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Three new species of *Pseudocalotes* (Squamata: Agamidae) from southern Sumatra, Indonesia

MICHAEL B. HARVEY[1], AMIR HAMIDY[2], NIA KURNIAWAN[3], KYLE SHANEY[4] & ERIC N. SMITH[4]

[1]*Department of Biological Sciences; Broward College; 3501 S.W. Davie Road; Davie, FL 33314;USA. E-mail: mharvey@broward.edu*

[2]*Laboratory of Herpetolog; Museum Zoologicum Bogoriense; Research Center for Biology, Indonesian Institute of Sciences–LIPI; Jl. Raya Jakarta Bogor km 46; Cibinong, West Java, 16911; INDONESIA*

[3]*Department of Biology; Universitas Brawijaya; Jl. Veteran; Malang, East Java, 65145; INDONESIA*

[4]*The Amphibian and Reptile Diversity Research Center and Department of Biology; University of Texas at Arlington; 501 S. Nedderman Drive; Arlington, TX 76010; USA.*

Abstract

We describe three new species of *Pseudocalotes* from the Bukit Barisan Range of southern Sumatra, Indonesia. *Pseudocalotes cybelidermus*, *P. guttalineatus*, and *P. rhammanotus* differ from most congeners in having serrate dorsal crests that extend to the base of the tail and a dorsolateral series of enlarged heavily keeled scales. In these new species, subdigital lamellae of Toe III have prominent preaxial keels and lack or have greatly reduced postaxial keels. In contrast, *P. rhammanotus* resembles *P. tympanistriga* by having bicarinate subdigital lamellae at the base of Toe III. Like most congeners, these new species appear to be restricted to humid forests above 1000 m. We report several new morphological characters for *Pseudocalotes* and discuss their diagnostic value. Future systematic studies of this genus should assess presence/absence of interparietals, four different kinds of modified scales on the neck, a dorsolateral series of heavily keeled scales, and unicarinate lamellae under the distal phalanges of most fingers and toes. Our comparisons among congeners demonstrate the diagnostic value of width of the gap between the nuchal and dorsal crests and frequency data for contact between the nasal and supralabials and between the postmentals and infralabials. Finally, we discuss variation in morphology of subdigital lamellae at the base of Toe III and describe new conditions intermediate between the serrate fringe of most Indochinese species and the bicarinate lamellae of the *P. tympanistriga*.

Key words: Color change, Draconinae, *Pseudocalotes cybelidermus* new species, *Pseudocalotes guttalineatus* new species, *Pseudocalotes rhammanotus* new species, Sauria

Introduction

Lizards of the genus *Pseudocalotes* occur in tropical forests of Southeast Asia from northeastern India east to Vietnam and Yunan, China and south to the Malay Peninsula and major landmasses of the Sunda Shelf. Most species appear to be restricted to montane refugia and many remain rare in collections.

The genus has had a complex taxonomic history. Smith (1935) recognized the distinctiveness of these lizards by placing them in his *microlepis* Group of *Calotes.* Dring (1979) reviewed the species and noted that they fall into Sundaland and Indochinese groups distinguished from one another by morphology of the third toe. Moody (1980) formally recognized the genus *Pseudocalotes* and included *Paracalotes poilani* Bourret, 1939, in this genus. Hallermann & Böhme (2000) transferred *Pseudocophotis sumatrana* (Hubrecht, 1879) to *Pseudocalotes*, however, Manthey & Denzer (2000) removed this species from *Pseudocalotes* and revalidated *Pseudocophotis* (see also Ananjeva *et al.* 2007). Hallermann & Böhme (2000), Hallermann & McGuire (2001), Chan-ard *et al.* (2008), and Hallermann *et al.* (2010) described four new species. Mahony (2010) transferred *Calotes kingdonwardi* Smith, 1935, *Japalura kaulbacki* Smith, 1937, *Mictopholis austeniana* (Annandale, 1908) and *Salea kakhienensis* (Anderson, 1879) to *Pseudocalotes* and considered *J. kaulbacki* to be a junior subjective synonym of *P. kingdonwardi.* Harikrishnan & Vasudevan (2013) rediscovered *Calotes andamanensis* Boulenger, 1891, and transferred it to *Pseudocalotes*. Following these changes, the genus currently contains fifteen species.

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Appendix I

Additional Specimens Examined

Pseudocalotes brevipes (10): **LAO PDR**. XE KONG; Kaleum District, Xe Sap National Biodiversity Conservation Area, near 16° 0410N, 106° 5845”E, 1200–1300 m (FMNH 258703). **VIETNAM**. VINH PHU; Tam Dao, Vinh Yen District (MVZ 224103–224106; 226486, 226487, 226489, 226490, 226494).

Pseudocalotes flavigula (1): **MALAYSIA.** PAHANG; Gunnong Brinchang, Cameron Highlands, 1524–1829 m (FMNH 143903).

Pseudocalotes floweri (2): **CAMBODIA.** KOH KONG; Cardamom Highlands Plateau. 0349359 Easting, 1325813 Northing, 1200 m (FMNH 270127). **THAILAND.** No other data (FMNH 114514).

Pseudocalotes kakhienensis (6): **CHINA.** YUNAN; Nujiang Prefecture, small village S of Gongshan, 27° 42' 13.7016" N, 98° 42' 10.1982" E, ca 1451 m (CAS 214907, 214940, 214949), Fugong County, Shiwuli, 27° 09’ 22.5” N, 98° 47’ 57.4” E (CAS 234454–234455), Gongshan County, vicinity of village S of Gongshan, 27° 42’ 13.1” N, 98° 42’ 10.6” E, 1437 m (CAS 242105).

Pseudocalotes kingdonwardi (11): **CHINA.** YUNAN; Nujiang Prefecture, Gongshan County; road between Kongdang and Bapo in Dulong Valley, 27° 49’ 33.9” N, 98° 19’ 31.7” E, 1478 m (CAS 241965), ca 5 km N (by Dulong River) of Kongdang (CAS 241992, 241994, 241997), Dulong Valley, E of Kongdang (CAS 242015), Dulong Valley, 2 km N of Kongdang, W side of Dulong River (CAS 242020), Dulong Valley, road from Bapo N toward Kongdang, 27° 45’ 29.9” N, 98° 20’ 52.8” E, 1357 m (CAS 242628), Dulong Valley, Kongdang, 27° 50’