

Ochterus nicobarensis sp. nov. from Great Nicobar
Biosphere Reserve, Andaman and Nicobar Islands,
India (Hemiptera: Heteroptera: Ochteridae)

Kailash CHANDRA & E. Eyarin JEHAMALAR

Zoological Survey of India, New Alipore, Kolkata – 700 053, India;
e-mails: kailash611@rediffmail.com; jehamalar@gmail.com

Abstract. *Ochterus nicobarensis* sp. nov. (Hemiptera: Heteroptera: Nepomorpha: Ochteridae) is described from Great Nicobar Biosphere Reserve, Andaman and Nicobar Islands, and is the second *Ochterus* Latreille, 1807 species known from India.

Key words. Hemiptera, Heteroptera, Nepomorpha, Ochteridae, Great Nicobar Biosphere Reserve, Andaman and Nicobar Islands, India, Oriental Region

Introduction

The extant Ochteridae, commonly called ‘velvety shore bugs’, is a small family with three extant genera and 68 described species (HENRY 2009), distributed in the tropical and warm-temperate regions of the world (e.g., BAEHR 1989, SCHUH & SLATER 1995, D. A. POLHEMUS & J. T. POLHEMUS 2008, HENRY 2009, ZETTEL & LANE 2010). Their small size (ca. 3.5–10.0 mm) and the cryptic habitats of some species, such as mossy rocks along forested mountain streams and walls of waterfalls, have made it difficult to observe them in the field to learn more about their biology and ecology (GAPUD 2003). Adults do not go into water, but nymphs are occasionally seen clumsily swimming submerged just underneath the water’s surface (TAKAHASHI 1923). Because of their cryptic nature, ochterids have been poorly encountered in biological surveys, being taken only by experienced collectors, or at light traps set at night near water bodies. A number of new species of *Ochterus* Latreille, 1807 from the Oriental Region have been described in the past few decades (KORMILEV 1971, GAPUD & VALENTIN 1977, GAPUD 1995, NIESER & CHEN 1999, ZETTEL & LANE 2010). In this paper we describe another new species from Great Nicobar Island.

The Andaman and Nicobar Archipelago form a chain of more than 500 islands and islets situated in the southeastern part of the Bay of Bengal (Indian Ocean). The Great Nicobar Biosphere Reserve is situated on Great Nicobar Island, which is only about 80 nautical miles (ca. 150 km) northwest of Sumatra.

Materials and methods

The holotype specimen was glued on a card board, and photographs and measurements taken using a Leica Stereozoom Microscope (Leica M205A). The male genitalia were dissected to study the parameres and other characters. Measurements are provided in millimeters. The holotype and a paratype are deposited in Zoological Survey of India, New Alipore, Kolkata (ZSI).

Taxonomy

Ochterus nicobarensis sp. nov

(Figs. 1–5)

Type material. HOLOTYPE: ♂ (macropterous), **INDIA: NICOBAR ISLANDS:** Nicobar District, Great Nicobar Biosphere Reserve, Campbell Bay, Govind Nagar, Ring Road, attracted to light near a pond 1½ km away from sea, 40 ft., ambient temperature 26.8°C, N 07°00.075', E 093°54.594', 22.xi.2010, E. Eyarin Jehamalar, Reg. No. 2506/H15 // HOLOTYPE / *Ochterus / nicobarensis / sp. nov. / Ochteridae / Hemiptera / K.CHANDRA & E. E. JEHAMALAR* det. 2012. [red, printed] (ZSI). PARATYPE: 1 ♀ (macropterous), **INDIA: NICOBAR ISLANDS:** same data as holotype, Reg. No. 2507/H15 (ZSI).

Description. Male (holotype). Body opaque and oval in shape. Body length 4.06 mm, maximum width across hemelytra 2.13 mm.

Coloration. Black, opaque and wax coated appearance; venter of the body piceous; eyes bronze colour; frontal plate of head black and shiny and vertex opaque; frontoclypeus ochraceous and shiny; first two antennal segments and legs yellowish brown; anterolateral margins of pronotum and posterior margin of pronotum yellowish and pronounced at the centrobasal region of pronotum; embolium with an elongated basal spot and three square-to-round orange spots arranged serially below the elongated spot; clavus near to scutellum and apex of claval suture yellow.

Head. Length (dorsally along midline) 0.49 mm, width (across eyes) 1.32 mm; head wider than long; ocelli found very close to the eyes; frontal plate of head with numerous oblique striae; a ridge present running along center of frons from between ocelli to apex of frontal plate; eyes protruding posterolaterally over pronotal collar; antennal segments I and II short, globose; segments III and IV long, slender; lengths of antennal segments I–IV = 0.09, 0.10, 0.18, 0.26 mm; length of rostrum not discernable due to card mount.

Thorax. Length of pronotum (along midline) 0.86 mm, maximum width (across postero-pronotal angle) 2.06 mm; pronotum and scutellum both wider than long; pronotum, scutellum and hemelytra moderately punctured; calli on pronotum indistinct; collar small and separation indistinct; median yellow area of pronotum near to base of scutellum enclosing 13 piceous to black punctures; pronotum anterolaterally truncated, laterally convex, posterolateral angle less acute; posterior margin of pronotum trisinuate; pronotum above base of scutellum concave; length of scutellum 1.01 mm, width 1.53 mm.

Hemelytra. Length 2.89 mm, width (across membrane) 1.12 mm, length of clavus (along outer margin) 1.64 mm; hemelytra reaching apex of abdomen, and fully covering the abdomen laterally; membrane venation present but number of cells difficult to ascertain due to opaqueness.



Figs. 1–5. *Ochterus nicobarensis* sp. nov. 1 – female, dorsal view. 2 – female head, frontal aspect. 3 – female subgenital plate, ventral view. 4–5 – male, right paramere (4 – general view; 5 – detail of apical portion).

Legs. Length of hind tibia 1.8 mm, lengths of hind tarsal segments I–III = 0.12, 0.17, 0.20 mm. Remaining leg segments not visible due to card mount.

Genitalia. Genital segments retracted into abdomen, head of right paramere slightly elongate, appendices of paramere long, entire (not indented) apically, both the appendices similar in size, shaft of paramere elongate and bent sub-basally, base with large anterior and small posterior processes (Figs. 4–5).

Female (Figs. 1–3). General structure and colouration similar to that of holotype with following exceptions: hemelytra not fully covering the abdomen posterolaterally; body length 3.9 mm, width 2.1 mm; head length 0.52 mm, width 1.3 mm; eye length 0.61 mm, width 0.38 mm; length of antennal segments I–IV = 0.09, 0.13, 0.25, 0.28 mm; pronotal length 0.9 mm, width 2.17 mm; length of scutellum 0.82 mm, width 1.2 mm; hemelytral length 2.94 mm, width 1.23 mm; claval length along outer margin 1.56 mm; length of fore femur 1.0 mm. The apex of subgenital plate slightly concave.

Differential diagnosis. The body of *Ochterus nicobarensis* sp. nov. is shiny, giving a wax coated appearance, and the punctations are less prominent when compared to *O. marginatus*. In *O. marginatus* the body has a velvety appearance, and is not shiny, and the punctures are very prominent. There is also a difference on the base of the central ridge on the frontal plate of the head; in *O. nicobarensis* sp. nov. the base of the ridge between the ocelli is upwardly sulcate, whereas in *O. marginatus* this sulcus is less prominent. The head of the right paramere is rounded and the appendages are apically indented in *O. marginatus* (KORMILEV 1971, RIEGER 1977, NIESER & CHEN 1999), while in *O. nicobarensis* sp. nov. the head is elongated and the apices of the appendages are entire.

Etymology. *Ochterus nicobarensis* sp. nov. is named after the type locality, the Nicobar Islands.

Bionomics. The male and female specimens were collected at a light trap set near a pond 1.5 km away from the sea on a rainy day. No other aquatic bugs were attracted to the light on that day.

Distribution. Known only from the type locality, Great Nicobar Island (India).

Discussion

So far, two zoological surveys collecting aquatic and semiaquatic bugs have been made in the area: in 1845–1847 by Danish Frigate ‘Galatea’ in Nicobar Islands (Car Nicobar, Nancowry) (ANDERSEN 1964) and also by the Austrian-Indian Hydrobiological Mission in the year 1976 in Andaman Islands (North and South Andaman) (J. T. POLHEMUS & STARMÜHLNER 1990). In 2010, the second author of this contribution has conducted a 48 day faunistic survey in Great Nicobar to explore the fauna of the Great Nicobar Biosphere Reserve (GNBR). As a result 22 species of aquatic Heteroptera were collected, of which 13 species were identified including five new records, 5 species yet to be identified, 3 new species (Gerridae) yet to be described and one new species, *Ochterus nicobarensis* sp. nov., treated here. According to MONTANDON (1910), ANDERSEN (1964), LANSBURY (1972), J. T. POLHEMUS (1990), J. T. POLHEMUS & STARMÜHLNER (1990), J. T. POLHEMUS & D. A. POLHEMUS (1994), THIRUMALAI (2002, 2007) and CHANDRA et al. (in press), 44 species of aquatic and semi-aquatic Heteroptera were

so far recorded from Andaman and Nicobar Islands including four endemic species, namely *Tenagobonus nicobarensis* Andersen, 1964, *Calyptobates andaman* J. T. Polhemus & D. A. Polhemus, 1994 (both Gerridae), *Rhagovelia (Neorhagovelia) andaman* J. T. Polhemus, 1990 (Veliidae), and *Ranatra distanti* Montandon, 1910 (Nepidae). By the present description of new species one more endemic species is added to the aquatic Heteroptera fauna of Andaman and Nicobar Islands, representing the first record of the family Ochteridae in the studied area.

So far only a single species of Ochteridae is known from India. *Ochterus marginatus marginatus* has been recorded in the following states of India: Assam, Bihar, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Orissa, Pondicherry, Tamil Nadu, Uttar Pradesh, and West Bengal (DISTANT 1906, 1910; THIRUMALAI 1989, 2001, 2007; BAL & BASU 2004; THIRUMALAI et al. 2007).

Acknowledgements

The authors are thankful to the Director, Dr. K. Venkataraman (Zoological Survey of India, Kolkata) for the facilities and encouragement. We also thank to Dr. Dinesh Kannan (Divisional Forest Officer, Nicobar Islands, Campbell Bay), who provided us with a field guide during our light trap collecting in the field. We are also thankful to Dr. Herbert Zettel (International Research Institute of Entomology, Natural History Museum, Vienna, Austria), for providing some literature on the family Ochteridae.

References

- ANDERSEN N. M. 1964: The genus *Tenagobonus* Stål in the collections of the zoological museum of Copenhagen (Hemiptera: Gerridae). *Entomologiske Meddelelser* **32**: 321–334.
- BAEHR M. 1989: Review of the Australian Ochteridae (Insecta, Heteroptera). *Spixiana* **11**: 111–126.
- BALA A. & BASU R. C. 2004: Insecta: Hemiptera: Water-bugs. Pp. 293–310. In: *Fauna of Manipur; Part-2 (Insects). State Fauna Series. Vol. 10*. Zoological Survey of India, Kolkata, v + 625 pp.
- CHANDRA K., JEHAMALAR E. E. & RAGUNATHAN C., in press: Aquatic and semiaquatic Heteroptera (Hemiptera: Insecta) of Great Nicobar Biosphere Reserve, Andaman and Nicobar Islands, India. *Records of the Zoological Survey of India*.
- DISTANT W. L. 1906: Rhynchota. Vol III. Heteroptera-Homoptera. In: BINGHAM C. T. (ed.): *The fauna of British India including Ceylon and Burma*. Taylor and Francis, London, xiv + 503 pp.
- DISTANT W. L. 1910: Rhynchota. Vol V. Heteroptera: Appendix. In: SHIPLEY A. E. & MARSHALL G. A. K. (eds.): *The fauna of British India including Ceylon and Burma*. Taylor and Francis, London, xii + 362 pp.
- GAPUD V. P. 1995: A new species of *Ochterus* Latreille (Hemiptera: Ochteridae) from the Philippines. *Asia Life Sciences* **4**: 41–44.
- GAPUD V. P. 2003: Two new Philippine *Ochterus* Latreille (Insecta: Heteroptera: Ochteridae) and checklist of Philippine species. *Annalen des Naturhistorischen Museums in Wien, Series B* **104** (2002): 99–108.
- GAPUD V. P. & VALENTIN H. O. S. 1977: The Ochteridae (Hemiptera) of the Philippines. *Kalikasan, Philippine Journal of Biology* **6**: 269–300.
- HENRY T. J. 2009: Biodiversity of Heteroptera. Pp. 223–263. In: FOOTITT R. & ADLER P. (eds.): *Insect Biodiversity: Science and Society*. Wiley – Blackwell, United Kingdom, 632 pp.
- KORMILEV N. A. 1971: Ochteridae from the Oriental and Australian regions (Hemiptera-Heteroptera). *Pacific Insects* **13**: 429–444.
- LANSBURY I. 1972: A review of Oriental species of *Ranatra* Fabricius (Hemiptera-Heteroptera: Nepidae). *Transactions of the Royal Entomological Society of London* **124**: 287–341.

- LATRIELLE P. A. 1804: *Histoire naturelle, generale et particuliere des crustaces et des insects. Vol. 12.* Dufart, Paris, 424 pp., 4 pls.
- MONTANDON A. L. 1910: Nepidae. Notes et descriptions d'espèces nouvelles. *Annales Musei Nationalis Hungarici* **8**: 161–171.
- NIESER N. & CHEN P. P. 1999: Sixteen new species of Nepomorpha mainly from Sulawesi. Notes on Malesian aquatic and semiaquatic bugs (Heteroptera), VIII. *Tijdschrift voor Entomologie* **142**: 77–123.
- POLHEMUS D. A. & POLHEMUS J. T. 2008: A new Indian Ocean species of *Ochterus* from the island of Mauritius (Hemiptera: Heteroptera: Ochteridae). *Acta Entomologica Musei Nationalis Pragae* **48**: 281–288.
- POLHEMUS J. T. 1990: Miscellaneous studies on the genus *Rhagovelia* Mayr (Heteroptera: Veliidae) in Southeast Asia and the Seychelles Islands, with keys and descriptions of new species. *Raffles Bulletin of Zoology* **38**: 65–75.
- POLHEMUS J. T. & POLHEMUS D. A. 1994: The Trepobatinae (Heteroptera: Gerridae) of new Guinea and surrounding regions, with a review of the world fauna. Part 2. Tribe Naboandelini. *Entomologia Scandinavica* **25**: 333–359.
- POLHEMUS J. T. & STARMÜHLNER F. 1990: Results of the Austrian-Indian Hydrobiological Mission 1976 to the Andaman-Islands: Part X: list of aquatic Hemiptera collected in the inland waters of the Andaman Islands. *Annalen des Naturhistorischen Museums in Wien* **91B**: 43–51.
- RIEGER Ch. 1977: Neue Ochteridae aus der Alten Welt (Heteroptera). *Deutsche Entomologische Zeitschrift, Neue Folge* **24**: 213–217.
- SCHUH R. T. & SLATER J. A. 1995: *True Bugs of the World (Hemiptera: Heteroptera). Classification and Natural History.* Cornell University Press, Ithaca, New York, 336 pp.
- TAKAHASHI R. 1923: Observation on the Ochteridae. *Bulletin of the Brooklyn Entomological Society* **18**: 67–68.
- THIRUMALAI G. 1989: Aquatic and semi aquatic Hemiptera (Insecta) of Javadi Hills, Tamil Nadu. *Records of Zoological Survey of India, Occasional Paper* **118**: 1–63 + 3 pls.
- THIRUMALAI G. 2001: Insecta: Aquatic and semi-aquatic Heteroptera. Pp. 111–127. In: *Fauna of Nilgiri Biosphere Reserve. Fauna of Conservation Area Series. Vol. 11.* Zoological Survey of India, Kolkata.
- THIRUMALAI G. 2002: A checklist of Gerromorpha (Hemiptera) from India. *Records of Zoological Survey of India* **100(1–2)**: 55–97.
- THIRUMALAI G. 2007: A synoptic list of Nepomorpha (Hemiptera: Heteroptera) from India. *Records of Zoological Survey of India, Occasional Paper* **273**: 1–84.
- THIRUMALAI G., SHARMA R. M. & CHANDRA K. 2007: A checklist of aquatic and semiaquatic Hemiptera (Insecta) of Madhya Pradesh. *Records of Zoological Survey of India* **107(4)**: 71–91.
- ZETTEL H. & LANE D. J. W. 2010: A new species of *Ochterus* Latreille (Heteroptera: Ochteridae) from Brunei. *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* **62**: 97–101.