SHORT COMMUNICATION

DESCRIPTION OF A NEW SPECIES OF OMYOMYMAR SCHAUFF FROM INDIA WITH A KEY TO ORIENTAL SPECIES AND FIRST REPORT OF PALAEONEURA MARKHODDELI TRIAPITSYN (HYMENOPTERA: MYMARIDAE) FROM THE INDIAN SUBCONTINENT

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26 October 2020 | Vol. 12 | No. 14 | Pages: 17003–17008
Description of a new species of *Omyomymar* Schauf from India with a key to Oriental species and first report of *Palaeoneura markhoddlei* Triapitsyn (Hymenoptera: Mymaridae) from the Indian subcontinent

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Abstract: *Omyomymar hayati* sp. nov. (Hymenoptera: Chalcidoidea: Mymaridae) is described from Tamil Nadu, India and key to Oriental species of *Omyomymar* is updated. *Palaeoneura markhoddlei* Triapitsyn, is reported from Indian subcontinent for the first time and key to Indian species is updated. The following known species, viz., *Acropolyneuma incognitum* (Narayanan, Rao & Kaur), *Platystethynium glabrum* Jin & Li, *Polyneuma* (*Polyneuma*) *bengalense* Rehm & Anis and *Palaeoneura vegis* Amer & Zeya are recorded from the Indian states of Rajasthan, Karnataka, Kerala, and Tamil Nadu, respectively.

Keywords: Chalcidoidea, key, new species, *Palaeoneura markhoddlei*, *Omyomymar*.

Abbreviations: fl—flagellar segments | gt—gastral tergite | mps—multiporous plate sensillum or sensilla | YPT—yellow pan trap.

The family Mymaridae is represented by 116 genera world-wide (Noyes 2019) and 39 from India. Totally, about 205 species are known from India (H. Sankararaman personal compilation up to August 2020). Of the two genera treated in this work, *Omyomymar* Schauf (1983) was erected by Schauf with descriptions of *O. alar* and *O. griselli* from U.S.A. and he also transferred *Paranaphoidea silvana* Oglobin and *P. clavata* Ogoblin to *Omyomymar* and designated *P. silvana* as the type species of *Omyomymar*. Presently, this genus contains six and seven species from New and Old World, respectively. In the Oriental region, Lin & Chiappini (1996) described three species from China, *O. glabrum*, *O. breve* and *O. longidigitum*. Manickavasagam & Rameshkumar (2011) reported this genus from India. Pricop (2014) reported this genus from Europe describing *O. andriescui* from Romania. So far, four species have been described from India: *O. insulanum* Zeya & Anwar and *O. yousufi* Anwar & Zeya by Anwar et al. (2014), followed by *O. huberi* Manickavasagam & Gowripakrash, and *O. noyesi* Manickavasagam & Gowripakrash (2016).

*Palaeoneura* was erected by Waterhouse (1915) with *P. interrupta* as the type species. Currently, this genus is represented by 53 species around the world, of which six species of *kusnezovi* group are known from India (Amer & Zeya 2019). Recently, *P. markhoddlei* was described by Triapitsyn (2018a) from USA. Members of this genus are known to parasitize eggs of Cicadellidae (Hemiptera)

ZooBank: urn:lsid:zoobank.org:pub:1A8BA6A5-34DC-4FAB-9E36-8589D50BEC9C

Editor: P. Girish Kumar, Zoological Survey of India, Kozhikode, India.

Date of publication: 26 October 2020 (online & print)


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Funding: (DST-PURSE II).

Competing interests: The authors declare no competing interests.

Acknowledgements: The help rendered by Dr. S. Palanivel, PAJANCOA, Karaikal and Mr. Prashanth, Central University of Kerala, Kasaragod in collecting mymarids, Dr. Doug Yanega, University of California, Riverside in providing relevant literature on *Platystethynium*, Mr. Balakrishnan and Mr. Mohan Prasath, Act for Butterflies for permitting us to collect specimens from Kunjappaneri and Siruvani forest ranges and the partial financial aid of Government of India, DST PURSE II (2018–2019) through Annamalai University are gratefully acknowledged.

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In the present paper, eighth Oriental species of *Omyomymar* is described from material collected from Tamil Nadu and Kerala, India. The previous key to the Oriental species of *Omyomymar* (Gowriprakash & Manickavasagam 2016) is updated. *Palaeoneura markhoddlei* is recorded from the Indian Subcontinent for the first time and key to Indian species of *Palaeoneura* (Amer & Zeya 2019) is updated.

**MATERIALS AND METHODS**

Specimens were collected using yellow pan traps (Noyes 1982) from various Indian states. Recovered parasitoids were processed using hexamethyldisilazane (Brown 1993) and card or slide mounted for study. All the specimens are deposited with Entomology Department, Annamalai University (EDAU), Chidambaram, Tamil Nadu, India. All measurements are in microns. Habitus images were captured using Leica M205C stereozoom microscope (while specimens were in ethanol before slide mounting) and the slide mounted parts using Leica DM 750 phase contrast microscope. Images were stacked using montage and Combine ZP software, and then processed using Adobe Photoshop version 7.0. Terms used in the description follow Gibson (1997).

**RESULTS**

*Omyomymar* Schauff, 1983


*Omyomymar hayati*

Manickavasagam & Sankararaman sp. nov.  
(Images 1–2)

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**Materials examined:** Holotype: EDAU/Mym34/2020, Female, 01.viii.2019, Kunjappanai, Coimbatore, Tamil Nadu, India, 11.305N & 76.929E, on slide under four coverslips, labeled “India: Tamil Nadu, Kunjappanai, Coimbatore, YPT, tea plantation, coll. H. Sankararaman”.

**Key to Oriental species of Omyomymar, females** (modified from Gowriprakash & Manickavasagam 2016)

1. Clava without apical incision (Anwar et al. 2014: Figs. 1–2) .............................................................. 2
   - Clava with an apical incision (Anwar et al. 2014: Fig. 7) ................................................................. 3

2. Clava about 3.5× as long as wide and shorter than $f_{1e}$ combined [0.73×] (China) ............... O. glabrum Lin & Chiappini
   - Clava 2.5× as long as wide and a little longer than $f_{1e}$ combined (India) ............................... O. yousufi Anwar & Zeya

3. Exserted part of ovipositor at most 0.4× gaster length (China) ........................................................ O. breve Lin & Chiappini
   - Exserted part of ovipositor at least 0.6× gaster length ................................................................. 4

4. $f_{1}$ shorter (0.75×) than pedicel (Exserted part of ovipositor 0.6× gaster length) (India) .... O. insulanum Zeya & Anwar
   - $f_{1}$ at least as long as pedicel ................................................................. 5

5. $f_{1}$ and $f_{2}$ excised dorsally (Lin & Chiappini 1996: Fig. 3) ($f_{1}$ 1.35× pedicel length; exserted part of ovipositor at least 0.85× gaster length) (China) ................................. O. longidigitum Lin & Chiappini
   - $f_{1}$ and $f_{2}$ straight, not excised dorsally ................................................................. 6

6. Clava at most 3.1× as long as wide (Image 1C); clava as long as $f_{1e}$ combined (Image 1B–C); fore wing disc almost bare with two lines of thick setae in distal half, running parallel to its wing margin (Image 2A) (India) ................................. O. hayati Manickavasagam & Sankararaman sp. nov.
   - Clava at least 3.6× as long as wide; clava longer than $f_{1e}$ combined (1.3×); fore wing disc densely setose .................... 7

7. Clava 4× as long as wide; exserted part of ovipositor 0.6× gaster length (Gowriprakash & Manickavasagam 2016: Fig. 9); $f_{1}$ the longest and 1.5× as long as pedicel; propodeum finely striulate (India) ................................. O. huberi Manickavasagam & Gowriprakash
   - Clava 3.6× as long as wide; exserted part of ovipositor 0.9× gaster length (Gowriprakash & Manickavasagam 2016: Fig. 10); $f_{1}$ the longest; $f_{2}$ as long as pedicel; propodeum smooth (India) ... O. noyesi Manickavasagam & Gowriprakash

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**Description**  
**Female (Holotype):** (Image 1A) Length, 585μm (excluding exserted part of ovipositor). Head, flagellum, pronotum, mesoscutum, propodeum, brown. Antenna with scape and pedicel yellow. Metasoma with lateral lobe of mesoscutum yellow. Wings subhyaline. Legs including coxae yellow. Metasoma, basal one third of gaster yellow (rest brown), ovipositor brown.

Head 1.1× as wide as high; antenna with (Image 1B, C) scape about 3.5× as long as wide; pedicel about 1.8× as long as wide; $f_{1}$ the longest; $f_{1}$ longer than $f_{2}$; clava 2-segmented, 3.1× as long as wide, with apical incision and as long as $f_{1e}$ combined. Basal segment of clava with one mps and one placoid sensilla, apical segment with three mps and four placoid sensilla.

Metasoma (Image 1A) 0.7× gaster length, pronotum, mesoscutum, anterior scutellum faintly reticulate; frenum substrigulate; propodeum smooth. Mid lobe of mesoscutum with two pairs of setae and lateral lobe of mesoscutum with one pair of setae; anterior scutellum with one pair of setae. Fore wing (Image 2A) about 9.4× as long as wide, proximal half or so of wing disc almost bare, distal half with two lines of setae running parallel to wing margins; longest marginal seta about 1.75× as long as maximum wing width. Hind wing (Image 2B) 26.5× as long as wide, longest marginal seta about 5.0× as long as maximum wing width.

Metasoma (Image 2C) ovipositor about 1.9× as long as gaster, 2.5× as long as mesotibia and 2.3× as long as metatibia, exserted part 0.9× as long as gaster.

**Measurements** (length: width; or length) antennal segments: scape, 77:22; pedicel, 40:22.5; $f_{1}$, 90; $f_{2}$, 75; $f_{3}$, 62.5; $f_{4}$, 45; $f_{5}$, 40; $f_{6}$, 33; clava, 117:37.5; mesosoma, 250; fore wing, 750: 80; longest marginal seta, 140; hind wing, 730: 27.5; longest marginal seta, 140; mesotibia, 256; metatibia, 288; gaster, 350; ovipositor, 650; exserted part, 320.

**Male:** Unknown.

**Etymology:** The species is named after Prof. Mohammad Hayat, Aligarh Muslim University, for his contributions to the taxonomy of Indian Chalcidoidea.

**Distribution:** India: Tamil Nadu and Kerala.

**Hosts:** Unknown.

**Comments:** Omyomymar hayati sp. nov. looks similar to O. glabrum and O. yousufi in having fore wing with very few setae. However, it differs from both of...
them by having clava with apical incision (O. glabrum and O. yousufi, clava without apical incision). This new species differs from O. glabrum, by having following characters: clava as long as fl\textsubscript{4-6} combined; exserted part of ovipositor shorter than gaster (In O. glabrum, clava shorter than fl\textsubscript{4-6} combined [0.7×] and exserted part of ovipositor longer than gaster [1.3×]). It differs from O. yousufi by having clava 3.1× as long as wide; fl\textsubscript{1} longer than fl\textsubscript{2}; exserted part shorter than gaster (In O. yousufi, clava 2.5× as long as wide; fl\textsubscript{1} subequal to fl\textsubscript{2}; exserted part as long as gaster).

First report of Palaeoneura markhoddlei Triapitsyn from India (Image 3)

Material examined: EDAU/Mym35/2020, three females, 22.ix.2018, Yercaud, Salem, Tamil Nadu, India, 11.774N & 78.209E, YPT, coffee ecosystem, coll. S. Palanivel, two on slide under four cover slips, another female on card, EDAU.

Brief diagnosis

Vertex with sparse, short setae; scape as long as wide and smooth; pedicel shorter than Fl\textsubscript{1}; Fl\textsubscript{3} the longest and fl\textsubscript{6} the widest; fore wing disc notably narrow, hyaline with brownish tinge along apical margin and also anterior margin sub apically. Ovipositor occupying almost entire length of gaster, notably exserted beyond gastral apex (Image 3B) (Triapitsyn 2018a).

Distribution:

USA: California & Hawaii [Hawaiian Islands, Maui island] (Triapitsyn 2018a), India: Tamil Nadu (New report).

Hosts: Unknown, but is assumed to be egg parasitoid of leafhopper from tribe Nirvanini Baker (Hemiptera: Cicadellidae: Evacanthinae) (Triapitsyn 2018a).

Comments: All three specimens collected from India exactly match with description given by Triapitsyn (2018a).

Distributional records

1. Acmopolynema incognitum (Narayanan, Rao & Kaur, 1960)

Material examined: EDAU/Mym/DR1/2020, five females, 4.iii.2019, Udaipur, Rajasthan, India, 10.786N & 76.654E, pitfall trap, grassland, coll. Prashanth (two on card, EDAU).

Brief diagnosis: Scape with cross-ridges on inner surface; fore wing with one brownish spot in the middle and marginal vein with one dorsal macrochaeta; propodeal carinae do not extend to half the length of propodeum; ovipositor exserted beyond gastral apex. (Triapitsyn & Berezovskiy 2007).

Distribution: India: Delhi, Karnataka, Uttar Pradesh (Hayat & Anis 1999) and Rajasthan (new record).

2. Platystethynium glabrum Jin & Li 2016

Material examined: EDAU/Mym/DR2/2020, two females, 08.ii.2019, Palakkad, Kerala, India, 10.786N & 76.654E, pitfall trap, grassland, coll. Prashanth (two on card, EDAU).

Brief diagnosis: Ovipositor about 0.49× as long as gaster, 1.8× of metatibia and originating at the level of gt\textsubscript{1} (Triapitsyn 2018b; Sankararaman et al. 2019).

Distribution: Platystethynium glabrum, India: Meghalaya (Sankararaman et al. 2019) and Kerala (new record)

Comments: Jin & Li (2016) described P. glabrum without examining the type species P. onomarchicidum, based on the absence of setae on eyes and lengths of fl\textsubscript{1}, fl\textsubscript{2} and ovipositor. Triapitsyn (2018b) examined few
Key to Indian species of the *kusnezowi* group of *Palaeoneura*, females (modified from Amer & Zeya 2019)

1. Fore wing hyaline or subhyaline without brown patch ................................................................. 2
   - Fore wing hyaline with one or two brown patches ........................................................................ 3

2. Fore wing subhyaline, without patches (Amer & Zeya 2019: Fig. 1C), except slightly infumate in basal third and along anterior margin of the blade; ovipositor hardly exserted and 0.57× as long as metatibia .......... *P. vegis* Amer & Zeya
   - Fore wing hyaline, without brown patch; ovipositor exserted distinctly beyond gastral apex and 1.39× as long as metatibia (Image 3B) ......................................................... *P. markhoddlei* Triapitsyn

3. Fore wing disc with an infuscated, round spot in distal fourth in anterior half of disc; scape with cross-ridges on inner surface .................................................................................................. 4
   - Fore wing disc with two brown patches; scape smooth, without cross-ridges on inner surface .......... 5

4. Fore wing less densely setose; face below toruli with six setae on each side; pronotum entire (Amer & Zeya 2019: Figs. 2C, A & G) ......................................................................................................................... 5
   - Fore wing densely setose; face below toruli with at least 11 setae on each side; pronotum divided mediolongitudinally (Amer & Zeya 2019: Figs. 4C, E; 5D, 7A) ................................................................................................. 6

5. Fore wing apical brown patch with proximal margin almost straight, the patch as wide as anteriorly and posteriorly; face below toruli with 11 setae on each side; ovipositor slightly longer than metatibia (Amer & Zeya 2019: Figs. 4C, 5A, 4F) ................................................................. *P. sophoniae* (Huber)
   - Fore wing apical brown patch with proximal margin strongly oblique, the patch much wider along anterior margin than along posterior margin; face below toruli with 15 setae on each side; ovipositor at most 0.94× to about 1.02× as long as metatibia (Amer & Zeya 2019: Figs. 6C & A) ................................................................................. 6

6. Body length 1.4 mm; head reddish-brown; antenna pale brown except clava and bases of F2 and F3 black; clava subequal in length to preceding two funicular segments combined; malar space with about 15 setae ................................................................. *P. indopeninsularis* (Mani & Saraswat)
   - Body length 0.6–0.97 mm; head yellowish-brown; antenna with funicular segments pale yellow to pale brown except clava dark brown; clava longer than preceding two funicular segments combined; malar space with 10 setae (Amer & Zeya 2019: Fig. 6) ........................................................................................................ 7

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non-type materials of *P. onomarchicum* (having similar data as in holotype) from Indonesia and indicated that the only potential difference between these two taxa is the relative length of ovipositor (0.84× as long as gaster, 3.0× of metatibia in *P. onomarchicum* and 0.49× as long as gaster, 1.8× of metatibia in *P. glabrum*). Now it is further noted that ovipositor arises at the level of gₐ in *P. onomarchicum* (Fig. 106, p.161 of Triapitsyn 2018b) and g₈ in *P. glabrum*. This was incorrectly quoted as g₈ in *P. onomarchicum* by Jin & Li (2016) and Sankararaman et al. (2019).

   **Material examined:** EDAU/Mym/DR3/2020, two females, 29.xii.2018, Nanjangud, Mysore, Karnataka, India, 12.116N & 76.678E, YPT, finger millet and weed ecosystems, coll. K. Surya (on card, EDAU).
   **Brief diagnosis:** Face narrow, subantennal grooves carrying setae; torulus slightly above mid-level of eye and touching preorbital trabeculae; ocelli in obtuse triangle. Scape with striations; fore wing disc slightly infuscate; propodeum smooth and without any ridges or carinae; ovipositor very slightly exserted; five conical sensillae on fore tibia (Rehmat & Anis 2015).

   **Distribution:** India: West Bengal (Rehmat & Anis 2015) and Karnataka (new record).

4. *Palaeoneura vegis* Amer & Zeya 2019
   **Material examined:** EDAU/Mym/DR4/2020, two females, 23.ix.2018, Yercaud, Salem, Tamil Nadu, India, 11.774N & 78.209E, YPT, coffee ecosystem, coll. K. Surya (on card, EDAU).
   **Brief diagnosis:** Face below toruli with 12 setae on each side; wings subhyaline; fore wing slightly infumate in basal third and along anterior margin; pronotum entire; ovipositor hardly exserted beyond gastral apex (Amer & Zeya 2019).

   **Distribution:** India: Uttar Pradesh (Amer & Zeya 2019) and Tamil Nadu (new record).
References


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Erratum and addenda to the article ‘A history of primatology in India’