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Dressed in black. A New *Ansonia* Stoliczka, 1870 (Lissamphibia: Anura: Bufonidae) from Gunung Murud, Sarawak, East Malaysia (Borneo)

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Abstract

A new species of stream toad of the genus *Ansonia* is described from Gunung Murud, Pulong Tau National Park, of northern Sarawak, Malaysia, Borneo. *Ansonia vidua*, **sp. nov.**, is morphologically distinguished from its Bornean congeners by the following combination of characters: medium size (SVL of adult females 33.5–34.4 mm); body uniformly black-brown in life; absence of a visible pattern on dorsum or limbs; presence of two low interorbital ridges; shagreened skin on dorsum, sides and upper surfaces of the limbs with numerous homogeneously small, rounded warts; first finger shorter than second; reduced webbing between the toes and an absence of a sharp tarsal ridge. Uncorrected genetic distances between related taxa of > 4.3% in 16S rRNA gene support its status as a hitherto undescribed species.

Key words: Amphibia, *Ansonia vidua* **sp. nov.**, Pulong Tau National Park, systematics

Introduction

The bufonid genus *Ansonia* Stoliczka 1870 comprises 26 nominal species known from Myanmar to Sundaland and the Philippines (Frost 2013). Larval synapomorphies, including a large ventral oral disc and a dorsoventrally flattened body, are associated with a rheophilic lifestyle in streams with a moderate to strong current (Inger 1966, 1992; Haas *et al.* 2009; Haas & Das 2008; Matsui 2005; Matsui *et al.* 2010).

With a total of 12 species described and additional undescribed species recognised, the island of Borneo is a centre of diversity for the genus *Ansonia* (Matsui *et al.* 2010). Recent studies using molecular markers reveal that the Bornean species of *Ansonia* do not form a monophyletic group (Matsui *et al.* 2010, 2012). Instead, the genus is divided into two major clades: the first occurs on Borneo, some of the islands of the Philippines and the Malay Peninsula; the second clade is known from Myanmar, Thailand and Sundaland, including the Malay Peninsula and Borneo (Matsui *et al.* 2010). This latter clade includes a monophyletic Bornean group, consisting of *Ansonia hanitschi* Inger, 1960, *A. spinulifer* (Mocquard, 1890), *A. minuta* Inger, 1960 and *A. platysoma* Inger, 1960, as well as two genetically distinct lineages from the Kelabit Highlands in Sarawak and from the Crocker Range in Sabah that probably represent species that have not been formally described (Matsui *et al.* 2010). While a few species, such as *A. leptopus* (Günther, 1872), *A. longidigita* Inger, 1960 and *A. spinulifer*, are widespread on Borneo, the majority of *Ansonia* are distributed in small and isolated areas in mountain ranges or even on a single mountain range (Inger & Stuebing 2005). *Ansonia fuliginea* (Mocquard, 1890), for instance, is a micro-endemic species of Gunung Kinabalu, Sabah. *A. latidisca* Inger, 1966 is only known from Gunung Penrissen, Sarawak and the adjacent Gunung Damus, near Sambas, Kalimantan (Inger & Stuebing 2005, Pui *et al.* 2011). Relatively recently, *A. echinata* Inger & Stuebing, 2009 was described from Bukit Kana, a low, isolated hill near the coast of Sarawak (Inger & Stuebing 2009). The number of species of *Ansonia* will likely grow in the future as sampling of new localities continues.

Tapin in the Gunung Mulu massif. The linear distance between Gunung Mulu and Gunung Murud is ca. 75 km. Dring used the slightly longer legs, slightly smaller size and narrower head to distinguish this species from the syntopic *A. hanitschi*. According to the original description, *A. torrentis* is similar to *A. vidua* **sp. nov.** in size, webbing and the absence of a sharply angular canthus rostralis. However, the heterogeneous skin structure in *A. torrentis* (tubercles both small and large, dorsal tubercles without spines) and the color patterning on the dorsum and venter distinguish this species from *A. vidua* **sp. nov.**

Surprisingly, in our phylogenetic analysis the sample identified as *A. torrentis* by Matsui *et al.* (2010, AB435296) clustered with a sample identified by Frost *et al.* (2006) as *A. longidigita* from Sipitang District, Sabah (DQ283341) (uncorrected p-distance 0.3%). Given the possibility that one or both of these samples may have been erroneously determined, the validity of *A. torrentis* needs to be addressed in future studies. Similarly, we found *A. latiffi* (Wood *et al.* 2008), to be both morphologically and genetically similar to *A. leptopus* (uncorrected genetic distance of just 1–2%) and suggest that the validity of these taxa requires additional attention.

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APPENDIX 1. Comparative material examined.

Ansonia albomaculata Inger, 1960. FMNH 81975 (holotype) and SM (uncatalogued), in Bottle 51 (paratype), from “1,400–2,000 feet above sea level, in the headwaters of the Baleh River, Third Division, Sarawak”; UBD 266, 309, 318, 337, 389, 396, 412, 472, 476, 481, 487, 508, 539, 617, Batu Apoi Forest Reserve, Temburong District, Brunei Darussalam.

Ansonia guibei Inger, 1966. UNIMAS 7746; 8058, 8060. Mesilau, Gunung Kinabalu Park, Sabah, Malaysia.

Ansonia hanitschi Inger, 1960. UNIMAS 8050, Liwagu Trail, Gunung Kinabalu Park, Sabah, Malaysia; UNIMAS 8055, ZRC 1.11911, Mesilau, Gunung Kinabalu Park, Sabah, Malaysia; NMBE 1056271-1056280, Sungei Tapin, Gunung Mulu, Sarawak, Malaysia.

Ansonia latidisca Inger, 1966. UNIMAS-OJJ 009–011, NMBE 1061497, NMBE 1061498, Gunung Penrissen, Sarawak, Malaysia.

Ansonia leptopus (Günther, 1872). UBD 289, 382, 293, 397, 420, 506, 510, 517, 618–19, Batu Apoi Forest Reserve, Temburong District, Brunei Darussalam; NMBE 1056582, 1056591, 1057156, 1057168, 1057169, 1057172, 1059721-1059723, UNIMAS 8393, 8402, Kubah National Park, Sarawak, Malaysia; NMBE 1056281-1056283, Camp 5, Gunung Mulu National Park, Sarawak, Malaysia; UNIMAS 8725, Gunung Santubong, Sarawak, Malaysia.

Ansonia longidigita Inger, 1960. BMNH 99.8.19.12 (holotype), “..4,200 feet on Mount Kina Balu, North Borneo”; UNIMAS 7925–26. Gunung Santubong, Sarawak, Malaysia; UBD 90, 94–98, 135, 160, Batu Apoi Forest Reserve, Temburong District, Brunei Darussalam; NMBE 1056284-1056288, ZMH A09368, ZMH A09371, ZRC 1.12012–13, Camp 2, Gunung Mulu National Park, Sarawak, Malaysia; ZMH A09370 8th Mile, Crocker Range Park, Sabah, Malaysia.

Ansonia minuta Inger, 1960. NMBE 1056601, 1057163, ZMH A10003–06, Sungei Rayu, Kubah National Park, Sarawak, Malaysia; ZRC 1.2215, Summit Trail off Sungei Bawang, Kubah National Park, Sarawak, Malaysia.

Ansonia platysoma Inger, 1960. ZMH A10007–09, ZRC 1.12004, 1.12007, Camp 2, Gunung Mulu National Park, Sarawak, Malaysia.

Ansonia spinulifer (Mocquard, 1890). SBC A.00001, Gunung Meraja, Bau, Sarawak, Malaysia; SBC A.00032, Gunung Pambor, Bau, Sarawak, Malaysia; SBC A.00045, Gunung Ropih, Bau, Sarawak, Malaysia; SBC A.00065–67, Gunung Tai Ton, Bau, Sarawak, Malaysia; SBC A.00093, Gunung Batu Payong, Bau, Sarawak, Malaysia; SBC A.00165–66, Gunung Umbut, Bau, Sarawak, Malaysia; SBC A.00288, Gunung Podam, Bau, Sarawak, Malaysia; UNIMAS 7875, Anna Rais, base of Gunung Penrissen, Sarawak, Malaysia; UNIMAS 7020–22. Ranchan Pool, Serian, Sarawak, Malaysia; UNIMAS 7580. Gunung Gading, Sarawak, Malaysia; NMBE 1057085, 1057086, 1057171, Kubah National Park, Sarawak, Malaysia.

Ansonia torrentis Dring, 1983. NMBE 1056296-1056298, Sungei Tapin, Gunung Mulu, Sarawak, Malaysia.