



FIGURE 1. a. Two of the four giant anteaters seen foraging near each other, indicated by a white arrow. These two apparently ignored the presence of the others. 1b–1f. Sequence of the agonistic encounter (see text). Note (in Figure 1d) the raised forepaw of the aggressor.

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Fabiana L. Rocha^{1,2} and **Guilherme Mourão**^{2, 1} Programa de Pós-Graduação em Ecologia e Conservação, Dept. Ecologia, Universidade Federal de Mato Grosso do Sul, Brazil and ² Embrapa Pantanal, Rua 21 de Setembro, 1880, C. P. 109, Corumbá 79320-900, Mato Grosso do Sul, Brazil, e-mail: <gui@cpap.embrapa.br>.

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Chasing Behavior in Yellow Armadillos, *Euphractus sexcinctus*, in the Brazilian Pantanal

The behavior of the yellow armadillo, *Euphractus sexcinctus* (Linnaeus, 1758), has not been well

documented. This species is primarily solitary, except during the breeding season and in the case of mother and young. Several yellow armadillos have also been seen gathered around the carcass of a dead animal, feeding on maggots and carrion (Moeller *apud* Nowak, 1999).

On the afternoon of 27 October 2003, during fieldwork in the Brazilian Pantanal (18°59'S, 56°39'W), we observed three yellow armadillos chasing each other through grassy scrub at the edge of a forested area. The animals were running at high speed in single file, less than a meter apart from one another (Fig. 1). We witnessed similar behavior on 10 November 2004, in which up to eight yellow armadillos were involved in a similar chase. Although the number of animals actively chasing varied from moment to moment, as many as eight individuals were seen together at one time, forming a single long and weaving line.

The animals continued this behavior for over an hour, appearing and disappearing among the denser vegetation in an area of no more than one hectare. We found several open-earth burrows nearby, located in the grassy scrub near the more densely vegetated area. Several of the burrows showed evidence of recent activity, with fresh dirt scattered at the entrance.

Aggression in armadillos typically consists of chases, in which one animal displaces another by running after it, and of fights, in which chases lead to physical contact (McDonough, 1994). During fieldwork in Alabama, USA, Breece and Dusi (1985) witnessed adult nine-banded armadillos (*Dasypus novemcinctus* Linnaeus, 1758) chasing juveniles on five occasions



FIGURE 1. Yellow armadillos (*Euphractus sexcinctus*) in full chase, 27 October 2003, in the Brazilian Pantanal (18°59'S, 56°39'W). Photo: Arnaud L. J. Desbiez.

over 35 minutes. The threat of injury gives a fight greater risk than a chase (see Loughry *et al.*, 2002). In fights between nine-banded armadillos, the combatants balance on their hind feet and tails and claw at one another with their front feet; they also claw at the sides of their opponents with their hind feet while rolling and flipping one another in a ventral-ventral position (McDonough, 1994). This fighting behavior has not been reported in yellow armadillos, but it may occur in a similar form.

In nine-banded armadillos, adult males and females are most aggressive during the breeding season. Male aggression may ensure exclusive access to females as well as suppressing reproductive behavior by younger males. In females, aggressive behavior may be due to competition for limiting resources during pregnancy and lactation, and may also stimulate dispersal of young from the previous year (McDonough, 1994). Female aggression has been associated with lactation in yellow armadillos (McDonough and Loughry, 2003).

During the breeding season male armadillos will avidly follow the females and, among nine-banded armadillos, they will forage together for several days (McDonough and Loughry, 2003). Male nine-banded armadillos may be polygynous, mating with two or three females each breeding season, while females generally mate with only a single male (McDonough and Loughry, 2001). In the three-banded armadillo (*Tolypeutes tricinctus* [Linnaeus, 1758]), an observation of one female followed by two males has been recorded (Marinho-Filho *apud* Guimarães, 1997). When the more distant male tried to approach the female, the closer male put himself between the female and the hopeful interloper. Whenever the farther male managed to get close to the female, her defender would jump onto the intruder, the two of them rolling and flipping one another across the ground (Marinho-Filho *apud* Guimarães, 1997).

It is unclear whether the chasing behavior we observed in these yellow armadillos may have a reproductive function—allowing access to a mate, or maintaining an exclusive mate—or to defend territories or food resources. As all the animals we observed were of a similar size, however, the chases we witnessed probably had nothing to do with the dispersal of young. Both of these observations were made at the beginning of the rainy season, in October and November. The local people, the *pantaneiros*, believe that these chases involve several yellow armadillo males in pursuit of females that are ready to breed, and so chasing may be a way for males to compete for females. To

fully understand this behavior, however, will require more information on the sex, age and reproductive status of the individuals involved.

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Arnaud Léonard Jean Desbiez, Durrell Institute of Conservation and Ecology (DICE), Department of Anthropology, University of Kent, Canterbury, Kent CT2 7NS, UK, e-mail: <desbiez@hotmail.com>, **Paulo André Lima Borges**, Programa de Especialização em Geoprocessamento, Departamento de Geociências, Universidade de Brasília, Brasília 70910-900, Distrito Federal, Brazil, e-mail: <pauloandre_limaborges@yahoo.com.br>, and **Ísis Meri Medri**, Programa de Pós-Graduação em Ecologia, Departamento de Ecologia, Universidade de Brasília, Brasília 70910-900, Distrito Federal, Brazil, e-mail: <isismedri@gmail.com>.

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Extension of the Distribution of *Cabassous unicinctus* in Santa Cruz, Bolivia

The southern naked-tailed armadillo, *Cabassous unicinctus*, has been reported from northern Bolivia in the Departments of Pando, Beni, and northern Santa Cruz. The two southernmost localities for the species in Bolivia are both in Santa Cruz: at 16°40'S, 63°45'W, 80 km north of San Carlos, and 14°45'S, 60°35'W, 52 km south of Campamento Los Fierros. Only four specimens have been recorded



FIGURE 1. An adult female southern naked-tailed armadillo, *Cabassous unicinctus*, walking across an unpaved road.



FIGURE 2. Distribution of *Cabassous unicinctus* in Bolivia; the open circle represents the new locality reported here. (Original image courtesy of the American Museum of Natural History, reproduced and modified with permission of the AMNH Library.)