

A new forest-dwelling Bent-toed Gecko (Squamata: Gekkonidae: *Cyrtodactylus*) from Doi Suthep, Chiang Mai Province, northern Thailand

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Abstract

We describe a new forest-dwelling *Cyrtodactylus* from Doi Suthep, Chiang Mai Province, northern Thailand. *Cyrtodactylus doisuthep sp. nov.* is characterized by a maximal known SVL of 90.5 mm; 19 or 20 longitudinal rows of dorsal tubercles; a continuous series of 34 or 35 enlarged femoro-precloacal scales, including six or seven pitted scales on each femur (male and females) separated by a diastema from six pitted (females) or pore-bearing (male) precloacal scales; no precloacal groove or depression; transversely enlarged subcaudal scales; and six or seven irregular thin beige dorsal bands between limb insertions.

Key words: *Cyrtodactylus doisuthep sp. nov.*, taxonomy, new species, Doi Suthep-Pui National Park

Introduction

In his list of the terrestrial vertebrates of Doi Suthep-Pui National Park, the late Nabhitabhata (1987) listed 50 reptiles, among which was a single *Cyrtodactylus* species, *C. consobrinoides* (Annandale). He later referred to that same population as *Cyrtodactylus variegatus* (Blyth) (Nabhitabhata *et al.* 2004; Nabhitabhata & Chanard 2005). Unfortunately these records were not documented, and there is no evidence that either of these two species occur in Thailand (Ellis & Pauwels 2012). Populations from Chiang Dao in Chiang Mai Province and from Pang Mapha in Mae Hong Son Province also referred to *C. variegatus* by Nabhitabhata & Chanard (2005) might actually belong to *C. dumnnui* Bauer, Kunya, Sumontha, Niyomwan, Pauwels, Chanhome & Kunya, 2010 and *C. erythrops* Bauer, Kunya, Sumontha, Niyomwan, Panitvong, Pauwels, Chanhome & Kunya, 2009, respectively (Ellis & Pauwels 2012). In order to solve the taxonomic status of the Doi Suthep population, we examined a series of *Cyrtodactylus* specimens from that locality. Although they show remote resemblance to both *C. consobrinoides* and *C. variegatus* due to their banded pattern, they are very distinct in other aspects and differ from all known congeners in scalation and color pattern. This population is consequently described hereafter as a new species, *Cyrtodactylus doisuthep sp. nov.*

Material and methods

Measurements and meristic counts follow Sumontha *et al.* (2012) and Pauwels *et al.* (2013). Paired meristic

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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., Chanhome, L. & Kunya, T. (2009) *Cyrtodactylus erythrops* (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., Chanhome, L. & Kunya, T. (2010) *Cyrtodactylus dumnnui* (Squamata: Gekkonidae), a new cave-dwelling gecko from Chiang Mai Province, Thailand. *Zootaxa*, 2570, 41–50.
- Bauer, A.M., Pauwels, O.S.G. & Chanhome, 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., Nguyen, Q.T., Schneider, N. & Ziegler, T. (2011) A new species of the genus *Cyrtodactylus* Gray, 1827 from central Laos (Squamata: Gekkonidae). *Zootaxa*, 2833, 29–40.
- 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., Belabut, D.M., Quah, E.S.H., Chan, K.O., Wood, P.L. & Hasim, R. (2014) 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., 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.
<http://dx.doi.org/10.11646/zootaxa.3620.3.10>
- Luu, V.Q., Calame, T., Bonkowski, M., Nguyen, Q.T. & Ziegler, T. (2014) A new species of *Cyrtodactylus* (Squamata: Gekkonidae) from Khammouane Province, Laos. *Zootaxa*, 3760 (1), 54–66.
<http://dx.doi.org/10.11646/zootaxa.3760.1.3>
- Nabhitabhata, J. (1987) Wildlife in Doi Suthep-Pui National Park. *Kog-Ma Watershed Research Bulletin*, 48, iv + 1–42.
- Nabhitabhata, J. & Chan-ard, T. (2005) *Thailand Red Data: Mammals, Reptiles and Amphibians*. Office of Natural Resources and Environmental Policy and Planning, Bangkok, 234 pp.
- Nabhitabhata, J., Chan-ard, T. & Chuaynkern, Y. ('2000' 2004) *Checklist of amphibians and reptiles in Thailand*. Office of Environmental Policy and Planning, Bangkok, 152 pp.
- Ngo, V.T. & Chan, K.O. (2010) A new species of *Cyrtodactylus* Gray, 1826 (Squamata: Gekkonidae) from Khanh Hoa Province, Southern Vietnam. *Zootaxa*, 2504, 47–60.
- Ngo, V.T. & Grismer, L.L. (2012) A new endemic species of *Cyrtodactylus* Gray (Squamata: Gekkonidae) from Tho Chu Island, southwestern Vietnam. *Zootaxa*, 3228, 48–60.
- Ngo, V.T. & Pauwels, O.S.G. (2010) A new cave-dwelling species of *Cyrtodactylus* Gray, 1827 (Squamata: Gekkonidae) from

- Khammouane Province, southern Laos. *Zootaxa*, 2730, 44–56.
- Nguyen, T.Q., Kingsada, P., Rösler, H., Auer, M. & Ziegler, T. (2010) A new species of *Cyrtodactylus* (Squamata: Gekkonidae) from Northern Laos. *Zootaxa*, 2652, 1–16.
- 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 samroiyot*, 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>
- Rösler, H. & Glaw, F. (2008) A new species of *Cyrtodactylus* Gray, 1827 (Squamata: Gekkonidae) from Malaysia including a literature survey of mensural and meristic data in the genus. *Zootaxa*, 1729, 8–22.
- Sumontha, M., Panitvong, N. & Deein, 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. (2012) 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. (2012) A new forest-dwelling gecko from Phuket Island, southern Thailand, related to *Cyrtodactylus macrotuberculatus* (Squamata: Gekkonidae). *Zootaxa*, 3522, 61–72.
- Ziegler, T., Phung, T.M., Le, M.D. & Nguyen, T.Q. (2013) A new *Cyrtodactylus* (Squamata: Gekkonidae) from Phu Yen Province, southern Vietnam. *Zootaxa*, 3686 (4), 432–446.
<http://dx.doi.org/10.11646/zootaxa.3686.4.2>

APPENDIX. Comparative material examined.

Cyrtodactylus auribalteatus: see Sumontha *et al.* (2010); *C. brevipalmatus*: see Pauwels and Chan-ard (2006); *C. dumnuui*: see Bauer *et al.* (2010); *C. intermedius*: IRSNB 17011, Nakhon Ratchasima, Thailand; *C. oldhami* complex: see Pauwels and Chan-ard (2006) and Pauwels *et al.* (2000); *C. peguensis*: see Pauwels *et al.* (2000); *C. sanook*: see Pauwels *et al.* (2013); *C. sumonthai*: see Bauer *et al.* (2002); *C. tigroides*: see Bauer *et al.* (2003).