

THYSANOPTERA FROM THE SOLOMON ISLANDS

By L. A. MOUND

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SYNOPSIS

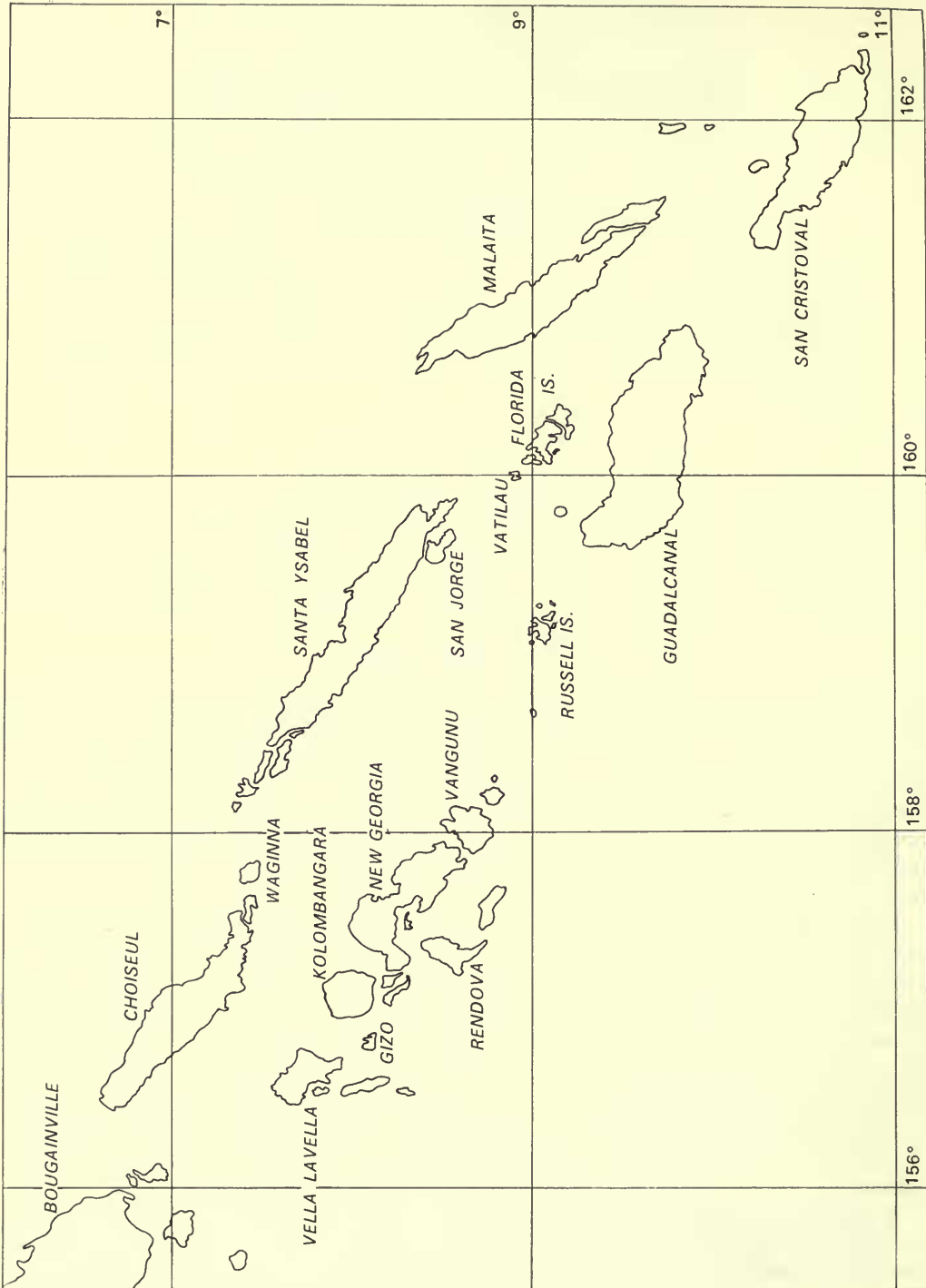
Thirty species of Thysanoptera are recorded from the Solomon Islands. Nine of these species are widespread across the world, two are widespread in the Western Pacific, two are known from other parts of Melanesia, and seventeen are known only from the Solomons. Fifteen new species are described, four new genera are defined, and seven new synonymies are established. The new species were collected in leaf-litter and a discussion is included on the structure, collecting methods and distribution of leaf-litter species.

INTRODUCTION

ONLY two species of Thysanoptera have been described from the Solomon Islands (*Euoplothrips carcinoides* Hood, 1937 and *Mecynothrips snodgrassi* Hood, 1952), and the present author has seen published records of only three other species from this area (*Haplothrips priesnerianus* Bagnall in Mound, 1968, and *Thrips tabaci* Lindemann and *Selenothrips rubrocinctus* (Giard) in Lever, 1968). In the present account a further twenty five species are recorded, of which fifteen are described as new, and notes are included of fragmentary material of several other species which have also been seen during the course of this work.

Most of the material discussed here was extracted from leaf-litter on the ground through berlese funnels, either by the government entomologist, Dr. John Greenslade (P.J.M.G.), or by Mr. P. N. Lawrence (P.N.L.) who visited the Islands with the Royal Society Expedition in 1965, or by collectors from the Bernice P. Bishop Museum, Hawaii. A single gall containing very large numbers of a single species was collected by Mr. J. Grant on the Royal Society Expedition, and three species were submitted for identification to the Commonwealth Institute of Entomology by the Solomon Islands Department of Agriculture. Unless stated to the contrary the material referred to in this paper is deposited in the British Museum (Natural History).

Thrips were extracted from moss, soil, leaf-litter and plant debris through eight-inch diameter plastic funnels. Several samples were taken at each site and these were placed in funnels beneath electric lights. The insects dropped into tubes of



MAP 1. The Solomon Islands (N.B., the Florida Islands are also known as the Nggela Group).

alcohol pushed on to the bottoms of the funnels. The extractions were carried out at Kukum Agricultural Research Station, near Honiara, Guadalcanal, not at the various collecting sites, and Dr. Greenslade has suggested that at least some of the species were attracted either to the lights or to the alcohol of the funnels. This is probably true of some thripid specimens, but most of the Phlaeothripidae recorded here are apparently leaf-litter dwelling species and some were accompanied by larvae and apterae.

Because most of the species discussed here were extracted from leaf-litter, it is not possible to discuss the thrips fauna of the Solomon Islands in general terms. The few species known from surrounding areas were mainly collected from flowers or green leaves or dead wood, and these habitats have not been examined for thrips in the Solomons. Conversely the thrips of leaf-litter are unknown from Fiji and New Guinea, although some species have been described from Indonesia. However Moulton (1944) does not record the genera *Ecacanthothrips*, *Machatothrips* and *Mecynothrips* from Fiji, and in view of the large size of the species and the frequency with which they have been taken in the Melanesian area, it would be reasonable to expect collectors to find them if they were present. These forms may not extend across the Pacific, although *Rhaebothrips* is known from Formosa to Samoa and Eastern Australia. The apparent absence of the conspicuous flower-living Aeolothripidae from the Melanesian area is rather surprising, as this family is well developed in Australia and also occurs in New Zealand, New Caledonia and Southern India. Similarly no Merothripidae were taken in the Solomon Islands, although these inconspicuous thrips are readily taken in leaf-litter in Australia and also occur in New Zealand.

Some species that live in leaf-litter have a rather unexpected geographical range. *Bradythrips hesperus* is now known from Guyana, Southern India and the Solomon Islands, and species of the genus *Psolidothrips* are known from Java, the Solomon Islands and Brazil. The author has recently collected unidentified species of *Allothrips* and *Pseudocryptothrips* in Australia and both these genera occur in North America. These distributions may be natural but could be the result of man's activity. Leaf-litter thrips feed on the fungi associated with dead leaves and it seems likely that such fungi have extensive ranges. Unlike phytophagous insects which are limited by the range of their host plants, these fungus-feeding thrips have a continuous habitat wherever there are dead leaves and a suitably drained soil. However it is likely that man has also influenced the distribution of some species during the last three or four hundred years. The present author has commented elsewhere (1968 : 140) on the possibility that *Nesothrips propinquus* has been distributed around the Southern Hemisphere in hay used on board ships, and it is suggested below that *Hoplandrothrips flavipes* has similarly been distributed in firewood on ships. Lindroth (1957) in an account of the faunal relationships of North America and Europe has produced evidence to show that some species, particularly of carabid beetles, have been distributed by man in the soil and gravel used as ballast on sailing ships. Similar studies have not been made in tropical regions but ballast was carried by all sailing ships in varying quantities in order to

maintain vessels at a suitable level in the water, thus more ballast was needed with a light cargo than a heavy cargo. Captain Cook records loading the *Endeavour* with eight tons of 'iron ballast' before leaving England in 1768, but he also records taking on twenty tons of 'stone ballast' at Tahiti, and unspecified amounts in New Zealand, Eastern Australia and Java (Beaglehole, 1955). Such stone ballast probably included quantities of soil and plant debris. In North Atlantic ports ships were not permitted to throw ballast into the water, as it could have blocked the harbour, but had to offload it on to the quayside. Similar regulations were probably in operation in tropical ports. Once the ballast was on the quay, it was then available to the next ship, so creating the opportunity for organisms to be moved in ballast from port to port. Although European settlers and plant collectors undoubtedly moved very large numbers of tubs of soil containing plants from place to place, this traffic in ships' ballast is probably more important to zoogeographers because of its sheer bulk. Lindroth (1957 : 161) states that according to the records of Poole Harbour in Southern England, 1180 tons of ballast were supplied to ships sailing from Poole to Newfoundland in the year 1815. With the vast tonnage of sailing vessels in operation during the eighteenth and nineteenth centuries there were thus ample opportunities for soil-living organisms to be moved around the world.

There are several morphological characters which seem to be associated with the leaf-litter habitat in the Phlaeothripinae. The species of *Baphikothrips*, *Psalidothrips*, *Mystrothrips* and *Solomonthrips* are bicoloured, usually yellow with one or more transverse brown markings. The wings of most of these species are narrow, not constricted medially, with widely spaced cilia and few or no accessory cilia. *Baphikothrips*, *Psalidothrips* and *Solomonthrips* species have a narrow bell-shaped pelta as in *Adraneothrips* and *Hoplandrothrips* species. Surface reticulation is frequent in leaf-litter species such as *Solomonthrips*, *Mystrothrips* and the Glyptothripini, but it is not restricted to such species nor are all leaf-litter species reticulate, e.g. *Psalidothrips*. An interesting negative characteristic is the apparent absence of oedymorous forms in these species. Fungus-feeding Phlaeothripinae living under bark frequently show a very great range of body form, e.g. *Ecacanthothrips*. The leaf-litter species are also fungus-feeders but none of the species referred to here are known to produce strongly oedymorous individuals. The major males of *Solomonthrips greensladei* described below have larger femora with tubercles than the minor males but they do not show any great difference in body size.

Most of the specimens referred to in this paper were treated briefly with 5% sodium hydroxide solution prior to dehydration and mounting in balsam. This treatment facilitates clearing but destroys the hypodermal pigments, and so the notes on colours of the species refer only to cuticular colour. The head lengths which are quoted are based on measurements of total head length from the base of the head to the interantennal projection. The text-figures were drawn at various magnifications, the heads and pronota using a Wild drawing tube and the remainder using a Zeiss camera lucida. Mr. B. R. Pitkin drew text-figures 10-12, 24, 25 and 28-32, and the others were drawn by the author. This paper could not have been

completed without the advice and generous loan of material from Dr. H. Priesner of Linz, Miss Kellie O'Neill of the U.S.D.A., Washington, and Dr. Paul Arnaud of the California Academy of Sciences.

THRIPIDAE

Included among the few thripids taken from leaf-litter were two female *Scirtothrips* from Mt. Austen, Guadalcanal, one female *Pseudodendrothrips* from New Georgia, and four females and one male of the *Thrips*/*Taeniothrips* group from Guadalcanal and Kolombangara. The condition of these specimens was too poor for accurate study below the generic level at the present state of knowledge of the Melanesian fauna.

Chirothrips spiniceps Hood

Chirothrips spiniceps Hood, 1915 : 12-15.

Chirothrips spiniceps Hood ; zur Strassen, 1960 : 175.

This species is probably established in the Solomon Islands. It is known from North America, Mexico and Hawaiian Islands according to zur Strassen.

Material studied. GUADALCANAL : on Rice, 1 ♀, xi-xii.1965 and 1 ♀, 4.xii.1965 (*M. McQuillan*) ; on ?*Brachiaria miliiformis*, 1 ♀, 17.v.1966 (*M. McQuillan*).

Microcephalothrips abdominalis (Crawford)

Thrips abdominalis Crawford, 1910 : 157-159.

This species is widely distributed in the tropics on composite flowers, and may be a pest on sunflowers.

Material studied. GUADALCANAL : Kukum, 1 ♀, 14.vii.1966 (*P.J.M.G.*) ; Mt. Popanamisiu, 1 ♀, x.1965 (*P.J.M.G.*).

Plesiothrips perplexus (Beach)

Sericothrips ? perplexa Beach, 1896 : 216.

Plesiothrips perplexus (Beach) ; Stannard, 1968 : 333-337.

The postocellar chaetotaxy of the specimens listed here compares favourably with American specimens collected on grass in Washington, D.C. The species is widespread on grasses ; the author has collected it in Eastern Australia, but members of the genus need careful study as indicated by Stannard.

Material studied. GUADALCANAL : on Rice, 2 ♀, xi-xii.1965 ; 1 ♀, 3.xii.1965 ; 1 ♀, 4.xii.1965 (*M. McQuillan*) ; on *Eleusine indica*, 1 ♀, 14.v.1966 (*M. McQuillan*).

Selenothrips rubrocinctus (Giard)

Physopus rubrocinctus Giard, 1901 : 263-265.

The red-banded cocoa thrips is spread throughout the tropics as a pest on the leaves of cocoa trees.

Material studied. GUADALCANAL : Mt. Austen, 1 ♀, ii.1966 (*P.J.M.G.*).
RENDOVA : 10 larvae on Cacao leaves, 1957 (*E. S. Brown*).

***Thrips tabaci* Lindemann**

Thrips tabaci Lindemann, 1888 : 61-75.

This cosmopolitan species is recorded from the Solomon Islands by Lever (1968 : 8) as a result of thrips having been seen on onions. No material has been studied.

***Thrips unispinus* Moulton**

Thrips (Epithrips) unispinus Moulton, 1940 : 252.

The type specimens of this species have not been studied but the male and female listed below agree well with the description based on material from Koitaki, New Guinea.

Material studied. GUADALCANAL : Mt. Austen, 1 ♀, 1 ♂, 13.xi.1964 (*P.J.M.G.*).

PHLAEOTHRIPIDAE

In addition to the species which are discussed below under the two subfamilies Phlaeothripinae and Megathripinae, a number of rather poor specimens have been seen which cannot be adequately distinguished. In the author's opinion, no useful purpose is served by describing species on inadequate material in unrevised genera which are known to include highly variable species. Two specimens of undescribed *Androthrips* and fifteen unidentified *Haplothrips* have been seen, also single specimens of *Adraneothrips*, *Diceratothrips*, *Horistotherips* and *Karnyothrips*. Of more interest, but still not worth describing, were three specimens of a genus between *Nesothrips* and *Diceratothrips*, and three specimens of a genus close to *Malacothrips*.

PHLAEOTHRIPINAE

***BAPHIKOTHRIPS* gen. n.**

Type-species : *Baphikothrips coloratus* sp. n.

Weakly sclerotized slender species with cuticle bicoloured brown and yellow. Head faintly sculptured dorsally ; eyes large, longer on dorsal surface than ventral ; postocular setae behind inner margin of eyes, shorter than dorsal length of eye ; cheeks weakly incut behind eyes, without major setae ; fore ocellus directed forwards ; mouth cone long, not sharply pointed ; stylets retracted into head, maxillary bridge present. Antennae eight-segmented, VIII not sharply constricted at base. Pronotal setae well developed, epimeral sutures usually incomplete ; praepectus absent ; probasisternal plates with one seta at anterior external angle ; mesopraesternum broadly boat-shaped but weakly sclerotized. Fore tarsi unarmed, legs slender. Lateral mesonotal setae well developed. Metanotum with longitudinal band of reticulation, median setae wide apart. Fore wings slender, weakly constricted medially ; cilia widely spaced, 2-4 accessory cilia ; sub-basal setae well developed. Pelta bell-shaped ; tergites II-VII with two pairs of wing-retaining setae ; tergite IX with accessory seta well developed between B₁ and B₂ : tube shorter than head.

This new genus resembles *Baphothrips* in many ways but in the opinion of the present author this is probably superficial. *Baphikothrips* is very close to *Adraneothrips* but has larger eyes, which are more extensive dorsally than ventrally, and moreover has the postocular setae rather close together. *Adraneothrips* and *Baphikothrips* both have a maxillary bridge, whereas in *Baphothrips* and *Malacothrips* the maxillary guides approach each other at their anterior ends as in more typical members of the Phlaeothripina (Priesner, 1960). It seems more likely that *Adraneothrips* and *Baphikothrips* are derived from *Haplothrips*-like stock by the loss of the praepectus and degeneration of the fore wings in association with their cryptic habitat, than that they have evolved from members of the Phlaeothripini and developed independantly a maxillary bridge. Moreover, these two genera, in common with *Haplothrips*, do not have antennal segment eight sharply constricted into a basal neck as is found in *Baphothrips* and Phlaeothripina such as *Phlaeothrips*, *Ecacanthothrips* and *Hoplandrothrips*. For these reasons the author would place *Adraneothrips* and *Baphikothrips* in the Haplothripini.

KEY TO THE SPECIES OF *BAPHIKOTHRIPS*

- 1 Antennae very long, segment III about four times as long as wide with two sense cones ; head brown, pronotum and fore legs yellow ; antennal III not much paler than IV ; male not known **antennatus** sp. n. (p. 93)
 - Antennae shorter, III about twice as long as wide with three sense cones ; head yellow with brown margins, pronotum and fore legs with brown markings ; antennal III yellow, IV brown but V and VI brown with basal third yellow ; male with no fore tarsal tooth, sternite VIII with glandular areas **coloratus** sp. n. (p. 91)

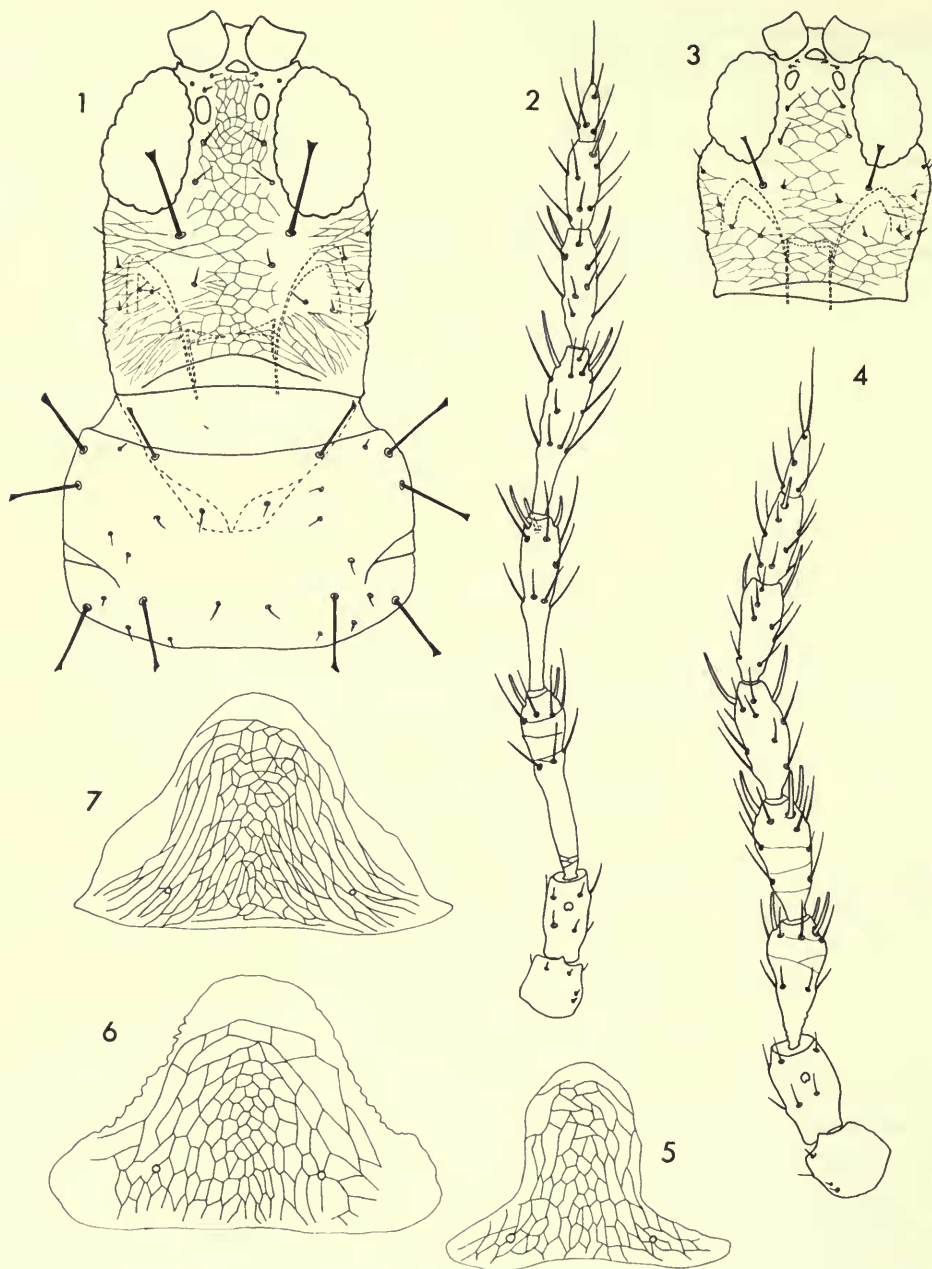
***Baphikothrips coloratus* sp. n.**

(Text-figs. 3 & 4)

♀ (macropterous). Colour yellow with brown markings ; head and pronotum yellow with brown margins ; mesothorax, sides of metathorax, and sides of abdominal segments II-III and V-VI brown ; tube brown ; mid and hind femora and tibiae brown medially ; fore legs with brown shadings along margins ; antennal III and basal third of V and VI yellow ; wings shaded except at extreme apex and median constriction ; major setae pale.

Head with faint sculpture dorsally (Text-fig. 3) ; eyes longer on dorsal surface than on ventral ; antennals III and IV with three sense cones (Text-fig. 4). Pronotum weakly sculptured near posterior margin ; epimeral sutures usually not quite complete ; epimeral setae little longer than other major setae. Mesonotal lateral setae about 20 μ long, expanded at apex ; metanotal setae pointed but not acute, 25 μ long, 40 μ apart. Fore wing narrow, maximum width 55 μ , weakly constricted medially, distal width 35 μ ; cilia widely spaced, two to four accessory cilia ; sub-basal setae in a straight line, 30 μ , 30 μ and 45 μ long with expanded apices. Pelta bell-shaped, faintly sculptured ; seta B₁ on tergites broadly expanded at apex, more than 50 μ long ; tergites with faint sculpture laterally. Sternites with transverse row of about 10 accessory setae 8 μ long.

Measurements in microns of holotype with range from four paratypes in parentheses. Body length 1300 (1150-1400). Hind tibia 135 (120-). Fore wing 580 (510-). Head, length 175 (160-) ; width 160 (150-) ; postocular seta 32 (26-35). Pronotum, length 97 (88-100) ; width 190 (180-200) ; epimeral seta 35 (32-40). Tergite IX, B₁ 55 (49-) ; accessory seta 42 ; B₂ 58 (49-). Tube, length 97 (88-) ; terminal setae 80 (70-). Antennal segments length 26 (23-) ; 35 (-39) ; 52 (49-) ; 52 (49-) ; 42 (39-) ; 39 ; 26 (-29).



FIGS. 1-7. Figs. 1 & 2. *Baphikothrips antennatus* : 1, Head and pronotum (sculpture omitted from pronotum). 2, Left antenna. Figs. 3 & 4. *Baphikothrips coloratus* : 3, Head. 4, Right antenna. Figs. 5-7. Pelta of *Ecacanthothrips* species : 5, *spinipes* gynaeoid female. 6, *spinipes* oedymereous female. 7, *sanguineus*.

Holotype ♀. CHOISEUL : Vasu River, 16.xi.1965 (*P.J.M.G.*), collected with 14 ♀ paratypes.

Other material. FLORIDA Is. : Vatilau, 18 ♀, 2.xii.1965 (*P.J.M.G.*). GUADALCANAL : Mt. Austen, 1 ♀, 8.ii.1966, 1 ♀, 11.ii.1966 (*P.J.M.G.*) ; Mt. Popanamisui, at 7000 feet in moss forest, 1 ♀, 6.xi.1965 (*P.N.L.*).

The bicoloured antennae and the weak fore wings of this species are similar to *Adraneothrips* species, but very large eyes are not found in that genus except when the eyes are extended on the ventral surface.

***Baphikothrips antennatus* sp. n.**

(Text-figs. 1 & 2)

♀ (macropterous). Bicoloured ; head and antennal segments I and II dark brown ; lateral sclerites of pterothorax, abdominal segment IV and tube brown ; anterior margin of abdominal segment V, posterior margin of III, and segments VIII and IX light brown ; pronotum and fore legs yellow ; middle femora dark brown in basal half, hind femora and middle and hind tibiae largely yellow ; wings shaded except at median constriction, dark around sub-basal setae, cilia rather pale ; major setae pale except on dark sclerites ; antennal segments III and IV light brown, V–VIII darker but V and VI with basal stem yellow.

Head rather long with faint sculpture dorsally (Text-fig. 1) ; eyes larger on dorsal surface than on ventral ; antennal segments very long, sense cones small, two sense cones on III and V, three on IV (Text-fig. 2). Pronotal epimeral sutures not complete (Text-fig. 1) ; mesonotal lateral seta 30μ long with expanded apex ; metanotal setae finely acute, 35μ long, 60μ apart. Legs long and slender. Fore wing narrow, maximum width 60μ, weakly constricted medially, distal width 40μ, cilia widely spaced, 2–4 accessory cilia ; sub-basal setae in straight line, 45μ, 50μ and 70μ long. Pelta narrow and bell shaped ; tergites with very faint sculpture laterally ; B₁ and B₂ on IX with apices weakly expanded. Sternites transversely reticulate with about six accessory setae 20μ long.

Measurements in microns of holotype. Body length 1650. Hind tibia 190. Fore wing 700. Head, length 225 ; width 180 ; postocular seta 55. Pronotum, length 130 ; width 240 ; epimeral seta 45. Tergite IX, B₁ 100 ; accessory seta 56 ; B₂ 100. Tube, length 115 ; terminal setae 115. Antennal segments 32 ; 42 ; 100 ; 90 ; 95 ; 60 ; 49 ; 30.

♂ (macropterous). Colour rather paler than female, particularly the abdomen. Chaetotaxy and sculpture similar to female but B₂ on tergite IX short and stout ; sternite VIII with an irregular pair of glandular areas laterally ; pseudovirga long and slender as in many *Haplothrips* species.

Measurements in microns of allotype. Body length 1450. Hind tibia 175. Fore wing 600. Head, length 225 ; width 150 ; postocular seta 45. Pronotum, length 120 ; width 185 ; epimeral seta 42. Tergite IX, B₁ 100 ; accessory seta 65 ; B₂ 32. Tube 105. Antennal segments 30 ; 38 ; 100 ; 100 ; 100 ; 65 ; 50 ; 30.

Holotype ♀. SANTA YSABEL : South East Coast, 1000 Ships Bay opposite Lillinia Island, leaf-litter on shore, 20.ix.1965 (*P.N.L.*).

Allotype ♂, and 5 ♀, 4 ♂, 2 larvae collected with holotype.

Other material. SANTA YSABEL : Tatamba, in mangrove litter, 1 ♀, 14.x.1965 (*P.N.L.*) ; San Jorge Island, in litter in gully, 1 ♀, 22.ix.1965 (*P.N.L.*). CHOISEUL : Malangona, 1 ♀, 4.iii.1964 (*P. Shanahan*) in Bishop Museum Collection.

Because of the very long antennae this species shows less resemblance to *Adraneothrips* than does *coloratus*.

BAPHOTHRIPS Priesner

Baphothrips Priesner, 1933 : 69-70. Type-species : *B. tricolor* Priesner, by monotypy.

The unique female, from soil in Java, upon which this genus is based has been studied and compared with the new species described below. The genus may be defined as follows :—

Cuticle bicolored, brown and yellow ; wings weakly banded. Cheeks incut behind large compound eyes ; postocular setae long ; first ocellus directed forward between bases of antennae ; maxillary stylets close together in middle of head, maxillary bridge absent. Antennae long, eight-segmented, segment IV longest, VIII constricted at base ; three sense cones on III and IV. Pronotum transverse, epimeral sutures complete ; anteroangular setae rather close to midlaterals ; praepectus absent, mesopraesternum well developed but weakly sclerotized. Lateral mesonotal setae well developed. Metanotum reticulate, one pair of long setae wide apart near anterior margin. Fore wings moderately broad, weakly constricted medially, with accessory cilia ; three sub-basal setae in straight line. Pelta weakly sclerotized ; tergites II-VII with two pairs of wing-retaining setae and several lateral setae anterior to B₁ ; tergite IX with accessory seta between B₁ and B₂ well developed, more than half as long as B₁ ; tube shorter than head.

This genus belongs in the Phlaeothripina close to *Malacothrips*, but most of the species placed in that genus are not known to the present author. *Baphothrips* apparently has larger, more rounded eyes, the cheeks are less constricted behind the eyes, and the maxillary stylets are retracted further into the head. *Adraneothrips* and *Baphikothrips* are readily distinguished by the presence of a maxillary bridge and the weaker fore wings. Moreover these two genera do not have the eighth antennal segment constricted into a basal neck and the pronotum is relatively longer.

KEY TO THE SPECIES OF *BAPHOTHRIPS*

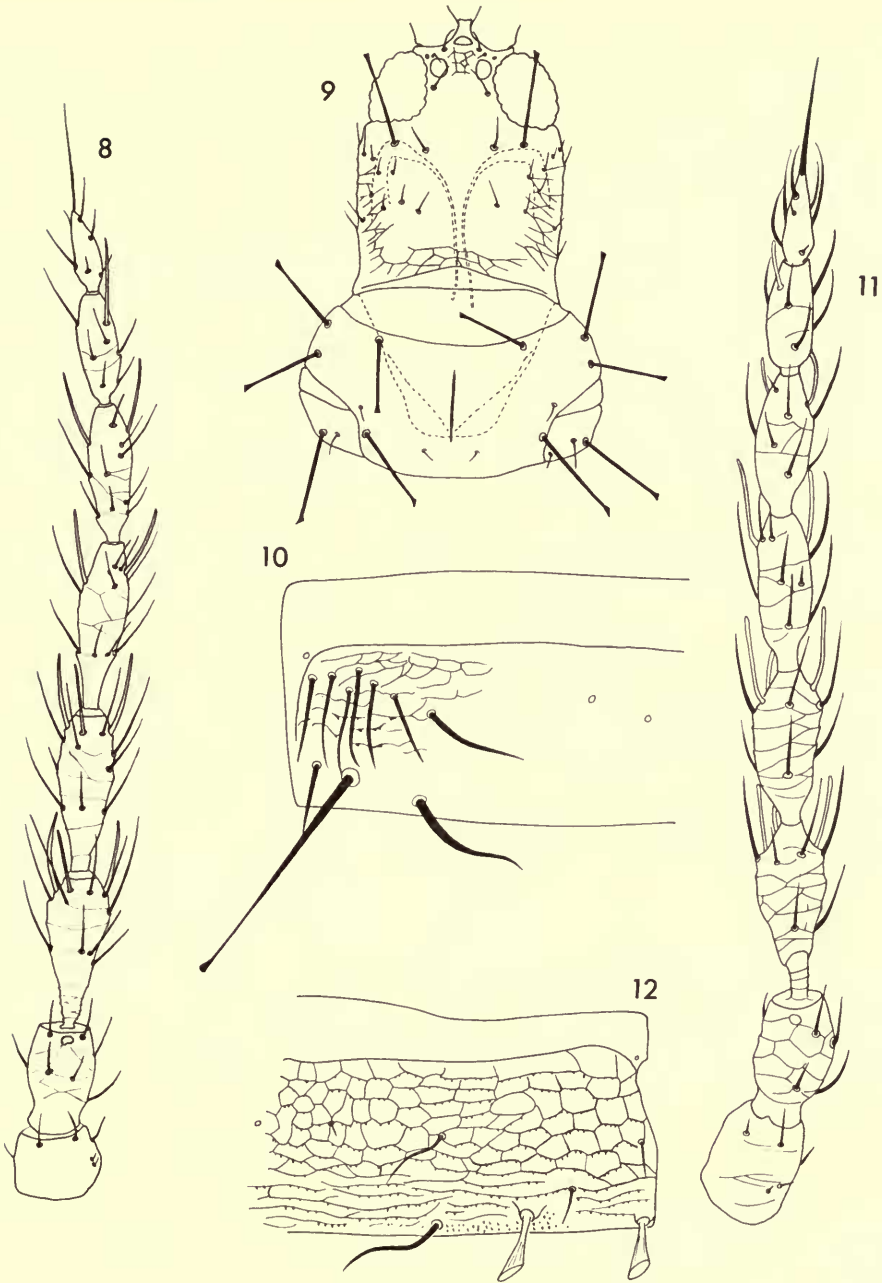
- 1 Dorsal surface of head reticulate, cheeks strongly narrowed to base ; metanotum with longitudinal band of reticulation ; mesonotal lateral setae less than half as long as pronotal posteroangular setae ; head yellow, brown only on anterolateral margins, mesothorax with anterior margin brown ; abdominal segments VIII and IX yellow ***tricolor*** Priesner
- Dorsal surface of head not reticulate, cheeks weakly narrowed to base ; metanotum weakly reticulate ; mesonotal lateral setae long, more than half as long as pronotal posteroangulars ; head and abdominal segments VII-IX brown, anterior margin of mesothorax yellow ***leios*** sp. n. (p. 94)

***Baphothrips leios* sp. n.**

(Text-figs. 8-10)

♀ (macropterous). Bicoloured ; pterothorax, abdominal segments V-VI, all tibiae and tarsi yellow ; dark brown on head and pronotum, antennal segments I and II, tube and abdominal segments VII-IX, II-III and anterior margin of IV ; femora shaded brown medially, fore femora darkest ; antennal segments III-VIII light brown ; major setae light brown ; basal half of wing darker than distal half, cilia dark.

Head weakly sculptured laterally and between ocelli ; postocular setae longer than eyes (Text-fig. 9) ; maxillary stylets retracted deeply into head, close together medially, maxillary



FIGS. 8-12. Figs. 8-10. *Baphothrips leios* : 8, Left antenna. 9, Head and pronotum. 10, Tergite IV. Figs. 11 & 12. *Mystrothrips dilatatus* : 11, Left antenna. 12, Tergite III.

guides well developed, bridge absent ; ventral surface of head with a pair of long setae basally and another pair between the eyes ; antennae long, sensorium on II near apex (Text-fig. 8) ; mouth cone extending two thirds across prothorax, acute but with broadly rounded labrum.

Pronotum short and wide (Text-fig. 9) ; probasisternal plates well developed with five setae along anterior margin. Mesonotal lateral setae 50μ long, apex expanded. Metanotal setae finely acute, 65μ long, 100μ apart. Fore legs long, without armature. Wing broadest (80μ) just beyond sub-basal setae, weakly constricted medially, with seven accessory cilia ; sub-basal setae long (65μ ; 80μ ; 100μ), expanded apically.

Pelta weakly sclerotized, reticulate, broadly bell-shaped ; tergite II with an irregular group of 12 or more setae laterally anterior to B_1 ; setae in this position on tergites III–VIII in an irregular transverse row (Text-fig. 10), but posterior tergites with fewer setae (3) than anterior (8) ; B_1 and B_2 on IX very weakly expanded at apex ; sternites with transverse row of about 24 rather long fine setae (40μ).

Measurements in microns of holotype with one paratype in parentheses. Body length 2200 (1750). Hind tibia 260 (245). Fore wing 850 (700). Head, length 275 (260) ; width 210 (190) ; postocular seta 105 (90). Pronotum, length 130 (125) ; width 320 (300) ; epimeral seta 84 (78). Tergite IX, B_1 155 (155) ; accessory seta 105 (105) ; B_2 160 (160). Tube, length 180 (160) ; terminal setae 160 (145). Antennal segments length 42 (35) ; 52 (49) ; 84 (84) ; 80 (80) ; 100 (97) ; 80 (80) ; 65(65) ; 49 (45) ; terminal seta 60 (60).

Holotype ♀. GUADALCANAL : Forest litter in root mat, 5.vii.1965 (P.N.L.).

Other material. GUADALCANAL : near Honiara, Poha River, grasses and weeds, 1 ♀, 19.xi.1965 (P.N.L.) ; Mt. Austen, 1 ♀, 21.ix.1965 (P.J.M.G.).

Bradythrips hesperus Hood & Williams

Bradythrips hesperus Hood & Williams in Hood, 1925 : 68–69.

Bradythrips hesperus Hood & Williams ; Hood & Williams, 1927 : 4–5.

Bradythrips hesperus Hood & Williams ; Ananthakrishnan, 1966 : 5.

Type material of this species has not been studied but the specimens listed below compare closely with the published descriptions. All the specimens from the Solomon Islands however are macropterous, whereas the original specimens from Guyana and the recently collected ones from Quilon in Southern India are all apterous. At the apex of the tube there is a pair of fine dorsal setae which are less than one quarter as long as the four major anal setae, and laterally on the meta-thorax there is a large seta on a tubercle.

Material studied. GUADALCANAL : Mt. Austen, beaten from dead sticks on ground, 9 ♀, 11.ii.1966, and 2 ♀ with 8 larvae, 8.ii.1966 (P.J.M.G.). SAN CRISTOVAL : forest litter, 1 ♀, 5.viii.1965 (P.N.L.).

Ecacanthothrips spinipes (Bagnall)

(Text-figs. 5 & 6)

Phloeothrips spinipes Bagnall, 1908 : 195–196.

Ecacanthothrips spinipes (Bagnall) Mound, 1968 : 90.

Ormothrips inermis Buffa, 1909 : 168. **Syn. n.**

Ecacanthothrips bagnalli Priesner, 1930 : 364–365. **Syn. n.**

Ecacanthothrips guineaensis Moulton, 1947 : 176–177. **Syn. n.**

Bagnall described the unique holotype of this species, which was dry on a card point, as having yellow antennae. This specimen has now been mounted into

balsam and not only are the distal antennal segments brown but also segments three and four have light brown shadings near their apices. The antennae of *inermis* were also described as being yellow. Buffa's unique holotype has not been studied but the description does not separate it from *spinipes*, and as this species is apparently common in New Guinea, *inermis* is here regarded as a synonym. The unique holotype of *bagnalli*, which is a medium-sized male, and the type series of *guineaensis*, three very small females, have been studied and compared with the material listed below from New Guinea and the Solomon Islands.

This species can be distinguished from *sanguineus* Bagnall, the type-species of the genus, by the unarmed fore femora of the female and the broader reticulations laterally on the pelta (Text-figs. 5-7). The male has two subapical fore femoral teeth, a small and variable dorsal one overlaying the larger ventral tooth (cf. fig. in Priesner, 1930). However the species varies considerably in size, even within a population, and the smallest individuals can appear very different from the larger ones, as is known in *sanguineus*. In large females the fore femur bears a series of stout thorn-like setae on the inner dorsal surface, the fore tibia has about five tubercles on the inner margin, the sense cones on antennal segment three are dark, and the pelta has broad lateral reticulations. Medium-sized females are similar to the large ones, but very small females have no stout setae on the fore femur, no tubercles on the fore tibia, pale sense cones on the antenna, and the lateral margins of the pelta are eroded into small chitinous islets (Text-fig. 5).

There are four other nominal species of *Ecacanthothrips* with unarmed fore femora in the females. Neither *piceae* Ishida nor *inarmatus* Kurosawa from Japan have been studied, although according to the descriptions they are very similar to each other. The unique holotype of *leai* Moulton from Malaya, which is a very small female, has been compared with a rather large female paratype of *coniger* Priesner from Borneo, but because of the size-difference and the poor state of the *leai* holotype, it is not possible to state how these species differ. From *spinipes* they differ in having the third antennal segment brown.

Material studied. Holotype ♀. NEW GUINEA : Dorey (*Wallace*).

NEW GUINEA : Holotype ♀ and 2 ♀ paratypes of *guineaensis*, with 1 ♀, 1 ♂ labelled as *bagnalli* by Moulton, Finschhafen, on bark, 16.iv.1944 (*E. S. Ross*) ; Maffin Bay, on bark, 3 ♀, 1 ♂, ix.1944 (*E. S. Ross*) ; Mt. Lamington, Owen Stanley Range at 1500 feet, 2 ♀ (*C. T. McNamara*), all in Californian Academy of Sciences collection ; north of Wau, Bulolo Gorge at 900 m, bark of fallen log, 12 ♀, 1 ♂, 4 larvae (with *sanguineus*), 4.vi.1968 (*R. Rice* via *F. Bianchi*) ; Aiyura, on grasses at 5400 feet, 1 ♀, 22.ii.1962 (*J. H. Barrett*).

?KEI ISLANDS : Holotype ♂ of *bagnalli*, in Dr. Priesner's collection.

SOLOMON ISLANDS : Guadalcanal, Mt. Austen, under bark, 4 ♀, 2 ♂, 24.xi.1965 (*P. J. M. G.*) ; Tambeluse, in camp kitchen, 1 ♀, 10.xi.1965 (*P. N. L.*).

Euoplothrips crassipes Hood

Euoplothrips crassipes Hood, 1937 : 599-604.

Species of this genus have a stout curved process on the inner margin of the fore

femora. These thrips cause the leaves of their host plants to roll along the margins, and the species are recorded from Samoa, Tonga, Solomon Islands, Eastern Australia, New Guinea and India.

Material studied. SOLOMON ISLANDS : Tulagi, Big Florida Island, in rolled-up leaf, 1 ♀ paratype, 18.iii.1936 (*R. A. Lever*).

Haplothrips gowdeyi (Franklin)

Anthothrips gowdeyi Franklin, 1908 : 724.

This species is very widely distributed on flowers in the tropics, including the Pacific islands, and it probably breeds in the flowers of grasses.

Material studied. GUADALCANAL : Kukum Agricultural Station, on grasses and flowers, 2 ♀, 2.xi.1965 (*P.N.L.*).

Haplothrips priesnerianus Bagnall

Haplothrips priesnerianus Bagnall, 1933 : 327-328.

Haplothrips priesnerianus Bagnall ; Mound, 1968 : 114.

This species appears to be widespread on grasses and other Gramineae in the tropics and subtropics. It has been recorded from Sudan, Libya, Pakistan, India, and the Solomon Islands.

Material studied. GUADALCANAL : on rice, 26 ♀, 9 ♂, xi-xii.1965 (*M. McQuillan*) ; Ilu, on ? *Brachiaria mutica*, 11 ♀, 17 and 27.v.1965 (*M. McQuillan*) ; Kukum Agricultural Station, on grasses and flowers, 1 ♀, 1 ♂, 21.xi.1965 (*P.N.L.*) ; Mt. Popanamisiu, 1 ♀, x.1965 (*P.J.M.G.*) ; Mt. Austen, 1 ♂, 24.viii.1965 (*P.J.M.G.*).

Hoplandrothrips flavipes Bagnall

Hoplandrothrips flavipes Bagnall, 1923 : 628-629.

Phloeothrips gracilicornis Priesner, 1927 : 72-73. **Syn. n.**

Phlaeothrips claratibia Moulton, 1937 : 414. **Syn. n.**

Phloeothrips indicus Ramakrishna & Marghabandu, 1939 : 43-44. **Syn. n.**

Phlaeothrips (Hoplandrothrips) flavitibia Moulton, 1944 : 300-302, regarded as a synonym of *indicus* R. & M. in Ananthakrishnan, 1964 : 101-104.

Hoplandrothrips flavipes Bagnall ; Mound, 1968 : 120.

The holotype of *gracilicornis* from Nigeria has not been examined but the material listed below under this name was determined by Dr. Priesner. The characters given by Moulton to distinguish the Fijian species *flavitibia* from *flavipes* are not correct, and although the types have not been studied, the synonymy given by Ananthakrishnan is accepted here. Specimens determined by Dr. Ananthakrishnan as *indicus* have been studied but not the unique holotype of that name. Moulton (1947 : 175) has recorded a female of *claratibia* from Finschhafen, New Guinea ; Bianchi (1953 : 106) records both sexes from Samoa, and the species is here recorded for the first time from the Solomon Islands, Sumatra, and Malaya. There is no record of the species from the Neotropics but it is now known from Hawaii to West

Africa. It probably feeds on fungus growing on dead wood and may well have been distributed round the world on the wood stored in ships as firewood. The Indian specimens listed below have fewer accessory wing cilia (6-8) than African or Solomon Islands specimens (10-12), and Moulton states that *flavitibia* has sixteen. The tubercle at the apex of the fore femur is not developed in very small males.

The species is placed in *Hoplandrothrips* rather than *Phlaeothrips* because the fore wings are weakly constricted medially. The antenna with the four fat sense cones on segment three has been figured by Ananthakrishnan, Priesner and Mound, and the following notes are intended to amplify the other descriptions.

Colour brown, median abdominal segments paler; all tibiae, tarsi and femoral apices yellow, extreme base of mid and hind femora pale; major pronotal setae dark; wings weakly shaded, cilia dark; antennals III, IV, V and sometimes VI shaded apically but much paler in teneral specimens. Head reticulate; postoculars long, broadly expanded at apex; vertex with about six pairs of fine submedian setae, cheeks with one pair of stout sub-basal setae; stylets close in centre of head. Antennal III with four fat sense cones ventrally, IV with four stout sense cones. Pronotum reticulate near posterior margin particularly in large individuals; pronotal setae long, expanded; praepectus absent, mesopraesternum absent medially; female with minute fore tarsal tooth, male with large tooth. Lateral mesonotal setae well developed; metanotum reticulate. Pelta bell-shaped; abdominal tergites with two pairs of wing-retaining setae; tergite IX with B₁ and B₂ more than two thirds as long as tube, weakly expanded at apex; terminal setae as long as tube.

Material studied. Holotype ♀. [KENYA: Kijalie, Kikuyu Escarpment, xii.1911 (*Alluaud & Jeannel*)] 27.

GUINEA: Conakry, on Kola nuts, 27 ♀, 2 ♂, determined by Priesner as *gracilicornis*, xii.1898 (*Maclaud*).

HAWAIIAN ISLANDS: Oahu, Kipapa, in wind trap, holotype ♂ of *claratibia*, 26.iv.1934, in California Academy of Sciences collection.

INDIA: Madras, on palm leaf sheath, 1 ♀, 23.x.1960; on coconut sheath, 1 ♀, 1 ♂, 8.iv.1964 (*Ananthakrishnan*).

SUMATRA: Lampongs, 1 ♀, 25.xi.1921 (*Karny*).

MALAYA: Pahang, on *Palaquium gutta*, 1 ♀, 14.ix.1925 (*Corbett*).

SOLOMON ISLANDS: Kolombangara, 30 m, Pepele, 1 ♀, 1 ♂, 13.ii.1964, and 1 ♀, 11.ii.1964 (*P. Shanahan*), in Bishop Museum collection, Hawaii; San Cristoval, 7 miles South of Wainoni, in forest leaf-litter, 1 ♀, 26.iv.1965 (*P.N.L.*).

MYSTROTHRIPS Priesner

Mystrothrips Priesner, 1949: 117. Type-species: *Sagenothrips dammermanni* Priesner, 1933, by monotypy.

Mystrothrips Priesner; Stannard, 1955: 92-93.

The following redefinition of this genus is based on a paratype of *dammermanni* from Java and the new species described below. According to Stannard, *clavatoris* Hood from Brazil, the only other species in the genus, has knobbed setae on the antennae and legs. The present author has taken at least one species of this genus in leaf-litter in Queensland, Australia.

Body strongly reticulate, all major setae broadly expanded except on antennae. Head longer than broad, concave at posterior dorsal margin, deeply incut behind eyes; postocular setae short and expanded; one pair of postocellar and mid-dorsal setae present; cheeks tapering slightly to base of head, each with about five fine recurved setae; maxillary stylets wide apart, retracted about halfway into head; antennae eight-segmented, segments sculptured, three sense cones on III and IV, terminal seta longer than VIII. Pronotum reticulate, epimeral sutures complete; anteroangular and midlateral setae about as far apart as the length of one seta; praepectus very weak but apparently present; mesopraesternum weakly sculptured, broadly boat-shaped; fore tarsal claw slender, slightly curved, length equal to half the tarsal width. Mesonotum with lateral setae well developed, broadly expanded. Median setae of metanotum slender; three pairs of basal wing setae with expanded apices. Pelta broad, reticulate, withdrawn into concave anterior margin of tergite II. Tergites II-VII with two pairs of sigmoid wing-retaining setae; B₁ and B₂ on IX long with broad round apices, B₃ acute; tube faintly sculptured with overlapping scales, terminal setae shorter than tube; sternites with a row of about twelve accessory setae, marginal seta B₁ shorter than B₂.

Mystrothrips dilatus sp. n.

(Text-figs. 11 & 12)

♀ (micropterous). Colour yellowish, shaded brown on tergite II, at sides of head, apex of tube, and antennal segments I, II, VI-VIII and apical half of V. Head very similar to *dammermanni* (see fig. in Stannard, 1955: 101); postocellar setae fan-shaped, little smaller than postoculars; sensorium on antennal II near apex (Text-fig. 11). Tergites and sternites fully sculptured (Text-fig. 12); tube with faint sculpture, like overlapping scales.

Measurements in microns of holotype. Body length 1900. Hind tibia 160. Fore wing 180. Head, length 210; width 160; postocular seta 20. Pronotum, length 110; width 270; epimeral seta 20 long, 13 wide at apex. Tergite IX, B₁ 110; B₂ 130. Tube, length 135; terminal setae 80. Antennal segments: 42; 50; 70; 68; 68; 58; 42; 42.

Holotype ♀. KOLOMBANGARA: near Kuzi, 1500 ft., leaf-litter in mossy wood, 4.ix.1965 (P.N.L.).

Although this new species resembles *dammermanni* not only in the characters given in the generic definition but also in the colour pattern, it can be distinguished by the shorter, more broadly expanded, fan-shaped setae particularly on the head and pronotum. In *dammermanni* the postocellar setae are small with acute apices and the prothoracic epimeral setae about three times as long as broad apically.

PSALIDOTHrips Priesner

Psalidothrips Priesner, 1932: 61-62. Type-species: *P. amens* Priesner, by monotypy.

This genus was erected for the species *amens* from Java, which was based on a single female, and the author is grateful to Dr. Priesner for the loan of this holotype. The following definition of the genus is based on a comparison of *amens* with the two new species from the Solomon Islands described below, but the other four species in *Psalidothrips*, described by Hood (1955) from Belem, Brazil, have not been studied.

Slender, weakly sclerotized, bicoloured thrips. Head as broad as long, cheeks rounded, narrowed to base, eyes well developed; ventral surface with only one pair of long setae, arising between tentorial pits not at base of head; postocular setae long, close to eye, postocellars

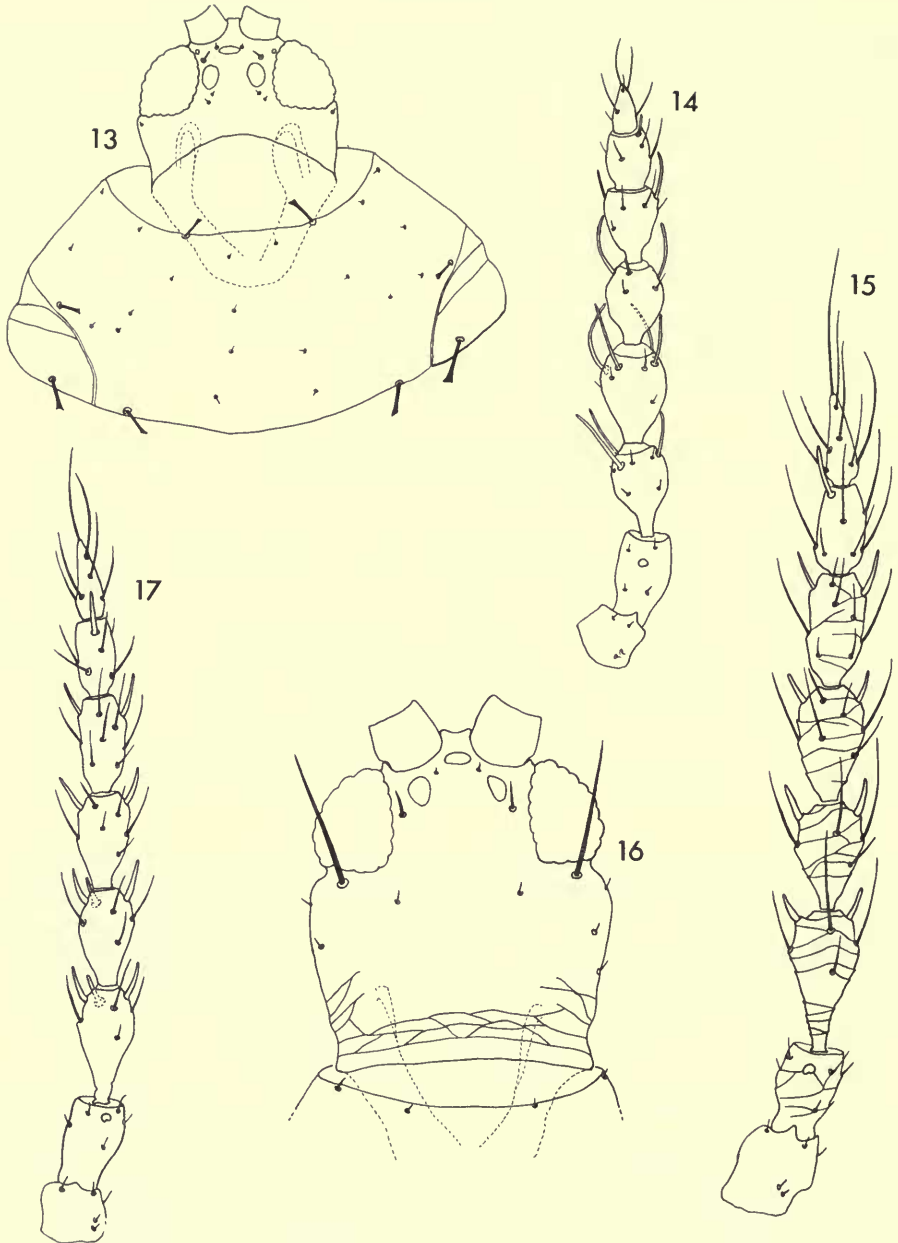
about as long as ocellar triangle ; maxillary stylets not deeply retracted into head, without maxillary bridge ; maxillary palps very small, scarcely longer than labial palps ; mouth cone short and rounded. Antennae eight-segmented ; sensorium on II near apex. Pronotum with anteromarginal and anteroangular setae minute, posteroangulars about twice as long as epimerals ; epimeral sutures complete ; mesopraesternum complete, praepectus absent with cuticular islets arranged linearly in a regular pattern. Meso- and metanotum faintly sculptured, without major setae ; ventral thoracic setae minute. Fore femora thickened in both sexes, fore tarsus unarmed in female, with stout tooth in male. Fore wing cilia widely spaced, distal half of wing parallel-sided without accessory cilia ; two pairs of small sub-basal wing setae, B₁ minute. Pelta not constant in shape, margin frequently broken up into cuticular islets. Tergites II-VII with two pairs of wing-retaining setae, these setae curved but not sigmoid ; B₁ and B₂ on IX almost as long as tube in both sexes ; terminal setae shorter than tube ; fustis of female short and weak. Sternal accessory setae less than 100 μ long, each sternite with less than six accessory setae ; sternite VIII of male with transverse glandular area ; sternite VI of male frequently with a pair of deeply reticulate areas.

Priesner originally placed this genus in the Haplothripini near to *Adraneothrips*. However the wing form of *Psalidothrips* is probably an adaptation to the leaf-litter habitat. The genus has subsequently been placed in both the Phlaeothripina and Mesothripina, but it is probably related to *Sagenothrips*, another Melanesian leaf-litter form, and should come into the Hoplothripina. Most Phlaeothripidae have a pair of long setae near the posterior ventral margin of the head, but in *Psalidothrips* these setae are short and there is a pair of long setae between the tentorial pits. The genus is also unusual in the small size of the maxillary palps and the anterior setae of the pronotum, as well as the few sternal accessory setae.

The three species in this genus known to the author may be distinguished by means of the following key. Unlike many fungus-feeding species of thrips, the two new species are remarkably constant in body size and the lengths of their major setae.

- 1 Antennal segments with lines of sculpture ; segments III and IV with two sense cones ; maxillary stylets subparallel, retracted about half way into head ; head, antennae, mesothorax and abdominal segment II brown, rest of body yellowish, male micropterous *grandis* sp. n. (p. 103)
- Antennal segments without sculpture ; III and IV with three sense cones, the ventral one smaller than the lateral ones ; maxillary stylets wide apart, V-shaped low in head ; abdominal segments shaded laterally, II not distinctly browner than other segments 2
- 2 Sense cones on antennal IV about two thirds as long as segment ; postocular and epimeral setae with apices expanded ; head brown ; male not known *amens* Priesner
- Antennal sense cones shorter, on IV about one half as long as segment ; major setae acute or softly rounded at apex ; head pale medially, deeply shaded between eyes and along cheeks ; male macropterous *minor* sp. n. (p. 103)

According to the descriptions given by Hood (1955) the four species from Brazil may be distinguished as follows ; *dissidens* and *umbraticus* have three sense cones on antennal III and four on IV, and *dissidens* is almost uniformly brown ; *retifer* has three sense cones on both III and IV but the head is reticulate all over ; *cancellatus* has two sense cones on III and IV as in *grandis* but the segments are apparently not reticulate and the sense cones are more than half as long as the segments.



FIGS. 13-17. Figs. 13 & 14. *Sophikotherips malaitae* : 13, Head and pronotum. 14, Left antenna. Figs. 15 & 16. *Psalidothrips grandis* : 15, Left antenna. 16, Head. Fig. 17. *Psalidothrips minor*, left antenna.

Psalidothrips grandis sp. n.

(Text-figs. 15 & 16)

♀ (macropterous). Colour yellow ; head, abdominal tergite II, anterolateral sclerites of mesothorax, and antennal segments brown, base of antennal III and distal half of II paler ; head sometimes pale at base ; mid and hind coxae, and sides of tube shaded ; fore wings shaded except at median constriction.

Head weakly sculptured at base (Text-fig. 16), ventral surface smooth ; antennal segments sculptured, lateral sense cones on III 13–16 μ , ventral sense cone not developed (Text-fig. 15). Anteroangular and anteromarginal setae of pronotum 6 μ long ; midlateral seta 50 μ , epimeral 30 μ , posteroangular 70–90 μ . Median setae of metanotum weak, less than 15 μ long, about 40 μ apart. Basal wing setae small, B₁ 6 μ , B₂ and B₃ 15–30 μ . Pelta broadly bell-shaped ; tergites very faintly sculptured ; tube rather strongly narrowed, about 130 μ long, 70 μ wide at base, 25 μ at apex.

Measurements in microns of holotype with range from five paratypes in parentheses. Body length 1850 (1750–1900). Hind tibia 195 (180–200). Fore wing 830 (730–900). Head, length 210 (195–) ; width 195 (180–). Pronotum, length 155 (145–160) ; width 260 (240–). Tergite IX, B₁ 135 (125–) ; B₂ 165 (145–). Tube length 130 (125–140). Antennal segments length 39 (–42) ; 39 (–42) ; 65 (–68) ; 52 (45–55) ; 52 (49–55) ; 55 (52–) ; 49 (45–52) ; 49 (45–52) ; terminal seta 70.

♂ (micropterous). Colour and chaetotaxy similar to female ; fore femora thicker than female, fore tarsal tooth more than two thirds as long as width of tarsus. Glandular area on abdominal sternite VIII 30 μ long extending across full width of sternite ; sternite VI with paired submedian areas of deeper reticulation sometimes present.

Measurements in microns of allotype. Body length 1500. Hind tibia 175. Fore wing 210. Head, length 190 ; width 160. Pronotum, length 155 ; width 230. Tergite IX, B₁ 120 ; B₂ 80. Tube length 100. Antennal segments 35 ; 35 ; 58 ; 45 ; 52 ; 52 ; 45 ; 45 ; terminal seta 60.

Holotype ♀. KOLOMBANGARA : North of Kuzi at 1000 feet, 6.ix.1965 (*P.N.L.*).

Allotype ♂, 12 ♀ and 7 ♂ paratypes taken with holotype.

Other material. KOLOMBANGARA : North of Kuzi at 250 feet, 12 ♀, 4 ♂ and 1 larva, 6.ix.1965 (*P.N.L.*). GUADALCANAL : Nuhu at 1000 feet, 1 ♀, 28.x.1965 (*P.N.L.*). VANGUNU : 1 ♀, 10.vi.1966 (*P.J.M.G.*).

Although the females of this species are macropterous, many specimens had the distal half of the fore wings broken. This condition was so common that it is possible the wings are broken naturally in the field.

In the larva the anterior margin of the pronotum bears very small setae as in the adult.

Psalidothrips minor sp. n.

(Text-fig. 17)

♀ (macropterous). Colour pale yellowish brown ; dark brown at anterior and lateral margins of head, and anterior and lateral margins of pterothorax ; antennae shaded brown, also anterior corners of abdominal tergites ; wings shaded except at median constriction, cilia dark.

Head almost without sculpture, very similar to *grandis* ; surface of antennal segments smooth (Text-fig. 17), ventral sense cone on III and IV about 10 μ long. Midlateral seta of pronotum weakly expanded, all other major setae acute or softly rounded at apex. Tergal sculpture weaker than in *grandis* ; tube less conical, about 115 μ long, 60 μ wide at base, 25 μ at apex.

Measurements in microns of holotype with range from five paratypes in parentheses. Body length 1750 (1550-1800). Hind tibia 175 (170-). Fore wing 730 (700-750). Head, length 170 (-180); width 165 (-175). Pronotum, length 135 (130-140); width 225 (210-230). Tergite IX, B₁ 100 (-115); B₂ 140 (130-). Tube length 115 (110-). Antennal segments length 30 (-32); 40; 58 (54-); 52 (45-); 49 (45-); 49 (45-52); 39 (42-); 42 (39-); terminal seta 50.

♂ (macropterous). Colour and chaetotaxy similar to female; fore femora thickened, fore tarsal tooth about two thirds as long as tarsal width. Glandular area on sternite VIII about 15 μ long, extending fully across width of sternite; sternite VI with a pair of submedian deeply reticulate areas; B₂ on tergite IX much stouter than B₁ at base.

Measurements in microns of allotype. Body length 1600. Hind tibia 175. Fore wing 700. Head, length 165; width 140. Pronotum, length 130; width 210. Tergite IX, B₁ 100; B₂ 90. Tube length 100. Antennal segments 26; 35; 55; 45; 49; 49; 35; 39; terminal seta 42.

Holotype ♀. GUADALCANAL: Mt. Austen, 21.iv.1965 (*P.J.M.G.*).

Allotype ♂ collected with holotype.

Other material. GUADALCANAL: Mt. Austen, 1 ♀, 8.ii.1966 (*P.J.M.G.*); Nuhu at 1000 feet, 1 ♀, 1 ♂, 28.x.1965 (*P.N.L.*). KOLOMBANGARA: ? locality, 3 ♀, 3 ♂, 9.vi.1965 (*P.J.M.G.*); North of Kuzi at 500 feet, in forest leaf-litter, 1 ♂, 6.ix.1965 (*P.N.L.*). WAGINNA: 11 ♀, 10 ♂ and 1 larva, 3.vii.1966 (*P.J.M.G.*). CHOISEUL: Malangona, 1 ♀, 8.iii.1964 (*P. Shanahan*) in Bishop Museum Collection.

This species is more closely related to *amens* Priesner, the type-species of the genus from Java, than to *grandis* with which it was collected at one site in the Solomon Islands.

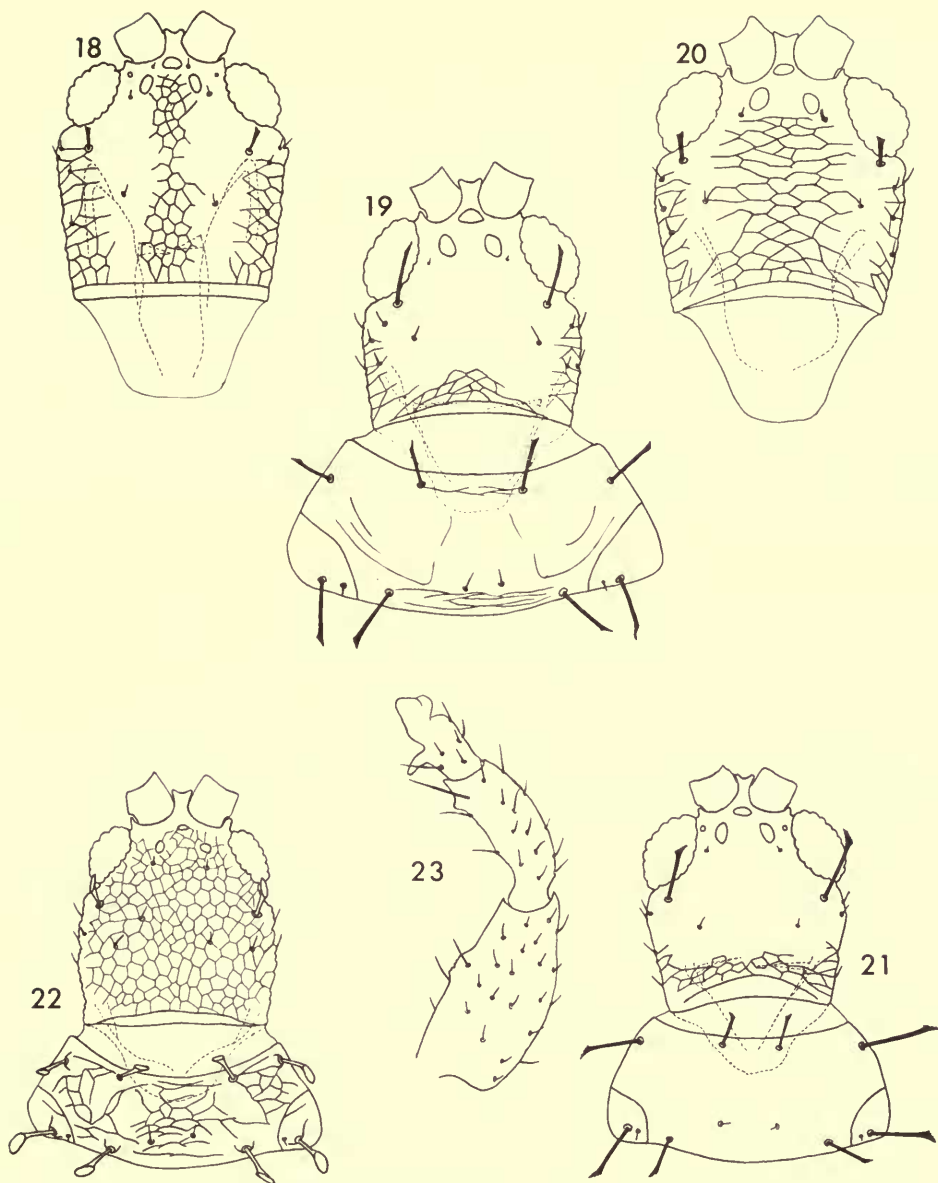
SOLOMONTHRIPS gen. n.

Type-species: *Solomonthrips greensladei* sp. n.

Small slender species, light brown or frequently yellowish with brown markings, metanotum and at least part of head reticulate. Usually macropterous but micropterous and hemimacropterous individuals found. Antennae eight-segmented, almost moniliform, VIII always distinct, usually constricted at base; two sense cones ventrolaterally on III and IV, sensorium on II near apex; apical seta on VIII very long, usually longer than VII + VIII. Eyes well developed, cheeks sharply incut behind eyes without major setae; vertex reticulate at least in part, postocular setae well developed; mouth cone short and rounded apically, maxillary palps small; stylets deeply or barely retracted into head, usually with maxillary bridge.

Pronotum transverse, weakly sculptured, epimeral sutures complete; only four pairs of major setae present, anteroangulars (? or midlaterals) absent, posteroangulars not close to epimeral sutures; major setae broadly expanded apically. Mesonotum reticulate, without major or elongate setae. Metanotum with elongate triangular band of reticulation, median setae not enlarged. Praepectus present, sometimes weak; probasisternum large and pigmented; mesopraesternum not small but weakly sclerotized. Fore femora moderately enlarged, sometimes with indistinct irregular hump on inner margin; fore tibiae unarmed in female; fore tarsi armed in both sexes. Fore wings weakly expanded at base, distal two thirds slender and parallel-sided; cilia widely separated except around apex, no duplicated cilia; third sub-basal wing seta distant from one and two.

Pelta reticulate, bell-shaped; tergites III to VIII with two pairs of wing-retaining setae, only one wing-retaining seta on tergite II; tergites laterally frequently with sculpture. Setae on tergite IX shorter than tube, B₁ and B₂ expanded apically; terminal cilia of tube short



FIGS. 18-23. Figs. 18-22. Heads of *Solomonthrips* species: 18, *intermedius*. 19, *greensladei*. 20, *striatus*. 21, *fimbrii*. 22, *setifer*. Fig. 23. Fore leg of *S. greensladei* male.

and weak. Male without glands on sternites; B_2 on tergite IX not reduced to a stout seta, little different from B_2 of the female.

Although superficially resembling both *Malacothrips* and *Adraneothrips*, this

new genus can be distinguished from them both by the presence of the praepectus. *Mystrothrips* is also similar but has three sense cones on the third and fourth antennal segments, and has the lateral mesonotal setae well developed. The thoracic chaetotaxy of *Solomonthrips* is unique and moreover the development of wing-retaining setae on the eighth tergite is unusual. However the genus is probably derived from a genus like *Sagenothrips*. The author has examined the unique holotype of *Sagenothrips gracilicornis* through the courtesy of Dr. Priesner, and this specimen has no major mesonotal setae and the third sub-basal wing seta is more than twice its length from the second. The pronotal anteroangular and midlateral setae are very reduced, less than 10μ long. Contrary to Stannard (1955 : 79) the anteromarginal setae are present, 16μ long, the right hand one being displaced submarginally and the left hand one partially obscured by the pigment of this imperfectly cleared individual. Although the heads of both genera are more or less reticulate, neither *Sagenothrips* nor *Solomonthrips* belong in the Glyptothripini. The reticulation of the body and the weak structure of the wings are probably functional adaptations to the leaf-litter habitat.

KEY TO THE SPECIES OF *SOLOMONTHRIPS*

- 1 Tergite VIII with B_1 not large and expanded as on tergite VII but acute and curved, closely parallel to marginal wing-retaining setae (Text-fig. 24) ; fore femur in both sexes with irregular hump on inner margin (Text-fig. 23) ; major males with subapical fore tibial spur (male not known in *striatus*) ; two pairs of long ventral interocular setae, as long as antennal III 2
- Tergite VIII with chaetotaxy closely similar to tergite VII, B_1 major straight with expanded apex (Text-fig. 25) ; fore femur without an irregular hump on inner margin, male without a subapical fore tibial spur ; ventral interocular setae not as long as antennal III although sometimes longer than remaining ventral head setae 3
- 2 Sternal reticulations on V-VII anterior to median row of accessory setae with internal longitudinal striations (Text-fig. 30) ; median area of vertex between postocular setae clearly reticulate (Text-fig. 20) ; antennal III much paler than IV, head without median longitudinal dark stripe *striatus* sp. n. (p. 113)
- Sternal reticulations without internal longitudinal striations ; median area of vertex between postocular setae without sculpture or with very faint reticulations (Text-fig. 19) ; antennal III not much paler than IV, head usually with median longitudinal dark stripe *greensladei* sp. n. (p. 107)
- 3 Antennals III and IV with dorsal setae expanded apically (Text-fig. 27) ; head fully reticulate both dorsally and ventrally (Text-fig. 22) ; ventral interocular setae no longer than remaining ventral head setae ; probasisternum fused into single plate ; abdominal sternites with more than twelve long accessory setae ; major body setae very broadly expanded, lateral abdominals almost as broad as long ; maxillary stylets barely retracted into head, maxillary bridge absent *setifer* sp. n. (p. 111)
- Antennal segments with major setae acute ; head not fully reticulate ; ventral interocular setae longer than remaining ventral head setae ; probasisternal plates separate ; abdominal sternites with accessory setae small, less than a quarter as long as sternal marginals ; lateral abdominal setae longer than width of apical expansion 4
- 4 Upper surface of head with median longitudinal band of reticulation (Text-fig. 18) ; stylets deeply retracted into head, maxillary bridge about one third of head

width ; major setae short with expanded smooth apex, basal wing setae less than half basal width of fore wing ; tergite IX setae B_1 rather short, two thirds of B_2 .

intermedius sp. n. (p. 110)

- Upper surface of head not sculptured between postocular setae but with transverse band of reticulations at base (Text-fig. 21) ; stylets low in head, maxillary bridge more than half of head width ; major setae long, expanded apices fimbriate, basal wing setae more than half basal width of fore wing ; tergite IX setae B_1 more than two thirds as long as B_2 *fimbrii* sp. n. (p. 110)

The development of the major seta B_1 on tergite eight as an additional wing-retaining seta in *greensladei* and *striatus* is not always complete. Although weak and sigmoidal in all the specimens studied, this seta in a few individuals is very weakly expanded or "soft" at the apex instead of acute. The characters given in the key suggest that *setifer* is quite distinct from the other species, but it appears to be merely an extreme specialization within the group. The probasisternal plates are large and heavily pigmented in the other species and so their fusion in *setifer* is not particularly surprising. Similarly the placement of the maxillary stylets and the extent of the reticulation on the vertex is variable between the other species and the condition in *setifer* can be regarded conveniently as an extreme of a series.

Solomonthrips greensladei sp. n.

(Text-figs. 19, 23, 24, 26, 34, 35)

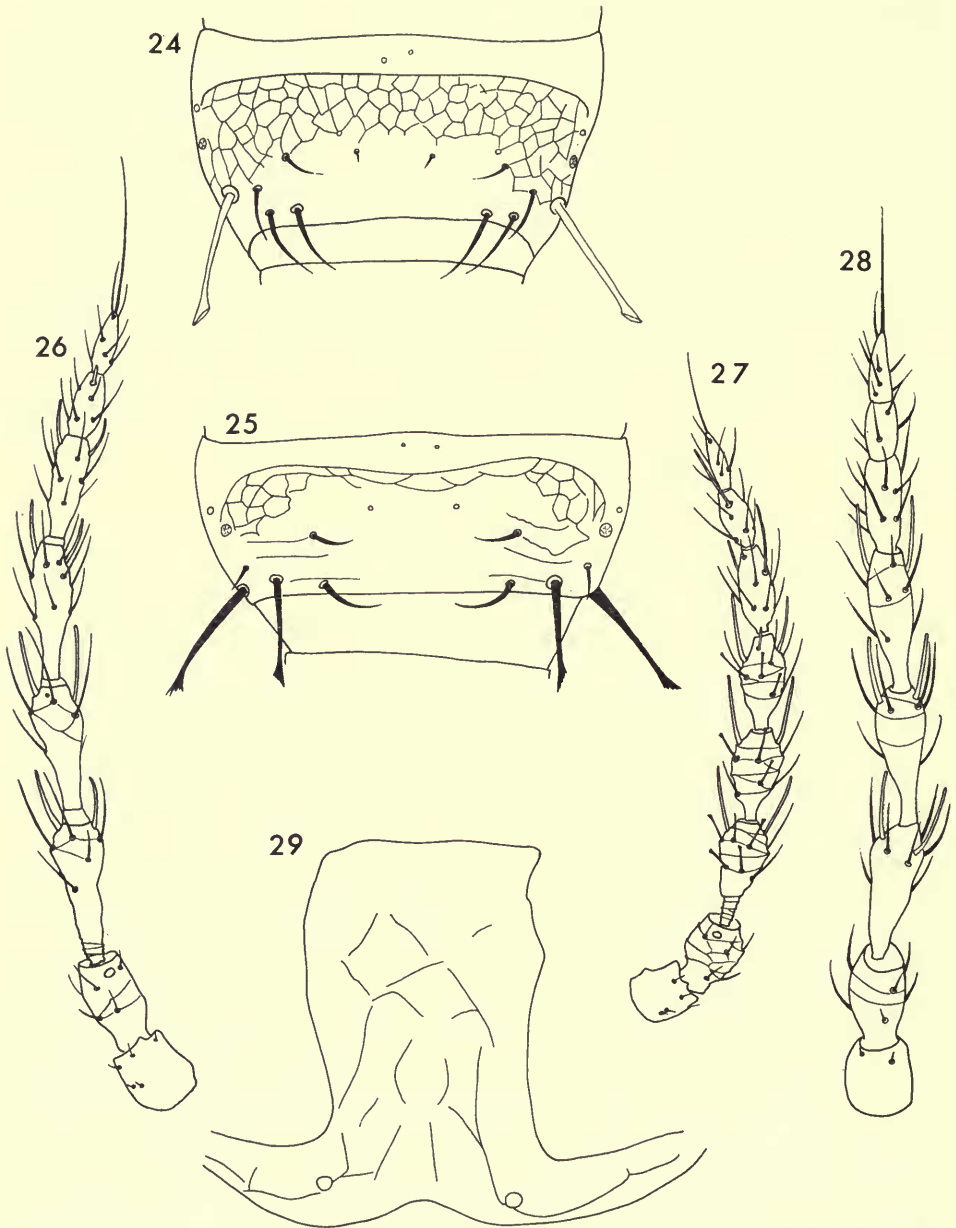
The specimens on which this species is described are variable both in colour and the lengths of some major setae. These specimens were collected at several different sites in the Solomon Islands and although the two main colour forms were collected together on both Guadalcanal and Kolombangara there is a possibility that local populations may eventually be found to be specifically distinct. For this reason a male has been selected as holotype, and this individual is weakly oedymorous and has the aedeagus exposed (Text-fig. 35).

♂ (macropterous). Colour yellowish, thoracic sternites and coxae brown, head with lateral margins and median longitudinal stripe brown ; antennae light brown, darkening distally ; fore and hind wings and major setae shaded ; mid and hind tarsi yellow, rest of legs variable pale brown ; abdominal segments weakly shaded posterolaterally, tube darker apically.

Head reticulate at base, weakly sculptured medially (Text-fig. 19) ; maxillary stylets low ; antennals III, IV and V with two ventrolateral sense cones, a small dorsal sense cone on V (Text-fig. 26). Pronotum wider than long, weakly sculptured medially (Text-fig. 19), epimeral sutures complete. Fore femora weakly incrassate, interior margin with indistinct rugose hump, fore tibia with apex thickened or with a spur in major males, fore tarsus with stout claw (Text-fig. 23). Mesonotum reticulate near posterior margin, without long or expanded setae. Metanotum reticulate medially with one pair of weak setae near anterior margin. Fore wing typical of genus.

Pelta longer than wide, weakly reticulate (Text-fig. 34) ; tergites III-VIII with two pairs of wing-retaining setae, the posterior pair much stouter than the anterior pair on anterior segments ; major seta B_1 on tergite VIII fine and curved, usually with acute apex, parallel to wing-retaining setae (Text-fig. 24) ; B_1 on tergites II-VII with broadly expanded assymmetric apex, sculpture anterior to B_1 with stout dentate microtrichia, tergites weakly reticulate medially ; B_1 on IX shorter than or sub-equal to B_2 with moderately expanded apex, B_2

acute; tube with faint sculpture like overlapping tiles, terminal setae shorter than tube. Sternites transversely reticulate anterior to accessory setae, reticules sometimes with one or



FIGS. 24-29. *Solomonthrips* species. Figs. 24 & 25. Tergite VIII: 24, *greensladei*. 25, *fimbrii*. Figs. 26-28. Antennae: 26, *greensladei*. 27, *setifer*. 28, *fimbrii*. Fig. 29. Pelta of *fimbrii*.

two faint longitudinal markings; median sternal setae arise submarginally, about three times as long as accessory setae.

Measurements in microns of holotype with range from three paratypes in parentheses. Body length 1370 (1130-1500). Hind tibia 120 (105-145). Fore wing 570 (480-700). Head, length 150 (130-175); width 140 (125-170); postocular seta 45 (39-65). Pronotum, length 97 (74-105); width 240 (190-255); epimeral seta 32 (-65). Tergite IX, B₁ 72 (65-95); B₂ 90 (80-110). Tube, length 97 (80-110); terminal setae 60 (50-80). Antennal segments length 32 (29-32); 39 (-45); 68 (58-75); 55 (48-68); 61 (55-71); 50 (45-); 32 (29-); 32 (29-); terminal seta 65 (58-97).

♀ (macropterous). Colour similar to male, but abdomen typically with sternite V as dark as thoracic sternites; several females have abdomen brownish yellow, as in typical males without a dark band on segment V; antennae variable, usually with apex of III not much paler than IV. Chaetotaxy and sculpture of female very similar to male, fore tibiae not armed.

Measurements in microns of allotype with range from four paratypes in parentheses. Body length 1650 (1400-1780). Hind tibia 175 (145-180). Fore wing 720 (570-). Head, length 160 (145-180); width 155 (145-170); postocular seta 45 (38-49). Pronotum, length 105 (80-120); width 225 (205-250); epimeral seta 35 (32-42). Tergite IX, B₁ 110 (84-); B₂ 115 (97-). Tube, length 120 (105-125); terminal setae 70 (58-74). Antennal segments length 39 (29-); 45 (39-); 77 (68-); 74 (64-); 58 (52-); 39 (35-43); 35 (32-39); terminal seta 90 (80).

Holotype ♂. GUADALCANAL: Mt. Gallego at 2500 feet, 12.vii.1965 (*P.N.L.*).

Allotype ♀ and paratype ♂ taken with holotype.

Other material. GUADALCANAL: Umasani River, forest litter, 2 ♀, 1 ♂, 5.vii.1965 (*P.N.L.*); Nuhu, 1 ♂, 31.x.1965 (*P.N.L.*); Mt. Austen, forest litter, 1 ♀, 19.xi.1963 (*P.J.M.G.*); Mt. Austen, beaten from sticks on ground, 5 ♀ and 1 larva, 11.ii.1966 (*P.J.M.G.*); Mt. Popanamisiu, montane forest litter at 5000 feet, 1 ♂, x.1965 (*P.J.M.G.*); Malekuna, forest soil, 1 ♂, 9.iv.1966 (*P.J.M.G.*). MALAITA: Puamawara, forest soil, 1 ♂, 11.vii.1966 (*P.J.M.G.*). NEW GEORGIA: Canonygu, forest litter, 1 ♀, 18.iv.1966 (*P.J.M.G.*); Barakoma, forest litter near airstrip, 1 ♀, 6.v.1966 (*P.J.M.G.*). RENDOVA: 1 ♀, 6.v.1966 (*P.J.M.G.*). GIZO: 1 ♀, 1 ♂, 11.ix.1965 (*P.N.L.*). KOLOMBANGARA: near Kuzi; forest litter on coral limestone, 2 ♀, 8.ix.1965 (*P.N.L.*); litter in mossy wood at 1500 feet, 1 ♀, 4.ix.1965 (*P.N.L.*); valley litter at 50 feet, 8.ix.1965 (*P.N.L.*); forest litter at 1000 feet, 1 ♀, 1 ♂ and 3 larvae, 6.ix.1965 (*P.N.L.*).

The following material was mounted from tubes in the Bishop Museum, Hawaii. CHOISEUL: Kitipi River at 80 m, 9 ♀, 5 ♂ and 7 larvae, 20.iii.1964, and Malangona, 1 ♂, 4.iii.1964 (*P. Shanahan*). KOLOMBANGARA: Pepele at 30 m, 1 ♂, 1 ♀, 11.ii.1964, and 1 ♀, 13.ii.1964 (*P. Shanahan*); Iriri at 5 m, 2 ♀, 1 ♂, 4.vii.1964 (*J. Sedlacek*). MALAITA: Dala at 30 m, 1 ♂ and 2 larvae, 14.vi.1964 (*J. Sedlacek*). GUADALCANAL: Gold Ridge at 500 m, 1 ♀, 24.vi.1956 (*J. L. Gressitt*).

Larvae taken with this species have four tubercles (or two bifid tubercles) on the head just underneath the antennae. Larvae taken with *striatus* have similar tubercles but the *greensladei* larvae have a smooth head and pronotal shield, and abdominal segment nine is brown only in the distal half.

Solomonthrips fimbrii sp. n.

(Text-figs. 21, 25, 28 & 29)

♂ (macropterous). Colour light brown, antennals I and II and bases of III and IV yellowish ; mid and hind tarsi and median half of tube pale ; fore wings uniformly shaded.

Head reticulate basally (Text-fig. 21), maxillary stylets low in head ; postocular and other major setae with expanded fringed apices ; antennae shorter than in *greensladei* (Text-fig. 28)

Pronotum similar to *greensladei* but epimeral and midlateral setae twice as long as antero-marginals and posteroangulars ; praepectus and mesopraesternum weak ; fore femora without a tubercle, fore tarsi with a stout claw. Mesonotum as in *greensladei*, metanotum broadly reticulate in median area. Fore wings typical of genus, sub-basal setae rather long.

Pelta with basal portion rather broad (Text-fig. 29) ; tergite VIII with two pairs of wing-retaining setae, B₁ broadly expanded apically (Text-fig. 25). Tergal sculpture rather weak, sternites without reticulations.

Measurements in microns of holotype with one paratype in parentheses. Body length 1150 (900). Hind tibia 130 (115). Fore wing 500 (450). Head, length 135 (125) ; width 125 (120) ; postocular seta 48 (39). Pronotum, length 84 (?) ; width 175 (160) ; epimeral seta 45 (35). Tergite IX, B₁ 45 (52) ; B₂ 60 (58). Tube, length 87 (72) ; terminal seta 39 (35). Antennal segments length, 19 (23) ; 32 (32) ; 58 (52) ; 55 (48) ; 55 (48) ; 48 (42) ; 35 (26) ; 32 (29) ; terminal seta 64 (58).

♀ (macropterous). Colour of allotype and ♀ from San Cristoval similar to but darker than holotype ; 2 ♀ from Guadalcanal dark brown with brown tube. Sculpture and chaetotaxy very similar to male, pronotum more clearly sculptured than in *greensladei*.

Measurements in microns of allotype with one paratype in parentheses. Body length 1350 (1300). Hind tibia 140 (140). Fore wing 570 (550). Head, length 130 (130) ; width 130 (130) ; postocular seta 49 (49). Pronotum, length 80 (80) ; width 195 (195) ; epimeral seta 45 (45). Tergite IX, B₁ 71 (71) ; B₂ 77 (77). Tube, length 97 (97) ; terminal seta 48 (48). Antennal segments length 26 (26) ; 35 (35) ; 61 (61) ; 58 (55) ; 55 (55) ; 48 (45) ; 32 (29) ; 35 (32) ; terminal seta 72 (64).

Holotype ♂. GUADALCANAL : Mt. Austen, forest litter, 21.iv.1965 (*P.J.M.G.*).

Allotype ♀ with same data as holotype.

Other material. GUADALCANAL : Mt. Austen, forest litter, 2 ♀, 8.ii.1966 (*P.J.M.G.*) ; litter in river forest hollow, 1 ♂, 5.vii.1965 (*P.N.L.*). SAN CRISTOVAL : near Wainoni, litter on ridge at 1000 feet, 1 ♀, 8.viii.1965 (*P.N.L.*). CHOISEUL : Kitipi River, 1 ♀, 2 ♂, 20.iii.1964 (*P. Shanahan*) in Bishop Museum Collection.

The two dark brown females with the unicolorous brown tube referred to above do not appear to differ in structure from the other specimens although the colour difference is quite distinctive. The extent of the sculptured band near the posterior margin of the vertex is not identical in any of the specimens.

Solomonthrips intermedius sp. n.

(Text-fig. 18)

♂ (macropterous). Colour brown, antennals II and III, hind tarsi, and median area of tergites yellow, also a pale longitudinal stripe behind each eye on vertex ; fore wings shaded.

Head reticulate with a pale unsculptured longitudinal stripe behind each eye (Text-fig. 18) ; maxillary stylets retracted almost as far as eyes ; antennae slender, sense cones lateral on III and IV. Pronotum irregularly sculptured, major setae short ; fore tarsal claw recurved but small ; meso- and metanotum similar to *greensladei* ; B₃ on fore wing more than five times its

length from B₂. Pelta stout basally as in *fimbrii*; abdominal tergites reticulate antero-medially, with dentate microtrichia laterally; tergite VIII with two pairs of wing-retaining setae, B₁ with moderately expanded rounded apex as other major setae. Sternal accessory setae very small, less than one fifth as long as sternal marginals.

Measurements in microns of holotype. Body length 1250. Hind tibia 130. Fore wing 570. Head, length 160; width 135; postocular seta 17. Pronotum, length 74; width 190; epimeral seta 22. Tergite IX, B₁ 45; B₂ 65. Tube, length 105; terminal setae 55. Antennal segments length 26; 35; 64; 64; 64; 48; 29; 32; terminal seta 85.

♀ (macropterous). Rather paler than male but sculpture and chaetotaxy very similar.

Measurements of allotype. Body length 1400. Hind tibia 145. Fore wing 610. Head, length 160; width 145; postocular seta 17. Pronotum, length 71; width 210; epimeral seta 26. Tergite IX, B₁ 45; B₂ 71. Tube, length 110; terminal setae 52. Antennal segments length 29; 32; 68; 64; 64; 55; 26; 29; terminal seta 87.

Holotype ♂. GUADALCANAL: Mt. Popanamisiu, montane litter at 5000 feet, x.1965 (*P.J.M.G.*).

Allotype ♀ with same data as holotype.

Solomonthrips setifer sp. n.

(Text-figs. 22, 27, 32 & 33)

♂ (micropterous). Colour light brown, femora, tibiae, tube and lateral margins of head darker; base of antennal III yellow, and a yellow longitudinal stripe behind each eye.

Head fully reticulate (Text-fig. 22), ventral head setae all subequal; maxillary stylets barely retracted into head, bridge not visible; antennae rather short, dorsal setae on III, IV and V blunt or expanded (Text-fig. 27).

Pronotum sculptured (Text-fig. 22), probasisternal plates fused medially; fore tarsal claw slender as in *intermedius*. Mesonotum as in *greensladei*; metanotum short, fore wings very short but with three basal setae; mesosternum with about 12 pairs of setae, metasternum with about 24 pairs of setae.

Pelta rather broad, probably foreshortened as a result of microptery (Text-fig. 33); tergites with sculpture well developed, lateral setae very short and broadly expanded (Text-fig. 32); tergite VIII with two pairs of wing-retaining setae, B₁ short with broadly expanded apex; tergite IX with B₁ probably expanded and assymmetric at apex; seta between B₁ and B₂ more than half as long as B₁. Sternites transversely reticulate over whole area posterior to antecostal ridge, with about twelve accessory setae each about equal in length to sternal marginal setae.

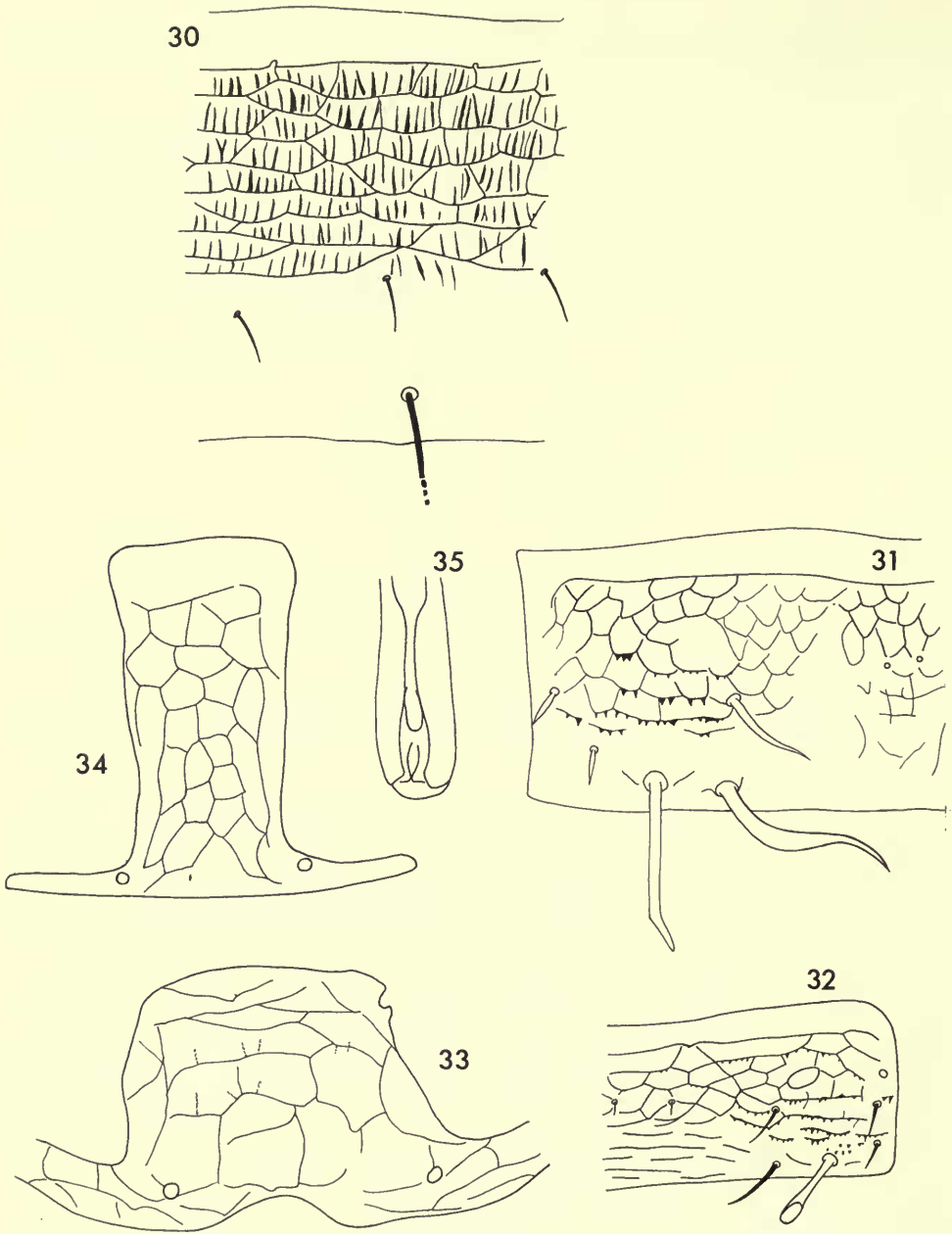
Measurements in microns of holotype. Body length 1050. Hind tibia 120. Fore wing 115. Head, length 145; width 125; postocular seta 26. Pronotum, length 64; width 185; epimeral seta 26. Tergite IX, B₁ 58; B₂ 68. Tube, length 74; terminal setae 42. Antennal segments length 26; 35; 55; 45; 45; 45; 32; 29; terminal seta 48.

♀ (macropterous). Colour similar to male; fore wing weakly shaded, dark only around sub-basal setae at anterior margin. Sculpture and chaetotaxy very similar to male; probasisternal plates fused medially; metanotum reticulate; pelta rather broader than similar species; fore wing thickened on anterior margin between sub-basal setae. Sternal marginal setae less than 1.5 times as long as accessory setae.

Measurements in microns of allotype. Body length 1300. Hind tibia 145. Fore wing 570. Head, length 160; width 140; postocular seta 26. Pronotum, length 74; width 195; epimeral seta 29. Tergite IX, B₁ 74; B₂ 90. Tube, length 100; terminal setae 55. Antennal segments length 32; 42; 58; 52; 55; 48; 35; 32; terminal seta 48.

Holotype ♂. WAGINNA: forest litter, 3.vii.1966 (*P.J.M.G.*).

Allotype ♀ collected with holotype.



FIGS. 30-35. *Solomonthrips* species. FIGS. 30 & 31. *striatus*: 30, Sternite VI. 31, Tergite IV. FIGS. 32 & 33. *setifer*: 32, Tergite V. 33, Pelta. FIGS. 34 & 35. *green-sladei*: 34, Pelta. 35, Aedeagus tip.

***Solomonthrips striatus* sp. n.**

(Text-figs. 20, 30 & 31)

♀ (macropterous). Colour yellowish, antennals IV–VIII dark brown ; sternite VI and tergites VI and VII with brown markings, thoracic sternites and tube apex brown ; fore wings shaded with median area paler ; major setae dark.

Head reticulate (Text-fig. 20), maxillary stylets retracted half way into head ; antennae very similar to *greensladei*. Thorax and appendages, and abdominal sculpture and chaetotaxy (Text-fig. 31) similar to *greensladei* ; anterior half of sternites V–VII with numerous longitudinal striations within the reticles (Text-fig. 30).

Measurements in microns of holotype. Body length 1700. Hind tibia 160. Fore wing 700. Head, length 160 ; width 160 ; postocular seta 28. Pronotum, length 100 ; width 225 ; epimeral seta 29. Tergite IX, B₁ 103 ; B₂ 110. Tube, length 205 ; terminal setae 80. Antennal segments length 35 ; 42 ; 80 ; 80 ; 74 ; 55 ; 35 ; 35 ; terminal seta 80.

♀ (hemimacropterous). Very similar to macropterous female but darker, tube brown and head shaded medially ; fore wing 550µ long, without cilia.

Holotype ♀. SAN CRISTOVAL : near Wainoni, in leaf-litter on ridge at 1000 feet, 8.viii.1965 (*P.N.L.*).

Paratype ♀ hemimacropterous and 3 larvae, SAN CRISTOVAL : 6 miles S.E. of Wainoni, in moss-forest litter at 2325 feet, 3.viii.1965 (*P.N.L.*).

This species is very similar to *greensladei* although the sternal reticulations are apparently quite distinctive. These striations may not be evident in specimens that have not been fully cleared however.

Larvae taken with this species are very similar to larvae taken with *greensladei* but have abdominal segment nine all brown, the head and pronotal shield bear minute microtrichia, and the major setae are shorter and more broadly expanded at the apex.

***SOPHIKOTHRIPS* gen. n.**

Type-species : *Sophiokthrips malaitae* sp. n.

Head small, broader than long ; eyes large ; postocular setae absent ; stylets retracted into base of head ; antennae eight-segmented, III with three sense cones, IV with four. Pronotum twice as long and twice as broad as head ; praepectus very weak, mesopraesternum absent ; fore tarsus with tooth ; fore wing without accessory cilia ; major setae short, apices expanded. Pelta divided into a small dark anterior portion and a transverse poorly defined posterior sclerite ; sternites with no accessory setae ; tergites with one pair of straight wing-retaining setae ; tube as long as head, apical setae shorter.

Nine species have been described in the genus *Sophiokthrips* Hood, and some authors place *Nanokthrips* Faure with three species and *Zaxenokthrips* Crawford with one species in synonymy with this genus. Seven of the *Sophiokthrips* species were described as having two long dorsolateral sense cones on antennal segments three and four, although both *bicolor* and *vorticokus* apparently have only one sense cone on segment three. The species included in *Zaxenokthrips* and *Nanokthrips* are described as having one sense cone on segment three and two on four, and these sense cones are shorter than those found in the other species. Eleven of these thirteen

species have well developed interocellar setae and a laterally displaced stout postocular seta ; however *S. vorticosus* is described as having small postocular and interocellar setae, and *N. breviceps* is figured as having three small pairs of postocular setae. The small head and wide pronotum may be an adaptation to the leaf-litter habitat. The new species described below, although similar to this group, has three long sense cones on antennal segment three and four on segment four, no postocular setae except a minute one on the cheek, and moreover the maxillary stylets are not restricted to the mouth cone.

***Sophikothrips malaitae* sp. n.**

(Text-figs. 13 & 14)

♀ (macropterous). Colour, head, thorax and anterior half of pelta brown, rest of abdomen yellow with apex of tube shaded ; mid and hind femora and tibiae shaded brown medially, fore tibiae shaded along external margins, fore femora shaded at base ; antennals I and II yellow, III-VI pale basally and shaded at least in apical half, VII and VIII brown ; major setae pale ; fore wing shaded in basal third, pale distally. Body weakly sclerotized with only very faint indications of sculpture.

Head small, broader than long, eyes well developed (Text-fig. 13) ; stylets retracted into base of head, mouth cone rounded, maxillary palps well developed ; no postocular setae, interocellars moderate. Antennae eight-segmented (Text-fig. 14), sensorium on II in distal half ; three sense cones on III, four on IV, two on V and VI.

Pronotum very broad, anteroangular setae not developed, other major setae rather small (Text-fig. 13) ; epimeral sutures complete ; praepectus weakly indicated by fusion of several chitinous islets, gular sclerite anterior to praepectus well developed ; probasisternum broad, spinasternum and mesopraesternum absent ; fore femora broader than head length, fore tibia not armed, fore tarsi with moderate curved tooth at inner apical margin. Mesonotum without major setae ; metanotum broader than long, median setae fine, 30μ long. Fore wing bent through an angle of about 5° in basal third, almost parallel-sided, cilia widely spaced except around apex, sub-basal wing setae expanded, 16μ long.

Pelta divided into an irregularly oval anterior portion and a very weakly sclerotized, apparently dumb-bell shaped posterior portion ; wing-retaining setae on tergites III-VII strong, almost straight, on tergite VIII very weak ; submedian tergal setae minute (3μ) ; tergal seta B_1 with expanded rounded apex, two thirds as long as wing-retaining seta ; lateral tergal setae not enlarged ; B_1 and B_2 on tergite IX weakly expanded at apex ; sternites without accessory setae.

Measurements in microns of holotype. Body length 700. Fore wing 450. Head, length 70 ; width 130 ; maxillary palp 26. Pronotum, length 130 ; width 320 ; epimeral seta 26. Tergite IV, wing-retaining seta 45 ; seta B_1 32. Tergite IX B_1 29. Tube, length 65 ; terminal seta 50. Antennal segments 22 ; 32 ; 39 ; 39 ; 32 ; 29 ; 25 ; 23.

Holotype ♀. MALAITA : Givarin, 24.i.1965 (*P.J.M.G.*).

***Tolmetothrips granti* sp. n.**

(Text-figs. 36 & 37)

♀ (macropterous). Colour brown, head and particularly tube dark brown ; all tibiae and tarsi yellow ; antennals I and VIII dark brown, VII and base of II paler, apex of II and III-VI yellow, or VI shaded brown ; the yellow on legs and antennae is a rich golden yellow, not a bright citron-yellow ; major setae shaded but not dark except at apex of tube ; fore wings

deeply shaded in distal two thirds except for a pale longitudinal stripe near the posterior margin, cilia dark.

Head about as wide as long, eyes not directed laterally and rather smaller ventrally than dorsally (Text-fig. 36) ; cheeks project behind eyes, with several pairs of small setae ; dorsal surface reticulate, postocular setae long, 100μ in holotype ; ventral surface of head without sculpture, no long setae between eyes or near posterior margin, one pair of long setae just posterior to tentorial pits ; maxillary stylets retracted as far as eyes, approaching each other in middle of head, maxillary guides well developed ; mouth cone broadly rounded, maxillary palps about 50μ long. Antennae eight-segmented, VIII weakly constricted at base but without a basal neck (Text-fig. 37) ; sensorium on II in apical half of segment ; one sense cone on III, three on IV, two (+ one) on V and VI, but the two external sense cones on IV frequently replaced by one larger cone.

Pronotum broad, at least anterior half reticulate, epimeral sutures complete (Text-fig. 36) ; all five pairs of major setae well developed (on holotype, AM 42μ ; AA 60μ ; ML 65μ ; Ep 100μ ; PA 80μ). Praepectus absent, mesopraesternum reduced, frequently absent medially. Mesonotum reticulate, lateral setae about 50μ long with expanded apex. Metanotum reticulate, median setae acute, 20μ long, 60μ apart and 70μ from anterior margin of sclerite. Fore femora weakly expanded, tibiae and tarsi unarmed ; mid and hind tibiae with a stout apical seta on external margin. Fore wing almost evenly wide, accessory cilia variable 5-10 ; three sub-basal setae in straight line, about 70 - 80μ long with expanded apices.

Pelta bell-shaped but posterior flange broad. Tergites reticulate laterally, lines of sculpture bear dentate microtrichia ; II-VII with two pairs of sigmoid wing-retaining setae, anterior pair only half as long as posterior pair ; marginal seta B_1 long, about 100μ ; tergite IX B_1 and B_2 with expanded apices, accessory setae small ; tube weakly constricted in basal third, apical setae rather short ; fustis very reduced. Sternites not sculptured, with a median transverse row of 7-10 accessory setae 20μ long.

Measurements in microns of holotype. Body length 2500. Hind tibia 240. Fore wing 980. Head, length 225 ; width 220. Pronotum, length 170 ; width 350. Tergite IX, B_1 145 ; B_2 140. Tube, length 225 ; basal width 98 ; apical width 49 ; longest terminal setae 160.

♂ (macropterous). Colour, sculpture and chaetotaxy very similar to female ; fore tarsus with a stout median tooth more than one third of tarsal width long ; tergite IX seta B_2 very short and stout with a broad round apex ; sternite VIII with an irregular oval glandular area anterior to accessory setae, about 100μ wide.

Measurements in microns of allotype. Body length 2200. Hind tibia 200. Fore wing 750. Head, length 190 ; width 195. Pronotum, length 160 ; width 320. Tergite IX, B_1 160 ; B_2 40. Tube, length 195 ; basal width 100 ; apical width 50 ; longest terminal seta 160.

Holotype ♀. SAN CRISTOVAL : confluence of Warahito and Pogato Rivers, from a convoluted (? leaf) gall, six inches in diameter, on a liana hanging from a banyan, 24.vii.1965 (*J. Grant*).

Allotype ♂ and numerous specimens of both sexes and immature stages taken with the holotype (69 ♀♀ and 16 ♂♂ mounted on slides).

The gall in which this species was collected was spherical, about six inches in diameter, composed of a solid mass of highly convoluted non-woody tissue. This is apparently the largest gall caused by thrips which has been recorded. Only one species has been found in the gall but there may be 10,000 individuals in this single colony. The body size was found to be remarkably constant.

The leaf-feeding Phlaeothripinae of the Melanesian region are poorly known and the generic classification of this group is rather difficult to interpret. The type-species of *Eothrips* is not known to the present author but *annulicornis* Karny has

been studied and this genus apparently is distinct on account of the striate metanotum, long sense cones, and unarmed fore tarsi of the male. The new species *granti* cannot be placed in *Teuchothrips* or *Gynaikothrips* (*sensu strictu*) on account of the short head and reduced eyes, and moreover the short-headed *Gynaikothrips citritibia* Moulton, 1940 from New Britain should be placed in *Eothrips* (**comb. n.**). In *citritibia*, of which the author has recently studied the holotype and allotype, the sense cones on antennals III and IV are three quarters as long as the segments, and the fore tarsus of the male does not have a tooth. Similarly *granti* cannot be placed in *Eugynothrips* as the species of that genus have long sense cones and short anterior pronotal setae.

The antennae, the sculpture and the chaetotaxy of *granti* are very similar to *smilacis* Priesner, which is a common species, rolling the leaves of a climbing plant *Smilax australis* in Eastern Australia. This is the only species at present placed in the genus *Tolmetothrips* Priesner, 1953. In *smilacis* the maxillary stylets are wide apart, low in the head and the eyes are not so reduced as in *granti*.

Priesner (1960) places the leaf-feeding, gall-forming species of the *Gynaikothrips*/*Teuchothrips*/*Liothrips* complex in the same subtribe as the fungus-feeding species of *Hoplothrips*. In the opinion of the present author, *Hoplothrips* can be distinguished from the leaf-feeding forms not only by its biology but also by the greater number of sense cones on the third antennal segment and the constricted neck at the base of segment eight. In these respects this genus is similar to the genera around *Hoplandrothrips*, and *Hoplothrips* is probably a reduced and highly successful offshoot from the fungus-feeding Phlaeothripina.

MEGATHRIPINAE

Atractothrips solomoni sp. n.

(Text-figs. 38, 39 & 43)

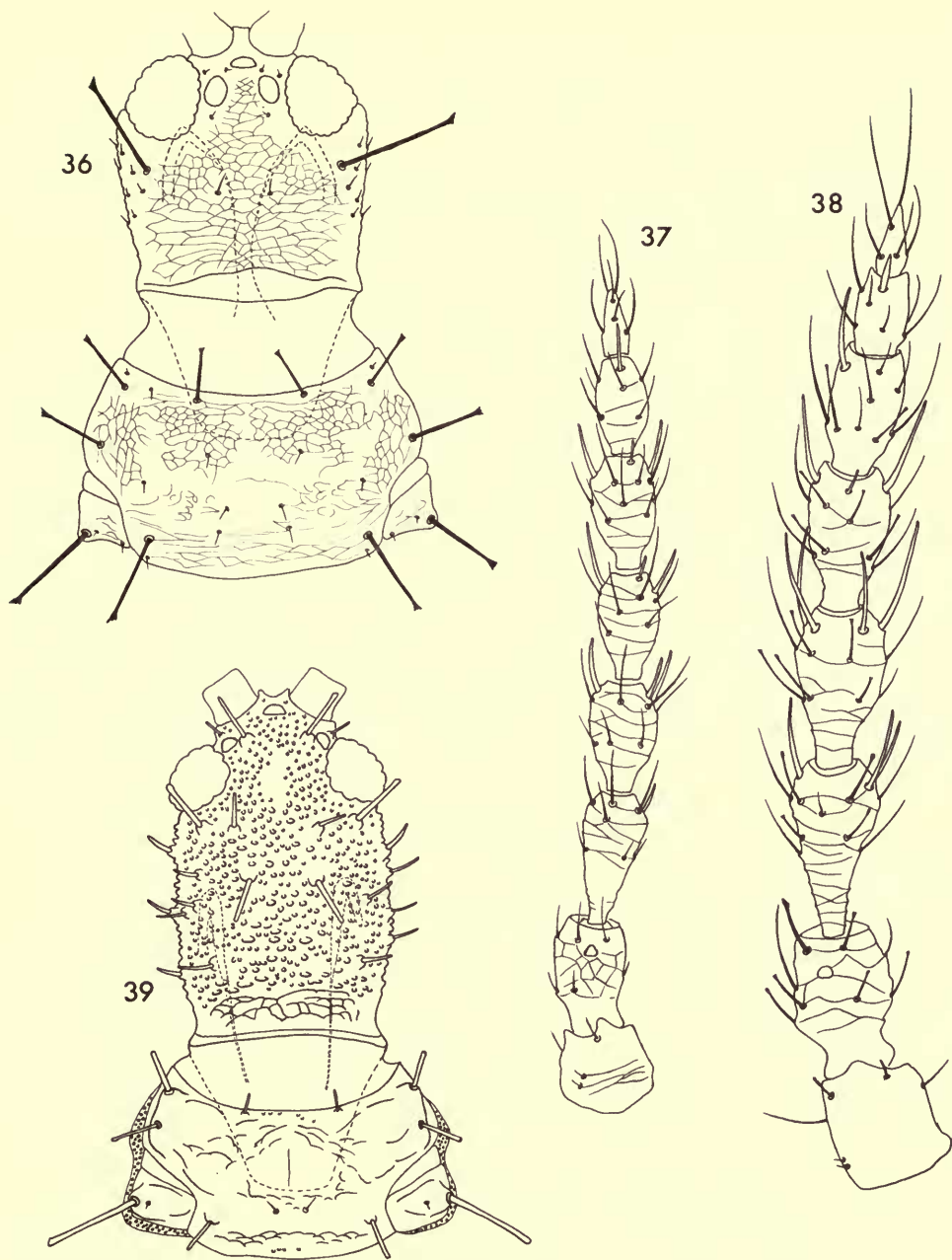
♀ (macropterous). Colour medium brown, lateral margins of head dark brown; antennals I-II and VI-VIII dark, III-V light brown with yellow bases; all tarsi pale, mid and hind femora and tibiae yellow at base and apex; fore wings with two longitudinal shadings; all setae pale.

Antennae eight-segmented (Text-fig. 38); sensorium on II in apical half; two (or three) sense cones on III, four on IV, major dorsal setae with weakly expanded apices. Preocular projection of head short (Text-fig. 39); interocellar setae large; eyes rounded; postocular and mid-dorsal setae well developed; maxillary stylets widely separated; ventral surface of head with less than ten pairs of fine setae.

Pronotum with five pairs of major setae (Text-fig. 39), anteroangulars and midlaterals on an elongate tubercle; epimeral sutures complete; praepectus present, mesopraesternum well developed. Fore tarsus with a minute tooth. Anterior angles of mesothorax not expanded; fore wing slightly bent before middle, evenly wide to apex, without accessory cilia, basal setae B₂ and B₃ stout.

Pelta very broad, curving away from tergite II laterally; tergites II-VII with one pair of wing-retaining setae near posterior margin (Text-fig. 43); tergite IX with B₁ and B₂ stout; tube weakly constricted at apex. Sternal accessory setae in regular transverse row; sternite surface anterior to accessory setae reticulate, reticles with internal markings.

Measurements in microns of holotype. Body length 2450. Hind tibia 260. Fore wing



FIGS. 36-39. Figs. 36 & 37. *Tolmetothrips granti*: 36, Head and pronotum. 37, Right antenna. Figs. 38 & 39. *Atractothrips solomoni*: 38, Right antenna (external sense cones on III abnormal). 39, Head and pronotum.

950. Head, length 320 ; postocular seta 55. Pronotum, length 135 ; width 300. Tergite IX, length 97 ; B₁ 70 ; B₂ 80. Tube, length 290 ; terminal setae 130. Antennal segments length 45 ; 60 ; 71 ; 65 ; 58 ; 55 ; 40 ; 32.

♂ (apterous). Colour rather darker than female. Head and pronotum as in female, ocelli absent ; fore tarsus with stout claw. Tergites and sternites more heavily sculptured than female, without wing-retaining setae.

Measurements in microns of allotype. Body length 1500. Hind tibia 200. Head, length 290 ; postocular seta 60. Pronotum, length 130 ; width 260 ; epimeral seta 71. Tergite IX, B₁ 65 ; B₂ 80. Tube, length 225 ; terminal setae 130. Antennal segments length 50 ; 60 ; 68 ; 60 ; 55 ; 48 ; 40 ; 32.

Holotype ♀. CHOISEUL : Vasu River, 16.xi.1965 (*P.J.M.G.*).

Allotype ♂ and two paratype ♀ taken with the holotype.

This is the second species to be included in the genus *Atractothrips*. It differs very considerably from *bradleyi* Hood, 1938 from Panama, and may eventually have to be placed in a separate genus (see Stannard, 1957 ; 93-94). Four paratypes of *bradleyi* have been studied and that species differs from *solomoni* as follows :

Antennal segment II with sensorium and two stout setae at apex ; sense cones on III minute ; antennal segments long and slender, dorsal setae small and acute ; lateral ocellar setae long, interocellars small ; eyes reduced, angular in outline ; postocular setae not distinct, dorsal surface of head with about 10 pairs of setae ; pronotal midlateral setae very small, close to anteroangulars ; three small setae along anterior margin of epimeral suture ; praepectus absent ; fore tarsi unarmed in both sexes ; basal wing setae absent ; anterior angles of mesothorax projecting ; lateral metanotal sclerite with large expanded setae ; tergites with three pairs of setae at margin including wing-retaining seta and posteroangular seta ; median tergal setae and pores large ; tergites sculptured in front of antecostal ridge ; tube very long ; B₁ on IX about one quarter as long as segment ; sternal accessories not in a regular transverse row.

MACHATOTHRIPS Bagnall

Machatothrips Bagnall, 1908 : 189. Type-species : *M. biuncinatus* by monotypy.

Adiaphorothrips Bagnall, 1909 : 536-537. Type-species : *A. simplex* by monotypy.

Machatothrips Bagnall ; Priesner, 1932 : 339-344.

Machatothrips Bagnall ; Mound, 1968 : 133-135.

Females in this genus have a series of tubercles on the fore femur although these are not present in the males. Because the type-species of *Adiaphorothrips* is the male of the type-species of *Machatothrips*, several species which were described in *Adiaphorothrips*, particularly from Australia, are now referred to the older genus although they do not belong there. The following species are at present placed in *Machatothrips*.

antennatus (Bagnall, 1915), from West Sarawak.

artocarpi Moulton, 1928, from Formosa.

biuncinatus Bagnall, 1908, from New Guinea.

braueri Karny, 1912, from West Africa.

celosia Moulton, 1928, from Formosa.

haplodon Karny, 1925, from Uganda.

= *spatiata* Priesner, 1932, from Congo. **Syn.n.**

heveae Karny, 1921, from Java.

?*isshikii* Ishida, 1932, from Japan.

montanus Priesner, 1932, from Sarawak.

quadrudentatus Moulton, 1947, from New Guinea.

Kurosawa (1968) has recently published the following synonymy of species from Japan:

M. femoralis Ishida, 1932 = *Docessissophothrips frontalis* Bagnall.

M. ohtai Ishida, 1932 = *Hoplothrips flavipes* Bagnall.

M. ipomoeae Ishida, 1932 = *Rhaebothrips lativentris* Karny.

One paratype of *spatiata* from Dr. Priesner's collection has been studied and compared with the type specimens of *haplodon*. *M. isshikii* is not recognizable as a member of this genus from its description. The species *artocarpi*, *celosia*, *heveae* and *montanus* are not at present clearly defined, and the unique holotype of *celosia* has not been studied, although type material of all the other species has been used in the preparation of the following key.

- | | | |
|---|--|-----------------------------------|
| 1 | Mid-dorsal head setae very small, less than one quarter as long as postoculars | 2 |
| - | Mid-dorsal head setae usually well developed, more than one quarter as long as postocular setae | 4 |
| 2 | Fore femur of female with about 20 small tubercles 6 μ in length ; anterior angles of pronotum with several stout thorn-like setae | <i>antennatus</i> Bagnall |
| - | Fore femora with few stout tubercles | 3 |
| 3 | Fore femur of female with four tubercles ; antennal III much paler than IV | <i>quadrudentatus</i> Moulton |
| | Fore femur of female with six or more tubercles ; antennal III dark with a lighter area at base and at apical exterior margin ; pronotal midlateral setae pale, more than two thirds as long as epimeral setae | <i>haplodon</i> Karny |
| 4 | Distal tubercles on fore femur fused into a ridge | <i>biuncinatus</i> Bagnall |
| - | Fore femoral tubercles all distinct | 5 |
| 5 | Antennal III dark, only basal membrane paler ; tubercles on fore femur slender, close set, forming a regular series decreasing in length towards apex, 45 μ -10 μ | <i>braueri</i> Karny |
| - | Antennal III yellow at base ; fore femoral tubercles stouter, more widely separated, not forming a regular series decreasing in length evenly | 6 |
| 6 | Fore femur with four (or five) tubercles, no tubercles on basal half of femur ; antennal III sharply yellow at extreme base, apex uniformly dark | <i>artocarpi</i> Moulton (p. 119) |
| - | Fore femur otherwise | 7 |
| 7 | Fore femora with three tubercles | <i>montanus</i> Priesner |
| - | Tubercles present on most of inner margin of femora | <i>heveae</i> Karny |

***Machatothrips artocarpi* Moulton**

Machatothrips artocarpi Moulton, 1928 : 322-325.

The statement in the original description that the mid-dorsal head setae are 'very small, hardly one fourth the length of postoculars' is not correct. In the holotype these setae are almost erect but their length has been calculated by using a microscope with the vertical movement calibrated in microns. The mid-dorsal setae are about 80 μ and the postoculars 180 μ .

The species is apparently widespread in the Western Pacific, but as indicated above it is not clearly different from *heveae* or *montanus*. The females from the

Solomon Islands have four tubercles on the fore femora, but of three females taken together in New Guinea one has four tubercles and the other two have five.

Material studied. Holotype ♀ and allotype ♂, FORMOSA : Kagi, on *Artocarpus*, 10.viii.1927 (*R. Takahashi*). NEW GUINEA : Maffin Bay, on bark, 3 ♀, 1 ♂, ix.1944 (*E. S. Ross*) ; in California Academy of Sciences.

SOLOMON ISLANDS : Guadalcanal, in dried calyx of shrivelled coconut, 2 ♀, 2 ♂, x.1931 (*R. J. Lever*) ; Umasani River, *Areca macrocalyx* dead fronds, 2 ♀, 1 ♂, 9.vii.1965 (*P.N.L.*) ; Kukum, 1 ♀ 3 ♂, 1962 (*P.J.M.G.*).

Mecynothrips snodgrassi Hood

Mecynothrips snodgrassi Hood, 1952 : 294.

Mecynothrips snodgrassi Hood ; Mound, [in press].

This species was described on a single oedymorous male from the SOLOMON ISLANDS : Big Florida Island, on a shrub along jungle trail, 29.xi.1944 (*H. E. Milliron*). Species of *Mecynothrips* are also known from New Guinea, Kei Islands, Manus Island, New Britain and Eastern Queensland. The genus has recently been revised and *snodgrassi*, which is only known from the Solomon Islands, can be distinguished by the apical expansion of the fore tibia lying parallel to the fore tarsal claw.

Material studied. BIG FLORIDA ISLAND : Tulagi, 1 ♂, 2.ix.1960 (*C. W. O'Brien*). GUADALCANAL : Gold Ridge at 600 m, 1 ♂, 22.vi.1956 (*J. L. Gressitt*), in the Bishop Museum collection, Hawaii.

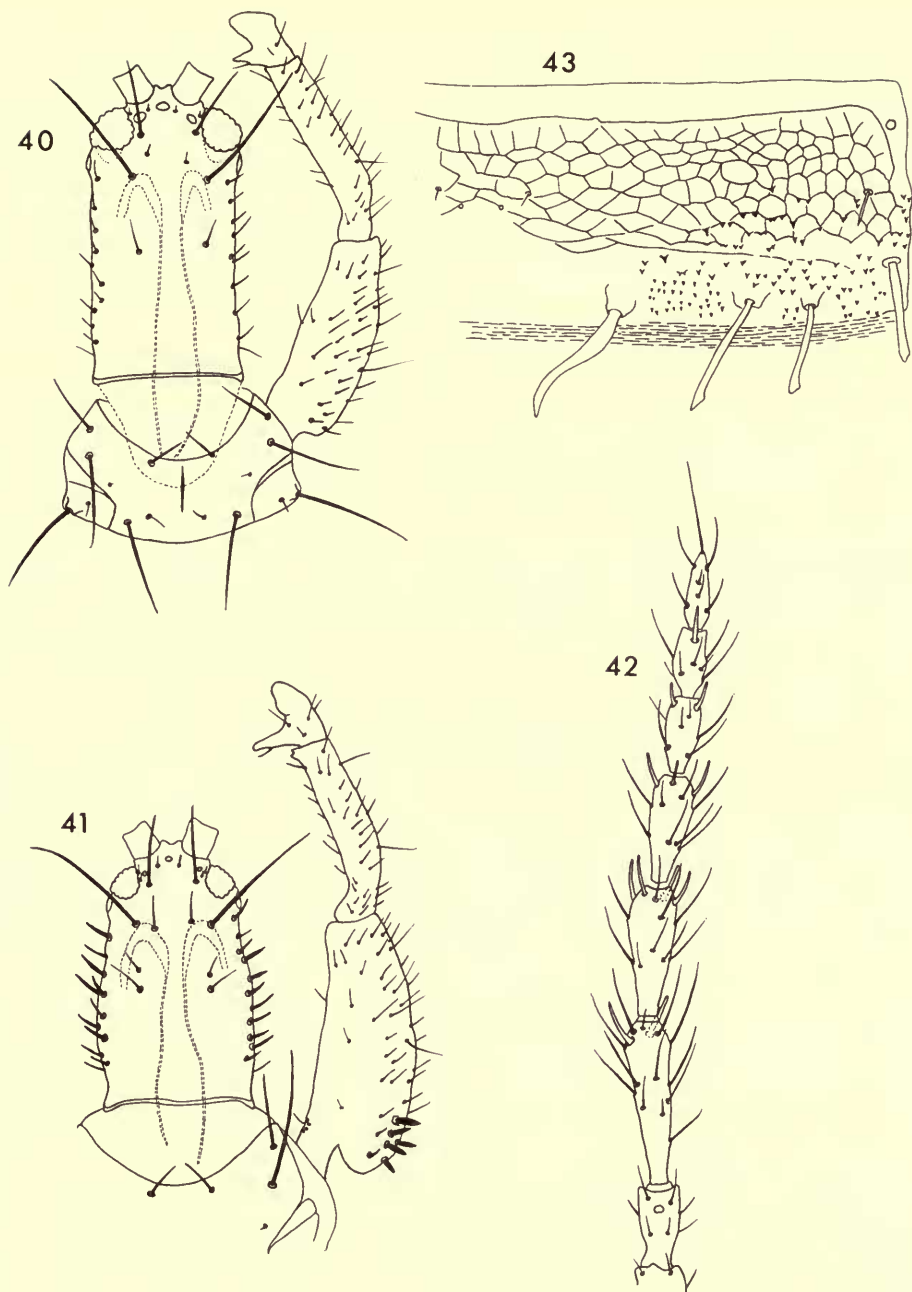
OMMATIDOTHRIPS gen. n.

Type-species : *Ommatidothrips lawrencei* sp. n.

This genus is erected for a species in which the head is strongly sexually dimorphic, but in which both males and females have an area of clear cuticle on each cheek posterior to the compound eyes, apparently representing a single isolated ommatidium. Eyes of this type have not previously been described in the Thysanoptera, but apterous females of a second species of this genus have been collected by the author on dead grass in Northern Queensland, Australia.

Large brown, non-sculptured species, feeding on fungal spores. Head long, dorsally elevated, eyes rather small, with one ommatidium separate on each cheek ; cheeks convex with stout spines in male, weakly concave with fine setae in female ; postocellar and postocular setae long ; stylets approach each other in middle of head, mouth cone rounded with large maxillary palps. Fore tarsus armed in both sexes ; wings, when present, of equal width with few accessory cilia. Pronotum emarginate anteriorly, anteroangular setae not arising at margin ; epimeral sutures complete, praepectus present. Tube almost as long as head, with many fine setae ; both sexes with B₂ on tergite IX less than half as long as B₁ ; abdominal tergites with one pair of wing-retaining setae.

The relationships of this new genus within the Megathripinae are not clear. The long head with the maxillary stylets approaching each other medially suggests *Megalothrips*, but in that genus there is a stout seta on the cheek behind each eye



FIGS. 40-43. Figs. 40-42. *Ommatidothrips lawrencei* : 40, Head, pronotum and fore leg of female. 41, Head and fore leg of male. 42, Left antenna. Fig. 43. *Atractothrips solomoni*, tergite IV.

and the males have a pair of drepanae on abdominal segment six. The new species is unusual in the subfamily in having the seta B_2 on tergite nine of the male less than half as long as B_1 , and in this character it resembles *Abiastothrips*. Several genera which Priesner (1960) places in the Cryptothripina are regarded by Stannard (1957) as being quite unrelated and as belonging in the subfamily Phlaeothripinae. Certain of these genera have the head elevated in the midline and do not have three equally long pairs of setae on tergite nine in the males. The present author considers that at least *Abiastothrips* belongs in the Megathripinae, near to *Cryptothrips*, and it is to these forms that the new genus is most closely related.

Ommatidothrips lawrencei sp. n.

(Text-figs. 40-42)

♀ (macropterous). Colour medium brown, increasingly dark toward posterior, tube black in basal two thirds; major setae light brown; legs yellowish, fore femora sometimes darker; basal half of antennal III and apex of II yellow, rest of antenna light brown, wings weakly shaded.

Head long, weakly elevated in midline, with very faint sculpture (Text-fig. 40); cheeks weakly expanded behind eyes, bearing an isolated ommatidium on each side; cheeks parallel-sided or weakly concave, with about seven pairs of setae; one pair of postocular and postocellar setae almost as long as head-width, middorsal head setae about one third as long as head width; maxillary stylets broad, band-like, approaching each other in midline; mouth cone rounded, maxillary palps 100μ long. Antennae on a short preocular process, eight-segmented; sensorium on II in apical half of segment; two sense cones on III, four on IV; VIII constricted at base (Text-fig. 42).

Pronotum not sculptured, anterior margin thickened and deeply concave; epimeral sutures complete; epimeral setae more than three times as long as anteromarginal setae, remaining prothoracic setae about two thirds as long as epimerals; praepectus narrow, transverse; probasisternal plates large with four long setae on anterior margin; mesopraesternum shallow boat-shaped. Mesonotum with three pairs of fine setae less than 20μ long, with faint lines of sculpture. Metanotum not sculptured medially, median setae about 50μ long. Fore femora moderately thickened, external margin with long fine setae; fore tibiae slender; fore tarsal tooth shorter than width of tarsus. Fore wings almost parallel-sided, about 90μ wide medially and 100μ wide subapically; 12-15 accessory cilia; only two pairs of major sub-basal wing setae, about 130μ long, B_1 fine and hair like 30μ long.

Pelta broad, not trilobed, weakly reticulate in anterior half. Tergites III-V with one pair of sigmoid wing-retaining setae, tergites II and particularly VI and VII with weak almost straight wing-retaining setae; tergites III-VI laterally with a group of about 12 fine setae anterior to B_1 and B_2 , these groups of setae extend medially across the tergites of the posterior segments so that IX bears two irregular transverse rows of fine setae; B_2 on IX less than half length of B_1 ; sides of tube straight with numerous fine setae about 30μ long, base of tube 130μ , apex 55μ wide, longest terminal seta about 230μ . Sternites with transverse row of about 15 accessory setae 40μ long, sternites VII and VIII with accessory setae in two transverse rows; B_1 on sternites at least twice as long as B_2 , arising well in front of posterior margin.

Measurements in microns of holotype with range from five paratypes in parentheses. Body length 3400 (-3800). Hind tibia 450. Fore wing 1250. Head, length 450 (-470); width behind eyes 240; postocular seta 230 (210-240). Pronotum, length 130; width 350 (-390); epimeral seta 190 (-225). Tergite IX, B_1 350 (340-360); B_2 115 (-160). Tube length 420 (-450). Antennal segments III-VIII, 160 (-170); 130 (-135); 115; 80; 70 (65-); 80 (68-).

♂ (apterous). Colour similar to female, setae brown on cheeks and base of fore femora. Head weakly elevated in midline, without sculpture (Text-fig. 41), cheeks convex medially

with about 10 stout setae ; ocelli absent, otherwise similar to female. Pronotum as in female except that posteroangulars almost equal epimerals, setae particularly long in oedymorous males ; fore femur broad with about 6 stout cyathiform setae at posterior external angle ; fore tibia with a small tubercle close to apex ; fore tarsus stout, longer than tarsal width (Text-fig. 41). Abdominal tergites with reduced wing-retaining setae, VI-IX with transverse row of fine setae ; sternites, tergite IX and tube similar to female, although tube comparatively short, narrowing from 130 μ to 50 μ .

Measurements in microns of allotype with range from three paratypes in parentheses. Body length 3400 (3200-3500). Hind tibia 400 (-420). Head, length 410 (-460) ; width behind eyes 220 (200-) ; postocular seta 225 (-240). Pronotum, length 130 (-200) ; width 450 (-560) ; epimeral seta 250 (-320). Tergite IX, B₁ 330 (320-360) ; B₂ 115 (95-). Tube length 350 (320-360). Antennal segments III-VIII, 145 (-160) ; 105 (-120) ; 95 (-105) ; 65 (-70) ; 65 (58-) ; 70.

Holotype ♀. GUADALCANAL : near Honiara, Poha River, 19.xi.1965 (*P.N.L.*).

Allotype ♂. GUADALCANAL : Mt. Austen, in litter between buttress roots of tree, 4.vii.1966 (*P.J.M.G.*), collected with 2 ♀, 3 ♂ paratypes and 2 larvae.

Other material. GUADALCANAL : Umasani River, in forest leaf-litter, 1 ♀ and 1 larva, 5.vii.1965 (*P.N.L.*) ; Mt. Austen, in forest litter, 4 ♀, 1 ♂ and 1 larva, 29.xi.1963 (*P.J.M.G.*) ; Mt. Austen, 2 ♀, 8.ii.1966 (*P.J.M.G.*). KOLOMBANGARA : 2 ♂, 9.vi.1965 (*P.J.M.G.*). NEW GEORGIA : Munda, 3 ♀ and 11 larvae, 15.ii.1966 (*P.J.M.G.*). RENDOVA : 1 ♂, 6.v.1966 (*P.J.M.G.*). CHOISEUL : Vasu River, 1 ♀, 1 ♂, 16.xi.1965 (*P.J.M.G.*).

Rhaebothrips lativentris Karny

Rhaebothrips lativentris Karny, 1913 : 128-129.

The genus *Rhaebothrips* was erected by Karny for the species *lativentris*, based on a single male from Formosa. Two further species have been described in the genus, *major* Bagnall, 1928 from Samoa, and *fuscus* Moulton, 1942 from Guam, Fiji and the Torres Straits. Karny (1924) recorded *lativentris* from Queensland, and there are specimens determined as that species by Karny in Dr. Priesner's collection from Ponape. Moulton (1944) recorded *major* from Fiji but did not refer to his species *fuscus* in that paper, although his remarks on the variation in *major* would appear to include *fuscus* as a variety. The unique holotype of *major* is lost (Mound, 1968), but Bianchi (1953) states that Moulton's specimens from Hawaii and Fiji can be separated from new specimens available from Samoa.

At present it is not possible to be certain of the specific identity of the Solomon Islands representatives of this genus, but it seems that there is just one widespread species involved. The specimens from Ponape mentioned above vary greatly in size, both within and between sexes. In the specimens listed below, it has been noted that the tube is shorter than the head in micropterae but longer than the head in macropterae. However the tube is relatively longer in males than in females.

Material studied. NEW GEORGIA : Munda, 1 ♀, 1 ♂ (mac.), 15.ii.1966 (*P.J.M.G.*). GUADALCANAL : Mt. Austen, under bark, 1 ♀ (mic.), 24.xi.1965 (*P.J.M.G.*) ; Lunga, 1 ♀ (mic.), 15.iii.1963 (*P.J.M.G.*). SAN CRISTOVAL : 10 miles south of Wainoni,

litter 3 feet up palm stump, 1 ♂ (mic.), 27.vii.1965 (*P.N.L.*) ; 6 miles S.E. of Wainoni, in ground moss of forest, 1 ♀ (mic.), 3.vii.1965 (*P.N.L.*). VATILAU : 1 ♀ (mac.), 2.xii.1965 (*P.J.M.G.*).

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