STUDIES ON THYSANOPTERA OF N. E. INDIA-3
TUBULIFERA FROM TRIPURA

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(With 11 Text-figures)

INTRODUCTION

A comprehensive knowledge of the Thysanoptera fauna of North Eastern India appears to be essential in view of the peculiar terrains as well as the nature of vegetation. In two earlier papers (Sen & Muraleedharan, 1977; Muraleedharan & Sen 1978) some attempts were made to present an idea of the gall thrips of Assam and Meghalaya. Information provided here is based on a collection of Tubulifera made from Tripura during a faunistic survey conducted during September and October 1977.

Tripura is situated between latitudes 22° – 24°5' N and longitudes 91° 2' – 92° 5'E spread in an area of 10477 sq. km. There are seven hill ranges running from North to South and the hill slopes are dense forests mainly consisting of Bamboo and Sal trees, with lot of undergrowth.

Collections were mainly made in and around Belonia, Paratia, Amarpur, Teliamura, Ambasa, and Kailashahar (Text-fig. 1). All specimens are deposited in the National Collection at the Zoological Survey of India, Calcutta. All measurements in microns unless otherwise mentioned.

Systematic Account

Order THYSANOPTERA
Family PHLAEOTHRIPIDAE

1. Androthrips flavipes Schmutz


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2. Crotonothrips cacharensis Muraleedharan & Sen.


Text-fig. 1. Map of Tripura showing areas surveyed.
3. *Crotonothrips longirostris* sp. nov.  

(Text-fig. 2, A-E)

**Female (Macropterous)**: General body colour brown, tube and terminal abdominal segments darker; antennal segments 1-6 golden yellow, 7 & 8 brown; all femora golden yellow with brownish tinge at base, foretibiae golden yellow; mid- and hind tibiae golden yellow with brownish tinge; forewings infumate. All setae brown and blunt.

Head broader than long; 192-220 long, 200-212 wide across eyes; 240-264 wide across cheeks, 244-272 across base; cheeks crenulate with 2-4 minute setae; surface strongly reticulate. Eyes small, 72-76 long, 60-64 wide; all ocelli 24 wide, median ocellus over-hanging between antennae, paired ones placed above the middle of eyes. Postoculars 60-72 long, blunt, very close to eyes. Antennal segments 3-7 pedicellate;

![Image](image_url)


areola of segment 2 at extreme apex; 7 and 8 forming a close unit; segments 1-8 length (width) 1: 44-52 (40); 2: 60-64 (36); 3: 64-68 (32-36); 4: 60-68 (36-40); 5: 60-64 (32-36); 6: 52-60 (28-32); 7: 40-48 (24-28); 8: 32-36 (16). Mouthcone pointed, very long, almost reaching at the base of prosternum, 208-232 long, 240-248 wide at base, 52-64 at apex. Maxillary stylets retracted up to eyes, meeting at middle.


Total body length: 1.9-2.1 mm.

Male (Macropterous): Colouration as in female. Head 176-180 long, 192-200 wide across eyes, 216-220 wide across cheeks, 208-216 across base. Eyes 64-72 long, 56-60 wide. Postoculars 64-68 long. Antennal segments 1-8 length (width): 1: 36-44 (36-40); 2: 52-56 (32-36); 3: 60-64 (28-32); 4: 64 (32); 5: 56-60 (28-32); 6: 60 (28); 7: 48-52 (24-28); 8: 32 (16); sense cones 24-32 long. Mouthcone 180-192 long, 208 wide at base, 60 wide at apex.


Total body length: 1.7-1.8 mm.

This unique new species differs from all the known species of *Crotonothrips* by its very long and pointed mouthcone, reaching almost base of prosternum.

4. *Dinothrips sumatrensis* Bagnall


5† _Ecacanthothrips tibialis_ (Ashmead)


6. _Elaphrothrips denticollis_ (Bagnall)


7. _Gynaikothrips affinis_ sp. nov.

(Text-fig. 3, A-C)

_Female_ (Macropterous): General body colour brown. Antennal segment 1 brown, 2 brown with apical half yellowish, 3-8 uniformly yellow. All femora yellow, foretibiae yellow with basal brownish shade, mid and hind tibiae brown with their apices yellow. All tarsi yellow. Foretarsi armed. Setae hyaline, blunt.


*See Ananthakrishnan (1973) and Palmer & Mound (1978) for Synonymy.
†See Ananthakrishnan (1973) and Palmer & Mound (1978) for synonymy,
broad, 152-180 long, 228-236 wide at base and 100-120 wide at apex. Maxillary stylets retracted to middle of head, not close at middle.


Text-fig. 3. *Gynaiakothrips affinis* sp. n. A. Head and pronotum. B. Antenna. C. Mesopraesternum.

96-100 wide, with 14-15 double fringes. Basal wing setae B₁-B₃ 80-84, 80-84, 84-116 long respectively.


Total body length 2.57-2.92 mm.

*Male (Macrapterous):* Colour as in female. Head 268-300 long, 204-212 across eyes, 216-220 across cheeks, 204-260 across base. Eyes


Total body length 2.31-2.60 mm.


This species resembles Gynaikothrips uzeli Zimmerman in general appearance but differs from it by the short postoculars and posteroangulars, antennal segments 3-8 uniformly yellow and incomplete epimeral suture. From G. flaviantennatus (Moulton) which has also a similar colouration it differs by the longer tube and also by the colouration of tibiae which are completely yellow in G. flaviantennatus. Another species G. bengalensis Anan. also shows some similarities to this species by the presence of a long tube and general colour but differs from the new species by the presence of well developed prothoracic setae except the anteromarginals.

8. Gynaikothrips bengalensis Ananthakrishnan


9. Hoplandrothrips flavipes Bagnall


10. Liothrips clarus sp. nov.

(Text-fig. 4, A-C)

Female (Macropterous): General body colour brown. Antennal segment 1 and 2 brown, rest yellow. All femora brown, foretibiae

Text-fig. 4. Liothrips clarus sp. n. A. Head and pronotum. B. Antenna. C. Meso-praesternum.
yellow with brownish tinge, mid and hind tibiae brown and all tarsi yellow. Wings a little cloudy with a dark brown median streak; setae brown, blunt.

Head 1.3 times as long as head, 313 long, 248 wide across eyes, 240 across cheeks, 212 across base. Cheeks finely crenulate with a few cheek setae. Eyes 124 long, 84 wide and ocelli 32 wide. Postocular 116 long, placed a little below eyes. Antennal segments elongate, segments 1-8 length (width) 1 : 40 (40), 2 : 64 (36), 3 : 112 (36), 4 : 112 (44), 5 : 104 (36), 6 : 96 (36), 7 : 72 (28), 8 : 40 (16). Sense cones 40 long. Mouthcone roughly pointed, 156 long, 208 wide across base and 100 wide at apex. Maxillary stylets retracted to \( \frac{1}{3} \) of head.

Prothorax short, with transverse striations 172 long in the median line, 228 wide at anterior margin and 388 wide at posterior margin. Anteroangulars 64, anteromarginals 52, midlaterals 100, posteroangulars 128, epimerals 148 long respectively. Forefemora 280 long, 116 wide. Pterothorax 495 long, 511 wide at meso- and 462 wide at metathorax. Mesopraesternum incomplete. Forewings 1089 long, 104 wide. Basal wing setae \( B_1-B_5 \) 110 ; 116 & 116 long respectively with 20 double fringes.

Abdomen 478 wide at base, 396 at middle, 181 across segment IX. \( B_1-B_5 \) of segment IX 300 ; 336 & 280 long respectively. Tube 330 long and anal setae 280 long.

Total body length : 3.22 mm.


Prothorax 168 long, 200 wide at anterior margin and 340 at posterior margin. Anteroangulars 48, anteromarginals 32, midlaterals 80, posteroangulars 96, epimerals 120 long respectively. Forefemora 268 long and 100 wide. Pterothorax 445 long, 412 wide at meso- and 396 across metathorax. Forewings 973 long and 96 wide. Basal wing setae 80, 92 & 92 long respectively with 14 double fringes.

Abdomen 396 wide at base, 313 at middle, 132 across segment IX. \( B_1-B_5 \) of segment IX, 280 ; 64 & 300 long respectively. Tube 300 long and anal setae 220 long.

Total body length : 2.74 mm.
This species closely resembles the preceding species, *Liothrips infrequens* in general appearance but differs by the infumate wings, longer head, anteroangulars longer than anteromarginals, epimerals longer than postoculars. *Liothrips himalayanus* Anan. also shows some similarity to the new species by the elongate head, long setae and colouration of legs, but differs from the latter by the incomplete mesopraesternum, colouration of setae and terminal antennal segments.

**Material**: Holotype ♀ (Z. S. I. Reg. No. 178/H17); Tripura; Hrishyamukh 30. ix. 77. Ex. leaf galls of *Ficus* sp. allotype ♂ (Z. S. I. Reg. No. 179/H17), Tripura, Sarashima 29. ix. 77. From leaf gall of *Ficus* sp. (coll. N. Muraleedharan).

11. *Liothrips infrequens* sp. nov.

(Text-fig. 5, A-C)

**Male (Macropterous)**: General colour brown. Antennal segment 1 and 2 brown, 3, 4 and 5 yellow, 6, yellow with a brown tinge at apex, 7 and 8 pale brown. All femora brown, foretibiae yellow, mid and hind tibiae brown, all tarsi yellow. Wings clear. Setae brown.


Total body length: 1.68-2.33 mm.
Liothrips infrequens appears to be closely related to *L. clarus* in general colouration, nature of setae and incomplete mesopraesternum but differs by shorter head and more pointed mouthcone. In general appearance this species shows some similarities to *L. hradeccensis* Uzel also but the latter is characterised by much shorter head, postoculars shorter than eyes and clear forewings.

**Material:** Holotype ♂, (Z. S. I. Reg. No. 180/H17), Tripura; Teliamura, Gamartilla, Ex. Leaf gall, 19. x. 77, paratype 1 ♂ (Z. S. I. Reg. No. 181/H17) data same for holotype (coll. N. Muraleedharan.)

12. Liothrips loranthi sp. nov.

(Text-fig. 6 A-B)

**Female (Macropterous):** General body colour blackish brown; antennal segment 1 concolourous with head, 2 dark brown at base and
margin, 3-6 yellow. 7 & 8 light brown; all femora, mid and hind tibiae dark brown. extreme apex yellow; foretibiae with proximal half brown, yellow beyond; all tarsi yellow. Forewings transparent, extreme base faint grey. All setae light brown, blunt to little dilated at apex. Head very little longer than broad, 236-240 long, 210-214 wide across eyes, 228-236 across cheeks, 224-232 across base; cheeks finely crenulate with 2-3 minute spines, surface reticulate. Eyes 84-92 long, 64-68 wide; all ocelli 32-34 wide, median ocellus overhanging between antennae, paired ones placed much above the middle of eyes, almost at extremity.

Postoculars 84-92 long, blunt. Antennal segments 3-6 subpedicellate and elongate; antennal segments 1-8 length (width): 1: 42-46 (38-42); 2: 58 (32-36); 3: 68-72 (32-36); 4: 72-76 (38-40); 5: 66 (36-38); 6: 62 (36); 7: 54 (28); 8: 32 (16); sense cones on 3-6 moderately thick, 32-36 long. Mouthcone long, almost reaching base of prosternum, pointed, 138 long, 172 wide at base, 42 at apex. Maxillary stylets oculad, close at middle.

Prothorax short and reticulate 164 long, 248 wide at anterior margin, 350 at posterior margin. Anteroangulars 38, anteromarginals 50, midlaterals 58, posteroangulars 88, epimerals 92 long respectively; epimeral

Text-fig. 6. *Liothrips loranthi* sp. n. A. Head and pronotum. B. Antenna.

Abdomen 418 wide at base, 398 at middle, 314 across segment VIII and 232 across segment IX. Pelta roughly bell shaped. B₁-B₃ of segment IX 184, 152 & 170 long respectively. Tube 202 long, anal setae 190 long.

Total body length : 2.17-2.28 mm.


Prothorax 156 long, 216 wide at anterior margin, 292 at posterior margin. Anteroangulars 34, anteromarginals 38, midlaterals 58, posteroangulars 66, epimerals 76 long respectively. Forefemora 172 long, 62 wide. Pterothorax 308 long, 360 wide across meso- and 348 across metathorax. Forewings 765 long, 68-80 wide with 12 double fringes; basal wing setae 50, 56 & 58 long respectively.

Abdomen 368 wide at base, 304 at middle, 244 across segment VIII, 156 across segment IX. B₁-B₃ of segment IX : 152, 48 & 156 long respectively. Tube 168 long, anal setae 152 long.

Total body length : 1.9 mm.


The new species approaches L. mucronis Ananthakrishnan & Jagadish in general appearance, nature of setae and mesopraesternum but can be differentiated by shorter head, very long and pointed mouthcone, anteromarginals longer than anteroangulars and epimerals longer than posteroangulars.
13. *Mesothrips acutus* sp. nov.

(Text-fig. 7, A-C)

**Female (Macropterus):** General body colour brown; basal half and margin of tube blackish brown; antennal segments 1, 2, 7 & 8 brown, 3 yellow, 4-6 basal half yellow, brown distally; all femora brown, foretibiae yellow with brownish shade, mid- and hind tibiae brown except extreme apex yellow, all tarsi yellow. Forewings clear. All setae hyaline and blunt.

Head very little longer than broad, 220-228 long, 180-190 wide across eyes, 206-214 across cheeks, 190-206 across base; cheeks finely
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crenulate with spines, surface strongly striate. Eyes moderately large, 92-96 long, 56-58 wide; all ocelli 24-28 wide; postoculars 80-88 long. Antennal segments 3-6 pedicellate, segments 1-8 length (width): 1: 38-42 (38); 2: 48-53 (30-32); 3: 72-76 (38); 4: 72-76 (38); 5: 58 (28); 6: 54-56 (24); 7: 42 (20); 8: 32 (16); sense cones long 50 long. Mouthcone long, broadly pointed 114-118 long, 164-172 wide at base, 60-68 at apex. Maxillary styles occlud, close at middle.

Prothorax shorter than head, slightly sculptured, 164-172 long, 212-232 wide at anterior margin, 312-328 at posterior margin. Antero-angularchs 54-58, anteromarginals 32-34, midlaterals 60, posteroangulars 92-94, epimerals 76-80 long respectively; epimeral suture complete with 2 minute accessory setae. Forefemora 216-224 long, 96-98 wide; foretarsal tooth 16-20 long. Pterothorax 338-344 long, 384-388 wide at meso- and 406-410 at metathorax. Forewings 833-850 long, 72-108 wide; basal wing setae 68-70, 76-80 and 118-134 long respectively with 7-10 double fringes. Mesopraesternum incomplete, restricted to two lateral sclerites.


Total body length: 2.21-2.25 mm.

Male (Macropterous): Head 206 long, 176 wide across eyes, 190 wide across cheeks, 186 across base. Eyes 80 long; all ocelli 28 wide. Postoculars 72 long. Antennal segments 1-8 length (width): 1: 38 (38-40); 2: 46 (30); 3: 64 (34); 4: 62 (34); 5: 54 (28); 6: 46 (24); 7: 38 (20); 8: 32 (12); sense cones 38-40 long.

Prothorax 176 long, 190 wide at anterior margin; 308 at posterior margin. Antero-angulares 38, anteromarginals 28, post-angulars 78, epimerals 64 long respectively. Forefemora 242 long, 100 wide, foretarsal tooth 20 long. Pterothorax 300 long, 404 wide across meso- and 380 across metathorax. Forewings 760 long, 58-76 wide with 9 double fringes, basal wing setae 52, 56 and 96 long respectively.

Abdomen 360 wide at base, 332 at middle, 190 across segment VIII, 130 across segment IX. B₃-B₅ of segment IX: 152, 90 and 144 long respectively. Tube 160 long; anal setae 156 long.

Total body length: 2.04 mm.


Mesothrips acutus very closely resembles M. extensivus Anan. & Jag. in colouration of legs pronotal chaetotaxy, number of double fringes and nature of mouthcone but differs by the colouration of antennae, maxillary styles ocular and much shorter head. M. elaeocarpi Ananthakrishnan also shows similar colour pattern of legs and antennae but the present species can be easily distinguished by shorter head, maxillary styles ocular and lesser number of double fringes of forewings.

14. Mesothrips ambasensis sp. nov.

(Text-fig. 8, A-C)

Female (Macropterous): General body colour blackish brown; antennal segments 1,2 dark brown, 3 yellow, 4-6 yellow in proximal half and brown distally, 7 & 8 brown; all femora, mid- and hind tibiae dark brown except extreme apex lighter, foretibiae brown with yellowish shade, all tarsi light brown. Forewings faint yellow. All setae brown and blunt.

Head longer than broad, 276-292 long, 228-236 wide across eyes, 236-244 across cheeks and 188-200 across base, cheeks with 6-8 moderately stout spines, surface strongly striate. Eyes large 100-120 long; 68-80 wide; all ocelli 32-36 wide, median ocellus overhanging between antennae. Postoculars short, about half the length of eyes, 40-48 long. Antennal segments 3-6 pedicellate, segments 1-8 length (width); 1: 48 (44-52); 2: 60-68 (40-44); 3: 84-92 (48-52); 4: 100-104 (48-52); 5: 80-84 (36-40); 6: 68-72 (28-32); 7: 56-60 (24-28); 8: 36 (16); sense cones elongate 48-56 long. Mouthcone short, broadly pointed, 112 long, 200-220 wide at base, 104 wide at apex. Maxillary styles short, retracted below half the length of head, wide apart.


Total body length : 3.14-3.43 mm.

**Male (Macropterous)**: Head 272 long, 212 wide across eyes, 220 across cheeks, 172 across base. Eyes 100 long, 68-72 wide ; postoculairs

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Text-fig. 8. *Mesothrips ambasensis* sp. n. A. Head and pronotum. B. Antenna. C. Mesopraesternum.

Prothorax 208 long, 228 wide at anterior margin, 352 at posterior margin. Anteroangulars broken, anteromarginals 36, midlaterals 52, posteroangulars 60, epimerals 68-76 long respectively. Forefemora 236 long, 112 wide, foretarsal tooth 16 long. Pterothorax 400 long, 428 wide across meso- and 436 across metathorax. Forewings 1.02 mm. long with 12 double fringes; basal wing setae 80, 96 and 108 long respectively.

Abdomen 432 wide at base, 360 at middle, 248 across segment VIII, 180 across segment IX. B₁-B₉ of segment IX : 220, 112 and 280 long respectively. Tube 228 long; anal setae 180 long.

Total body length: 2.25 mm.


The new species appears to be closely allied to M. acutus but can be distinguished by maxillary stylets placed a little above mouthcone and mesopraesternum as two pieces. Mesothrips moundi Anan. has also clear wings, mesopraesternum as two sclerites, and antennal colour same as that of M. ambasensis but the latter differs from M. moundi by maxillary stylets placed slightly above mouthcone and intermediate antennal segments elongate.

15. Mesothrips jordani Zimmerman


16. Mesothrips latus sp. nov.

(Text-fig. 9, A-B)

Female (Macropterous): General body colour dark brown; tube blackish brown, except extreme apex; antennal segments 1, 2, 7 & 8 brown, 3 yellow, 4-6 yellow at proximal half, distal half brown and segments successively darker; all femora, mid- and hindtibiae brown except at extreme apex yellow, foretibiae yellow with brownish shade, all tarsi yellow. Forewings clear. All setae hyaline to brown and blunt.
Head 240-260 long, 224-232 wide across eyes, 240-260 across cheeks, 232-244 across base; cheeks finely crenulate with 3-4 moderately stout spines, surface strongly striate. Eyes 88-100 long, 68-76 wide; all ocelli very close, 36 wide. Postoculars very long, 84-96 long. Antennal segments 3-7 pedicellate, segments 1-8 length (width): 1 : 40 (48); 2 : 56-60 (40); 3 : 84-88 (44-48); 4 : 80-84 (48); 5 : 72-76 (40); 6 : 60 (32); 7 : 56-60 (28); 8 : 40 (12); sense cones 36-40 long. Mouthcone short and broad, 132-140 long, 224-232 wide at base, 120-124 wide at apex.

Text-fig. 9. *Mesothrips latus* sp. n. A. Head and pronotum. B. Antenna.

wings 1.02-1.05 mm., 60-120 wide with 10-13 double fringes; basal wing setae 72-76, 80-84 and 120-124 long respectively. Mesopraesternum incomplete, restricted to two lateral plates.


Total body length: 2.39-2.48 mm.

Male (Macropterous): Colour pattern as in female but little darker. Head 252-260 long, 200-216 wide across eyes, 216-224 across cheeks, 184-200 across base. Eyes 92-96 long, 64-68 wide; postoculars 68-76 long. Antennal segments 1-8 length (width): 1: 40 (40-44); 2: 56-60 (32-36); 3: 76-80 (40); 4: 76 (40-44); 5: 72 (32); 6: 52-56 (40-44); 7: 48-52 (24-28); 8: 36 (16); sense cones 32-36 long. Mouthcone 112-120 long, 172-188 wide at base, 100-112 at apex.


Total body length: 2.21-2.34 mm.


The new species approaches M. moundi Ananthakrishnan but differs by elongate intermediate antennal segments, short maxillary stylets and very long postoculars,
17. *Mesothrips perlucidus* sp. nov.

(Text-fig. 10, A-B)

**Female (Macropterous):** General body colour brown, terminal abdominal segments and tube darker; antennal segments 1, 7 & 8 brown, 2 brown at proximal third golden yellow beyond, 3-6 golden yellow, all femora mid- and hind tibiae brown, foretibiae brown at base and margin, rest golden yellow, all tarsi golden yellow. Forewings clear to very faint yellow. All setae brown and blunt.

Head 1.3-1.4 times as long as broad, 340-344 long, 232-256 wide across eyes, 228-264 across cheeks, 180-216 across base; cheeks strongly...
constricted at base with 5-7 stout spines, surface strongly reticulate.
Eyes large 120-124 long, 80-84 wide; all ocelli large very closely set,
32-36 wide. Postoculars 68-76 long. Antennal segments 3-6 pedicellate,
segments 1-8 length (width): 1: 40-44 (44-48); 2: 56-60 (36-40);
3: 100-104 (48-52); 4: 112 (48-52); 5: 88-96 (40); 6: 68-76 (32-36);
7: 56-60 (24-28); 8: 36-40 (16); sense cones elongate 40-44 long.
Mouthcone broadly pointed 140 long. 160-220 wide at base and 92 at
apex. Maxillary styles very short, wide apart.

Prothorax 248-300 long, 200-252 wide at anterior margin, 368-444 at
posterior margin. Anteroangulars 44-48, anteromarginals 36-44, midla
terals 80-92, posteroangulars 124 and epimerals 120 long respectively.
Forefemora 380-440 long, 180-208 wide, foretarsal tooth 36 long. Ptero
thorax 500-508 long, 520-540 wide across meso- and 512-520 wide
across metathorax. Forewings 1.22-1.27 mm. long, 80-120 wide with
12 double fringes; basal wing setae 100-120, 132-140 and 168-200
long respectively. Mesopraesternum incomplete, restricted to two
lateral plates.

Abdomen 388-440 wide at base, 260-328 at middle, 260-264 across
segment VIII, 180-184 across segment IX. Pelta roughly triangular.
B₁-B₉ of segment IX: 300-320, 240 and 340 long respectively. Tube
304-320 long; anal setae 280 long.

Total body length: 2.9-3 mm.

Male (Macropterous): Head 288-304 long, 208-220 wide across eyes,
200-204 across cheeks, 168 across base. Eyes 100-104 long, 80 wide.
Postoculars 80-88 long. Antennal segments 1-8 length (width): 1:
40-44 (44-48); 2: 60-64 (36); 3: 96-100 (40-44); 4: 100-108 (40-48);
5: 84-96 (36-40); 6: 60-68 (28-32); 7: 56-60 (24). Mouthcone 100-108
long, 148-164 wide at base, 80-100 at apex.

Prothorax 212-240 long, 160-200 wide at anterior margin, 320-344
at posterior margin. Anteroangulars 28, anteromarginals 44-48, midlateral
s 68-80, posteroangulars 104-120 and epimerals 80-96 long respectively.
Forefemora 260-292 long, 132-140 wide, foretarsal tooth 24-32 long.
Pterothorax 380-460 long, 380-452 wide across meso- and 372-460 across
metathorax. Forewings 1.02-1.05 mm. long, with 10-12 double fringes;
basal wing setae 76-88, 96-104 and 140 long respectively.

Abdomen 320-388 wide at base, 200-328 at middle, 196-220 across
segment VIII, 140-160 across segment IX. B₁-B₉ of segment IX:
248-260, 108-128 and 272-280 long respectively. Tube 240-284 long;
apal setae 260-280 long.

Total body length: 2.3-2.5 mm,

The new species is closely allied to M. jordani Zimmerman but it differs by clear wings and lesser number of double fringes.

18. Rhaebothrips lativentris Karny


19. Stephanothrips occidentalis Hood & Williams


20. Stigmothrips consimilis Ananthakrishnan


21. Stigmothrips okajimai sp. nov.

(Text-fig. 11, A-B)

*Female (Macropterous):* General body colour light brown; head, thorax and tube darker, body with plenty of red pigmentation; antennal segments 1, 2, 7 & 8 brown, 4 & 5 bicoloured pale in proximal third, rest brown, 6 pale yellow with faint brown shade in distal third; all femora golden yellow with brownish shade, fore- and hind tibiae yellow, midtibiae yellow with shaded brown, all tarsi whitish yellow. Forewings faint grey with a median streak in basal half. All setae hyaline knobbed to dilated at tip.

Head very little longer than broad, 168-176 long, 140-148 wide across eyes, 156-170 across cheeks, 152-160 across, base; cheeks finely crenulate with 2-3 spines, surface reticulate; vertex subconical. Eyes 76-78 long, 48-50 wide, all ocelli 24-28 wide, very close to each other.
Postocul ars 36-38 long, dilated at tip. Antennal segments 3-6 subpedicellate, segments 1-8 length (width): 1: 24-28 (32); 2: 42 (24-28); 3: 56-58 (26-28); 4: 52-56 (24); 5: 52-58 (20); 6: 46-50 (20); 7: 40-42 (16); 8: 28 (12); sense cones 24-28 long. Mouthcone very short and broad, 54-60 long, 114-118 wide at base, 64-88 at apex. Maxillary stylets oculad, somewhat close and parallel at middle.

Prothorax weakly sculptured, about half as long as head, 96-120 long, 172-176 wide at anterior margin, 202-206 at posterior margin. Antero-

Text-fig. 11. *Stigmothrips okajimai* sp. n. A. Head and pronotum. B. Antenna.
bristles $B_1$ & $B_2$ equal and dilated at tip, $B_3$ blunt: 38; 38 & 62 long respectively. Mesopraesternum parallel sided expanded laterally.

Abdomen 240-244 wide at base, 222-228 at middle, 164-172 across segment VIII, 114-116 across segment IX. Pelta bell shaped. $B_1$-$B_3$ of segment IX short: 54, 46 and 64-76 long respectively. Tube 100-104 long, anal setae 76-80 long.

Total body length: 1.56-1.65 mm.


The new species is closely allied to $S. consimilis$ Ananthakrishnan but can easily be distinguished by shorter head, colouration of 6th antennal segment, basal wing setae, $B_1$ & $B_2$ equal, dilated at tip; $B_3$ blunt and lesser number of double fringes.

Summary

Altogether twentyone species of thrips belonging to twelve genera of Phlaeothripidae are dealt with in this paper. Four new species of Mesothrips, three new species of Liothrips and one new species each of Crotonothrips, Gynaikothrips and Stigmothrips are described.

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