



## Two new species of *Amemboa* Esaki (Heteroptera: Gerridae) from West Bengal, India

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### Abstract

*Amemboa mahananda* sp. nov. and *Amemboa bifurcata* sp. nov. are described from Mahananda Wildlife Sanctuary, in the Darjeeling district and from Kalikhola, in the Jalpaiguri district of West Bengal, and compared with all allied species. A species checklist of the genus *Amemboa* Esaki, 1925 and *Amemboides* Polhemus & Andersen, 1984 from India and their distribution in India and elsewhere is provided. *Amemboa kumari* (Distant, 1910) is reported for the first time from West Bengal and *Amemboa dentata* Polhemus & Andersen, 1984 is newly recorded from Himachal Pradesh.

**Key words:** *Amemboa*, *Amemboides*, Eotrechinae, Mahananda Wildlife Sanctuary, Gorumara, Chapramari, Kalikhola, Darjeeling, Jalpaiguri, West Bengal

### Introduction

The eotrechine water striders of the genus *Amemboa* Esaki show strong preferences for their hygropetric habitats, mainly small pools or stagnant water-bodies within undisturbed forest areas along sandy, rocky and muddy streambeds or river banks, especially in association with hill streams and waterfalls. They are generally found resting on wet soil near to the shore or edge of the water body. These small, oval bugs can be easily identified by the silvery markings on the dorsal surface of the body and by having the hind leg relatively shorter than the middle leg.

During a survey in the Darjeeling District and Jalpaiguri District of West Bengal, the authors collected two new species from two different forest streams, which are tributaries of Teesta River. These new species, described herein, are the fifth and sixth *Amemboa* species known from India.

### Materials and Methods

**Study Area:** The Mahananda Wildlife Sanctuary in the Darjeeling District of West Bengal, is situated at an altitude of 180 m in the Himalayan foothills. It is one of the major conservation areas in the ‘Dooars’ of North Bengal. The new species *Amemboa mahananda* sp. nov., was collected from a shady, stagnant pool along the Panchanoi River, a tributary of Teesta, within the Sanctuary. The other new species, *Amemboa bifurcata* sp. nov., was collected from a slow flowing jungle stream, the Kalikhola, in the Jalpaiguri District of West Bengal. The Kalikhola forms the borderline between two Conservation areas: the Gorumara National Park and Chapramari Wildlife Sanctuary.

**Methods:** The specimens were collected using a rectangle-shaped aquatic net, and preserved in 70% ethyl alcohol in glass vials. The morphological and genitalic studies were undertaken using a Leica M205A stereo zoom binocular microscope. The male genital segment was dissected and immersed in 10% KOH for 30 minutes to allow detailed studies.

## *Amemboa dentata* Polhemus & Andersen, 1984

*Material examined*: 5 apterous males, 5 apterous females, 3 nymphs; Loc: Guikhad River bed, Rajol, Kangra District, Himachal Pradesh; Dt: 9.4.2012; Coll: S. K. Ghosh & party.

**New Record**: to the state of Himachal Pradesh.

## Discussion

Currently, five species of *Amemboa* Esaki are known from India. A checklist of *Amemboa* with their distribution in India and elsewhere is provided in Table 1. The genus as a whole has a distribution centered on continental Asia, and including the proximal islands of Taiwan, Sumatra, Java, Borneo, Hainan and Mindanao (Polhemus & Andersen, 1984; Zettel, 1995; Zettel & Chen, 1996; Zettel *et al.*, 2007). The distribution of *Amemboa kumari* (Distant) was earlier reported to include Karnataka, Kerala, Orissa and Tamilnadu (Thirumalai, 2002). During surveys of the Darjeeling and Jalpaiguri districts of West Bengal, the authors collected *Amemboa kumari* (Distant) from Sikhiajhora, Alipurduar division of Jalpaiguri district, West Bengal, which is a new report from the State. A recent survey in the Kangra district of Himachal Pradesh (Guikhad Riverbed, Kangra dist.) collected *Amemboa dentata* Polhemus & Andersen, 1984 which is a new record for the state of Himachal Pradesh. The discovery of two new species indicates that the Darjeeling and Jalpaiguri region of West Bengal, which may be considered to be the Himalaya and Himalayan foothills, harbors a rich biodiversity of aquatic and semi-aquatic Heteroptera, some of which are still unknown to science. Our studies highlight that the genus is poorly documented within the Indian subcontinent and that more extensive field surveys are required to understand the distribution and diversity of this genus.

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