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***Cyrtodactylus wankulangkulae* (Squamata: Gekkonidae), a new Bent-toed Gecko from Satun Province, southern Thailand**

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Abstract

We describe a new *Cyrtodactylus* from Manang District, Satun Province, southern Thailand, based on an adult female having a snout-vent length of 73.9 mm, a long tail (1.34 times snout-vent length), a complex blotched and banded dorsal pattern with four irregularly shaped dark bands between limbs insertions, bluish-grey iris, discontinuous series of enlarged poreless femoral and precloacal scales, 10 regularly arranged dorsal tubercle rows, 38 ventral scale rows between ventrolateral skin folds, transversely enlarged subcaudal plates, and no precloacal groove.

Key words: Thai-Malay Peninsula, *Cyrtodactylus wankulangkulae* sp. nov., taxonomy, limestone cave

Introduction

In the course of our ongoing, long-term systematic and zoogeographic review of the reptiles of the Thai-Malay Peninsula (see Grismer *et al.* 2010, 2012, Sumontha *et al.* 2012a, 2012b, Pauwels *et al.* 2013 and Pauwels & Sumontha (2014) for the most recent reports on the gecko fauna), we encountered a *Cyrtodactylus* at the entrance of a limestone cave near Wangsaithong Waterfall in Satun Province, Thailand. Based on morphology and coloration characters, it differs from all congeneric species found in Thailand, Malaysia and Myanmar and we hence describe it here as a new species.

Material and methods

Measurements and meristic counts follow Sumontha *et al.* (2012b) and Pauwels *et al.* (2013). Paired meristic characters are given left/right. Numbers of supralabial and infralabial scales are counted from the largest scale immediately posterior to the dorsal inflection of the posterior portion of the upper jaw to the rostral and mental scales, respectively. The number of longitudinal rows of body tubercles was counted transversely across the center of the dorsum from one ventrolateral skin fold to the other. The number of longitudinal rows of ventral scales was counted transversely across the center of the abdomen from one ventrolateral skin fold to the other. The numbers of subdigital lamellae beneath the toes were counted from the base of the first phalanx to the claw. The following measurements were taken with a digital caliper to the nearest 0.1 mm: AG: axilla to groin length, taken from the posterior margin of the forelimb at its insertion point on the body to the anterior margin of the hind limb at its insertion point on the body; EarL: ear length, the greatest horizontal distance of the ear opening; ForeaL: forearm length, taken on the dorsal surface from the posterior margin of the elbow while flexed 90° to the inflection of the

References

- Bauer, A.M. (2002) Two new species of *Cyrtodactylus* (Squamata: Gekkonidae) from Myanmar. *Proceedings of the California Academy of Sciences*, 53 (7), 73–86.
- Bauer, A.M. (2003) Descriptions of seven new *Cyrtodactylus* (Squamata: Gekkonidae) with a key to the species of Myanmar (Burma). *Proceedings of the California Academy of Sciences*, 54 (25), 463–498.
- Bauer, A.M., Kunya, K., Sumontha, M., Niyomwan, P., Panitvong, N., Pauwels, O.S.G., Chanhom, L. & Kunya, T. (2009) *Cyrtodactylus erythropros* (Squamata: Gekkonidae), a new cave-dwelling gecko from Mae Hong Son Province, Thailand. *Zootaxa*, 2124, 51–62.
- Bauer, A.M., Kunya, K., Sumontha, M., Niyomwan, P., Pauwels, O.S.G., Chanhom, L. & Kunya, T. (2010) *Cyrtodactylus dummui* (Squamata: Gekkonidae), a new cave-dwelling gecko from Chiang Mai Province, Thailand. *Zootaxa*, 2570, 41–50.
- Bauer, A.M., Pauwels, O.S.G. & Chanhom, L. (2002) A new species of cave-dwelling *Cyrtodactylus* (Squamata: Gekkonidae) from Thailand. *The Natural History Journal of Chulalongkorn University*, 2 (2), 19–29.
- Bauer, A.M., Sumontha, M. & Pauwels, O.S.G. (2003) Two new species of *Cyrtodactylus* (Reptilia: Squamata: Gekkonidae) from Thailand. *Zootaxa*, 376, 1–18.
- Chan-ard, T. & Makchai, S. (2011) A new insular species of *Cyrtodactylus* Gray, 1827 (Squamata, Gekkonidae), from the Surin Islands, Phang-nga Province, southern Thailand. *The Thailand Natural History Museum Journal*, 5 (1), 7–15.
- David, P., Teynié, A. & Ohler, A. (2004) A new species of *Cyrtodactylus* Gray, 1827 (Reptilia: Squamata: Gekkonidae) from southern Laos. *The Raffles Bulletin of Zoology*, 52 (2), 621–627.
- Ellis, M. & Pauwels, O.S.G. (2012) The bent-toed geckos (*Cyrtodactylus*) of the caves and karst of Thailand. *Cave and Karst Science*, 39 (1), 16–22.
- Grismer, L.L. (2008) On the distribution and identification of *Cyrtodactylus brevipalmatus* Smith, 1923 and *Cyrtodactylus elok* Dring, 1979. *The Raffles Bulletin of Zoology*, 56 (1), 177–179.
- Grismer, L.L. (2011) *Lizards of Peninsular Malaysia, Singapore and their Adjacent Archipelagos*. Edition Chimaira, Frankfurt am Main, 728 pp.
- Grismer, L.L. & Ahmad, N. (2008) A new insular species of *Cyrtodactylus* (Squamata: Gekkonidae) from the Langkawi Archipelago, Kedah, Peninsular Malaysia. *Zootaxa*, 1924, 53–68.
- Grismer, L.L., Anuar, S., Muin, M.A., Quah, E.S.H. & Wood, P.L. (2013) Phylogenetic relationships and description of a new upland species of Bent-toed Gecko (*Cyrtodactylus* Gray, 1827) of the *C. sworderi* complex from northwestern Peninsular Malaysia. *Zootaxa*, 3616 (3), 239–252.
<http://dx.doi.org/10.11646/zootaxa.3616.3.2>
- Grismer, L.L., Belabut, D.M., Quah, E.S.H., Chan, K.O., Wood, P.L. & Hasim, R. (2014a) A new species of karst forest-adapted Bent-toed Gecko (genus *Cyrtodactylus* Gray, 1827) belonging to the *C. sworderi* complex from a threatened karst forest in Perak, Peninsular Malaysia. *Zootaxa*, 3755 (5), 434–446.
<http://dx.doi.org/10.11646/zootaxa.3755.5.3>
- Grismer, L.L., Sumontha, M., Cota, M., Grismer, J.L., Wood, P.L., Pauwels, O.S.G. & Kunya, K. (2010) A revision and redescription of the rock gecko *Cnemaspis siamensis* (Taylor 1925) (Squamata: Gekkonidae) from peninsular Thailand with descriptions of seven new species. *Zootaxa*, 2576, 1–55.
- Grismer, L.L., Wood, P.L., Anuar, S., Quah, E.S.H., Muin, M.A., Mohamed, M., Chan, K.O., Sumarli, A.X., Lored, A.I. & Heinz, H.M. (2014b) The phylogenetic relationships of three new species of the *Cyrtodactylus pulchellus* complex (Squamata: Gekkonidae) from poorly explored regions in northeastern Peninsular Malaysia. *Zootaxa*, 3786 (3), 359–381.
<http://dx.doi.org/10.11646/zootaxa.3786.3.6>
- Grismer, L.L., Wood, P.L., Chan, K.O., Anuar, S. & Muin, M.A. (2014c) *Cyrtodactylus* in the city: a new Bent-toed Gecko (genus *Cyrtodactylus*) is the only endemic species of vertebrate from Batu Caves, Selangor, Peninsular Malaysia. *Zootaxa*, 3774 (4), 381–394.
<http://dx.doi.org/10.11646/zootaxa.3774.4.6>
- Grismer, L.L., Wood, P.L., Quah, E.S.H., Anuar, S., Muin, M.A., Sumontha, M., Ahmad, N., Bauer, A.M., Wangkulangkul, S., Grismer, J.L. & Pauwels, O.S.G. (2012) A phylogeny and taxonomy of the Thai-Malay Peninsula Bent-toed Geckos of the *Cyrtodactylus pulchellus* complex (Squamata: Gekkonidae): combined morphological and molecular analyses with descriptions of seven new species. *Zootaxa*, 3520, 1–55.
- Johnson, C.B., Quah, E.S.H., Anuar, S., Muin, M.A., Wood, P.L., Grismer, J.L., Greer, L.F., Chan, K.O., Ahmad, N., Bauer, A.M. & Grismer, L.L. (2012) Phylogeography, geographic variation, and taxonomy of the Bent-toed Gecko *Cyrtodactylus quadrivirgatus* Taylor, 1962 from Peninsular Malaysia with the description of a new swamp dwelling species. *Zootaxa*, 3406, 39–58.
- Mahony, S. (2009) Taxonomic status of *Cyrtodactylus khasiensis tamaiensis* (Smith, 1940) and description of a new species allied to *C. chrysopylos* Bauer, 2003 from Myanmar (Reptilia: Gekkonidae). *Hamadryad*, 34 (1), 62–74.
- Panitvong, N., Lauhachinda, V., Saithong, S. & Temchai, T. (2012) Ecology of *Cyrtodactylus sumonthai* Bauer, Pauwels, & Chanhom, 2002 (Reptilia: Squamata: Gekkonidae): a karst dwelling bent-toed gecko from South-eastern Thailand. *The Raffles Bulletin of Zoology*, 60 (2), 569–582.
- Pauwels, O.S.G., Bauer, A.M., Sumontha, M. & Chanhom, L. (2004) *Cyrtodactylus thirakhupti* (Squamata: Gekkonidae), a

- new cave-dwelling gecko from southern Thailand. *Zootaxa*, 771, 1–11.
- Pauwels, O.S.G. & Chan-ard, T. (2006) Reptiles of Kaeng Krachan National Park, Western Thailand. *Natural History Bulletin of the Siam Society*, 54 (1), 89–108.
- Pauwels, O.S.G., Laohawat, O.-A., David, P., Bour, R., Dangsee, P., Puangjit, C. & Chimsunchart, C. (2000) Herpetological investigations in Phang-Nga Province, southern peninsular Thailand, with a list of reptile species and notes on their biology. *Dumerilia*, 4 (2), 123–154.
- Pauwels, O.S.G. & Sumontha, M. (2014) *Cyrtodactylus samroi*, a new limestone-dwelling Bent-toed Gecko (Squamata: Gekkonidae) from Prachuap Khiri Khan Province, peninsular Thailand. *Zootaxa*, 3755 (6), 573–583.
<http://dx.doi.org/10.11646/zootaxa.3755.6.4>
- Pauwels, O.S.G., Sumontha, M., Latinne, A. & Grismer, L.L. (2013) *Cyrtodactylus sanook* (Squamata: Gekkonidae), a new cave-dwelling gecko from Chumphon Province, southern Thailand. *Zootaxa*, 3635 (3), 275–285.
<http://dx.doi.org/10.11646/zootaxa.3635.3.7>
- Pauwels, O.S.G., Sumontha, M., Panitvong, N. & Varaguttanonda, V. (2014) *Cyrtodactylus khelangensis*, a new cave-dwelling Bent-toed Gecko (Squamata: Gekkonidae) from Lampang Province, northern Thailand. *Zootaxa*, 3755 (6), 584–594.
<http://dx.doi.org/10.11646/zootaxa.3755.6.5>
- Sumontha, M., Panitvong, N. & Deekin, G. (2010) *Cyrtodactylus auribalteatus* (Squamata: Gekkonidae), a new cave-dwelling gecko from Phitsanulok Province, Thailand. *Zootaxa*, 2370, 53–64.
- Sumontha, M., Pauwels, O.S.G., Kunya, K., Limlikhitaksorn, C., Ruksue, S., Taokratok, A., Ansermet, M. & Chanhome, L. (2012a) A new species of Parachute Gecko (Squamata: Gekkonidae: genus *Ptychozoon*) from Kaeng Krachan National Park, western Thailand. *Zootaxa*, 3513, 68–78.
- Sumontha, M., Pauwels, O.S.G., Kunya, K., Nitikul, A., Samphanthamit, P. & Grismer, L.L. (2012b) A new forest-dwelling gecko from Phuket Island, southern Thailand, related to *Cyrtodactylus macrotuberculatus* (Squamata: Gekkonidae). *Zootaxa*, 3522, 61–72.
- Ulber, T. & Grossmann, W. (1991) Ein weiterer neuer Gecko aus Zentral-Thailand: *Cyrtodactylus papilionoides* sp. nov. (Reptilia: Sauria: Gekkonidae). *Sauria*, 13 (1), 13–22.

APPENDIX. Comparative material examined.

Cyrtodactylus astrum: see Grismer *et al.* (2012); *C. auribalteatus*: see material listed in Sumontha *et al.* (2010); *C. brevipalmatus*: see Pauwels & Chan-ard (2006); *C. chanhomeae*: see Bauer *et al.* (2003); *C. dumuii*: see Bauer *et al.* (2010); *C. erythroptus*: see Bauer *et al.* (2009); *C. intermedius*: IRSNB 17011, Nakhon Ratchasima, Thailand; *C. khelangensis*: see Pauwels *et al.* (2014); *C. lekaguli*: see Grismer *et al.* (2012); *C. oldhami* complex: see Pauwels & Chan-ard (2006) and Pauwels *et al.* (2000); *C. peguensis*: see Pauwels *et al.* (2000); *C. phuketensis*: see Sumontha *et al.* (2012); *C. samroi*: see Pauwels & Sumontha (2014); *C. sanook*: see Pauwels *et al.* (2013); *C. sumonthai*: see Bauer *et al.* (2002); *C. thirakhupti*: see Pauwels *et al.* (2004); *C. tigroides*: see Bauer *et al.* (2003).