



New Distributional Records of Fairyflies (Hymenoptera: Chalcidoidea: Mymaridae) from Pudhucherry, India

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A survey was conducted between February and March, 2011 to collect mymarid parasitoids from forest ecosystem from Pudhucherry (Pondicherry University premises) and orchard and weed ecosystem from Pandit Jawaharlal Nehru College of Agriculture (PAJANCOA), Karaikkal using two collection methods (net sweep, and yellow pan trap). The survey revealed new distributional records of seven genera and nine species of mymarids from Pudhucherry.

Key words: Survey, Fairyflies, Mymaridae, Hymenoptera, Distributional records, Pudhucherry, India.

Fairyflies (Hymenoptera: Chalcidoidea: Mymaridae) are internal, primary parasitoids on insect eggs especially Hemiptera, but eggs of Lepidoptera, Odonata, Coleoptera and Psocoptera are also attacked. Huber (1986) published a review of the hosts of mymarids and also stated that they particularly parasitize eggs in concealed situations such as those embedded in plant tissues, placed under scales, bracts or in soil. Few mymarids are also capable of swimming under water in search of their aquatic insect egg hosts, using their wings as oars (Matheson and Crosby, 1912 and Jackson, 1966). Indian mymarid taxonomy was mainly studied from Aligarh Muslim University (AMU), Uttar Pradesh by Verma (1980), Subba Rao and Hayat (1983), Hayat (1992), Zeya and Hayat (1995), Hayat and Anis (1999a, b, and c), Hayat and Singh (2001), Hayat et al. (2008), Rehmat et al. (2009) and Zeya (2011). Recently, in South India, the mymarid fauna of Kerala, Andhra Pradesh and Tamil Nadu was studied by Rameshkumar et al. (2011 a and b) and Manickavasagam and Rameshkumar (2011) respectively. In continuation, the mymarid fauna of pudhucherry is documented in the present study, as only three species (*Gonatocerus meghalayanus* (Zeya and Hayat, 1995), *Polynema brevicarinae* and *P. mendeli* (Hayat and Anis, 1999c) of mymarids are reported from Pudhucherry (=Pondicherry).

Material and Methods

A survey was conducted for a week in February and March, 2011 at Pandit Jawaharlal Nehru College of Agriculture (PAJANCOA), Karaikkal (orchard and weed ecosystem) and Pondicherry (forest ecosystem within Pondicherry University premises) districts respectively of Pudhucherry in search of mymarid parasitoids by yellow pan trapping and net sweeping. The recovered parasitoids were either card or slide mounted and labeled according to the

standard procedure provided by Noyes (1982). References and keys for identification to all the species recorded here are available in Lin et al. (2007), Hayat and Anis (1999 b and c), Zeya and Hayat (1995) and Subba Rao and Hayat (1983) and deposited with Parasitoid Taxonomy and Biocontrol Laboratory, Department of Entomology, Faculty of Agriculture, Annamalai University, Chidambaram.

Results and Discussion

From the present survey, 89 mymarids were collected which include nine genera and 11 species out of which, seven genera and nine species were new distributional records from the state of Pudhucherry and they are listed below:

1. *Acmopolynema maculatum* Subba Rao

Specimen examined: INDIA, Pudhucherry, Karaikkal, PAJANCOA premises, 1 male, through net sweep from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Himachal Pradesh, Tamil Nadu (Hayat and Anis, 1999b), Kerala (Rameshkumar et al., 2011a), Pudhucherry (New record).

Host: Unknown.

2. *Alaptus* Westwood

Specimen examined: INDIA, Pudhucherry, Pondicherry University premises, 1 female, through yellow pan trap from forest ecosystem, 04.iii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Delhi, West Bengal, Tamil Nadu (Subba Rao and Hayat, 1983), Pudhucherry (New record).

Host: (?) Mealybug on coconut (Subba Rao and Hayat, 1983), Psocoptera and perhaps Coccoidea (records of Coccoidea need confirmation) (Lin et

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al., 2007).

3. *Anagrus Haliday*

Specimens examined: INDIA, Pudhucherry, Pondicherry University premises, 7 females, 3 males, through net sweep and yellow pan trap from forest ecosystem, 04-05.iii.2011; Pudhucherry, Karaikkal, PAJANCOA premises, 6 females, 4 males, through yellow pan trap from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Andhra Pradesh, Himachal Pradesh, Delhi, Orissa (Subba Rao and Hayat, 1983), Kerala (Rameshkumar *et al.*, 2011a), Tamil Nadu (Manickavasagam and Rameshkumar, 2011), Pudhucherry (New record).

Host: Cercopidae, Tingidae, and Odonata (Zygoptera), Cicadellidae and Delphacidae reported for Australia (Lin *et al.*, 2007).

4. *Anaphes Haliday*

Specimens examined: INDIA, Pudhucherry, Pondicherry University premises, 2 females, 1 male, through yellow pan trap from forest ecosystem, 03.iii.2011; Pudhucherry, Karaikkal, PAJANCOA premises, 1 female, through yellow pan trap from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Uttar Pradesh, Himachal Pradesh (Subba Rao and Hayat, 1983), Kerala (Rameshkumar *et al.*, 2011a), Tamil Nadu (Manicka vasagam and Rameshkumar, 2011), Pudhucherry (New record).

Host: Curculionidae and Chrysomelidae; also from *Argidae*, *Brenthidae*, *Byrrhidae*, *Ephydriidae*, *Gerridae*, *Miridae*, *Tephritidae* and *Tipulidae* (Lin *et al.*, 2007).

5. *Arescon Walker*

Specimen examined: INDIA, Pudhucherry, Pondicherry University premises, 1 female, through yellow pan trap from forest ecosystem, 04.iii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Bihar, Delhi, Gujarat, Himachal Pradesh, Karnataka, Maharashtra (Subba Rao and Hayat, 1983), Kerala (Rameshkumar *et al.*, 2011a), Andhra Pradesh (Rameshkumar *et al.*, 2011b), Tamil Nadu (Manickavasagam and Rameshkumar, 2011), Pudhucherry (New record).

Host: Cicadellidae (Lin *et al.*, 2007), Jassid eggs (Subba Rao and Hayat, 1983).

6. *Erythmelus Enoch*

Specimens examined: INDIA, Pudhucherry, Pondicherry University premises, 1 female, through yellow pan trap from forest ecosystem, 04.iii.2011; Pudhucherry, Karaikkal, PAJANCOA premises, 1 female, through yellow pan trap from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Delhi, Andhra Pradesh, Uttar Pradesh (Subba Rao and Hayat, 1983), Kerala (Rameshkumar *et al.*, 2011a), Tamil Nadu (Manickavasagam and Rameshkumar, 2011), Pudhucherry (New record).

Host: *Empoasca devastans*, *Helopeltis cinchonae*, *Ophiomyia lantanae* (Subba Rao and Hayat, 1983), Tingidae and Miridae (Lin *et al.*, 2007).

7. *Gonatocerus bashai Zeya*

Specimen examined: INDIA, Pudhucherry, Pondicherry University premises, 1 female, through yellow pan trap from forest ecosystem, 04.iii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Assam (Zeya and Hayat, 1995), Kerala (Rameshkumar *et al.*, 2011a), Pudhucherry (New record). Host: Unknown.

8. *Gonatocerus bouceki Zeya*

Specimen examined: INDIA, Pudhucherry, Pondicherry University premises, 1 female, through yellow pan trap from forest ecosystem, 04.iii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Bihar, Uttar Pradesh (Zeya and Hayat, 1995), Kerala (Rameshkumar *et al.*, 2011a), Pudhucherry (New record). Host: Unknown.

9. *Gonatocerus delhiensis (Narayanan & Subba Rao)*

Specimens examined: INDIA, Pudhucherry, Pondicherry University premises, 1 female, through yellow pan trap from forest ecosystem, 04.iii.2011; Pudhucherry, Karaikkal, PAJANCOA premises, 1 female, through yellow pan trap from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Bihar, Delhi, Himachal Pradesh, Karnataka, Kerala, Tamil Nadu, Uttar Pradesh (Zeya and Hayat, 1995), Andhra Pradesh (Rameshkumar *et al.*, 2011b), Pudhucherry (New record).

Host: Unknown.

10. *Gonatocerus narayani (Subba Rao & Kaur)*

Specimens examined: INDIA, Pudhucherry, Pondicherry University premises, 4 females, through yellow pan trap from forest ecosystem, 04.iii.2011; Pudhucherry, Karaikkal, PAJANCOA premises, 3 females, through yellow pan trap from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Andhra Pradesh, Bihar, Himachal Pradesh, Kerala, Tamil Nadu, Uttar Pradesh (Zeya and Hayat, 1995), Pudhucherry (New record).

Host: ex. eggs of membracids, *Eucoccosterphus tuberculatus* (Zeya and Hayat, 1995).

11. *Gonatocerus pahlgamensis (Narayanan)*

Specimens examined: INDIA, Pudhucherry, Pondicherry University premises, 8 females, through yellow pan trap from forest ecosystem, 04.iii.2011;

Pudhucherry, Karaikkal, PAJANCOA premises, 5 females, through yellow pan trap from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Andhra Pradesh, Assam, Bihar, Jammu and Kashmir, Kerala, Maharashtra, Orissa, Tamil Nadu (Zeya and Hayat, 1995), Pudhucherry (New record).

Host: [?] *Quadraspidotus perniciosus* (Zeya and Hayat, 1995).

12. *Gonatocerus tamilanus* Mani & Saraswat

Specimen examined: INDIA, Pudhucherry, Pondicherry University premises, 1 female, through yellow pan trap from forest ecosystem, 04.iii.2011 (S. Manickavasagam and A. Rameshkumar).

Distribution: India: Kerala, Tamil Nadu, Uttar Pradesh (Zeya and Hayat, 1995), Pudhucherry (New record).

Host: Unknown.

13. *Gonatocerus tarae* (Narayanan & Subba Rao)

Specimens examined: INDIA, Pudhucherry, Pondicherry University premises, 6 females, through net sweep and yellow pan trap from forest ecosystem, 04.iii.2011; Pudhucherry, Karaikkal, PAJANCOA premises, 4 females, through net sweep from weed ecosystem, 11.ii.2011 (S. Manicka vasagam and A. Rameshkumar).

Distribution: India: Assam, Andhra Pradesh, Bihar, Jammu and Kashmir, Kerala, Karnataka, Maharashtra, Meghalaya, Tamil Nadu, Uttar Pradesh (Zeya and Hayat, 1995), Pudhucherry (New record).

Host: Ex. eggs of *Nilaparvata lugens* (Stal); *Sogatella furcifera* (Horvath) (Zeya and Hayat, 1995).

14. *Mymar taprobanicum* Ward

Specimens examined: INDIA, Pudhucherry, Karaikkal, PAJANCOA premises, 2 females, 1 male, through yellow pan trap from weed ecosystem, 11.ii.2011 (S. Manickavasagam and A. Ramesh kumar).

Distribution: India: Uttar Pradesh, Madhya Pradesh (Hayat, 1992), Kerala (Rameshkumar et al., 2011a), Tamil Nadu (Manickavasagam and Rameshkumar, 2011), Pudhucherry (New record).

Host: Ex. eggs of *N. lugens* and *S. furcifera* (Hayat, 1992).

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