



<http://dx.doi.org/10.11646/zootaxa.3774.2.4>

<http://zoobank.org/urn:lsid:zoobank.org:pub:933179AB-E8DB-4785-9F79-E0D051E1E398>

A new species of the genus *Opisthotropis* Günther, 1872 from northern Laos (Squamata: Natricidae)

ALEXANDRE TEYNIÉ¹, ANNE LOTTIER¹, PATRICK DAVID^{*2}, TRUONG QUANG NGUYEN³ & GERNOT VOGEL⁴

¹ Société d'Histoire Naturelle Alcide d'Orbigny, 57 rue de Gergovie, F-63170 Aubière, France. E-mail: ateynie@shnao.net

² Reptiles & Amphibiens, UMR 7205 OSEB, Département Systématique et Évolution, CP 30, Muséum National d'Histoire Naturelle, 57 rue Cuvier, 75231 Paris Cedex 05, France. E-mail: p david@mnhn.fr

³ Institute of Ecology and Biological Resources, Vietnam Academy of Science and Technology, 18 Hoang Quoc Viet Road, Hanoi, Vietnam

Current address: Department of Terrestrial Ecology, Zoological Institute, University of Cologne, Zùlpicher Strasse 47b, D-50674 Cologne, Germany. E-mail: nqt2@yahoo.com

⁴ Society for Southeast Asian Herpetology, Im Sand 3, D-69115 Heidelberg, Germany. E-mail: gernot.vogel@t-online.de

* corresponding author

Abstract

Two specimens, a male and a female, of the genus *Opisthotropis* Günther, 1872 were collected in a karst formation of northern Louangphabang (or Luang Prabang) Province, North Laos. These specimens are assigned to the genus *Opisthotropis* on the basis of their morphology, dentition and cephalic scalation. However, they differ from all other known species of *Opisthotropis* by a combination of the following characters: (1) 21–19 scale rows on the fore part of the body, (2) 17 scale rows at midbody, (3) 22/23 maxillary teeth, (4) 177–181 ventrals, (5) 1 loreal on each side, in contact with internasal, (6) 7 supralabials, 4th entering orbit, (7) dorsum dark bronze-brown, with upper part of dorsum darker than lateral sides, without bands or crossbars, and (8) chin and throat blackish-brown with a sharp, transversal limit with the ventral colour crossing the posterior part of the throat. As a consequence, these specimens are here referred to a new species, *Opisthotropis durandi* spec. nov. The new species is compared with other species of the genus, especially the most similar species *O. spenceri* Smith, 1918 and *O. atra* Günther, 1872, the type species of the genus. An updated key to the genera *Opisthotropis* is provided. *Opisthotropis durandi* spec. nov. represents the first confirmed record of a species of *Opisthotropis* sensu stricto from Laos and it is the 108th snake species currently recorded from the Lao People's Democratic Republic.

Key words: *Opisthotropis durandi* spec. nov., morphology, taxonomy, distribution.

Introduction

Members of the genus *Opisthotropis* Günther, 1872 are highly aquatic snakes inhabiting mostly fast-flowing streams of hills and mountains of tropical and subtropical Asia. The genus is distributed across the mainland of Southeast Asia eastwards to the Philippines and the Ryukyu Archipelago of Japan (see Ziegler *et al.* 2008; David *et al.* 2011). According to Boulenger (1893), Smith (1943), Stuart and Chuaynkern (2007), Murphy *et al.* (2008), Ziegler *et al.* (2008), David *et al.* (2011), and Yang *et al.* (2011, 2013), this rather homogeneous genus is defined by a series of the following characters: (1) head depressed, not or scarcely distinct from neck, (2) body rather stout, (3) eye moderate or small, with rounded or vertically elliptical pupil, (4) nostril directed upwards and outwards, piercing in the nasal placed in dorsal position on the snout, (5) prefrontal very broad, usually single, forming a long suture with the frontal, (6) scales smooth or keeled, without apical pits, in 15 to 19 dorsal rows at midbody (23 in *O. laui* Yang, Sung & Chan, 2013), (7) cloacal scale divided, (8) subcaudals paired, and (9) 20–40 upper maxillary teeth, small, and subequal.

This genus is still imperfectly known. Not only the biology and ecology of numerous species are poorly

Research of T. Q. Nguyen in Germany is funded by the Alexander von Humboldt Stiftung/Foundation (VIE 1143441).

References

- Alcala, A.C. (1986) *Guide to Philippine flora and fauna. Vol. X. Amphibians and reptiles*. Natural Resources Management Center, Ministry of Natural Resources and University of the Philippines, Manila, xiv + 195 pp.
- Angel, F. (1929) Liste des Reptiles et Batraciens du Haut-Laos recueillis par M. Delacour. Description d'un genre, de deux espèces et d'une variété d'Ophidiens. *Bulletin du Muséum d'Histoire Naturelle*, Paris, (2), 1 (1), 75–81.
- Angel, F. & Bourret, R. (1933) Sur une petite collection de serpents du Tonkin. Descriptions d'espèces nouvelles. *Bulletin de la Société Zoologique de France*, 58 (3–4), 129–140.
- Anonymous (Central Intelligence Agency) (2012) *The CIA World Factbook 2013*. Skyhorse Publishing, New York, xxxi + 922.
- Boulenger, G.A. (1888) Description of two new snakes from Hongkong, and note on the dentition of *Hydrophis viperina*. *Annals and Magazine of Natural History*, (6), 2 (7), 43–44.
- Boulenger, G.A. (1893) *Catalogue of the snakes in the British Museum (Natural History), Vol. I., containing the families Typhlopidae, Glauconiidae, Boidae, Ilysiidae, Uropeltidae, Xenopeltidae, and Colubridae Aglyphae, part*. British Museum of Natural History, London, xiii + 448 pp., Pls. 1–28.
- Boulenger, G.A. (1899) On a collection of reptiles and batrachians made by Mr. J.D. La Touche in N.W. Fokien, China. *Proceedings of the Zoological Society of London*, 1899, 159–172, Pls. 16–19.
- Boulenger, G.A. (1903) Descriptions of new snakes in the collection of the British Museum. *Annals and Magazine of Natural History*, (7), 12 (69), 350–354.
- Boulenger, G.A. (1914) Descriptions of new species of snakes in the collection of the British Museum. *Annals and Magazine of Natural History*, (8), 14 (84), 482–485.
- Bourret, R. (1934) Notes herpétologiques sur l'Indochine française. III. Ophidiens d'Annam et du Moyen Laos. *Bulletin général de l'Instruction Publique*, 13^e Année (9, Mai), 167–176. [Separate reprint: 3–12].
- Brown, W.C. & Leviton, A.E. (1961) Discovery of the snake genus *Opisthotropis* in the Philippine Islands, with description of a new species. *Occasional Papers of the Natural History Museum of Stanford University*, 8, 1–5.
- Cope, E.D. (1895) On a collection of Batrachia and Reptilia from the Island of Hainan. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 46 [1894], 423–428.
- David, P., Pham, C.T., Nguyen, T.Q. & Ziegler, T. (2011) A new species of the genus *Opisthotropis* Günther, 1872 (Squamata: Natricidae) from the highlands of Kon Tum Province, Vietnam. *Zootaxa*, 2758, 43–56.
- David, P., Nguyen, T.Q., Nguyen, T.T., Ke, J., Chen, T., Teynié, A. & Ziegler, T. (2012) A new species of the genus *Oligodon* Fitzinger, 1826 (Squamata: Colubridae) from northern Vietnam, southern China and central Laos. *Zootaxa*, 3498, 45–62.
- Deuve, J. (1970) Serpents du Laos. *Mémoires de l'ORSTOM*, 39, Paris, 1–251.
- Dowling, H.G. (1951) A proposed standard system of counting ventrals in snakes. *British Journal of Herpetology*, 1 (5), 97–99.
- Günther, A.C.L.G. (1872) Seventh account of new species of snakes in the collection of the British Museum. *Annals and Magazine of Natural History*, (4), 9 (1), 13–37, Pls. 3–6.
- Iskandar, D.T. & Kamsi, K. (2009) On the second specimen of *Opisthotropis rugosus* (van Lidth de Jeude, 1890) (Colubridae, Natricinae). *Hamadryad*, 34 (1), 107–110.
- Malkmus, R., Manthey, U., Vogel, G., Hoffmann, P. & Kosuch, J. (2002) *Amphibians and reptiles of Mount Kinabalu (North Borneo)*. A.R.G. Gantner Verlag K.G., Ruggell, 424 pp.
- Manthey, U. & Grossmann, W. (1997) *Amphibien & Reptilien Südasiens*. Natur und Tier-Verlag, Münster, 512 pp.
- McCoy, J.F. (2003) *Geo-Data: The World Geographical Encyclopedia. Third Edition*. Gale Group, Farmington Hills (Michigan, USA), xi + 704.
- Mocquard, F. (1890) Recherches sur la faune herpétologique des îles de Bornéo et de Palawan. *Nouvelles Archives du Muséum d'Histoire Naturelle de Paris*, 3 (2), 115–168.
- Murphy, J.C., Chan-ard, T., Mekchai, S., Cota, M. & Voris, H.K. (2008) The rediscovery of Angel's stream snake, *Paratapinophis praemaxillaris* Angel, 1929 (Reptilia: Serpentes: Natricidae). *The Natural History Journal of Chulalongkorn University*, 8 (2), 169–183.
- Okada, Y. & Takara, T. (1958) A new species of *Liopeltis* (Ophidia, Colubridae) from Ryukyu Islands. *Bulletin of the Biogeographical Society of Japan*, 20 (3), 1–3.
- Orlov, N., Darevsky, I.S. & Murphy, R.W. (1998) A new species of mountain stream snake, genus *Opisthotropis* Günther, 1872 (Serpentes: Colubridae: Natricinae) from the tropical rain forests of southern Vietnam. *Russian Journal of Herpetology*, 5 (1), 61–64.
- Ota, H. & Mori, A. (1985) On the fourth specimen of *Opisthotropis kikuzatoi*. *The Snake*, 17 (2), 160–162.
- Peracca, M.G. (1904) Nouvelles espèces d'ophidiens d'Asie et d'Amérique faisant partie de la collection du Muséum d'Histoire Naturelle de Genève. *Revue Suisse de Zoologie*, 12 (3), 663–668.
- Pope, C.H. (1928) Seven new reptiles from Fukien Province, China. *American Museum Novitates*, 320, 1–6.

- Pope, C.H. (1935) *The reptiles of China. Turtles, crocodilians, snakes, lizards*. American Museum of Natural History, New York, *Natural History of Central Asia*, Vol. 10, xlii + 604 pp., Pl. 1–27.
- Smith, M.A. (1918) Description of a new snake (*Opisthotropis spenceri*) from Siam. *The Journal of the Natural History Society of Siam*, 3 (1), 13.
- Smith, M.A. (1943) *The Fauna of British India, Ceylon and Burma, including the whole of the Indo-chinese subregion. Reptilia and Amphibia. Vol. III, Serpentes*. Taylor & Francis, London, xii + 583 pp.
- Stuart, B.L. & Chuaynkern, Y. (2007) A new *Opisthotropis* (Serpentes: Colubridae: Natricinae) from Northeastern Thailand. *Current Herpetology*, 26 (1), 35–40.
- Taylor, E.H. (1965) The serpents of Thailand and adjacent waters. *University of Kansas Science Bulletin*, 45 (9), 609–1096.
- Taylor, E.H. & Elbel, R.E. (1958) Contribution to the herpetology of Thailand. *University of Kansas Science Bulletin*, 38 (2), 1033–1189.
- Teynié, A. & David, P. (2010) *Voyages Naturalistes au Laos: Les Reptiles*. Éditions Revoir, Nohanent (France), 315 pp.
- Teynié, A. & David, P. (2014) Amphibiens et reptiles des formations karstiques du Laos. *Bulletin de la Société Herpétologique de France*, 148 [2013] (4), 451–489.
- Teynié, A., David, P., Lottier, A., Le, D.M. & Nguyen, T.Q. (2014) A new genus and species of xenodermatid snake (Squamata: Colubroidea: Xenodermatidae) from northern Lao People's Democratic Republic. *Zootaxa*, in press.
- Toyama, M. (1983). Taxonomic reassignment of the colubrid snake, *Ophedrys kikuzatoi*, from Kume-jima Island, Ryukyu Archipelago. *Japanese Journal of Herpetology*, 10 (2), 33–38.
- Van Lidth de Jeude, T.W. (1890) Reptilia from the Malay Archipelago. II. Ophidia. In: Weber, M. (Ed.), *Zoologische Ergebnisse einer Reise in Niederländisch Ost-Indien. Heft 2*, Leiden, E.J. Brill, 178–192, Pl. 15–16.
- Vogel, G., Nguyen, T.Q., Kingsada, P. & Ziegler, T. (2012) A new species of the genus *Lycodon* Boie, 1826 from Laos (Squamata: Colubridae). *North-western Journal of Zoology*, Oradea (Romania), 8 (2), 344–352.
- Yang, J.H., Sung, Y.-H. & Chou, B.P.-L. (2013) A new species of the genus *Opisthotropis* Günther, 1872 (Squamata: Colubridae: Natricinae) from Guangdong Province, China. *Zootaxa*, 3646 (3), 289–296.
<http://dx.doi.org/10.11646/zootaxa.3646.3.7>
- Yang, J.H., Wang, Y.Y., Zhang, B., Lau, M.W.-N. & Chou, W.-H. (2011) Revision of the diagnostic characters of *Opisthotropis maculosa* Stuart and Chuaynkern, 2007 with notes on its distribution and variation, and a key to the genus *Opisthotropis* (Squamata: Natricidae). *Zootaxa*, 2785, 61–68.
- Zhao, E.M. (1999) Diagnoses of a new frog and a new snake from China. *Sichuan Journal of Zoology*, 18 (3), inside front cover.
- Zhao, E.M. (2004) A re-description of *Opisthotropis cheni* Zhao, 1999 (Serpentes: Colubridae). *Sichuan Journal of Zoology*, 24 (3), 342–343.
- Zhao, E.M. (2006) *Zhongguo Shelei*. Anhui Science and Technology Publishing House Publishing, Hefei (Anhui Province), Vol. I, 372 pp; Vol. II, 279 pp. (In Chinese).
- Zhao, E.M., Huang, M.H., Zong, Y., Zheng, J., Huang, Z.J., Yang, D. & Li, D.J. (Eds.) (1998) *Fauna Sinica. Reptilia Vol. 3. Squamata Serpentes*. Science Press, Beijing, xvii + 522 pp., Pl. I–VIII, Col. Pl. I–IV. (In Chinese).
- Zhao, E.M., Jiang, Y.M. & Huang, Q.Y. (1978) Three new snake species in China. *Material for Herpetological Researches*, Chengdu, 4, 21.
- Ziegler, T., David, P. & Vu, N.T. (2008) A new natricine snake of the genus *Opisthotropis* from Tam Dao, Vinh Phuc Province, northern Vietnam (Squamata, Colubridae). *Zoosystematics and Evolution*, Berlin, 84 (2), 197–203.

APPENDIX. List of examined specimens.

- Opisthotropis atra* (n = 1). “West Africa”. BMNH 1946.1.15.31 (Holotype), no locality.
- Opisthotropis balteata* (n = 5). **Vietnam**. Bac Giang Province. IEBR A.0861, ZFMK 94229, Tay Yen Tu Nature Reserve, Son Dong District; Tonkin. NMW 22979.—**Cambodia**. No locality. NMW 22978:1–2.
- Opisthotropis cucae* (n = 1). **Vietnam**. Kon Tum Province. IEBR A.0924 (Holotype), Chu Mom Ray National Park, Sa Thay District, (14°26.227'N, 107°43.268'E), 740 m.
- Opisthotropis daovantieni* (n = 1). **Vietnam**. Kon Tum Province. ZISP 26073, Kon Plong Forest, Xa Hieu, Kon Plong District (14°41.447'N 108°22.376'E, 1,170 m).
- Opisthotropis guangxiensis* (n = 3). **China**. Guangxi Province. CIB 9972–4, Dayao Shan (Mt. Dayao).
- Opisthotropis jacobi* (n = 7). **Vietnam**. Lao Cai Province. IEBR 2910, Sa Pa; MNHN 1933.0010, MNHN 1935.0083, MNHN 1938.0126–0127, “Chapa, Tonkin”, now Sa Pa. Vinh Phuc Province. MNHN 1935.0457, CAS-SU 9147, Tam Dao.
- Opisthotropis lateralis* (n = 3). **Vietnam**. Bac Giang Province. IEBR 3644–3645, Tay Yen Tu Nature Reserve, Son Dong District. Quang Nam Province. IEBR 83, Tra My, Tra Don Commune, Mt. Ngoc Linh.
- Opisthotropis latouchii* (n = 2). **China**. Jiangxi Province. NMW 26028: 1–2, “Pingshiang, Kiangsi Province”, now Pinjiang.
- Opisthotropis rugosa* (n = 1). **Indonesia**. Province of Sumatera Barat. RMNH 4330 (Holotype), Kayutanam.
- Opisthotropis spenceri* (n = 2). **Thailand**. Lampang Province. BMNH 1946.1.15.31, BMNH 1965.640, “Muang Ngow, N. Siam”, at present Ngao.
- Opisthotropis tamdaoensis* (n = 1). **Vietnam**. Vinh Phuc Province. VNUH 010606, Tam Dao, ca. 195 m a.s.l.