

Interfamilial Amplexus between a Male Crying Streamfrog, Sylvirana lacrima (Ranidae), and a Female Kalasgram Skittering Frog, Euphlyctis kalasgramensis (Dicroglossidae), with a Recommendation for an English Common Name for Sylvirana lacrima

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Cylvirana lacrima is a ranid described from Myanmar by Sheridan and Stuart (2018) that had been confused with the Nicobar Island Frog (Indosylvirana nicobariensis) in northeastern India (Lalronunga et al. 2021). The species has been recorded from Myanmar, northeastern India, and Bangladesh (Frost 2021; Lalronunga et al. 2021). No English common name has been applied to this species, for which we propose Crying Stream Frog. The Kalasgram Skittering Frog (Euphlyctis kalasgramensis) is a dicroglossid described from Bangladesh by Howlader et al. (2015). The species had been confused with the Indian Skittering Frog (Euphlyctis cyanophlyctis) (Howlader et al 2015; Ali et al. 2020; Lalronunga et al. 2020). Euphlyctis kalasgraminensis had been recorded throughout Bangladesh, Mizoram in northeastern India, Nepal, and western Punjab in Pakistan (Howlader et al. 2015; Ali et al. 2020; Frost 2021; Lalronunga et al. 2021).

At about 2100 h on 20 February 2018, we observed a male *S. lacrima* in axillary amplexus with a female *E. kalis-gramensis* in Vaipuanpho Stream, Mamit District, Mizoram, India (23°42.489'N, 92°38.475'E; elev. 440 m asl) (Fig. 1). The frogs were floating in a rocky pool about 1 m long, 0.5 m wide, and 25 cm deep. The bed of the pool was composed of sand and gravel and was covered by leaf litter and twigs. Air temperature and humidity at the site were 22 °C and 74%, respectively. After remaining motionless for approximately 20 sec, the pair submerged. Other than taking photographs, we did not disturb them.

Many instances of interspecific amplexus have been reported in different families of anurans (e.g., Shahrudin 2016; Bhattarai et al. 2018; Groffen et al. 2019; Lalnunhlua



Fig. 1. A male Crying Stream Frog (*Sylvirana lacrima*) in amplexus with a female Kalasgram Skittering Frog (*Euphlyctis kalasgramensis*) at Vaipuanpho, Mizoram, India. Photograph by Samuel Lalronunga.

et al. 2021), and a number of authors have attempted to explain the occurrence of interspecific amplexus in anurans (e.g., Höbel 2005; Wogel et al. 2005; Mollov et al. 2010; Machado and Bernarde 2011; Vivek et al. 2014; Shahrudin 2016). The breeding season of the two species would not be expected to overlap in February as the Crying Stream Frog is considered a winter breeder (October to April) whereas the

Kalasgram Skittering Frog is a monsoon breeder (March to August) (Lalremsanga 2011).

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Literature Cited

- Ali, W., A. Javid, A. Hussain, M. Hafeez-ur-Rehman, A.-L. Chabber, and F. Hemmatzadeh. 2020. First record of *Euphlyctis kalasgramensis* (Anura: Dicroglossidae) from Punjab, Pakistan. *Mitochondrial DNA Part B* 5: 1227–1232. https://doi.org/10.1080/23802359.2020.1731337.
- Bhattarai, S., P. Gotame, C.P. Pokheral, B.R. Lamichhane, R.C. Kandel, and N. Subedi. 2018. Interspecific amplexus of a Six-lined Treefrog, *Polypedates taeniatus* (Boulenger 1908), and a Chunam Treefrog, *P. maculatus* (Gray 1830) (Anura: Rhacophoridae), in Chitwan National Park, Nepal. *Reptiles & Amphibians* 25: 29–30. https://doi.org/10.17161/randa.v25i1.14225.
- Frost, D.R. 2021. Amphibian Species of the World: An Online Reference. Version 6.1. American Museum of Natural History, New York, New York, USA. https://doi.org/10.5531/ db.vz.0001.
- Groffen, J., Y. Yang, A. Borzée, and Y. Jang. 2019. Interspecific amplexus between Glandirana tientaiensis (Chang, 1933) and Odorrana schmackeri (Boettger, 1892) at the Fuchun River, eastern China. Herpetology Notes 12: 41–42.
- Höbel, G. 2005. *Rana palustris* (Pickerel Frog) and *Ambystoma maculatum* (Spotted Salamander) Reproductive behavior. *Herpetological Review* 36: 55–56.
- Howlader, M.S.A., A. Nair, S.V. Gopalan, and J. Merilä. 2015. A new species of Euphlyctis (Anura: Dicroglossidae) from Barisal, Bangladesh. PLoS ONE 10: e0116666. https://doi.org/10.1371/journal.pone.0116666.
- Lalnunhlua, S. Lalronunga, P.L. Lalsawmliana, C. Lalrinchhana, and E. Lalhmingliani. 2021. Interspecific amplexus between a male Yang's Frilled Treefrog, Kurixalus yangi Yu, Hui, Rao, and Yang 2018, and a female Brauer's

- Brown Treefrog, *Polypedates braueri* (Vogt 1911), with recommendations for English common names. *Reptiles & Amphibians* 28: 467–468. https://doi.org/10.17161/randa.v28i3.15681.
- Lalremsanga, H.T. 2011. Studies on the ecology, breeding behaviour and development of ranid and microhylid anurans prevalent in Mizoram, Northeast India. Unpublished Ph.D. thesis, North Eastern Hill University, Shillong, Meghalaya, India.
- Lalronunga, S., Vanramliana, C. Lalrinchhana, Vanlalhrima, S. Sailo, Lalnunhlua, L. Sailo, I. Zosangliana, K. Lalhmangaiha, and E. Lalhmingliani. 2020. DNA barcoding reveals a new country record for three species of frogs (Amphibia: Anura) from India. Science Vision 20: 106–117. https://doi.org/10.33493/scivis.20.03.02.
- Lalronunga, S., Vanramliana, L. Sailo, I. Zosangliana, Lalmuanpuia, K. Lalhmangaiha, S. Sailo, C. Lalrinchhana, and E. Lalhmingliani. 2021. The identity of *Indosylvirana nicobariensis* (Stoliczka 1870) (Amphibia, Ranidae) from northeast India. *Zootaxa* 4952: 596–600. https://doi.org/10.11646/zootaxa.4952.3.12.
- Machado, R.A. and P.S. Bernarde. 2011. Multiple and heterospecific amplexi between the toads *Rhaebo guttatus* and *Rhinella marina* (Anura: Bufonidae). *Herpetology Notes* 4: 167–169.
- Mollov, I.A., G.S. Popgeorgiev, B.Y. Naumov, N.D. Tzankov, and A.Y. Stoyanov. 2010. Cases of abnormal amplexus in anurans (Amphibia: Anura) from Bulgaria and Greece. *Biharean Biologist* 4: 121–125.
- Shahrudin, S. 2016. Interspecific amplexus between male *Rhacophorus prominanus* and female *Polypedates leucomystax* from peninsular Malaysia. *The Herpetological Bulletin* 135: 30–31.
- Sheridan, J.A. and B.L. Stuart. 2018. Hidden species diversity in *Sylvirana nigrovit-tata* (Amphibia: Ranidae) highlights the importance of taxonomic revisions in biodiversity conservation. *PLoS ONE* 13: e0192766. https://doi.org/10.1371/journal.pone.0196242.
- Vivek, S., M. Dinesh, K.R. Kumar, Y. Divaker, and K.K. Sharma. 2014. Interspecies mating interactions between *Duttaphrynus stomaticus* (Marbled Toad) and *Sphaerotheca breviceps* (Indian Burrowing Frog) at the Central Aravalli Foothills, Rajasthan, India. *Herpetology Notes* 7: 139–140.
- Wogel, H., P.A. Abrunhosa, and J.P. Pombal-Junior. 2005. Breeding behaviour and mating success of *Phyllomedusa rohdei* (Anura, Hylidae) in southeastern Brazil. *Journal of Natural History* 39: 2035–2045. https://doi.org/10.1080/00222930500044581.