

Notes on the poorly known species of the genus *Brachyrhynchus* laporte, 1833 (*Aradidae*: *Mezirinae*) from West Bengal (India) with a new report for the state fauna

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Abstract

In this study, I have discussed the poorly known species of a rarely occurred aradid genus *Brachyrhynchus* Laporte from West Bengal (India) along with a new report for the state. The description along with body parts measurements, drawings and photograph of dorsal habitus of the newly recorded taxon, *B. triangulus* Bergroth for West Bengal has been provided.

Keywords: *brachyrhynchus* laporte, 1833, west bengal, new report, state fauna

Introduction

One of the essential aspects of zoological research is to get knowledge on distribution of animal and maintenance of them in their original habitat for future (Dursun & Fent, 2015) [4]. For Aradidae fauna (flat bugs), around 2000 species under more than 200 genera are known to the world (see Kormilev & Froeschner, 1987; Schuh & Slater, 1995; Kaulfuss *et al.*, 2011) [12, 15, 9].

West Bengal is one of 29 states found in India, locating in the eastern region of the country and stretching from Himalayas in north to Bay of Bengal in south. Studies on flat bugs in West Bengal revealed with only 3 species (Distant, 1903) [3]. Perhaps no species has been published from the state for about over a century of period.

Several taxonomic revisions have been done on the genus *Brachyrhynchus* Laporte till date. Usinger & Matsuda (1959) [17] and Kormilev (1972) [11] synonymized this genus under the genus *Mezira* Amyot & Servile, 1843. The ambiguity of date of the publication of the genus *Brachyrhynchus* Laporte was clarified by Artois *et al.* (2013) [1].

Being a member of the subfamily Mezirinae under the flat bug family Aradidae, the genus *Brachyrhynchus* Laporte, 1833 [13] comprises only 8 species worldwide currently (GBIF, 2019) [5]. This genus is diagnosed with the following attributes: head narrowly compressed and with tooth on either side, antenniferous tubercles spinous; rostrum short and never extending beyond the rostral groove; pronotum medially transversely impressed, its lateral margin sinuate near middle and posterior margin strongly sinuate before scutellum; scutellum more or less triangular; corium longer than scutellum, membrane with numerous anastomosing veins; sternum with sulcation.

Materials and methods

Study Area

The Gorumara National Park is being the collection site and locating in Jalpaiguri district of West Bengal, India. It is limited in between 26°47'12.5" to 26°43'25.6" North and 88°52'4.2" E to 88°47'7.3" East.

Collection Methods and Preservation

Two specimens were collected from the decaying bark of Chilauni tree (*Schima wallichii*) with the help of scalpel and preserved in 75% ethyl alcohol in the field. By getting back to the entomology laboratory of Durgapur Government College, the bugs were drily preserved in insect cabinet for further study.

Identification of Specimen

The collected specimens were identified from Distant (1903) [3] and Kormilev (1971) [10].

Technical Supports

For identifying, digital imaging and drawing of the insect, I have used Binocular Microscope (Model: Zeiss SV6) with necessary aids like drawing tube and Sony Cyber shot camera.

Result and Discussions

Previously known Species from West Bengal

Only 2 species of the genus *Brachyrhynchus* Laporte, 1832 viz. *B. feanus* Bergroth, 1889 and *B. membranaceus* (Fabricius, 1803) were known from West Bengal (Distant, 1903) [3].

1. *Brachyrhynchus feanus* Bergroth, 1889

1889. *Brachyrhynchus feanus* Bergroth, Ann. Mus. Cir. Gen. 27: 737

[Ref. Distant, 1903] [3]

Distribution

India: Sikkim, Munghu (West Bengal); Burma (=Myanmar) (Distant, 1903) [3].

2. *Brachyrhynchus membranaceus* (Fabricius, 1803)

1803. *Aradus membranaceus* Fabricius, Syst. Rhyng.: 118 [Ref. Stål, 1868: 96; Distant, 1903: 160; Kormilev & Froeschner, 1987: 117; Heiss, 2001: 27; Henry *et al.*, 2013: 342-348] [16, 3, 12, 6, 8]

Distribution

India: Assam, Khasi Hills (Meghalaya), Sikkim, Munghu (West Bengal); Ceylon (= Sri Lanka), Burma (= Myanmar), Malay Peninsula and Malayan Archipelago (Distant, 1903)

[³]; Australia, China, Japan & Vietnam (Pham *et al.*, 2011)
 [¹⁴]; Western hemisphere (Henry *et al.*, 2013) [⁸].

Newly Recorded Species from West Bengal and Its Taxonomy

Brachyrhynchus triangulus Bergroth, 1889 [Fig. 1 & 2(a-g)]
 1889. *Brachyrhynchus triangulus* Bergroth, Ann. Mus. Cir.
 Gen. 27: 736

[Ref. Distant, 1903: 161; Kormilev & Froeschner, 1987:
 120; Heiss, 2001: 26; Heiss 2010: 175; Chandra &
 Khuswaha, 2015: 220-222] [³, ¹², ⁶, ⁷, ²]

Measurements (In Mm Scale)

Total body length - 11.11; head length – 1.01, head width

across the eyes – 1.06; total antennal length – 2.06, antennal segmental length as 1st segment – 0.50, 2nd segment – 0.52, 3rd segment – 0.54, and 4th segment – 0.48; total length of rostrum – 0.85, rostral segmental length as 1st segment – 0.23, 2nd segment – 0.26, 3rd segment – 0.36; pronotal length – 1.39, pronotal width across humeral angles – 2.19; scutellar length – 1.23, scutellar width at base – 1.08; hemelytra length – 3.11, hemelytra width near base of membrane – 1.07, abdominal length – 3.81.

Description

Body (Fig. 1) somewhat obovate, elongate, depressed, dorso-ventrally flattened, dark chocolate brown, antennae located at in front of the head.



Fig 1: *Brachyrhynchus triangulus* Bergroth, 1889 (Dorsal habitus)

Head

Head (Fig. 2a) as wide as long, with tooth on either side, antenniferous tubercles spinous, tylus greatly medially raised, jugum apically confluent and emarginated, vertex centrally elevated; antennae (Fig. 2b) dark chocolate brown, apex of apical segment conical and ochraceous, short, pilose, 4 segmented, 1st, 2nd and 3rd segments almost sub equal; eyes ochraceous; ocelli absent; rostrum short, reaching near the base of rostral groove, 3 segmented, apical segment longest, 1st and 2nd segments sub equal.

Thorax

Pronotum (Fig. 2c) dark chocolate brown, broader than long, with thick and coarse tuberculous punctures, pilose, anteriorly and medially deeply transversely sulcate, anterior sulcation forming collar like appearance, anterior half dorsally convex with 4 obscure callosities, anterior margin concave and strongly reflexed, lateral margins finely

serrated and as much sinuate at anterior $\frac{1}{3}$ rd, posterior half little paler, posterior margin strongly sinuate before base of scutellum and reflexed, anterior angles lobate, humeral angle broadly rounded; scutellum (Fig. 2d) with thick coarse tubercles and punctures, triangular, basal margins convex, apically narrowed, apex obtusely acuminate, lateral margins strongly reflexed; hemelytra (Fig. 2e) - clavus reduced, corium dark brown with rugulose, longer than scutellum, apically acuminate, with 2 veins strongly raised, membrane much darker with anastomosed veins, reaching to the base of last abdominal segment; sternal plates pale brown, pilose, pro-sternal plate weakly raised, its lateral margin transversely sulcated, meso and meta-sternal plates depressed; legs comparatively small, dark chocolate brown, with thick and coarse granules, pilose; fore leg (Fig. 2f) – fore coxae much closer each other, fore femora much thickened, granulate and with minute spines beneath; tarsi 2 segmented.

Abdomen

Dorsum dark chocolate brown, granulate, pilose, connexivum smooth, marginally weakly reflexed, venter (Fig. 2g) glossy pale brown, lateral margin of 6th segment

distinctly sinuate and somewhat rectangularly excavated; male terminal genitalia – pygophore dark brown, hairy, broadly triangulate and lobate.

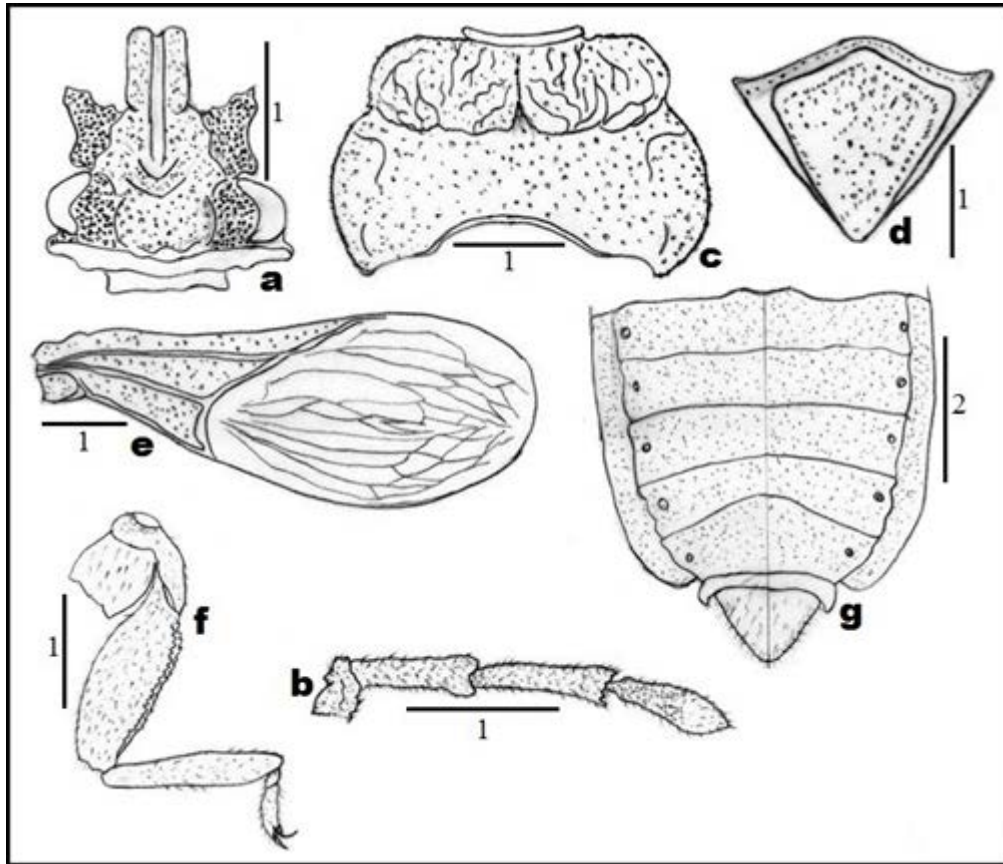


Fig 2(a-g): *Brachyrhynchus triangulus* Bergroth; a – Head (dorsal view), b – Antenna, c – Pronotum, d – Scutellum, e – Hemelytra, f – Fore leg, g – Venter of abdomen

Material Examined

2♂♂, Garumara, 26°46'19.3"N 88°47'40.6"E, 07.vi.2018, coll. S. Dhali.

Distribution

India: Andaman and Nicobar Island (Chandra & Khuswaha, 2015) [2], Assam (GBIF, 2020), West Bengal (NEW RECORD).

Distribution

Elsewhere

Myanmar (Distant, 1903) [3]; Australia, China, Laos, Philippines, Sri Lanka, Thailand, Vietnam (Pham *et al.*, 2011) [14].

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