

ON THE GENERA ALLIED TO *LIOTHRIPS*, OF THE ORIENTAL
FAUNA. I. (*Thysanoptera*)

by

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Eugynothrips PR.

1926. *Eugynothrips* PRIESNER, Treubia, 8, Suppl., p. 157.

Redescription: Antennae 8-segmented, long and always very slender, sense-cones long and fine, setiform; antennal joint 3 with only one sense-cone. Head varying in length, but seldom much elongate, always longer than the short pronotum, never constricted behind eyes. Eyes large, without enlarged ommatidia. One pair of moderately long postoculars, in some cases postoculars vestigial. Cheeks smooth, without spines. Mouth-cone very broadly rounded, often truncate apically. Epimeron of prothorax with one conspicuous bristle, bristles on fore margin developed or, often interior ones, vestigial. Fore femora in most cases weak in the female, in some cases slightly thickened, in the male simple or somewhat (slightly) enlarged; fore tarsi of female unarmed, of male armed with small tooth. Wings very moderately broad, evenly wide or slightly and evenly tapering towards apex, at least on one side with double fringe hairs. Tube either similar to that of *Gynaikothrips*, but less stout, i.e. elongate, with a very slight concavity beyond base; or short, evenly conical, in one species it is somewhat longitudinally ribbed.

Typ. gen. *Cryptothrips conocephali* KARNY.

Differing from *Gynaikothrips* by the shape of the antennae and sense-cones, the usually shorter head that is never constricted behind eyes, always smooth cheeks and the constant absence of the tarsal tooth in the female sex. *Liothrips* subgen. *Phaenothrips* PR. is distinguished by the shape of the intermediate antennal joints, the longer and more slender head, and the unarmed fore tarsi in both sexes. *Chaetokarnyia* PR. is more closely allied than the former genus, but is characterized by the presence of a pair of long post-ocellar bristles.

Besides the type species, *Eugynothrips conocephali* (KARNY), the following species belong to this genus:

Eugynothrips brevisetis (PR.), from *Gynaikothrips*; *E. coarctatus* (KARNY), from *Dolerothrips*; *E. convolvens* (KARNY), from *Gynaikothrips*; *E. decipiens* (KARNY), from *Dolerothrips*; *E. intorquens* (KARNY), from *Cryptothrips*; *E. persimilis* (KARNY), from *Cryptothrips*; *E. seticornis* (KARNY), from *Dolerothrips*; *E. tubifex* (KARNY), from *Dolerothrips*, and the new species (sc. var.) described below: *adulator*, *manubrialis*, *intorquens* var. *smilacinus*, *sumatranus*, *susicola* and *umbricornis*.

Eugynothrips priesneri AYYAR (Contr. knowl. Thys. Ind., 1928, 307) does most likely not belong to his genus. In order to ascertain its generic position the re-examination of the type will be necessary. Stout, incrassate fore femora and roundedly pointed mouth-cone, pointed labrum do not fit into this genus.

If *Dolerothrips connaticornis* KARNY (1913, Bull. Jard. Bot. Buitenzorg, 10, p. 83, fig. 57; 1915, Zeit. wiss. Ins.-Biol., p. 146; 1915, HOOD, Entomologist, p. 107) belongs to *Eugynothrips* can also not be stated, since the type specimen is not in KARNY's collection. I suspect the unique specimen to be one having monstrously fused terminal antennal joints.

Eugynothrips smilacis PRIESNER does not fit into this genus; I have created for it a special one: *Tolmetothrips* nov., which will be described in another part of this paper.

Excluded are herewith also the following species which I had formerly considered to belong to *Eugynothrips*: *circinans* (KARNY), from *Cryptothrips* to be referred to *Teuchothrips* HOOD; *fuscipennis* (KARNY), from *Cryptothrips* to *Zelotothrips* PR. (Ind. Journ. Ent., 1951, p. 200); *longus* (SCHMUTZ), from *Mesothrips* to *Teuchothrips*; *tenuicornis* (KARNY), from *Cryptothrips* to *Chaetokarnyia* PR. (Ind. Journ. Ent., 1951, p. 200).

Key to the species of *Eugynothrips*

1. Interior antero-marginal bristles of prothorax conspicuous, about as long as antero-angulars, at least 30 μ long. Head broader than long. Tube shortly conical. Bristles knobbed. (On Araceae sp.) *tubifex* (KARNY)¹⁾
- Interior antero-marginal bristles of prothorax either vestigial or small, in any case much shorter than antero-angulars 2
2. Antennae strongly infumated, joint 3 at apex, joints 4-6 dark in apical two-thirds. Middle- and hind tibiae pale at apex. Tube longer than head, not quite evenly conical. Head little longer than broad.

¹⁾ cf *Liothrips* (*Phaenothrips*) *inquilinus* (KARNY): Head much elongate, eyes very large, all tibiae pale yellow.

- Antero-angular bristles of pronotum well developed, antero-marginals vestigial. (On *Ardisia* sp.) **umbricornis** spec. nov.
- Antennae paler 3
3. Antero-angular pronotal bristles very small or vestigial 4
- Antero-angular pronotal bristles conspicuous 11
4. Head elongate, about 1.3 times as long as broad. Tube long, not quite evenly conical. Antennae very slender, joints 3-7 yellow, the latter darkened at apex, 8 wholly dark. Pronotum reticulate in anterior portion. (On *Conocephalus suaveolens*) **conocephali** (KARNY)
- Head less elongate, at most 1.2 times as long as broad 5
5. Postocular bristles well developed, 40-48 μ long. Tube long, much longer than head, slightly concave beyond base. (On *Schismatoglottis calyptrata*) **decipiens** (KARNY)
- Postocular bristles small or vestigial 6
6. Sense-cones moderately long. Head reticulate between eyes, and also tergite 1. Wings evenly smoky, longitudinal streak not conspicuous cf. **Liothrips (Zopyrothrips) breviceps** PR.
- Sense-cones long and fine, setiform; if shorter, head not reticulate. 7
7. Tube of female short, conical, about as long as or little longer than head 8
- Tube of female long, 260-295 μ . Antennae with only joint 8 infumated. Antennae very slender. (On *Conocephalus* spec.) **brevisetis** (PR.)
8. Wings infumated for all their length, with longitudinal vein pronounced. Fore tibiae pale yellow 9
- Wings pale, gradually slightly shaded with grey-brown towards apex, or nearly hyaline. Antennal 5 infumated at apex, 6 darkened in apical half, 7 pale only at base. Joint 8 slender, conical. Tube shorter. Fore tibiae darker. (On *Smilax* spp.) 10
9. Sense-cones of joints 4 and 5 : 44-52 μ long. Antennal joint 7 shaded with grey at apex, joint 8 wholly dark, constricted at base. Head elongate. (On *Conocephalus* sp.) **persimilis** (KARNY)
- sense-cones on joints 3-6 only 24-32 μ long. Antennae nearly wholly pale. Joint 8 not constricted at base. Head somewhat broader than long. (On *Susum anthelminticum*) **susicola** spec. nov.
10. Antennae somewhat shorter, 415-460 μ , joints 5 and 6 each 68-72 μ long. Tube evenly conical, length 173-216 μ
- **intorquens** (KARNY) [*liliaceae* (MOULT.)]
- Antennae longer, 485-500 μ , joints 5 and 6 80-84 μ long. Tube 240-260 μ long, not quite evenly conical **smilacinus** spec. nov.
11. Postocular bristles small or vestigial 12

- Postocular bristles well developed, though sometimes only moderately long 14
12. Wings rather evenly infumated all along, with longitudinal vein ... 13
- Wings nearly hyaline in basal half, more or less slightly shaded in distal portion. Longitudinal streak indistinct. At least joints 5 and 6 of antennae slightly shaded. Fore femora of male often somewhat enlarged. (On *Smilax* spec.) cf. 8 b
13. Head distinctly somewhat longer than broad. Length of epimeral bristles of prothorax not more than 46 μ . (On *Conocephalus suaveolens*) cf. **persimilis** (KARNY)
- Head as long as broad or somewhat broader than long. Epimeral bristles at least 100 μ long. (On *Gnetum* spec.) . . . **seticornis** (KARNY)
14. Tube short, evenly conical, length 140-173 μ . Head broader than long (On *Araceae* spec.) **coarctatus** (KARNY)
- Tube longer 15
15. Antennae long, 675-690 μ . Eyes elongate-ovate, measuring in lateral diameter 144-152 μ . Tube length 320 μ . Head strongly narrowed towards base, cheeks straight. Antennals 5 and 6 somewhat narrowed apically (*Conocephalus* sp.) **sumatranus** spec. nov.
- Antennae shorter 16
16. Tube heavy, in the female 407-424 μ long, somewhat longitudinally ribbed. About 15 double-fringe cilia present (*Ardisia* sp.) **manubrialis** spec. nov.
- Tube of female at most 310 μ long 17
17. Epimeral bristles of prothorax longer, 124-140 μ . Antennae longer and more slender. Tube length 277-295 μ . (On *Gnetum* sp.) **convolvens** (KARNY)
- Length of epimeral bristles at most 110 μ , these bristles blunt ... 18
18. Antennals 4 and 5 pale. Legs stout. Tube slender, but nearly evenly conical, length 250-260 μ . (*Schefflera* sp.) . . . **adulator** spec. nov.
- Antennals 4 and 5 somewhat shaded, 5 and 6 indistinctly constricted at apex. Legs more slender. Tube distinctly slightly concave beyond base, 225-236 μ long cf. **umbricornis** spec. nov.

Eugynothrips conocephali (KARNY)

1913. *Cryptothrips conocephali* KARNY, Bull. Jard. Bot. Buitenzorg, 10, p. 98, figs. 70, 72.
1916. — — — Zeit. wiss. Ins.-Biol., p. 92, 125.
1926. *Eugynothrips conocephali* PRIESNER, Treubia, 8, Suppl., p. 158.

Eugynothrips brevisetis (PRIESNER)

1930. *Gynaikothrips brevisetis* PRIESNER, Treubia, 12, p. 263.

Eugynothrips convolvens (KARNY)

1915. *Gynaikothrips convolvens* KARNY, Zeit. wiss. Ins.-Biol., p. 326; 1916, p. 86.
 1926. — — — PRIESNER, Treubia, 8, Suppl., p. 174, 203; pl. 15,
 fig. 97.
 1928. — — — KARNY, Treubia, 10, p. 38.

Eugynothrips decipiens (KARNY)

1915. *Dolerothrips decipiens* KARNY, Zeit. wiss. Ins.-Biol., p. 147, 253.
 1926. *Gynaikothrips decipiens* PRIESNER, Treubia, 8, Suppl., p. 173, 192; pl. 13, fig. 90.

Eugynothrips seticornis (KARNY)

1915. *Dolerothrips seticornis* KARNY, Zeit. wiss. Ins.-Biol., p. 147, 252.

New record: Java, G. Pantjar, 600 m, 8.i.1923, in leaf galls of *Gnetum neglectum* Bl. (leg. DOCTERS VAN LEEUWEN).

Eugynothrips intorquens (KARNY)

1912. *Cryptothrips intorquens* KARNY, Marcellia, 11, p. 139, 145.
 1913. — — — Bull. Jard. Bot. Buitenzorg, 10, p. 92, fig. 65.
 1916. — — — Zeit. wiss. Ins.-Biol., 12, p. 94.
 1923. — — — Treubia, 3, p. 326.
 1926. *Eugynothrips intorquens* PRIESNER, Treubia, 8, Suppl., p. 158, 160; pl. 11, fig. 69.
 1928. *Gynaikothrips liliaceae* MOULTON, Ann. Zool. Japon., 11, p. 311, fig. 8 (p. 331).
 1936. *Smerinthothrips liliaceae* TAKAHASHI, Philippine Journ. Sci., 60, p. 442, fig. 2.

Eugynothrips coarctatus (KARNY)

1915. *Dolerothrips coarctatus* KARNY, Zeit. wiss. Ins.-Biol., p. 146, 250.

Eugynothrips persimilis (KARNY)

1913. *Cryptothrips persimilis* KARNY, Bull. Jard. Bot. Buitenzorg, 10, p. 96, fig. 69.
 1916. — — — Zeit. wiss. Ins.-Biol., p. 92, 125.
 1926. *Eugynothrips persimilis* PRIESNER, Treubia, 8, Suppl., p. 158, 161; pl. 3, figs.
 17-19; pl. 11, figs. 70, 71.

Eugynothrips tubifex (KARNY)

1915. *Dolerothrips tubifex* KARNY, Zeit. wiss. Ins.-Biol., pp. 146, 249.
 1926. *Eugynothrips tubifex* PRIESNER, Treubia, 8, Suppl., pp. 158, 170; pl. 12, fig. 77.

Descriptions of the new species

Eugynothrips umbricornis spec. nov.

Female: Blackish brown, antennal joints 1 and 2 dark, 3 pale yellow, shaded with brown in apical third or fourth, 4 and 5 pale yellow in basal third (or somewhat more), 6 in basal third, 7 at extreme base pale yellow, 8 wholly dark. Fore tibiae with dark ring behind base, middle and hind tibiae paler at base, while they are pale yellow at apex; tarsi pale yellow, hardly shaded. Body bristles dark. Abdominal bristles paler towards tips. Wings all along strongly infumated with distinct longitudinal stripe.

Head short, little longer than broad, as broad across eyes as across cheeks, the latter slightly tapering towards base. Mouth-cone short, very broadly rounded. Sculpture of vertex consisting of very fine transverse wrinkles. Postocular bristles long, slightly knobbed. Hind ocelli scarcely in front of a line across middle of eyes, front ocellus on a level with fore margin of eyes, not overhanging. Antennae slender, with very long and fine sense-cones, joint 3 with one, 4 with $1 + 2 + 1$; antennal joint 1 narrowed towards apex, 3 thin at base, exterior margin to middle somewhat concave, interior margin convex, joint 6 comparatively long, apex somewhat prolonged, 8 somewhat narrowed at basal third. Prothorax very short and strongly transverse, antero-angular bristles well developed, interior antero-marginals extremely small; epimerals and postero-marginals long, slightly curved, these and coxals with apices opened. Pronotum not reticulate. Wings narrowed towards apex, very narrowly rounded at extreme apex; basal wing bristles moderately long, knobbed; fringe cilia moderately dense, double fringe cilia 5-7. Legs slender, fore femora slender, fore tarsi unarmed. Bristles on abdomen moderately long, pointed or nearly so, lateral bristle on segment VIII rounded at tip; bristle 1 of segment IX short, b. 2 long, all pointed. Tube long, longer than head, conical as a whole, but very slightly concave beyond base, strongly narrowed in posterior fourth, and therefore very slightly convex in posterior third.

Measurements of female (holotype), in μ : Head, length from eyes 220, width across eyes (or cheeks) 200-205; eyes, lateral diameter 95-100, dorsal diameter 100-105; cheeks, length behind eyes 128. Postocular bristles 68-72. Antennae, total length 458-467; lengths (widths) of joints: 36 (base 42, apex 34), 50-53 (31), 64 (27), 73 (32), 73 (28), 73-76 (27), 53 (23), 36 (13); sense-cones on joint 4: 76. Pronotum, length 108, width (without coxae) 285-295; antero-angular bristles, length well 40, epimerals

100. Pterothorax, length 310, width 330; wings, length 880; basal wing bristles, lengths 56, 60, 76. Abdomen, bristles on segment VIII (laterals) ab. 80; bristles on IX, b. 1 : 72-80, b. 2 : 155-160; tergite IX, median length 88; tube, length 225 (dorsal) - 236 (lateral), width at base 74-76, at apex 40; longest anal bristle 152.

Habitat: 1 female (perfect specimen), Sumatra, eastcoast, Bandarbaru, \pm 1000 m, 14.vii.1921, on *Ardisia* spec. (gall no. 5539, leg. DOCTERS VAN LEEUWEN).

This species is well characterized by the coloration of the antennae. It is a typical *Eugynothrips*.

***Eugynothrips manubrialis* spec. nov.**

Female: Dark brown, fore tibiae testaceous, sometimes with indistinct subbasal dark ring, middle and hind tibiae paler or yellow at extreme base and apex. Antennae with joints 1 and 2 as dark as head, 2 paler at apex and exterior margin, 3-6 pale yellow, 5 not infumated or only very slightly so at apex, 6 usually pale brownish in apical half, 7 and 8 brown, 7 paler at extreme base, as a rule. Wings shaded (for the whole length) with grey-brown, longitudinal vein usually very weak or scarcely visible, a pale line accompanies hind margin from middle to apex of wing. Body bristles infumated, apices lighter.

Head not long, broadest across large eyes, an indistinct notch behind eyes; cheeks narrowed towards base, straight (convex only in teneral shrivelled specimens), roughened, vertex transversely finely rugose, not reticulate; hind ocelli in front of middle of eyes, anterior ocellus on the same level as fore margins of eyes. Postocular bristles long, 24-28 μ distant from eyes, tips rounded, length 92-96 μ . Mouth-cone short, very broadly rounded, labrum blunt. Antennae long, 570-590 μ , joint 3 straight at sides, widened towards apex, joint 6 with a sharply defined pedicel, 8 narrower at base than 7 at apex, not constricted at base, but nearly parallel-sided in basal half; sense-cones very long and slender, length on joint 4 ab. 70-80 μ ; one sense-cone on 3 and 1 + 2 + 1 on 4, as usual. Prothorax shorter than head, hind margin much convex; antero-angular bristles well developed, 64-68 μ , not quite sharp, interior antero-marginals very small (vestigial); surface of pronotum very slightly reticulate, anteriorly; epimeral bristles long, ab. 140 μ , postero-angulars somewhat shorter, 112-120 μ ; tips slightly rounded, not sharp. Pterothorax heavy, broader than prothorax, about as broad as (to base of hind coxae) long, metathorax slightly reticulated. Wings rather broad, of even width, basal bristles moderately long, 44-64, 56-60 and 95-100 μ , b. 1 and 2 blunt,

b. 3 with white tip; double fringe cilia: 13-16. Legs slender, fore femora slightly enlarged, fore tarsi unarmed. Abdomen with dorsum slightly reticulate, tergite one (dorsal plate) about bell-shaped, concentrically reticulate; abdominal bristles long, longest lateral bristle on segment VII ab. 200, laterals on VIII 128-132 μ long, all pointed; b. 1 on segment IX 180-188, b. 2 longer, 240-260, all pointed. Tube long and stout, but evenly narrowed towards apex, sides straight, somewhat more strongly narrowed near apex; the tube is slightly longitudinally ribbed; length of tube 407-425, width at base 110, at apex 56 μ . Anal hairs very fine, the longest ab. 200.

Further measurements (of holotype), female, in μ : Head, length 280, width (across eyes) 250; eyes, lateral diameter 120-125, dorsal diameter 128-132; antennae, lengths (breadths) of joints: 48 (base 56, apex 46), 72-76 (40), 88-92 (39), 96 (40), 96 (38), 92 (33), 68 (28), 46-48 (16). Pronotum, length 190, width 380-400, or (with coxae) 460. Pterothorax, length or width 554. Wings, length 1436.

Male: Fore femora hardly larger than in the female, slightly enlarged, fore tarsi with small, distad posited tooth, with hamus (under side) almost on the same level. Colour as in the female. Double fringe hairs 12-15. Tube shorter but of the same shape; segment IX of abdomen angularly produced at sides, beneath.

Measurements of male (allotype): Bristles on segment IX of abdomen, b. 1: 200-208; b. 2 (spiniform) 75-80; b. 3: 250-280. Tube, length 355, width at base 104, at apex 50; in other specimens, tube length 350-363 μ , width at base 100-105, at apex 50-52 μ .

Habitat: Males and (mostly) females, Sumatra, eastcoast, Berastagi, \pm 1800 m, 8.ii.1924, in leaf gall of *Ardisia* spec. (no. 7784, leg. DOCTERS VAN LEEUWEN).

This species is unmistakable by the length, shape and structure of the tube; it is the stoutest of all members of this genus; the ribbed tube would suggest the *Acallurothrips*-group and not *Eugynothrips* but in the former the tube is broader and strongly constricted at apex, anal hairs weak, etc.; the present new species belong to *Eugynothrips*, and may be considered representative of a special subgenus.

***Eugynothrips susicola* spec. nov.**

Female: Dark brown to blackish-brown, joints 1 and 2 of antennae of the same colour, 2 darker, especially at interior margin; all tarsi pale yellow, fore tibiae nearly wholly yellow, shaded only at extreme base, middle and hind tibiae blackish-brown, with extreme tips abruptly pale

yellow. Antennal joints 3-8 wholly pale yellow. Wings strongly infumated with grey-brown, with conspicuous dark longitudinal vein.

Head short, 208-212 μ long, 213-218 μ broad; diameter of eye 105-110, length of cheek 112, eyes appearing therefore very large; cheeks narrowed towards base in a hardly noticeable arch; head slightly constricted at base. Dorsal distance of eyes about 70 μ ; front ocellus nearly reaching a line across fore margin of eyes, not overhanging; mouth-cone very broadly rounded, nearly truncate, short; postocular bristles vestigial; surface of vertex finely transversely striate, not reticulate. Antennae very slender, length about 433 μ ; joint 1 transverse, 2 scarcely convex laterally, the following joints also very little convex, 6 parallel-sided in apical half, joint 8 very slender, pointed, constricted at base. Pronotum shorter than head, surface not reticulate, finely transversely striate, antero-angular bristles small, epimerals long, blunt. Pterothorax about as long as broad. Wings moderately broad, with only two conspicuous basal bristles, the second one of them measuring 60 μ ; number of double fringe hairs only 0-3, usually 2-3. Fore femora not at all enlarged, fore tarsi unarmed. Bristles on segment IX long, b. 1 with finely lanceolate tip, b. 2 pointed, b. 3 hair-like, finer. Tube evenly conical, short, length 190-200, width at base 88-92, at apex 48 μ .

Measurements of female (holotype), in μ : Antennal joints, lengths (breadths): 28-30 (40-42), 52-56 (28-30), 60-65 (24), 56-60 (24), 64 (24), 64-66 (26), 60-62 (20), 44 (12). Length of sense-cones on joints 5 and 6: 24-32; prothorax, length 138, width without coxae 295, including coxae 330; antero-angular bristles 22, epimerals 88-96. Pterothorax, length 346, width 337-355. Wings, length 900-917, width across middle 84-86. Bristles on segment IX of abdomen: b. 1, 180; b. 2, 200-215; b. 3 about 200.

Male: Very similar to female, fore femora not enlarged. Bristles on segment IX, b. 1 about 108, with pale lanceolate tip, b. 2 weak, at most 40 long, b. 3 hair-like, about 200 μ long. Tube, length about 164, width across base 84, at apex 43 μ .

Habitat: 4 females, 1 male, W. Java, Mt Salak, \pm 1000 m, 8.ii. 1925, collected by DOCTERS VAN LEEUWEN in leaf gall of *Susum anthelminticum* Bl. (Fam. Flagellariaceae).

This species much resembles *E. persimilis* at first sight, but is easily distinguished by the much shorter sense-cones and the shorter head.

***Eugynothrips intorquens smilacinus* var. nov.**

This form comes so close to *E. intorquens* (KARNY) that I cannot consider it a proper species. It agrees with *intorquens* in all characters

except that it has longer antennae, measuring 485-500 μ (in *intorquens* 415-460 μ), the joints 5-7 measuring 76-80, 76-80 and 68-70 μ , respectively (in *intorquens* 68, 68 and 62 μ , respectively). The length of the wings is about 1.04 mm (in *intorquens* 0.87 mm). The tube is 242-260 μ long (in *intorquens* 190-216 μ). The epimeral pronotal bristles have a length of 80-100 μ .

Habitat: Java, Bandarbaru,¹⁾ \pm 800 m, ix.1920 (DOCTERS VAN LEEUWEN no. 17), on *Smilax leucophylla*; Java, Mt Pantjar, \pm 600 m, 7.xii.1923 (DOCTERS VAN LEEUWEN) in leaf galls of *Smilax glauca*; 1 female, Sumatra, eastcoast up Petani Valley, \pm 1200 m, 4.ii.1924 (DOCTERS VAN LEEUWEN no. 7749), on *Smilax modesta*; 3 females, Taiwan (Formosa), Taihoku, 15.iv.1933, on *Smilax* sp. (leg. R. TAKAHASHI).

Gynaikothrips liliaceae MOULTON (from Taihoku, Formosa, 11.vii.1926), on *Smilax* sp. (leg. R. TAKAHASHI) is not identical with the above form, but a synonym of *E. intorquens* (KA.), though the epimeral bristles are slightly longer than in most specimens of *intorquens*; in other respects it better agrees with *intorquens* than with the stouter *smilacinus*.

***Eugnothrips sumatranus* spec. nov.**

Female: Black-brown, legs as well, fore tibiae yellow, slightly darkened at base, middle and hind tibiae very narrowly pale yellow at extreme apex. Antennal joints 1 and 2 dark, 2 somewhat paler brown at apex exteriorly, joints 3-6 pale yellow, scarcely shaded, 6 very faintly infumated in apical third, 7 shaded in apical third or half, 8 wholly pale grey-brown. Wings pale grey-brown, with strong infumation at the bristle plate, and the scale, besides, like the hind wings, with very sharp dark longitudinal vein that nearly reaches the apex. Major body bristles dark.

Head with large, oval eyes, longer than broad, strongly narrowed towards base, cheeks straight, not curved, having at the eyes below an acute angle. Postocular bristles well developed, their distance from each other 147-182 μ . Mouth-cone broadly rounded. Vertex finely transversely striate, cheeks without noticeable setae. Anterior ocellus on a line across fore margin of eyes. Antennae long and slender, 675-690 μ , joint 1 tapering towards apex, joints 4-6 not (female) or slightly (male) constricted at apex, 8 somewhat constricted at base; joint 3 comparatively short, even 6 somewhat longer than 3; joint 3 with 1, 4 with 1 + 2 + 1, 5 and 6 with 1 + 1 + 1, 7 with 1 dorsal sense-cone; sense-cones very long and slender, on 5 and 6 about 100 μ long. Antero-angular bristles of prothorax well developed, postero-marginals and epimerals long,

¹⁾ This is probably Bandarbaru in N.E. Sumatra. — Ed.

curved, little blunt, epimerals nearly pointed. Surface of pronotum not reticulate, transversely striate posteriorly. Pterothorax very little longer than broad. Wings long, evenly wide, somewhat pointed at apex, basal bristles 1 and 2 somewhat blunt, 3 nearly pointed; 15-17 double fringe cilia present (10-15 in the male). Abdominal bristles long, dark at base, those of segment IX not very much differing in length, shorter than tube. Tube nearly evenly conical, about as long as the head. Anal bristles well developed, dark.

Measurements (of female, holotype), in μ : Head, length 310, width across eyes 260, across base 208; eye's diameter 144-152, length of cheeks behind eyes 164-168; postocular bristles, length ab. 85 (not horizontal). Antennal joints, lengths (breadths): 40-42 (base 56, apex 44-48), 64-68 (38), 84-88 (36), 112 (40), 120 (36), 120 (32), 88 (24), 52-54 (16). Prothorax, length 173, width 380 (with coxae 440); antero-angular bristles 50-60, epimerals 155-173, postero-marginals 138-147. Pterothorax, length 520, width 467-485. Wings, length 1450, width 110-112 (at middle). Bristles on segment IX of abdomen, b. 1, 288; b. 3, 200; anal setae 220. Tube, length 320, width across base 108, at apex 56. Hind tibiae, length 380.

Male: Somewhat smaller and more slender, fore tarsi with distinct tooth, femora not enlarged. Sternite IX produced angularly at sides of apex. Bristles 1 and 3 on segment IX long, b. 2 short, somewhat blunt.

Measurements of male (allotype), in μ : Head, length 260, width across eyes 208; diameter of eye 108-112. Antennae, length 554-570. Lengths (breadths) of joints: 32-34 (46), 56 (32), 72 (30), 88 (38), 96 (34), 96 (28), 68 (22), 52 (14). Prothorax, length 130, width 320 (inclusive of coxae 363). Pterothorax, width nearly 400. Bristles on segment IX of abdomen, b. 1 and 3, about 260, b. 2: 70-80. Tube, length 248-252, width across base 92, across apex 48.

Habitat: 3 males, 1 female, Sumatra (eastcoast), Petani Valley, \pm 1250 m, 4.ii.1924, in galls (no. 7752) of *Conocephalus* spec. (leg. DOCTERS VAN LEEUWEN).

Among the species having well developed postocular and antero-angular prothoracic bristles, this species is characterized by the straight strongly narrowed cheeks and the exceptionally long and slender antennae.

***Eugynothrips adulator* spec. nov.**

Female: Dark brown, fore tibiae dark at base, pale yellow towards apex, middle and hind tibiae dark, with abruptly pale yellow extreme apex. Joints 1 and 2 of antennae dark, 2 pale at extreme apex, 3-6 pale yellow, 5 not or quite indistinctly shaded, 6 in apical half (or

less) very pale greyish, 7 dark (pale about in basal third), 8 dark. Wings all along rather evenly shaded with grey-brown, with conspicuous longitudinal vein approaching tip. Prothoracic and abdominal bristles for the major part dark.

Head short, little longer than broad; eyes large (eyes : cheeks = 92 : 124 μ); cheeks scarcely convex, scarcely narrowed towards base; mouth-cone very broadly rounded, nearly truncate. Postocular bristles moderately long (about 60 μ), blunt, far lateral, about in first third of distance between hind margin of eyes and that of vertex; posterior ocelli situated in front of a line across middle of eyes, front ocellus not overhanging; vertex finely transversely striate. Antennae very moderately long, about 415-425 μ , joint 3 very thin at base, strongly widened towards apex, with 1 sense-cone, 4 with 1 + 2, the remaining segments normal; joint 8 not constricted at base or only very slightly so. Sense-cones not exceptionally long, as this is the case in most species, on 4 they measure about 45 μ . Prothorax shorter than head, transversely striate, interior antero-marginals vestigial, exterior distinctly developed, shorter than postoculars; postero-angulars long, 86-105 μ , slightly curved, with pale blunt tip, coxal bristles somewhat longer than antero-angulars. Legs stout, fore legs not enlarged, fore tarsi unarmed, slightly convex interiorly. Pterothorax as long as wide (380 μ), metanotum in front longitudinally striate, behind somewhat longitudinally reticulate. Wings very slightly bent and narrowed towards apex, basal setae dark, moderately long (44, 52 and 64 μ), blunt. Double fringe 7-10. Dorsal plate of tergite I triangular. Bristles at sides of abdomen long, pointed or nearly so, b. 1 on segment IX shorter than 2. Tube long, conical, length 250-260, width across base 80-83, at apex 45 μ ; tube slightly constricted at apex.

Further measurements of female (holotype): Head, length 208, width across eyes 200, diameter of eyes 92, cheeks behind 124. Antennal joints, lengths (breadths): 25 ? (base 45, apex 34), 56 (34), 57 (31), 57-59 (32), 64-67 (31-32), 63 (29), 56 (25), 39 (15). Prothorax, length 125, width 286 (incl. coxae 320); antero-angular bristles 40, postero-angulars 100-105. Wings, length 0.97-1.03 mm.

Male: Smaller, segment IX laterally sharply produced, b. 2 of segment IX short, spine-like. Tube much shorter than in the female; length 188, width across base 76, across apex 40 μ .

Habitat: Types from Berastagi, N.E. Sumatra, \pm 1600 m, 6.ii.1924, in leaf rolls on Schefflera spec. (Araliaceae), leg. DOCTERS VAN LEEUWEN (no. 7771); males and females, Sibolangit, \pm 500 m, 17.vii.1921, in leaf galls of Schefflera spec., leg. DOCTERS VAN LEEUWEN (no. 9933).

The specimens from Sibolangit are smaller, on an average, and have shorter head that is about as long as broad, cheeks slightly more strongly convex. These differences are certainly not specific.

The short interior, but well developed exterior, anteromarginal prothoracic bristles, the moderately long tube and the comparatively short and blunt epimeral bristles distinguish this species from all those hitherto known.

Pnigmothrips gen. nov.¹⁾

Head strongly narrowed towards base, constricted at base. Eyes large. Postocular bristles vestigial. Mouth-cone very broadly rounded, nearly truncate. Antennae very slender, sense-cones long and fine, setiform, joint 8 of antennae slender, nearly parallel-sided in basal third, not constricted, narrower than 7 at apex. Prothorax shorter than head (from eyes to base), antero-angular bristles small, epimerals stouter, moderately long. Fore femora distinctly somewhat enlarged in both sexes, slightly constricted subapically and reflexed exteriorly. Fore tarsi unarmed in both sexes, but with stout claw (hamus). Wings comparatively short, evenly wide, shape as in *Eothrips*; basal bristles stout, rather short, double fringe present. Abdomen with long bristles; tube long, not quite evenly conical, having slight convexity at middle.

Typ. gen. *P. medanensis* spec. nov.

Close to *Eugynothrips*, differing by the slightly enlarged fore femora of both sexes, the unarmed fore tarsi also of the male and the different shape of the head.

Pnigmothrips medanensis spec. nov.

Female: Chestnut-brown to blackish-brown, fore tibiae and all tarsi pale yellow, middle- and hind tibiae at base and apex narrowly pale yellow, fore femora pale yellow at apex. Antennal joints 1 and 2 dark, 2 pale brown towards apex (more so exteriorly), rest of antennae pale yellow, joint 8 scarcely shaded at apex. Wings infumated all along, without dark longitudinal vein, but with a pale longitudinal streak right near hind margin, fading out towards base.

Head about as long as broad, cheeks straightly narrowed posteriorly (even with slight concavity behind eyes), somewhat constricted behind. Eyes large. Ocelli arranged in a very low triangle, hind ocelli in anterior third of eyes, front ocellus on a line with fore margin of eyes, not overhanging. Surface of head somewhat reticulate around ocelli, vertex with

¹⁾ *pnigmos* = contraction (of neck).

anastomosing transverse lines; cheeks appearing slightly serrate. Mouth-cone short, broadly rounded, labrum blunt. First antennal joint somewhat narrowed towards apex, joint 3 very slightly emarginated interiorly, convex exteriorly, joints 4-6 not constricted at apex, 7 and 8 slender, 8 not constricted but narrower at base than 7 at apex; sense-cones fine, rather long, 3rd joint with 1, joint 4 with 3 + 1, joints 5 and 6 with 1 + 1 + 1. Prothorax shorter than head, disk with anastomosing transverse lines; antero-angular bristles short, interior antero-marginals vestigial, postero-angulars moderately long, dark, tip pale, blunt only in one direction. Fore femora thickened, somewhat constricted at apex in one direction, with slightly reflexed apical margin; surface distinctly transversely striate; fore tarsi unarmed, only with hamus. Pterothorax somewhat broader than long; sculpture of metanotum consisting of anastomosing longitudinal lines. Wings not constricted, scarcely narrowed towards apex, basal bristles comparatively short, nearly pointed, dark. 7-11 interlocated cilia present, mostly 8-9. Tergite I bell-shaped, faintly reticulate. Abdominal bristles long, dark for the major part, pointed. Fustis (rod in abdominal segment IX) slender. Tube somewhat longer than head, not quite evenly conical, slightly concave beyond base, evenly conical in posterior third.

Measurements of female (holotype), in μ : Head, length 235-240, width across eyes 242-245 (at base 190); lateral diameter of eye 108-110; length of cheeks behind eye 148-152; distance of eyes on dorsum 87; postocular bristles, length 12. Antennae, total length 502-520; lengths (breadths) of joints: 40 (base 48, apex 36), 60-64 (34), 76 (30), 80 (32), 80 (30), 78 (29), 64 (20), 44 (12); sense-cones on joints 4-6, length 40-45. Prothorax, length 156, width 310 (inclusive of coxae 374); antero-angular bristles 28, epimerals 84-88, interior postero-marginals about 68. Pterothorax, length 346, width 380-398. Wings, length 882, width at middle 92; basal wing bristles 36, 56 and 60-65. Bristles on segment VIII of abdomen 105, on IX: b. 1 180, b. 2 and 3 240 (and more); tube, length 268, width across base 88, at apex 42; anal hairs about 148. Fore femora, width 105, hind tibiae, length 242.

Male: somewhat smaller, coloration as in the female. Fore femora not noticeably more strongly enlarged, fore tarsi unarmed. Bristle 2 of segment IX is dark and spine-like.

Measurements of male (allotype), in μ : Head, length 216, width across eyes 213; lateral diameter of eye 100. Antennal joints from joint 3: 68 (36), 68 (44), 72 (39), 72 (36), 58 (27), 40 (16). Bristles on segment IX of

abdomen, b. 1 : 84, b. 2 : 60-68, b. 3 : 220. Tube, length 220, width across base 76, across apex 36.

Habitat: Males and females, Sumatra (southeast-coast), Batang Serangan, virgin forest, xii.1923, in leaf galls (herbarium no. 23), collected by L. FULMEK.

Sauridothrips gen. nov.

Head elongate, somewhat narrowed towards base, with a slight notch behind eyes and slightly constricted at base, somewhat convex dorsally; vertex reticulate between eyes. Eyes large. Mouth-cone broadly rounded, labrum slightly pointed. Antennae and sense-cones long and slender, the former 8-segmented, segment 8 nearly parallel-sided in basal portion, joints 3 comparatively long. Postocular bristles vestigial. Prothorax shorter than head, closely striate (scarcely reticulate), bristles moderately long, very stout, interior antero-marginals vestigial. Wings as in *Liothrips*, with double fringe cilia, basal bristles very moderately long, but stout. Legs very slender (fore and middle tibiae wholly yellow). Fore femora long (apex narrow), slightly enlarged in both sexes; fore tarsi unarmed in both sexes. Abdominal bristles strong, dark, with pale ends, blunt. Tube short, conical.

Typ. gen. *S. phlaeothripinus* spec. nov.

Though the head suggests a Phlaeothripine, this form undoubtedly belongs to the *Liothrips*-group of the *Liothripinae* m. It is distinguished from *Liothrips* s. str. by the incrassate fore femora, the short, stout, rigid bristles, the notch behind the eyes, the long, slender antennal joints 3; from *Liothrips* subg. *Phaenothrips* nov., besides, by the not constricted antennal joints 5 and 6, and the slight reticulation around the ocelli.

Sauridothrips phlaeothripinus spec. nov.

Male: Black-brown, with profuse crimson pigmentation. Fore and middle tibiae and all tarsi pale yellow, hind tibiae dark brown, abruptly pale yellow in posterior two-thirds (having base interiorly at the excavation somewhat paler brown). Major bristles dark, those of segment IX paler. Joints 1 and 2 of antennae dark, joints 3-8 pale yellow. Wings in basal third and at apex pale, having a slight longitudinal shade in median half or being evenly slightly shaded throughout, with hardly indicated longitudinal infumation.

Head elongate, right behind eyes with a slight notch; head somewhat broader across cheeks than across eyes; cheeks narrowed towards base, slightly constricted near base; vertex with transverse striae, reticulate

between eyes; posterior ocelli situated in anterior third of eyes; front ocellus not overhanging; cheeks without setae, only slightly serrate; postocular setae vestigial; mouth-cone broadly rounded, nearly truncate, labrum scarcely pointed. Antennae very long and slender, joint 1 tapering towards apex, 5 scarcely constricted before apex, 8 not constricted at base; joint 3 with one sense-cone ($28\ \mu$), 4 with $3+1$, 5 and 6 with $1+1$ sense-cones; on joint 5 the sense-cones are 40-48 μ long; antennal 3 much longer than 4. Prothorax much shorter than head, surface transversely striate, major bristles thick, moderately long, with pale, rounded tip, not distinctly knobbed; interior postero-marginal bristles minute, antero-angulars stout, moderately long. Fore femora long, somewhat enlarged, somewhat constricted at apex in a certain direction; tibiae long and slender, fore tarsi unarmed. Pterothorax about as long as broad. Wings narrow, evenly wide, nearly pointed from apical fifth, with 3 rigid, dark basal bristles, situated in one line. Double fringe 7-10. Mesonotum transversely, metanotum longitudinally, striated. Tergite I slightly reticulate, unevenly triangular. Abdominal bristles stout, dark at base, two of the lateral bristles blunt. Bristles 1 of segment IX not quite sharp, bristle 2 spine-like, bristle 3 setiform, pointed. Tube conical, much shorter than head, with very slight concavity beyond base, more strongly narrowed before apex.

Measurements of male (holotype), in μ : Head, length 265, width across eyes 190, across cheeks 198; lateral diameter of eye 92-96; length of cheeks behind eyes 200; dorsal distance of eyes about 68. Antennae, total length 519-536; lengths (breadths) of joints: 28 (base 40, apex 32), 56 (28), 104-108 (24), 90 (28), 88 (30), 72-74 (24), 60 (20), 38 (12). Pronotum, length 160, width 310 (with coxae 363); antero-angular bristles 40, epimerals and postero-marginals 80 (their basal width $6\ \mu$). Width of fore femora 116-120, length of fore tibiae 277. Pterothorax, length 380, width 398. Wings, length 934, width across middle 80; basal wing bristles, 52, 60, 64-68 ($6\ \mu$ thick). Abdominal segment IX, length 96, width 156; bristles on segment IX, b. 1: 136-145, b. 2: 64-68, b. 3: 164-168. Tube, length 204-208 (in paratype 180), width across base 76, at apex 40 (in paratype 70 and 36, respectively).

Female: Fully agreeing with the male in every respect. Bristles 1 and 2 of segment 9 pale, slightly rounded at tip, 220 and 240 long, respectively, b. 3 pointed, 220 μ . Tube nearly evenly conical. Double fringe 10.

Measurements of female (allotype), in μ : Head, length 286-294, width across cheeks 208; lateral diameter of eyes 96-100; length of cheeks

behind eyes 200. Antennal joints, lengths (breadths) : 36-40 (base 44, apex 36), 56 (30), 93-104 (24), 80-92 (28), 80-88 (29), 70 (28), 60 (22), 42 (13). Pterothorax, length 380, width 415. Hind tibiae, length 304. Tube, length 216, width across base 82, across apex 46.

Habitat: Indochina, Langson, 6.ii.25, 2 males and 2 somewhat mutilated females (ex coll. KARNY).

Manothrips gen. nov.

Head elongate, sides strongly narrowed towards base, constricted at base. Eyes moderately large, with posterior ommatidium enlarged. Cheeks with a small dark spine-like bristle behind eyes and another one, sub-dorsally, in posterior third. Postocular bristles (one pair) well developed, curved, pointed. Mouth-cone narrowly rounded at tip. Antennae long, as in *Liothrips*, sense-cones rather long, joint 8 constricted at base. Pronotum shorter than head, major bristles long, curved, nearly pointed, antero-angular bristles developed. Legs slender, fore femora not enlarged, tarsi unarmed in the female (male unknown). Wings long and broad, evenly wide, densely set with fringe hairs, of which more than 30 are duplicated; basal wing bristles moderately long. Body bristles scarcely darkened, those of abdomen long. Tube conical, somewhat thickened basally, with slight concavity before middle, narrowed again in posterior third; as a whole, conical.

Typ. gen. *M. fortis* spec. nov.

This form has the appearance of a *Liothrips* (s. str.), but is distinguished by having enlarged basal ommata of the eyes (as in *Thlibothrips*), broader wings with numerous (about 30) double fringe cilia, and by having not evenly conical tube.

Manothrips fortis spec. nov.

Female: Black, legs black, all tarsi blackish-brown. Joints 1 and 2 of antennae dark, 3 pale yellow (very slightly shaded), the following joints dark, but 4 (especially on under side) yellow in basal third (or less), somewhat paler also at extreme apex, 5 pale at extreme base only, 6 to 8 dark. Wings with scale and basal plate dark, but hyaline in about the whole basal half, and slightly shaded with grey-brown in apical half (or more), tip paler again, without dark longitudinal streak; hind wings with only slight longitudinal vein attached to hind margin. Major body bristles and basal wing bristles rather pale, only anal bristles dark, as are the small cheek spines.

Head elongate, eyes moderately large, shape about as in *Thlibothrips* having a larger basal omma at posterior angles; cheeks strongly tapering towards base, straight, constricted at base; mouth-cone narrowly rounded at apex; cheeks bearing a small dark spine behind the enlarged omma, and another one (or two) in posterior third, somewhat subdorsally (length of posterior spine-like bristles $30\ \mu$, of anterior $20-25\ \mu$); the dorsal basal margin of the vertex is considerably thickened, collar-like; sculpture of vertex not reticulate; front ocellus not overhanging. Antennae as in *Liothrips* (s. str.), joint 8 constricted at base. Sense-cones slender, on joint 5 about $60\ \mu$ long, joint 3 with 1, joint 4 with 3, joints 5 and 6 with $2+1$ each. Interior and angular bristles of fore margin of prothorax developed but not long, epimerals long, nearly pointed. Fore femora not enlarged, fore tarsi unarmed. Pterothorax slightly longer than broad. Wings rather broad, evenly wide, long, basal bristles nearly in one line, well developed, b. 1 and 2 almost pointed, 3 pointed. Double fringe 33-34 in the unique specimen. Middle and hind legs slender. Abdomen elongate, segment VIII strongly convex laterally, central plate of segment I triangular. Bristles on segment IX moderately long, much shorter than tube. Tube somewhat longer than head, not quite evenly conical, slightly constricted at the broader short basal portion, behind the basal thickening to middle slightly concave, but narrowed in a straight line from posterior third to apex; the tube shows, therefore, two feeble convexities.

Measurements of female (holotype), in μ : Head, length 358, width across hind angles of eyes (where it is broadest) 277, at basal constriction 205; lateral diameter of eye 132-136, length of cheeks from behind eyes to constriction 234. Antennae, length (breadths) of joints: ? (40), ? (43), 120 ? (40), 120 (48), 104-108 (37), 98-100 (35), 74 (32), 56-58 (20). Prothorax, length 225, width 440 (inclusive of coxae 500); antero-angular bristles about 50, epimerals 145-156. Pterothorax, length 640, width 615. Wings, length 1757, width at middle 245; basal wing bristles 100-108, 120-128 and 132-140. Segment IX of abdomen, length 156, width 246; bristles of segment 9, b. 1 and 2 about 220, b. 3: 180-200. Tube, length 390, width across base 116, at apex 54. Longest anal seta 280.

Habitat: 1 female (holotype), Sumatra (southeast coast), Mt Sibajak, 2212 m, viii.1923 (leg. L. FULMEK).

Adelphothrips gen. nov.¹⁾

Head longer than broad, scarcely or distinctly narrowed towards base, slightly constricted at base. Antennae 8-segmented, moderately long, joint

¹⁾ *Adelphos* = brother.

8 not or very slightly constricted at base; sense-cones slender, but not setiform. Mouth-cone narrowly rounded at apex or nearly pointed. Eyes large. Two pairs of postocular bristles present, not lying in one transverse line, the posterior pair situated about middle of distance between hind margin of eyes and hind margin of vertex. Pronotum much shorter than head (from eyes), all bristles well developed, stout, dark, blunt or rounded at tip. Legs moderately long or slender as in *Liothrips* (s. str.), fore femora not or scarcely thickened in both sexes, fore tarsi unarmed in both sexes. Shape of wing as in *Liothrips* (s. str.). Double fringe cilia present. Bristles of abdomen long, tube nearly as long as head or somewhat shorter, evenly conical as in *Liothrips* (s. str.). — Gall thrips, on *Vernonia* spp.

Typ. gen. *Gynaikothrips tristis* KARNY.

Near *Liothrips*, but differing in having two pairs of postocular bristles (that are not situated in one transverse line). From *Acaciothrips* (see below) distinguished by its stouter build, the more elongate head, the longer wings having numerous interlocated cilia, and the insertion of the stouter postocular bristles, both pairs of which are situated on the same level, in *Acaciothrips*.

Key to the species

1. Antennae stouter. Head little narrowed posteriorly. Wings slightly infumated, with 10-12 double fringe cilia. Tube of female 234-242 μ long. On *Vernonia* spec. **tristis** (KARNY)
- Antennae more slender. Head distinctly narrowed towards base. Wings strongly infumated, mostly punctured in the apical portion, with 12-17 double fringe cilia. Tube length 268-286 μ . On *Vernonia arborea* **vernoniae** spec. nov.

Note. *Liothrips novi-oris* (MOULTON) may also belong to this genus.

Adelphothrips tristis (KARNY)

- 1915/16. *Gynaikothrips tristis* KARNY, Zeit. wiss. Ins.-Biol., pp. 325 & 15, resp.
 1921. — — — Denkschr. Akad. Wiss. Wien, 98, p. 21.
 1926. — — — PRIESNER, Treubia, 8, Suppl., p. 172, 178; pl. 12, fig. 79.

Black, none of the tibiae pale yellow, fore tibiae brown, all tarsi darkened. Third antennal joint wholly yellow, 4 little, 5 and 6 shaded with grey in apical half, 7 and 8 dark. Body bristles black, abdominal bristles paler towards tips. Wings slightly infumated, hind wings with indistinct longitudinal vein.

Major bristles long, blunt at tips and somewhat fringed. Head convex, little narrowed towards base, somewhat constricted at base. Two pairs of postocular bristles present, the posterior pair situated in a transverse line drawn across middle of cheeks. Antennae, length 285 μ ; antennal joint 1 parallel-sided. Pronotum without conspicuous sculpture, interior anteromarginal bristles well developed, stout like the other bristles, 45 μ long. Epimeral bristles and interior postero-marginals 104-112 μ long. Fore femora very slightly widened. Dorsal plate of tergite I of abdomen triangular, with hind angles somewhat produced laterally. Head, length 286, width 216, lateral diameter of eye 108-112, cheeks behind them 190 μ . Prothorax 138 μ long, pterothorax 450 μ broad. Double fringe 10-11. Basal wing bristles 68, 80 and 88 μ long, thick, nearly knobbed, situated in one row. Bristles on segment IX of abdomen long, rather pale, b. 1 rounded at tip, 180, b. 2 not quite sharp, 220, b. 3 pointed, 200 μ long. Tube short, evenly conical, 234-242 μ long, at base 98-100, at apex 48-50 μ broad.

Male: unknown. — The above description gives additions to KARNY's description (l.c.), on the base of cotype specimens from Nusa Kambangan (S. Java), 8.x.1913, in leaf-rolls of *Vernonia* spec.¹⁾

***Adelphothrips vernoniae* spec. nov.**

Female: Brownish-black to nearly black, fore tibiae paler, yellow-brown. Antennal joints 1 and 2 dark, 3 pale yellow, 4 slightly shaded in apical third, 5 as well (or somewhat more so), 6 in apical half (or less), 7 in apical half (or more), 8 wholly dark. Wings distinctly shaded, with dark longitudinal vein that is punctured with brown in its apical portion. Hind wing with dark longitudinal vein. Body bristles, except the paler ones at apex, dark.

Head distinctly narrowed towards base, slightly or scarcely constricted to base; cheeks with slight concavity in first third. Front ocellus, as in the former species, on a slight hump, not surpassing fore margin of eyes; the ocellar triangle is rather narrow. Mouth-cone narrowly, labrum distinctly pointed. The anterior postocular bristles are more closely approximated than the posterior, of the former each bristle lying behind the interior margin of the eye, 68-72 μ distant, the latter far (156 μ) apart from each other; length of the first postoculars at least 90, of the second at least 105 μ . Antennae more slender than in *tristis*, length about

¹⁾ DOCTERS VAN LEEUWEN states (*Zoocecidia* of Netherl. East Indies, Batavia, 1926, p. 204, footnote) that the plant was wrongly named and that the material belonged perhaps to *Vernonia arborea*, and not to *Litsea chinensis*.

570 μ ; joint 1 parallel-sided; sense-cones on joint 5 48-52 μ long; joint 8 not or indistinctly narrowed at base. Interior antero-angular prothoracic bristles 64-68, epimerals at least 140, interior postero-marginals 120 long, all bristles more or less curved, with pale knob. Fore femora not thickened, fore tarsi simple. Pterothorax about as long as broad. Wings moderately broad, about as in normal *Liothrips* spp., situated in one row; 12-17 double fringe cilia present. Median plate of tergite I triangular, faintly reticulate; two pairs of latero-dorsal bristles of abdominal segments knobbed, only exterior lateral bristle of tergite VII nearly pointed; bristles on segment IX about as long as tube, b. 1 narrowly rounded, the others pointed.

Further measurements (especially of female holotype), in μ : Head, length 310-330, width across eyes 227, across constriction at base 173-187; lateral diameter of eyes 116-120, length of cheeks behind them 208-216. Antennae, lengths (breadths) of segments: 40 (44-48), 68 (36-38), 92-96 (36), 96 (40), 88 (36), 84 (32), 62-64 (26), 48 (16). Prothorax, length 173, width 380 (with coxae 450). Pterothorax, length 502-536, width 502-520. Wings, length 1330, width across middle 92; basal wing bristles 80-96, 96-112 and 100-120. Segment IX of abdomen, length 132-136, width 208-224; bristles on IX, b. 1 272-280, b. 3 little shorter. Tube, length 268-286, width across base 108, across apex 52. Anal setae, length not more than 200.

Male: Very similar. Antennae, length (of allotype) 520 μ . Post-ocular bristles, length 85, head length 295. Antennal joints, length: 40, 60, 88, 86, 76, 70, 62, 40 μ . Tube, length 260, width at base 96, at apex 48.

Mouth-cone slightly pointed. Double fringe as in the female. Wings less distinctly punctured. Bristle 1 on segment IX of abdomen nearly pointed, b. 2 short, little broader, about 60 long, b. 3: 260 μ long.

Habitat: 2 females, 1 male, W. Java, Pateunteung near Garut, \pm 1500 m, 13.xi.1918, in marginal leaf curls of *Vernonia arborea* HAM.; 2 females, Mt Gedé, Tjibodas, 1500 m, 18.x.1923, in leaf gall of *Vernonia arborea* HAM. (leg. DOCTERS VAN LEEUWEN).

***Aliothrips* gen. nov.**

Head somewhat longer than broad and somewhat longer than the pronotum. Anterior ocellus not overhanging, vertex not reticulated. Mouth-cone narrowly rounded, labrum pointed. Antennae well 2.4 times as long as head, 8-segmented, very long and slender, having comparatively long preapical joints, joints 4 and 5 not noticeably constricted at apex, 6 longer than 3, sense-cones very fine and slender, setiform. Pronotal

bristles very long, also those at fore margin very well developed, all knobbed. Fore femora slightly enlarged, fore tarsi with small tooth in the female, triangular one in the male. Wings as in *Liothrips* or wholly parallel-sided, with double fringe cilia, basal bristles long, knobbed. Abdominal bristles long. Tube short, evenly conical, somewhat shorter than head.

Typ. gen. *A. elegantulus* spec. nov.

Distinguished from *Liothrips* (s. lat.) by the slightly enlarged fore femora and the armed tarsi in both sexes, and from *Liothrips* (s. str.) also by the long, setiform sense-cones and the comparatively shorter 3rd antennal joint.

Key to the species

1. Fore femora yellow at apex. Antennal joints 6-8 partly darkened. Bristles on abdomen dark, those of segment IX only paler. Tube of female 195-200, of male about 150 μ long *elegantulus* sp. n.
- Fore femora wholly dark. Only segment 7 of antennae distinctly shaded. Bristles on abdomen pale. Tube of female 220, of male 205 μ long *eugeniinus* sp. n.

Aliothrips elegantulus spec. nov.

F e m a l e: Chestnut-brown. All tibiae and tarsi, apex of fore femora, trochanters (somewhat shaded) of all legs and antennal joints 3 to 5 pale yellow; joint 6 pale yellow in basal fourth or third, rest of it and joint 7 wholly dark, 8 paler than 7, grey. Major body bristles dark, those of segment IX of abdomen paler. Wings for all their length evenly and distinctly infumated, with fine but marked dark longitudinal vein.

Head only a little longer than broad with large eyes, very slightly narrowed towards base, and little constricted at base. Front ocellus not overhanging, posterior ocelli in anterior third of eyes. Postocular bristles very long, much longer than eyes, knobbed. Mouth-cone more or less narrowly rounded. Antennae very long and slender, with setiform sense-cones, joint 3 with one of them (length of cone 88 μ), 4 with 3 + 1, 5 and 6 with 1 + 1 + 1; joint 8 not constricted at base, slightly narrower, 6 comparatively long, longer than 3. Fore femora very slightly thickened, fore tarsi with small, slightly obliquely forwardly directed tooth. Anteroangular prothoracic bristles long, only little longer than the anteromarginals, epimerals longer, curved. Head and pronotum not reticulated. Pterothorax about as long as broad. Wings rather narrow, parallel-sided,

with long, knobbed basal bristles, and 7-9 cilia duplicated. Abdomen first parallel-sided, narrowed only from segment VIII onwards, with long, dark lateral bristles, the two dorso-lateral ones being knobbed. Bristles 1 of segment IX rounded at tip, b. 2 nearly pointed. Tube short, evenly conical.

Measurements of female (holotype), in μ : Head, length 208, width across eyes 196; lateral diameter of eye 100, length of cheeks behind eyes 120; postocular bristles, length 104-107. Antennae, total length 502-520; lengths (breadths) of joints: 24 (base 40, apex 36), 56 (32), 68-72 (28), 80 (32), 84 (29), 82 (28), 62 (23), 47 (14). Prothorax, length 138, width 295 (incl. coxae 355); antero-angular bristles, length 87, epimerals 124, interior antero-marginals 78. Pterothorax, length 345, width 363. Wings, length 880, width across middle 72-76; basal wing bristles 72-75, 84-92 and 96. Segment IX of abdomen, length 100, width 190. Bristles on segment IX, b. 1: 132-136, b. 2: 156-164. Tube, length 196-200, width across base 94, at apex 43. Anal setae, length 168. Hind tibiae, length 265.

Male: Fore femora somewhat more strongly enlarged, tarsal tooth stouter, curved. Double fringe 6-7. Sternite IX with pointed hind angles. All bristles on segment IX pointed, b. 1 much shorter than in the female, at most ? 100 μ long, b. 2 about 52, not stouter, b. 3: 136 μ long. Head, length 184, width 170. Pterothorax, length 295, width 310. Tube, length 150, width at base 80, at apex 38-40 μ .

Habitat: Female (holo- and paratype), W. Java, Mt Pantjar, \pm 700 m, 7.i.1924, in marginal leaf rolls of *Ficus recurva* Bl.; Tjitepus near Bandung, \pm 700 m, 20.i.1918, in similar leaf rolls of *Ficus* sp. (leg. DOCTERS VAN LEEUWEN).

***Aliothrips eugeniinus* spec. nov.**

Male: Brownish-black, with dark prothoracic and paler abdominal bristles. All tibiae and tarsi pale yellow, femora wholly dark. Joints 1 and 2 of antennae dark, 3-6 pale yellow, 7 slightly infumated, 8 pale yellow. Wings distinctly infumated, with sharp, fine dark longitudinal vein.

Head distinctly longer than broad, only very slightly narrowed towards base. Eyes large, oval. Postocular bristles very long, strongly curved, knobbed, about 25 μ distant from hind margin of eye. Ocelli as in the former species. Mouth-cone narrowly rounded. Antennae very long and slender, length 554 μ ; joint 1 narrowed towards apex as in the former species, 3 with one setiform sense-cone (76 μ long), 4 with 3 + 1, 5 and 6 with 1 + 1 + 1 sense-cones; intermediate segments not constricted at apex, 8 somewhat constricted. Antero-angular prothoracic bristles long, interiors most likely also but not visible. Fore femora strongly enlarged,

fore tarsi with triangular tooth. Metanotum densely longitudinally striate. Wings slender, slightly and evenly narrowed towards apex; basal bristles well developed, knobbed, in one row, 7-8 interlocated cilia present. Bristles on segment IX of abdomen fine, b. 1 only about 60 μ long, narrowly rounded at tip, not quite pointed, b. 2 somewhat shorter, fine, not spine-like, b. 3 hair-like, pointed, 128 μ long. Tube shorter than head, evenly conical.

Measurements of male (holotype), in μ : Head, length 250-260, width across eyes or cheeks (anteriorly) 196; lateral diameter of eye 112, cheeks behind them 145. Postocular bristles, length 112. Prothorax, length 138, width 268 (including coxae 330); fore femora, width 105; antero-angular bristles 88, epimerals, about 108. Wings, length 865, width across middle 70. Hind tibiae, length 288. Tube, length 205, width across base, 72, apex 36. Anal setae, length 140. Antennae, lengths (breadths) of joints: 28 (base 40, apex 32), 56 (28), 76 (20), 92-96 (23), 96-100 (20), 94 (19), 62 (20), 48 (12).

F e m a l e: In colour and structure similar to the male. Fore femora not enlarged. Double fringe 7-9. All bristles on segment IX of abdomen fine, pale, the dorsal ones rounded at tip. Fustis (rod in segment IX) long and slender.

Measurements of female (allotype), in μ : Head, length 185, width 205; lateral diameter of eye 120. Postocular bristles, 68. Antero-angular prothoracic bristles 56, antero-marginals 43, epimerals 88-92. Prothorax, length 120, width (without coxae) 286. Pterothorax, length and width 345. Wings, length 900, width across middle 70. Bristles on segment 9 of abdomen 128-140, b. 2: 145, b. 3 much shorter. Tube, length 220, width across base 84, apex 39. Anal setae 145.

H a b i t a t: 1 male, 1 female, W. Java, Gunung Tjibodas, near Tjampea (Bogor) \pm 300 m, causing yellow spot on leaves of *Eugenia spec.*, 28.vi.1925 (leg. DOCTERS VAN LEEUWEN).
