

The  
**HERPETOLOGICAL  
BULLETIN**

Number 100 – Summer 2007



PUBLISHED BY THE  
**BRITISH HERPETOLOGICAL SOCIETY**

**STEFANIA EVANSI (Groete Creek carrying frog): FROGLET CARRYING.** The neotropical genus *Stefania* was recently removed from the family Hylidae and placed in the family Cryptobatrachidae, together with *Cryptobatrachus*, by Frost *et al.* (2006), mainly on the basis of molecular data. *Stefania evansi*, the most widespread member of the genus, is endemic to Guyana and is found below 900 m. The highland species *S. scalae* was synonymised with *S. evansi* by Duellman and Hoogmoed (1984), but the two species were separated by Señaris *et al.* [1997 ("1996")]. The reproductive biology of *Stefania* remains poorly understood, although females carry their eggs and neonates on their back. In a recent paper, Kok *et al.* (2006) reported a large female (97.5 mm SVL) *Stefania evansi* carrying 25 eggs. Until now this record remained the maximum known number of eggs or juveniles carried by a female *S. evansi*. As pointed out by Kok *et al.* (2006), very little data exists on female *S. evansi* carrying eggs or juveniles, and the authors cited the only four known literature records. We report here two more cases of juvenile brooding in *S. evansi*.

Three large females carrying juveniles on their back were caught at night in March 2006 on the banks of the Elinkwa River in the southeastern part of Kaieteur National Park, west-central Guyana (5°08'09"N, 59°25'28"W, ca. 500 m elevation). All three were on the ground close to a slow moving stream. One female escaped, but the two others, with their carried juveniles, were captured and deposited in the herpetological collections of the Institut Royal des Sciences Naturelles de Belgique (IRSNB). All the juveniles remained attached to the back of the females when captured, and remained there until the following morning. IRSNB 13934, a striped female [Morph B of Duellman & Hoogmoed (1984)], 95.1 mm SVL, collected on 23<sup>rd</sup> March 2006 at 20:00 hrs, carried the remarkable number of 30 near-term juveniles (16.0–18.3 mm SVL, mean = 17.4 mm) (see cover). Five juveniles (16.7%) conform to the plain colour morph [Morph A of Duellman and Hoogmoed (1984)] while 25 juveniles (83.3%) conform to the striped colour morph. IRSNB 13933, another striped female, 77.7 mm SVL,

collected on 22<sup>nd</sup> March 2006 at 21:20 h, carried 15 near-term juveniles (14.9–17.4 mm SVL, mean = 16.3 mm). Seven juveniles (46.7%) conform to the plain colour morph while eight juveniles (53.3%) conform to the striped colour morph. This observation confirms that a same individual can produce different colour morphs (MacCulloch *et al.* 2006).

The next day, following handling for photography, some juveniles began to leave the mucus layer of the females, breaking the gill stalks by their movements. This premature 'hatching' due to disturbance and stress does not appear to be detrimental to the juveniles and could be interpreted as an antipredator defence. Juveniles that left IRSNB 13934 still had yolk-filled bellies and residual gill stalks attached at the base of forearms. Jungfer & Boehme (1991), speculated that juveniles might leave the mother's back when the resorption of the gill stalks is complete, which should coincide with the consumption of all yolk (see MacCulloch & Lathrop, 2002). This is congruent with our observations of four independent juveniles collected on 2<sup>nd</sup> December 2005 along a tributary of Muri Muri Creek in the central part of Kaieteur National Park. The juveniles (IRSNB 13929–32) were close together on leaves and branches (up to 120 cm above ground) not far from a slow moving stream and measured 16.7–18.0 mm SVL; the gill stalks were completely resorbed and no yolk was visible through the belly skin. MacCulloch & Lathrop (2002) found juvenile *S. evansi* on female's back, with only a small amount of yolk remaining, SVL 18–19 mm.

#### ACKNOWLEDGEMENTS

These observations were made during a study funded by grants from the Belgian Directorate General for Development Cooperation through the Belgian Focal Point to the Global Taxonomy Initiative. Specimens were collected under Permit Number 030605BR006 and exported under Permit Numbers 191205SP011 and 040406SP014 issued by the Guyana Environmental Protection Agency (EPA). We thank Ross MacCulloch (Royal Ontario Museum, Canada) for helpful comments on an earlier version of this manuscript.

## REFERENCES

- Duellman, W. E. & Hoogmoed, M. S. (1984). The taxonomy and phylogenetic relationships of the hylid frog genus *Stefania*. *Misc. Publ. Mus. Nat. Hist. Univ. Kansas* **75**, 1–39.
- Frost, D.R., Grant, T., Faivovich, J., Bain, R., Haas, A., Haddad, C.F.B., de Sa, R.O., Donnellan, S.C., Raxworthy, C.J., Wilkinson, M., Channing, A., Campbell, J.A., Blotto, B.L., Moler, P., Drewes, R.C., Nussbaum, R.A., Lynch, J.D., Green, D. & Wheeler, W.C. (2006). The amphibian tree of life. *Bull. Am. Mus. Nat. Hist.* **297**, 1–370.
- Jungfer, K-H. & Boehme, W. (1991). The backpack strategy of parental care in frogs, with notes on froglet-carrying in *Stefania evansi* (Boulenger, 1904) (Anura: Hylidae: Hemiphractinae). *Rev. fr. Aquariol.* **18**, 91–96.
- Kok, P.J.R., Bourne, G.R., Benjamin, P. & Lenglet, G.L. (2006). *Stefania evansi*. Reproduction. *Herpetol. Rev.* **37**, 212–213.
- MacCulloch, R.D. & Lathrop, A. (2002). Exceptional diversity of *Stefania* (Anura: Hylidae) on Mount Ayanganna, Guyana: three new species and new distribution records. *Herpetologica* **58**, 327–346.
- MacCulloch, R.D., Lathrop, A. & Khan, S.Z. (2006). Exceptional diversity of *Stefania* (Anura: Cryptobatrachidae) II: six species from Mount Wokomung, Guyana. *Phyllomedusa* **5**, 31–41.
- Señaris, J. C., Ayarzagüena, J. & Gorzula, S. [1997 (“1996”)]. Revisión taxonómica del género *Stefania* (Anura: Hylidae) en Venezuela con la descripción de cinco especies. *Publ. Asoc. Amigos de Doñana* **7**, 1–57.

PHILIPPE J.R. KOK<sup>1</sup> and PAUL BENJAMIN<sup>2</sup>

<sup>1</sup> Department of Vertebrates, Royal Belgian Institute of Natural Sciences, 29 rue Vautier, B-1000 Brussels, Belgium.

E-mail: Philippe.Kok@naturalsciences.be

<sup>2</sup> Chenapou Village, Upper Potaro River, Region 8, Guyana.

**TRITURUS CRISTATUS (Great crested newt): PREDATION BY BIRDS.** I am fortunate enough to have a pond with a large colony of Great crested newts on my land and, over a number of years, have been able to observe the extensive predation that the colony suffers from birds (the pond is in the High Weald of Kent and lies about half a mile from the River Teise).

I have only been able to find very limited references to the fact that this predation occurs and have to assume that it has not been adequately recorded or documented in the past. My observations and identification of the prey are made easier by the fact that there are no fish in the pond other than a few large grass-eating carp and no other newts are resident. It is also clear that adult newts are not a problem for some birds despite the belief that toxicity affords some protection.

Firstly, Moorhens (*Gallinula chloropus*). It is perhaps surprising but Moorhens will catch and consume adult Crested newts. Although they spend most of their day pecking away at plants in the pond eating mainly vegetable matter they are omnivores and will also eat insects, worms and snails. As far as catching newts is concerned, Moorhens are opportunistic hunters in that, as far as I have seen, they do not actively seek them out. However, if an adult crested newt comes up for air in the path of a Moorhen, it becomes a target and, if possible, will be caught. When this happens it creates a great deal of excitement among the other Moorhens on the pond who chase the lucky bird hoping to share in the spoil; an indication that they would eat more if they could catch them. They do not appear to swallow them whole but peck them into smaller bits before eating them.

As far as I am aware it is not generally known that Mallards (*Anas platyrhynchos*) are also predators and more successful ones than Moorhens. They hunt the adult newts much more systematically and I have watched them patrolling the pond actively looking for the newts coming to the surface. A female Mallard I observed caught and consumed at least five fully-grown crested newts in the space of an hour. Having webbed-feet and better diving skills clearly makes the ducks more adept at catching them than the Moorhens and when the newts are caught they are swallowed whole, toxins clearly being no discouragement.

Predation by ducks and Moorhens pales into insignificance when compared with the predation