by Emmons (1997). A consequence of this new range extension for biogeographic studies is that *D. dactylinus* constitutes an element in the Amazonian region as an operant biogeographic unit.

The records for the Marajó Island archipelago pose new questions in addition to those presented by the study of the island's primates conducted previously by Fernandes *et al.* (1995). Considering the four main islands of the archipelago, would it be possible for *D. dactylinus* to be present on the smallest and absent on the biggest? Beyond being smaller, Caviana and Mexiana are also the farthest islands from the continent, making it unlikely for this hypothesis to be confirmed. However, new surveys of *D. dactylinus* will be necessary in Gurupá and on Marajó Island to confirm its status there.

## CONCLUSIONS

From a conservation viewpoint, even though the species' geographical distribution is patchy, the enlarged area reaches as far as

the eastern border of the Amazon forest. Nevertheless, it is essential to investigate the presence of this rodent in the protected areas of this region to evaluate the conservation status of its populations.

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## APPENDIX

Material examined in the Museu Paraense Emílio Goeldi (MPEG), Museu de Zoologia da Universidade de São Paulo (MZUSP) and Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ) for comparison.

**BRAZIL: RORAIMA:** Caracaraí, lower Rio Mucajaí: MPEG-2153, 6765, 6766, 22374; **AMAZONAS:** Rio Juruá: MZUSP-908, 909; Silves: MZUSP-4497, 4640; Igarapé Anibá: MZUSP-4480; Itacoatiara: MZUSP-25811; Paraná do Ariaú, 40 Km above the mouth of the Rio Ariaú, right tributary of the Rio Negro: MNRJ-30476; **PARÁ:** Trombetas Biological Reserve, Oriximiná: MNRJ-31573; Cacaoal Grande, Santarém: MPEG-5504, 5505, 5506; Curuá-Una, 44Km S and 40Km E from Santarém: MPEG-12590; Fazenda Santana, Mexiana Island: MPEG-24099, 24100, 24101, 24102, 24103; Taperinha: MZUSP-3795; Urucurituba Island: MZUSP-10106; Boiçucá: MZUSP-4421, 4724; Rio Arapiuns: MPEG-2519, 2521, 2522, 2523, 2532; MZUSP-25814; Fordlândia: MZUSP-10105, 25812, 25813, 27749; **MARANHÃO:** Palmeiral, Matões: MPEG-26368, 26369, 26370, 26371.