

## CHECKLIST OF INDIAN GRASS GALL MIDGES (DIPTERA: CECIDOMYIIDAE) WITH THEIR HOST GRASS (POACEAE) INDEX

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### Abstract

Thirty six species belonging to five widely distributed genera of Indian gall midges (Diptera: Cecidomyiidae) affecting ear-heads of nearly 39 grass species (Poaceae) have been checklisted together with their host grass and distribution.

### Introduction

Gall midges are small, fragile flies belonging to the order Diptera, the suborder Nematocera and the family Cecidomyiidae. The family Cecidomyiidae is one of the largest families of Diptera in the world (Skuhrava *et al.*, 1984). Presently the family consists of three subfamilies: Lestremiinae, Porricondyliinae and Cecidomyiinae.

The larvae of gall midges belonging to Lestremiinae and Porricondyliinae are mycophagous, saprophagous, phytosaprophagous and xylophagous in nature. Whereas all phytophagous cecidomyiids are either gall forming or non-gall forming (including inquiline species) belong to the subfamily Cecidomyiinae. Several phytophagous gall midges cause considerable damage to economically important agricultural crops and have gained the status of serious pests. These include the Asian Rice Gall Midge, *Orseolia oryzae* (Wood-Mason) and the Sorghum Midge, *Contarinia sorghicola* (Coquillett) and many others.

The majority of grass gall midges attack inflorescence (seed-heads) of host grass showing no marked deformity (except in some *Orseolia* sp. which produce hollow, sterile shoot galls). Undoubtedly, gall midge infestation adversely affects seed production of forage grasses. Though, most of them seem to be host specific, the possibility of their transfer to new hosts cannot be ruled out.

There has been no attempt to consolidate the information on the Indian grass gall midges other than that of Gagne (1985),

who has consolidated the information on the Asian Rice Gall Midge and its relatives. Therefore, this contribution is intended to present a resume of all the known Indian grass gall midges together with their host grass index to aid and facilitate their identification and the study of their alternate hosts.

It is evident from the following checklist that rich and vast diversity of our grasses remain to be explored for gall midge infestation.

Altogether, 36 species belonging to five widely distributed genera of gall midges viz., *Lasioptera* Meign, *Contarinia* Rondani, *Geromyia* Coutin and Harris, *Kamptodiplosis* Felt, and *Orseolia* Kieffer and Massalongo associated with nearly 39 grass species (Poaceae) have been enumerated in this resumé. For recent scientific names of the host plants Lakshminarsimhan (1996) has been followed.

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### Checklist of Indian grass gall midges

Gallmidge	Host grass	Distribution
<b>Family: Cecidomyiidae</b>		
<b>Subfamily: Cecidomyiinae</b>		
<u>Supertribe: Lasiopteridi</u>		
1. <i>Lasioptera bothriochloae</i> Rao and Sharma, 1977	<i>Dichanthium pertusum</i> (L.) W.D. Clayton (= <i>Bothriochloa pertusa</i> (L.) A. camus)	Aurangabad (Marathwada), Melghat, Amravati District, Maharashtra.
2. <i>Lasioptera eriochloa</i> Felt, 1926	<i>Eriochloa procerca</i> (Retz.) C.E. Hubb. (= <i>polystachya</i> HOB & K)	Coimbatore, Madras, Tamil Nadu.
3. <i>Lasioptera fluitans</i> Felt, 1917	<i>Paspalidium geminatum</i> (Frosk.) Stapf (= <i>Panicum fluitans</i> ) Retz.	Coimbatore, Madras, Tamil Nadu.
4. <i>Lasioptera paniculi</i> Felt, 1920	<i>Panicum carinatum</i> J.&C.	India and Philippines
5. <i>Lasioptera tomentosae</i> (Grover, 1967)	<i>Setaria intermedia</i> R & S. (= <i>tomentosa</i> Kunth)	Allahabad, Uttar Pradesh; Aurangabad (Marathwada), Vidharba, Maharashtra; Uttara Kannada District, Kamataka; possibly throughout India.
*6. <i>Lasioptera</i> sp. 1.	<i>Axonopus compressus</i> (SW) P. Beauv.	Andaman Islands.
*7. <i>Lasioptera</i> sp. 2.	<i>Brachiaria reptans</i> (L.) Gard. & Hubb.	Andaman Islands.
*8. <i>Lasioptera</i> sp. 3.	<i>Cyrtococcum accrescens</i> (Trin.) Stapf.	Andaman Islands.
*9. <i>Lasioptera</i> sp. 4.	<i>Digitaria sanguinalis</i> (Linn.) Scop.	Andaman Islands.
**10. <i>Lasioptera</i> sp. 5.	<i>Setaria pumila</i> (Poir) R & S.	Melghat, Amravati District, Maharashtra.
<u>Supertribe: Cecidomyiidi</u>		
11. <i>Contarinia caudata</i> Felt, 1920	<i>Cymbopogon schoenanthus</i> (L.) Spreng. (= <i>Andropogon schoenanthus</i> ) <i>Heteropogon contortus</i> (L.) P. Beauv. (= <i>Andropogon contortus</i> ) <i>Apluda mutica</i> L. (= <i>varia</i> Hack)	Coimbatore, Madras, Tamil Nadu.
12. <i>Contarinia eragrostidis</i> Felt, 1927	<i>Eragrostis unioloides</i> (Retz.) Nees.	Andaman Islands; Java, Indonesia.
13. <i>Contarinia</i> (= <i>Bothriochloamyia</i> ) <i>orientalis</i> (Rao & Sharma) 1977	<i>Dichanthium pertusum</i> (L.) W. D. Clayton (= <i>Bothriochloa pertusa</i> (L.) A. Camus)	Aurangabad (Marathwada), Melghat, Amravati District, (Vidharba), Maharashtra.
14. <i>Contarnia sorghicola</i> (Coquillett) 1899 (= <i>andropogonis</i> (Felt), 1921)	<i>Sorghum bicolor</i> (L.) Moench. (= <i>Andropogon sorghum</i> Brot.)	Throughout Asia, North and South America, Africa and Australia.
15. <i>Geromyia akolaensis</i> Grover & Bakshi, 1977-78	<i>Panicum miliaceum</i> L.	Akola (Vidharba), Maharashtra.

16. <i>Geromyia penniseti</i> (Felt), 1920 (= <i>penniseti</i> Felt, 1920) ( <i>Cecidomyia</i> ), (= <i>seminis</i> Felt, 1922) ( <i>Itonida</i> ), (= <i>pennisetoides</i> Barnes, 1956) ( <i>Cecidomyia</i> )	<i>Pennisetum setosum</i> Rich. (= <i>cenchroides</i> ) <i>Pennisetum americanum</i> (L.) K. Sch. (= <i>typhoideum</i> Rich)	Coimbatore, Madras, Tamil Nadu; Daulatabad, Aurangabad (Marathwada), Maharashtra.
17. <i>Kamptodiplosis ramanathi</i> Mani, 1936	Bamboo sp.	Dehra Dun, Uttar Pradesh.
18. <i>Orseolia andropogonis</i> (Felt), 1917 (= <i>plumosa</i> Felt, 1921)	<i>Dichanthium annulatum</i> (Forsk) Stapf. (= <i>Andropogon annulatum</i> )	Adoni, Mysore, Bellary District, Karnataka; Samalkota, Godavari District, Andhra Pradesh.
19. <i>Orseolia</i> spp. Near <i>andropogonis</i> (Felt), Gagne 1985	<i>Dichanthium pertusum</i> (L.) W.D. Clayton (= <i>Bothriochloa pertusum</i> (L.) A. Camus  <i>Ischaemum</i> sp. <i>Iselema laxum</i> Hack.  <i>Ophiuros exaltatus</i> (L.) Kuntze <i>Panicum</i> sp.	Coimbatore, Tamil Nadu; Kistna District, Koderu, Andhra Pradesh.  Madurai, Tamil Nadu. Achanta, Srikakulam, Andhra Pradesh; Cuttack, Orissa; Madurai, Tamil Nadu.  Kavitam, Andhra Pradesh. Cuttack, Orissa.
20. <i>Orseolia apludae</i> (Felt), 1920	<i>Apluda mutica</i> L. (= <i>varia</i> Hack)	Coimbatore, Tamil Nadu.
21. <i>Orseolia cornea</i> (Felt), 1917	<i>Ischaemum indicum</i> (Houtt) Merr. (= <i>ciliare</i> Retz.)	Coimbatore, Tamil Nadu.
22. <i>Orseolia difficilis</i> Gagne, 1973	<i>Cynodon dactylon</i> (L.) Pers.	Allahabad, Uttar Pradesh; Goa; Raipur, Madhya Pradesh; Nagpur, Maha- rashtra; Cuttack, Orissa; Aduthural, Coimbatore, Madurai, Tamil Nadu.
23. <i>Orseolia eragrostisae</i> (Mani), 1936	<i>Eragrostis tenella</i> (L.) P. Beauv.	Malabar, Cannanore, Taliparamba, Kerala; Mysore, Mangalore, Karnataka; Calcutta, West Bengal.
24. <i>Orseolia fluvialis</i> (Felt), 1917	<i>Paspalidium geminatum</i> (Forsk) Stapf. (= <i>Panicum fluitans</i> Retz.)	Coimbatore, Tamil Nadu; Samalkota, Warangal, Nadipudi (Kistna District), Andhra Pradesh.
25. <i>Orseolia</i> spp. Near <i>fluvialis</i> (Felt) Gagne, 1985.	<i>Eleusine indica</i> (L.) Gaertn.	Ranchi, Bihar.
26. <i>Orseolia indica</i> (Felt), 1921	<i>Cymbopogon schoenanthus</i> (L.) Spreng (= <i>Andropogon schoenanthus</i> )	Yemmiganur, Bellary, District Mysore and Kuppal, Karnataka; Coimbatore, Tamil Nadu.
27. <i>Orseolia ischaemi</i> (Kieffer), 1910	<i>Ischaemum pilosum</i> (Klein ex. Willd) Wight	Bombay, Maharashtra.
28. <i>Orseolia mnesitheae</i> Gagne, 1985	<i>Mnesitheae laevis</i> (Retz.) Kunth	Cuttack, Orissa.
29. <i>Orseolia monticola</i> (Felt), 1921	<i>Chrysopogon fulvus</i> (Spr.) Chiov (= <i>Andropogon monticola</i> R & S)	Mysore, Muruvami, Bellary District, Karnataka.
30. <i>Orseolia</i> sp. near <i>monticola</i> (Felt), Gagne, 1985.	<i>Paspalum scrobiculatum</i> L.	Jabalpur, Madhya Pradesh.
31. <i>Orseolia oryzae</i> (Wood-Mason) 1889	<i>Oryza sativa</i> L. <i>Oryza perrenis</i> Moench. (nom. illeg.)	Hyderabad, Andhra Pradesh; Ranchi, Bihar; Raipur, Madhya Pradesh; Nagpur, Maharashtra; Cuttack, Orissa; Coimbatore, Tamil Nadu; Allaha- bad, Uttar Pradesh. This species occurs on rice in nature and has wide distribution from north-central India to southern China, Sri Lanka and Indonesia (Gagne, 1985).
32. <i>Orseolia</i> sp. near <i>oryzae</i> (Wood-Mason) Gagne, 1985.	<i>Echinochloa crusgalli</i> (L.) Beauv. <i>Echinochloa stagnina</i> (Retz.) Beauv. <i>Leersia hexandra</i> S.W.	Cuttack, Orissa. Samalkota, Godavari District, Andhra Pradesh. Cuttack, Orissa.
33. <i>Orseolia paspali</i> (Felt), 1921 (= <i>paspalumi</i> Mani, 1936)	<i>Paspalum scrobiculatum</i> L.	Cannanore, Kerala; Jabalpur and Raipur, Madhya Pradesh; Cuttack, Orissa; Allahabad, Uttar Pradesh.
34. <i>Orseolia pollinae</i> (Felt)	<i>Eulalia trispicta</i> (Schult) Henr (= <i>Pollinia argentea</i> Trin)	Cannanore, Malabar, Taliparamba, Kerala.
35. <i>Orseolia sallae</i> Gagne, 1973	<i>Pseudoraphis spinescens</i> (R. Br.) Vickey (= <i>Andropogon squarrosus</i> Koen)	Achanta, Kistna District, Andhra Pradesh.
36. <i>Orseolia similis</i> Gagne, 1973	<i>Ischaemum indicum</i> (Houtt) Merr. (= <i>ciliare</i> Retz.)	Coimbatore, Tamil Nadu.

\* The author has reared and recorded (Sharma, 1989) these undescribed species from Andaman Islands and are being described elsewhere.

\*\* The author has reared this undescribed species from Melghat Tiger Reserve, Amravati District, Maharashtra and is being described elsewhere.