



First Record of the Brown-spotted Pitviper, *Protothrops mucrosquamatus* (Cantor 1839), from the Present-day State of Assam, India

Arijit Dutta¹, Sourav Gupta^{2,3}, Jayanta Kr. Roy², and M. Firoz Ahmed²

¹National Institute of Science Education and Research (NISER), Homi Bhabha National Institute (HBNI), Bhubaneswar, Jatani, Khurda, Odisha 752050, India (arijit.dutta@niser.ac.in, <https://orcid.org/0000-0002-7538-8738>)

²Aaranyak, 13, Tayab Ali Byelane, Bishnu Rabha Path, Guwahati, Assam, 781028, India (souravassamwild@gmail.com; <https://orcid.org/0000-0001-5918-2302>; roy.jayantakumar47@gmail.com, <https://orcid.org/0000-0001-8949-3726>; mfa.aaranyak@gmail.com, <https://orcid.org/0000-0002-2652-1360>)

³Department of Life Science and Bioinformatics, Assam University, Diphu Campus, Karbi Anglong, Assam, 782460, India

The Brown-spotted Pitviper (*Protothrops mucrosquamatus*) (Viperidae: Crotalinae) is widely distributed across southeastern Asia (Vogel 2006), including Myanmar (Leviton et al. 2003), Laos (Whitaker and Captain 2004; Brakels et al. 2021), China (Zhao 2006; Uetz et al. 2023), Vietnam (Wallach et al. 2014; Duong and Nguyen 2021), Taiwan (Nguyen et al. 2009), Thailand (Vasaruchapong et al. 2017), and India (Whitaker and Captain 2004), where it has been recorded from only a few localities at elevations of 500–2,500 m in the northeastern states of Mizoram: Tamdil National Wetland (Lalremsanga et al. 2017); Arunachal

Pradesh: Ziro, Gatte Village, Limeking, Singa Track, Talley Valley (Bhatt 2004), Namdapha National Park, Changlang District (Bhattacharjee 2014); and Nagaland: Tuensang (Ao et al. 2004). Although the species was listed as occurring in Assam (Prater 1929; Smith 1943), the state at that time was undivided and included the present-day states of Arunachal Pradesh, Assam, Mizoram, Meghalaya, and Nagaland, which separated from the parent state in the years 1972, 1970, and 1930, respectively. Consequently, no confirmed locality records of *P. mucrosquamatus* exist within the present-day state of Assam. The observation by Prater (1929: 998)



Figure 1. A Brown-spotted Pitviper (*Protothrops mucrosquamatus*) from the community forest in Karbi Anlong District, Assam, India (ZRC(IMG)2.606). Photograph by Arijit Dutta.

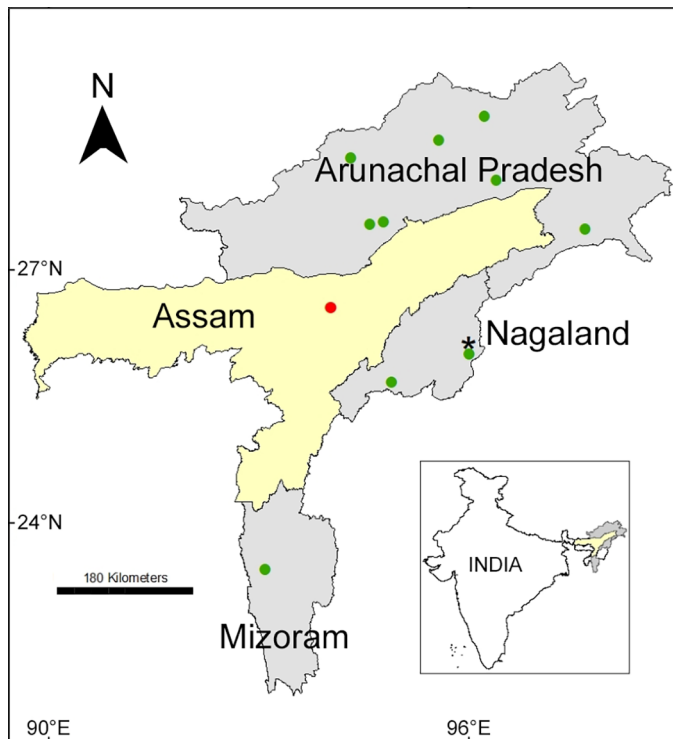


Figure 2. Distribution of the Brown-spotted Pitviper (*Protobothrops mucrosquamatus*) showing the type locality (asterisk), a new distribution record from the Kohora River Basin, Karbi Anglong District, Assam, India (red dot) and previous records from Arunachal Pradesh, Nagaland, and Mizoram (green dots). Note that coordinates for Gatte Village and Ziro in Arunachal Pradesh are tentative (Bhatt 2004).

from Pasighat is in the present day state of Arunachal Pradesh and Smith's (1943: 507) mention of the "Naga Hills, as one day's march from Bessa Lacon" is in the present day state of Nagaland. Herein we provide the first confirmed record of *P. mucrosquamatus* from the Karbi-Anlong District of Assam.

At about 2100 h on 17 August 2022, we encountered a *P. mucrosquamatus* (Fig. 1) on a forest trail adjacent to a stream within a bamboo-dominated forest patch in the Karbi-Anlong Hills at Kohora, Assam, India (26.558175 N, 93.367792 E; elev. 278 m asl; Fig. 2). The snake was curled in a defensive position on the forest floor for 5–7 minutes, after which it retreated into nearby shrubs. The length of the snake (45 cm) was estimated using methods of Rivas et al. (2008). A photographic voucher was deposited at the Lee Kong Chian Natural History Museum, National University of Singapore (ZRC(IMG)2.606) and the species was identified from photographs using keys and descriptions in Cantor (1839), Boulenger (1890), and Smith (1943), and was later confirmed by Gernot Vogel (pers. comm.). This record from

the present state of Assam is the fourth state in India in which the species has been reported.

Acknowledgements

We thank Rong Asar Amei of the Kohora River Basin for permission and support and Aranyak for financial support through funding provided by IUCN-KFW and USFWS.

Literature Cited

- Ao, J.M., P. David, S. Bordoloi, and A. Ohler. 2004. Notes on a collection of snakes from Nagaland, northeast India, with 19 new records for this state. *Russian Journal of Herpetology* 11: 155–162. <https://doi.org/10.30906/1026-2296-2004-11-2-155-162>.
- Bhatt, B.B. 2004. Present Status of Ophidian Fauna and Habitat Ecology of Certain Species of Ophidians in Arunachal Pradesh, India. Unpublished Ph.D. Thesis, Gauhati University, Assam, India.
- Bhattacharjee, K. 2014. Photographic record and field observations of a Brown-spotted Pit Viper. *Journal of the Bombay Natural History Society* 111: 137–138. <https://doi.org/10.17087/jbnhs/2014/v111i2/72242>.
- Boulenger, G.A. 1890. *The Fauna of British India, Including Ceylon and Burma. Reptilia and Batrachia*. Taylor & Francis, London, UK.
- Brakels, P., N. Maury, S. Phimmachak, and T.V. Nguyen. 2021. Geographic distribution. *Protobothrops mucrosquamatus* (Brown-spotted Lance-headed Pitviper). *Herpetological Review* 52: 800.
- Cantor, T.E. 1839. Spicilegium serpentium indicorum [part 1]. *Proceedings of the Zoological Society of London* 1839: 31–34.
- Duong, T. and T. Nguyen. 2021. Geographic distribution. *Protobothrops mucrosquamatus* (Brown-spotted Lance-headed Pitviper). *Herpetological Review* 52: 800–801.
- Lalremsanga, H.T., L. Biakzuala, and R. Lalrinsanga. 2017. Geographic distribution. *Protobothrops mucrosquamatus* (Brown-spotted Pitviper). *Herpetological Review* 48: 131.
- Leviton, A.E., G.O.U. Wogan, M.S. Koo, G.R. Zug, R.S. Lucas, and J.V. Vindum. 2003. The dangerously venomous snakes of Myanmar. Illustrated checklist with keys. *Proceedings of the California Academy of Sciences* 54: 407–462.
- Nguyen, V.S., T.C. Ho, and T.Q. Nguyen. 2009. *Herpetofauna of Vietnam*. Edition Chimaira, Frankfurt am Main, Germany.
- Prater, S.H. 1929. Note on a Formosan Viper (*Trimeresurus Mucrosquamatus*) from the north-east frontier. *The Journal of the Bombay Natural History Society* 33: 998–998.
- Rivas, J.A., R.E. Ascanio, and M.D.C. Muñoz. 2008. What is the length of a snake? *Contemporary Herpetology* 2008: 1–3. <https://doi.org/10.17161/ch.vi.11941>.
- Smith, M.A. 1943. *The Fauna of British India, Ceylon and Burma, Including the Whole of the Indo-Chinese Sub-Region. Reptilia and Amphibia. Vol. III—Serpentes*. Taylor and Francis, London, UK.
- Uetz, P., P. Freed, R. Aguilar, F. Reyes, and J. Hošek (eds.). 2023. *The Reptile Database*. <<http://www.reptile-database.org>>.
- Vasaruchapong, T., P. Laoungbua, K. Tangrattanapibul, T. Tawan, and L. Chanhome. 2017. *Protobothrops mucrosquamatus* (Cantor, 1839), a highly venomous species added to the snake fauna of Thailand (Squamata: Viperidae). *Tropical Natural History* 17: 111–115.
- Vogel, G. 2006. *Venomous Snakes of Asia. Giftschlangen Asiens*. Edition Chimaira, Frankfurt am Main & Aqualog Verlag ACS, Rodgau, Germany.
- Wallach, V., K.L. Williams, and J. Boundy. 2014. *Snakes of the World. A Catalogue of Living and Extinct Species*. CRC Press, Boca Raton, Florida, USA.
- Whitaker, R. and A. Captain. 2004. *Snakes of India. The Field Guide*. Draco Books, Chennai, India.
- Zhao, E. 2006. *Zhongguo Shelei. The Snakes of China*. Anhui Science and Technology Publishing House, Hefei, China.