



## FIRST RECORD OF THREE SPECIES OF *HELOCHARES* (COLEOPTERA: HYDROPHILIDAE) FROM WESTERN GHATS OF INDIA

RITA DEB<sup>1\*</sup> AND K A SUBRAMANIAN<sup>1</sup>

Zoological Survey of India, Southern Regional Centre, Chennai 600028, Tamil Nadu, India

\*Email: rita.deb24@zsi.gov.in (corresponding author): ORCID ID 0000-0002-3015-1753

### ABSTRACT

Hydrophilidae is one of the families of aquatic beetles which are known as water scavenger beetles. There are about 212 species of aquatic beetles belonging to Hydrophilidae from India. 10 species of genus *Helochares* Mulsant, 1844 had been reported from India out of which two species has been reported from Western Ghats. The present study documents three more species namely *Helochares crenatus* Régimbart, 1903, *Helochares lentus* Sharp, 1890, *Helochares negatus* Hebauer, 1995 from Western Ghats region of Tamil Nadu and Kerala as new records.

**Key words:** Hydrophilidae, *Helochares*, aquatic beetles, water scavenger beetles, new record, taxonomy, Western Ghats, distribution, Tamil Nadu, Kerala, Species diversity

The Western Ghats are a mountain range running parallel along the western coast of India starting from Gujarat and ending in Tamil Nadu covering the states of Maharashtra, Goa, Karnataka and Kerala. It is well known for its biodiversity and high number of species endemism. About 24.79% species of animals are found exclusively living in this region. The order Coleoptera is hard bodied beetles and holometabolous in nature. India harbours 776 species of aquatic beetles belonging to 137 genera, 17 families under 3 suborders. Western Ghats of India harbours around 154 described species of aquatic coleopterans, out of which, 42 species under 18 genera belongs to the family Hydrophilidae (Chandra et al., 2017; 2020). The genus *Helochares* Mulsant, 1844 is a large genus of the Hydrophilidae comprising 159 described species distributed worldwide (Hansen, 1999; Short and Hebauer, 2006; Short and Fikacek, 2011; Giron et al., 2021). An adult *Helochares* occurs in ponds and at the edge of slow streams, or on surface of wet stones covered with leaves (Yang et al., 2021). The present study reports three species of *Helochares* Mulsant, 1844 as new records from the Western Ghats of India.

### MATERIALS AND METHODS

This study is based on some recent collections of 17 examples of genus *Helochares* Mulsant, 1844 by ZSI scientists in different sampling sites of Western Ghats from Kanyakumari District, Tamil Nadu (08.46770°N, 77.33164°E; 08.49090°N, 77.32606°E) and Trivandrum District, Kerala (08.67534°N, 77.08522°E). The specimens are preserved in the

repository of the Zoological Survey of India, Southern Regional centre, Chennai and Zoological Survey of India, Western Ghat Regional Centre, Kozhikode. The material examined was collected by means of light trap near water bodies. The beetles were killed using ethyl alcohol. The specimens were studied in the Western Regional Centre, Zoological Survey of India, Pune. The photographs were taken using Leica stereo zoom microscope (S9i).

### RESULTS AND DISCUSSION

A total of 10 species of *Helochares* Mulsant, 1844 have been recorded from India so far (d'Orchymont 1928 and Giron et al., 2021) (Table 1).

Three species of *Helochares* Mulsant, 1844 are reported as new records from Western Ghats of India. These are *H. crenatus* Régimbart, 1903, *H. lentus* Sharp, 1890, *H. negatus* Hebauer, 1995. Identification of specimens are based on Dong and Bian (2021), Devi et al. (2014), Species synonyms are only based on the original citation and the latest citation on Giron and Short (2021). The latest citation is indicated by a colon symbol (:) between species and author's name. The details of new recorded species like material examined, distribution with images of adult are given.

*Helochares crenatus* Régimbart, 1903 (Fig. 1)

1903. *Helochares* (*Graphelochares*) *crenatus* Régimbart, Ann. Soc. Ent. Fr., 72: 54.

2021. *Helochares crenatus*: Giron and Short, *ZooKeys* 1045: 173

Table 1. Distribution of *Helochaeres* in India

Species	Distribution
<i>Helochaeres altus</i> d Orchymont, 1943	Tamil Nadu (Nilgiri)
<i>Helochaeres anchoralis</i> Sharp, 1890	Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Maharashtra, Manipur, Tripura, Uttar Pradesh and West Bengal
<i>Helochaeres crenatuloides</i> d Orchymont, 1943	Madhya Pradesh, Uttar Pradesh
<i>Helochaeres crenatus</i> Régimbart, 1903	Andhra Pradesh, Bihar, Madhya Pradesh, Pondicherry, Tamil Nadu, Tripura, West Bengal
<i>Helochaeres densus</i> Sharp, 1890	Andaman Island, Madhya Pradesh, Nicobar Is., Tamil Nadu, Uttarakhand, Uttar Pradesh
<i>Helochaeres hiekei</i> Hebauer, 1995	Karnataka
<i>Helochaeres lentus</i> Sharp, 1890	Kerala, Tamil Nadu
<i>Helochaeres minor</i> d Orchymont, 1925	Bihar
<i>Helochaeres negatus</i> Hebauer, 1995	Kerala, Tamil Nadu
<i>Helochaeres pallens</i> (MacLeay, 1825)	Andaman Island, Assam, Bihar, Madhya Pradesh, West Bengal



Figs. 1-3. Dorsal habitus of *Helochaeres* spp.  
1. *Helochaeres negatus* Hebauer, 1995; 2. *Helochaeres crenatus* Régimbart, 1903; 3. *Helochaeres lentus* Sharp, 1890

Material examined: 1 ex., Kilaviar, Kulasekaram range, Kanyakumari district, Tamil Nadu, 22.ii.2020, coll. Varadaraju and party.

Distribution: India: Andhra Pradesh, Bihar, Madhya Pradesh, Pondicherry, Tamil Nadu, Tripura and West Bengal. Elsewhere: Cambodia, Indonesia and Philippines.

*Helochaeres negatus* Hebauer, 1995 (Fig. 2)

1995. *Helochaeres* (*Hydrobaticus*) *negatus* Hebauer, Acta Coleopterologica 11(3): 5

2021. *Helochaeres negatus*: Giron and Short, ZooKeys 1045: 188

Material examined: 13 ex., Kuttar, Kulasekaram Range, Kanyakumari district, Tamil Nadu, 21.ii.2020, coll. Varadaraju and party; 2 ex., Vithura, Peppara WLS, Trivandrum district, Kerala, 4.xii.2021, coll. P. Girish Kumar and party.

Distribution: India: Kerala, Tamil Nadu. Elsewhere: Bangladesh, Nepal.

*Helochaeres lentus* Sharp, 1890 (Fig. 3)

1890. *Helochaeres lentus* Sharp, Trans. of the Ent. Soc. of Lond., 352

2021. *Helochaeres lentus*: Giron and Short, ZooKeys 1045: 180

Material examined: 1 ex., Vithura, Peppara WLS, Trivandrum district, Kerala, 4.xii.2021, coll. P. Girish Kumar and party.

Distribution: India: Andhra Pradesh, Kerala. Elsewhere: Bangladesh, Cambodia, China, Indonesia, Laos, Malaysia, Nepal, Sri Lanka, Thailand and Vietnam.

Two species of *Helochaeres* were earlier recorded from Western Ghat i.e., *H. altus* d Orchymont, 1943 and *H. hiekei* Hebauer, 1995 (Hansen, 1999). The present study reports three more species from one of the 36 global biodiversity hotspots. Devi et al. (2014) mentioned *Helochaeres atropiceus* Régimbart, 1903 as a new record to Manipur as well as India. However, Giron and Short (2021) transferred the species to the genus *Peltochaeres* Régimbart, 1907 based on the redescription and biological notes on *Peltochaeres atropiceus* by Jia and Tang (2018). Therefore, this species is not included in the list of Indian *Helochaeres* (Table 1).

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#### AUTHOR CONTRIBUTION STATEMENT

Both the authors have equally contributed.

#### CONFLICT OF INTEREST

No conflict of interest.

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