

FIELD NOTE

An observation of chasing behavior in the yellow armadillo (*Euphractus sexcinctus*) at Maciço do Urucum, Corumbá, MS, Brazil

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Abstract Chasing behavior is described as a component of the reproductive repertoire of the yellow armadillo *Euphractus sexcinctus*. In this note, we report a field observation of chasing behavior in yellow armadillos obtained with camera trapping at Maciço do Urucum on the western border of the Brazilian Pantanal. Five specimens of unidentified gender were recorded in chasing activity. After this chasing sequence other specimens were recorded, but they were apparently nosing the ground on the same trail. Our records increase the knowledge about the ecology and natural history of this species.

Keywords: behavior, biology, camera trap, Pantanal

Uma observação de comportamento de perseguição em tatu peba (*Euphractus sexcinctus*) no Maciço do Urucum, Corumbá, MS, Brazil

Resumo O comportamento de perseguição é descrito como um componente do repertório reprodutivo do tatu peba (*Euphractus sexcinctus*). Nesta nota de campo, descrevemos uma observação do comportamento de perseguição em tatus pebas obtida com o uso de armadilha fotográfica no Maciço do Urucum, borda oeste do Pantanal. Embora não tenha sido possível identificar os sexos dos indivíduos envolvidos, cinco animais foram registrados em comportamento de perseguição. Após esse registro, outros indivíduos, que apenas cheiravam a trilha, foram fotografados. Nossos registros ampliam o conhecimento a respeito da ecologia e história natural dessa espécie.

Palavras-chave: armadilha fotográfica, biologia, comportamento Pantanal

The yellow armadillo, *Euphractus sexcinctus* (Linnaeus, 1758), is the largest of the five species of euphractine armadillos (Wetzel, 1985) occurring over a wide area of South America, from southern Suriname, most of Brazil, and in adjacent areas of Bolivia, Paraguay, Uruguay, and Argentina (Redford & Wetzel, 1985; Wetzel, 1985; Silva-Júnior & Nunes, 2001). Despite its wide distribution, presumably large population and tolerance to habitat changes (Abba & Superina, 2010), the ecology, behavior and natural history of *E. sexcinctus* remain poorly understood (Desbiez *et al.*, 2006; Médri, 2008). The

species is currently listed as Least Concern by the International Union for Conservation of Nature and Natural Resources (IUCN, 2014).

In this field note, we report an observation of chasing behavior among *E. sexcinctus* at Maciço do Urucum on the western border of the Brazilian Pantanal. Chasing behavior among yellow armadillos was reported by Desbiez *et al.* (2006) as having a possible reproductive function or a strategy to defend territories or food resources, while Tomas *et al.* (2013) asserted that chasing behavior among *E. sexcinctus* represented a reproductive event. In their

observations in the Brazilian Pantanal (Nhecolândia), Tomas *et al.* (2013) noticed that males of *E. sexcinctus* did not interact with each other on two reports of chasing events. The authors suggested that competition for mating in this species seems to be based on the ability of a male to be the first to reach and mount a female, rather than on overt exhibition of aggressive behavior among males.

Our observation of chasing behavior was recorded on a camera trap (Bushnell Trophy Cam, USA) installed on a tree at approximately 35 cm above ground level, which was set up to operate 24 hours/day and take three consecutive pictures at five second intervals. The camera trap was placed at Fazenda Palestina (19°08'25"S, 57°36'34"W), municipality of Corumbá, MS, located at the base of Maciço do Urucum, a geological formation that is one of the few elevated areas in the Pantanal (Alfonsi & Camargo, 1986) and an important zone of iron and manganese mining in Brazil (Tomas *et al.*, 2010).

On 4 November 2014 at 18:57 hr we recorded a photographic sequence of five yellow armadillos in a chasing event (FIG. 1). Although it was not possible to determine their respective sexes, the five individuals were recorded in a chase sequence along a trail in a forested habitat. The images do not show mounting or aggressive behaviors between animals. The weather was rainy on that day and no burrows were found in the neighborhood of the camera trap after equipment checking. Roughly four hours after the chasing sequence was recorded (at 22:46 hr) a yellow armadillo was photographed apparently nosing the ground on the same trail (FIG. 2). In the second photograph of this later sequence, we observed a second individual in the background of the trail (FIG. 3). Again, it was not possible to determine the sexes of these individuals. On 5 November 2014,



FIGURE 1. Yellow armadillos (*Euphractus sexcinctus*) photo-trapped in November 2014 during chasing behavior at Fazenda Palestina, Maciço do Urucum, Corumbá, MS, Brazil.

we obtained two additional records of an apparently solitary yellow armadillo meandering along the forest trail and its surroundings. These pictures were recorded at 00:40 hr and at 02:30 hr (FIG. 4).

According to Tomas *et al.* (2013), the chasing event registered here is part of the mating repertoire of *E. sexcinctus*. However, contrary to what has been described by these authors or by Desbiez *et al.* (2006), we did not find evidence of frantic excavation by this species or the presence of recent and active burrows around or nearby the camera trap. Tomas *et al.* (2013) also mentioned that males might continue the chase sequence inside burrows in search of the female. We did not observe this behavior, although other specimens were recorded nosing the ground and meandering the trail where the chasing sequence records were obtained. Nevertheless, Desbiez *et al.* (2006) mentioned the continuity of chasing behavior for over an hour.



FIGURE 2. A yellow armadillo photographed in November 2014 at Fazenda Palestina presumably nosing the trail roughly four hours past the initial chasing observation.



FIGURE 3. Two yellow armadillos recorded crossing the trail moments later.



FIGURE 4. A yellow armadillo specimen crossing the same trail roughly seven hours after the chasing event observation.

Both observations of Tomas *et al.* (2013) occurred approximately at 17:00 hr. Although *E. sexcinctus* is described as mainly diurnal, the species may occasionally be active at night (Redford & Wetzel, 1985; Médri, 2008), with temperature strongly influencing the behavior of *E. sexcinctus* (Médri, 2008). However, our records of specimens nosing the ground of the trail after the chasing behavior sequence of pictures may indicate that extension of activity patterns may also be related to reproductive events, meriting further research.

Our unique sequence of records possibly corroborates the suggestions of Tomas *et al.* (2013) concerning a mating period for *E. sexcinctus* lasting from the mid-dry season to the onset of the rainy season (July to November). Observations like ours may shed light on the ecology and natural history of the yellow armadillo.

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LITERATURE CITED

- Abba, A. M. & M. Superina. 2010. The 2009/2010 armadillo Red List assessment. *Edentata* 11: 135–184.
- Alfonsi, R. R. & M. B. P. Camargo. 1986. Climatologia. Pp. 1–265 in *Anais do 1º Simpósio sobre recursos sócio-econômicos do Pantanal*, Brasília.
- Desbiez, A. L. J., P. A. Lima Borges & I. M. Médri. 2006. Chasing behavior in yellow armadillos, *Euphractus sexcinctus*, in the Brazilian Pantanal. *Edentata* 7: 51–53.
- IUCN. 2014. The IUCN Red List of Threatened Species 2014.3. International Union for Conservation of Nature and Natural Resources. <<http://www.iucnredlist.org>>. Downloaded on 3 December 2014.
- Médri, I. M. 2008. Ecologia e história natural do tatu-peba, *Euphractus sexcinctus* (Linnaeus, 1758), no Pantanal da Nhecolândia, Mato Grosso do Sul. Doctoral Thesis, Universidade de Brasília, Brasília. 167 pp.
- Redford, K. H. & R. M. Wetzel. 1985. *Euphractus sexcinctus*. *Mammalian Species* 252: 1–4.
- Silva Júnior, J. S. & A. P. Nunes. 2001. The disjunct geographical distribution of the yellow armadillo *Euphractus sexcinctus* (Xenarthra, Dasypodidae). *Edentata* 4: 16–18.
- Tomas, W. M., I. H. Ishii, C. Strussmann, A. P. Nunes, S. M. Salis, Z. Campos, V. L. Ferreira, M. O. Bordignon, A. T. M. Barros & D. R. C. Padilha. 2010. Borda Oeste do Pantanal e Maciço do Urucum em Corumbá, MS: Área prioritária para conservação da biodiversidade. Pp. 1–6 in 5º Simpósio sobre Recursos Naturais e Sócioeconômicos do Pantanal, Corumbá.
- Tomas, W. M., Z. Campos, A. L. J. Desbiez, D. Kluyber, P. A. L. Borges & G. Mourão. 2013. Mating behavior of the six-banded armadillo *Euphractus sexcinctus* in the Pantanal wetland, Brazil. *Edentata* 14: 87–89.
- Wetzel, R. M. 1985. Taxonomy and distribution of armadillos, Dasypodidae. Pp. 23–46 in: *The evolution and ecology of armadillos, sloths, and vermilinguas* (G. G. Montgomery, ed.). Smithsonian Institution Press, Washington and London.

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