

## Description of the male of *Anaphes triapitsyni* Anwar & Zeya, 2019 with new distributional records of mymaridae in India (Hymenoptera: Chalcidoidea)

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Received: 06 April 2022 / Accepted: 27 June 2022 / Available online: November 2022 / Printed: December 2022

**Abstract:** The previously unknown male of *Anaphes triapitsyni* Anwar & Zeya, 2019 (Hymenoptera: Mymaridae) is described. Two species are recorded for the first time from India viz., *Erythmelus rex* (Girault) and *Litus usach* Triapitsyn & Berezovskiy, 2004. New distributional records for some other mymarids in India are provided.

**Keywords:** fairyfly, taxonomy, biodiversity, new records, India.

### Introduction

The Mymaridae (Hymenoptera: Chalcidoidea) in India is a rather large and speciose family, represented by over 200 species in 39 genera (Noyes 2019), with many species still waiting to be discovered. Of the various classical literature on Indian fauna, these three major works, Zeya & Hayat (1995), Rehmat & Anis (2015), and Anwar et al. (2020) alone, presented about 80 species from India.

Anwar et al. (2019) described two new species of *Anaphes* Haliday (i.e., *A. triapitsyni* Anwar & Zeya, 2019 and *A. kailashchandrai* Anwar & Zeya, 2019). They provided the key to females of the three known species of the genus from India. The males are not uncommon, but no males of any *Anaphes* species described from India have not been reported so far. Because the taxonomy of the chalcid species is mostly based on characters that are contrastingly present in females, males are often neglected. Nevertheless, the importance of either of the sexes cannot be underestimated when it comes to the biological control program. Manickavasagam & Rameshkumar (2011), Palanivel & Manickavasagam (2015), Anwar et al. (2015), Anwar & Zeya (2018), Anwar et al. (2020, 2021, 2022), described several Mymaridae species from India, including the males.

Here, a male specimen of *Anaphes triapitsyni* is described and illustrated for the first time. We also provide new distributional records for other mymarids from India and some of its states.

### Material and Methods

A well-preserved, quality slide-mounted specimen is a prerequisite for studying these tiny parasitic wasps. The slides were prepared following Huber (2015) and Anwar et al. (2020). For morphological terminology, Zeya & Hayat (1995) and Gibson (1997) were followed. Measurements of body lengths are taken from the card-mounted specimens; all other measurements were taken from slide mounts and were later converted to  $\mu\text{m}$ . The length of the antennal scape excludes the radicle. Habitus photographs were taken from card-mounted

specimens using a Nikon SMZ 1000 stereomicroscope. The photographs of slide-mounted parts were taken with a digital camera attached to a "Nikon eclipse DM 2500" compound microscope and retouched using Adobe Photoshop®. All the identified specimens were deposited in the Insect Collections Department of Zoology, Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

The following abbreviations are used:

fl<sub>1</sub>, fl<sub>2</sub>... = Funicular 1, 2 ...

m<sub>ps</sub> = multiporous plate sensillum or sensilla (= longitudinal sensilla of authors)

SN = Sweep net

PFT = Pitfall trap

YPT = Yellow pan trap

The following acronyms are used for specimen depositories:

BMNH = The Natural History Museum, London, U.K.

CNC = Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Ontario, Canada.

EDAU = Entomology Department, Annamalai University, Chidambaram, Tamil Nadu, India.

NMID = National Museum of Ireland, Dublin, Ireland.

NPC = National Pusa Collection, Division of Entomology, Indian Agricultural Research Institute, New Delhi, India.

USNM = National Museum of Natural History, Washington, D.C., USA.

ZDAMU = Insect Collections Department of Zoology, Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

### Results

#### Taxonomy and faunistic records

##### Description of the newly recorded male

*Anaphes triapitsyni* Anwar & Zeya, 2019

(Figs 1-3)

*Anaphes triapitsyni* Anwar & Zeya, in Anwar et al., 2019: 27, female. Holotype, female, India, Odisha, Jharsuguda (ZDAMU), examined.

Examined material. 2 females, 1 male. India: Uttar Pradesh: Lakhimpur Khiri, Imami Purwa, 1 male (on slide under 4 coverslips, slide No. MYM.905), 2 females (each on

slide under 1 and 4 coverslips, slide Nos. MYM.906, MYM.907) 27.ix.2008, Coll. S.M.A. Badruddin & F.R. Khan. (Zdamu).

Diagnosis.

*Male.* Similar to females (see Anwar et al. 2019) except for 10-segmented flagellum and genitalia  $0.9 \times$  gaster and  $0.9 \times$  mesotibia length.

Description.

*Male.* Length, 987  $\mu$ m. Head and body dark brown. Antenna pale brown. Wings subhyaline. Legs, including coxae, yellowish brown.

*Head* (Fig. 1). Head in ventral view  $1.4 \times$  as broad as high. Antenna with 10 flagellomeres. Scape  $1.7 \times$  long as broad; pedicel shorter than each individual funicular, slightly wider than long; flagellomeres all with mps, fl<sub>4</sub> the longest (Fig. 1).

*Mesosoma* (Fig. 3). Mesoscutum wider than long, shorter than scutellum length. Forewing about  $5 \times$  long as broad, with a wide gap between the hypochaeta and the base of the cubital

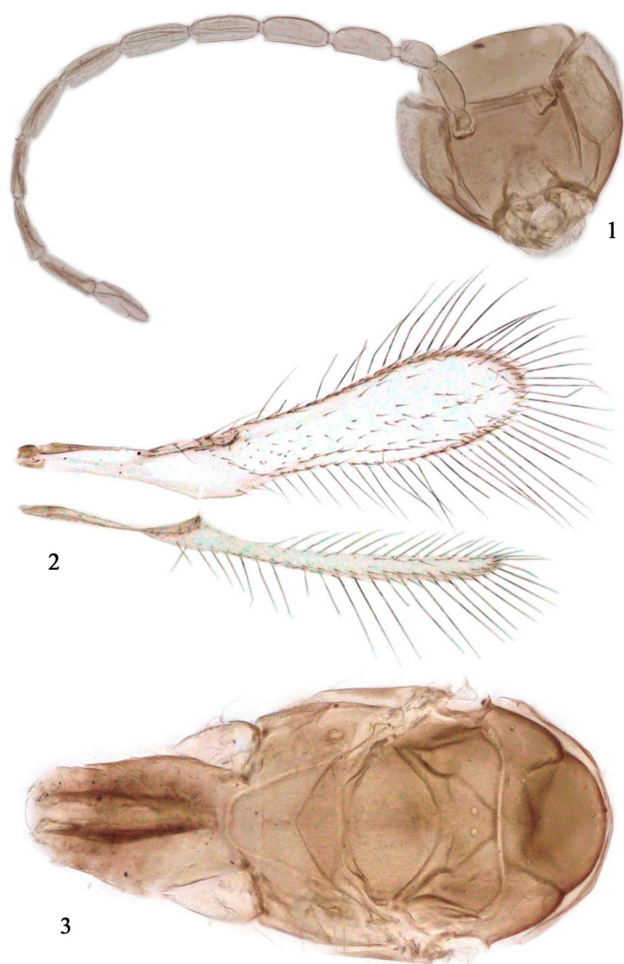
row of microtrichia; wing disc largely bare except with a few microtrichia unevenly scattered; longest marginal seta  $0.3 \times$  long as the maximum wing width (Fig. 2). Hind wing  $19 \times$  long as broad; longest marginal seta  $4 \times$  as long as the maximum wing width (Fig. 2). All coxae smooth.

*Metasoma* (Fig. 3). Metasoma shorter than mesosoma in length; genitalia  $0.9 \times$  gaster length.

Measurements ( $\mu$ m): head width:height, 138:188; antennal segments length:width-radicle, 15:13; rest of scape, 43:25; pedicel, 30:33; fl<sub>1</sub>, 50:20; fl<sub>2</sub>, 55:20; fl<sub>3</sub>, 55:18; fl<sub>4</sub>, 58:18; fl<sub>5</sub>, 57:18; fl<sub>6</sub>, 50:18; fl<sub>7</sub>, 53:18; fl<sub>8</sub>, 50:18; fl<sub>9</sub>, 50:15; fl<sub>10</sub>, 50:15; mesosoma, 218; forewing length:width, 480:95; longest marginal seta, 150; hind wing length:width, 475:25; longest marginal seta, 100; protibia, 120; mesotibia, 150; metatibia, 158; gaster, 150; genitalia, 138.

Host Unknown.

Distribution. India: Kerala, Odisha, Uttar Pradesh (new record).



Figures 1-3. *Anaphes triapitsyni* Anwar & Zeya, 2019

Male:

1. head with antenna, frontal view;

2. wings;

Faunistic records

New country records

*Erythmelus rex* (Girault, 1911)

(Figs 4-6)

*Anthemella rex* Girault, 1911: 185, female. Holotype, female, Urbana, Illinois, USA (USNM), not examined.

Examined material. 2 females. India: Uttar Pradesh: Etah,

Patna Panchi Vihar, 1 female (on slide under 4 coverslips, slide No. MYM.620), 27.xi.2011 (SN), Coll. S.U. Usman & P.T. Anwar; Himachal Pradesh: Shimla, 1 female (on slide under 4 coverslips, slide No. MYM.610), 30.vii.2014 (SN), Coll. K. Veenakumari.

Diagnosis. Body largely dark brown except gaster in basal third pale yellow. Antenna with fl<sub>1</sub> shortest; fl<sub>5</sub> longest, shorter than the combined length of fl<sub>3</sub> and fl<sub>4</sub> (Fig. 5).

Forewing about 8× long as broad, disc almost bare, with a few microtrichia in the middle (Fig. 6). Metasoma as long as mesosoma (Fig. 4).

**Important references.** Triapitsyn (2003), Triapitsyn et al. (2007), Hu & Triapitsyn (2013), Lotfalizadeh (2015), Zeya et al. (2022).

**Hosts.** Miridae.

**Distribution in India (new record).** Himachal Pradesh, Uttar Pradesh.

***Litus usach*** Triapitsyn & Berezovskiy, 2004

(Figs 7–9)

*Litus usach* Triapitsyn & Berezovskiy, 2004: 13, female. Holotype, female, Nepal, Goropani Pass (CNC), not examined.

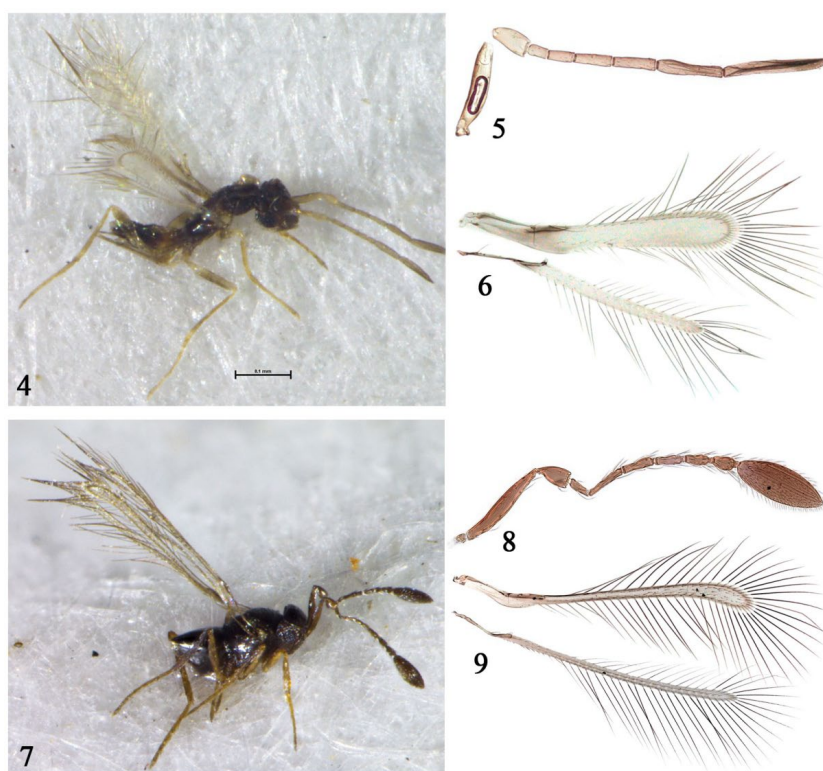
**Examined material.** India: Himachal Pradesh: Shimla, 1

female (on slide under 4 coverslips, slide No. MYM.221), 2.viii.2014 (YPT), Coll. K. Veenakumari; Uttarakhand: Sahaspur, 1 female (on slide under 4 coverslips, slide No. MYM.228), 19.iii.2016 (SN), Coll. P.T. Anwar & M.M. Jamali. (ZDAMU).

**Diagnosis.** Body length 0.37–0.4 mm. Body with antenna and legs dark brown (Fig. 7). Antenna with scape (excluding radicle) 6.0–6.4× long as broad; funicular all longer than broad, fl<sub>2</sub> longest; fl<sub>1</sub> shortest; clava shorter than fl<sub>3</sub>–fl<sub>6</sub> combined (Fig. 8). Forewing 14–16× as long as broad; disc setose in distal half, broad and curved at apex; longest marginal seta 5.3–5.7× as long as the maximum wing width (Fig. 9). Ovipositor 0.6–0.7 × mesotibia length.

**Hosts.** Unknown.

**Distribution in India (new record):** Himachal Pradesh, Uttarakhand.



Figures 4-9.  
(4-6) *Erythmelus rex* (Girault), female:  
4 habitus;  
5. antenna;  
6. wings.  
(7-9) *Litus usach* Triapitsyn & Berezovskiy, female:  
7. habitus;  
8. antenna;  
9. wings.

#### New state records for India

***Anagroidea himalayana*** (Mani & Saraswat, 1973)

(Fig. 10)

*Anaphes himalayanus* Mani & Saraswat 1973: 101, female, male. Holotype, female, India, Kalatop, Dalhousie (USNM), not examined.

**Examined material.** 2 females, 1 male. India: Himachal Pradesh: Chamba, Dalhousie, 1 female, 1 male (each on card), Coll. P.T. Anwar & F.S.K. Amer. Sikkim: Tadong, Icar Comp, 1 female (on card), 3.xi.2014 (YPT), Coll. K. Veenakumari. (ZDAMU).

**Diagnosis.** *Anagroidea himalayana* is the only species in the genus recorded in India. The features that distinguish it from others in the genus are the body length of 720–880 µm; clava 3.1× long as broad, slightly shorter than the scape (including

radicle); the base of forewing with a well-defined row of 6–7 setae along the submarginal vein.

**Important references.** Subba Rao & Hayat (1983), Hayat (1992), Triapitsyn & Berezovskiy (2002).

**Hosts.** Unknown.

**Distribution in India:** Himachal Pradesh, Sikkim (new record), West Bengal.

***Dicopomorpha albithorax*** Manickavasagam, 2016 (Fig. 11)

*Dicopomorpha albithorax* Manickavasagam, 2016: 8384, female. Holotype, female, India, Andaman & Nicobar Islands (Edau), examined.

**Examined material.** 2 females. India: Karnataka, Bengaluru, Cori, 2 females (on slide under 4 coverslips, slide

No. MYM.204, 205), 26.i.2013 (YPT), Coll. K. Veenakumari. (ZDAMU).

**Diagnosis.** Head dark brown; mesosoma pale yellow; metasoma dark brown; antenna pale brown; legs pale yellow. Antenna with 6 funiculars.

**Hosts.** Unknown.

**Distribution.** India: Andaman & Nicobar Islands, Karnataka (new record), Tamil Nadu.

***Dicopomorpha indica* (Subba Rao, 1989)**

(Fig. 12)

*Dicopulus indicus* Subba Rao, 1989 : 168, female. Holotype, female, India, Karnataka (BMNH), not examined.

**Material examined.** 2 females. India: Ani: Little Andaman Forest Nursery, 1 female (on slide under 4 coverslips, slide No. MYM.105), 30.i.2013 (SN), Coll. K. Veenakumari. Kerala: Kannur, Mankuzhy, 1 female (on slide under 4 coverslips, slide No. MYM.211), 10.i.2012 (SN), Coll. F.R. Khan. (ZDAMU).

**Diagnosis.** Head dark brown; mesosoma pale yellow; metasoma dark brown; antenna pale brown; legs pale yellow. Antenna with 7 funiculars; fl<sub>2</sub> quadrate.

**Hosts.** Unknown.

**Distribution.** India: Andaman & Nicobar Islands (new

record), Karnataka, Kerala (new record).

***Litus huberi* Rehmat & Anis, 2009**

(Fig. 13)

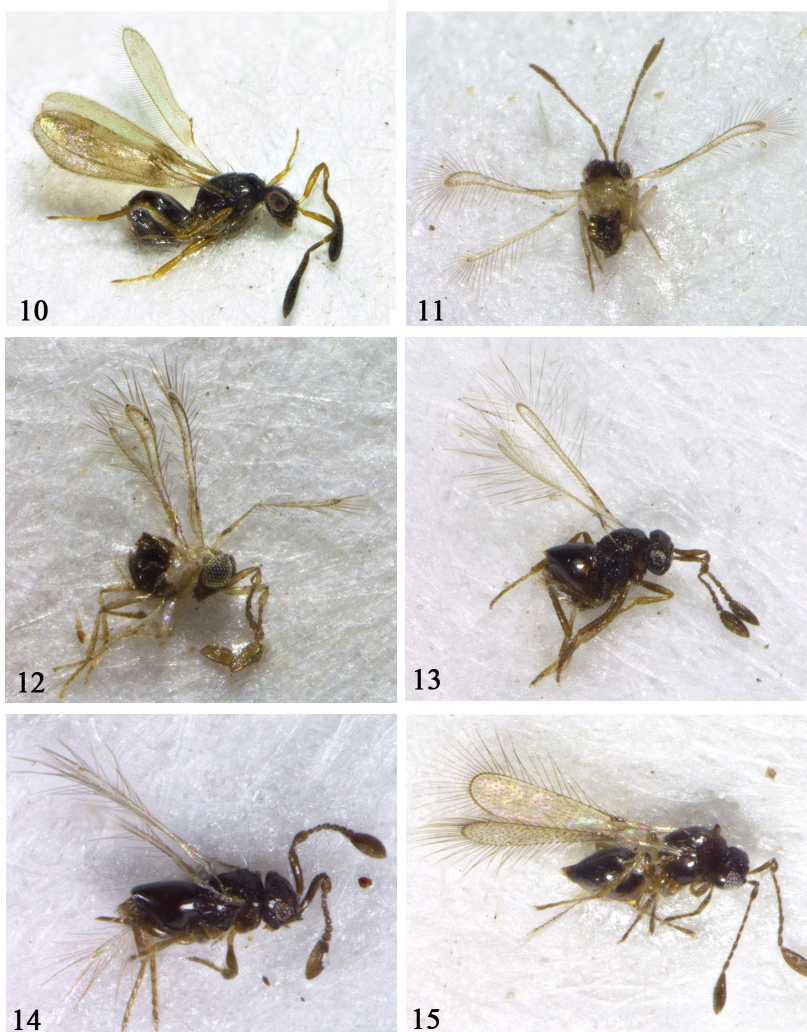
*Litus huberi* Rehmat & Anis, in Rehmat et al., 2009 : 370, female. Holotype, female, India, Assam (NPC), not examined.

**Examined material.** 2 females. India: Odisha: Jharsuguda, Sarbahal, 1 female (on slide under 4 coverslips, slide No. MYM.226), 15.xii.2007 (SN), Coll. F.R. Khan. Andaman & Nicobar Islands: South Andaman, Sippighat, 1 female (on slide under 4 coverslips, slide No. MYM.227), 22.ii.2012 (SN), Coll. K. Veenakumari. (ZDAMU).

**Diagnosis.** Anterior margin of frons slightly convex, with a row of large denticles; ovipositor slightly exerted, the exerted part about 0.2 × gaster; ovipositor 1.6 × mesotibia and 1.3 × metatibia length. *Litus huberi* looks very similar to *L. triapitsyni* Rehmat & Hayat, 2009. It was differentiated by the authors of this species by very meagre features that may be artifacts of slide preparation so that the later taxon may be a synonym of the former.

**Hosts.** Unknown.

**Distribution.** India: Andaman & Nicobar Islands (new record), Assam, Odisha (new record), Uttarakhand, Tamil Nadu.



Figures 10-15 females:

- 10. *Anagroidea himalayana* (Mani & Saraswat);
- 11. *Dicopomorpha albithorax* Manickavasagam;
- 12. *Dicopomorpha indica* (Subba Rao);
- 13. *Litus cynepsius* Haliday;
- 14. *Litus huberi* Rehmat & Anis;
- 15. *Ptilomyzmar dictyon* Hayat & Anis.

***Litus cynepseus* Haliday, 1833**

(Fig. 14)

*Litus cynepseus* Haliday, 1833: 345, female. Lectotype, female, likely in England (UK) or Ireland (NMID), not examined.

**Material examined.** 19 females. India: Uttarakhand: Garhwal, Khirsu, 1 female (on slide under 4 coverslips, slide No. MYM.26), 17.xi.2011 (SN), Coll. P.T. Anwar. Himachal PRADESH: Shimla, 2 females (1 on card and 1 on slide under 4 coverslips, slide No. MYM.223), 30.vii.2014 (SN); 16 females (15 on card and 1 on slide under 4 coverslips, slide No. MYM.222), 30.vii.2014 (SN), Coll. K. Veenakumari. (ZDAMU).

**Diagnosis.** Antenna with fl<sub>2</sub> at most as long as pedicel; mesoscutum with notauli well developed; forewing almost straight at the apex.

**Important references.** Triapitsyn & Berezovskiy (2004).

**Hosts.** *Ocypus olens* (Müller, 1764) and *Staphelinus* sp. (Coleoptera: Staphelinidae).

**Distribution in India:** Himachal Pradesh (new record), Karnataka, Meghalaya, Nagaland, Tamil Nadu, Uttarakhand (new record).

***Ptilomyar dictyon* Hayat & Anis, 1999**

(Fig. 15)

*Ptilomyar dictyon* Hayat & Anis, 1999: 15, female. Holotype, female, India, Tamil Nadu (BMNH), not examined.

**Examined material.** 1 female. India: Madhya Pradesh: Bhopal, Anand Nagar, 1 female (on card), 16.xii.2011 (PFT), Coll. K. Veenakumari. (ZDAMU).

**Diagnosis.** Antenna with 8 funiculars; fl<sub>7</sub> and fl<sub>8</sub> each distinctly shorter than fl<sub>3</sub>-fl<sub>6</sub> individually; first gastral tergite with a pair of scale-like setae on each side; ovipositor not exerted beyond the apex of gaster.

**Hosts.** Unknown.

**Distribution.** India: Madhya Pradesh (new record), Tamil Nadu.

**Discussion**

The study led to a record, and for the first time, description of the male of *Anaphes triapitsni* Anwar & Zeya 2019 and adds new distributional information of the nine mymarid species from India.

Two species, i.e., *Erythmelus rex* and *Litus usach*, are recorded for the first time in the fauna of India of which *L. usach* is recorded for the first time after its original description from Nepal (Triapitsyn & Berezovskiy, 2004). The other recorded species are quite uncommon and are new additions to the ZDAMU collections.

The species included in the present study were collected from different states all over India. However, because of the biodiversity richness of this country, many more mymarid wasp species are expected to occur here. Therefore, future collection trips and studies are needed to explore this family in different zoogeographical regions of this large country that occupies a major part of Asia.

**Acknowledgments**

The authors thank Dr. Mohammad Hayat, In-charge, ZDAMU, for his

suggestions and critical review. They are very grateful to the collectors (mentioned in the examined material section) for donating the specimens. Prince T. Anwar gratefully acknowledges the Council of Scientific and Industrial Research (CSIR), New Delhi, India, for providing financial assistance in the form of a Research Associateship.

**References**

- Anwar, P.T., Zeya, S.B., Veenakumari, K. (2015): First record of *Stephanocampta* Mathot (Hymenoptera: Mymaridae) from India, with description of a new species. *Journal of Insect Systematics* 1(2): 149-151.
- Anwar, P.T., Zeya, S.B. (2018): The genus *Dicopus* Enock (Hymenoptera: Chalcidoidea: Mymaridae) in India with description of two new species. *Journal of Asia-Pacific Entomology* 21(2018): 682-687.
- Anwar, P.T., Zeya, S.B., Huber, J.T. (2019): Two new species of *Anaphes* Haliday (Hymenoptera: Mymaridae) from India and Indonesia. *Zootaxa* 4623(1): 26-40.
- Anwar, P.T., Zeya, S.B., Veenakumari, K. (2020): Fairyfly genus *Camptoptera* Foerster (Hymenoptera: Chalcidoidea: Mymaridae) in India and Sri Lanka, with descriptions of eleven new species. *Zoologica* 165: 1-89.
- Anwar, P.T., Zeya, S.B., Khan, F.R., Usman, S.U. (2021): Description of the males of the subgenus *Eofoersteria* Mathot, 1966 (Hym., Mymaridae, *Camptoptera* Foerster), with new distributional records in India. *Journal of Insect Biodiversity and Systematics* 7(4): 437-447.
- Anwar, P.T., Khan, F.R., Ahmad, Z., Usman, S.U., Ghramh, H.A., Zeya, S.B. (2022): An overview of the genus *Alaptus* Westwood in India (Hymenoptera: Mymaridae). *The European Zoological Journal* 89(1): 1159-1173.
- Gibson, G.A.P. (1997): Chapter 2. Morphology and terminology. pp. 16-44. In: Gibson G.A.P., Huber, J.T., Woolley, J.B. (eds), *Annotated keys to the genera of Nearctic Chalcidoidea* (Hymenoptera). National Research Council of Canada, NRC Research Press, Ottawa, Ontario, Canada.
- Girault, A.A. (1911): A new mymarid genus and species from North America allied with *Anthemus* Howard. *Proceedings of the Entomological Society of Washington* 13(3): 185-187.
- Haliday, A.H. (1833): An essay on the classification of the parasitic Hymenoptera of Britain, which correspond with the *Ichneumones minuti* of Linnaeus. *Entomological Magazine* 1: 259-276, 333-350.
- Hayat, M. (1992): Records of some Mymaridae from India, with notes (Hymenoptera: Chalcidoidea). *Hexapoda* 4(1): 83-89.
- Hayat, M., Anis, S.B. (1999): New record of two genera *Ptilomyar* and *Himopolymena* from India, with descriptions of two new species (Hymenoptera: Mymaridae). *Shashpa* 6(1): 15-22.
- Hu, H., Triapitsyn, S.V. (2013): Taxonomic notes on *Erythmelus* Enock (Hymenoptera: Mymaridae) from Xinjiang, China, with description of a new species. *Turkish Journal of Zoology* 37: 423-430.
- Huber, J.T. (2015): World reclassification of the *Gotatocerus* group of genera (Hymenoptera: Mymaridae). *Zootaxa* 3967(1): 1-184.
- Lotfalizadeh, H. (2015): Preliminary checklist of Iranian mymarids (Hymenoptera: Chalcidoidea, Mymaridae). *Journal of Entomological and Acarological Research* 47(4838): 73-78.
- Mani, M.S., Saraswat, G.G. (1973): Part III. Family Mymaridae. In: Mani, M.S., Dubey, O.P., Kaul, B.K., Saraswat, G.G. (eds.), *On some chalcids* (Hymenoptera) from India. *Memoirs of the School of Entomology* 2: 101-125.
- Manickavasagam, S., Rameshkumar, A. (2011): First report of three genera of fairyflies (Hymenoptera: Mymaridae) from India with description of a new species of *Dicopus* and some other records. *Zootaxa* 3094: 63-68.
- Noyes, J.S. (2019): Universal Chalcidoidea Database. Available at: <http://www.nhm.ac.uk/entomology/chalcidoids/index.html> (accessed: 12 January 2022).
- Palanivel, S., Manickavasagam, S. (2015): Description of a new species of *Eubroncus* Yoshimoto (Hymenoptera: Mymaridae) from India, with a key to world species. *Journal of Threatened Taxa* 7(5): 7152-7156.
- Rameshkumar, A., Manickavasagam, S. (2016): Descriptions of four new species of *Dicopomorpha* Ogloblin (Hymenoptera: Chalcidoidea: Mymaridae) from India with a key to Indian species. *Journal of Threatened Taxa* 8(1): 8383-8388.
- Rehmat, T., Anis, S.B., Hayat, M. (2009): Record of the genus *Litus* Haliday (Hymenoptera: Chalcidoidea: Mymaridae) from India, with description of two species. *Journal of Threatened Taxa* 1(7): 370-374.
- Rehmat, T., Anis, S.B. (2015): A review of Indian species of *Polymena* Haliday (Hymenoptera: Mymaridae). *Journal of Insect Systematics* 2(2): 138-166.
- Subba Rao, B.R. (1989) On a collection of Indian Mymaridae (Chalcidoidea: Hymenoptera). *Hexapoda* 1: 139-186.
- Subba Rao, B.R., Hayat, M. (1983): Key to the genera of Oriental Mymaridae, with a preliminary catalogue (Hymenoptera: Chalcidoidea). pp 125-150. In: Gupta, V.K. (Ed.). *Studies on the Hymenoptera*. Contributions of the American Entomological Institute 20. Gainesville.
- Triapitsyn, S.V. (2003): Review of the Mymaridae (Hymenoptera, Chalcidoidea)

- of Primorskii Krai: genus *Erythmelus* Enock, with taxonomic notes on some extralimital species. *Far Eastern Entomologist* 126: 1-44.
- Triapitsyn, S.V., Berezovskiy, V.V. (2002): Review of the Mymaridae (Hymenoptera, Chalcidoidea) of Primorskii Krai: genera *Anagroidea* Girault and *Eubroncus* Yoshimoto, Kozlov et Trjapitzin. *Far Eastern Entomologist* 114: 1-17.
- Triapitsyn, S.V., Berezovskiy, V.V. (2004): Review of the genus *Litus* Haliday, 1833 in the Holarctic and Oriental regions, with notes on the Palearctic species of *Arescon* Walker, 1846 (Hymenoptera: Mymaridae). *Far Eastern Entomologist* 141: 1-24.
- Triapitsyn, S.V., Berezovskiy, V.V., Hoddle, M.S., Morse, J.G. (2007): A review of the Nearctic species of *Erythmelus* (Hymenoptera: Mymaridae), with a key and new additions to the New World fauna. *Zootaxa* 1641: 1-64.
- Zeya, S.B., Hayat, M. (1995): A revision of the Indian species of *Gonatocerus* Nees (Hymenoptera: Chalcidoidea: Mymaridae). *Oriental Insects* 29: 47-160.
- Zeya, S.B., Anwar, P.T., Ahmad, Z., Ghramh, H.A., Khan, F.R., Khan, F.S. (2022): The family Mymaridae (Hymenoptera: Chalcidoidea) in the Kingdom of Saudi Arabia - II: new records, and description of a new species of *Erythmelus* Enock. *Journal of Insect Biodiversity and Systematics* 8(4): 527-539.
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