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## **TAXONOMIC STUDIES ON A COLLECTION OF CHALCIDOID WASPS (HYMENOPTERA : CHALCIDOIDEA) FROM SUNDERBANS, WEST BENGAL, INDIA**

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### **INTRODUCTION**

The Sunderbans area is composed of a group of Islands from the mouth of the river Hoogly on the west and extending up to the river Meghna in the east, covering the districts North and South 24 Parganas of the state of West Bengal within the Indian territory and the districts Khulna and Barishal in Bangladesh. It lies approximately 87° 51'- 91° 30' east longitude and 21° 31'- 22° 30' north latitude. It is considered as the largest single mangrove belt of the world comprising an area of 9827 sq. km of which 4264 sq. km comes under the jurisdiction of India.

No detailed study on the chalcidoid wasps of Sunderbans is done so far. So in this paper we are listing 20 species of them from Sunderbans for the first time. The sample collections were taken from Dwarikapur and Bagabadpur. All the identified specimens are deposited in the 'National Zoological Collections' of the Zoological Survey of India, Kolkata (NZSI).

The following abbreviations are used in the text : BMNH = The Natural History Museum, London, England; DZCU = Department of Zoology, University of Calicut, Kerala, India; NM = Entomologicke oddeleni Museum, Praha, CSSR; NRS = Naturhistoriska Riksmuseet, Stocholm, Sweeden; NZSI = 'National Zoological Collections' of the Zoological Survey of India, Kolkata, India; QMB = Queensland Museum, Brisbane, Australia; USNM = United States National Museum, Washington DC, USA; ZMUM = Zoological Museum of Moscow Lomonslov State University, Moscow, Russia; ZSIC = Zoological Survey of India, Culcutta (= Kolkata), India; ZSIK = Western Ghats Field Research Station, Zoological Survey of India, Kozhikode, Kerala, India.

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## Family CHALCIDIDAE

1. *Antrocephalus validicornis* (Holmgren)

1869. *Halticella validicornis* Holmgren, 438, Lectotype Male, Java (NRS).

1989. *Antrocephalus validicornis* (Holmgren) : Narendran, 45, Lectotype examined.

*Material examined* : 2 Males, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. Nos. 10606/H3 & 10607/H3 (NZSI).

*Distribution* : India (Present record) : West Bengal (Present record).

*Elsewhere* : Indonesia (Java), Malaysia and Philippines.

2. *Brachymeria lasus* (Walker)

1841. *Chalcis lasus* Walker, 219, Lectotype Female, India (BMNH).

1973. *Brachymeria lasus* (Walker) : Joseph *et al.*, 29-32.

*Material examined* : 1 Male, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10608/H3 (NZSI).

*Distribution* : India : Andaman & Nicobar Islands, Arunachal Pradesh, Bihar, Delhi, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Punjab, Tripura, Uttar Pradesh and West Bengal.

*Elsewhere* : Worldwide.

3. *Hockeria fronta* Narendran

1989. *Hockeria fronta* Narendran, 104, Female, India (DZCU).

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10609/H3 (NZSI).

*Distribution* : India : Kerala, Tamil Nadu, West Bengal (Present record).

4. *Tropimeris monodon* Boucek

1958. *Tropimeris monodon* Boucek, 481, Female, India (NM).

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10614/H3 (NZSI).

*Distribution* : India : Kerala, Maharashtra, West Bengal (Present record).

*Elsewhere* : Indonesia and Sri Lanka.

### Family EULOPHIDAE

#### 5. *Aprostocetus bangaloricus* Narendran

2003. *Aprostocetus bangaloricus* Narendran, (in Hayat *et al.*), 323, Female, India (ZSIK).

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10558/H3 (NZSI).

*Distribution* : India : Karnataka, West Bengal (Present record).

#### 6. *Aprostocetus ricosus* Narendran

2007. *Aprostocetus ricosus* Narendran, 88, Female, India (ZSIC).

*Material examined* : 2 Females, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10559/H3 & 10560/H3 (NZSI).

*Distribution* : India : Kerala, Orissa, Uttar Pradesh, West Bengal (Present record).

#### 7. *Aprostocetus vatiata* Narendran

2007. *Aprostocetus vatiata* Narendran, 103, Female, India (ZSIC).

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10561/H3 (NZSI).

*Distribution* : India : Kerala, Maharashtra, Uttar Pradesh, West Bengal (Present record).

#### 8. *Leptocybe invasa* Fisher & LaSalle

2004. *Leptocybe invasa* Fisher & LaSalle, (in Mendel *et al.*), 103, Female, Male, Israel, Syria.

*Material examined* : 31 Females, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. Nos. 10562/H3 to 10592/H3 (NZSI).

*Distribution* : India : Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, West Bengal (Present record).

*Elsewhere* : Algeria, Iran, Israel, Italy, Jordan, Kenya, Morocco, Spain, Syria, Turkey and Uganda.

*Remarks* : This is a serious pest of *Eucalyptus* and has widely affected the *Eucalyptus* plantations in Sunderbans.

### 9. *Neotrichoporoides curiosus* Narendran & Girish Kumar

2006. *Neotrichoporoides curiosus* Narendran & Girish Kumar, 12, Female, India (ZSIC)

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10593/H3 (NZSI).

*Distribution* : India : Kerala, West Bengal (Present record).

### 10. *Tetrastichus dulciculus* Narendran

2007. *Tetrastichus dulciculus* Narendran, 255, Female, India (ZSIK).

*Material examined* : 10 Females, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. Nos. 10594/H3 to 10603/H3 (NZSI). 1 Female, India : West Bengal; S-24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10604/H3 (NZSI).

*Distribution* : India : Kerala, West Bengal (Present record).

### 11. *Elasmus punensis* Mani & Saraswat

1972. *Elasmus punensis* Mani & Saraswat, 479, Female, India (USNM).

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10605/H3 (NZSI).

*Distribution* : India : Karnataka, Kerala, Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal (Present record).

*Elsewhere* : Sri Lanka.

## Family EURYTOMIDAE

### 12. *Philolema albitarsis* (Motschulsky)

1863. *Eurytoma albitarsis* Motschulsky, 41, Female, Sri Lanka (ZMUM).

1988. *Acantheurytoma albitarsis* (Motschulsky): Boucek, 117.

2008. *Philolema albitarsis* (Motschulsky), Noyes, Universal Chalcidoidea database. Updated.

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10610/H3 (NZSI).

*Distribution* : India : Andhra Pradesh, Karnataka, Kerala, West Bengal (Present record).

*Elsewhere* : Sri Lanka.

### 13. *Eurytoma agalica* Narendran

1994. *Eurytoma agalica* Narendran, 239, Female, India (DZCU).

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10611/H3 (NZSI).

*Distribution* : India : Kerala, Tamil Nadu, West Bengal (Present record).

### 14. *Eurytoma chaitra* Narendran

1994. *Eurytoma chaitra* Narendran, 228, Female, India (DZCU).

*Material examined* : 1 Female, India : West Bengal; S-24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10612/H3 (NZSI).

*Distribution* : India : Karnataka, Kerala, West Bengal (Present record).

### 15. *Eurytoma tanjorensis* Narendran

1994. *Eurytoma tanjorensis* Narendran, 246, Female, India (DZCU).

*Material examined* : 1 Female, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10613/H3 (NZSI).

*Distribution* : India : Tamil Nadu, West Bengal (Present record).

## Family PTEROMALIDAE

### 16. *Metastenus indicus* Sureshan & Narendran

2002. *Metastenus indicus* Sureshan & Narendran, 125, Female, Male, India (ZSIK).

*Material examined* : 4 Females, India : West Bengal; S- 24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10615/H3 to 10618/H3 (NZSI).

*Distribution* : India : Kerala, West Bengal (Present record).

### 17. *Notoglyptus scutellaris* (Dodd & Girault)

1915a. *Merismus scutellaris* Dodd & Girault, (in Girault, 1915a), 328, Female, Australia (QMB).

1988. *Notoglyptus scutellaris* (Dodd & Girault): Boucek, 466.

*Material examined* : 2 Females, India : West Bengal; S-24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10619/H3 & 10620/H3 (NZSI).

*Distribution* : India : Delhi, Kerala, Uttar Pradesh, West Bengal (Present record).

### 18. *Propicroscytus mirificus* (Girault)

1915b. *Arthrolysis mirificus* Girault, 191, Female, Australia (QMB).

1941. *Propicroscytus mirificus* (Girault): Szelenyi, 123.

*Material examined* : 3 Females, India : West Bengal; S-24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10621/H3 to 10623/H3 (NZSI). 2 Males, India : West Bengal; S-24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10624/H3 & 10625/H3 (NZSI).

*Distribution* : India : Andhra Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Uttar Pradesh, West Bengal (Present record).

*Elsewhere* : Australia, Indonesia, Malaysia, China and Sri Lanka.

### 19. *Pteromalus keralensis* Sureshan

2001. *Pteromalus keralensis* Sureshan, 12, Female, India (ZSIK).

*Material examined* : 1 Female, India : West Bengal; S-24 Parganas Dt.; Sunderbans; Dwarikapur, 24.xi.2007, Coll. Girish Kumar, P., Reg. No. 10626/H3 (NZSI).

*Distribution* : India : Kerala, West Bengal (Present record).

### 20. *Pteromalus puparum* (Linnaeus)

1758. *Ichneumon puparum* Linnaeus, 567, Sweden (*Linn. Soc. London*).

1795. *Pteromalus puparum* (Linnaeus): Swederus, 203. Additional citation: Fitton (1978).

*Material examined* : 1 Female, India : West Bengal; S-24 Parganas Dt.; Sunderbans; Bagabadpur, 25.xi.2007, Coll. Girish Kumar, P., Reg. No. 10627/H3 (NZSI).

*Distribution* : India : Assam, Bihar, Himachal Pradesh, Kerala, Meghalaya, Punjab, Tamil Nadu, Uttar Pradesh, Uttarakhand, West Bengal (Present record).

## SUMMARY

Four species of Chalcididae viz., *Antrocephalus validicornis* (Holmgren), *Brachymeria lasus* (Walker), *Hockeria fronta* Narendran and *Tropimeris monodon* Boucek, Seven species of Eulophidae viz., *Aprostocetus bangaloricus* Narendran, *A. ricosus* Narendran, *A. vatiata* Narendran, *Leptocybe invasa* Fisher & LaSalle, *Neotrichoporoides curiosus* Narendran & Girish Kumar, *Tetrastichus dulciculus* Narendran and *Elasmus punensis* Mani & Saraswat, Four species of Eurytomidae viz., *Philolema albitarsis* (Motschulsky), *Eurytoma agalica* Narendran, *E. chaitra* Narendran and *E. tanjorensis* Narendran and Five species of Pteromalidae viz., *Metastenus indicus* Sureshan & Narendran, *Notoglyptus scutellaris* (Dodd & Girault), *Propicroscytus mirificus* (Girault), *Pteromalus keralensis* Sureshan and *P. puparum* (Linnaeus) are identified and reported here for the first time from Sunderbans, West Bengal, India.

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