Jpn. J. Ent., 63(2): 303-321. June 25, 1995

# A Revision of the Bamboo- or Grass-Inhabiting Genus Bamboosiella ANANTHAKRISHNAN (Thysanoptera, Phlaeothripidae), I

### Shûji OKAJIMA

Laboratory of Entomology, Tokyo University of Agriculture, Sakuragaoka, Setagaya-ku, Tokyo, 156 Japan

Abstract The genus Bamboosiella ANANTHAKRISHNAN, March 1957, of the tribe Phlaeothripini is revised. The genus Antillothrips STANNARD, November 1957, is newly synonymized with this genus. 25 species are recognised, in which 14 species are treated herein, and further 11 species will be treated in part II. The 14 species are: B. australis (PITKIN) comb. n., B. bicoloripes ANANTHAKRISHNAN, B. brevis sp. n., B. cingulata (HOOD) comb. n., B. elongata sp. n., B. exastis (ANANTHAKRISHNAN & KUDÔ) comb. n., B. fasciata sp. n., B. flavescens sp. n., B. fusca sp. n., B. graminella (ANANTHAKRISHNAN) comb. n., B. hartwigi (PITKIN) comb. n., B. lewisi (BAGNALL) comb. n., B. longirostris sp. n. and B. malabarica (ANANTHAKRISHNAN) comb. n. A key to species will be inserted in part II.

Key words: Thysanoptera; Phlaeothripidae; Bamboosiella; Antillothrips; bamboo.

Mainly in the tropics and subtropics, especially in the wet areas of the Old World, there are certain bamboo- or grass-inhabiting phlaeothripine genera, such as *Bamboosiella* (=*Antillothrips*), *Podothrips* and *Veerabahuthrips*. It is quite interesting that more than half number of them are carnivorous and have the bodies bicolorous yellow and brown. The colour patterns of bicolorous species of both the genera *Bamboosiella* and *Podothrips* are very similar. Most common pattern is that the head, thorax and some of distal abdominal segments including tube are brown, and the remaining abdominal segments are yellow. This pattern of coloration is also found in some bamboo- or grass-inhabiting species of the phlaeothripine genera *Apelaunothrips* and *Karnyothrips* as well as the thripine genus *Trichromothrips*. However, the relation between the coloration and habitat (or behavior) remains unclear.

Recently, the present author and his colleagues have had opportunities to make surveys of the thrips fauna of the East Asian tropics and subtropics. During the surveys, they were able to obtain a long series of thrips specimens collected from the bamboo sheaths and grass tussocks. Most of them are belonging to the genera *Bamboosiella* and *Podothrips*, and one of which, *Bamboosiella*, will be revised in the present time.

#### Shûji Okajima

The depositories of the material examined are abbreviated as follows: LCM-Loyola College, Madras, India; NHM-The Natural History Museum, London; SCAU-South China Agricultural University, Guangzhou; SMF-Senckenberg Museum, Frankfurt; not indicated-Tokyo University of Agriculture, Tokyo. The collectors are abbreviated as follows: *BRP*-B. R. PITKIN; *HU*-H. URUSHIHARA; *KY*-K. YASUMATSU; *LAM*-L. A. MOUND; *PJ*-P. JANGVITAYA; *SO*-S. OKAJIMA; *TN*-T. NONAKA; *TNA*-T. N. ANANTHAKRISHNAN.

The prothoracic setae are abbreviated as follows: aa–anteroangulars; am– anteromarginals; ml–middorsals; pa–posteroangulars; epim–epimerals.

Before going further, the author wishes his cordial thanks to Prof. T. N. ANANTHAKRISHNAN of Loyola College, Madras, Prof. L. A. MOUND of Natural History Museum, London, Dr. W. ZHANG of South China Agricultural University and Dr. R. ZUR STRASSEN of Senckenberg Museum, Frankfurt, for loan of materials under their care. Thanks are also due to Dr. T. NONAKA of Tokyo, Miss P. JANGVITAYA of Bangkok and Miss H. URUSHIHARA of Omogo Mountain Museum, Ehime for their help in many ways.

### Genus Bamboosiella ANANTHAKRISHNAN

- Bamboosiella ANANTHAKRISHNAN, Mar., 1957, 33. Type-species: Bamboosiella bicoloripes ANA-NTHAKRISHNAN, by monotypy.
- Antillothrips STANNARD, Nov., 1957, 35–36. Type-species: Antillothrips graminatus STANNARD (junior synonym of Zygothrips cingulatus HOOD; synonymized by PITKIN, 1973, 326), by monotypy. Syn. nov.
- Elatea FAURE, 1957, 400-401. Type-species: Elatea stannardi FAURE, by monotypy (Synonymized with Antillothrips by PITKIN, 1977, 54).
- Xenothrips ANANTHAKRISHNAN, 1965, 53. Type-species: Xenothrips malabaricus ANANTHAKR-ISHNAN, by monotypy (synonymized with Antillothrips by PITKIN, 1976, 231).

This genus was erected for a single species, *bicoloripes*, collected from India by ANANTHAKRISHNAN (1957), and was compared with some genera of the tribe Phlaeothripini, such as *Adraneothrips*, *Hoplandrothrips* and *Phylladothrips*, as well as the genus *Mesothrips* of the tribe Hoplothripini in the original description. Since then, ANANTHAKRISHNAN (1964) listed this genus in the tribe Phlaeothripini. On the other hand, the genus *Antillothrips* and its synonyms, *Elatea* and *Xenothrips*, were previously included in the tribe Haplothripini or at least compared with the genus *Haplothrips* by some authors (ANANTHAKRISHNAN, 1965; FAURE, 1957; PITKIN, 1973, 1976, 1977; STANNARD, 1957). However, most of the generic characteristics of these two genera, *e.g.* antennal segmentation, sense-cone formula, short and V-shaped maxillary stylets, reduced basantral plates and hat-shaped pelta, are very similar. *Bamboosiella bicoloripes* has the foretarsal tooth in both sexes, though the type-species of *Antillothrips, cingulatus*, does not have the tooth at least in female.

Moreover, a species of *Antillothrips* undoubtedly closely related to *cingulatus*, *australis*, as well as several other species do not have the foretarsal tooth in both sexes. However, this feature does not divide these two genera satisfactorily, because there are some species intermediate between them. They have the foretarsal tooth at least in male, and often have small one in female.

The genus *Bamboosiella* is related to the genera *Mychiothrips* and *Veeraba-huthrips* (see OKAJIMA, 1993), and may well be included in the tribe Phlaeo-thripini. The difference between Haplothripini and Phlaeothripini is still not clear, but, at least, *Bamboosiella* is not closely related to the genus *Haplothrips* and its relatives. Some East Asian species of *Bamboosiella* including type-species have the long heads, somewhat enlarged forefemora, stout foretarsal teeth and more or less elongate antennal segments in both sexes. These features are in common with those of *Mychiothrips*, but the forefemora of *Bamboosiella* do not have teeth without exception.

*Diagnosis*. Small to medium sized phlaeothripine. Body bicolorous yellow and brown or uniformly brown. Head variable, short to elongate; antennae eight-segmented; segment III with 0+1 or 1+1 sense-cones, segment IV usually with  $1+2^{+1}$  sense-cones (rarely 1+1 or 2+2); maxillary stylets very short, V-shaped; maxillary bridge absent; mouth-cone short and rounded, but often long and pointed. Basantral plates absent or weakly developed; epimeral suture usually complete, rarely incomplete; foretarsal tooth absent, often present in male or in both sexes; forewings, when fully developed, usually with duplicated cilia, rarely absent, slightly constricted medially. Pelta bell-shaped, weak.

### Bamboosiella australis (PITKIN), comb. nov.

#### Antillothrips australis PITKIN, 1977, 54-55.

This species was originally described from New South Wales and Queensland of Australia based on a female and eight males, and it is very similar to *cingulata* in general appearance. Although the anteromarginal pronotal setae are short and pointed in this species, they are stout and expanded in *cingulata*.

*Material examined.* Australia: Holotype  $\stackrel{\circ}{\rightarrow}$  and non-paratypic  $1\stackrel{\circ}{\rightarrow}$ , New South Wales, Broulee, on grass on sand dunes, 26-iv-1968 (*LAM*) (NHM); paratype  $1_{\circ}$ , Queensland, Mt. Tamborine, on grasses, 21-iii-1968 (*LAM*) (NHM).

Distribution. Australia.

### Bamboosiella bicoloripes ANANTHAKRISHNAN

### (Figs. 1, 16)

Bamboosiella bicoloripes ANANTHAKRISHNAN, 1957, 65-68.





Figs. 1-3. Bamboosiella species, female. — 1, B. bicoloripes ANANTHAKRISHNAN, head; 2, B. brevis sp. n., head and prothorax; 3, B. elongata sp. n., head, prothorax and foreleg.

This species was originally described from Coimbatore, India based on a female and two males. In the original description, it was described that the fourth antennal segment has an outer and inner sense-cones (1+1). Whereas, the holotype female and allotype male each have one inner and two outer  $(1+2^{+1})$  sense-cones. Recently, the author and his colleagues collected several series of a good number of specimens of this species from Thailand. The sixth abdominal segment is usually yellow in the material from Thailand as well as the types from India, but it is rarely dark brown. Moreover, there are some intermediate specimens between them, and it could well be treated intraspecific variation.

*Material examined*. India: Holotype  $\stackrel{\circ}{\rightarrow}$  and allotype  $\stackrel{\circ}{\rightarrow}$ , Coimbatore, on bamboo, 12-iv-1954 (*TNA*) (LCM). Thailand:  $1 \stackrel{\circ}{\rightarrow} 4 \stackrel{\circ}{\rightarrow}$ , Phuket Is., Gu gu suri Road, on bamboo, 24-viii-1991 (*TN* et *SO*);  $28 \stackrel{\circ}{\rightarrow} 13 \stackrel{\circ}{\rightarrow}$ , nr. Kanchanaburi, on bamboo, 30-viii-1991 (*TN* et *SO*);  $2 \stackrel{\circ}{\rightarrow} 1 \stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Doi Suthep, on bamboo, 1-ix-1991 (*TN* et *SO*);  $2 \stackrel{\circ}{\rightarrow} 4 \stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Mae-sa, on bamboo, 3-ix-1991 (*TN* et *SO*);  $31 \stackrel{\circ}{\rightarrow} 22 \stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Phrow, on bamboo, 22-viii-1992 (*TN* et *SO*);  $20 \stackrel{\circ}{\rightarrow} 9 \stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Doi Inthanon, on bamboo, 29-viii-

1992 (*TN* et *SO*); 1  $\stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, foot of Doi Saket, on dry grass, 27-viii– 1992 (*SO*); 2  $\stackrel{\circ}{\rightarrow}$ , Chiang Mai, Farm of Chiang Mai University, on bamboo, 26viii–1992 (*TN*); 2  $\stackrel{\circ}{\rightarrow}$  1 $\stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Pha Hean, on bamboo, 3-ix–1992 (*TN*); 1  $\stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Doi Pui, on dead leaves and branches, 1-ix–1992 (*TN*); 8  $\stackrel{\circ}{\rightarrow}$  3 $\stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Ka Jan, on bamboo, 3-ix–1992 (*SO*); 6  $\stackrel{\circ}{\rightarrow}$ , Fang, on bamboo, 23-viii–1992 (*SO*).

Distribution India; Thailand.

#### Bamboosiella brevis sp. nov.

(Figs. 2, 17)

*Female* (Macroptera). Bicolorous yellow and brown; head, thorax and abdominal segments VII to X (=tube) brown, anterior portion of abdominal segment VII and apical third of tube somewhat paler; abdominal segments I to VI yellow, terga III to VI each with an anteromedian pale brown marking; foreand midcoxae brown, concolorous with thorax, hindcoxae yellowish brown, forefemora yellow to brownish yellow, mid- and hindfemora, all tibiae and tarsi yellow; antennal segments I, II, VII and VIII brown, almost concolorous with head, but apex of segment II yellowish, segments III and IV yellow, apical half of IV shaded with pale brown, segments V and VI pale brown to brown, each with basal third yellowish; wings almost hyaline, major setae yellowish.

Head (Fig. 2) a little shorter than 1.20 times as long as wide, 1.15 times as long as wide in holotype, dorsal surface weakly sculptured posteriorly; cheeks rounded; postocular setae much shorter than eye, pointed; postocellar setae shorter than diameter of hind ocellus. Antennal segments III and IV with 1+1 and  $1+2^{+1}$  sense-cones, respectively. Mouth-cone (Fig. 2) short and rounded.

Pronotal aa, am and ml reduced to minute setae, pa short and pointed, epim expanded (Fig. 2). Basantral plate absent. Foretarsal tooth absent. Forewings each with 3-5 duplicated cilia; subbasal wing setae B1 distinctly expanded, B2 almost pointed or very weakly expanded, B3 pointed.

Median pair of setae (B1) on tergum IX short, almost half the length of tube or a little longer, pointed, B2 much longer than B1, but shorter than tube, pointed. Tube 0.55 times as long as head in holotype, about 2.1 times as long as basal width. Anal setae much longer than 1.5 times as long as tube, 1.85 times in holotype, but dorsal pair only a little longer than tube.

Measurements of holotype macropterous female in  $\mu$ m. Total distended body length 1740. Head length 190, from anterior margin of eyes 170, width 165; eye length 72. Pronotum length 133, width 175; forewing length 635. Pelta length 63, width 95. Tube length 105, basal width 50, apical width 26. Antennal segments I to VIII length (width) as follows: 31 (33); 43 (26); 50

#### Shûji OKAJIMA

(27); 55 (27); 51 (22.5); 50 (20); 40 (16); 25 (10). Length of setae: Postoculars about 25; prothoracic aa 12–13, am less than 10, ml about 10, pa 22–24, epim 37–38; subbasal wings B1 24–25, B2 26–28, B3 30–34; B1 (B2) on tergum IX 55 (75–80); anals 188–195.

*Male* (macroptera). Colour very similar to macropterous female. Head 1.21–1.28 times as long as wide; forelegs stout in large male, foretarsal tooth present.

Measurements of paratype macropterous male in  $\mu$ m. Total distended body length 1450. Head length 180, from anterior margin of eye 161, width 149; eye length 68. Pronotum length 120, width 165; forewing length 610. Pelta length 62, width 80. Tube length 89, basal width 43, apical width 25. Antennal segments I to VIII length (width) as follows: 28 (32.5); 40 (23); 46 (23); 49 (24); 48 (22); 44 (20); 36 (17.5); 27 (10). Length of setae: Postoculars about 25; prothoracic aa about 10, am less than 10, ml about 10, pa about 15, epim 32–35; subbasal wings B1 about 20, B2 23, B3 25–27; B1 (B2) on tergum IX 53 (43–45); anals 130.

Holotype  $\stackrel{\circ}{+}$ . Thailand: nr. Chiang Mai, Phrow, on bamboo, 22-viii-1992 (*TN* et SO). Paratypes. Thailand:  $1 \stackrel{\circ}{\sim}$ , Phuket, Gu gu suri Road, on bamboo, 24-viii-1991 (*TN* et SO);  $1 \stackrel{\circ}{\sim}$ . nr. Chiang Mai, foot of Doi Saket, on dry grass, 27-viii-1992 (SO);  $1 \stackrel{\circ}{+}$ , nr. Chiang Mai, Ka Jan, on bamboo, 3-ix-1992 (SO).

Distribution. Thailand.

*Remarks.* This species is very similar to *malabarica* in the coloration, reduced anteromarginal pronotal setae and pointed postocular setae. However, the head, postocular cephalic setae, anteroangular and midlateral pronotal setae, and median and lateral pairs of setae (B1 and B2) on the ninth abdominal tergum are shorter than those of *malabarica*. Moreover, the male of *brevis* has the foretarsal tooth, though it is absent in the male of *malabarica*.

### Bamboosiella cingulata (HOOD), comb. nov.

Zygothrips cingulatus HOOD, 1919, 80-81.

Watsoniella latiaureus GIRAULT, 1927, 1. (Synonymized by PITKIN, 1973, 326).

Haplothrips (Hindsiana) sakimurai MOULTON, 1936, 413. (Synonymized by PITKIN, 1977, 55).

Antillothrips graminatus STANNARD, 1957, 35-36. (Synonymized by PITKIN, 1973, 326).

Antillothrips cingulatus (HOOD); PITKIN, 1973, 326; PITKIN, 1977, 55.

Xenothrips opacus ANANTHAKRISHNAN & KUDÔ, 1974, 117–121. (Synonymized by PITKIN, 1977, 55).

This wide-spread species was revised by PITKIN (1977), and the males of it are unknown.

Material examined. Thailand: Lectotype  $\stackrel{\circ}{+}$  of Xenothrips opacus, on

grass, Bangkok, 23–v–1973 (I. KUDO) (LCM);  $3 \stackrel{\circ}{+}$ , Nakhon Si, Thammarat, on *Oryza sativa*, 27–iv–1978 (*KY*);  $2 \stackrel{\circ}{+}$ , Chiang Mai, rice field, 4–v–1978 (*KY*);  $1 \stackrel{\circ}{+}$ , Chacheongsao, Bannampriew, on wild rice, 12–vii–1978 (*KY*);  $1 \stackrel{\circ}{+}$ , Phuket Is., on bamboo, 19–viii–1976 (*SO*); Bangkok, Bangkhen, Campus of Kasetsart University,  $2 \stackrel{\circ}{+}$  on grass, 29–xii–1988 (*SO*),  $1 \stackrel{\circ}{+}$ , on dead branches of *Casuarina equisetifolia*, 11–i–1988 (*SO*),  $1 \stackrel{\circ}{+}$ , on grass, 12–xii–1988 (*SO*);  $2 \stackrel{\circ}{+}$ , Saraburi, Farm of Kasetsart University, on grass, 20–viii–1991 (*TN* et *SO*);  $4 \stackrel{\circ}{+}$ , Nakornprathom, Kamphaeng Saen, on corn, 15–ix–1991 (*PJ*);  $2 \stackrel{\circ}{+}$ , foot of Doi Inthanon, on grass, 4–ix–1991 (*TN* et *SO*);  $2 \stackrel{\circ}{+}$ , nr. Chiang Mai, Pha Hean, 3–ix–1992 (*SO*). Indonesia:  $1 \stackrel{\circ}{+}$ , Bali Is., Peliatan, alt. about 220 m, on dead leaves and branches, 24–vii–1984 (*SO*). Taiwan:  $1 \stackrel{\circ}{+}$ , Pintung Hsien, Kenting National Park, on grass, 19–iii–1988 (*SO*);  $2 \stackrel{\circ}{+}$ , Chiai Hsien, Kuantzulin, on grass, 1–iv–1993 (*TN* et *SO*). Japan:  $1 \stackrel{\circ}{+}$ , Ogasawara Isls., Haha-jima Is., nr. Minami-zaki, on grass, 5–iii–1988 (*SO*).

Distribution. Wide-spread mainly in the tropics and subtropics. Previously unknown from Indonesia, Taiwan and Japan.

#### Bamboosiella elongata sp. nov.

(Figs. 3, 12, 18)

*Female* (macroptera). Bicolorous brownish yellow and brown; head and tube brown; thorax brownish yellow to yellowish brown, much paler than head, sides of pterothorax brown; abdominal segments I and II yellow, segment IX yellowish brown, intermediate segments gradually darkened posteriorly; antennal segments I, II, VII and VIII brown, almost concolorous with head, segment III yellow, segments IV and V yellow, tinged with pale brown at apical two-thirds, segment VI brown with base yellowish; forefemora yellow, very weakly shaded with brown, foretibiae yellow, mid- and hindtibiae pale brown, all tarsi yellow; wings hyaline, setae yellowish.

Head (Fig. 3) elongate, about 1.6 times as long as wide, widest across eyes, surface almost smooth; cheeks narrowed towards base, distinctly constricted just behind eyes, with a stout setae at basal third; postocellar setae minute, postocular setae well developed, almost as long as eye, very weakly expanded or nearly pointed; eyes well developed, bulged. Antennal segments (Fig. 12) III and IV with 1+1 and 1+2 sense-cones, respectively. Mouth-cone (Fig. 3) short.

Prothorax (Fig. 3) well developed, somewhat similar to those of *Mychiothrips* species, surface smooth with long median line; pa and epim long and weakly expanded, aa and ml short and pointed, am reduced to minute setae.

#### Shûji OKAJIMA

Basantra absent, ferna well developed. Forefemora enlarged, foretarsi each with a stout tooth (Fig. 3). Forewings each with 5–6 duplicated cilia, three subbasal setae long, B1 and B2 weakly expanded, B3 the longest and almost pointed.

Abdominal sterna V to VII each with a distinct reticulated area; B1 and B2 setae on tergum IX pointed apically. Tube 0.62 times as long as head, 2.71 times as long as basal width.

Measurements of holotype macropterous female in  $\mu$ m. Total distended body length 1890. Head length 244, from anterior margin of eyes 224, width across eyes 156, across cheeks 152; eye length 96. Pronotum length 152, width 194; forewing length about 820. Pelta length 72, width 92. Tube length 152, basal width 56, apical width 36. Antennal segments I to VIII length (width) as follows: 40 (34); 46 (30); 56 (33); 56 (34); 57 (28); 50 (24); 41 (21); 29 (11). Length of setae: Postoculars 94–98; prothoracic aa 15–20, ml about 20, pa 70–80, epim 62–64; subbasal wings B1 45–46, B2 54–58, B3 about 100; B1 (B2) on tergum IX 102–106 (132–138); anals 212–213.

Male. Unknown.

Holotype  $\stackrel{\circ}{+}$ . Thailand: nr. Chiang Mai, Doi Suthep, on bamboo, 1–ix–1991 (*TN* et SO).

Non-paratypic material. Thailand:  $1 \stackrel{\circ}{+}$ , nr. Chiang Mai, Ka Jan, on bamboo, 3-ix-1992 (SO).

Distribution. Thailand.

*Remarks.* This species has the structures somewhat intermediate between the genera *Bamboosiella* and *Mychiothrips.* The shape of head, and well developed prothorax and forelegs are very similar to those of *Mychiothrips.* Moreover, it has the conspicuous reticulated areas on the fifth to seventh abdominal sterna. It is unique in the genus *Bamboosiella* and similar structure is found in one of *Mychiothrips* species, *fruticola* HAGA et OKAJIMA, from Japan. However, *elongata* could barely be distinguished from *Mychiothrips* by the absence of forefemoral teeth. A non-paratypic female listed above may be conspecific with this species, but it has more or less larger body and paler fourth to sixth antennal segments.

Bamboosiella exastis (ANANTHAKRISHNAN & KUDÔ), comb. nov.

(Fig. 19)

Xenothrips luteus exastis Ananthakrishnan & Kudô, 1974, 120–121. Antillothrips exastis (Ananthakrishnan & Kudô); Pitkin, 1977, 57.

This species was originally described as a subspecies of *Xenothrips luteus* ANANTHAKRISHNAN and KUDÔ, synonymized with *malabarica*, based on one

male and two female syntypes from Thailand, and it was revised by PITKIN (1977). It is very similar to *malabarica* in general appearance, and *exastis* could barely be distinguished by the brown femora, brownish fourth and fifth antennal segments and darker intermediate abdominal segments. The posteroangular pronotal setae of *exastis* are usually weakly expanded apically, though those of the lectotype female of *malabarica* are sharply pointed. However, three females and two males collected from Coimbatore, India listed below under *malabarica* as well as the lectotype female of *luteus* have these features somewhat intermediate. In a strong case, these two forms could be treated as the local variations in same species.

*Material examined.* Thailand: Lectotype  $\stackrel{\circ}{\rightarrow}$  of *X. luteus exastis*, Bangkok, on grass, 23–v–1973 (I. KUDÔ) (LCM);  $2 \stackrel{\circ}{\rightarrow} 1 \stackrel{\circ}{\rightarrow}$ , Doi Suthep, on grass, 8–viii– 1976 (SO);  $1 \stackrel{\circ}{\rightarrow}$ , Nakhon Si. Thammarat, on Olyza sativa, 27–iv–1978 (KY);  $1 \stackrel{\circ}{\rightarrow}$ , Chacheongsao, Bannampriew, on wild rice, 12–vii–1978 (KY);  $4 \stackrel{\circ}{\rightarrow} 3 \stackrel{\circ}{\rightarrow}$ , Chiang Mai, on Olyza sativa, 4–v to 24–vi–1978 (KY);  $1 \stackrel{\circ}{\rightarrow}$ , Kamphaeng Saen, Campus of Kasetsart University, on grass, 12–i–1988 (SO);  $2 \stackrel{\circ}{\rightarrow}$ , foot of Doi Inthanon, on grass, 4–ix–1991 (TN et SO);  $6 \stackrel{\circ}{\rightarrow} 3 \stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Pha Yao, on grass, 5–ix–1992 (SO);  $3 \stackrel{\circ}{\rightarrow} 1 \stackrel{\circ}{\rightarrow}$ , nr. Chiang Mai, Pha Hean, 3–ix–1992 (SO). Taiwan: Chiai Hsien, Kuantzulin, on grass,  $20 \stackrel{\circ}{\rightarrow}$ , 1–iv–1993,  $26 \stackrel{\circ}{\rightarrow}$ , 22–viii– 1993 (TN et SO). Japan:  $1 \stackrel{\circ}{\rightarrow}$ , Kagoshima-ken, Amami-ohshima Is., Ukenson, Fureainomori, on dead leaves and branches, 24–iii–1990 (SO).

Distribution. Thailand; Taiwan; Japan. Previously unknown from Taiwan and Japan.

### Bamboosiella fasciata sp. nov.

(Figs. 4, 20)

The structures of this species are very similar to those of *bicoloripes*, but it can easily be distinguished by the coloration as the followings: legs dark brown, except for yellowish foretibiae and all tarsi; abdominal segments II and III yellow, the remaining segments dark brown.

Measurements of holotype macropterous female in  $\mu$ m. Total distended body length 2475. Head length 296, from anterior margin of eyes 270, width 181; eye length 115. Pronotum length 162, width 260; forewing length 980. Pelta length 88, width 140. Tube length 146, basal width 73, apical width 37. Antennal segments I to VIII length (width) as follows: 50 (40); 55 (30); 78 (33); 92 (32); 82 (28); 60 (27); 48 (21); 33 (13). Length of setae: Postoculars about 50; prothoracic aa 26–28, am less than 8, ml 37–40, pa 40–41, epim 50– 53; subbasal wings B1 35–40, B2 48–50, B3 69–75; B1 (B2) on tergum IX 155–160 (168–172); anals about 220.

Measurements of paratype macropterous male in  $\mu$ m. Total distended

Shûji OKAJIMA



Figs. 4-5. Bamboosiella species, head, female. — 4, B. fasciata sp. n.; 5, B. flavescens sp. n.

Fig. 6. Bamboosiella fusca sp. n., foreleg, large male.

body length 1500. Head length 200, from anterior margin of eyes 180, width 136; eye length 80. Pronotum length 105, width 173. Pelta length 55, width 83. Tube length 110, basal width 48, apical width 26. Antennal segments I to VIII length (width) as follows: 37 (31); 40 (25); 52 (27); 58 (28); 56 (25); 45 (22); 38 (20); 27 (10).

Holotype  $\stackrel{\circ}{+}$ . Thailand: Kamphaeng Saen Campus of Kasetsart University, on bamboo, 12–i–1988 (SO). Paratype. Thailand:  $1_{\circ}$ , Chiang Mai, Farm of Chiang Mai University, on bamboo, 26–viii–1992 (TN).

Distribution. Thailand.

*Remarks.* The paratype male listed above has exceptionally small body, but most of other specific characteristics are common with the holotype female.

#### Bamboosiella flavescens sp. nov.

(Figs. 5, 13, 21)

*Female* (macroptera). Bicoloured yellow and brown; head, thorax and tube brown, tube with extreme base paler; abdominal segments yellow, segments III–V very weakly shaded with brown, segment IX tinged with pale brown posterolaterally; antennal segment III yellow, the remaining segments brown, somewhat paler than head, but apex of II, basal third of IV and V, and extreme base of VI are yellowish; fore- and midfemora bicolorous, brown at basal halves, yellow at apical halves, the rest of legs including hindfemora

yellow; wings very weakly shaded with grey medially; setae yellowish.

Head (Fig. 5) short, almost as long as wide, dorsal surface weakly sculptured posteriorly and laterally; postocellar setae minute, more or less shorter than diameter of hind ocellus, postocular setae expanded; cheeks weakly rounded. Antennal segments (Fig. 13) III and IV with 1+1 and  $1+2^{+1}$  sense-cones, respectively. Mouth-cone (Fig. 5) moderately long and rather pointed.

Pronotal usual setae including am setae well developed, expanded apically, am longer than aa. Basantra present, but weak. Foretarsal tooth absent. Forewings each with 3 duplicated cilia in holotype; three subbasal setae expanded.

B1 setae on tergum IX expanded, B2 weakly expanded or nearly pointed. Tube about three-fourths as long as head, 0.76 times as long as head in holotype, about twice as long as basal width, 1.94 times as long as basal width in holotype; anal setae longer than tube.

Measurements of holotype macropterous female in  $\mu$ m. Total distended body length about 1400. Head length 130, from anterior margin of eyes 115, width 131; eye length 56. Pronotum length 107, width 177; forewing length 550. Pelta length 55, width 80. Tube length 99, basal width 51, apical width 27. Antennal segments I to VIII length (width) as follows: 35 (31); 38 (25); 38 (25); 43 (25), 41 (20); 41 (19); 38 (18); 27 (11). Length of setae: Postoculars about 40; prothoracic aa ?20, am 32–34, ml 25–30, pa 38–40, epim 38–43; subbasal wings B1, 35, B2 36–38, B3 62–68; Ba (B2) on tergum IX about 70 (75–78); anals 125–130.

*Male* (macroptera). Very similar in colour and structure to macropterous female, but smaller.

Measurements of paratype macropterous male in  $\mu$ m. Total distended body length about 1200. Head length 137, from anterior margin of eyes 119, width 123; eye length 57. Pronotum length 97, width 157; forewing length about 500. Pelta length 53, width 65. Tube length 85, basal width 50, apical width 25. Antennal segments I to VIII length as follows: 30; 35; 37.5; 40; 40; 37; 35; 25. Length of setae: Postoculars 42–45; prothoracic aa ?20, am 23–25, ml ?25, pa 38–40, epim 38–43; subbasal wings B1 30, B2 31–34, B3 56–58; B1 (B2) on tergum IX 63–67 (29–31); anals 123–125.

Holotype  $\stackrel{\circ}{+}$ . Thailand: nr. Chiang Mai, Doi Suthep, on bamboo, 1-ix-1991 (*TN* et *SO*). Paratypes. Thailand: nr. Chiang Mai, on bamboo,  $6 \stackrel{\circ}{+} 5 \stackrel{\circ}{\neg}$ , collected with holotype,  $5 \stackrel{\circ}{+} 3 \stackrel{\circ}{\neg}$ , Mae sa, 3-ix-1991 (*TN* et *SO*),  $16 \stackrel{\circ}{+} 3 \stackrel{\circ}{\neg}$ , Hong kai, 4-ix-1991 (*TN* et *SO*),  $2 \stackrel{\circ}{+}$ , Phrow, 22-viii-1992 (*TN* et *SO*),  $2 \stackrel{\circ}{+} 1 \stackrel{\circ}{\neg}$ , Lampang, 28-viii-1992 (*TN*),  $1 \stackrel{\circ}{+} 1 \stackrel{\circ}{\neg}$ , Doi Inthanon, 29-viii-1992 (*TN* et *SO*),  $2 \stackrel{\circ}{+} 3 \stackrel{\circ}{\neg}$ , Ka Jan, 3-ix-1992 (*SO*);  $7 \stackrel{\circ}{+} 5 \stackrel{\circ}{\neg}$ , Chiang Dao, on bamboo, 23-viii-1992 (*TN* et *SO*);  $1 \stackrel{\circ}{+}$ , Chiang Rai, on dead leaves and branches, 4-ix-1992 (*SO*);  $1 \stackrel{\circ}{+} 1 \stackrel{\circ}{\neg}$ , nr. Kanchanaburi, on bamboo, 30-viii-1991 (*TN* et *SO*);  $4 \stackrel{\circ}{+}$ 

#### Shûji Okajima

# 8₀<sup>¬</sup>, Nakornprathom, Puttamonton, on bamboo, 18-ix-1991 (PJ). Distribution. Thailand.

*Remarks.* This species is very similar to *nayari*, but it can be distinguished by the colour of abdomen and antennal segments. It has paler second to ninth abdominal segments and fourth to sixth antennal segments. Moreover, the reticulation at the ocellar region is weaker in this species.

### Bamboosiella fusca sp. nov.

(Figs. 6-7, 11, 14, 22)

*Female* (macroptera). Uniformly dark brown; antennal segments I and II brown to dark brown, apical portion of segment II paler, segment III yellow, segment IV brownish yellow, segment V brown with yellowish base, segments VI–VIII dark brown; foretibiae brown with paler apices, mid- and hindtibiae dark brown with paler extreme apices; forewings almost hyaline, major body setae yellowish; remainder dark brown.

Head (fig. 7) longer than wide, 1.23 times as long as wide in holotype, dorsal surface sculptured posteriorly; cheeks weakly rounded; postocellar setae minute, more or less shorter than diameter of hind ocellus, postocular setae shorter than eye, expanded. Antennal segments (Fig. 14) III and IV with 1+1 and  $1+2^{+1}$  sense-cones, respectively. Mouth-cone (Fig. 7) very long and pointed, almost as long as head capsule, distal segment of maxillary palpus elongate (66  $\mu$ m in holotype).

Pronotal am setae reduced to minute setae, other usual setae well developed, expanded (Fig. 7). Basantral plate very weakly developed. Foretarsal tooth absent. Forewings each with 6–7 duplicated cilia; subbasal wing setae B 1 and B2 expanded, B3 the longest and pointed.

B1 and B2 setae on tergum IX very weakly expanded, blunt or almost pointed. Tube about 0.7 times as long as head, 2.25–2.29 times as long as basal width.

Measurements of holotype macropterous female in  $\mu$ m. Total distended body length 2050. Head length 205, from anterior margin of eyes 178, width 166; eye length 72–73. Pronotum length 160, width 220; forewing length 860. Pelta length 75, width 118. Tube length 143, basal width 63, apical width 33. Antennal segments I to VIII length (width) as follows: 45 (40); 49 (30); 64 (30); 63 (30); 64 (28); 58 (25); 44 (21); 30 (12). Length of setae: Postoculars 52–58; prothoracic aa about 27–30, ml 42–45, pa 55–56, epim 56–60; subbasal wings B1 34–38, B2 34–35, B3 60–61; B1 (B2) on tergum IX 118–125 (128– 130); anals 178–182.

*Male* (macroptera). Colour and structure almost as in female except for the followings: Forefemora yellowish apically; foretibiae yellow; sometimes

abdominal segments II-VIII more or less paler; forefemora enlarged in large individuals (Fig. 6); foretarsal tooth present.

Measurements of paratype small-large macropterous male in  $\mu$ m. Total distended body length 1720–1820. Head length 193–203, from anterior margin of eyes 166–175, width 150–159; eye length 68–73. Pronotal length 158–185, width 195–220; forewing length 738–820. Pelta length 65–69, width 100–110. Tube length 113–123, basal width 54–59, apical width 29–30. Antennal segments I to VIII length (width) as follows: 44–48 (38–40); 46–50 (27–28); 56–58 (29–29); 58–60 (27–28); 59–59 (25–26); 55–56 (24–25); 41–40 (20–20); 27–30 (12–13). Length of setae: Postoculars 52–63; prothoracic aa 26–34, ml 42–58, pa 55–62, epim 50–55; subbasal wings B1 37–39, B2 44–44, B3 60–75; B1 (B2) on tergum IX 104–118 (35–55); anals 162–175.

Holotype  $\stackrel{\circ}{\rightarrow}$ . West Malaysia: Cameron Highland, nr. Brinchang, on dead leaves and branches, 27-viii-1990 (*TN* et SO). Paratypes. West malaysia:  $2 \stackrel{\circ}{\rightarrow} 4_{\circ}^{\nearrow}$ , collected with holotype.

Distribution. West Malaysia.

*Remarks.* Although most of congeners have rounded and comparatively short mouth-cones, this species and another new species described below under the name of *longirostris* have pointed and very long ones (Figs. 7 and 9). However, there are some species with somewhat intermediate mouth-cones.

This species is most closely related to *longirostris*, but their body colours are quite distinct. Moreover, the relationship between their body colours and habitats is somewhat interesting. The bicolorous species, *longirostris*, inhabits bamboo, though this brown species inhabits dead leaves and branches of ever-green trees.

Bamboosiella graminella (ANANTHAKRISHNAN & JAGADISH), comb. nov.

Xylaplothrips graminellus ANANTHAKRISHNAN & JAGADISH, 1969, 123–124. Antillothrips graminellus (ANANTHAKRISHNAN & JAGADISH); PITKIN, 1976, 231–232.

This species was originally described based on five female and two male syntypes collected from Tirupathi, India. Unfortunately, the author has not studied the type-series, but has studied a female and a male, collected from Mirik, identified by Prof. ANANTHAKRISHNAN, and a female, collected from Tumkur, compared to the syntype female of *graminella* by Dr. PITKIN.

The present author examined many females and males collected from Thailand listed below. The intermediate antennal segment of Thai material are more or less shorter than that of Indian material, but most other features are very similar.

*Material examined.* India: Mirik,  $\triangleleft^{\nearrow}$  (labelled as  $\stackrel{\circ}{\rightarrow}$ ), on dry twigs, 22-iv-1969, 1  $\stackrel{\circ}{+}$  (labelled as  $\triangleleft^{\nearrow}$ ), on dry bamboo, 23-iv-1969 (*TNA*) (SMF); 1  $\stackrel{\circ}{+}$ , 316





Figs. 7-9. Bamboosiella species, female. 7, B. fusca sp. n., head and prothorax; 8, B. lewisi (BAGNALL) comb., n., head; 9, B. longirostris sp. n., head and prothorax.

Tumkur, on bamboo, 5-ix-1967 (*TNA*) (NHM). Thailand: Bangkok, Bangkhen, Campus of Kasetsart University, NBCRC, on bamboo,  $1 \stackrel{\circ}{+}$ , 28-xii-1987,  $1 \stackrel{\circ}{+}$ , 11-i-1988 (*SO*); Phuket, Phuket Hill, on bamboo,  $5 \stackrel{\circ}{+} 5 \stackrel{\circ}{-}$ , 22-viii-1991,  $4 \stackrel{\circ}{+} 4 \stackrel{\circ}{-}$ , 9-ix-1992 (*TN* et *SO*); Phuket, nr. Rawai Beach, on bamboo,  $19 \stackrel{\circ}{+} 7 \stackrel{\circ}{-}$ , 26-viii-1991,  $7 \stackrel{\circ}{+} 2 \stackrel{\circ}{-}$ , 15-ix-1992 (*TN* et *SO*);  $7 \stackrel{\circ}{+} 4 \stackrel{\circ}{-}$ , nr. Kanchanaburi, on bamboo, 30-viii-1991 (*TN* et *SO*);  $5 \stackrel{\circ}{+} 2 \stackrel{\circ}{-}$ , nr. Chiang Mai, Doi Suthep, on bamboo, 1-ix-1991 (*TN* et *SO*);  $3 \stackrel{\circ}{+} 2 \stackrel{\circ}{-}$ , nr. Chiang Mai, Mae-sa, on bamboo, 3-ix-1991 (*TN* et *SO*);  $3 \stackrel{\circ}{-} 4 \stackrel{\circ}{-}$ , nr. Chiang Mai, Mae-sa, on bamboo, (*TN* et *SO*);  $3 \stackrel{\circ}{+} 4 \stackrel{\circ}{-}$ , nr. Chiang Mai, Doi Inthanon, on bamboo, 29-viii-1992 (*TN* et *SO*);  $2 \stackrel{\circ}{+} 1 \stackrel{\circ}{-}$ , nr. Chiang Mai, Ka Jan, on bamboo, 3-ix-1992 (*SO*). Distribution India: Thailand

Distribution. India; Thailand.

## Bamboosiella hartwigi (PITKIN), comb. nov.

Antillothrips hartwigi PITKIN, 1977, 57-58.

This species is somewhat similar to *malabarica* and its relatives, but it can be distinguished by the reduced midlateral pronotal setae and absence of outer small sense-cone on the fourth antennal segment (so as to make the formula 1+2).

*Material examined.* Tanzania: paratype  $1^{\checkmark}$ , Mt. Meru, below Kitoto Camp, c 6,000 ft., grass tussocks, 9-vi-1974 (*BRP*) (NHM); paratype  $1^{\circ}$ , Para Mtns., Gonja, 2-3,500 ft., grass tussocks, 16-vi-1974 (*BRP*) (NHM).

Jamaica: paratypes 1 ♀ 1♂, Caenwood, on grass, 27-x-1970 (*LAM*) (NHM). *Distribution.* Tanzania; Kenya; Malawi; South Africa; Jamaica.

Bamboosiella lewisi (BAGNALL), comb. nov.

(Figs. 8, 23)

Mesothrips lewisi BAGNALL, 1921, 366–367; BAGNALL, 1924, 636. Arrhenothrips lewisi (BAGNALL); MOUND, 1968, 71.

This species was originally described based on an unspecified number of specimens from Japan. However, there is a female lectotype designated by MOUND (1968, 71) in the BAGNALL's Thysanoptera collection in the Natural History Museum, London.

This species is somewhat intermediate between *Bamboosiella* and *Mychiothrips* in having the elongate head with a constriction behind eyes (Fig. 8), elongate antennae and enlarged forelegs each with a stout foretarsal booth, but



Figs. 10-11. Bamboosiella species, head, male. --- 10, B. longirostris sp. n.; 11, B. fusca sp. n.

Figs. 12-15. Bamboosiella species, antenna, female. — 12, B. elongata sp. n.; 13, B. flavescens sp. n.; 14, B. fusca sp. n.; 15, B. longirostris sp. n.

### Shûji Okajima

it does not have forefemoral teeth. The brief description based on recently collected females and males is given below, because of the original description is more or less incomplete.

Head (Fig. 8) elongate, 1.57-1.90 times as long as wide, very weakly reticulated posteriorly; cheeks constricted just behind eyes; postocular setae longer than eye, blunt at apices; antennal segments III and IV with 1+1 and  $1+2^{+1}$  sense-cones, respectively; mouth-cone short and rounded; prothoracic am setae reduced to minute setae, other usual setae developed with blunt apices; forelegs enlarged in large individuals, foretarsal tooth present in both sexes; basantra absent; forewing with 1–7 duplicated cilia; B1 and B2 setae on tergum IX pointed, B1 almost as long as tube in female, a little longer in male.

*Material examined.* Japan: Lectotype  $\stackrel{\circ}{+}$ , Ashiya, on grass, 5-vii-1917 (J. E. A. LEWIS) (NHM); Kanagawa-ken, Kawasaki-shi, Mukogaoka,  $1_{\circ}$ <sup>7</sup> on grass (*Miscanthus*), 3-vi-1976,  $2 \stackrel{\circ}{+} 2_{\circ}$ <sup>7</sup> on bamboo (*Pleioblastus*), 15-vii-1989 (SO);  $1 \stackrel{\circ}{+} 6_{\circ}$ , Kanagawa-ken, nr. Tsukui-ko, on bamboo (*Pleioblastus*), 15-ix-1980 (SO);  $2 \stackrel{\circ}{+}$ , Hyogo-ken, Mt. Futatabi-san, on grass, 15-viii-1980 (SO);  $4 \stackrel{\circ}{+} 3_{\circ}$ <sup>7</sup>, Kyoto-fu, nr. Shizuhara, on grass, 6-viii-1980 (SO);  $1_{\circ}$ <sup>7</sup>, Fukuoka-ken, Mt. Tachibana, yellow pan trap, 16-vi-1979 (K. YAMAGISHI).

Distribution. Japan.

# Bamboosiella longirostris sp. nov.

### (Figs. 9-10, 15, 24)

*Female* (macroptera). Head, thorax and abdominal segments VIII–X brown, but median portion of head and anterior portion of abdominal segment VIII yellowish; abdominal segments II–VII yellow, segments III–VII each with a pale brown marking anteromedially; antennal segments I, II and IV–VIII brown, but apical portion of II and extreme base of IV are yellowish, segment III yellow; all femora brownish yellow, fore- and midfemora sometimes shaded with pale brown, all tibiae and tarsi yellow; wings almost hyaline, major body setae yellowish.

Head (Fig. 9) a little longer than wide, about 1.1 times as long as wide in holotype, dorsal surface weakly sculptured posteriorly; cheeks weakly rounded, gradually narrowed towards base; postocellar setae almost as long as diameter of hind ocellus, postocular setae shorter than eye, expanded. Antennal segments (Fig. 15) III and IV with 1+1 and  $1+2^{+1}$  sense-cones, respectively. Mouth-cone (Fig. 9) very long and pointed, almost as long as head capsule, distal segment of maxillary palpus long (60  $\mu$ m in holotype).

Pronotal am setae reduced to short setae, other usual setae well developed and expanded apically (Fig. 9). Basantral plate absent. Foretarsal tooth absent. Forewings each with 6–7 duplicated cilia; subbasal wing setae B1 and

B2 expanded, B3 the longest and sharply pointed.

B1 and B2 setae on tergum IX expanded apically. Tube about two-thirds as long as head, 1.86–1.90 times as long as basal width.

Measurements of holotype macropterous female in  $\mu$ m. Total distended body length about 1900. Head length 182, from anterior margin of eyes 158, width 165; eye length 75. Pronotum length 158, width 217; forewing length 730. Pelta length 73, width 110. Tube length 120, basal width 64, apical width 33. Antennal segments I to VIII length (width) as follows: 40 (38); 46 (29); 55 (30); 58 (29); 58 (25); 55 (25); 40 (20); 31 (11). Length of setae: Postoculars 52–55; prothoracic aa 37–40, am less than 19, ml about 50, pa 54– 58, epim 55–56; subbasal wings B1 39–40, B2 40–45, B3 80–85; B1 (B2) on tergum IX 100–106 (105); anals 195–198.

*Male* (macroptera). Colour and structures similar to female except for the followings: Prothorax somewhat paler than head and pterothorax; fore- and midfemora brownish yellow, concolorous with hindfemora; abdominal segments VIII yellow, apical portion of segment IX yellowish; head much longer than wide in large individuals (Fig. 10), 1.24 times as long as wide in largest paratype, a little longer in small individuals, almost 1.10 times as long as wide in smallest paratype; forefemora enlarged in large individuals; foretarsal tooth present; mouth-cone somewhat shorter than head capsule.

Measurements of paratype small-large macropterous males in  $\mu$ m. Total distended body length 1400–1850. Head length 155–198, from anterior margin of eyes 138–170, width 140–160; eye length 59–71. Pronotum length 117–185, width 172–225; forewing length 588–760. Pelta length 58–80, width 80–120. Tube length 93–113, basal width 50–61, apical width 28–30. Antennal segments I to VIII length (width) as follows: 35–39 (32–40); 39–41 (25–25); 48–53 (25–30); 52–60 (25–28); 48–61 (24–25.5); 48–55 (23–24); 35–40 (18–20); 28–29 (11–11). Length of setae: Postoculars 45–55; prothoracic aa about 25–35, am less than 12, ml 32–55, pa 38–56, epim 42–50; subbasal wings B1 30–44, B2 34–44, B3 70–88; B1 (B2) on tergum IX 70–111 (35–40); anals 156–175.

Holotype  $\hat{\uparrow}$ . Singapore: Macritchie Res., on bamboo, 7-viii-1990 (*TN* et SO). Paratypes. Singapore:  $42 \hat{\uparrow} 24 \hat{\checkmark}$ , collected with holotype. West Malaysia:  $3 \hat{\uparrow} 1 \hat{\checkmark}$ , Tapah, on bamboo, 17-ix-1990 (*TN* et SO). Thailand:  $1 \hat{\uparrow}$ , Saraburi, Farm of Kasetsart University, on grass, 20-viii-1991 (*TN* et SO);  $1 \hat{\uparrow} 1_{\hat{\frown}}$ , nr. Chiang Mai, Mae sa, on bamboo, 3-ix-1991 (*TN* et SO);  $2 \hat{\uparrow}$ , nr. Chiang Mai, on bamboo, 4-ix-1991 (*TN* et SO);  $1 \hat{\uparrow} 1_{\hat{\frown}}$ , Chiang Mai, on bamboo, 2-ix-1991 (*TN* et SO);  $4\hat{\frown}$ , Doi Inthanon, on bamboo, 29-viii-1992 (*TN* et SO). Borneo:  $1 \hat{\uparrow} 1_{\hat{\frown}}$ , Sabah, nr. Keningau, Taman Bunsit, on bamboo, 2-ix-1990 (*TN* et SO).

Distribution. Thailand; West Malaysia; Singapore; Borneo (Sabah).

320





Figs. 16–24. Bamboosiella species, pelta, female. — 16, B. bicoloripes ANAN-THAKRISHNAN; 17, B. brevis sp. n.; 18, B. elongata sp. n.; 19, B. exastis (ANAN-THAKRISHNAN & KUDO) comb. n.; 20, B. fasciata sp. n.; 21, B. flavescens sp. n.; 22, B. fusca sp. n.; 23, B. lewisi (BAGNALL) comb. n.; 24, B. longirostris sp. n.

*Remarks.* This bicolorous species is undoubtedly related to the brown species newly described above under the name of *fusca*. Three paratype females collected from West Malaysia listed above have somewhat paler eighth abdominal segment.

Bamboosiella malabarica (ANANTHAKRISHNAN), comb. nov.

Xenothrips malabaricus ANANTHAKRISHNAN, 1965, 53-54.

Xenothrips luteus ANANTHAKRISHNAN & KUDÔ, 1974, 119–120. (Synonymized by PITKIN, 1976, 232.)

Antillothrips malabaricus (ANANTHAKRISHNAN); PITKIN, 1976, 232-234.

This species has the bicoloured body, yellow legs, somewhat long head (1.23 times as long as wide in lectotype female), pointed postocular and posteroangular pronotal setae,  $1+2^{+1}$  sense-cones on the fourth antennal segment and reduced anteromarginal pronotal setae. The lectotype female of

*malabaricus* has the third to fifth antennal segments yellow, whereas, the lectotype female of *luteus* as well as three females and two males collected from Coimbatore listed below have the fourth and fifth segments shaded with brown. However, most of other specific characteristics are indistinguishable and they may be conspecific with this species.

*Material examined.* India: Lectotype  $\stackrel{\circ}{\rightarrow}$  of *X. malabaricus*, Chalakudi, on bamboo, 5-xii-1963 (*TNA*) (LCM); lectotype  $\stackrel{\circ}{\rightarrow}$  of *X. luteus*, Palghat, on grass, 17-ii-1967 (*TNA*) (LCM);  $3 \stackrel{\circ}{+} 2 \stackrel{\circ}{\sim}$ , Coimbatore, on grass clumps, 24-vi-1973 (J. S. BHATTI) ( $2 \stackrel{\circ}{+} 1 \stackrel{\circ}{\sim}$  in NHM and  $1 \stackrel{\circ}{+} 1 \stackrel{\circ}{\sim}$  in SMF).

Distribution. India.

(To be continued)

321

### References

ANANTHAKRISHNAN, T. N., 1957. Bamboosiella nov. gen. (Phlaeothripidae, Tubulifera) from India. Ent. News, 68: 65-68.

1965. Thysanopterologica Indica-III. Ent. Tidskr., 86: 49-63.

& A. JAGADISH, 1969. Studies on the species of *Xylaplothrips* PRIESNER from India. *Zool. Anz.*, 182: 121–133.

— & I. KUDÔ, 1974. The species of the genus Xenothrips ANANTHAKRISHNAN (Thysanoptera, Phlaeothripidae). Kontyû, Tokyo, 42: 117–121.

BAGNALL, R. S., 1921. Brief descriptions of new Thysanoptera. XI. Ann. Mag. nat. Hist., (9) 7: 355-368.

1924. Brief descriptions of new Thysanoptera. XIV. Ann. Mag. nat. Hist., (9) 14: 625-640.

FAURE, J. C., 1957. South African Thysanoptera-7. J. ent. Soc. S. Africa., 20: 391-419.

GIRAULT, A. A., 1927. A discourse on wild animals. Published privately, Brisbane.

HOOD., J. D., 1919. Two new genera and thirteen new species of Australian Thysanoptera. *Proc. biol. Soc. Wash.*, **32**: 75-92.

MOULTON, D., 1936. Thysanoptera of the Hawaiian Islands. Proc. Haw. ent. Soc., 9: 181-188.

MOUND, L. A., 1968. A revision of R. S. Bagnall's Thysanoptera collections. Bull. Br. Mus. nat. Hist. (Ent.), Suppl. II: 1-181.

OKAJIMA, S., 1993. Bamboo-inhabiting genera Mychiothrips and Veerabahuthrips (Thysanoptera, Phlaeothripidae) from Asia. Jpn. J. Ent., 61 723-736.

PITKIN, B. R., 1973. A revision of the Australian Haplothripini, with descriptions of three new species (Thysanoptera: Phlaeothripidae). J. Aust. ent. Soc., 12: 315–339.

1976. A revision of the Indian species of *Haplothrips* and related genera (Thysanoptera: Phlaeothripidae). *Bull. Br. Mus. nat. Hist.* (Ent.), **34**: 221–280.

The genus Antillothrips STANNARD, with descriptions of two new species (Thysanoptera: Phlaeothripidae). Syst. Ent., 2: 53-58.

STANNARD, L. J., 1957. The phylogeny and classification of the North American genera of the suborder Tubulifera (Thysanoptera). *Illinois biol. Monogr.*, 25: 1–200.

(Received August 6, 1994; Accepted October 5, 1994)