

Additional report of the Brown-nosed Coati (*Nasua nasua vittata*) on the tepuis – the Chimantá Massif, Churí Tepui, Venezuela

Další pozorování nosála červeného (*Nasua nasua vittata*) ze stolových hor – masiv Chimantá, Churí tepui, Venezuela

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došlo 4. 12. 2007

Abstract. In 2006, we reported on the distribution of *Nasua nasua vittata* on the Roraima Tepui as two independent observations of at least two individuals in March 2002 and January 2003. Moreover, in 2007, second and third authors observed another five individuals of coati on the Chimantá Massif (approx. 100 km westward from the Roraima Tepui), specifically on the Churí Tepui. The first individual, probably an adult, was identical in the pelage coloration to the *N. n. vittata* observed previously on Roraima, but another four individuals were probably juveniles with brown-orange-brown pelage with predominant orange colour on the belly and inner side of the legs. Based also on their external proportions, we suppose them to be juveniles. The dense vegetation with a relatively good food resources allows coatis's natural distribution on Chimantá Massif where they are certainly not facilitated by the touristic activity. In view of this and previous reports, coatis should be considered as a regular inhabitants of tepuis.

Tepuis are geomorphologically isolated mountains in the northeastern part of South America with a relatively high percentage of plant and animal endemism, including terrestrial vertebrates (e. g. HOLLOWELL & REYNOLDS 2005). Mammals are quite unusual on tepuis and they are extremely rare in their endemic forms there (for review see OCHOA & GORZULA 1992). Last year, we reported on two independent observations of brown-nosed coati (*Nasua nasua vittata*) on the Roraima Tepui and we associated the distribution of coati in this relatively barren area with its ecological opportunism (HAVELKOVÁ ET AL. 2006). Because Venezuela belongs to the favourite touristic destination for people from Czech Republic (especially during last 10 years), we published our observation also in a popular-science journal with a chance of obtaining other reports about coati's distribution on tepuis – but without any success. But, in 2007, second and third authors observed five (one solitary and four together) individuals of coati during their expedition on the Churí Tepui in the Chimantá Massif.

Chimantá Massif (approx. 05° 07' – 05° 27' N, 61° 65' – 62° 19' W) has a total surface of about 1470 km², its summit ranging from 1700 to 2700 m a. s. l. (RULL 2004). Recently, Chimantá Massif is unexpectedly very attractive for the speleologists (AUDY & ŠMÍDA 2005). RULL (2004) noted on the Chimantá Massif the

characteristic vegetation of the Guiana Shield in the connection with the topography, altitude and climatic condition (mainly temperature) as a vegetation of the piedmont (50–400 m), the slopes (400–2000 m) with possible definition of lower montane or submontane, montane and upper montane level and the tepui summits (2000–3000 m). The climate is mild and humid, with the estimated annual mean temperature 14.1 °C and average total annual precipitation 3351 mm (RULL 2004). The fauna is relatively well documented (e. g. HOLLOWELL & REYNOLDS 2005 and references therein). Specifically in terrestrial vertebrates, an endemic herpetofauna is present here, but there are no endemic mammals (OCHOA & GORZULA 1992). So, mammals from Chimantá Tepui are either widely distributed species (e. g. bats – SANBORN 1954) or endemic, but to the whole Guiana Shield (e. g. *Didelphis imperfecta* – VENTURA et al. 2002) (OCHOA & GORZULA 1992, HOLLOWELL & REYNOLDS 2005). The mammalian fauna of the Chimantá Massif has been partly reported by VENTURA et al. 2002 and in particular by SANBORN 1954 and OCHOA & GORZULA 1992. OCHOA & GORZULA (1992) described in detail the mammalian fauna of the Chimantá Massif, based on a perfect historical review and their own observations. Thus in the Chimantá Massif, *Nasua nasua* was reported in 1955 (female, end of February, Toronó-Tepui, 2040 m), 1984 (indeterminate sex, beginning of February, Apakará-Tepui, 2150 m), 1985 (bones, February, entry valley, Toronó-Tepui, 2100 m) and entry valley and central-west part of the top of the Chimantá-Tepui in 1983 and 1986 (OCHOA & GORZULA 1992).

Although the coatis have already been reported from the Chimantá Massif, they have never been observed not only on the Churí Tepui but in the whole eastern part of the massif. Because the Churí Tepui is connected with the Akopán Tepui, we can envisage their presence also on this tepui, enlarging the distribution of the brown-nosed coati probably to the whole Chimantá Massif. The aim of this paper is to bring new observations concerning the distribution of this species on the Chimantá Massif after 15 years long gap and also partially described its external appearance.

In February 2007, second and third authors observed altogether five individuals of coati during the day and early evening on the Chimantá Massif (approx. 100 km westward from the Roraima Tepui), specifically on the Churí Tepui. Both observations were made during the daytime, which is congruent with the known diurnal activity of coatis (NOWAK 1991). All observations happened during the unexpectedly dry season on the summit of the tepui. Dry season with the limited water resource allowed the observation of one thirsty adult in the vicinity of the water reservoir. Its pelage coloration was identical with the pelage coloration of the *N. n. vittata* observed on Roraima (for details and quality photos see HAVELKOVÁ et al. 2006). The surrounding habitat of this observation was open landscape, generally composed mainly from *Brocchinia hechtoides*, locally *B. tatei* and *Stegolepis guyanensis*, *Oreocanthe sceptrum*, *Chimantaea humilis* and *C. lanocaulis*.

Later, the third author observed four other individuals grouped together in early evening. All of them had a brown-orange-brown pelage with predominant orange colour on the belly and inner side of the legs. Only adult males of coatis are solitary, females and young form groups (GOMPPER & DECKER 1998). So, the association of these coatis together with their coloration and body proportions (juvenile character of head) indicate to be the juveniles. If so, the contrast beige-black pelage coloration in adult *N. n. vittata* develops through this brown pelage stage, more typical for other subspecies of *Nasua nasua* (NOWAK 1991, GOMPPER & DECKER 1998). The observed coatis were searching for a food on the vegetation of wood-like plants *Bonnetia* and in bromeliads (*Brocchinia tatei*). This typical behaviour with searching inside bromeliads was also observed by BEISIEGEL & MANTOVANI (2006). As we noted previously (HAVELKOVÁ et al. 2006), coatis are omnivorous opportunist capable of the occupation of very barren summit of tepuis (e. g. Roraima). Thus the Chimantá Massif, with its dense vegetation and relatively good food resources, allows the coatis natural distribution, which is certainly not affected by the tourist activity as we can supposed e. g. for the Roraima Tepui.

Several years ago (2005) the second author and his colleagues observed some footpaths on the summit of Chimantá Massif. These findings were originally associated with another scientific expedition. However in 2007, new expedition with the second author observed the same type of footpath in a very difficult accessible part of Churí Tepui – later the four coatis were observed on this place so these footpaths are probably associable with coati's exploring activity. This indication in the combination with the direct reports (for details see OCHOA & GORZULA 1992) supports the stable character of distribution of coatis on the Chi-

mantá Massif. In respect to this report and reports by HUBER (1988) (coatis reported on Roraima, Yuruani, Angassima Tepui summits, but without any additional details or references), OCHOA & GORZULA 1992, LINARES 1998, HAVELKOVÁ et al. 2006, coatis should be considered as a regular inhabitants of tepuis.

The preparation of this work was partly supported by the grant No. MSMT 6007665801.

SOUHRN

V předcházejícím příspěvku (HAVELKOVÁ et al. 2006) jsme informovali o opakovaném pozorování nosála červeného (*Nasua nasua vittata*) na stolové hoře Roraima (na pomezí Venezuely, Guayany a Brazílie) v letech 2002 a 2003. V roce 2007 se podařilo druhému a třetímu autorovi pozorovat celkem pět nosálů (jednoho samotáře a skupinu čtyř, patrně mladých jedinců) na další stolové hoře Churí v masivu Chimantá (cca. 100 km západně od Roraimy). Samotné zvíře bylo dospělé a stejně vybarvené jako nosálové z Roraimy (běžová srst na většině těla vyjma tmavého ocasu a černých nohou a hlavy) a šlo tedy s vysokou pravděpodobností opět o příslušníka poddruhu *Nasua nasua vittata*. Ostatní jedinci pozorovaní ve skupině s rezavohnědou barvou srsti, oranžovým břichem a vnitřní stranou končetin, pravděpodobně nepředstavují jinou formu nosála, nýbrž mladé jedince, což napovídají i tělesné proporce pozorovaných jedinců (jeden byl vyfotografován). V tom případě by kontrastně běžovo-černí dospělci procházeli ve svém ontogenetickém vývoji barevnou fází typickou pro jiné poddruhy nosála červeného (tmavší srst s významným podílem červenavých – červeno-hnědých odstínů). Oproti Roraimě je masiv Chimantá mnohem bohatší na bylinné, keřové a stromové lesní porosty, a proto by zde nosálové neměli mít problém najít dostatek potravy. Přestože byl nosál již v masivu Chimantá opakovaně pozorován (OCHOA & GORZULA 1992), doposud nebyl zaznamenán na Churí tepui. Nová pozorování jej po patnácti letech v masivu Chimantá potvrzují a v kombinaci s publikovanými sděleními podporují přesvědčení, že stolové hory, ať s bohatou či chudší vegetací a ať více či méně izolované, jsou pravidelným domovem tohoto poddruhu nosála.

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