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COMMUNICATION

Reproduction and feeding behavior of *Oxybelis wilsoni*, a new species of vine snake (Serpentes: Colubridae)

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Resumen: En cautiverio, la serpiente *Oxybelis wilsoni* puede poner ocho huevos blancos de 37.3-48.5 mm de largo y 10-17.5 g, que tardan unos 93 días hasta el nacimiento. Los juveniles miden 418-457 mm de longitud y no difieren mucho de los adultos. Cazan de la misma forma que otras especies del género. En la naturaleza los juveniles tal vez pasen más tiempo en el suelo que los adultos (la especie es arborícola).

Key words: Reproduction, feeding behavior, captivity.

Little is known concerning the ecology and behavior of *Oxybelis* (Henderson and Nickerson 1977) and most notes refer to behavior (Henderson and Binder 1980) and reproduction (Fitch 1970, Duellman 1978, Dixon and Soini 1986). It is, therefore, appropriate to present some observations on *Oxybelis wilsoni* following its formal description in this same issue. Since March 1990, the Philadelphia Zoological Garden has maintained five specimens of *Oxybelis wilsoni* collected by Jaime D. Villa and James R. McCranie on Isla de Roatán, Departamento Islas de la Bahía, Honduras in 1989. Adults (ca. 1.5 m in length), two females and one male, were housed in a 1.2 x 1.2 x 1.5 m. enclosure (l x w x h). Two smaller specimens (< 1 m) were housed with a subadult *Oxybelis aeneus* in a enclosure measuring 0.7 x 0.7 x 0.5 m. Temperatures of both enclosures were 27-29 ^{o}C and humidity ca. 60%. The three larger specimens were later moved to a vertical exhibit (0.9 x 0.9 x 1.5 m) with similar environmental conditions.

Reproduction: On 7 September 1990 one of the larger females started to lay white eggs on the floor. By 1100 hrs two eggs had been produced, with the remaining six eggs being laid in intervals of 10 to 90 min each. These ranged in length from 37.3 to 48.5 mm (mean 43.2 mm; diameter18.3 - 21.8 mm, mean 20.1 mm). Similarly, weights were 10.0 - 17.5 g (mean 13.1 g). The eggs were incubated in a covered glass gallon jar containing 50 mm (depth) of moist vermiculite (26-29 °C and ca. 80% humidity). Only two eggs hatched, the others adled (one with an embryo), turning brown and becoming somewhat deflated depending on when they had addled.

Incubation took 92 and 94 days. Hatching lasted one day and the young hid in the vermiculite; the egg tooth was lost several days later. Coloration was similar in adults and young, except for a more greenish-yellow dorsal and ventral surface in the young (yellow-brown, or "mustard yellow" in adults, according to Wilson and Meyer 1985). The young characteristically had a slightly swollen and up-turned rostral area. All other characters are within the range given by Villa and McCranie (1994). Upon hatching the young measured 418 mm and 457 mm (total length) and had weights of 4.7 and 6.7 g, respectively. On 22 December 1990, the smaller young shed its natal skin. Although attempts to feed both were made 10 days post-hatching, feeding was not established until 9 January 1991 for the larger individual and 20 January 1991 for the other. At these

times, the larger young consumed a frog part (*Rana pipiens)* and has since only accepted small *Anolis* lizards, while the smaller individual ate one newborn mouse and small *Anolis*. Both living and dead food has been accepted. On 11 May 1991, one young had a snout-vent (SV) length of 410 mm, and a tail length of 210 mm (TL= 620 mm) (359, 181 and 540 mm in the other respectively). Their weights were 10.2 g and 7.1 g, respectively.

There are no equivalent data about close species (Stuart 1948, however, mentioned a Guatemalan *O. fulgidus* with well developed eggs in mid-April). Villa and McCranie (1994) collected two juvenile *O. wilsoni,* a primarily arboreal species, from the ground. Early behavior in captivity suggests that the young of this species (and possibly other Oxybelid species) may not be as arboreal as the adults.

Feeding behavior: The feeding behavior of *Oxybelis* has received considerable attention and includes a variety of vertebrates (Henderson and Binder 1980, Villa and McCranie 1994). *O. wilsoni* is an ambush feeder. The feeding behavior of adults and subadults at the Garden is similar to other species of *Oxybelis* (see Keiser 1975, Henderson and Binder 1980). Henderson and Nickerson (1977) observed that *Oxybelis aeneus* and *O. fulgidus* would stop their stalking behavior when lizards stopped moving. Observations on *O. wilsoni*, however, suggest that even motionless prey, after discovered, can be captured; stalking *O. Wilsoni* probably depend on both visual and olfactory capabilities. Whether or not these snakes are able to detect eye movement in motionless lizards is yet to be determined. The swaying motion of the head in *Oxybelis* may enhance binocular vision (Henderson and Nickerson 1977) or help mimicking the swaying of grass in a breeze. Both rodent and lizard prey were usually grasped with a forceful lunging strike, usually after the snake had approached within 5-10 cm. If envenomation does occur before ingesting, it is probably as an aid in digesting a relative large prey (Thomas and Pough 1979, Pough and Groves 1983) and may be more frequent if the prey estruggles. Lizards were usually grasped behind the neck and were quickly taken into the mouth and swallowed, usually without signs of envenomation.

Oxybelis snakes are diurnal, but the captive snakes were seen eating mice in the normal fashion but in darkness (1800 to 2100 hrs). Of course captive behavior should not be generalized to nature (Henderson and Nickerson 1977), but my experience with other species suggests that the captive behavior of *Oxybelis wilsoni* reflects behavior in the wild.

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REFERENCES

Dixon, J.R. & P. Soini. 1986. The reptiles of the upper Amazon Basin, Iquitos region, Peru. 2nd. Ed. Milwaukee Publ. Mus., Milwaukee, Wisconsin.

Duellman, W.E. 1978. The biology of an equatorial herpetofauna in Amazonian Ecuador. Univ. Kansas Mus. Nat. Hist., Misc. Publ. 65:1-352.

Fitch, H.S. 1970. Reproductive cycles in lizards and snakes. Univ. Kansas Mus. Nat. Hist., Misc. Publ. 52:1-247.

Henderson, R.W., & M.H. Binder. 1980. The ecology and behavior of vine snakes, *(Ahaetulla, Oxybelis, Thelotornis, Uromacer):* a review. Milwaukee Publ. Mus., Contrib. Biol. Geol., 37:1-38.

Henderson, R.W., & M.A. Nickerson. 1977. Observations on the feeding behavior and movements of the snakes *Oxybelis aeneus* and *O. fulgidus.* British J. Herpetol. 5:663-667.

Keiser, E.D., Jr. 1975. Observations on tongue extension of vine snakes (genus *Oxybelis*) with suggested behavioral hypotheses. Herpetologica 31:131-133.

Stuart, L.C. 1948. The amphibians and reptiles of Alta Verapaz Guatemala. Misc. Publ., Univ. Michigan, 69:1-109.

Thomas, R.G. & F.H. Pough. 1979. The effect of rattlesnake venom on digestion of prey. Toxicon 17:221-228.

Villa J. D. & J.R. McCranie. 1994. *Oxybelis wilsoni*, a new species of vine snake from Isla de Roatán, Honduras (Reptilia: Serpentes: Colubridae). Rev. Biol. Trop. 43: 297-305.

Wilson, L.D. & J.R. Meyer. 1985. The snakes of Honduras. 2nd. Ed. Milwaukee Publ. Mus., Milwaukee, Wisconsin.