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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 23rd 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 22nd 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 2nd 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.

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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.

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