NATURAL HISTORY NOTES

Natural History Notes features articles of shorter length documenting original observations of amphibians and reptiles mostly in the field. Articles should be concise and may consist of as little as two or three paragraphs, although ideally will be between 500 and 700 words. Preferred contributions should represent an observation made of a free-living animal with little human intrusion, and describe a specific aspect of natural history. Information based on a captive observation should be declared as such in the text and the precise geographical origin of the specimen stated. With few exceptions, an individual 'Note' should concern only one species, and authors are requested to choose a keyword or short phrase which best describes the nature of their observation (e.g. Diet, Reproduction). The use of photographs is encouraged, but should replace words rather than embellish them. Contributions are accepted on the premise that they represent a previously unreported observation, and may be edited prior to acceptance. Standard format for this section is as follows:

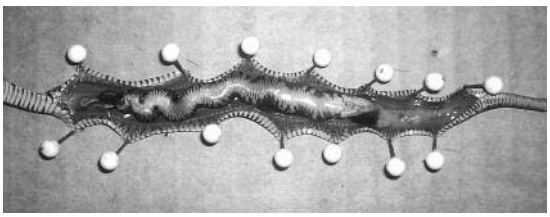
SCIENTIFIC NAME (Common Name): KEYWORD. Text (there are no constraints on how information is presented but the date, time, and locality – with full map co-ordinates if possible – must be included, as should precise details on the nature of the observation with some discussion of its significance, and references to pertinent literature). If the information relates to a preserved specimen, its catalogue number and place of deposition should also be given. REFERENCES. Then leave a line space and close with name and address details in full.

***LIOPHIS MILIARIS* (Common water snake): CANNIBALISM**. *Liophis miliaris* is a medium size, semiaquatic and diurnal-nocturnal colubrid snake (Marques *et al*., 2001) usually associated with moist environments (Dixon, 1980). It is a species widely distributed in South America, from the Guianas to northeastern Argentina, being common in southeastern Brazil (Gans, 1964; Dixon, 1983). Its diet is based on anurans, fishes and eventually lizards (Amaral, 1933; Lema *et al*., 1983; Vitt, 1983; Michaud & Dixon, 1989; Machado *et al*., 1998; Marques & Souza, 1993). This note reports an incident of cannibalism in *L. miliaris* involving two individuals of a litter kept in captivity.

On 12th November 2005, an adult female *L. miliaris* with a snout-vent length (SVL) of 930 mm, tail length (TL) of 192 mm, and mass of 330 g, was collected in Itapecerica da Serra (23°43'S, 46°50'W), São Paulo State. On 17th November 2005 it laid 31 eggs that were incubated in a container with moistened soil as substrate and a mean room temperature of 25°C. From 6th–8th February 2006, eighteen of the eggs hatched. All newborns were housed in the same plastic box (20 x 32 x 35 cm) with water ad libitum and cardboard as substrate. On 31st March 2006, while cleaning the cage, we noted the lack of one individual and that one female (IB 74409, SVL = 171 mm, TL = 41 mm and 2.54 g) showed several undulations in its body, typical of snakes that have previously been observed to exhibit ophiophagy (Jackson *et al*., 2004). This female was euthanised and dissection revealed that it had ingested another conspecific female (IB 74410, SVL = 135 mm, TL = 41mm and 1.28 g) (Figure 1). The prey was swallowed headfirst, length ratio (LR = prey total length/predator SVL) was 1.03 and weight ratio (WR = prey mass/predator mass) was 0.50. It was fitted in the predator stomach, compressed in several waves such that its total length had decreased ca. 2.28 times (= 77 mm), and with no digestive activity apparent, had evidently been swallowed recently. It was not possible to determine whether or not the prey was alive or dead at the moment of ingestion.

The predator/prey size ratio of 1.03 is high for *L. miliaris* considering its natural prey (anurans and fishes). We used total length for prey and SVL for predator because the SVL of the predator is the useful space into which the entire length of the prey has to fit (cf. Jackson *et al*., 2004). There are few data published to compare with ours, but the length

Figure 1. Hatchling female *L. miliaris* (IB 74409, SVL = 171 mm, TL = 41 mm and 2.54 g) with conspecific as prey (IB 74410, SVL = 135 mm, TL = 41mm and 1.28 g); prey mass/predator mass = 0.50.



ratio obtained here is lower than the LR found by Jackson *et al*. (2004) in observations of ophiophagy in *Lampropeltis getula californiae*. Young snakes usually feed on large prey, a fact explained by the lower availability of adequately sized prey in nature, and there are reported occurrence of young snakes having died from trying to eat prey above their ingestion capacity due to evaluation error (see Sazima, 1990). *Liophis miliaris* appears to be habitat specialist and food generalist (Dixon, 1983). Although it is known that this species feeds on anurans and fishes, it occasionally preys on lizards, increasing its prey spectrum and thus demonstrating its opportunistic habits (Michaud & Dixon, 1989; Machado *et al*., 1998). In a review of published data on the diet of *L. miliaris*, we could find no mention of snakes as a recorded food item for this species (Amaral, 1933; Lema *et al*., 1983; Vitt, 1983; Michaud & Dixon, 1989; Marques & Souza, 1993). The incident described here therefore leads us to speculate that *L. miliaris* probably feeds on snakes also in nature. However, cannibalism among newborn snakes kept in captivity seems to be a relatively frequent behaviour even in species that do not include snakes in the diet (e.g. Hoge & Federsoni, 1981; Lema *et al.*, 1983; Cardoso Júnior *et al*., 1990). Furthermore, the litter had never been fed and the individual concerned may therefore have been hungry. Nevertheless, this was the only incident of cannibalism that occurred in the litter. Further research about the diet of *L. miliaris* should elucidate the possibility of ophiophagy in nature.

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