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## RESUMO

Popularly known as nine-banded armadillo, *Dasypus novemcinctus* is the Xenarthra with the largest geographical distribution. Although it is the most studied armadillo species, only few ecological studies have been made in the Neotropical region. Most research on this species have been carried out in the United States. Agonistic encounter of *D. novemcinctus* is part of the behavioral repertoire of the species, however, there have been no reports of this kind of behavior in the Neotropical region so far. Studying the mammal community of the Ilha Grande State Park, using camera traps installed in 18 plots, we registered an agonistic encounter between two individuals of *D. novemcinctus*. Ilha Grande is an island in the Atlantic Forest hotspot, located in Angra dos Reis municipality, southwestern Rio de Janeiro state, Brazil. Bushnell camera traps were installed, on average 1km apart from each other, attached 30 cm from the floor, and programmed to take videos and photos when activated by the motion/heat sensor. Camera traps were set to operate for 24 hours/day the entire sampling period, with a minimum interval between records of 10 seconds. Between March and August 2019, we captured 189 images of *D. novemcinctus* at six sampling sites. Images taken less than one hour apart by the same camera were discarded, totaling 83 records. On 2019 May 14th at 02:54 a.m., we registered an agonistic behavior between two adult *D. novemcinctus* individuals. One of the armadillos was walking when the other approached it from behind. The first turned and attacked the second with his head, knocking over the individual, who fell with his back to the ground. The attacked individual got up and went towards the attacker, tried to fight back, but ended up being attacked again. The behavior can be viewed at: <[https://youtu.be/Q\\_41P-HI8XA](https://youtu.be/Q_41P-HI8XA)>. This is the first record of an agonistic encounter of wild *D. novemcinctus* in the Neotropics. Agonistic behaviors for this species are recorded in males and females who are equally likely to initiate and receive aggression. Both directed their aggression more significantly towards individuals of the same sex. It is not possible to identify the sexes of the individuals of *D. novemcinctus* in our observations. The most likely explanation for nine-banded armadillo aggression in males may be competition for females, whereas in females it is possible that aggression is a defensive behavior of the litter. However, the functions of aggressive behavior in females are less clear, demonstrating the importance of more behavioral studies. Camera trapping is a good way to record and understand animal behavior and thereby allow the establishment of appropriate conservation strategies.

**PALAVRAS-CHAVE:** Aggressive behavior, Agonistic encounter, Nine-banded armadillo

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