

Additional records to the Pteromalidae (Hymenoptera, Chalcidoidea) fauna of Odisha with first report of seven species from India

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ABSTRACT: The survey conducted to find out the diversity of pteromalids (Hymenoptera, Pteromalidae) in Odisha and documented 22 species for the first time in the state, representing 18 genera and 03 subfamilies. Notably, seven of these species were recorded for the first time in India. In addition, a comprehensive checklist of the Pteromalidae of Odisha has been prepared, comprising 47 species across 26 genera and 03 subfamilies © 2026 Association for Advancement of Entomology

KEY WORDS: New records, checklist, diversity

INTRODUCTION

The family Pteromalidae is one among the largest families of parasitic Hymenoptera, belonging to the superfamily Chalcidoidea, whose species are distributed in all zoogeographical regions worldwide (Mitroiu *et al.*, 2011). They are primary or secondary parasitoids of various insect orders such as Coleoptera, Diptera, Lepidoptera, Hymenoptera, and Hemiptera at their different developmental stages (Bouèek and Rasplus, 1991; Desjardins *et al.*, 2007). The family Pteromalidae is one of the known groups within the Chalcidoidea with its economic importance (Shaaban *et al.*, 2005). The family is represented by 34 subfamilies, about 648 genera, and approximately 4275 species worldwide (Gibson *et al.*, 2021). Recently, Burk *et al.* (2022) revisited the genera of Pteromalidae based on their classical morphology and many genera were shifted

to elevated subfamilies, consequently, some of subfamilies were omitted from the family Pteromalidae and upgraded to new family status. The Indian Pteromalidae fauna is now represented with 242 species, 96 genera under 6 subfamilies. The state of Odisha is only explored by Sureshan 2009 and Noyes 2019, while the state of Odisha is one of state of diverse flora and climatic condition, and this condition favours the insect diversity and the parasitic fauna. Therefore, the present study was undertaken to investigate the Pteromalidae faunal diversity of Odisha, India.

MATERIALS AND METHODS

The study was conducted to explore the diversity of Pteromalidae fauna in Odisha. A field survey of 14 districts - Puri, Cuttack, Khorda, Ganjam, Jajpur, Jagatsinghpur, Nayagarh, Bhadrak, Balasore, Mayurbhanj, Angul, Dhenkanal, and Kendrapara

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of Odisha - was carried out during 2021-2023. Specimens of Pteromalid insects were collected from the field using a sweeping net and yellow pan trap. Insect infested plant hosts, along with parasitized stages of insect pupae, larvae, eggs, and adults, were collected and reared in the laboratory, and the emerged Pteromalid parasitoids were gathered. The specimens were properly preserved in 80% ethyl alcohol. Further treatment and studies were conducted at the Forest Entomology Discipline, Forest Research Institute, Dehradun. The specimens were dehydrated following standard procedures of serial dilution, and specimens were exposed to HMDS for one hour. Insect specimens were preserved by dry mounting on triangular cards for further identification and photography. The specimens were photographed using a Leica M205C stereo-zoom trinocular microscope. Genus-level identification was completed with keys from Bouèk (1988), Bouèk and Rasplus (1991), Gibson *et al.* (1993), Sureshan (2003), Sureshan and Narendran (2004), and Graham (1969), while species-level identification was based on literature sourced from the Universal Chalcidoidea Database (Noyes, 2019) and recent publications. The morphological terminology used in this paper is based on Bouèk's work in 1988.

Terminology: Ant- Antennae; F1-F7- Funicular segments 1-7; POL- Post ocellar length; OOL- Ocello ocular length; FW- Forewing; SMV- Sub marginal vein; MV- marginal vein; STV- stigma vein; PMV-Post marginal vein; T1-T8- Tergum 1-8; FRI- Forest Research Institute; NFIC- National Forest Insect Collection.

RESULTS AND DISCUSSION

The result exhibited in the table 1 revealed that, a total 22 species belonging to 17 genera and 3 subfamilies were recorded in this study from Odisha (Figs. 1, 2). Among these seven species like *Halticoptera andriscui* Mitroiu, *Halticoptera crius* Walker, *Halticoptera flavicornis* Spinola, *Merismus megapterus* Walker, *Stictomischus obscurus* (Walker), *Stictomischus longiventris* (Thomson), and *Anisopteromalus quinarius* Gokhman & Baur were reported for the first time in India. The subfamily Pteromalinae, was recorded

to be the most diverse with a maximum 11 species, followed by Miscogasterinae (08 species) and Pachyneurinae (03) in this study. Classification and brief diagnostic characters of newly recorded species has given in the systematics section. Additionally, checklist of Pteromalidae species of Odisha has been revised in view of this study and reclassification of Burks *et al.* (2022) (Table 1).

Systematics

Order: Hymenoptera

Super-family: Chalcidoidea

Family: Pteromalidae

Subfamily: Miscogasterinae

Genus: *Halticoptera* Spinola

1. *Halticoptera andriscui* Mitroiu, 2005

Diagnosis: Female. Body length 1.89mm. Body bluish black in colour. Antennal formula 11263; F1 is shortest funicular segment. Antenna present just below ocular line. Legs pale yellow in colour except brown tarsal claws. eyes cupreous; POL 1.4x OOL; FW hyaline, veins paler. Mesosoma length 1.9x of head length; Notauli complete; Gaster petiolate, gaster length 1.41X of its width.

Material examined: 1 ♀; India: Odisha: Tangi: Cuttack; 20.57111111N; 85.83111111E; 10.vii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23438.

Distribution: India (Odisha*); Elsewhere: Romania.

2. *Halticoptera crius* Walker, 1839

1839: *Miscogaster crius* Walker. *Monographia Chalciditum*. 1: 201.

Diagnosis: Female. Body length 1.9mm. General body green with reflection of golden color, antennae brown except scape's basal part yellowish to testaceous. Maxillary palpi inflated, dark brown, inflated part larger, distinctly longer than an eye length; eyes cupreous, FW hyaline, veins paler, brown. Coxae concolrous with mesosoma, rest of legs metallic brown or testaceous; gaster petiolated,

noticeably shorter than the sum of length of the head and mesosoma, petiole quadrate, longer than broad, reticulate, dorsally with medial carina.

Material examined: 1 ♀; India: Odisha: Tarajanga: Dhenkanal; 20.96972222N; 85.62944444E; 27.ii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23539.

Distribution: India (Odisha*); Elsewhere: Czech Republic, Europe, Germany, Hungary, , Iran, Ireland, Italy, Netherlands, China, Romania, Russia, Sweden, Turkey, United Kingdom.

3. *Halticoptera flavicornis* Spinola, 1808

1811. *Halticoptera flavicornis* Spinola. Essaid'une nouvelle classification générale des Diplolépaires. *Annals Mus. Hist. nat. Paris.* 17: 148.

Diagnosis: Female: Body length 2.05mm. Dark metallic bluish green body; testaceous antennae with black pedicel and scape; coxae concolorous with thorax, brown femora, and testaceous remaining legs. Forewing having either no hairs at all or very few hairs on the basal cell apex. The pronotal collar has a rounded anterior end and is reticulate, with a very thin, glossy strip at most running along its hind margin. Propodeum nearly glossy; gastral petiole with median carina firmly reticulates.

Material examined: 1 ♀ 5 ♂; India: Odisha: Buduli forest: Ganjam; 19°58'31.1"N; 84°33'16.9"E; 29.ix.2021; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23208.

Distribution: India (Odisha*); Elsewhere: Belgium, Croatia, Czech Republic, Czechoslovakia, France, Germany, Hungary, Iran, Netherlands, Romania, Slovakia, Sweden, United Kingdom.

4. *Halticoptera shimlica* Narendran and Girish Kumar, 2010

2010. Narendran, and Girish Kumar, 7 (1): 2-4.

Diagnosis: Female- body length 1.62mm . Eyes cupreous, head and mesosoma dark green with golden reflection; POL almost equal to OOL (1.13x); antennae (11263) with scape and pedicel

dark green, basal part of scape testaceous, anelli and funicular segments brown; gaster brownish with strong golden green reflection on T1 in dorsal view and slightly lateral sides of all tergites; legs with coxae concolorous with mesosoma, femora brown, trochanter, tibiae, and tarsal segments yellowish, with the exception of the tips of the tarsal brown.

Material examined: 2 ♀; India: Odisha: NALCO: Angul; 20.842087N; 85.150425E; 04.xi.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23308.

Distribution: India (Himachal Pradesh, Odisha*)

Genus: *Merismus* Walker

1. *Merismus megapterus* Walker, 1833

Diagnosis: Female. Body length 2.38mm. Clypeus having two sharp, asymmetrical teeth. Antennae 11263, scape not reaching median ocellus, clava slightly capitate with a row of micropilosity along its length. Notauli complete, frenal groove complete without longitudinal striations. FW hairy, speculum broad and open below. Apex of propodeum broad, median carina present crossed with transverse carinules, plicae present. Gaster petiolated, petiole longer than wide, strongly reticulate.

Material examined: 1 ♀; India: Odisha: Basudevpur: Balasore; 21.459476N; 86.872663E; 19.xii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23559.

Distribution: India (Odisha*); Elsewhere: Ireland, Italy, Kazakhstan, Belgium, Bulgaria, Europe, France, Germany, Hungary, Mongolia, Netherlands, China, Poland, Romania, Russia, Serbia, Canada, Croatia, Czech Republic, Czechoslovakia, Spain, Sweden, United Kingdom.

Genus: *Stictomischus* Thomson

1. *Stictomischus obscurus* (Walker, 1833)

1833: *Miscogaster obscura* Walker, 459

1833: *Miscogaster obscuripennis* Walker, 460.

1833: *Miscogaster chrysochlora* Walker, 461.

1841: *Chrysolampus splendens* Forster, 37.

1841: *Chrysolampus subquadratus* Forster, 37.

1848: *Lamprotatus Mallius* Walker, 111, 166.

1955: *Stictomischus obscurus* (Walker) Delucchi, 79, 89-90.

Diagnosis: Female. Body length 2.102mm; Body metallic green; eyes cupreous; POL=OOL; antenna 11263, brown in colour; scape not touching median ocellus; notauli deep and complete; mesosoma length 1.69x head length; notauli complete; FW hyaline, stigma moderately capitate; Legs calcareous with brown tarsal segments; gaster minutely petiolate.

Material examined: 1 ♀; India: Odisha: Chikiti: Ganjam; 19° 11' 28" N; 84° 37' 16" E; 09.ix.2021; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23337.

Distribution: India (Odisha*); Elsewhere: Austria, Belgium, Czech Republic, Czechoslovakia, Europe, France, Germany, Hungary, Ireland (north and south), Kazakhstan, Montenegro, Netherlands, Poland, Romania, Serbia, Slovakia, Sweden, Switzerland, Tselinograd Obl., United Kingdom, USSR.

2. *Stictomischus longiventris* (Thomson)

1976: *Stictomischus longiventris* Thomson, 1876a: 237.

1955: *Stictomischus longiventris* Thomson; Delucchi, 1955: 77, 79.

Diagnosis: Female. Body length 2.53mm. Head 2.3x as wide as long. Antennae formula 11263, clava with micro pilosity only on apex of third segment. Notauli deep and complete, scutellar frenum finely reticulated. Propodeum having complete median carina and plicae. Gaster petiolated, petiole distinctly longer than broad. FW with a narrow bare line just outside the basal vein, stigma of FW capitate.

Material examined: 1 ♀; India: Odisha: Bhatasahi: Nayagarh; 20.122108N; 85.071202E; 07.i.2023; Coll. By: Aishwarya Ray. Accession number: FRI/

NFIC/23512.

Distribution: India (Odisha*); Elsewhere: Austria, Europe, Germany, Sweden.

Genus: *Syntmopus* Walker

1. *Syntmopus rajamalaiensis* Sureshan & Narendran, 1999

1999: *Syntmopus rajamalaiensis* Sureshan & Narendran.

Diagnosis: Female body length 2.61mm. Head and mesosoma dark green with golden reflection, petiole dark bluish green; Eyes cupreous, anelli silvery white. Antennae yellowish brown except scape and pedicel testaceous; FW hyaline, veins paler, discal pubescence normal, marginal fringe moderate. Propodeum with median effaced at middle. Legs with all coxae concolorous with mesosoma, trochanter, femora, tibiae very light brown, tarsal segments yellowish except tips of tarsal segments brown.

Material examined: 1 ♀; India: Odisha: Kuhudi: Khorda; 19°52'27.7"N; 85°20'41.6"E; 29.ix.2021; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23200.

Distribution: India (Odisha*, Kerala)

Subfamily: Pachyneurinae

Genus: *Acroclisoides* Girault and Dodd, 1915

1. *Acroclisoides indicus* Ferriere, 1931

1931: *Acroclisoides indicus* Ferriere, 1931: 279. M. India: Dehra Dun (BMNH).

2002: *Acroclisoides indicus* Ferriere (Sureshan and Narendran, 2002). 123-131.

Diagnosis: Female. Body length 1.46 mm. Head and mesosoma black except frontal basal half of head green with golden reflection; Antennae 11263, scape, pedicel and anelli yellowish or testaceous, flagellum brown; eyes cupreous, ocelli silvery white; FW hyaline, veins paler, basal cell with few hairs, costal cell with few scattered hairs; speculum short and closed below. Legs with fore and hind coxa

Table 1. Check list of Pteromalidae species recorded from Odisha, India#

No	Subfamily/species	Record
Subfamily: Miscogasterinae		
1	<i>Halticoptera andriscui</i> Mitroiu	New Record, India#
2	<i>H. crius</i> Walker	New Record, India#
3	<i>H. flavicornis</i> Spinola	New Record, India#
4	<i>H. shimlica</i> Narendran & Girish Kumar	New Record
5	<i>Merismus megapterus</i> Walker	New Record, India#
6	<i>Stictomischus obscurus</i> (Walker)	New Record, India#
7	<i>St. longiventris</i> (Thomson)	New Record, India#
8	<i>Sphegigaster brunneicornis</i> (Ferriere)	Sureshan, 2009
9	<i>Sp. stepicola</i> Boucek	Sureshan, 2009
10	<i>Syntmopus rajamalaiensis</i> Sureshan & Narendran	New Record
Subfamily: Pachyneurinae		
1	<i>Acroclisoides indicus</i> Ferriere	New Record
2	<i>A. maculatus</i> Sureshan and Narendran	New Record
3	<i>Metastenus indicus</i> Sureshan & Narendran	Sureshan, 2009
4	<i>Pachyneuron aphidis</i> (Bouche)	New Record
5	<i>P. groenlandicum</i> (Holmgren)	Noyes (2019)
6	<i>Toxeumorpha minuta</i> Sureshan & Narendran	Sureshan, 2009
Subfamily: Pteromalinae		
1	<i>Anisopteromalus quinarius</i> Gokhman & Baur	New Record, India#
2	<i>A. calandrae</i> (Howard)	Sureshan, 2009
3	<i>Callitula anguloclypea</i> Sureshan	New Record
4	<i>Ca. peethapada</i> Narendran & Mohana	Sureshan, 2009
5	<i>Ca. rugosa</i> (Waterston)	Sureshan, 2009
6	<i>Ca. travancorensis</i> Sureshan	Sureshan, 2009
7	<i>Cholorocytus indicus</i> Sureshan	New Record
8	<i>Cryptoprymna elongate</i> Sureshan & Narendran	New Record
9	<i>Dinarmus acutus</i> (Thomson)	Sureshan, 2009
10	<i>D. basalis</i> (Rondani)	New Record
11	<i>D. maculatus</i> (Masi)	Sureshan, 2009
12	<i>D. colemani</i> (Crawford)	Sureshan, 2009

13	<i>Halticopterella rampurensis</i> Sureshan	New Record
14	<i>Manineura pentatomivora</i> (Mani)	New Record
15	<i>Merisomorpha minuta</i> Sureshan	New Record
16	<i>Mokrzeckia menzeli</i> Subba Rao	New Record
17	<i>Norbanus acuminatus</i> Dutt & Ferriere	Sureshan, 2009
18	<i>N. indorum</i> (Masi)	Noyes (2019).
19	<i>Oniticellobia longigastra</i> Sureshan & Narendran	Sureshan, 2009
20	<i>Oxysychus nupserhae</i> (Dutt & Ferriere)	Sureshan, 2009
21	<i>Panstenon oxylus</i> (Walker)	Sureshan, 2009
22	<i>Propicroscytus mirificus</i> (Girault)	Sureshan, 2009
23	<i>Pr. oryzae</i> (Subba Rao)	Sureshan, 2009
24	<i>Pteromalus puparum</i> (Linnaeus)	Sureshan, 2009
25	<i>P. semotus</i> (Walker)	Sureshan, 2009
26	<i>Trichomalopsis apanteloctena</i> (Crawford)	Sureshan, 2009
27	<i>T. nigra</i> Sureshan & Narendran	Sureshan, 2009
28	<i>T. ovigastra</i> Sureshan & Narendran	Sureshan, 2009
29	<i>T. travencorensis</i> Sureshan & Narendran	New Record
30	<i>T. thekkadiensis</i> Sureshan & Narendran	Sureshan, 2009
31	<i>T. kannurensis</i> Sureshan & Narendran	New Record

concolorous with mesosoma, mid coxa, trochanter, tibiae testaceous or yellowish, tarsal segments whitish, tips of tarsal segments brown. Gaster deep blue to brownish with slightly golden reflection in some tergites and T1 brownish.

Material examined: 1 ♀; India: Odisha: Athagarh: Cuttack; 20°31'16.8"N; 85°38'01.4"E; 13.ii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23364.

Distribution: India (Odisha*, Uttar Pradesh, Uttarakhand, Kerala, Tamil Nadu); Elsewhere: Sri Lanka, Myanmar, China.

Remarks: Parasitic on bug eggs on Citrus plant.

2. *Acroclisoides maculatus* Sureshan and Narendran, 2002

Acroclisoides maculatus Sureshan & Narendran, 2002a: 128. Holotype F: India, Kerala.

Diagnosis: Female. Body length. 1.98mm. Head and mesosoma metallic green with reflection of golden color, lower face green with reflection of golden colour; occipital carina present; eyes cupreous; ocelli whitish. Antennae (11263) with scape, pedicel and anelli testaceous, flagellum brown and clava brown; Mandibles yellowish with teeth testaceous margins. Noauli deep and complete. Forewing hyaline with brown infuscated spot beneath STV; veins and pubescence brown, Gaster petiolated, T1 very large, funnel shaped.

Material examined: 1 ♀; India: Odisha: Mahavinayak: Jajpur; 20° 42' 12"N; 86° 05' 07"E; 11.iii.2021; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23306.

Distribution: India (Odisha*, Kerala, Karnataka, Tamil Nadu)

Genus: *Pachyneuron* Walker

1. *Pachyneuron aphidis* (Bouche, 1834)

1834: *Diplolepis aphidis* Bouche. *Natur. Ins. Berlin.* 5: 170. M, F.

1939: *Pachyneuron lali* Mani. *Ind. J. Ent.* 1: 81. M. India (Karnal) IARI.

1939: *Pachyneuron ferrieri* Mani. *Ind. J. Ent.* 1: 83. India: Chaubattia (IAR1).

1974: *Pachyneuron triarticulata* Mani & Saraswat. *Mem. School. Ent. Agra* No. 3: 98. F. India (Dalhousie) (USNM). Examined.

Diagnosis: Female. Body length 1.487mm. Body black or deep blue; gaster with a greenish or bluish tinge; Mandibles yellowish, teeth testaceous; Antennal formula 11353; scape, pedicel brownish black and flagellum dark brown; Eyes cupreous; ocelli silvery white. FW hyaline, veins paler, discal pubescence reduced basally and moderate beyond MV. Legs with coxae, trochanter, femora and basal part of tibiae concolorous with mesosoma, knees yellowish; tibiae distally and tarsal segments yellowish except tips of tarsal segments brown.

Material examined: 2 ♀; India: Odisha: Ghatagaon: Keonjhar; 21.407985N; 85.898484E; 22.vii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23193.

Distribution: India (Odisha*, Delhi, Haryana, Karnataka, Punjab, Himachal Pradesh, Jammu & Kashmir, Uttar Pradesh); Elsewhere: Iran, Iraq, Israel, Kirgizia, Korea, Korea, South Libya, Mexico, Netherlands, New Zealand, Pakistan, China, Argentina, Armenia, Italy, Japan, Kazakhstan, Australia, Belgium, Brazil, Bulgaria, Canada, Chile, Colombia, Croatia, Cuba, Czech Republic, Egypt, Europe, France, Germany, Peru, Poland, Romania, Russia, Serbia, Spain, Sweden, Switzerland, Syria, Taiwan, Greece, Hawaii, Hungary, Turkey, Ukraine, United Kingdom, United States of America, Yemen, Yugoslavia.

Subfamily- Pteromalinae

Genus: *Anisopteromalus* Ruschka

1. *Anisopteromalus quinarius* Gokhman and Baur

Diagnosis: Female. Length of body size is 2.21mm. Olive-green colour of the head, uniform black belly, greenish-black mesosoma, and dark reddish-brown eyes and ocelli. Third anelli quadrate, light brown pedicel and scape, antenna 11353. Hyaline FW with dark brown veins. The head is noticeably reticulate and fairly setose; the femora is brownish yellow with brighter apices; the fore tibia is white apically and pale yellow in the basal half; the legs have coxae concolorous with the mesosoma; the Gaster is sessile.

Material examined: 1 ♀; India: Odisha: Neulpur: Jajpur; 20.71111111N; 86.14138889E; 11.vii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23534.

Distribution: India (Odisha*); Elsewhere: Russia, USA.

Genus: *Callitula* Spinola

1. *Callitula anguloclypea* Sureshan, 2002

Diagnosis: Female. Body length 1.98mm. Head and mesosoma black; gaster brown and a yellowish spot at base dorsally; Antennal formula 11353, scape, pedicel and anelli testaceous, flagellum brown, apex of clava pointed; Eyes cupreous, ocelli silver white; FW hyaline, veins paler; Legs testaceous except coxae concolorous with mesosoma and tips of tarsal segments brown.

Material examined: 1 ♀; India: Odisha: Kapilash road: Dhenkanal; 20°39'53.4"N; 85°38'12.7"E; 25.ix.2021; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23388.

Distribution: India (Odisha*, Kerala, Tamil Nadu); Elsewhere: Sri Lanka

Genus: *Chlorocythus* Graham

1. *Chlorocythus indicus* Sureshan, 2000

2000: *Chlorocytus indicus* Sureshan, 2000: 98. Holotype F: India.

Diagnosis: Female. Body length 2.00mm. Body metallic blue with reflection of golden colour; Antenna 11263; Antenna having scape & pedicel testaceous. Remainder brown. Head distinctly punctuate. Notauli incomplete; Pronotal collar sharply carinate; Mesoscutum width 1.7x length; Propodeum with fine and complete median carina. Forewing with basal vein setae. SV is 0.5x PMV. Gaster sessile and longer than sum of length of head and mesosoma combined.

Material examined: 2♀; India: Odisha: Sribantapur: Cuttack; 20.415927N; 85.842296E; 17.xii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23403.

Distribution: India (Odisha*, Kerala, Arunachal Pradesh, Jammu, Karnataka, Tamil Nadu)

Genus: *Cryptoprymna* Forester

1. *Cryptoprymna elongata* Sureshan & Narendran, 2000

2000: *Cryptoprymna elongata* Sureshan & Narendran, 2000: 403. Holotype F: India, Kerala.

Diagnosis: Female. Body length 2.609mm. Body black; Antenna 11263, testaceous. Head finely reticulate, clypeus's anterior margin slight emarginate. Antenna with scape touching median ocellus. Clava slightly longer than the three segments that came before it. F1-F3 are slight larger than other funicular segments. Notauli incomplete; Mesoscutum finely reticulate; Gaster petiolate.

Material examined: 12♀, 5♂; India: Odisha: North Odisha University campus, Baripada: Mayurbhanj; 21.929373N; 86.760524E; 18.vii.2022; Syrphid fly pupa; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23536.

Distribution: India (Odisha*, Karnataka, Kerala)

Remarks: Pupa of Syrphid fly (*Episyrphus* sp.)

Genus: *Dinarmus* Thomson

1. *Dinarmus basalis* (Rondani, 1877)

1877: *Entedon basalis* Rondani. *Bull. Soc. Ent. Ital.* 9: 174.

1974: *Dinarmus basalis* (Rondani), in Boucek. *Redia.* 55: 241-285.

Diagnosis: Female. Body length 2.26mm. Head and mesosoma dark blue or green with reflection of golden colour and with abundant white pubescence, gaster brownish or blackish with golden or brassy reflection. Antennae 11353, scape pedicel and anelli yellowish or testaceous, rest of antennae brown. F1 distinctly longer than pedicel. FW hyaline, veins brown, discal pubescence proximally reduced greatly and moderate distally, large, open speculum underneath, basal vein absent, basal cell open. Legs with coxae concolrous with mesosoma, all trochanter, femora and basal part of tibiae testaceous, distal part of tibiae, tarsal segments yellowish except tips of tarsal segments brown.

Material examined: 10♀ 4♂; India: Odisha: Talabania: Puri; 19° 48' 46" N; 85° 51' 02" E; 07.ix.2021; Stored Yellow pea: *Calosobruchus chinensis*; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23190.

Distribution: India (Odisha*, Andhra Pradesh, Bihar, Kerala, Madhya Pradesh, Delhi, Haryana, Karnataka, Rajasthan); Elsewhere: Bangladesh; France; Iran; Israel; Italy; Kazakhstan; South Africa; Sri Lanka; Sudan; Thailand; Ukraine; United States of America.

Remarks: Parasitic on *Callosobruchus chinensis* and other bruchid beetles pest of stored chick pea & *Pisum sativum*.

Genus: *Halticopterella* Girault and Dodd

1. *Halticopterella rampurensis* Sureshan, 2001

Diagnosis: Female. Body length 3.65mm. Thorax and head are dark in colour. Brown tint on the propodeum. Testaceous antenna, slightly darker in the club. Gaster brown with a faint dorsal metallic blue reflection on T1. All legs are pale brown, with the exception of the darker tarsi tip. Brown telula,

hyaline forewing membrane, pale brown veins.

Material examined: 2 ♂; India: Odisha: Biruhan: Balasore; 21.44879N; 86.858465E; 20.xii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23540.

Distribution: India (Odisha*, Kerala)

Genus: *Manineura* Boucek

1. *Manineura pentatomivora* (Mani, 1939)

1939: *Acroclisoides pentatomivorus* Mani, 1939

Diagnosis: Female. Body length 1.58mm. Clypeus's anterior margin slightly emarginated. Antennal formula 11263 with scape reaching above vertex. FW with MV thickened, shorter than STV and PMV, stigma of FW moderately capitate, speculum broad and open below. Notauli deep and

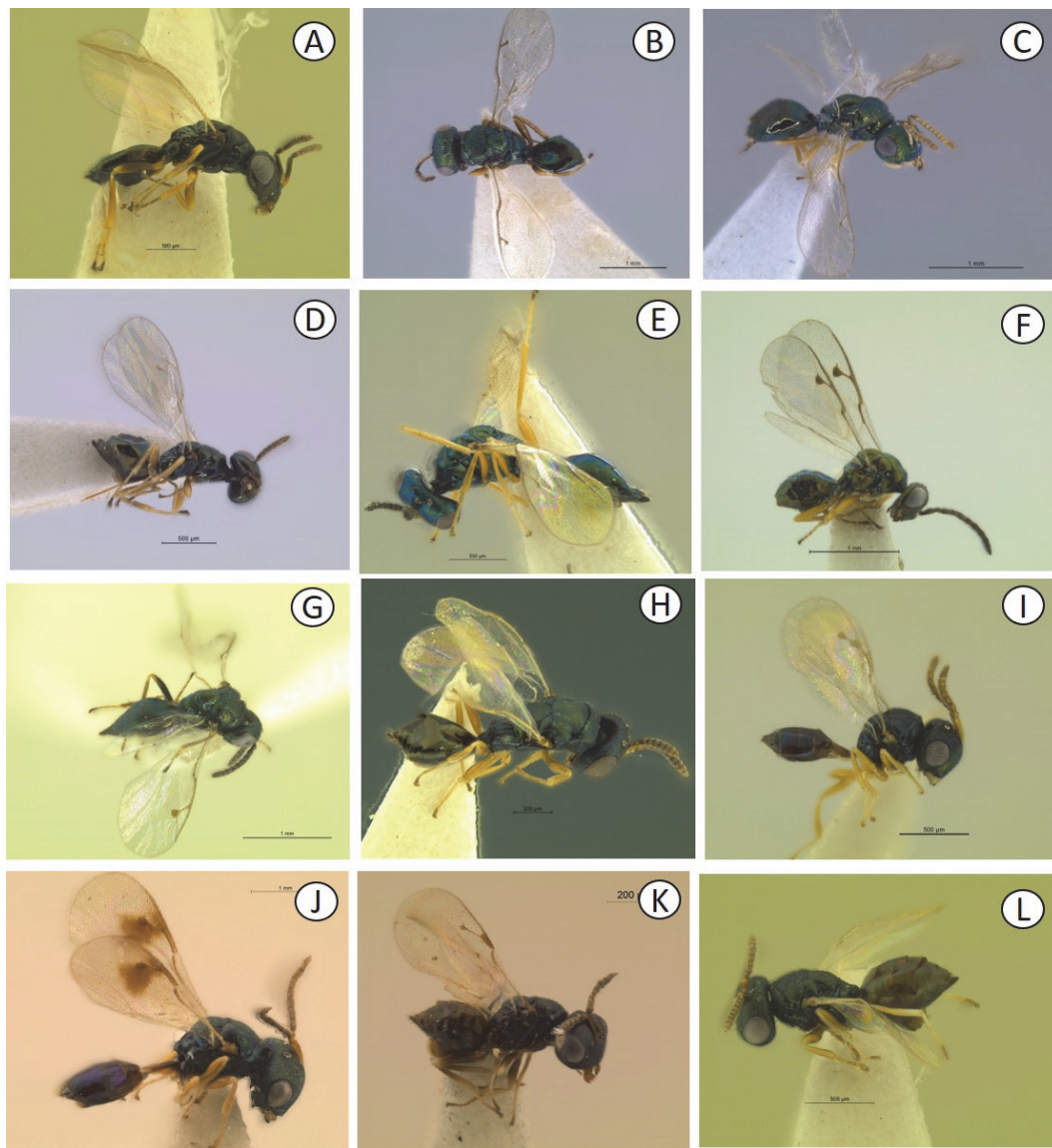


Fig. 1 (A-L): Pteromalidae species recorded from Odisha. A) *Halticoptera andriscui*, B) *Halticoptera crius*, C) *Halticoptera flavicornis*, D) *Halticoptera shimlica*, E) *Merismus megapterus*, F) *Stictomischus obscurus*, G) *Stictomischus longiventris*, H) *Syntomopus rajamalaiensis*, I) *Acroclisoides indicus*, J) *Acroclisoides maculatus*, K) *Pachyneuron aphidis*, L) *Anisopteromalus quinarius*

complete. Gaster subsessile, petiole as long as or slightly longer than broad.

Material examined: 1 ♀; India: Odisha: Panikoili: Jajpur; 20.9146N; 86.232E; 20.xi.2020; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23556.

Distribution: India (Odisha*, Assam, west Bengal)

Genus: *Mokrzeckia* Mokrzecki

1. *Mokrzeckia menzeli* Subba Rao, 1981

1981: *Mokrzeckia menzeli* Subba Rao. *Proc. Ind. Acad. Sci. (Allim. Sci.)*.90: 479. M. F. India (Dehra Dun) (BMNH).

Diagnosis: Female. Body length 2.42mm. Head and mesosoma is bright metallic bluish green.

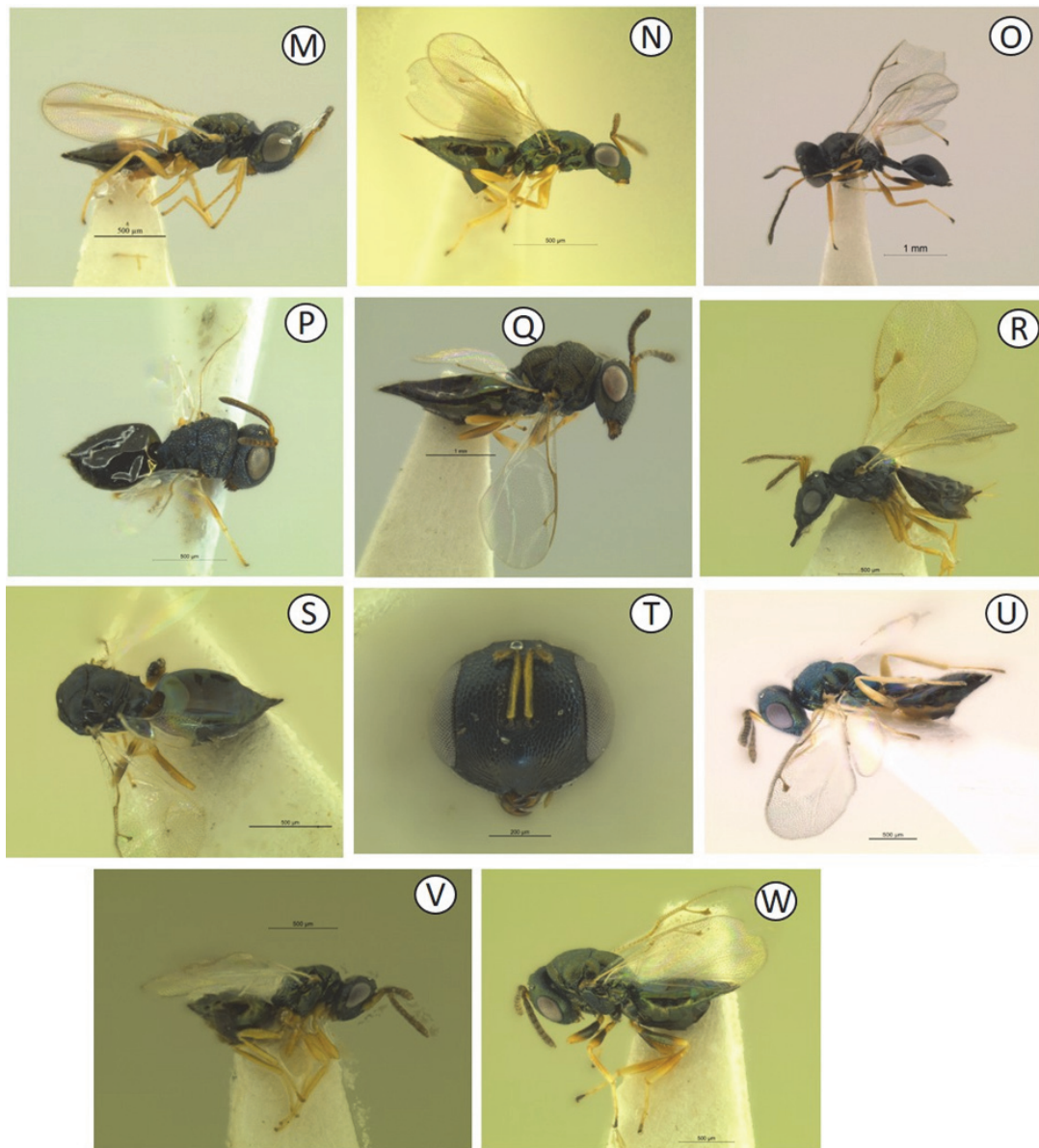


Fig. 2 (M-W): Pteromalidae species recorded from Odisha. M) *Callitula anguloclypea*, N) *Chlorocytyus indicus*, O) *Cryptoprymna elongata*, P) *Dinarmus basalis*, Q) *Halticopterella rampurensis*, R) *Manineura pentatomivora*, S-T) *Merismomorpha minuta*, U) *Mokrzeckia menzelli*, V) *Trichomalopsis travencorensis*, W) *Trichomalus kannurensis*

Antenna brown. Gaster is yellowish brown with metallic tinge on sides. Head moderately reticulate. Clypeus with anterior margin deeply incised. Antennae 11263, inserted in the middle of the face. POL shorter than OOL. Pronotal collar carinate. Forewing without irregular cilia below SMV. Gaster depressed and lanceolate.

Material examined: 5 ♀, 1 ♂; India: Odisha: Mahanga: Cuttack; 20.52944444N; 86.20166667E; 09.vii.2022; Bracon Pupa; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23311.

Distribution: India (Odisha*, Karnataka, Kerala, Uttar Pradesh, Uttarakhand)

Remarks: Parasitic on Bracon pupa.

Genus: *Merismomorpha* Girault

1. *Merismomorpha minuta* Sureshan, 2000

2000c: *Mersimomorpha minuta* Sureshan, *Rec. Zool. Surv. India*, 98 (3):105. (ZSIK).

Diagnosis: Female. Body length 1.63mm. Head and mesosoma bluish black with gaster metallic bluish black except T1 and ventral part dark brown; POL longer than OOL; lower margin of clypeus angulates, antennal formula 11353, propodeum without median carina; FW with MV longer than MV; petiole short, embraced by a long extension of first gastral sternite; pedicel as long as F1, inserted somewhat above middle of face; gaster small, oval, little longer than head plus mesosoma combined.

Material examined: 1 ♀; India: Odisha: Cuttack; 20.446912N; 85.91365E; 14.xi.2022; Coll. By: Aishwarya Ray. Accession number: FRI/23444.

Distribution: India (Odisha*, Kerala)

Genus: *Trichomalopsis* Crawford

1. *Trichomalopsis travancorensis* Sureshan & Narendran, 2001

2001: *Trichomalopsis travancorensis* Sureshan & Narendran.

Diagnosis: Female. Body length 1.80mm. Dark green head and mesosoma with a bronzy reflection; brown gaster with a bluish reflection dorsally; POL 1.373 x OOL. A brown antennal formula 11263 with a testaceous basal scape; a strongly margined pronotum; a prominent scutellum with a frenal area; a weak propodeum with a midline carina; a fairly convex nucha; a basal cell and naked basal vein in the apex Gaster is oval, elongate, 1.79 times longer than wide, longer than mesosoma, and sessile with a strongly transverse petiole. MV is longer than STV (1.89x).

Material examined: 1 ♀; India: Odisha: Gopalpur: Ganjam; 19°17'25.2"N; 84°52'11.6"E; 29.ix.2021; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23532.

Distribution: India (Odisha*, Kerala)

Genus: *Trichomalus* Thomson

1. *Trichomalus kannurensis* Sureshan & Narendran, 1995

1994b. *Trichomalus kannurensis* Sureshan & Narendran,

Diagnosis: Length 1.92mm. Dark green body with a hint of bronzy colour. Antennae 11263 with scape reaching level of vertex; propodeum with median carina not reaching beyond costula; anterior border of clypeus almost straight; POL 1.23x OOL; Gaster longer than head plus mesosoma combined; FW length 2.58x width. Brown with a hint of greenish-gray.

Material examined: 1 ♀; India: Odisha: Udala: Mayurbhanj; 21.579356N; 86.572343E; 18.vii.2022; Coll. By: Aishwarya Ray. Accession number: FRI/NFIC/23533.

Distribution: India (Odisha*, Kerala)

Burks *et al.* (2022) revisited the genera of Pteromalidae based on morphological characteristics, leading to the elevation of several subfamilies to family rank and the reassignment of certain genera to other subfamilies. Prior to this reclassification, twenty-eight species were reported

from Odisha by Sureshan (2009) and Noyes (2019). Following the revision, the fauna of Odisha was updated and the subfamilies Herbertinae and Spalanginae were excluded from Family Pteromalidae due to their elevation to family status. Consequently, three species *Herbertia indica* Howard, *Spalangia nigroaenea* Curtis, and *Spalangia simplex* Perkins previously recorded under Pteromalidae from Odisha were removed from the checklist. Additionally, the subfamily Panstenoninae was dissolved, with its genera transferred to sub-family Pteromalinae. In the present study, twenty-two new species records have been added for Odisha, including seven species viz. *Halticoptera andriscui* Mitroiu, *Halticoptera crius* Walker, *Halticoptera flavicornis* Spinola, *Merismus megapterus* Walker, *Stictomischus obscurus* (Walker), *Stictomischus longiventris* (Thomson), and *Anisopteromalus quinarius* Gokhman & Baur reported for the first time from India. Accordingly, an updated checklist of Pteromalidae fauna from Odisha has been prepared, comprising 47 species belonging to 26 genera under three subfamilies.

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