

Caso seja confirmada a utilização de sinais vocais por fêmeas de *Bradypus variegatus* na atração dos machos, conforme observado para *Bradypus torquatus* em semi-cativeiro, as observações descritas acima estariam relacionadas ao comportamento reprodutivo da espécie, constituindo o primeiro registro deste comportamento na natureza. Neste caso, as observações realizadas indicariam que as interações sociais ocorridas durante o período de reprodução destes animais não são restritas ao momento da cópula, estando associadas a um maior período de contato macho-fêmea durante o qual os animais permanecem na mesma área, chegando a compartilhar a árvore de repouso e alimentação. As interações observadas durante o período relatado indicam que estes animais geralmente solitários podem apresentar períodos de interações sociais de vários dias de duração. O fato é mais relevante ainda considerando que existem poucas observações de interações entre indivíduos adultos na natureza, sendo que estas normalmente são efetuadas em regiões com densidades populacionais excessivamente altas, relacionadas com restrita disponibilidade de habitat florestado adequado para o uso.

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## Mating Behavior of the Northern Tamandua (*Tamandua mexicana*) in Costa Rica

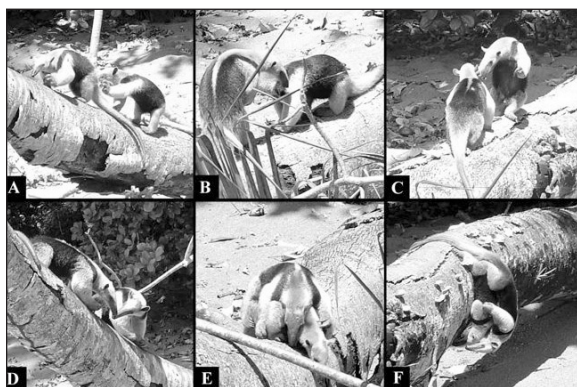
The mating behavior of several anteater species has been documented under zoo conditions (Sanmarco, 1985; Moeller, 1990; Coleman, 2003), but observations have yet to be made in the wild. No descriptions have been published on the mating behavior of *Tamandua mexicana* under any conditions, although it is the most common anteater in Central America (Lubin, 1983).

Northern tamanduas are medium-sized animals (4–6 kg) that feed on ants and termites (Montgomery, 1985a, 1985b); they range from eastern Mexico to northwestern Venezuela, Colombia, Ecuador and Peru (Wetzel, 1975, 1982, 1985; Fonseca and Aguiar, 2004). Macdonald (1995) speculated that *T. mexicana* may mate in the fall, but the few reports available suggest that mating is aseasonal (Lubin, 1983). Estrus cycles have not been reported for *T. mexicana*, but its close relative *T. tetradactyla* has estrus cycles lasting between 35 and 42 days (Sanmarco, 1987; Hay *et al.*, 1994). Silveira (1969) reported that gestation in tamanduas is approximately 130–150 days, but data from a zoo birth of *T. tetradactyla* suggests that gestation could be as short as 85 days (Sanmarco, 1987). *T. mexicana* are solitary but their home ranges, which are approximately 25 ha (Montgomery, 1985b), may overlap (Lubin *et al.*, 1977).

While hiking on a beach in Corcovado National Park, Costa Rica (08°29'N, 83°36'W), at 11:21 hrs on 1 February 2005, I witnessed a pair of *T. mexicana* engaging in mating behavior. Standing at a distance of five meters, I observed the pair interacting for over five minutes, during which two copulations occurred.

As I approached, I noticed one tamandua (later assumed to be female) searching for insects on top of a fallen log, which protruded onto the beach from beneath the shadowed understory of the forest. A second tamandua (later assumed to be male) emerged from the forest along the top of the same log. When the male encountered the female he first smelled her rump, and then followed her while she searched for insects, pacing back and forth on the log several times. As the male followed the female he swatted her rump with his forelimbs (Fig. 1a), and on several occasions he straddled the female and scrambled over her.

He then turned to face her, grabbing and holding her head for a short time (Fig. 1b), and then scrambled



**FIGURE 1.** Apparent courtship and mating behavior between two northern tamanduas (*Tamandua mexicana*) on a beach in Corcovado National Park, Costa Rica.

over her again. Both tamanduas remained on top of the log during the entire encounter, foraging and feeding on insects. The female acted antagonistically towards the male, attempting to avoid and flee from him. Twice both tamanduas reared up on their back legs facing each other, aggressively swinging their foreclaws (Fig. 1c). Several times the tamanduas paused to sniff each other's noses for 5–10 seconds (Fig. 1d). Twice the male mounted the female dorsally, despite her attempts to flee, and achieved copulations. Each copulation was brief (10–30 seconds) with approximately two minutes between them.

During the first copulation, the male mounted the female on top of the log and used his forelimbs to restrain her by holding her neck and forelegs (Fig. 1e). The second time the male mounted the female as she attempted to dismount the log. He grabbed her with his forelimbs, holding the log with his prehensile tail, and mounted her on the side of the log (Fig. 1f). Finally the male straddled the log and slid down the length of its incline, walking into the forest and leaving my field of view. The female continued to search for insects on the fallen log for another eight minutes before departing into the forest as well.

The dorso-ventral mating behavior of *Tamandua mexicana* is different from the behavior typical of at least two other Neotropical xenarthrans. The two-toed sloth (*Choloepus didactylus*) mates in a ventral-ventral manner (Burton, 1976) and giant anteaters (*Myrmecophaga tridactyla*) mate with the female lying on her side (Moeller, 1990). However, other aspects of the mating behavior of the giant anteater are consistent with my observations of *T. mexicana*. The male giant anteater follows the female during courtship and occasionally paws and sniffs her, while both sexes continue to forage and feed (Shaw *et al.*, 1987). Like-

wise during courtship the male and female exchange blows and pinches (Moeller, 1990), and engage in “face-to-face embraces” similar to *T. mexicana* (Coleman, 2003). The onset of aggression and copulation seem to coincide in *Tamandua tetradactyla* (Meritt, 1976), as observed here with *T. mexicana*. Mating in *T. tetradactyla* is preceded by both sexes engaging in mutual inspection, “gentle boxing,” cuddling, and following each other; a male *T. tetradactyla* will show interest in a female by sniffing, grooming, and following her (Sanmarco, 1985).

These observations of *T. mexicana* suggest that the strong forelimbs and tail may aid males in copulating with unwilling females. The prehensile tail provides stability during arboreal locomotion (Montgomery and Lubin, 1977; Lubin, 1983) but it may also aid in stabilizing the males during mating. Taylor (1978, 1985) has discussed the functional morphology of the tamandua's powerful forelimbs in the context of opening termite mounds, but my observations suggest that the forelimbs may also play a role in a male's ability to manipulate the position of the female during mating. Northern tamanduas find their prey by scent (Montgomery, 1985), and my observations suggest that scent may also be important during mating, perhaps to identify potential mates and assess their receptivity. The male *T. mexicana* may have been scent-marking both the female when he scrambled over her, and the log when he slid down it. I was unable to find additional information on scent glands and scent-marking in tamanduas for comparison. To my knowledge this is the first account of mating behavior in *T. mexicana* and the first account of any anteater mating in the wild.

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## New Information on Population Declines in Pink Fairy Armadillos

The conservation status of the pink fairy armadillo (*Chlamyphorus truncatus*) was extensively discussed during the recent IUCN Edentate Species Assessment Workshop (Fonseca and Aguiar, 2004). The near-total lack of data on its natural history and population dynamics, however, made it extremely difficult to assess. Fresh information from the field now suggests that its current classification as Near Threatened (IUCN, 2006) should be reconsidered.

In March 2006, I assisted a film crew in their search for pink fairy armadillos in Mendoza Province, Argentina. The documentary will be the opening film in a new television series, “Nick Baker’s Weird Creatures,” produced by Icon Films in association with the British Natural History Museum, and to be aired concurrently on Channel 5 (UK) and Animal Planet. Although our efforts to trap, track, or observe a live pink fairy armadillo were unsuccessful, our interviews with local people provided new and important information on the abundance of this species—information that needs to be considered to ensure that its conservation status is accurately assessed. There is no doubt that this information requires confirmation by scientific methods. But in the absence of long-term ecological research, we are obliged to listen to