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A new record of *Calassomys apicalis* (Rodentia, Cricetidae) in the Espinhaço Mountain Range, Brazil

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Abstract. We present herein the record of the monotypic sigmodontine rodent *Calassomys apicalis* Pardiñas, Lessa, Salazar-Bravo and Câmara 2014 in the Brazilian Cerrado, based on two adult male specimens collected in a rocky outcrops area (campo rupestre) in southern portion of Espinhaço Mountain Range, in May and June 2016. This taxon was previously known only from the type locality at Parque Nacional das Sempre Vivas, Minas Gerais State, Brazil. The fecal analysis of the specimens collected in this study indicates a diversified diet with the consumption of arthropods and vegetative parts of plants in different proportions, being the first record about the feeding habits of this species.

Key words: Cerrado, campos rupestres, diet, endemism, Phyllotini.

Resumo. Um novo registro de *Calassomys apicalis* (Rodentia, Cricetidae) na Cadeia do Espinhaço, Brasil. Apresentamos aqui o registro do monotípico sigmodontideo *Calassomys apicalis* Pardiñas, Lessa, Salazar-Bravo e Câmara 2014 no Cerrado Brasileiro, com base em dois espécimes de machos adultos coletados em área de afloramentos rochosos (campo rupestre) na porção sul da Cadeia do Espinhaço, em maio e junho de 2016. Este táxon era anteriormente conhecido apenas da localidade tipo no Parque Nacional das Sempre Vivas, Minas Gerais, Brasil. A análise fecal dos espécimes coletados neste estudo indica uma dieta diversificada com o consumo de artrópodes e partes vegetativas de plantas em diferentes proporções, sendo ~~este~~ o primeiro registro sobre os hábitos alimentares desta espécie.

Palavras-chave: Cerrado, campos rupestres, dieta, endemismo, Phyllotini.

Introdution

Calassomys is a recently described rodent genus and has the smallest geographic range of any within the tribe Phyllotini (Patton *et al.*, 2015). *Calassomys apicalis* Pardiñas, Lessa, Salazar-Bravo and Câmara 2014, is a monotypic medium sized rodent known only from the type locality, in Parque Nacional das Sempre Vivas, Minas Gerais State, Brazil. This taxon is rare in small mammal surveys and the available data on natural history of *C. aplicalis* mention that this species inhabits rock outcrops within campos rupestres (field rocks) in the Cerrado biome (Pardiñas *et al*., 2014; Patton *et al*., 2015). Campos rupestres

stricto sensu are a Neotropical, azonal vegetation complex endemic to Brazil (Alves *et al*., 2014). Its vegetation displays xerophytic adaptations and occurs on highly acidic, clayless and siltless soils with exposed rocks often covered by lichens and rupestrial plants at elevations between 900 and 2000 m (Alves *et al*., 2014; Pardiñas *et al*., 2014).

Calassomys apicalis is characterized by a moderately large and naked ear and a long bicolored tail with a totally white distal end. Its dentition is characterized by the persistence of vestigial mesolophs and mesostyles on booth upper 1st and 2nd molars, unique features within the Phyllotini. The karyotipe of *C. apicalis* shows a diploid number (2n) of 62 and fundamental number (FN) of 116 chromossomes (Pardiñas *et al*., 2014).

To date, the available data on natural history of *C. apicalis* mention that this is a terrestrial rodent that inhabits campos rupestres (Pardiñas *et al*., 2014), but, there is no information on diet, reproduction or population structure for this species. The goal of the present study is to report the first record of *C. apicalis* outside the type locality and provide information on their diet.

Material and Methods

We collected two adult males of *C. apicalis* in a campo rupestre area (18° 11' S; 43° 34' W; elevation 1322 m a. s. l.) in southern portion of Espinhaço Mountain Range, northern Minas Gerais State, during two field traps in May and June 2016 (Figure 1). The climate is type Cwb, ac-

Figure 1. Map showing type locality of *Calassomys apicalis* at Parque Nacional das Sempre Vivas, Minas Gerais state, Brazil, and the location of our study site.

cording to the Köppen classification, with mild, humid summers (October to April) and cool and dry winters (June to August). The average annual rainfall varies from 223 to 1550 mm and the average annual temperature ranges from 17 °C to 19 °C (Neves *et al*., 2005). All specimens were collected in an area of rocky outcrops close to a watercourse surrounded by bush/shrub vegetation, as well as open grasslands areas.

The specimens were trapped in Tomahawk traps (300 × 160 × 160 mm) set on the ground and baited with a mixture of banana, sardine oil, corn meal and oat grains. Two voucher specimens (both adult males) were preserved as study skin, skull, post-cranial skeleton, and tissue samples (liver fixed in 96% ethanol), and have been deposited in the Scientific Collection of the Departamento de Ciências Biológicas/Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Minas Gerais, Brazil, under the catalog numbers MDIA114 and MDIA116. Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) issued the collecting permit (license no. 52836-1).

We examined external and dental morphology of the two voucher specimens of *C. apicalis* (Figure 2) and confirmed the taxonomic identification comparing with other taxonomic specimens from the type locality housed in the Scientific Collection of the Museu de Ciências Naturais da Pontifícia Universidade Católica de Minas Gerais (catalog numbers MCN-M2176; MCN-M2188), Minas Gerais, Brazil. Morphologic characteristics considered for species diagnosis follows Pardiñas *et al*. (2014).

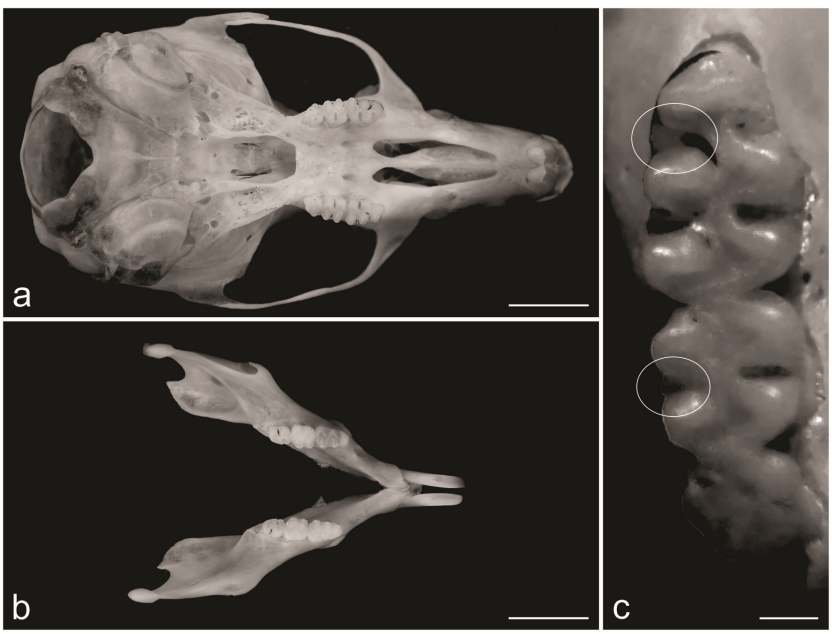

Figure 2. Ventral view of the skull and jaw of *Calassomys apicalis* highlighting the persistence of vestigial mesolophs and mesostyles on booth upper 1st and 2nd molars (white circles). Photo by Pacheco MAC. Scale bar = 5 mm (A and B); 0.5 mm (C).

We also collected feces directly from each specimen during manipulation or inside the trap. The samples were stored in paper envelopes and preserved at -10 °C to avoid fungi infestation. One fecal sample was considered as being all feces produced by a single captured animal in a night. In laboratory, feces were examined under a stereoscopic microscope and food items were identified to the lowest taxonomic level.

The following small mammal's species were also captured in the same trap-lines that *C. apicalis*, the cricetids *Oligoryzomys nigripes* (Olfers, 1818) and *Cerradomys subflavus* (Wagner, 1842); the echimyid *Thrichomys apereoides* (Lund, 1839) and the didelphid marsupial *Monodelphis domestica* (Wagner, 1842).

Results and Discussion

According to the available data, *C. apicalis* has a restricted range distribution, occurring in campos rupestres montane savannas at Espinhaço Mountain Range (Patton *et al*., 2015). The Espinhaço Range has been acknowledged as a center of endemism for plants (Giullietti *et al*. 1997), anurans, lizards and birds (Rodrigues, 1987; Pugliese *et al*., 2004; Eterovick *et al*., 2005; Nascimento *et al*., 2005; Rodrigues *et al*., 2005). However, as for the mammals, most species inhabiting campos rupestres are ordinarily found in other physiognomies in the Cerrado biome (Lessa *et al*., 2008; Silva *et al*., 2014). Thus far, due to the insufficiency of faunistic inventories, future researches are necessary to clarify if *C. apicalis* are restricted to this kind of habitat, at rock outcrops of the Espinhaço Range or if such species are restricted to mountains or massifs with campos rupestres, but not necessarily endemic to this vegetation complex (see Silva *et al*., 2014). Up to now, just one other Philotini rodent, *Oligoryzomys rupestris* Weskler & Bonvicino, 2005, are known exclusively from campos rupestres, with scattered populations in the Brazilian States of Goias, Minas Gerais, and Bahia at elevations above 1000 m a. s. l. (Weksler & Bonvicino, 2005). The paucity of geographic information on *C. apicalis*, also reflects how little is known about the biology of this species, and until now, information about its feeding habits are inexistent. The fecal analysis of the specimens collected in this study indicates the consumption of arthropods (mainly Isoptera and Hymenoptera), vegetative parts of plants (leaves and stems) and also flowers. A diversified diet with the consumption of arthropods and vegetative parts of plants in different proportions was also observed in other rodent species in campos rupestres such as *Cerradomys subflavus* and *Thrichomys apereoides* (Lessa & Costa, 2009; Paula *et al*. 2016 *in press*).

The increase in recent years of new small mammal's records in campos rupestres areas at the Espinhaço Mountain Range is noteworthy, and has provided important data on its distribution, taxonomy and ecology (see Pereira & Geise, 2009; Pardiñas *et al*., 2014; Loss *et al*., 2015; Braga *et al*., 2016). Nevertheless, the current level of knowledge on the composition and distribution of Phyllotini rodents in habiting rock outcrops in campos rupestres across this wide re-

gion is still scarce.

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