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## An addition to the gall midge fauna of Andaman Islands, India

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### Abstract

The aim of the present study was to identify the gall midge collections from different islands of Andaman deposited in Zoological Survey of India, Western Regional Centre, Pune. Results yielded an addition of nine species of gall midges (*Conarete calcuttaensis*, *Conarete mihijamensis*, *Micromyia orientalis*, *Peromyia indica*, *Allobremia pincerifera*, *Lestodiplosis erecta*, *Odontodiplosis travancoricus*, *Contarinia orientalis* and *Octodiplosis bispina*) to the Andaman Islands.

**Keywords:** Gall midges, Diptera, Cecidomyiidae, Andaman Islands

### 1. Introduction

Galls or tumours are abnormal growths on plants developing as a result of the nutritional dependence of microbes like viruses or mycoplasma like organisms, bacteria and fungi; animals such as nematodes, insects and mites<sup>[1]</sup>. Of these, range amplitude in form and structural specializations are more distinct and marked among galls induced by insects than those by other cecidogenous organisms<sup>[1]</sup>.

Approximately, 15,000 gall inducing insects have been recorded from the world, of which majority belong to thrips (Thysanoptera), psyllids, aphids, coccids (Homoptera), curculionids (Coleoptera), cynipids, chalcids (Hymenoptera), moths (Lepidoptera) and Cecidomyiids (Diptera)<sup>[2]</sup>.

Among Diptera, cecidomyiidae are the largest group of gall makers; commonly known as gall midges<sup>[1]</sup>. These are small, fragile flies, go unnoticed except by the specialist, but the large number of species, the wide diversity of host plants they attack, and their role in various ecosystems, make them much more important than their appearance might suggest<sup>[3]</sup>. The name gall midge is derived from the ability of the larvae to produce galls or abnormal plant growths, on various organs of plants. The Latin name of the family, Cecidomyiidae, comes from the word 'gall', in Latin 'Cecidium'<sup>[3]</sup>.

The Andaman and Nicobar Islands is known for rich biodiversity resources. The archipelago comprises 572 islands and extending over 800 km<sup>[4]</sup>. The insect fauna of the Andaman and Nicobar Islands is relatively less known in comparison with the explored and documented diverse fauna from the Indian mainland<sup>[5]</sup>. Even though a large number of studies on Plant galls and gall midges from Indian mainland<sup>[6-19]</sup>, only a very little attention was paid on the galls and gall makers of Andaman Islands<sup>[20, 21]</sup>. Hence, in the present study efforts were made to identify the gall midges which were collected during 1981-1983 from different islands of Andaman.

### 2. Material and Methods

Gall midges were collected from light trap, webs of spider and rotten barks of the trees from different islands of Andaman during the survey from 1981-1983 by one of the authors (RMS). Adults were dissected and mounted on microscope slides in Canada balsam. Identification of midges has been done with the help of literature<sup>[6, 10, 12, 14]</sup>. The specimens are deposited in the National Zoological Collection of WRC, Zoological Survey of India, Entomology Section, Pune, India.

### 3. Results and Discussion

Except Sharma 1989<sup>[20]</sup>, the gall midge fauna of Andaman Islands remains largely unexplored. Sharma 1989<sup>[20]</sup> reported four species of gall inducing midges from Andaman Islands as new records to these islands.

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This report yielded an addition of another nine species of gall midges to the Andaman Islands. Among them, five species (*Conarete calcuttaensis*, *Conarete mihijamensis*, *Micromyia orientalis*, *Peromyia indica* and *Allobremia pincerifera*) were mycophagous, two were zoophagous (*Lestodiplosis erecta*, *Odontodiplosis travancoricus*) and one species, *Contarinia orientalis* was phytophagous. The host for *Octodiplosis bispina* is not known.

*Conarete calcuttaensis* (Nayar), 1949

1949. *Anarete calcuttaensis* Nayar, Proceedings of the Royal Entomological Society of London (B) 18: 79-89.

2014. *Conarete calcuttaensis* : Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 1♀ collected at light, Delanipur, Port Blair, S. Andaman by R.M.Sharma Coll. Date. 22.iv.1982

*Conarete mihijamensis* Grover 1964

1964. *Conarete mihijamensis*: Grover, Marcellia 31 (1963): 108-141.

2014. *Conarete mihijamensis* : Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 1♂ Collected at light, Delanipur, Port Blair, S. Andaman by R.M.Sharma Coll. Date. 22.iv.1982

*Micromyia orientalis* Grover 1962

1962. *Micromyia orientalis* Grover, Proceedings of the National Academy of Sciences, India (B) 32: 439-444.

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Material examined: 1♂ collected at light, Delanipur, Port Blair, S. Andaman by R.M.Sharma Coll. Date. 28.iv.1982

*Peromyia indica* Grover 1970

1970. *Peromyia indica* Grover, Cecidologia Indica 5: 121-180.

2014. *Peromyia indica*: Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 1 ♂ collected at light, Delanipur, Port Blair, S. Andaman by R.M.Sharma Coll. Date. 15.iv.1982

*Allobremia pincerifera* Grover & Bakhshi 1978

1978. *Allobremia pincerifera*, Grover & Bakhshi; Cecidologia Indica 12-13: 5-267.

2014. *Allobremia pincerifera*: Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 1 ♂ collected from web, Keralapuram, North Andaman by R.M.Sharma Coll. Date. 14.xii.1983

*Contarinia orientalis* (Rao & Sharma), 1977

1977. *Bothriochloamyia orientalis*, Rao & Sharma; Entomon 2: 237-240.

2014. *Contarinia orientalis*: Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 1♂ collected at light, Arial Bay, N. Andaman by R.M.Sharma Coll. Date. 8.xii.1983

*Lestodiplosis erecta* (Nayar) 1949

1949. *Moreschiella erecta* Nayar; Proceedings of the Royal Entomological Society of London (B) 18: 79-89.

2014. *Lestodiplosis erecta*: Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 3 ♂ collected at light, Delanipur, PortBlair, South Andaman by R.M.Sharma Coll. Date.

6.iv.1982

*Octodiplosis bispina* Sharma, 1987

1987. *Octodiplosis bispina* Sharma; Geobios New Reports 6: 2-4.

2014. *Octodiplosis bispina*: Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 2 ♂ Collected at light, Mathura, S. Andaman by R.M.Sharma Coll. Date. 13.v.1982

*Odontodiplosis travancoricus* (Nayar) 1949

1949. *Trisopsis travancoricus* Nayar; Proceedings of the Royal Entomological Society of London (B) 18: 79-89.

2014. *Odontodiplosis travancoricus*: Gagné, R.J. and M. Jaschhof, Catalog of the Cecidomyiidae (Diptera) of the World. 3rd Edition. Digital version 2.

Material examined: 1♂ 1♀, Collected from the rotten bark of rain tree infested with mites, Sippighat, South Andaman by RM Sharma, 1.xii.1981; 2♀, Collected at light, Delanipur, Port Blair, S. Andaman by R.M.Sharma Coll. Date. 06.iv.1982

#### 4. Conclusion

The present paper reported an addition of nine species of gall midge fauna to the Andaman Islands. The actual number of gall midges inhabiting the archipelago is certainly much higher than the number of species reported so far and further explorations will definitely yield a rich diversity of gall midges.

#### 5. Acknowledgements

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