

Like an earthworm: Chalk-browed Mockingbird (*Mimus saturninus*) kills and eats a juvenile watersnake

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Recebido em 20 de janeiro de 2007; aceito em 11 de maio de 2007.

RESUMO: Como uma minhoca: o sabiá-do-campo (*Mimus saturninus*) mata e ingere uma cobra d'água juvenil. Diversas espécies de Passeriformes neotropicais apresam vertebrados, embora serpentes sejam presas raramente registradas. Apresento aqui um registro de sabiá-do-campo (*Mimus saturninus*) apresando uma cobra-d'água juvenil. Uma vez que serpentes são presas perigosas, é aqui proposta a hipótese de que serpentes apresadas por Passeriformes sejam principalmente juvenis de espécies não-venenosas e não-constritoras. Também, sugiro que o apresamento de serpentes de pequeno porte e relativamente inofensivas representa uma alteração simples no comportamento de caça de Passeriformes que tenham o hábito de apresam minhocas e artrópodes alongados como lagartas e diplópodes.

PALAVRAS-CHAVE: Ofiofagia, comportamento predatório, presas alongadas.

KEY-WORDS: Ophiophagy, predatory behaviour, elongate prey

In a recent study of Neotropical passerine birds as vertebrate predators (Lopes *et al.* 2005) a surprising number of species (206) was found to prey on this animal type, although the number of stomachs with vertebrate remains was very low (0.3% out of 5,221 samples). Frogs and lizards were among the most preyed vertebrates, whereas snakes were a rare prey. Snakes are regarded as a dangerous prey that can inflict a serious or even a deadly injury to a predator (Greene 1988), which could explain their rarity as preys of passerine birds.

I report here on the Chalk-browed Mockingbird (*Mimus saturninus*, Mimidae) killing and eating a juvenile snake in southeastern Brazil. Additionally, I note that the “snake-eaters” among passerine birds are relatively large species, most of which forage on the ground even if not exclusively.

The record was made at the Parque Ecológico Prof. Hermógenes de Freitas Leitão Filho, Campinas (22°48'S, 47°11'W), São Paulo state, southeastern Brazil, on 31 December 1995 at 1735 h. The whole sequence, from the bird finding and beginning to peck the snake until its swallowing the prey, was observed through binoculars with use of “ad libitum” and “behaviour” sampling rules (Martin & Bateson 1986). Two photographs were taken as vouchers.

One Chalk-browed Mockingbird (*Mimus saturninus*) from a group of about 4-5 individuals foraging on the ground of a lake shore was observed walking quickly towards a bare spot where it stopped and began to peck at a writhing, elongate animal. The remainder birds uttered contact calls and some of them performed wing-flashing displays (see Argel-de-Oliveira 1989, Sazima and Marques 2007). Upon close inspection, a Red-bellied Watersnake (*Helicops modestus*, Colubridae) about 15 cm in total length (TL) was trying to evade the pecking bird, which aimed mostly at the snake's head but also

pecked at the mid body and even at the tail. After about 3 min, the snake laid still on the ground and the bird began to swallow it. One juvenile individual from the group begged for food and seemed to make attempts to steal the prey from the bird holding the snake. The hunter bird took off and flew with the prey hanging from its bill (Figure 1), landed on a place about 30 m from the hunting spot, and successfully engulfed the remainder portion of its prey. The whole sequence, from the first sighting to the end of prey swallowing lasted about 5 min.

The Chalk-browed Mockingbird is an omnivorous bird that forages in familiar groups (Argel-de-Oliveira 1989, Sick 1997). Its large size (26 cm and 73 g, see Sick 1997) allows it to prey on relatively large prey, although the staple food is



FIGURE 1. A Chalk-browed Mockingbird (*Mimus saturninus*) with a half-swallowed Red-bellied Watersnake (*Helicops modestus*) hanging from its open bill.

composed of arthropods and small fruits (Argel-de-Oliveira 1989, Sick 1997). No species of *Mimus* is reported as preying on snakes (Lopes *et al.* 2005), although *M. gilvus* and *M. polyglottos* prey on lizards, another squamate prey (*e.g.*, McLaughlin and Roughgarden 1989, ffrench 1991, Wunderle 1991).

Snakes are regarded as a potentially dangerous prey that can seriously injure or even kill their potential predators (Greene 1988). Thus, predators of snakes usually have a way to overcome the defences of this prey type, including quickness and deftness, and hard or slippery surfaces, to evade or hamper a snake's strike and to dispatch it quickly (Greene 1988). On the other hand, juvenile snakes may be handled more easily than the adults by a predator, the more so if the snake is a non-venomous or a non-constricting species. The Red-bellied Watersnake, although able to bite right out after born (pers. obs.), is a non-venomous snake and thus unable to seriously harm a potential predator the size of the Chalk-browed Mockingbird. Although the mockingbirds apparently recognized the prey as a snake (wing-flashing displays, contact calls), it was quickly dispatched and handled by the hunter bird more like a large earthworm than a potentially dangerous prey (earthworms are reported in the diet of this bird; see Argel-de-Oliveira 1989).

A glance at the appendix presented by Lopes *et al.* (2005) reveals that passerine birds that prey on snakes are mostly large and opportunistic species that forage on the ground, even if not exclusively. Exceptions are the cotingas, woodcreepers and tanagers (one species each), which forage on vegetation. In the ground-foraging category belong the flycatchers (one species), antshrikes and antbirds (7), crows (2), wrens (1), thrushes (2), and grackles (1). Some antshrike and antbird species prey on millipeds and caterpillars, whereas some other follow army ants (Sick 1997), thus gaining access to small vertebrates (including snakes) flushed by these insects. The latter four bird groups feed on relatively large arthropods, and earthworms probably are not strange to their diets (*e.g.*, Schubart *et al.* 1965, Skutch 1960, Sick 1997).

I predict that snakes preyed on by passerine birds would largely be juveniles of harmless species of the Colubridae, and possibly species of the Anomalepididae and Leptotyphlopidae (blindsnakes) as well, a hypothesis amenable to testing with a check of the stomach contents listed by Lopes *et al.* (2005) and further field observations. Additionally, I suggest that hunting small and harmless snakes, even if occasionally (Lopes *et al.* 2005), represents a relatively simple behavioural shift for large and ground-foraging passerines that prey on earthworms and elongate arthropods such as caterpillars and millipedes.

ACKNOWLEDGMENTS

I thank Marlies Sazima for pleasant company in the field and for her supporting love, and the CNPq for essential financial support.

REFERENCES

- Argel-de-Oliveira, M. M. (1989) *Eco-etologia do sabiá-do-campo* *Mimus saturninus* (Lichtenstein, 1823) (Passeriformes, Mimidae) no Estado de São Paulo. Ph. D. Dissertation. Campinas: Universidade Estadual de Campinas.
- ffrench, R. (1991) *A guide to the birds of Trinidad & Tobago*. 2nd ed. Ithaca: Comstock Publishing.
- Greene, H. W. (1988) Antipredator mechanisms in reptiles, p. 1-152. In C. Gans and R. B Huey (eds.) *Biology of Reptilia*, Ecology B: Defense and life history, vol. 16. New York: Alan R. Liss.
- Lopes, L. E., A. M. Fernandes and M. A. Marini (2005). Predation on vertebrates by Neotropical passerine birds. *Lundiana* 6:57-66.
- Martin, P. and P. Bateson (1986) *Measuring behaviour, an introductory guide*. Cambridge: Cambridge University Press.
- McLaughlin, J. F. and J. Roughgarden (1989) Avian predation on *Anolis* lizards in the northeastern Caribbean: an inter-island contrast. *Ecology* 70:617-628.
- Sazima, I. and O. A. V. Marques (2007) A reliable customer: fidelity to a foraging site by an actively searching neotropical colubrid snake. *Herp. Bull.* 99:36-38.
- Schubart, O, A. C. Aguirre and H. Sick (1965) Contribuição para o conhecimento da alimentação das aves brasileiras. *Arq. Zool.* 12:95-249.
- Sick, H. (1997) *Ornitologia brasileira, uma introdução*. Rio de Janeiro: Editora Nova Fronteira.
- Skutch, A. F. (1960) Life histories of Central American birds – Families Vireonidae, Sylviidae, Turdidae, Troglodytidae, Paridae, Corvidae, Hirundinidae and Tyrannidae. *Pacif. Coast Avifauna* 35:1-580.
- Wunderle, J. M., Jr. (1981) Avian predation upon *Anolis* lizards on Grenada, West Indies. *Herpetologica* 37:104-108.