

**STUDIES ON SOME INDIAN SPECIES OF THE  
GENUS *ELAPHROTHRIPS* BUFFA  
(Megathripinae : Tubulifera : Thysanoptera)**

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The world-wide genus *Elaphrothrips* Buffa includes species from the Oriental and Ethiopian regions and both Bagnall (1934, 1935) and Priesner (1934, 1935, 1952) have described, revised and formulated keys to the new and known species from these regions. In particular a large number of species have been reported by Schmutz (1913) from Ceylon. Unlike other members of the Phlaeothripidae, those of the Megathripinae, to which *Elaphrothrips* belongs, generally show profound sex-limited intraspecific diversity in the males, where on the basis of the study of a reasonably good series, at least three distinct categories of males could be recognised—the gynaecoid, normal and oedymorous males. Because the characters for species recognition in Oriental *Elaphrothrips* were hitherto based on odd males, the various forms of males each were described as different species, and, indeed, the various forms differed considerably from each other. Fundamentally the following morphological changes are evident within males of species of *Elaphrothrips* considering both the gynaecoid—oedymorous traits; the gynaecoid males have a shorter and weaker body, the armature of the forelegs and genal spines are very feeble, the sickle-like bristle at the apex of the forefemora are wanting, the third and fourth antennal segments are shorter and devoid of strong setae, the fewer double fringes on forewing and foretarsal tooth are very feebly developed in the extreme gynaecoid males; by contrast, the oedymorous males have a stronger build, have very prominent and strongly developed foreleg armature and cephalic and genal spines, the setae arise from prominent warts, the sickle-like bristle on forefemora is well developed (except in *E. productus* Priesner), foretarsal tooth is more strongly developed and exhibit two categories—a thin and straight tooth when the forefemora has a tendency to be more elongate and stout and beak-like when the forefemora is a little shorter and stouter an increase in the number of double fringes and longer antennal segments (in particular 3 and 4) with very long and strongly developed setae. With these differences, the range of measurements of the cephalic, thoracic and other body setae obviously show profound variation between the two extremes.

Studies presented here have led to firm conclusions regarding the synonymy of *Elaphrothrips mucronatus* Priesner, *Elaphrothrips greeni* (Bagnall) = *E. bouvierii* (Vuillet) with *Elaphrothrips beesoni* Ramakrishna; of *E. chandana* Ramakrishna, *E. graveleyi* Bagnall and *E. eranthemi* Seshadri & Ananthkrishnan with the common species of *E. procer* (Schmutz) and *E. agasthya* Ramakrishna with *E. crassiceps* (Bagnall). Mound (1968) in reviewing Bagnall's collection also concluded that *E. proximus* (Bagnall), *E. achaetus* Bagnall, *E. approximatus* Bagnall to be outright synonyms of *E. procer*.

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Ananthakrishnan (1964) erected a new genus *Elaphridia* for *E. agasthya* in view of the possession by the latter of a very short cephalic production, a short head, only about 1.5-1.7 times as long as wide, absence of well developed genal bristles on warts, a heavier prothorax, absence of strong armature on the forelegs, absence of the sickle-like bristle on the apex of the forefemora, the form of the abdomen which is very broad at middle and not gradually tapering behind as in all *Elaphrothrips* antennal segment 4 being longer than 3 in both sexes and in the tube being longer than the head. Further, *Elaphridia* has a typical cryptothripine appearance and combines characters of both the Cryptothripini and the Megathripini. The inclusion of another subgenus *Cradothrips* novo for *Elaphrothrips* species with a distinct forefemoral tooth in the females alone, is of particular interest in view of the males showing typical *Elaphrothrips* features with the well developed sickle-bristle on the forefemora. Three new species of *Elaphrothrips*-*E. micidus*, *E. secus* and *E. notabilis* and a new record to this country *E. clarispinis* Priesner are also included in this paper.

#### KEY TO ELAPHRIDIA AND SUBGENERA OF ELAPHROTHRIPS BUFFA

1. Forefemora of males without prominent armature in both sexes and without the sickle-like bristle. Head production short and genal spines weak. Abdomen not elongate and slender, but broader at middle. Tube clearly longer than head which is 1.5-1.7  $\times$  as long as wide. .... **Elaphridia** Ananthakrishnan  
Forefemora in males strongly armed, with or without sickle-like bristle at apex. Head production variable and genae with well developed spines, reduced only in extreme gynaecoid males. Abdomen long and slender and evenly tapering at apex. Tube shorter than head which may be 2-3.5  $\times$  as wide ..... (**Elaphrothrips** Buffa)... 2
2. Forefemora in males always unarmed, without any hump or tooth or conical processes on one or both margins. Oedymorous males strongly armed with a sickle-like bristle (except in *E. productus*) and inner margin of femora always straight. ....  
..... **Elaphrothrips** s. str.  
Forefemora armed with a distinct tooth or with a hump ..... 3
3. Forefemora of females with a distinct tooth at middle of inner margin, males without. Oedymorous males with the typical sickle-like bristle.....**Cradothrips** n. subg.  
Forefemora of oedymorous males with a strong tubercle or hump on exterior and interior margin.....4
4. Forefemora of oedymorous males with a strongly excavated inner margin and with a stout interior basal hump and a slender hump at exterior margin. ....  
..... **Klinothrips** Bagnall (after Priesner 1952)  
Forefemora of oedymorous males with inner margin not excavate, with a short hump at apex of exterior margin and with a distinct stout subdorsal hump or cone at middle of exterior margin. .... **Paraklinothrips** Priesner

#### KEY TO THE SPECIES OF ELAPHROTHRIPS DISCUSSED

1. Cephalic production pronounced, about 0.9-1.2  $\times$  as long as wide. .... 2  
Cephalic production much shorter, distinctly wider than long, at most 0.5  $\times$  as long as wide ..... 4
2. Oedymorous males devoid of sickle-like bristles at the apex of fore femora. *All tibiae* basally more brownish and yellowish beyond middle. Antennal segment 3

- yellowish with a tinge of brown at apex, 4 and 5 distinctly yellowish at basal half, rest brownish. .... **productus** Priesner  
 Oedymorous males with distinct sickle-like bristle at apex of forefemora. .... 3
3. Foretibiae brown, midtibiae also brown but shading to yellow at extreme apex; hindtibiae basally brown, rest yellowish. Antennal segment 3 yellow-yellowish brown at basal two-thirds, rest brownish; 4 and 5 brown. Cephalic, thoracic and basal wing bristles not very long, brownish yellow. .... **beesoni** Ramakrishna  
 Body bristles much longer and distinctly hyaline, except these on head production. Antennal segment 3 yellow, brownish at apex, 4 and 5 with proximal halves yellow, rest brown. .... **micidus** n. sp.
4. Cephalic, thoracic and basal wing setae exceptionally long. Antennal segments 3, 4, 5 and foretibiae, colored almost as in *E. productus*. Cephalic production setae 239-265, anterior postoculars 249-299, epimerals 195-208, postangulars 229, in the females ..... **notabilis** n. sp.  
 Body setae normal, never exceptionally long ..... 5
5. Foretarsi of females unarmed; fore, mid and hindtibiae basally more brownish and rest yellowish. Antennal segments 3, 4, 5, colored almost as in *E. productus* and *notabilis*. Basal wing bristles 104-114, 117-143 and 205-234 long. Anteromarginal shorter than anteroangulars, midlaterals, epimerals and postangulars almost subequal ..... **secus** n. sp.  
 All tibiae clearly uniformly brownish and foretarsi of females, with a stump-like to a well developed tooth. .... 6
6. Body setae clearly hyaline; antennal segment with 2/3 grayish yellow, rest brown, 4-8 brown. Basal wing bristles 130-148, 130-148 and 278-296 long respectively, with 42-47 double fringes in females and 50-55 in the males ..... **clarispinis** Priesner  
 Body setae not hyaline, but brownish. Apex of antennal segment 3 yellowish, rest brown, 4 and 5 basally yellow, distal half brown. Basal wing bristles 58-88, 63-75, 158-200 long, with 25-29 double fringes. .... **procer** (Schmutz)

#### ***Elaphrothrips* subgenus *Cradothrips* nov.**

The general taxonomic features as in *Elaphrothrips* but the forefemora in the females bear a distinct, well developed blunt tooth at middle of inner margin. Males with forefemora unarmed and at apex with distinct sickle-like bristle.

Type-species: *Elaphrothrips (Cradothrips) insignis* n. sp.

#### ***Elaphrothrips (Cradothrips) insignis* Ananthkrishnan, new species      Fig. 1.**

♀ (*macropteros*). Body and legs uniformly dark brown except tarsi a little paler. Antennal segments 1, 2, 6-8, extreme apex of 3, distal halves of 4 and 5 brown, rest yellow. Wings transparent excepting margins pale grayish. Body setae hyaline, blunt, except setae on head production.

Head 664-681 long, 299-315 across eyes, 266 across constricted region below eyes, 241-249 across cheeks and 266-274 at base; head production 65-74 long, 149-158 wide. Postoculars 195-200, middorsals 138 long. Eyes 116 long, 66 wide; median ocellus 21 wide, 78 apart from paired, 23 wide, 57 apart. Antennal segments 3-8 length (width): 241-254 (47-50); 199-216 (48-50); 174-183 (42-50); 133 (33-35); 83(26-33); 83(17); sense cones 52 long. Mouthcone 232 long, 249-266 wide at base and 116 at apex.

Prothorax 315-332 long at middle, 299 across anterior margin, 498-575 across posterior margin; anteroangulars 65, anteromarginals 52, midlaterals 114, postangulars 221 and epimerals 148-169

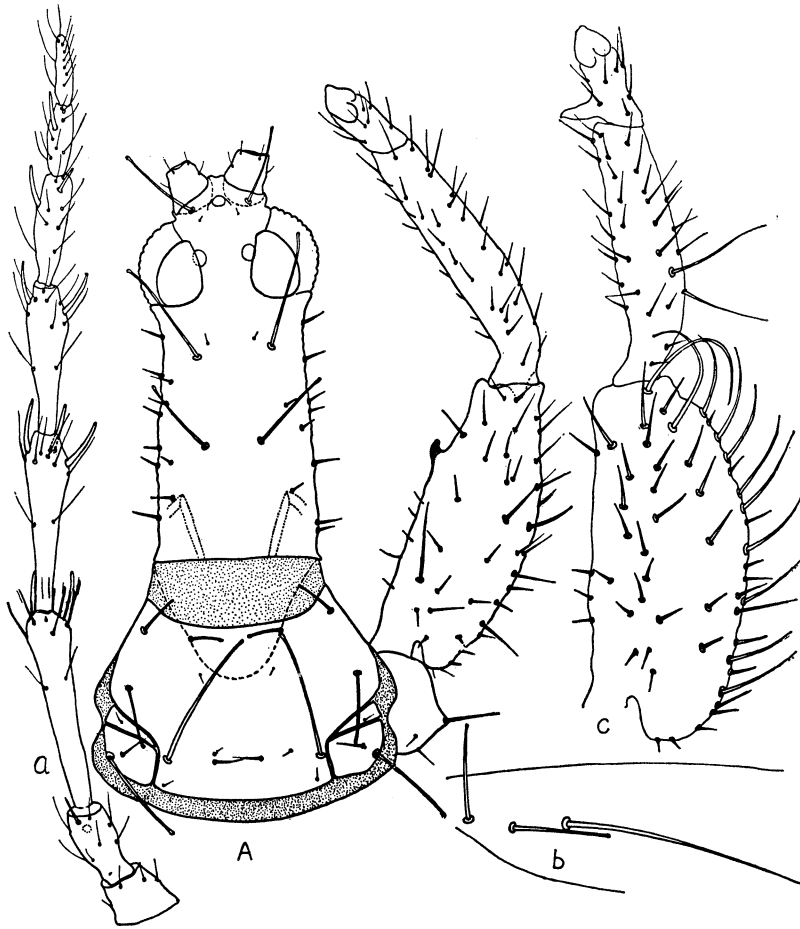


Fig. 1. A—*Elaphrothrips (Cradothrips) insignis* n. sp., head and prothorax of ♀: a, antenna of ♀; b, basal wing bristles; c, fore leg of ♂.

long. Pterothorax 847–863 long, 764–780 across mesothorax and 764–797 across metathorax. Forefemora 53 long, 199 wide; forefemora with a distinct blunt tooth at middle on inner surface, 29–39 long. Foretibia and foretarsi unarmed. Forewings 2074–2291 long, with 52–58 double fringes; basal wing bristles 135, 108–116 and 282–299 long.

Abdomen 714–813 wide at base, 598–647 across middle, 415–432 across VIII segment and 299–315 across IX segment; B1–B3 of IX segment, 564–598, 614, 664 and 515–548 long. Tube 647–697 long, 166, 116 and 83 wide at base, middle and apex; anal setae 398–448 long.

Total body length: 6.209–6.507 mm.

♂ (*macropteros*). Color same as ♀♀.

Head 730–749 long, 232–315 across eyes, 241–249 across cheeks and 249–267 at base. Eyes 167 long, 112 wide. Head production 74 long, 149–158 wide. Antennal segments 3–8, length (width): 265–282(50); 232(50); 183–191(50); 133(50); 66–83(33); 66(17). Mouthcone 232–249 long, 249–267

at base, 116 at apex.

Prothorax 349-398 long, 299-332 at anterior marginals and 515-564 across posterior marginals; anteroangulals 111, anteromarginals 74, midlateral 148, postangulals 130-135 and epimerals 135-140 long. Pterothorax 830-896 long, 714-830 across meso and metathoraces; forefemora 614-637 long (232-267 wide); forefemoral tooth absent; foretarsal tooth 50-66 long; forewings 2158-2191 long, double fringes 46; basal wing bristles 109-144, 73-104 and 182-216 long.

Abdomen 631-714 at base, 498-598 at middle, 299-382 across VIII segment and 232-299 across IX segment. B1-B3 of IX 465-502, 465-502, 465-502. Tube 531-548 long, 133-149, 100-116 and 83 wide at base, middle and apex; anal setae 415 long.

Total body length: 6.45-6.83 mm.

**MATERIAL:** Holotype ♀, Allotype ♂, Paratypes ♀ and ♂, dry twigs, Almora 5000' (Uttar Pradesh), 19.XI.1970.

*Elaphrothrips micidus* Ananthkrishnan, new species Fig. 2.

♀ (macropterous). Body brown including legs except femoro-tibial joints, distal half of foretibiae, distal 2/3 of midtibiae and distal 3/4 of hind tibiae yellow. Antennal segments,

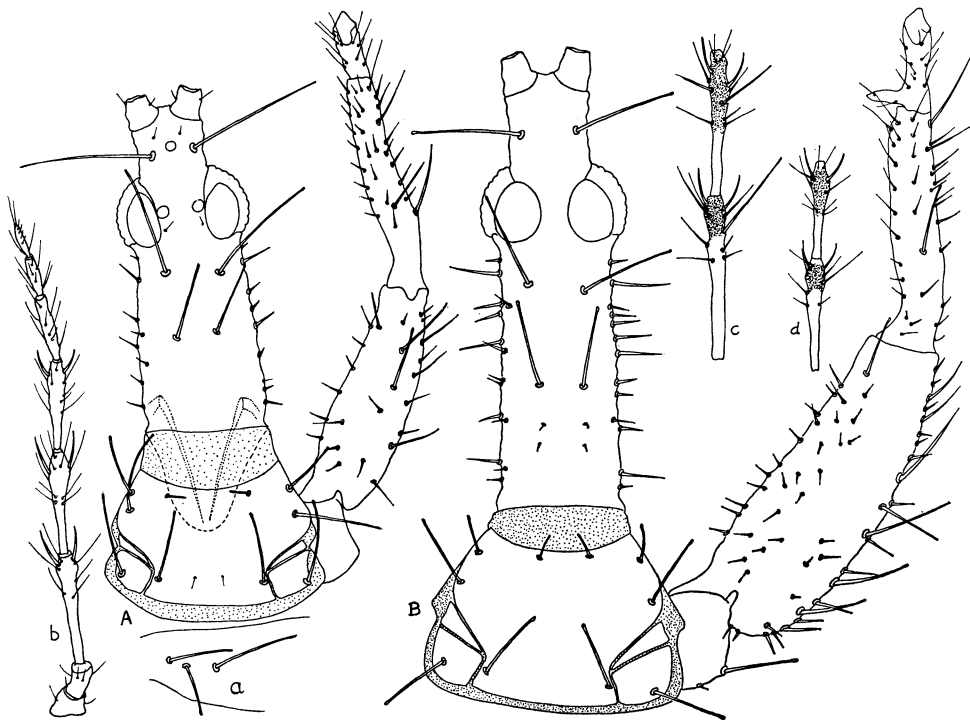


Fig. 2. A-*Elaphrothrips clarispinis* Pr., head and prothorax of ♀; a, basal wing bristles; b, antenna of ♀.

B-*Elaphrothrips micidus* n. sp., head and prothorax of ♀; c, d, antennal segments 3 & 4 of oedymorous and gynaecoid ♂♂ respectively.

1, 2, 6-8 brown; 3 yellow except apex brown; proximal halves of 4 and 5 yellow, rest of 4 and 5 brown. Wings transparent, setae hyaline, except production setae which is yellowish brown, knobbed.

Head 651-736 long, 260-279 across eyes, 232-742 across cheeks, 242-260 across base. Antecular head production 130-167 long, 116-149 wide. Eyes 149-155 long, 93-97 wide. Postoculars, 222-278, mid-dorsal setae 185-204 long. Cheeks with 7-8 pairs of setae, 56-60 long. Antennal segments, length (width): 56-65(56-59); 74-82(44-48); 260-295(41-45); 223-260(41-45); 186-205(37-42); 139-149(26-29); 93-97(22-26); 83-86(13-15); sense cones on 3 and 4, 67-72 long. Mouthcone 241-279 long, rounded, 93-98 across apex.

Prothorax 279-343 long, 200-279 across anterior margin, 428-484 across posterior margin. Anteroangulars 111-130, anteromarginals 93-111, midlaterals and postangulars 148-185, epimerals 185-204 long. Forefemora 130-167 wide, foretarsi unarmed. Pterothorax 651-837 long, 651-800 across meso and metathoraces. Forewings 2040-3344 long with 32-45 double fringes. Basal wing bristles 130-148, 111-130, 204-278 long.

Abdomen 335-391 across VIII segment, 223, 279 across IX segment, B1-B3 of IX segment, all 707-744 long. Tube 632-744 long, 130-134 across base, 112-116 across middle, 74 across apex. Anal setae 430-465 long.

Total body length: 4.84-6.70 mm.

♂ (*macropteros*). Coloration as in ♀♀.

Head 688-749 long, 242-298 wide across eyes, 205-223 across middle, 223-242 across base. Head production 130-205 long; major production setae 166-236 long; eyes 149-167 long, 93-112 wide; postoculars 185-210, middorsal setae 148-200 long. Antennal segments, length (width): 56-74 (52-55); 74-93(41-45); 260-372(37-41); 223-235(37-41); 205-279(33-37); 139-167(26-29); 93-102 (22-25); 83-93(15-18); sense cones as in female. Mouthcone 186-279 long, 112-120 across apex.

Prothorax 279-372 long, 260-279 across anterior margin, 372-484 across posterior margin. Anteroangulars 74-93, anteromarginals 37-45, midlaterals and postmarginals 93-111, epimerals 130-148 long. Forefemora 130-223 wide, foretarsal teeth 37-93 long. Pterothorax 595-837 long, 558-744 across meso and metathoraces. Forewings 1860-2604 long with 31-43 double fringes. Basal wing bristles 99-143, 86-107, 148-182.

Abdomen 223-279 across VIII segment, 186-223 across IX segment. B1-B3 of IX segment 558-651 long. Tube 465-670 long, as wide as in female. Anal setae 409-558 long.

Total body length: 5.4-8.65 long.

**MATERIAL:** Holotype ♀, Allotype ♂ and paratypes 6 ♀♀ and 4 ♂♂ from dry leaves, Yelagiri 1200 m (Tamil Nadu), 8.X.1970.

In the coloration of the antennae and tibiae and in the nature of the head production, this species approaches *E. productus*, from which it differs in the much longer and distinctly hyaline setae and in the presence of distinct sickle-like bristles in the oedymorous males. *E. beesoni* has a different coloration of the antennae, tibiae and body bristles.

**Elaphrothrips notabilis** Ananthakrishnan, new species Fig. 3.

♀ and ♂ (*macropteros*). Color dark brown. Fore and mid tibiae yellowish brown at base, more brownish at middle, apical third and tarsi brownish yellow; hind tibiae yellow in basal eighth, followed by a brownish area, rest almost yellowish. Antennal segment 1 dark, 2 dark at base, paler at apex; 3 yellow tinged brown at apex, 4 yellowish with a tinge of brown at apex, 5 proximal 2/3 yellow, rest brown. Forewings clear, all setae pale brown, knobbed, except the major setae on head production.

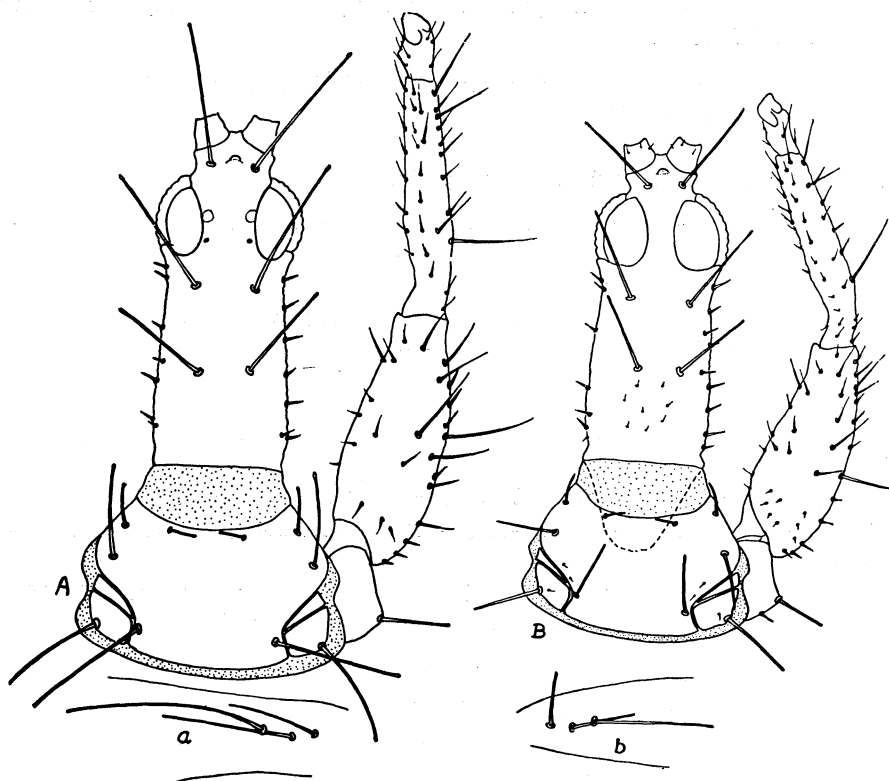


Fig. 3. A - *Elaphrothrips notabilis* n. sp., head and prothorax of ♀; a, basal wing bristles.

B - *E. secus* n. sp., head and prothorax of ♀; b, basal wing bristles.

Head 581-598(631) long, 266(266) wide across eyes, 216(216) across cheeks below eyes and 249 (266) at base; head production 91-100(100-149) long, 149 wide; major setae on head production 239-265(179) long. Postoculars, 249-299(237), mid-dorsal setae 166-216(205) long; cheek setae 26-33(26-28) long. Antennal segments, 3-8 length (width):

♀♀: 224-241(41-42); 207-216(42-50); 174-183(33-39); 133(29-33); 83(26-28); 75-83 (16-18).

♂♂: 249(39); 216(42); 199(34); 125(27); 83(26); 75(16).

Prothorax 315-322(315) long, 266-299(315) wide across anterior margin and 465-515(515) across posterior; anteroangulars 73-91, anteromarginals 39-52(55), midlaterals 143-172(104), postangulars 229 and epimerals 195-208(117) long. Forefemora 166-183(249) wide, foretarsus of female with a hardly discernable to a very weak blunt tooth, that of the males 66 long.

Forewings 166-183, 149-166(149, 133) wide at base and beyond middle, with 36-38 double fringes; basal wing bristles 153-171, 247-265, 312-372(143, 195, 247) long respectively.

B1-B3 of abdominal segment IX, 614-647, 498-548, 631-647(564, 498, 564). Tube 614-664(498) long, 166, 116, 83(149, 116, 83) respectively wide at base, middle and apex; anal setae 332(365) long.

Total body length: 5.86-6.26(5.76) mm.

**MATERIAL:** Holotype ♀, Allotype ♂, 5 paratype ♀♀, decaying bark, Kiruvatti forest (Mysore), 6.IX.1967.

This is a unique species characterised by the excessively long major cephalic and thoracic body setae and the basal wing bristles.

#### **Elaphrothrips secus** Ananthkrishnan, new species

*Macropterosus* ♀ (♂): Color dark brown; foretibiae yellow at extreme ends, rest yellowish brown; midtibiae extreme base tinged yellow, basal half brown, rest yellow; hind tibiae basal third brown, rest yellow; all tarsi yellowish. Antennal segments 1 and 2 brown, 3 yellow, tinged brown at apex; 4 proximal 2/3 yellow, rest pale brown; 5 basal half yellow, rest brown. Wings clear, body setae hyaline, blunt.

Head 531(531) long, 249 (241-299) wide across eyes, 199(183-232) below eyes across cheeks, 215-232(208-282) at base; head production 66(74-91) long, 133(116-166) wide; major setae on head production 148-182(135-166) long. Postoculars, anterior pair 182-195(156-190), mid-dorsal setae 148(153-169) long. Antennal segments 3-8, length (width):

♀: 155-183(41); 174-183(41); 164-166(33); 116(29-33); 66(21-25); 50-66(17)

♂: 166-232(41-50); 174-199(38-50); 166-183(33-41); 108-116(25-33); 66-74(17-25); 58-66(13-17).

Prothorax 249-266(249-365) long, 249(249-315) wide across anterior margin, 415-432(382-581) across posterior; anteroangulars 62-65(57-96); anteromarginals 39-42(52-55), midlaterals 120(96-117), postangulars 120(104-117) and epimerals 122-140(117-156) long. Forefemora 133-166(133-274) wide, foretarsal tooth lacking in the two females, those of males 21-66 long.

Forewings 1743-1876(1594-1878) long, 133, 116, 116(116, 100, 100) wide respectively at base, middle and apex; double fringes on forewing 29(27-31); basal wing bristles 104-114, 117-143, 205-234(88-130, 91-114, 172-247) long.

B1-B3 of abdominal segment IX, 465-515, 415, 448, 515-531(415-498, 299-332, 432, 481) long respectively. Tube 531-548(448-531) long, 133-149, 100-116, 66(112-133, 83-100, 58-62) wide across base, middle and apex; anal setae 315-332 (282-332) long.

Total body length: 4.18-5.33 (4.58-6.31) mm.

**MATERIAL:** Holotype ♀, Allotype ♂, Paratype ♀ and 2 paratype ♂♂, from dry twigs, Kalimpong, Darjeeling district (West Bengal), 20.IV.1969.

In the coloration of the tibiae and antennal segments 3, 4 and 5 this species approaches *E. productus*, and *E. notabilis*, but is distinctly different in the nature of the head production which is longer than wide. Both *E. clarispinis* and *E. procer* which possess a short head production, have all tibiae clearly uniformly brownish.

#### **Elaphrothrips beelsoni** Ramakrishna Fig. 4.

*Elaphrothrips beelsoni* Ramakrishna, 1934, *Indian For. Rec.* 20 (IV): 7-8. — Ananthkrishnan, 1964, *Opuscula Ent. Suppl.* 25:

*Elaphrothrips mucronatus* Priesner, 1935, *Konowia* 14 (2): 167-169; New synonym. — Ananthkrishnan, 1967, *Oriental Insects* 1 (1-2): 134-35; 1973, *J. Bombay Nat. Hist. Soc.* (in press).

*Dicaiothrips bouvierii* Vuillet, 1914, *Bull. Soc. Ent. France*: 276; New synonym.

*Elaphrothrips bouvierii*: Priesner, 1935, *Konowia* 14 (2): 163.

*Dicaiothrips greeni* Bagnall, 1914, *A. M. N. H.* (8) 13: 289.



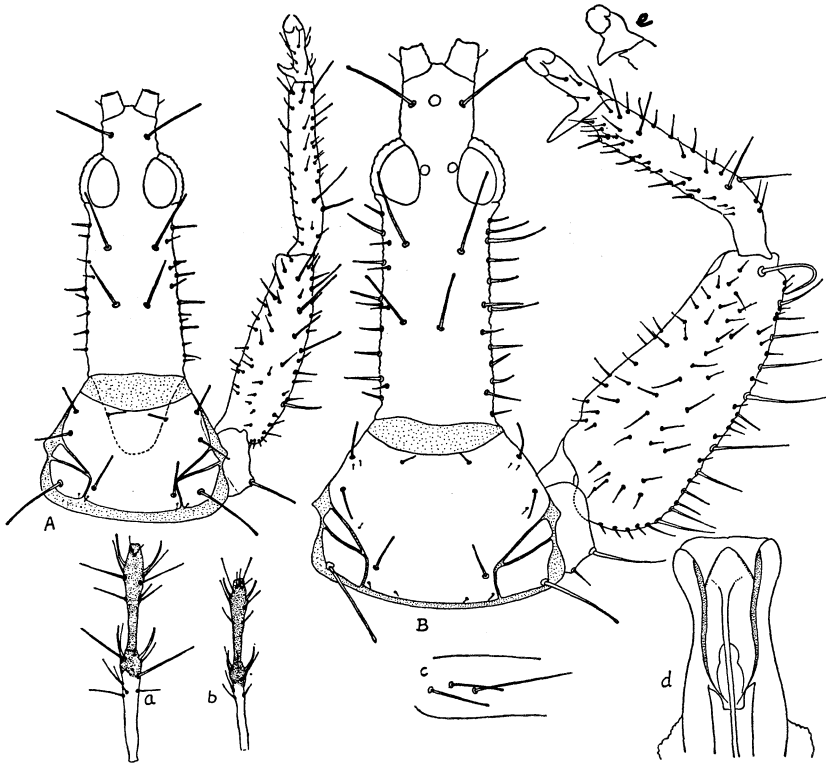


Fig. 4. *Elaphrothrips beesoni* Ramk. A, B—head and prothorax of gynaecoid and oedymorous ♂♂ respectively; a, b, antennal segments 3 & 4 of oedymorous and gynaecoid ♂♂ respectively; c, basal wing bristle; d, aedeagus; e, variation in tarsal tooth of ♂.

*Elaphrothrips greeni*: Priesner 1935, *Konowia* 14 (2): 161; New synonym.—Mound, 1968, *Bull. Br. Mus. Nat. Hist. Ent. Suppl.* 11: 96

Examination of Ramakrishna's material of *E. beesoni*, paratypes of Priesner's *E. mucronatus* and the very large series of *E. mucronatus* showing striking intraspecific diversity particularly in the males, i. e. gynaecoid to oedymorous males, has led to the confirmation of the above synonymy. Based on Ramakrishna's material Ananthkrishnan (1964) recorded the range of differences between the gynaecoid and oedymorous males of *E. beesoni* and that of *E. mucronatus* in large populations comprising over 50 females and 65 males (1970). It is of particular interest to observe the frequent association between the two very closely allied species *E. mucronatus* and *E. productus* Priesner which, while showing an overlapping range in measurements, particularly in the large series of males, possess very distinct features enabling their separation, the nature of the aedeagus being strikingly different. Both *E. greeni* Bagnall and *E. bouvierii* Vuillet were based on odd males, mostly gynaecoid (cf. 'Kraftig' males Priesner 1934). As has been exemplified through study of a very large series of males of *E. productus* and *E. beesoni*, the shape, some areas of color strong bristles on antennal 3 in males, the nature of the sickle-like bristles on forefemora, the nature of the foretarsal tooth, as well as the number of double



Fig. 5. *Elaphrothrips productus* Pr., A—head and prothorax of ♂: a, basal wing bristles; b, c, antennal segments 3 & 4 of oedymorous and gynae-coid ♂♂; respectively; d, aedeagus; e, variation in tarsal tooth of ♂.

fringes are all subject to profound variation when one goes up the series from the gynae-coid to the oedymorous, and, therefore, these characters are not taxonomically reliable. Color gives some comparative usefulness. Although the hind tibia is yellowish in the distal half in both *productus* and *beesoni*, the foretibia is uniform brown in *beesoni* and more brownish yellow in *productus*. Further, *productus* can always be recognized by the lack of the sickle-like bristle even in the oedymorous males. This feature is important because in all other known species, the normal and oedymorous males have this bristle, but is either reduced or lacking in gynae-coid males. The antennal segments 4 and 5 are almost uniformly brown except for the extreme bases tinged brownish yellow, while basal halves of 4 and 5 in *productus* are distinctly yellowish with only their apices brownish. Considering color and lack of the sickle-like bristle it would not be feasible to retain *E. greeni* as a distinct species; rather it has to be sunk as an outright synonym of *beesoni*. Mound (1968) has correctly sunk *E. bouvierii* as a synonym of *E. greeni*.

***Elaphrothrips procer* (Schmutz)**

- Dicaiothrips procer* Schmutz, 1913, *Sitz. Akad. Wiss. Wien* **122** : 1063.  
*Dicaiothrips dallatoremis* Schmutz, 1913, *Sitz. Akad. Wiss. Wien* **122** : 1067.  
*Dicaiothrips proximus* Bagnall, 1914, *A. M. N. H.* (8) **13** : 389.  
*Dicaiothrips novus* Schmutz, 1913, *Sitz. Akad. Wiss. Wien* **122** : 1066. **New synonym.**  
*Elaphrothrips dallatoremis* : Schmutz, 1934, *A. M. N. H.* (10) **13** : 632-633.  
*Elaphrothrips procer dallatoremis* : Priesner, 1935, *Konowia* **14** (1) : 62. — Ananthkrishnan, 1964, *Entomol. Ts. Arg.* **85** (3-4) : 224-225.  
*Elaphrothrips approximatus* Bagnall, 1934, *A. M. N. H.* (10) **13** : 635.  
*Elaphrothrips achaetus* Bagnall, 1934, *Indian Forest Rec.* **20** (4) : 8. **New synonym.**  
*Elaphrothrips chandana* Ramakrishna, 1934, *Indian Forest Rec.* **20** (4) : 8. **New synonym.**  
*Elaphrothrips graveleyi* Bagnall, 1934, *A. M. N. H.* (10) **13** : 628. **New synonym.**  
*Elaphrothrips eranthemi* Seshadri & Ananthkrishnan, 1954, *Indian J. Ent.* **14** (3) : 224. **New synonym.**  
*Elaphrothrips procer* : Mound, 1968, *Bull. Br. Mus. (Nat. Hist.) Ent. Suppl.* **11** : 98.

This is the most common species in India and several males and females have been recorded by me from several localities throughout Tamil Nadu (Madras, Tambaram, Kodaikanal, Nilgiris, Courtallum, etc.), throughout Kerala (Walayar forest, Tenmalai forest, Wyanaad hills, Andra Pradesh (Tirpuathi hills), Maharashtra (Poona, Nasik) and West Bengal (K Kalimpong). Comparison of Ramakrishna's material of *Elaphrothrips chandana* with those of typical *dallatoremis* as identified by Priesner, as well comparison of the type material of *E. eranthemi* Seshadri & Ananthkrishnan and *E. graveleyi* (the latter through the kind courtesy of Mr Mound of British Museum (Nat. Hist.) London who provided me with data of the holotype as well as a camera lucida figure) has sufficiently confirmed the synonymy of these species with *dallatoremis*. Mound (1968) on the basis of examination of Bagnall's type specimens has treated *E. achaetus*, *E. approximatus* and *Dicaiothrips proximus* as synonyms of *E. procer*. Ananthkrishnan (1964) suggested the synonymy of *E. chandana* with *E. beelsoni* from the then available damaged material, but with the further availability for comparison of slightly better material, its synonymy with *dallatoremis* stands more to reason than with *beelsoni*. For casual observation both *E. clarispinis* of Priesner, *Elaphrothrips procer dallatoremis* appear closely related, but are distinct in the antennal coloration, in the nature of bristle colors, in the arrangement of the basal wing bristles, with in *clarispinis*, B2 being shorter than B1 and B3.

***Elaphrothrips clarispinis* Priesner** Fig. 2.

*Elaphrothrips clarispinis* Priesner, 1934, *Konowia* **2** : 196.—1935, *Konowia* **3** : 247.

Two species were described with same specific name (Priesner, 1935, Bagnall 1935). In view of Priesner's species being based on material collected in 1923, the name *clarispinis* is retained while that of Bagnall (1928) has been renamed *bagnallianus* (Priesner 1952). The species *E. clarispinis* is being recorded for the first time from the Indian mainland and the discovery of females of this species for the first time and of more males add considerably to our knowledge to the range of variation of this species.

♀ (*macroperous*): Body uniformly brown including legs and antennal segments except 3 which is grayish yellow with apex brown. Wings transparent excepting a pale brown streak from base to middle. Setae hyaline, except the setae production brown, almost blunt.

Head 670-725 long, 298-316 across eyes and middle, 298-335 across base, head production 66-83 long, 126-166 wide, production setae 216-249. Eyes 116-149 long, 66-93 wide; postoculars 156. Cheeks with 6-7 pairs of setae, 64-72 long. Antennal segments, length (width): 74-78(65-68);

93-97(56-59); 223-242(52-55); 186-205(52-55); 167-186(48-50); 130-135(37-40); 74-78(30-33); 74-78(19-22); sense cones on 3 and 4, 40-44 long. Mouthcone 279 long, 112-121 across apex, rounded.

Prothorax 335-353 long, 372-465 across anterior margin, 707-744 across posterior margin. Epimerals 148-155 long. Forefemora 186-223 wide, foretarsal with a weak tooth 11-19 long. Pterothorax 744 long and as wide. Forewings 2232-2415 long, with 42-47 double fringes. Basal wing bristles 130-148, 130-148 and 278-296 long.

Abdomen 428 across VIII segment, 260 across IX segment. B1-B3 of IX segment, subequal, 502-539 long. Tube 595 long, anal setae 372 long.

Total body length: 5.20-6.70 mm,

♂ (*macropteros*): Coloration as in ♀.

Head 688-744 long, 298-316 across eyes, cheeks and base. Head production 63-83 long, 149-166 wide; anteocular or production setae 149-199 long. Postoculars 156 long, mid-dorsals 158, knobbed. Eyes as in female. Antennal segments, length (width): 74-78(65-68); 93-97(56-69); 242-251(53-55); 205-214(53-55); 186-195(50-52); 130-149(38-40); 70-74(31-33); 70-74(20-22); sense cones as in female. Mouthcone 242-250 long, 93 across apex.

Prothorax 279-372 long, 335-370 across anterior margin, 558 across posterior margin. Forefemora 242-260 wide, epimerals 156, foretarsal teeth 67-70 long. Forewings 2325-2604 long with 50-55 double fringes. Basal wing bristles 111-130, 111-130, 222-273 long.

Abdomen 372 across VIII segment, 279 across IX segment. Setae on IX segment subequal 484-521 long. Tube 558 long, anal setae 372 long.

Total body length: 6.04-6.51 mm.

MATERIAL: 2 ♀♀ and 2 ♂♂ from dry twigs, Kathgodam (U. P.), 20.X.1970.

### *Elaphridia crassiceps* (Bagnall) Fig. 6.

*Dicaiothrips crassiceps* Bagnall, 1921, *A. M. N. H.* (9) 8: 399.—Ramakrishna & Margabanhu, 1940, *Cat. Indian Insects*, Thysanoptera, 25.

*Elaphrothrips crassiceps*: Bagnall, 1934, *A. M. N. H.* (10) 13: 627-28.—Priesner, 1935, *Konowia* 14 (2): 163.

*Elaphrothrips agasthya* Ramakrishna, 1934, *Indian For. Rec.* 20 (4): 10-11; New synonym.

*Elaphridia agasthya*: Ananthakrishnan, 1964, *Opuscula Ent.* Suppl. 25: 91.

In view of *E. agasthya* becoming a synonym of *Elaphrothrips crassiceps* Bagnall, the type-species of the genus *Elaphridia* becomes *Elaphrothrips crassiceps* (Bagnall). The essential range of measurements of both sexes are provided below, as data on this species are lacking.

*Macropteros* ♀ (♂)

Head 415-448(345) long, 232-257(232) across eyes, 232-266(232) across cheeks and 216-257(216) at base. Postoculars 130-156 (138) long. Antennal segments 3-8, length (width):

♀: 130-143 (36-39); 138-161(36-42); 125-135(34-39); 83-91(29-34); 52-60(23); 55-65(13).

♂: 120(36); 127(39); 114(36); 81(31); 49(23); 49(13).

Prothorax 249(183) long, 262-332(267) wide across anterior margin and 448-498(398) across posterior; anteroangulars 68-88(78); antromarginals 2942(18), midlaterals 78-91, postangulars 78-104(91) and epimerals 130-156(125) long. Forefemora 156-183 (133) wide, foretarsal tooth 21-50(26) long. Forewings 1245-1461 long, with 24-27 double fringes. Basal wing bristles 60-70, 83-112, 130-138(65, 73, 125) long.

Abdomen 664-830(614-631) wide at base, 647-780(564-581), 282-415(315) across VIII. B1-B3 of



Fig. 6. *Elaphridia crasiceps* (Bagn.) A - head and prothorax of ♀.

IX 382-398(332-349), 332-365(282-332) and 382-432(332-349). Tube 365-464(332) long, 97-116(83), 91-100(75) and 58-66(50) wide respectively at base, middle and apex.

Total body length: 3.05-3.72(2.9) mm.

**MATERIAL:** 10 ♀♀, 1 ♂, Tirupathi, *Smilax* dry twigs, 21.I.1970. 1 ♀, Aravangadu (Nilgiris), dry grass clusters, 23.II.1966. 1 ♀, Mambakkam, Chingleput Dt., dry Palmyra leaf, 9.IV.1966. 1 ♀, Goa, misc. beating, 16.X.1964.

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