

Notes on the reproduction of the
Ecuadorian toad-headed pitviper
Bothrocophias campbelli
(FREIRE-LASCANO, 1991)

The toad-headed pitviper *Bothrocophias campbelli* (FREIRE-LASCANO, 1991) is found in the western Andean slopes of Ecuador (Choco region), where it lives in lower montane wet forest and cloud forest (GUTBERLET & CAMPBELL 2001; CAMPBELL & LAMAR 2004) and southwestern Colombia (CASTRO-HERRERA 2005). There is little information about the natural history and especially reproduction of this rare snake. The presence of enlarged follicles was reported by FREIRE & KUCH (2000). We report the first observations on litter size in the snake *B. campbelli* under captive conditions at the "Vivarium de Quito".

Abbreviations used in this text: FHGO = Fundación Herpetológica Gustavo Orcés-Vivarium de Quito. Geographic coordinates and collection dates were taken from the FHGO database, morphological measurement were done with a metallic ruler.

On 10 October 2005 a gravid adult female moving on the forest floor (Fig. 1; FHGO 5470, snout-vent length: 856 mm, total length: 989 mm, mass: 554 g.) was collected at Monte Oret, km 73, parish of Mindo, canton of Nanegalito, province of Pichincha (00°02'54"S, 78°46'21"W), 1200 m a.s.l., at night (21:33). This female was deposited in the Vivarium de Quito on 24 October 2005, and kept in a fiberglass cage.

Between 19 February and 24 March 2006, the female gave birth to five living and sixteen dead young (mean snout-vent length



Fig. 1: Female *Bothrocophias campbelli* (FREIRE-LASCANO, 1991) FHGO 5470 (Photograph by courtesy of Eduardo TORAL).

149.8±8.4 mm, range 134-162 mm) and two unfertilized eggs (length 27 mm and 34 mm, mass 2 g and 6 g). The color pattern of the newborns is similar to that of the mother, in which the dorsal spots tend to be obscure. On the young, the trapezoidal dorsolateral pattern elements, which match well or are staggered along the vertebral line are greyish with a black blotch in the center proximal to the paravertebral and vertebral scales, and delimited by black or brown blotches along their anterior and posterior margins (Fig. 2).

The number of 21 young in *B. campbelli* is exceeded in *B. microphthalmus*



Fig. 2: Female *Bothrocophias campbelli* (FREIRE-LASCANO, 1991) with neonates born in captivity. (Photograph by Jorge H. VALENCIA).

(COPE, 1876) from which the number of 36 well-developed unborn embryos was reported by FREIRE & KUCH (2000). In *B. hyoprora* (AMARAL, 1935) the maximum litter size known is much lower (13) (CAMPBELL & LAMAR 2004). Accordingly, the mean snout-vent length of newborn *B. campbelli* (149±8.41 mm) is small in comparison to *B. hyoprora* (180.7±3.9 mm) and *B. microphthalmus* (167.2±8.5 mm) (see CISNEROS-HEREDIA et al. 2006; CAMPBELL & LAMAR 2004). The newborn *B. campbelli* survived up to 59 days in captivity. For comparative data of other species of the genus *Bothrocophias* see CISNEROS-HEREDIA et al. (2006).

Knowledge of the reproductive biology of the Ecuadorian pitvipers is essential for the conservation of these threatened species and the support of their populations by means of reproductive programs under captive conditions.

ACKNOWLEDGMENTS: We are indebted to María Elena BARRAGÁN (FHGO) for proving access to the database and specimens deposited in this institution, and Miguel ALCOSER, Pablo PICERNO and Alexis BARAHONA (Vivarium de Quito) for laboratory assistance. This investigation was supported by Fundación Herpetológica Gustavo Orcés and Vivarium de Quito.

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KEY WORDS: Reptilia: Squamata: Serpentes: Viperidae; *Bothrocophias campbelli*, reproductive biology, Choco region, Ecuador

SUBMITTED: September 26, 2007

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