

PREDATION OF SNAKES BY THE YOUNG OF OPOSSUM *DIDELPHIS MARSUPIALIS* IN CAPTIVITY

C. JARED¹⁾, M. M. ANTONIAZZI¹⁾, and S. M. ALMEIDA-SANTOS²⁾

¹⁾ Laboratory of Cellular Biology and ²⁾ Laboratory of Herpetology, Instituto Butantan,
Av. Vital Brazil 1500, CEP 05503-900, São Paulo, Brazil

South-american opossums of genus *Didelphis*, popularly known as "gambás" or "comadrejas", are considered snake predators (Cordero and Nicolas, 1986). Fitch (1960) observed *D. virginiana* preying copperhead in nature. Despite of this single observation no work has been conducted in order to verify experimentally this type of behaviour, as in adults or in young. The only record of snake predation by *Didelphis* in captivity was done by Sazima (1992), who observed a *D. albiventris* attacking and preying a juvenile *Bothrops jararaca*.

It is known that these marsupials are generally resistant to ophidic venoms (Perez *et al.*, 1979; Moussatché *et al.*, 1990; Domont *et al.*, 1991). Perales *et al.* (1986) demonstrated *in vitro* that *Didelphis marsupialis* produces in its serum a protein complex that immunizes it against *Bothrops jararaca* venom. The same authors also demonstrated that the young separated from their mothers just after birth present immunity against *B. jararaca* which was considered as natural.

In this way, the purpose of this work is to demonstrate that young opossum prey snake in captivity. Moreover, we intend to reinforce the biochemical findings of Perales *et al.* (1986), by means of behavioural observations.

Four litters of *D. marsupialis* were used, younglets weighing 50 to 100 g. Two of the litters were orphans and composed of suckling individuals which were found near their dead mothers. The other two litters were separated from their mothers in captivity; these individuals were more developed, already having teeth. All litters were found in the park of Butantan Institute or on the campus of São Paulo University (São Paulo, Brasil). They were composed of

6 to 8 animals and were individually maintained in 70×80 cm tanks. The motherless litters were first fed with milk bottles; after some time they were fed with milk, fruit and cereal mush. During this work young snakes *Sibynomorphus neuwiedi* (15 to 18 cm TL) and *Bothrops jararaca* (20 cm TL) were offered to the litters every 15 days, from August to October of 1995.

Independently of their ages, the young would get very excited when the snakes were introduced in the tanks. They would approach the prey using their smell. However they did not seem to distinguish between poisonous and non-poisonous snakes. When very young, they would attack as a group (Fig. 1), all individuals of the litter biting the snake body at the same time. At this age no evidence of hierarchy among them was observed. When a little older, a clear dominance of certain individuals would appear at the moment of the attack resulting in a dispute for the prey (Fig. 2). When endangered, the reaction of *S. neuwiedi* would generally be escaping, while *B. jararaca* would resist, coiling itself and striking. For many times this species was seen biting the young faces; however no signs of changes in behaviour or poisoning were noted.

The younger litters even before having teeth, would use their gums in an attempt to bite the snakes at different parts of the body; most times they would not succeed in killing their prey. When a little older, already presenting teeth, they would immobilize the snakes breaking their vertebral column by successive bites along the whole body. The younglets would assume a posture similar to that described for adults (Antoniazzi *et al.*, 1996), holding the snake alive with one of their anterior paws and

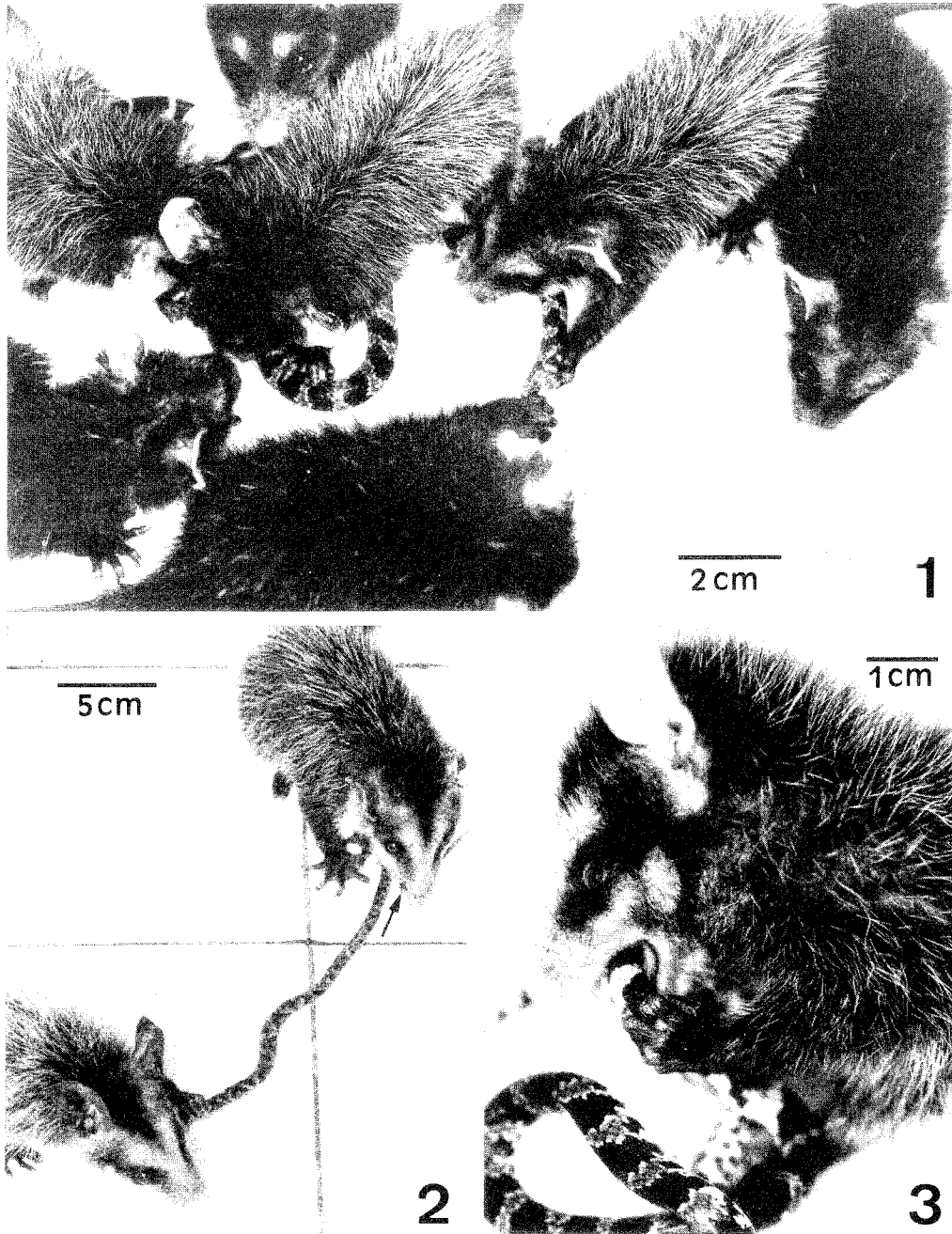


Fig. 1. A very young litter of *D. marsupialis* attacking a *S. newwiedi*.
 Fig. 2. Two individuals of a litter disputing a *B. jararaca*. The arrow indicates a snake bite on the face.
 Fig. 3. Close of a younglet trying unsuccessfully to bite a *S. newwiedi*. The posture is similar to that of an adult.

biting it using their lateral teeth, while the other paw would support the animal (Fig. 3).

Observing the great excitement, agility

and versatility demonstrated by the young *D. marsupialis* in attacking, killing and preying poisonous and non-poisonous snake younglets, and taking into account the

hypothesis of Perales *et al.* (1986) about natural immunity against *B. jararaca* venom, one can presume that this behaviour of predation can also be innate.

It is also probable that in nature the young of *D. marsupialis* are snake predators.

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飼育下におけるオポッサムの子のヘビの捕食

C. Jared¹⁾, M. M. Antoniazzi¹⁾ and
S. M. Almeida-Santos²⁾

南米産のオポッサム (*Didelphis marsupialis*) の子に飼育下でヘビを与え、その行動を観察した。無毒の *Sibynomorphus newwiedi* と毒蛇のジャララカ (*Bothrops jararaca*) を与えたところ、どちらをも捕食しようとした。歯が生えている個体は食べたが、歯が生えていなくて食べられない個体も、同じ様な行動をとり、食べようとした。ジャララカはオポッサムにかみついたが、オポッサムはダメージを受けた様子はなかった。これらの行動は生得のものと考えられる。

¹⁾ブタンタン研究所細胞生物学研究室

²⁾ 同 爬虫両生類学研究室