Online: ISSN 2771-5868
Print: ISSN 2771-585X

Original Research Article

New Locality Report for *Dorysthenes (Lophosternus) huegelii* (Redtenbacher, 1848) (Coloeptera: Cerambycidae: Prioninae) in Assam, India

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Received: April 26, 2022; revised: May 31, 2022; accepted: June 5, 2022

https://doi.org/10.56716/4/110

Abstract: Despite being located at the confluence of two biodiversity hotspots – the Himalaya and the Indo-Burma – our knowledge on the diversity of longhorn beetle from Northeast India is very limited and account for about a third of the total Indian diversity. Herein, we are reporting a confirmed record of *Dorysthenes (Lophosternus) huegelii* from Assam, India. A discussion on the limitation on the knowledge of the confirmed distribution range of this species in India based on historical records is also made. Being an economic pest, the knowledge on the distribution of the tree root borer *D (L.) huegelii* plays an important role in economic pest management. Taxonomic keys to the species under this genus recorded from India is also added.

Key words: Dhemaji, distribution record, longhorn beetles, northeast India, taxonomic keys, undivided Assam.

Introduction

India is home to 1,536 species of longhorn beetles (Kariyanna *et al.* 2017 a), yet the knowledge on the distribution and diversity of longhorn beetles in northeast India is rather limited to a mere 592 species despite the region being located at the confluence of two biodiversity hotspots – the Himalaya and the Indo-Burma (Agarwala & Bhattacharjee 2012; Behere *et al.* 2017; Gahan 1906; Sengupta & Sengupta 1981; Kariyanna *et al.* 2017 b; Kumawat *et al.* 2015; Mitra *et al.* 2016 a, b, c, d & 2017).

Recently, we have made a collection of beetle species from Dhemaji district of Assam (Fig. 1), which belongs to the genus *Dorysthenes* under subgenus *Lophosternus.* While *Dorysthenes* genus is characterised by long and recurved mandibles and transverse prothorax having lateral marginal spines, in the species belonging to the subgenus *Lophosternus,* the third antennomere do not cross pronotal hind margin (Singh and Sreedevi, 2017). Based on perusal of literature, the collected specimens of this beetle have been identified as *Dorysthenes (Lophosternus) huegelii* (Redtenbacher 1848; Gahan 1906; Stebbing 1914; Mitra *et al.* 2014) (Fig. 2).

While Mitra *et al.* (2017) reported the presence of 95 species of longhorn beetles from Assam based on available literature including the *Dorysthenes (Lophosternus) huegelii,* Kariyanna *et al.* (2017 b) reported 293 species from the State.

Dorysthenes (Lophosternus) huegelii belonging to the subfamily Prioninae is a longhorn beetle described from Kashmir by Redtenbacher (1848). Subsequently, Gahan (1906) listed Northwest Province, Punjab and Assam in the erstwhile undivided British India. During the British rule of India, the undivided Assam included almost the whole of Northeast India, and Sylhet (Sylhet is now a part of Bangladesh). After independence, the undivided Assam was finally divided into five north-eastern states of Arunachal Pradesh, Meghalaya, Nagaland and Mizoram, in addition to the current state of

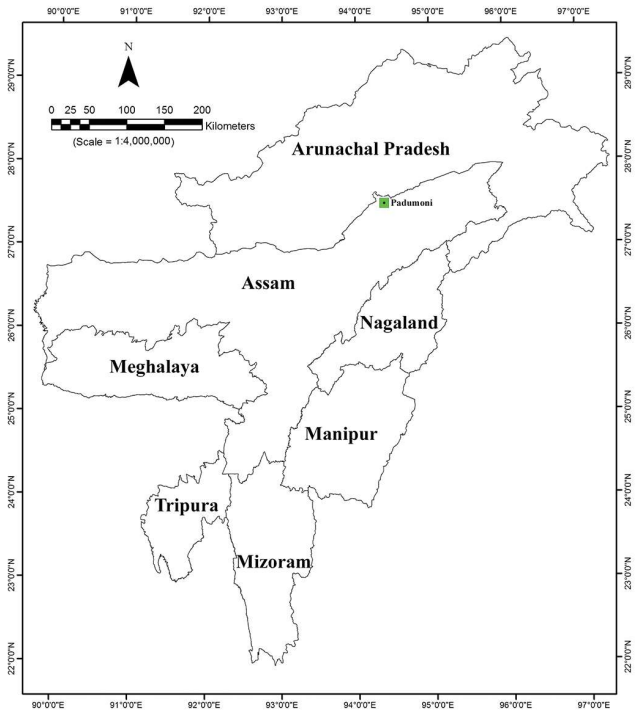

Fig. 1: A map showing seven states of Northeast India. The green square represents the collection locality of *Dorysthenes (Lophosternus) huegelii.*

Fig. 2: A collected *Dorysthenes (Lophosternus) huegelii* specimen (♀).

Assam. As Gahan (1906) did not specify the exact locality in the erstwhile undivided Assam, the subsequent workers included Assam under the distribution range of *D. (L.) huegelii* (Stebbing 1914; Mukhopadhyay 2011; Kumawat *et al.* 2015; Mitra *et al.* 2017). Interestingly, Kariyanna *et al.* (2017 a) catalogued this species in Khasi Hills under Assam, though, Khasi Hills was a part of the erstwhile undivided Assam, and is currently a part of the state of Meghalaya in northeast India since 1972. Mitra *et al.* (2017 b), though, did not include this species in their account of longhorn beetles of Meghalaya. As such, some disparity exists regarding our knowledge on the distributional records of longhorn beetles *vis-à-vis* their historical records from this region.

Materials and methods

On 11 April, 2022, the second author collected three specimens of longhorn beetles from a homestead at Padumoni Village (27°25'15" N, 94°24'47"E, 96 m elevation) located in Bordoloni area of Dhemaji district in Assam at ca. 20:00 hours. However, the collection of these specimens was a chance encounter and as such, no ecological parameters was recorded. While the greater collection locality is situated in the floodplains of Dhemaji district, and witness some flooding during the rainy seasons, the homestead from where the specimens were collected is located at a higher elevation, and hence, do not witness any sorts of water logging, even during the heavy annual monsoon showers. The area witness hot and humid summers, and with moderate winters. The homestead has a large plantation of areca nut trees, bamboos, citrus and a few varieties of timber trees. This serves as an excellent habitat for root borers like *D. (L.) huegelii*.

For the specific identity, the following literature was consulted: Redtenbacher (1848), Gahan (1906), Stebbing (1914) and Mitra *et al.* (2014). All the specimens collected were females.

The specimens are registered in the museum collection holdings of North Eastern Regional Centre, Zoological Survey of India (NERC, ZSI) located in Shillong, Meghalaya under the following registration numbers [I/COL/

NERC-331, 332 and 333]. We are also including taxonomic keys to the species under genus *Dorysthenes (Lophosternus)* found in India, for the benefit of future workers, which is represented by four species (Kariyanna *et al.* 2017 a).

Results

Systematic account:

Class: Insecta

Order: Coloeptera

Family: Cerambycidae

Subfamily: Prioninae

Genus: *Dorysthenes*

Subgenus*: Lophosternus*

Species: *Dorysthenes (Lophosternus) huegelii* (Redtenbacher, 1848)

1848. *Cyrtognathus hügelii* Redtenbacher: 550, pl. XXVIII, fig. 1

The brief morphological characters observed in the specimens collected are: body robust, 34-38 mm in length, 11-15 mm in width, chestnut brown in color; head and thorax slightly darker than elytra, pronotum blackish, with a pair of spurs on the lateral sides; antenna chestnut brown and smaller than body length, segments small, III segment being the longest, scape not reaching beyond the hind margin of the eye; scutellum triangular; elytra rugulose, large and robust, converging towards the apex, longitudinal striae prominent but obsolete near the apex; legs elongated, femur flattened, both femur and tibia serrated.

Currently *D. (L.) huegelii* is known to occur in India, Nepal, China and Pakistan. In India, this species is reported from Andaman Is., Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Manipur, Punjab, Tamil Nadu, Uttarakhand and West Bengal (Kumawat *et al.* 2015; Kariyanna *et al.* 2017 a; Mitra *et al.* 2017 a).

Discussion

Dorysthenes (Lophosternus) huegelii is an economic pest known to bore tree trunks and roots of oak tree, kinnow mandarin, apple, apricot, cheery, pear, peach, walnut and other trees (Stebbing 1914; Singh and Sreedevi 2017; Singh 2021). As such, the knowledge on their distribution is an important aspect of economic pest management.

Kumawat *et al.* (2015) reported *D. (L.) huegelii* from Pasighat in Arunachal Pradesh, the easternmost state of India. The locality record of Pasighat is ca. 115 kms northeast from the collection locality of Padumoni in Dhemaji, Assam. With this report, we are recording the confirmed distribution of *D. (L.) huegelii* in Assam, which is the first report from the State in more than a century since Gahan (1906) included the erstwhile undivided Assam under its distribution range.

A taxonomic key is also included for the species found in India under the genus *Dorysthenes (Lophosternus)* for the benefit of future workers.

Taxonomic keys to the species under genus *Dorysthenes (Lophosternus)* found in India:

1. Scape reaches beyond the hind margin of the eye 2
   Scape not reaching beyond the hind margin of the eye 3
2. Antenna as long as the body length ..... *D. (L.) buqueti*
   Antenna 3/4th to 5/6th of body length ..... *D. (L.) indicus*
3. Antenna reaching middle of elytra ..... *D. (L.) zivetta*
   Antenna a little shorter than the body length ..... *D. (L.) huegelii*

Acknowledgments

The authors are grateful to the Director, Zoological Survey of India, Kolkata and the Officer-in-Charge, NERC, ZSI, Shillong for providing facilities.

References

Agarwala BK and Bhattacharjee PP. 2012. Long-horned Beetles (Coleoptera: Cerambycidae) and Tortoise Beetles (Chrysomelidae: Cassidinae) of Tripura, northeastern India with some new additions. J. Threatened Taxa. 4(13): 3223-3227.

Behere GT, Firake DM, Thubru DP, Burange PS and Ngachan SV. 2017. Longhorn beetles (Coleoptera: Cerambycidae) of northeastern India: An Overview. Indian J. Hill Farming. 2: 42-54.

Gahan, CJ. 1906. The Fauna of British India, Including Ceylon, and Burma: Coleoptera-Vol. II (Cerambycidae). Taylor and Francis, London. Pp.: 1- 329.

Kariyanna B, Mohan M, Gupta R and Vitali F. 2017a. The checklist of longhorn beetles (Coleoptera: Cerambycidae) from India. Zootaxa. 4345(1): 001-317.

Kariyanna B, Mohan M, Gupta R and Bakthavatchalam N. 2017b. Species Composition and Distribution Pattern of Longhorn Beetles (Coleoptera: Cerambycidae) across India. Int. J. Curr. Microbiol. App. Sci. 6(5): 1677-1688.

Kumawat MM, Singh KM and Ramamurthy VV. 2015. A checklist of the Long-horned Beetles (Coleoptera: Cerambycidae) of Arunachal Pradesh, northeastern India with several new reports. J. Threatened Taxa. 7(12): 7879-7901.

Mitra B, Das P, Mallick K, Chakraborti U and Majumder A. 2016a. New records of longhorn beetles (Cerambycidae: Coleoptera) from Manipur State India with Checklist. J. Zoo. Studies. 3(1): 19-26.

Mitra B, Das P, Mallick K, Chakraborti U and Majumder A. 2016b. Longhorn beetles (Cerambycidae: Coleoptera) of Meghalaya with eight new records. J. Zoo. Studies. 3(4): 39-47.

Mitra B, Das P, Chakraborti U, Mallick K and Chakraborty K. 2016c. Long horn beetles (Cerambycidae: Coleoptera) of Nagaland, India. J. Global Biosci. 5(4): 3963-3969.

Mitra B, Das P, Chakraborti U, Mallick K and Chakraborty K. 2016d. Round Headed Borers (Cerambycidae: Coleoptera) of Mizoram. Entomol. Appl. Sci. Letters. (3)3: 10-12

Mitra B, Chakraborti U, Mallick K, Bhaumik S and Das P. 2017. An updated list of cerambycid beetles (Coleoptera: Cerambycidae) of Assam, India. Rec. Zool. Surv. India. 117(1): 78-90.

Mukhopadhyay P. 2011. On a collection of Insecta: Coleopera: Cerambycidae and Curculionidae (Brachyderinae and Otiorrhynchinae) from Uttarakhand. Rec. Zool. Surv. India. 111(2): 75-88.

Redtenbacher L. 1848. Aufzählung und Beschreibung der von Freih. Carl v. Huegel auf seiner Reise durch Kaschmir u. das Himalayagebirge gesammelten Insecten. Kaschmir und das Reich der Siek, Stuttgart. 4(2): 1-865.

Sengupta CK and Sengupta T. 1981. Cerambycidae (Coleoptera) of Arunachal Pradesh. Rec. Zool. Surv. India. 78: 133-154.

Singh S and Sreedevi K. 2017. Record of root borer, *Dorysthenes* (*Lophosternus*) Huegelii (Redtenbacher) (Coleoptera: Cerambycidae) on Kinnow mandarin in the Indian Punjab. Oriental Insects.

Singh J. 2021. Population dynamics and emergence pattern of apple root borer, *Dorysthenes hugelii* (Redt.) adults in Kullu valley. J. Entomol. Zoo. Studies. 9(3): 274-276.

Stebbing EP. 1914. Indian Forest Insects of economic importance. London. Pp.: 1-648.