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**Revision of the Genus *Siphanta* Stål
(Homoptera : Fulgoroidea : Flatidae)**

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Abstract

Siphanta Stål is redefined to include *Parasalurnis* Distant and *Siphantoides* Distant. *Lombokia* Distant is synonymized with *Siphanta*. The genus contains 40 species, 25 of which are described as new. Descriptions, redescrptions, measurements and illustrations are given of all 40 species. A key for separation of the species is included. The following new species are described: *angularis*, *angustata*, *bifida*, *compacta*, *constricta*, *eberhardi*, *expatria*, *fusca*, *gallowayi*, *glauca*, *griseoviridis*, *hackeri*, *kurandae*, *luteolineata*, *lynae*, *montana*, *occidentalis*, *parva*, *peracuta*, *recurva*, *similis*, *solitaria*, *tasmanica*, *thambeos* and *tropica*. The following new synonymy is established (junior synonym first): *Siphantoides alboconsersa* Distant = *Siphanta acutipennis* Kirkaldy; *Siphantoides conspicuus* Distant = *Siphanta acutipennis* Kirkaldy; *Siphantoides trimaculata* Distant = *Siphanta acutipennis* Kirkaldy; *Siphanta minuta* Melichar = *S. granulicollis* (Stål); *Siphanta atomaria* (Walker) = *S. hebes* (Walker); *Siphanta stigma* Distant = *S. hebes* (Walker); *Siphanta breviceps* Kirkaldy = *S. hebes* (Walker); *Siphanta sensilis* Kirkaldy = *S. minuta* (Fabricius); *Siphanta toga* Kirkaldy = *S. patruelis* (Stål); *Siphanta javana* Kirkaldy = *S. patruelis* (Stål); *Parasalurnis infumata* Distant = *Siphanta patruelis* (Stål); *Lombokia everetti* Distant = *Siphanta patruelis* (Stål); *Parasalurnis insularis* Distant = *Siphanta roseicincta* (Walker). The other species recognized are *S. acuta* (Walker), *S. galeata* Kirkaldy, *S. nubecula* Jacobi, *S. anomala* Jacobi, *S. gregaria* Jacobi, *S. lucindae* Kirkaldy, *S. granulata* Kirkaldy, *S. rubra* Schmidt and *S. subgranulosa* Kirkaldy.

Introduction

The genus *Siphanta* Stål (1862) was last reviewed by Kirkaldy (1907) who recognized 10 species. Since then six additional species have been described by Jacobi (1928, 1941), Distant (1910a) and Kirkaldy (1913). This present revision recognizes 40 species, of which 25 are described as new.

The genus is predominantly Australian, with one species, *S. acuta* (Walker), introduced to New Zealand and Hawaii; a second species, *S. patruelis* (Stål), extends northwards through Indonesia and Malaysia to the Philippines. All species except *S. expatria*, sp. nov. are represented in Australia.

Materials and Methods

The genitalia of the males were examined in 70% ethanol after maceration in 10% (w/v) KOH and washing in distilled water. The genitalia were then stored in glycerine in small vials attached to the insect mounting pin.

Female genitalia were generally examined *in situ* but where the third valvulae and anal segment obscured the second valvulae, dissection and maceration as described for the male genitalia were used.

Measurements were made using an ocular micrometer and drawings made using a camera lucida on a Leitz TS stereomicroscope. Scanning electronmicrographs were made using uncoated specimens examined under low voltage (5 kV) in an ISI Super IIIA scanning electron microscope.

Morphology

Head

The vertex and frons vary in shape, providing useful characters for species differentiation in the genus. Throughout this work the terms *base* and *apex* of the vertex are used to indicate the margins against the pronotum and the apex of the frons, respectively. The base of the frons is the adoral margin.

The vertex is always flat or slightly concave in the basal half and, if extending beyond the eyes apically, may curve dorsally. The apical margin may be angularly rounded, convex or straight and is always carinate.

The frons generally increases in width from the apex to level with the antennae, thence abruptly narrows to the base. The ratio of median length to greatest width is of use in characterizing the species.

Thorax

The structure of the thorax varies little within the genus and, except for the tegmen, is not used to differentiate the species of *Siphanta*. The shape of the tegmen varies considerably within the genus. The terminology used herein follows that established by Melichar (1902, 1923). The *clavus* is the anal lobe of the tegmen and the tegmen margin that incorporates the claval margin is known as the *sutural margin*. The angle between the sutural margin and the apical margin is the *sutural angle* and this varies in *Siphanta* from acutely angled to rounded. The other tegminal angle, between the apical and costal margins, is the *apical angle*, which, in *Siphanta*, is usually rounded. Tegmen venation is reasonably consistent within *Siphanta* although the first branch of M1 + 2 may occur before or level with the claval apex. The crossveins are irregularly arranged over the tegmen and do not form nodal and subapical lines characteristic of certain other genera as used by Melichar (1901, 1902). The tegmen, particularly the clavus, bears small wax-producing granulations, which may be concolorous with the ground colour of the tegmen or may be dark coloured at the apex. This is consistent between related species of *Siphanta* and is very useful taxonomically.

Abdomen

The genitalia provide the most useful characters for species differentiation. The terms used are based on those of Tuxen (1970). The anal tube of males and females consists of an elongate tenth segment with segment 11 positioned about halfway along. The anal tube differences illustrated are of individual specimens and are not of specific significance.

Genitalia

Male

The pygofer usually bears a process from the posterodorsal corner. This *pygofer process* varies specifically. The parameres vary in shape between species and bear a process on the dorsal margin, the *paramere process*, which also varies specifically (see Fig. 1).

The aedeagus (see Fig. 2) consists of a median *conjunctiva* with a tubular *phallosoma* surrounding it basally and extending laterally nearly to the apex of the conjunctiva. The phallosoma bears apical processes and also extends posteriorly between the dorsal margins of the conjunctiva to form a mediodorsal process. The conjunctiva often bears armature on its dorsal margins. These structures are most important for species recognition. The aedeagal terminology is based on that of Singh-Pruthi (1925).

Female

The third valvulae extend laterally some distance towards the dorsal pygofer. Posteriorly they form two triangular lobes bearing a pilose area, which is usually ventral. The first and second valvulae are much smaller than the third valvulae and are often obscured between them and the anal segment. The first valvulae are small setose lobes situated on either side of the gonopore and the second valvulae are thin horizontal plates fused basally just ventral to the gonopore. The gap between the inner margins of the second valvulae is often the only feature by which females of closely related species can be separated and is termed herein the *second valvulae gap* (Figs 289, 290, 291).

Measurements

All measurements are in millimetres and are given in the form $c(n) \bar{x} \pm \text{s.d.}$ (range), where c is the character abbreviation and n is the number of individuals measured. Abbreviations for the characters used are as follows.

lc	length of clavus
IR	length of tegmen to apex of last branch of vein R
wt	width of tegmen from apex of clavus to costal margin level with end of costal cell
lv	length of vertex in midline
wv	width of vertex at base
lp	length of pronotum in midline
lf	length of frons in midline (from apex to frontoclypeal suture)
wf	maximum width of frons
lt	maximum length of tegmen (in one species only)

The following additional abbreviations were used in this work:

AM	Australian Museum, Sydney, Australia
ANIC	Australian National Insect Collection, CSIRO, Canberra, Australia
BCRI	Biological and Chemical Research Institute, New South Wales Department of Agriculture, Rydalmere, Australia
BMNH	British Museum (Natural History), London, England
BPB	Bernice P. Bishop Museum, Honolulu, Hawaii
MV	Museum of Victoria, Melbourne, Australia
NRS	Naturhistoriska Riksmuseet, Stockholm, Sweden
NTDPI	Northern Territory Department of Primary Industries, Darwin, Australia
QDPI	Queensland Department of Primary Industries, Indooroopilly, Australia
QM	Queensland Museum, Brisbane, Australia
QU	Entomology Department, University of Queensland, St Lucia, Australia
SAM	South Australian Museum, Adelaide, Australia
SI	Smithsonian Institute, Washington, D.C., U.S.A.
TM	Tasmanian Museum and Art Gallery, Hobart, Australia
UMB	Übersee Museum, Bremen, West Germany
WADA	Western Australian Department of Agriculture, Perth, Australia
WAM	Western Australian Museum, Perth, Australia

Genus *Siphanta* Stål

Siphanta Stål, 1862, p. 69; Kirkaldy, 1902, p. 117; Melichar 1902, p. 36, 1923, p. 53.

Phalainesthes Kirkaldy, 1899, p. 359.

Parasalurnis Distant, 1910a, p. 309. syn. nov.

Siphantoides Distant, 1910a, p. 305. syn. nov.

Lombokia Distant, 1910b, p. 323. syn. nov.

Type-species: Poeciloptera acuta Walker.

Diagnostic Features

Frons slightly convex to flat, with median longitudinal carina. Lateral carinae very short or absent. Vertex flat, slightly undulate or slightly concave, meeting frons at carinate margin which may be triangularly produced, roundly convex or nearly straight. Pronotum medially flat between lateral carinae which curve posterolaterally and do not reach hind margin of pronotum; posterior margin broadly concave. Mesonotum with 2 lateral carinae, flattish medially. Occasionally, median carina faintly developed. Tegmen triangular with sutural angle obtusely rounded, right-angled or slightly acute. Tegmen lacking apical lines. Hind tibia with 1 spine on shaft.

Biology

The life history of *Siphanta acuta* was described by Myers (1922) in New Zealand, and Fletcher (1979a) briefly outlined the egg-laying of the same species. As the ovipositors of all species of *Siphanta* are similar, it is likely that all species oviposit in a similar manner.

Some species of the genus appear to have fairly wide food-plant ranges. This is evidenced by records of various species on exotic plants. Insufficient information is available to indi-

cate the extent of the food-plant range of any species. The following are the known food plants of species of *Siphanta*.

<i>S. acuta</i>	<i>Acacia koa</i> , <i>Cheirodendron gaudichaudii</i> , <i>Suttonia lessertiana</i> , <i>Citrus</i> , coffee, <i>Coprosma vontempskyi</i> , <i>Eucalyptus</i> , guava, <i>Metrosideros collina</i> , <i>Moraea iridioides</i> , <i>Rubus hawaiiensis</i> , <i>Styphelia</i> (<i>Cyathodes</i>), <i>Myrsine</i> (<i>Suttonia</i>), <i>Tetraplasandra</i> , sumac, and many other kinds of plant (Swezey 1931; Swezey and Williams 1932; Zimmerman 1948)
<i>S. angularis</i>	Avocado
<i>S. eberhardi</i>	Avocado, guava, jackfruit, mango
<i>S. expatria</i>	<i>Eucalyptus</i>
<i>S. glauca</i>	Jackfruit
<i>S. griseoviridis</i>	<i>Litchi sinensis</i>
<i>S. hebes</i>	<i>Kennedia rubicunda</i> , <i>Schefflera</i> , <i>Cordyline</i> , citrus
<i>S. luteolineata</i>	Gum, wattle, grass
<i>S. lynae</i>	<i>Eucalyptus eximia</i>
<i>S. parva</i>	<i>Banksia marginata</i> , <i>Eucalyptus cosmophylla</i> , <i>Hakea</i> sp., <i>Acacia</i> sp.

Key to the Species of *Siphanta*

This key provides characters by which most male and some female specimens of *Siphanta* can be given a species name. Male genitalia, however, provide the only features by which such identifications can be confirmed. Many other more easily examined characters are considerably variable within species and are often, therefore, of limited use.

1. Frons longer than wide (measured carefully to frontoclypeal suture) 2
- Frons as wide as long or wider than long 29
- 2(1). Vertex at least half as long as wide 3
- Vertex at most half as long as wide 23
- 3(2). All granules on corium and clavus concolorous with ground colour of tegmen, or green .. 4
- Granules on tegmen dark brown to black at tip 13
- 4(3). Vertex broadly extending in front of eyes, anteriorly broad margin shallowly convex (Fig. 282).
 Frons shallowly concave across disc; median longitudinal carina absent 5
- Vertex extending in front of eyes as rounded or pointed triangle. Frons usually convex, usually
 with at least short median longitudinal carina 6
- 5(4). Pygofer process knobbed; paramere process pointed (Fig. 85); north Queensland
 *S. acutipennis* Kirkaldy
- Pygofer process broadly triangular; paramere process broadly truncate apically (Fig. 87); New
 Guinea *S. expatria*, sp. nov.
- 6(4). Males 7
- Females 11
- 7(6). Pygofer process absent, posterodorsal corner of pygofer broadly rounded *S. tropica*, sp. nov.
 Pygofer process present on posterodorsal corner 8
- 8(7). Pygofer process nearly straight, longer than paramere process 9
- Pygofer process straight or curved, equal to or shorter than paramere process 10
- 9(8). Dorsal edge of paramere strongly convex on basal half so that paramere is broadest in basal
 half (Fig. 9) *S. eberhardi*, sp. nov.
- Dorsal edge of paramere not strongly convex so that paramere is broadest in apical half (Fig. 5)
 *S. angularis*, sp. nov.
- 10(8). Paramere process obliquely truncate apically, nearly perpendicular to dorsal edge of paramere
 (Fig. 1) *S. acuta* (Walker)
- Paramere process apically pointed, more or less continuous with apical curve of paramere
 (Fig. 19) *S. hebes* (Walker)
- 11(6). 2nd valvulae gap broadly U-shaped, shallow 12
- 2nd valvulae gap narrowly U-shaped, margins parallel over most of length (Fig. 89)
 *S. acuta* (Walker)
- 12(11). 2nd valvulae short, gap widely divergent to apex (Fig. 100) *S. tropica*, sp. nov.
- 2nd valvulae with gap about as wide as long
 *S. hebes* (Walker), *S. eberhardi*, sp. nov., *S. angularis*, sp. nov.

- 13(3). Tegmen dark brown *S. anomala* Jacobi
 Tegmen light-coloured, usually green, often with veins orange or yellow 14
- 14(13). Apex of vertex curved upwards *S. constricta*, sp. nov.
 Vertex not curved, at most anterior margin slightly raised 15
- 15(14). Sutural angle of tegmen obtusely angled or rounded *S. patruelis* (Stål)
 Sutural angle of tegmen right-angled or acute 16
- 16(15). Vertex evenly rounded anteriorly (Figs 130, 138, 150, 154) 17
 Vertex apically triangular (Fig. 146) *S. galeata* Kirkaldy
- 17(16). Males 18
 Females 21
- 18(17). Paramere with 2 small processes on dorsal margin (Fig. 7); margin of tegmen with yellowish
 band inside red border *S. bifida*, sp. nov.
 Paramere with single process on dorsal margin; yellowish margin to tegmen not apparent 19
- 19(18). Pygofer with pointed process; paramere process narrow, apically pointed (Fig. 15)
 *S. griseoviridis*, sp. nov.
 Pygofer without process or with rounded process; paramere process broad or narrow ... 20
- 20(19). Paramere process extending at right-angles to dorsal margin of paramere (Fig. 13)
 *S. glauca*, sp. nov.
 Paramere process extending at angle to dorsal margin of paramere so that paramere appears
 to be bifid (Fig. 3) (N.B. females unknown) *S. peracuta*, sp. nov.
- 21(17). Anal segment with deep V-shaped notch in apex *S. bifida*, sp. nov.
 Anal segment entire at apex or with slight emargination 22
- 22(21). Known only from south-east Queensland and north-east New South Wales *S. glauca*, sp. nov.
 Known only from north Queensland *S. griseoviridis*, sp. nov.
- 23(2). All granules on clavus concolorous with ground colour of tegmen 24
 Granules on clavus, and usually those on rest of tegmen, dark brown to black at tip 28
- 24(23). Posterodorsal corner of pygofer broadly triangular, without obvious process (Fig. 29); female
 unknown *S. solitaria*, sp. nov.
 Pygofer bearing strong process; females without obvious distinguishing characters 25
- 25(24). Pygofer process tapering from base to apex, about 1½ times as long as paramere process 26
 Pygofer process broad for ⅔ length with oblique point at apex; length equal to or shorter than
 paramere process 27
- 26(25). Paramere process at about ⅔ length of paramere, which is somewhat pointed apically (Fig. 27)
 *S. similis*, sp. nov.
 Paramere process close to apex of paramere, which is obliquely truncate apically (Fig. 23) ..
 *S. montana*, sp. nov.
- 27(25). Aedeagus bearing strong hooks dorsally (Fig. 26) *S. recurva*, sp. nov.
 Aedeagus lacking strong hooks (Fig. 18) *S. hackeri*, sp. nov.
- 28(23). Very small species 3–4 mm in total length; colour bright with red and orange as well as green
 *S. gallowayi*, sp. nov.
 Larger species 9–10 mm long or more; colour green with obvious brown spots surrounding
 granules of tegmen *S. gregaria* Jacobi
- 29(1). Vertex at least half as long as wide *S. compacta*, sp. nov.
 Vertex at most half as long as wide 30
- 30(29). Tegmen dark brown *S. fusca*, sp. nov.
 Tegmen light coloured, usually green, often with veins orange or yellow 31
- 31(30). All granules on clavus concolorous with ground colour of tegmen *S. kurandae*, sp. nov.
 Granules on clavus, and usually those on rest of tegmen, dark brown to black at tip 32
- 32(31). Tegmen length, from base to apex, equal to or less than 5 mm; costal margin evenly convex
 from base to apex 33
 Tegmen length, from base to apex, greater than 5 mm; costal margin generally more strongly
 convex over basal half than over distal half 37
- 33(32). Pronotum and mesonotum with 2–3 obvious longitudinal reddish orange and green stripes
 *S. minuta* (Fabricius)
 Pronotum and mesonotum not striped as above, sometimes with single median stripe 34
- 34(33). Pygofer process parallel-sided, elongate, extending nearly to level of paramere process; SE.
 South Australia (Fig. 51) *S. parva*, sp. nov.
 Pygofer process short, triangular 35
- 35(34). Apical phallosoma appendages extending posteriorly beyond apex of aedeagus (Fig. 56); eastern
 Victoria *S. thameos*, sp. nov.
 Apical phallosoma appendages extending anterodorsally (Figs 50, 54) 36

- 36(35). Conjunctiva with prominent lateral hook at about midlength (Fig. 50); mainland Australia *S. granulicollis* (Stål)
 Conjunctiva with small recurved process near base, lacking prominent hook (Fig. 54); Tasmania *S. tasmanica*, sp. nov.
- 37(32). Pronotum and mesonotum with 3 or 4 reddish orange and green longitudinal stripes (in dried specimens reddish orange and cream) 38
 Pronotum and mesonotum with single broad median band of red or unstriped 41
- 38(37). Vertex evenly concave, surface smooth; clavus with only 1 or 2 crossveins in cell closest to suture *S. luteolineata*, sp. nov.
 Vertex flat to undulate, surface granulate; clavus with at least 4, and usually more, crossveins in cell closest to suture 39
- 39(38). Tegmen length 5.9-7.5 mm; sutural angle rounded; apical margin convex 40
 Tegmen length 4.8-5.6 mm; sutural angle nearly right-angled; apical margin truncate (Fig. 265) *S. minuta* (Fabricius)
- 40(39). Male with erect dorsal conjunctiva process (Fig. 82); known only from Queensland (Mackay district) to New South Wales *S. rubra* Schmidt
 Male with recurved dorsal conjunctiva process (Fig. 84); known only from north Queensland (Herberton to Cairns) *S. subgranulosa* Kirkaldy
- 41(37). At least half of outer claval cell red or brown; claval vein broadly red 42
 Outer claval cell concolorous with rest of tegmen, granules often red and black, claval vein sometimes narrowly red or brown 44
- 42(41). Costal margin of tegmen convex over proximal half, thence straight or slightly concave to apex (Fig. 220); outer claval cell almost completely brown *S. occidentalis*, sp. nov.
 Costal margin of tegmen convex for its entire length, more strongly so in basal half; outer claval cell red with black granules, often basally concolorous with rest of tegmen 43
- 43(42). Pygofer process approximately 3 times length of paramere process (Fig. 79) *S. lynae*, sp. nov.
 Pygofer process equal to or slightly longer than paramere process (Figs 59, 61, 63, 65) *S. roseincta* (Walker)
- 44(41). Tegmen with obvious olive green blotches giving mottled appearance, frequently also with pale oblique stripe (Fig. 198) *S. nubecula* Jacobi
 Tegmen without mottled appearance 45
- 45(44). Males 46
 Females 49
- 46(45). Paramere narrow, lightly sclerotized, except for dorsal edge which is strongly sclerotized and extends distally beyond remainder of paramere (Fig. 73) *S. granulata* Kirkaldy
 Paramere more or less evenly sclerotized; dorsal process differentiated from margin of paramere 47
- 47(46). Paramere with distinct shoulder against which anal segment fits; paramere process attached apically; pygofer process broad and triangular or bent ventrally in apical half, about as long as paramere process (Fig. 67) *S. angustata*, sp. nov.
 Paramere without shoulder, dorsal edge running straight to process from base; paramere process attached subapically; pygofer process elongate straight, often much longer than paramere process 48
- 48(47). Pygofer process of varying length, but always thicker at midlength than paramere process at midlength (Figs 59, 61, 63, 65) *S. roseincta* (Walker)
 Pygofer process nearly twice length of paramere process and always narrower at midlength than paramere process at midlength *S. lucindae* Kirkaldy
- 49(45). 3rd valvulae bilaterally flattened in apical portion; pilose area on inner surface 50
 3rd valvulae apically broad, dorsoventrally flattened; pilose area ventral 51
- 50(49). 2nd valvulae short and broad with gap shallowly V- or U-shaped (Fig. 115)
 *S. angustata*, sp. nov.
 2nd valvulae with gap about as deep as wide (Fig. 117) *S. granulata* Kirkaldy
- 51(49). 2nd valvulae gap narrow U-shaped, sometimes apices of valvulae convergent apically; depth of gap greater than width (Fig. 116) *S. lucindae* Kirkaldy
 2nd valvulae gap U-shaped; depth of gap about equal to width (Fig. 114)
 *S. roseincta* (Walker)

***acuta* Group**

The following 16 species share the characteristics outlined below and are termed the *acuta* group.

Head produced medially in front of eyes so that frons apically convex and vertex at least half as long as wide. Frons with 3 short longitudinal carinae indicated near apex. Tegmen triangular with apical angle rounded and sutural angle right-angled or acutely produced dorsally. M1+2 branched level with apex of clavus. Coloration green or grey-green, often fading to yellow in dried specimens. Males usually duller than females. Apex of head, apices of fore- and mid-tibiae and all tarsi and often lateral angles of frons marked with red. Tegmen with minute granulations in all cells leaving bare circular spot in centre of each cell. Costal margin pallid, then narrowly red around apical margin and claval margin to apex of clavus. This colour pattern is fairly stable throughout the group (variations are noted below) but individuals in any species may lack all red coloration and show other individual variation.

***Siphanta acuta* (Walker)**

(Figs 1, 2, 89, 125-128)

Poeciloptera acuta Walker, 1851, p. 448; Stål, 1862, p. 489.

Poeciloptera cupido Walker, 1851, p. 453.

Cromna elegans Costa, 1864, p. 149.

Phalainesthes schauinslandi Kirkaldy, 1899, p. 359.

Types

Holotype ♀ 'N. Holl. 48-5' (New Holland = Australia), BMNH.

Other type-material examined: holotype ♂ of *P. cupido* Walker labelled 'Type 589-37. *Poeciloptera cupido*', BMNH; holotype ♀ of *P. schauinslandi* Kirkaldy, Hilo, 26.x.96 Schauinsland, UMB.

Other Material Examined

111 ♂, 144 ♀, from all parts of the range except New Zealand.

Known Distribution

Queensland: Kuranda, Dunk Island, Rockhampton, Gympie, Brisbane, Lamington National Park, Tamborine Mountain. **New South Wales**: Tweed River, Coffs Harbour, East Dorrigo, Ebor, Gloucester Tops, Salisbury, Putty, Huntley, Gosford, Terrigal, Pearl Beach, Grose Vale, Blue Mountains, Megalong Valley, Sydney district, Camden, Helensburgh, Royal National Park, Mt Keira, Jamberoo. **Australian Capital Territory**: Canberra. **Victoria**: Noorinbee, Melbourne. **Tasmania**: Hobart. **South Australia**: Gammon Ranges, Adelaide district. **Western Australia**: Perth, Fremantle, Jarrahdale, Yarloop, Kendenup, Albany. **New Zealand**: Auckland, Nelson, Whangerei (Myers 1922). **Hawaii**: Hawaii, Kauai, Molokai, Oahu, West Maui.

Description

Coloration. Pale olive green to green. Tegminal granules concolorous with ground colour of tegmen. Male sometimes with small infuscation at first forking of M1+2. Otherwise as in *acuta*-group description.

Morphology. Head (Figs 126-128): frontal carinae sometimes obsolescent; anterior margin of vertex evenly rounded. Tegmen (Fig. 125): prominence of sutural angle somewhat variable but always forming acute angle.

Measurements

Males: lc (10) 5.47 ± 0.32 (4.55-5.96), IR (10) 7.64 ± 0.45 (6.10-8.28), wt (10) 4.32 ± 0.36 (3.78-4.95), lv (10) 0.58 ± 0.06 (0.44-0.66), wv (10) 0.97 ± 0.05 (0.89-1.05),

lp (10) 0.57 ± 0.03 (0.51–0.61), lf (10) 1.23 ± 0.05 (1.17–1.33), wf (10) 1.07 ± 0.06 (0.97–1.13).

Females: lc (32) 6.50 ± 0.42 (5.61–7.27), IR (10) 8.03 ± 0.66 (7.27–9.12), wt (10) 4.84 ± 0.44 (4.38–5.78), lv (10) 0.75 ± 0.04 (0.71–0.83), wv (32) 1.04 ± 0.05 (0.93–1.13), lp (10) 0.60 ± 0.03 (0.57–0.66), lf (32) 1.41 ± 0.07 (1.27–1.56), wf (32) 1.18 ± 0.05 (1.05–1.32).

Male genitalia. Pygofer with posterodorsal corner extended to form short blunt point. Paramere rounded apically with broad, obliquely truncate process perpendicular to dorsal margin of paramere and mounted at approximate midlength (Fig. 1). Aedeagus as in Fig. 2.

Female genitalia. Ventral valves broadly triangular with pilose area ventral. 2nd valvulae gap narrowly U-shaped (Figs 89, 289).

Notes

This is the best-known species of *Siphanta* but has usually been confused with other species in collections. It is common in metropolitan gardens.

Several specimens tentatively ascribed to this species exhibit certain variation in the shape of the pygofer process and in the dorsal lobes of the conjunctiva. This indicates that the species is undergoing considerable radiation throughout southern Australia, and further related species will certainly be found as more material becomes available.

Siphanta peracuta, sp. nov.

(Figs 3–4, 129–132)

Types

Holotype, ♂, Macleay River, N.S.W., September 1902, Helms collection, BPB.

Description

Coloration. As in *acuta*-group description. Holotype lacking red on head and legs. Tegminal granules very slightly darkened at apex.

Morphology. Head (Figs 130–132): vertex evenly rounded anteriorly. Tegmen as in Fig. 129. Otherwise as in *acuta*-group description.

Measurements

Holotype: lc 5.00, IR 7.34, wt 3.99, lv 0.59, wv 0.89, lp 0.57, lf 1.17, wf 1.02.

Male genitalia. Dorsolateral corners of pygofer produced posteriorly to form large square process. Paramere with large process angled to dorsal paramere margin so that paramere appears bifid (Fig. 3). Aedeagus as in Fig. 4.

Female. Unknown.

Notes

This species is closely allied to *S. acuta*, which also has a large apically truncate paramere process. The structure of the aedeagus provides characters by which these two species can be easily differentiated.

The tegminal granules are slightly darkened apically in the monotype. This character is consistent within the species of *Siphanta* and provides a simple means by which *S. acuta* and *S. peracuta* can be differentiated.

Siphanta angularis, sp. nov.

(Figs 5–6, 90, 133–136)

Types

Holotype ♂, Imbil State Forest, Qld 5.xi.1957, T. E. Woodward, Reg. No. T.9386 QM.

Paratypes. **Queensland:** 5♂, 10♀, Palmwoods (3♂, 3♀, avocado terminals, 8.ii.1961; 3♂, avocado terminals, 26.i.1961; 2♂, 4♀, avocado fruit stem, 19.i.1961), QM; 1♂,

Brisbane, February 1954, N. J. Thompson, BCRI; 1♂, 8.x.1954, J. R. Pollock, QM; 1♂, Brisbane, 3.ii.1914, H. Hacker, BMNH; 3♂, Brisbane, 9.iii.1925, 18.v.1925, 24.v.1925, H. Hacker, QM; 1♂, Brisbane, November 1923, SAM; 1♂, 1♀, Nanango District, November 1927, H. Hacker, QM; 1♂, Toowoomba, April 1954, N. J. Thompson, QM; 1♂, N. Pine River, 12.iv.1927, H. Hacker, QM; 2♂, N. Pine River, 17.xi.1929, H. Hacker, C. J. Drake colln, 1956, SI; 1♂, Mt Glorious, 1.xii.1930, H. Hacker, SI.

Some of the paratypes collected by Hacker have been remounted.

Description

Coloration. Ground colour grey-green to green. Tegminal granules not darkened at tip. Apex of clavus usually with small brownish spot. Otherwise as in *acuta*-group description.

Morphology. Head (Figs 134-136): vertex with evenly rounded front margin. Tegmen (Fig. 133): sutural angle produced so that apical margin slightly concave.

Measurements

Males: lc (10) 5.41 ± 0.19 (5.05-5.66), IR (10) 7.52 ± 0.31 (7.07-7.88), wt (10) 4.29 ± 0.27 (3.94-4.85), lv (10) 0.64 ± 0.06 (0.53-0.73), wv (10) 0.92 ± 0.07 (0.77-1.00), lp (10) 0.55 ± 0.02 (0.51-0.57), lf (10) 1.31 ± 0.05 (1.21-1.37), wf (10) 1.04 ± 0.05 (0.95-1.15).

Females: lc (10) 6.25 ± 0.36 (5.66-6.77), IR (10) 8.51 ± 0.46 (7.78-9.09), wt (10) 5.04 ± 0.36 (4.44-5.45), lv (10) 0.72 ± 0.08 (0.61-0.83), wv (10) 1.00 ± 0.06 (0.89-1.11), lp (10) 0.60 ± 0.03 (0.53-0.62), lf (10) 1.46 ± 0.09 (1.33-1.58), wf (10) 1.15 ± 0.05 (1.05-1.21).

Male genitalia. Pygofer process elongate, narrow, extending to $\frac{2}{3}$ length of paramere. Paramere rectangular with prominent triangular process forming recurved hook continuous with apical curve of paramere (Fig. 5). Aedeagus as in Fig. 6.

Female genitalia. 3rd valvulae broadly triangular with pilose area ventral. 2nd valvulae gap (Fig. 90) U-shaped, about as wide as deep.

Notes

Females of this species are difficult to differentiate from females of *S. hebes* (Walker) and *S. eberhardi*, sp. nov., and hence few females have been designated as paratypes.

Siphanta bifida, sp. nov.

(Figs 7-8, 91, 137-140)

Types

Holotype ♂, Mt Edith, 18 miles NE. Atherton, Qld, 3400 ft, 17.iii.1964, I. F. B. Common and M. S. Upton, Reg. No. 9447 ANIC.

Paratypes. **Queensland:** 2♂, Bellenden Ker Range, Cable Tower 3 1054 m, 17.x.-5.xi.1981, Earthwatch Qld Museum, m.v. light, rainforest, 1 in QM, 1 in BCRI; 1♂, Bellenden Ker Range, Summit T.V. Station 1560 m, 17.x.-5.xi.1981, Earthwatch Qld Museum, QM; 1♀, same data as previous, beating rainforest, BCRI; 1♀, Peak Mt, Bellenden Ker 10-18.i.1977, R. I. Storey, at light, QDPI.

Description

Coloration. Ground colour in male green with grey-green tegmina, in female orange to yellow (probably green in life). All red areas brightly coloured. Tegmen with granules dark. Apical red margin to tegmen not broken by apices of veins, with pale greenish yellow band interior to this. Veins dark. 1♀ paratype with red infuscation around first branch of M1 + 2.

Morphology. Head (Figs 138-140): frons with 3 strong carinae; vertex evenly rounded anteriorly. Tegmen (Fig. 137): apical angle nearly right-angled, sutural angle acute so that apical margin very slightly concave.

Measurements

Males: (holotype given first) lc (2) 5·60, 5·15; IR (2) 7·98, 7·63; wt (2) 5·35, 4·14; lv (2) 0·69, 0·53; wv (2) 0·97, 0·91; lp (2) 0·57, 0·55; lf (2) 1·41, 1·29; wf (2) 1·17, 1·13.

Females: lc (2) 5·66, 5·76; IR (2) 8·08, 8·59; wt (2) 4·44, 4·44; lv (2) 0·57, 0·65; wv (2) 0·91, 0·93; lp (2) 0·55, 0·57; lf (2) 1·29, 1·29; wf (2) 1·19, 1·21.

Male genitalia. Pygofer with large tapered, pointed process. Paramere with blunt dorsal process at about midlength and with dorsal and apical margins meeting at right-angles to produce apparent 2nd dorsal process, margin evenly concave between the two (Fig. 7). Aedeagus as in Fig. 8.

Female genitalia. 3rd valvulae parallel-sided, apically obliquely and roundly truncate with pilose area ventral. 2nd valvulae gap about twice as wide as deep (Fig. 91). Anal tube with deep V-shaped notch in apex.

Notes

The shape of the parameres easily distinguishes this species from all other *Siphanta* species. In addition, the yellow band inside the marginal red line on the tegmina has not been observed in any other species of the genus. The paratypes that were originally stored in alcohol (Earthwatch survey specimens) have retained this yellow band.

Siphanta eberhardi, sp. nov.

(Figs 9–10, 92, 141–144)

Types

Holotype ♂, on avocado, Alstonville, 15 km E. of Lismore, N.S.W., 11.iii.1981, M. J. Fletcher & G. R. Brown, BCRI.

Paratypes. **Queensland:** 3♂, 1♀, Brisbane, 18.v.1925, H. Hacker, QM; 2♂, Brisbane, 24.v.1925, H. Hacker, QM; 1♂, Stradbroke I., Lea, SAM; 1♂, Burleigh, 15.ix.1960, A.N.B. MV; 2♂, 1♀ (mounted together), Burleigh, 12.xii.1964, A. N. Burns, MV; 1♂, Tamborine Mountain, A. M. Lea, SAM. **New South Wales:** 6♂, 20♀, same data as holotype, 1♂, 1♀ in QM, 1♂, 1♀ in QDPI, 1♂, 1♀ in ANIC, 1♂, 1♀ in AM, 2♂, 16♀ in BCRI; 1♂, 1♀, on guava, other data as in holotype, BCRI; 1♂, 2♀, on jackfruit, other data as in holotype, BCRI; 1♂, on mango, other data as in holotype, BCRI; 1♂, Alstonville, near Ballina, 13.i.1980, G. R. Brown, BCRI.

Description

Coloration. Green to grey-green. Some specimens, including holotype, with pale green band faintly visible immediately interior to red margin, which is broken by apices of veins. Otherwise as in *acuta*-group description.

Morphology. Head (Figs 142–144): vertex evenly rounded anteriorly. Tegmen (Fig. 141): with sharply rounded apical angle and sutural angle produced dorsally to point; apical margin straight.

Measurements

Males: lc (10) 5.21 ± 0.20 (4.95–5.66), IR (9) 7.36 ± 0.21 (7.12–7.78), wt (10) 4.02 ± 0.16 (3.69–4.24), lv (10) 0.61 ± 0.06 (0.55–0.73), wv (10) 0.89 ± 0.05 (0.83–0.97), lp (10) 0.55 ± 0.03 (0.51–0.61), lf (10) 1.25 ± 0.05 (1.17–1.33), wf (10) 1.01 ± 0.05 (0.93–1.09).

Females: lc (10) 5.98 ± 0.27 (5.35–6.26), IR (10) 8.08 ± 0.25 (7.47–8.38), wt (10) 4.76 ± 0.16 (4.44–5.05), lv (10) 0.73 ± 0.03 (0.69–0.79), wv (10) 1.00 ± 0.03 (0.95–1.05), lp (10) 0.62 ± 0.02 (0.59–0.65), lf (10) 1.44 ± 0.04 (1.37–1.49), wf (10) 1.14 ± 0.04 (1.09–1.21).

Male genitalia. Pygofer with strong elongate process abruptly pointed, straight or slightly curved ventrally. Paramere with strongly convex dorsal margin before process so that widest part of paramere in basal half. Process more or less clavate with pointed apex (Fig. 9). Aedeagus as in Fig. 10.

Female genitalia. 3rd valvulae broadly triangular with pilose area ventral. 2nd valvulae gap broad with valvulae slightly convergent apically (Fig. 92).

Notes

This species is superficially very similar to *S. angularis* and *S. hebes* from which it can be distinguished by examination of the paramere of the male. Female paratypes have been designated when they were collected with males.

The species is named for my friend and colleague Dr Eberhard Schicha, who has given me much encouragement in this work.

Siphanta galeata Kirkaldy

(Figs 11–12, 93, 145–148)

Siphanta galeata Kirkaldy, 1906, p. 453.

Types

Lectotype ♂ (here designated), Cairns, Qld, August 1904, BPB.

Paralectotypes. Queensland: 1♂, 2♀, Cairns, July 1904, BPB; 2♂, 5♀, Cairns, August 1904, BPB.

Other Material Examined

Queensland: 1♂, Mackay, July 1937, L. Franzen, SI; 2♂, 1♀, Cairns district, A. M. Lea, SAM; 2♂, beside Noah's Creek, 15 km N. of Daintree R., 26.iii.1976, I. D. Galloway, QDPI; 1♂, 2♀, Gadgarra, 30.iv.1941, A.R.B., QDPI; 2♂, 3♀, Kuranda, May 1904, F. P. Dodd, 1907-54, BMNH; 1♂, Redlynch, 12-21.viii.1938, R. G. Wind, Papuan-Australian Expn BM 1939-127, BMNH; 2♂, Kuranda, 18.i.1975, W. N. B. Quick, MV; 1♂, Clump Point, 6.iii.1964, I. F. B. Common & M. S. Upton, ANIC; 1♀, Kamerunga, 29.v.1948, N. L. H. Krauss, SI; 1♀, Babinda, coll. J. F. Illingworth, SI; 1♀, Kuranda, May 1904, F. P. Dodd, F. W. Goding colln, SI; 1♀, Koah, 8.i.1960, G. Ettershank, QU; 1♀, on maple, Gadgarra, 24.iv.1932, QDPI; 1♀, Malanda, Atherton Tableland, May 1978, G. R. Brown, BCRI; 1♀, 8 miles E. of Wallaman Falls, Ingham, 3.i.1973, B. Cantrell, QU; 1♀, Mt Lewis, 8 miles NW. of Mt Molloy, 2700 ft, 15.iii.1964, I. F. B. Common & M. S. Upton, ANIC; 1♀, 9 miles N. of Kuranda, 12.iii.1964, I. F. B. Common & M. S. Upton, ANIC.

Description

Coloration. As in *acuta*-group description, costal margin of tegmen sometimes narrowly red from near base but tegmen otherwise lacking red. Tegminal granules dark at tip, particularly those near apex of tegmen.

Morphology. Head (Figs 146–148): frons strongly convex in basal portion; vertex (Fig. 146) triangularly produced, not evenly rounded anteriorly. Tegmen (Fig. 145): apical angle nearly right-angled; apical margin straight to concave; sutural angle produced dorsally to acute point.

Measurements

Males: lc (8) 5.23 ± 0.24 (4.87–5.48), IR (8) 7.54 ± 0.32 (7.17–7.98), wt (8) 4.43 ± 0.20 (4.14–4.75), lv (8) 0.72 ± 0.02 (0.69–0.75), vv (8) 0.89 ± 0.04 (0.81–0.95), lp (8) 0.58 ± 0.03 (0.53–0.61), lf (8) 1.43 ± 0.06 (1.37–1.54), wf (8) 1.04 ± 0.06 (0.93–1.13).

Females: lc (8) 5.99 ± 0.34 (5.25–6.26), IR (8) 8.53 ± 0.39 (7.68–8.95), wt (8) 5.09 ± 0.23 (4.65–5.25), lv (8) 0.80 ± 0.06 (0.73–0.89), vv (8) 0.96 ± 0.04 (0.89–1.01), lp (8) 0.61 ± 0.02 (0.58–0.65), lf (8) 1.54 ± 0.09 (1.41–1.66), wf (8) 1.12 ± 0.04 (1.05–1.17).

Male genitalia. Pygofer with blunt triangular process. Paramere narrow, with bluntly pointed process about equal in length to pygofer process (Fig. 11). Aedeagus as in Fig. 12.

Female genitalia. 3rd valvulae triangular with pilose area ventral. 2nd valvulae gap widely U-shaped, shallow, about twice as wide at tips of valvulae as deep (Fig. 93).

Notes

This is one of the largest species of *Siphanta* and is distinguished from all others by the shape of the vertex. The male genitalia indicate a close affinity with *S. glauca*, sp. nov., which has the vertex evenly rounded anteriorly.

Siphanta glauca, sp. nov.

(Figs 13-14, 94, 149-152)

Types

Holotype ♂, Lamington National Park, Qld, 2700 ft, 7.xi.1961, I. F. B. Common & M. S. Upton, Reg. No. 9448 ANIC.

Paratypes. **Queensland:** 2♂, 1♀, 18 miles S. of Gympie, 28.ii.1964, I. F. B. Common & M. S. Upton, 1♂, 1♀ in ANIC, 1♂ in BCRI; 1♂, Bulburia State Forest, 27-29.v.1960, F. A. Perkins, QU, tegmina slightly damaged apically; 1♀, Brookfield, near Brisbane, 13.x.1967, C. Campbell, BCRI; 1♀, Toowoomba, 2.ii.1951, J. Letchford, QU; 1♀, Montville, 27.x.1932, QDPI; 1♀, Brisbane, 2.viii.195, J. Martin, QU. **New South Wales:** 1♀ on *Artocarpus integrifolius*, Alstonville, near Ballina, 8.vi.1978, B. J. Loudon, BCRI.

Description

Coloration. As in *acuta*-group description. Tegminal granules dark at tips.

Morphology. Head (Figs. 150-152): frons with strong longitudinal carinae over basal half; vertex (Fig. 150) with front margin evenly rounded anteriorly. Tegmen (Fig. 149): triangular with apical angle roundly right-angled or slightly obtuse and sutural angle produced dorsally to acute point.

Measurements

Males: lc (4) 5.30 ± 0.25 (4.95-5.56), IR (4) 7.57 ± 0.35 (7.15-7.98), wt (4) 4.16 ± 0.19 (3.94-4.39), lv (4) 0.56 ± 0.05 (0.53-0.63), wv (4) 0.94 ± 0.04 (0.89-0.97), lp (4) 0.59 ± 0.02 (0.57-0.61), lf (4) 1.22 ± 0.06 (1.17-1.29), wf (4) 1.10 ± 0.03 (1.05-1.13).

Females: lc (5) 6.00 ± 0.37 (5.56-6.41), IR (5) 8.35 ± 0.35 (7.98-8.89), wt (5) 4.86 ± 0.28 (4.55-5.25), lv (5) 0.63 ± 0.07 (0.55-0.73), wv (5) 1.00 ± 0.05 (0.93-1.07), lp (5) 0.61 ± 0.02 (0.59-0.65), lf (5) 1.37 ± 0.08 (1.29-1.49), wf (5) 1.17 ± 0.05 (1.09-1.21).

Male genitalia. Pygofer without process, dorsolateral corner rounded. Paramere parallel-sided with strongly pointed process (Fig. 13). Aedeagus as in Fig. 14.

Female genitalia. 3rd valvulae broadly triangular with pilose area ventral. 2nd valvulae gap widely U-shaped (Fig. 94). Apex of anal tube entire or very slightly emarginate.

Notes

S. glauca is closely related to *S. galeata* Kirkaldy, from which it can be distinguished by the shape of the vertex. In external features it is very similar to *S. bifida*, sp. nov. and *S. griseoviridis*, sp. nov. From the former it is distinguishable by the shape of the paramere, and from both by the absence of a pygofer process. The females can be distinguished by the characters given in the key. In addition, *S. glauca* appears to be restricted to south-east Queensland and northern New South Wales, whereas *S. galeata*, *S. bifida* and *S. griseoviridis* are north Queensland species.

Siphanta griseoviridis, sp. nov.

(Figs 15-16, 95, 153-156)

Types

Holotype ♂, ex *Litchi sinensis*, Ingham, Qld, 3.xi.1971, B. Franzmann, J415, Reg. No. T.9387 QM.

Paratypes. **Queensland:** 1♂, same data as holotype, J416, QDPI; 1♂, Dunk I., August 1927, H. Hacker, BCRI; 1♀, Kuranda, 11.vi.1927, A. J. Turner, QM.

Description

Coloration. As in *acuta*-group description, red coloration reduced in area. Tegminal granules dark at tips.

Morphology. Head (Figs 154–156): frons with lateral carinae weak; vertex with front margin rounded. Tegmen (Fig. 153): apical angle rounded, sutural angle slightly produced dorsally.

Measurements

Males: lc (3) 5.07 ± 0.28 (4.75–5.25), IR (3) 7.28 ± 0.43 (6.79–7.58), wt (3) 4.16 ± 0.29 (3.84–4.40), lv (3) 0.58 ± 0.02 (0.57–0.61), wv (3) 0.90 ± 0.04 (0.85–0.93), lp (3) 0.56 ± 0.03 (0.53–0.58), lf (3) 1.25 ± 0.04 (1.21–1.29), wf (3) 1.05 ± 0.04 (1.01–1.09).

Male genitalia. Pygofer process short triangular with strongly pointed apex. Paramere elongate with strong process near apex (Fig. 15). Aedeagus as in Fig. 16.

Female genitalia. 2nd valvulae gap widely U-shaped in single female known (Fig. 95). Anal tube roundly emarginate apically.

Notes

S. griseoviridis is close to *S. glauca*, *S. bifida* and *S. galeata*. Males can be distinguished by examination of the male genitalia. Females can be differentiated from females of *S. galeata* by the shape of the vertex, from females of *S. bifida* by the shape of the apex of the anal tube, and from females of *S. glauca* by an apparent difference in distribution.

Siphanta hackeri, sp. nov.

(Figs 17–18, 96, 157–160)

Types

Holotype ♂, Lamington National Park, Qld, 3000 ft, 21.xii.1921, Reg. No. T.9388 QM.

Paratypes. **Queensland:** 1 ♂ (right tegmen and wing missing), Lamington National Park, December 1921, H. Hacker, 3000 ft (labelled '*Siphanta* sp. near *acuta* Walk. prob. new species' in H. Hacker's hand), QM; 1 ♂, Lamington National Park, 3000 ft, 22.xii.1921, QU; 1 ♂, Lamington National Park, H. Hacker, 26.x.1923, BCRI; 1 ♂ (mounted with 1 ♀ presumed to be this species but not designated paratype), Lamington National Park, March 1932, H. Hacker, QDPI; 1 ♂, Tamborine Mountain, 11–17.v.1935, R. E. Turner, 1935-240, BMNH; 1 ♂, Tamborine Mountain, A. M. Lea, SAM; 2 ♂, Lamington National Park, December 1933, H. Hacker, C. J. Drake colln 1956, SI; 2 ♂, Southport, 24.x.1926, H. Hacker, C. J. Drake colln 1956, SI; 1 ♂, Tamborine Mountain, 6.v.1929, H. Hacker, C. J. Drake colln 1956, SI.

Description

Coloration. As in *acuta*-group description. Infuscation around apex of clavus. Tegminal granules concolorous with ground colour of tegmen.

Morphology. Head (Figs. 158–160): frons with carinae extending over basal half; vertex rounded anteriorly. Tegmen (Fig. 157): apical angle rounded, sutural angle nearly right-angled.

Measurements

Males: lc (12) 4.77 ± 0.20 (4.44–5.15), IR (12) 6.87 ± 0.33 (6.31–7.47), wt (12) 3.85 ± 0.15 (3.54–4.04), lv (12) 0.47 ± 0.04 (0.40–0.53), wv (12) 0.87 ± 0.04 (0.81–0.94), lp (12) 0.52 ± 0.02 (0.48–0.56), lf (12) 1.08 ± 0.04 (0.99–1.16), wf (12) 1.02 ± 0.04 (0.97–1.07).

Male genitalia. Pygofer process thick at base then abruptly narrowed to point; apex directed ventrally. Paramere narrow with large triangular process with apex pointed and slightly curved anteriorly (Fig. 17). Aedeagus as in Fig. 18.

Female genitalia. Described from females presumed to be this species. 2nd valvulae gap wide with valvulae converging apically (Figs 96, 291).

Notes

The infuscation around the apex of the clavus gives the impression of a V-shaped notch in the claval margin of the tegmen. This marking is also found in *S. similis*, sp. nov., which can be differentiated from *S. hackeri* only by examination of the male genitalia. The material of *S. hackeri* used in this study was collected from localities along the mountain ranges of eastern Queensland and New South Wales, whereas *S. similis* appears to be restricted to districts closer to the coast. No female paratypes of either species have been designated.

The species is named for Henry Hacker who collected much of the material used in this study and who recognized this as an undescribed species.

Siphanta hebes (Walker)

(Figs 19–20, 97, 161–164)

Poeciloptera hebes Walker, 1851, p. 464.

Poeciloptera atomaria Walker, 1858, p. 56. syn. nov.

Siphanta breviceps Kirkaldy, 1906, p. 454. syn. nov.

Siphanta stigma Distant, 1910a, p. 304. syn. nov.

Types

Holotype, ♀, N.S. Wales, 47 (or 49?)/22 in BMNH.

Other type-material examined: 1♂ holotype of *Poeciloptera atomaria* Walker 68·4 V.D.L. (written in ink, refers to Van Diemen's Land = Tasmania), BMNH; 1♂ holotype of *Siphanta stigma* Distant, Australia, BMNH; 1♂ holotype of *Siphanta breviceps* Kirkaldy, Brisbane, Q., Austr., June 1904, ♀ 317, BPB.

Other Material Examined

64♂, 68♀, from all parts of the range.

Known Distribution

Queensland: Malanda, Bingil Bay, Eight Mile Plains, Gympie, Bribie Island, Deception Bay, Nudgee, Brisbane, Dunwich, Lamington National Park, Canungra, Stanthorpe. **New South Wales:** Ballina, Ebor, Armidale, New England National Park, Merriwa, Hunter Valley, Doyalson, Gosford, Pearl Beach, Grose Wold, Sydney district, Bulli, Bowral, Nowra, Illawarra district, Braidwood. **Australian Capital Territory:** Canberra. **Victoria:** Melbourne. **Tasmania:** Furneaux Island Group, St Helens, Launceston, Hobart, Rokeby. **Western Australia:** Karrinyup, Rivervale.

Description

Coloration. As in *acuta*-group description. Tegminal granules concolorous with tegminal colour. Males often with infuscation around 1st branching of M1+2.

Morphology. Head (Figs 162–164): frons with 3 short carinae near base; vertex front margin evenly rounded, occasionally slightly prominent medially. Tegmen (Fig. 161): apical angle rounded; sutural angle right-angled in males but usually more prominent dorsally in females.

Measurements

Males: lc (44) 4.76 ± 0.33 (4.24–5.61), IR (10) 6.86 ± 0.49 (6.06–7.68), wt (10) 3.70 ± 0.25 (3.33–4.24), lv (10) 0.48 ± 0.08 (0.40–0.63), wv (43) 0.85 ± 0.05 (0.77–0.97), lp (10) 0.50 ± 0.03 (0.44–0.54), lf (43) 1.07 ± 0.09 (0.97–1.21), wf (43) 0.96 ± 0.05 (0.87–1.05).

Females: lc (33) 5.27 ± 0.35 (4.49–5.91), IR (11) 7.20 ± 0.35 (6.58–7.85), wt (11) 4.10 ± 0.30 (3.57–4.61), lv (11) 0.54 ± 0.09 (0.43–0.74), wv (32) 0.91 ± 0.09 (0.85–1.05), lp (10) 0.53 ± 0.05 (0.40–0.57), lf (32) 1.15 ± 0.07 (1.01–1.33), wf (32) 1.01 ± 0.06 (0.85–1.13).

Male genitalia. Pygofer process short recurved point. Paramere process elongate, pointed apically, curving slightly anteriorly from near apex of paramere (Fig. 19). Aedeagus as in Fig. 20.

Female genitalia. 3rd valvulae broadly triangular with pilose area ventral. 2nd valvulae gap wide, shallow, valvulae divergent to apices (Figs 97, 290).

Notes

S. hebes is a very common, widespread species and is usually mistaken for *S. acuta*. *S. hebes* is usually slightly smaller than *S. acuta* (see measurements) but the area of overlap is considerable. Male genitalia and the second valvulae gap in females are the only reliable characters for differentiation of these two species (Figs 97, 290).

S. breviceps Kirkaldy was synonymized with *S. acuta* by Fletcher (1979b). However, the holotype of *S. breviceps* falls clearly outside the ranges for many characters of *S. acuta* but within the ranges for all characters measured of *S. hebes*. The synonymy is thus transferred to *S. hebes*. The Bishop Museum collection contains specimens of *S. hebes*, which were collected in 1904 and were thus available to Kirkaldy for his 1906 publication. At that time *S. hebes* had been synonymized (incorrectly) with *S. acuta* by Stål (1862). The fact that *S. atomaria* (Walker) was absent from Kirkaldy's publication in 1906 implies that he was unaware that Walker had already described and named the species, and hence it was described as new by Kirkaldy.

Siphanta kurandae, sp. nov.

(Figs 21–22, 98, 165–168)

Types

Holotype ♂, Kuranda, Qld, 21–4.xi.1925, K55582, AM.

Paratypes. **Queensland:** 1 ♂, same data as holotype, K55583, AM; 3 ♀, Kuranda, May 1904, F. P. Dodd, 1907-54, BMNH.

Description

Coloration. As in *acuta*-group description. Tegmen in holotype with 2 red marks in centre of tegmen (Fig. 166), 1 at 1st branching of M1+2 and other on R4+5. 1 paratype with single red mark at first branching of M1+2. Other specimens lacking red marks at centre of tegmen. Granules concolorous with ground colour of tegmen (dull green). Red markings on head and legs faint, sometimes lacking.

Morphology. Head (Figs 166–168): frons with 3 carinae (Fig. 167) and rounded lateral margins; vertex with apical margin angulate medially (Fig. 166). Tegmen (Fig. 165): costal margin bowed; apical angle rounded; sutural angle right-angled.

Measurements

Males: (holotype first) lc (2) 5.15, 4.65; lR (2) 7.17, 6.46; wt (2) 4.34, 3.94; lv (2) 0.44, 0.44; wv (2) 0.93, 0.91; lp (2) 0.57, 0.57; lf (2) 1.11, 1.03; wf (2) 1.11, 1.01.

Females: lc (3) 5.33 ± 0.07 (5.25–5.38), lR (3) 7.35 ± 0.03 (7.32–7.37), wt (3) 4.66 ± 0.18 (4.49–4.85), lv (3) 0.45 ± 0.02 (0.44–0.48), wv (3) 0.96 ± 0.03 (0.93–0.99), lp (3) 0.57 ± 0.00 (0.57), lf (3) 1.13 ± 0.04 (1.09–1.17), wf (3) 1.14 ± 0.03 (1.11–1.17).

Male genitalia. Pygofer with short, sharply pointed process. Paramere triangular with pointed process at midlength (Fig. 21). Aedeagus as in Fig. 22.

Female genitalia. 3rd valvulae triangular with pilose area ventral. 2nd valvulae gap broad V-shaped (Fig. 98).

Notes

The strongly convex costal margin and broadly rounded apical angle, together with the evenly rounded lateral margins of the frons are helpful characters in separating females from those of *S. hebes*, which this species resembles generally.

Siphanta montana, sp. nov.

(Figs 23-24, 169-172)

Type

Holotype ♂, Bulburin, Qld, Site 1, Monto distr., 24°31'S., 151°29'E., Alt 540 m, ex malaise trap, 20.iii.1975, D. K. McAlpine, AM.

Description

Coloration. As in *acuta*-group description. Minute orange granulations of tegmen absent from narrow border interior to marginal red band so that tegmen has fine pale green line inside red margin. This line concolorous with central bare patch in each cell. Holotype with dark mark at 1st branching of M1+2, which may not be found in all specimens.

Morphology. Head (Figs 170-172): frons parallel-sided with slight prominence level with antennae; vertex more or less evenly rounded anteriorly, slightly angulate medially. Tegmen (Fig. 169): apical angle roundly right-angled; sutural angle produced dorsally to acute point; apical margin straight.

Measurements

Holotype: lc 4.75, IR 6.72, wt 3.79, lv 0.44, wv 0.89, lp 0.53, lf 1.09, wf 1.01.

Male genitalia. Pygofer with elongate bluntly pointed process. Paramere apically truncate with short, recurved, pointed process mounted near apex (Fig. 23). Aedeagus as in Fig. 24.

Female. Unknown.

Notes

S. montana externally is very similar to male *S. hebes*, *S. peracuta*, *S. solitaria* and some males of *S. acuta*. The sutural angle of the tegmen is more prominent than in these species but the variation in most *Siphanta* species and the fact that the degree of variability in *S. montana* is unknown means that this character may not be significant. Examination of the male genitalia and particularly of the structure of the aedeagus is the only reliable means of identifying this species.

Siphanta recurva, sp. nov.

(Figs 25-26, 173-176)

Types

Holotype ♂, Cairns district, Qld, A. M. Lea, Reg. No. 21156 SAM.

Paratypes. **Queensland:** 1 ♂, same data as holotype, BCRI; 1 ♂, near Deeral, June 1948, N. L. H. Krauss, SI; 1 ♂, Mackay, July 1937, L. Franzen, H. Hacker, C. J. Drake colln 1956, SI; 1 ♂, Lake Barrine, 530 m, 31.i.-1.ii.1964, J. Sedlacek coll., BPB.

Description

Coloration. As in *acuta*-group description. Ground colour yellow (probably leaf green in life) with red on head and legs very faint. Red border of tegmen extending short distance onto apical portion of clavus and over most of costal margin. Granules concolorous with ground colour of tegmen.

Morphology. Head (Figs 174-176): frons evenly rounded laterally, with 3 carinae (Fig. 175); vertex shortish, slightly produced apically (Fig. 174). Tegmen (Fig. 173): apical angle rounded; sutural angle right-angled; apical margin lightly convex.

Measurements

Males: lc (5) 4.99 ± 0.15 (4.85-5.20), IR (5) 7.28 ± 0.32 (6.97-7.78), wt (5) 4.14 ± 0.21 (3.94-4.49), lv (5) 0.42 ± 0.01 (0.40-0.44), wv (5) 0.89 ± 0.01 (0.87-0.91), lp (5) 0.53 ± 0.02 (0.50-0.55), lf (5) 1.08 ± 0.03 (1.03-1.11), wf (5) 1.05 ± 0.03 (0.99-1.07).

Male genitalia. Pygofer with short pointed process. Hind margin of pygofer on each side slightly excavate below process. Paramere elongate, triangular with short triangular process mounted near apex (Fig. 25). Aedeagus as in Fig. 26.

Female. Unknown.

Notes

S. recurva resembles *S. montana*, *S. solitaria*, *S. hackeri* and *S. similis* in external morphology. It can be separated from these species by examination of the male genitalia.

Siphanta similis, sp. nov.

(Figs 27-28, 99, 177-180)

Types

Holotype ♂, Brisbane, Qld, 5.x.1962, T. Brooks, Reg. No. T.9389 QM.

Paratypes. **Queensland:** 1♂, Noosa, 5.x.1939, A. J. Turner, QM; 1♂, Dayboro, 16.i.1928, H. Hacker, C. J. Drake colln 1956, SI; 1♂, Landsborough, 31.iii.1934, H. Hacker, C. J. Drake colln 1956, SI; 2♂, H. Hacker, C. J. Drake colln 1956, SI; 2♂, Mt Glorious, 1.xii.1930, H. Hacker, C. J. Drake colln 1956, SI; 2♂, same data as preceding, BCRI; 1♂, Mt Glorious, 6.x.1929, H. Hacker, C. J. Drake colln 1956, SI; 2♂, Maleny, 10.i.1929, H. Hacker, C. J. Drake colln 1956, SI; 2♂, same data as preceding, BCRI; 2♂, Maleny, 20.i.1936, H. Hacker, C. J. Drake colln 1956, SI; 1♂, Mt Glorious, 13.xi.1961, L. & M. Gressitt coll. BPB; 2♂ (mounted with 2♀ presumed to be this species but not designated paratypes), Brisbane, H. Hacker, 9.xi.1925, QM (1♂ with head and prothorax missing).

Description

Coloration. As in *acuta*-group description. Infuscation around apex of clavus. Tegminal granules concolorous with ground colour of tegmen.

Morphology. Head (Figs 178-180): vertex rounded apically, sometimes slightly angulate. Tegmen (Fig. 177): apical angle rounded; sutural angle nearly right-angled.

Measurements

Males: lc (20) 4.66 ± 0.16 (4.29-4.95), lR (20) 6.79 ± 0.20 (6.36-7.15), wt (20) 3.77 ± 0.20 (3.48-4.32), lv (19) 0.45 ± 0.03 (0.40-0.51), wv (19) 0.87 ± 0.04 (0.81-0.95), lp (19) 0.49 ± 0.02 (0.44-0.53), lf (19) 1.04 ± 0.04 (0.97-1.13), wf (19) 1.00 ± 0.04 (0.91-1.09).

Male genitalia. Pygofer with elongate tapered process. Paramere elongate, somewhat pointed apically with recurved pointed process at about $\frac{2}{3}$ length (Fig. 27). Aedeagus as in Fig. 28.

Female genitalia. Described from females presumed to be this species. 2nd valvulae gap wide with valvulae converging apically, so gap almost circular (Fig. 99).

Notes

This species is very similar in appearance to *S. hackeri* (q.v.).

Siphanta solitaria, sp. nov.

(Figs 29-30, 181-184)

Types

Holotype ♂, Mackay, Qld, 9.viii.1935, O. H. Swezey Collector, BPB.

Description

Coloration. As in *acuta*-group description but (in sole specimen known) lacking red on head. Granules on tegmen concolorous with ground colour of tegmen.

Morphology. Head (Figs 182–184): frons with lateral margins evenly curved and 3 carinae (Fig. 183); vertex short, slightly angularly produced apically. Tegmen (Fig. 181): apical angle rounded, sutural angle rounded right-angle; apical margin slightly convex.

Measurements

Holotype: lc 4.75, IR 6.53, wt 3.94, lv 0.36, wv 0.91, lp 0.48, lf 0.97, wf 1.02.

Male genitalia. Pygofer with lateral margin prominent posteriorly, process not clearly differentiated from margin. Paramere with thick recurved process (Fig. 29). Aedeagus as in Fig. 30.

Female. Unknown.

Notes

This species is close to *S. recurva* but can be easily distinguished by examination of the aedeagus.

Siphanta tropica, sp. nov.

(Figs 31–32, 100, 185–188)

Types

Holotype ♂, Dunk Island, H. Hacker, August 1927 (remounted 29.viii.1981), Reg. No. T.9390 QM.

Paratypes. **Queensland:** 1 ♂, 2 ♀, same data as holotype (1 ♀ remounted), QM; 1 ♂, 1 ♀ (mounted together), Tully, 20.vi.1939, A. J. Turner, BCRI; 2 ♂, Dunk Island, H. Hacker, C. J. Drake colln 1956, 1 in SI, 1 in BCRI; 1 ♂, H. Hacker, C. J. Drake colln 1956, SI; 1 ♀ Lawes, February 1954, A. J. Cowan, QU.

Description

Coloration. As in *acuta*-group description. Red colour on head and legs absent in all specimens seen. Granules on tegmen concolorous with ground colour of tegmen.

Morphology. Head (Figs 186–188): frons with 3 clear carinae, median nearly percurrent; vertex with apical margin roundly produced, angulately prominent medially. Tegmen (Fig. 185): apical angle rounded; sutural angle rounded right-angle; apical margin slightly convex.

Measurements

Males: lc (6) 4.80 ± 0.09 (4.70–4.95), IR (6) 6.73 ± 0.23 (6.36–7.02), wt (6) 4.00 ± 0.17 (3.84–4.24), lv (6) 0.40 ± 0.03 (0.36–0.44), wv (6) 0.92 ± 0.02 (0.89–0.93), lp (6) 0.54 ± 0.03 (0.51–0.59), lf (6) 1.00 ± 0.05 (0.97–1.03), wf (6) 1.03 ± 0.03 (0.99–1.07).

Females: lc (5) 5.20 ± 0.22 (4.90–5.40), IR (5) 7.38 ± 0.26 (6.97–7.63), wt (5) 4.50 ± 0.31 (4.09–4.85), lv (5) 0.43 ± 0.05 (0.36–0.48), wv (5) 0.98 ± 0.03 (0.94–1.01), lp (5) 0.57 ± 0.03 (0.55–0.61), lf (5) 1.07 ± 0.06 (1.01–1.15), wf (5) 1.12 ± 0.04 (1.07–1.17).

Male genitalia. Pygofer lacking process. Paramere triangular with prominent pointed process (Fig. 31). Aedeagus as shown in Fig. 32.

Female genitalia. 2nd valvulae gap widely U-shaped, valvulae short, divergent to apices (Fig. 100).

Notes

S. tropica fits into a closely related group of species within the *acuta* group. This sub-group includes *S. solitaria*, *S. similis*, *S. hackeri*, *S. recurva* and *S. kurandae*. These species all have the red coloration on the head and legs reduced, the lateral margins of the frons evenly convex without a prominence level with the antennae, and the sutural angle of the tegmen right-angled or nearly so. The structure of the aedeagus, however, clearly allies them to *S. hebes* and hence to *S. acuta*.

Siphanta patruelis (Stål)

(Figs 33-34, 101, 189-193)

Phyllyphanta patruelis Stål, 1859, p. 283.*Siphanta toga* Kirkaldy, 1906, p. 454. syn. nov.*Siphanta javana* Kirkaldy, 1913, p. 21. syn. nov.*Parasalurnis infumata* Distant, 1910a, p. 310. syn. nov.*Lombokia everetti* Distant, 1910b, p. 323. syn. nov.*Siphanta toga* var. *maculata* Lallemand, 1935, p. 662.*Types*

Holotype ♀, Batavia, Stål, NRS.

Other type-material examined: 1 ♂, holotype of *S. toga* Kirkaldy, Cairns, Qld, N. Austr., July 1904, BPB; 1 ♂, holotype of *S. javana* Kirkaldy, Java, Pekalongan, F. Muir, BPB; 1 ♀, holotype of *P. infumata* Distant, Townsville, Qld. 17.xi.1901, P. P. Dodd, 1902-319, BMNH; 1 ♀, holotype of *L. everetti* Distant, Lombok, Everett, 98-7, 2500 ft, June 1896, BMNH.

Other Material Examined

225 ♂, 261 ♀, from all parts of the range except Philippines.

Known Distribution

Queensland: Murray Island, Moa Island, Lockerbie, Red Island Point, Bamaga, Moreton, Weipa, Iron Range, Claudie River, Archer River, Rocky River, Coen, Silver Plains, Cooktown, Kowanyama, Pt Douglas, Mornington Island, Mount Molloy, Kuranda, Cairns, Mareeba, Bentinck Island, Meringa, Gordonvale, Tully, Dunk Island, Halifax, Ingham, Palm Island, Nardoo, Townsville, Killymoon, Ayr, Clare, Charters Towers, Collinsville, Richmond, Hughenden, Winton, Lake Idamea, Rockhampton, Emerald, Duaringa, Moura, Taroom, Quilpie, Cunnamulla. **New South Wales**: Lightning Ridge, Moree. **Northern Territory**: Coburg Peninsula, Cooper Creek, Maningrida, Oenpelli, Darwin, Mudginbarry HS, Humpty Doo, Mt Cahill, East Alligator River, Adelaide River, Woodah Isle, Daly River, Groote Eylandt, Cullen Siding, Katherine, Dorisvale HS, Tindal, Roper River, Pellew Islands, Coolibah HS, Auvergne HS, Victoria River Downs, McArthur River, Elliott, Brunette Downs, Tennant Creek, Tanami, Wauchope, Barrow Creek, Alice Springs. **Western Australia**: Sir Graham Moore Island, Wyndham, Kununurra, Lansdowne HS, Broome, Kimberley district, Camballin, Flora Valley Station, Monte Bello Islands, Karratha, Millstream, Minderoo, Swan River (?). **Indonesia**: Java, Lombok, Sumbawa, Timor. **Philippines**. **New Guinea**: Eramboe 80 km ex Merauke, Daru I., Rouna, Oriomo River region, Boroko, Port Moresby region, Redscar Bay.

Description

Coloration. Pale green, fading to yellow in dried specimens. Base of frons, apices of fore- and mid-tibiae and all tarsi with red markings. Tegmen with centre of each cell usually paler than surrounds. Costal margin to apex of costal cell pallid, then finely marked with red around apical margin and claval margin to apex of clavus. This red border sometimes extends proximally nearly to base of costal margin. Some specimens lack red entirely. Tegminal granules at apex, often surrounded with red or brown. Tegmen sometimes with pale oblique stripe (as described for *S. toga* Kirkaldy, 1906), or extensive brown areas. Lallemand's (1935) var. *maculata* with base of clavus, apex of clavus to sutural angle and large irregular spot in centre of tegmen dark brown, this latter spot sometimes with white spot in middle (see Fig. 190). Medial, cubital and claval areas of tegmen may be dark brown as in *P. infumata* Distant.

Morphology. Head (Figs 191-193): frons with median longitudinal carina extending from apex to beyond midlength of frons; lateral carinae indicated at very apex only or not

discernible; frons with lateral margins prominent level with antennae; vertex slightly ascending anteriorly, with apical margin triangularly produced forwards, medially rounded. Tegmen (Figs 189–190): obliquely truncate with apical and sutural angles rounded; costal margin usually slightly concave beyond end of costal cell so that tegmen appears constricted at this point; M1 + 2 branched just proximal to level of claval apex.

Measurements

Males: lc (15) 4.58 ± 0.53 (3.70–5.43), IR (18) 7.01 ± 0.74 (5.43–8.32), wt (17) 3.73 ± 0.55 (2.54–4.74), lv (10) 0.80 ± 0.07 (0.66–0.89), wv (10) 0.78 ± 0.04 (0.69–0.83), lp (10) 0.54 ± 0.05 (0.46–0.63), lf (10) 1.03 ± 0.12 (0.74–1.19), wf (10) 0.96 ± 0.06 (0.83–1.03).

Females: lc (10) 5.05 ± 0.47 (4.33–5.54), IR (9) 7.55 ± 0.73 (6.23–8.31), wt (10) 4.09 ± 0.61 (2.93–4.88), lv (10) 0.81 ± 0.09 (0.66–0.91), wv (10) 0.84 ± 0.07 (0.73–0.93), lp (10) 0.56 ± 0.05 (0.49–0.63), lf (10) 1.07 ± 0.10 (0.89–1.17), wf (10) 1.02 ± 0.06 (0.89–1.06).

Male genitalia. Pygofer lacking process, at most with dorsolateral corner slightly prominent. Paramere roughly triangular with recurved, pointed process mounted near apex (Fig. 33). Aedeagus as in Fig. 34.

Female genitalia. 3rd valvulae triangular with pilose area ventral. 2nd valvulae gap very shallow and wide, valvulae divergent to apices (Fig. 101).

Notes

S. patruelis is widespread in the tropical parts of Australia and its range outside this country is quite extensive. Despite the considerable variation in colour, size and, to some extent, shape of tegmina, the male genitalia are remarkably constant throughout the range of the species. Specimens from the Philippines have not been examined in this study. The concave costal margin of the tegmen, coupled with the dark granules with dark surrounds and the long vertex, make this species easily recognizable even without examination of the male genitalia.

Siphanta compacta, sp. nov.

(Figs 35–36, 102, 194–197)

Types

Holotype ♂, 6.4 km SSW. of Victoria River Downs, N.T., 14–17.vii.1973, L. P. Kelsey, Site 2 at light, Reg. No. 9449 ANIC.

Paratypes. **Western Australia:** 1 ♂, 18°27'S., 123°03'E., 101 km SE. by E. Broome, 19.viii.1976, I. F. B. Common, ANIC; 1 ♀, Tunnel Creek, E. of Derby, 1.xi.1978, M. S. & B. J. Moulds, BCRI; 1 ♀, Camballin, 10.iii.1967, J. Hodson, WADA. **Queensland:** 1 ♀, Normanton, 17.iv.1961, Light trap, QM; 1 ♀, Cloncurry–Julia Creek, 21.viii.1963, T. E. Woodward, QM. **Northern Territory:** 1 ♂, 10 miles NW. of Yuenduni Creek bed, at light, 20.ii.1968, SAM.

Description

Coloration. Pale green fading to yellow, lacking red except for fore- and mid-legs speckled with red and black on femora, tibiae and tarsi, and red hind tarsi. Tegminal granules dark at apex. Paratype from Camballin (in WADA) with brown mark on clavus near apex of scutellum, another at apex of clavus and another at sutural angle.

Morphology. Head (Figs 195–197): vertex angularly produced apically. Tegmen (Fig. 194): obliquely truncate; sutural angle obtusely rounded; apical angle less obtusely rounded; M1 + 2 branched just proximal to level of apex of clavus.

Measurements

Male: (holotype first) lc (2) 3.99, 3.74; IR (2) 5.66, 5.96; wt (2) 2.83, 2.93; lv (2) 0.52, 0.42; wv (2) 0.79, 0.74; lp (2) 0.46, 0.48; lf (2) 0.93, 0.87; wf (2) 0.97, 0.89.

Females: lc (4) 4.35 ± 0.47 (3.81–4.95), IR (4) 6.38 ± 0.67 (5.66–7.27), wt (4) 3.31 ± 0.42 (2.38–3.84), lv (4) 0.48 ± 0.09 (0.42–0.61), wv (4) 0.85 ± 0.05 (0.80–0.91), lp (4) 0.48 ± 0.05 (0.44–0.55), lf (4) 1.00 ± 0.11 (0.87–1.09), wf (4) 1.02 ± 0.05 (0.95–1.05).

Male genitalia. Pygofer with dorsolateral corners roundly prominent, lacking distinct process. Parameres elongate with sharply pointed recurved process near apex (Fig. 35). Aedeagus as in Fig. 36.

Female genitalia. 3rd valvulae short and broad with pilose area ventral. 2nd valvulae gap widely U-shaped (Fig. 102).

Notes

S. compacta can be distinguished from *S. patruelis* by the structure of the male genitalia and by the generally smaller size.

Siphanta nubecula Jacobi

(Figs 37–38, 103, 198–202)

Siphanta nubecula Jacobi, 1928, p. 18.

Types

Holotype ♀, by monotypy, 'Kimberley district, N.V. Austr., Mjöberg' (north Western Australia), NRS.

Other Material Examined

Northern Territory: 3♂, Darwin, 30.ix.1960, J. L. Gressitt, BPB; 1♂, 2♀, Katherine, 17–18.viii.1973, L. P. Kelsey, ANIC; 1♂, 1♀, 12°25'S., 132°58'E., 1 km N. of Cahill's Crossing, East Alligator River, 7.vi.1973, R. L. Kitching, ANIC; 1♂, Baroalba Creek Springs, 19 km NE. by E. of Mt Cahill, 12°47'S., 132°51'E., 28.x.1972, M. S. Upton, ANIC; 1♂, East Alligator River, 1 km N. of Cahill's Crossing, 12°25'S., 132°58'E., 8.xi.1972, M. S. Upton, ANIC; 1♂, 1♀, Smith Pt, Coburg Peninsula, 11°07'S., 132°08'E., 15–17.ii.1977, R. Lewis, ANIC; 3♀, Darwin, 25.iii.1945, B. Malkin, SI; 1♀, Oenpelli, December 1918, P. Cahill, MV; 1♀, Escarpment Top, Katherine Gorge, 2.vii.1969, J. C. LeSouef, MV; 1♀, Daly River, 1.vii.1969, J. C. LeSouef, MV; 1♀, Katherine (low level Park), 16.viii.1973, L. P. Kelsey, ANIC; 1♀, Katherine, 17.iv.1962, I. F. B. Common, ANIC; 1♀, at light, Daly River Mission, 12.iv.1974, J. F. Hutchinson, ANIC; 1♀, Smith Pt, Coburg Peninsula, 11°07'S., 132°08'E., 22.ii.1977, R. Lewis, ANIC; 1♀, at light, 12°23'S., 132°57'E., 8.vi.1973, R. L. Kitching, ANIC; 1♀, Nightcliff, Darwin, 2 m, 2.x.1960, J. L. Gressitt, BPB. **Western Australia:** 3♂, 1♀, Moola Bulla Station, 29–30.ix.1953, N. B. Tindale, ESI 2291, SAM; 1♂, Kimberley Research Station, Kununurra, 5–8.vii.1973, L. P. Kelsey, ANIC; 1♀, Sir Graham Moore Island, 20.ii.1945, B. Malkin, SI; 1♀, Wilson River, Aust. Museum N.W. Aust. Party, 20.v.1952, AM.

Description

Coloration. Green with pale mottling on tegmina. Apex of head and lateral margins of frons and vertex marked with red. Tegmina with bright green patches separated by pallid areas giving mottled appearance. Granules dark, usually surrounded by red, particularly on clavus. Costal margin pallid with fine red spotting at very edge, to apex of costal cell, thence bordered with red around apical margin to apex of clavus, red interrupted at vein endings. Fore- and mid-femora, tibiae and tarsi spotted with red and black. Tegmen in some specimens with oblique pale stripe (Fig. 199).

Morphology. Head (Figs 200–202): frons with median carina, lateral margins of frons strongly convex near frontoclypeal suture (Figs 201, 202); vertex rectangular, very slightly angulately produced apically (Fig. 200). Tegmen (Figs 198–199): crossveins distinct, widely separated; apical angle rounded; sutural angle nearly right-angled; M1 + 2 branched level with apex of clavus.

Measurements

Males: lc (7) 4.28 ± 0.17 (3.99-4.44), IR (7) 6.63 ± 0.30 (6.21-7.07), wt (7) 3.52 ± 0.24 (3.18-3.84), lv (7) 0.44 ± 0.03 (0.42-0.51), wv (7) 0.96 ± 0.04 (0.89-1.01), lp (7) 0.44 ± 0.01 (0.42-0.46), lf (7) 0.89 ± 0.06 (0.79-0.96), wf (7) 1.10 ± 0.04 (1.05-1.15).

Females: lc (10) 4.75 ± 0.27 (4.34-5.15), IR (10) 7.28 ± 0.49 (6.58-8.18), wt (10) 3.89 ± 0.39 (3.23-4.44), lv (10) 0.46 ± 0.05 (0.40-0.55), wv (10) 1.04 ± 0.04 (0.97-1.12), lp (10) 0.46 ± 0.02 (0.42-0.48), lf (10) 0.98 ± 0.06 (0.86-1.03), wf (10) 1.16 ± 0.07 (1.05-1.27).

Male genitalia. Pygofer with slight protuberance at laterodorsal corner but lacking distinct process. Paramere elongate, triangular, with short pointed process at apex (Fig. 37). Aedeagus as in Fig. 38.

Female genitalia. 3rd valvulae short, triangular with pilose area ventral. 2nd valvulae gap wide with apices of valvulae converging (Fig. 103).

Notes

S. nubecula shows similarity in the structure of the male genitalia to *S. anomala* Jacobi but these species are two of the most distinctive in external appearance in the genus. The short, broad vertex, the shape of the frons and the mottled appearance of the tegmen are diagnostic for *S. nubecula*.

anomala Group

The following five species show affinity with each other but lack uniform characteristics throughout. They are termed the *anomala* group.

Brown coloration is found in four of the species. *S. anomala* Jacobi and *S. fusca*, sp. nov. are the only species of *Siphanta* to be completely brown in colour. *S. constricta*, sp. nov., which lacks brown entirely, except for outer claval cells in some specimens, is very similar to *S. anomala* in the anomalous head structure and tegminal shape. *S. gregaria* Jacobi has a shape and colour pattern more typical of the *acuta* species-group but is linked to *S. occidentalis*, sp. nov. and thence to *S. fusca* on genitalic characteristics. *S. occidentalis*, sp. nov. is close to *S. fusca* in general shape, structure of the head, and features of the male genitalia, but lacks the brown coloration except on the outer veins and cell of the clavus.

Siphanta anomala Jacobi

(Figs 39-40, 104, 203-206)

Siphanta anomala Jacobi, 1928, p. 19.

Type

Holotype ♀, by monotypy, 'Kimberley district, N.V. Austr., Mjöberg' (north Western Australia); NRS.

Other Material Examined

Western Australia: 2♂, Baudin Island, 91-82, 1187-8, BMNH; 2♂, 1♀, 17°55'S., 122°13'E., 6 km NNW. of Broome, 23.viii.1976, I. F. B. Common, ANIC; 1♀, Sir Graham Moore Island, 30.ii.1945, B. Malkin, SI; 1♀, Fremantle(?), 91-82, BMNH.

Description

Coloration. Generally brown with white granules and red speckling. Pale stripe along midline of vertex, pronotum and mesonotum. Ventrally pale. Tegmen smoky brown, darker in obscure transverse bands. Costal margin speckled with red from near base to about $\frac{2}{3}$ length then pallid to near apex, thence alternating red and pallid around apical margin and claval margin to apex of clavus.

Morphology. Head (Figs 204-206): frons sloping steeply away on either side of median ridge over apical half, flat on basal half (Figs 205, 206); vertex elongate, produced forwards over entire breadth for some distance then rounded to apex; vertex evenly curved upwards

towards apex (Figs 203, 206). Tegmen (Fig. 203): costal margin strongly convex over basal $\frac{2}{3}$ then strongly concave before rounded apical angle; apical margin straight; sutural angle slightly less than 90°; M1 + 2 branched just distal to level of apex of clavus.

Measurements

Males: lc (3) 3.89 ± 0.05 (3.84–3.94), IR (3) 5.96 ± 0.23 (5.71–6.16), wt (3) 2.27 ± 0.13 (2.17–2.42), lv (3) 0.61 ± 0.03 (0.59–0.65), wv (3) 0.76 ± 0.02 (0.73–0.77), lp (3) 0.47 ± 0.01 (0.46–0.48), lf (3) 1.01 ± 0.08 (0.93–1.09), wf (3) 0.91 ± 0.03 (0.87–0.93).

Females: lc (2) 4.14, 4.74; IR (2) 6.57, 7.27; wt (2) 2.63, 2.68; lv (2) 0.67, 0.69; wv (2) 0.81, 0.83; lp (2) 0.48, 0.55; lf (2) 1.01, 1.13; wf (2) 0.95, 1.15.

Male genitalia. Pygofer lacking process. Paramere with short pointed process continuous with apical curve of paramere (Fig. 39). Aedeagus as in Fig. 40.

Female genitalia. 3rd valvulae narrow with pilose area ventral. 2nd valvulae gap widely V-shaped, with valvulae divergent to apices (Fig. 104).

Notes

The strongly sinuate costal margin of the tegmen, the shape of the head and the general dusky coloration separate this species from the typical form of *Siphanta*. However, the structure of the male genitalia, particularly the phallosoma (Fig. 40), shows a close affinity with *S. galeata* (Fig. 11), *S. glauca* (Fig. 13) and other members of the *acuta* group. In the shape of the tegmen and the structure of the head, *S. anomala* is close to *S. constricta*, sp. nov., which shows affinity with *S. hebes* in the structure of the aedeagus (see Figs 19, 43).

Siphanta fusca, sp. nov.

(Figs 41–42, 105, 207–210)

Types

Holotype ♂, Oobagooma, Western Australia, 5.v.1975, T. E. Aplin, Reg. No. 9450 ANIC.

Paratypes. **Western Australia:** 1 ♂, isolated pool in Ord River on Argyle Downs Station, October 1971, M. & E. Archer, BCRI; 1 ♀, Swan R., L. J. Newman, WADA; 1 ♀, Ord R., 51-1195, WAM. **Northern Territory:** 1 ♀, 8 km WSW. of Victoria River Downs, 12.ix.1973, L. P. Kelsey, ANIC. **Origin unknown:** 1 ♀, no data, ANIC.

Description

Coloration. Chocolate brown with red speckling. Frons pale brown with red and black speckling. Dorsum of thorax brown with pale granules. Fore- and mid-femora apically and fore- and mid-tibiae speckled with black. Tarsi marked with red. Tegmen chocolate brown with red crossveins. Tegmen darker brown near margins with edge red, apices of veins pale. Some specimens with darker markings on tegmen.

Morphology. Head (Figs 208–210): frons evenly rounded laterally with short median longitudinal carina and lateral carinae indicated at apex; vertex with apical margin more or less parallel with curvature of anterior margin of pronotum. Tegmen (Fig. 207): wider near apex than at level of claval apex; costal margin with concavity just beyond apex of costal cell, thence convex around apical angle; sutural angle rounded; M1 + 2 branched just proximal to level of apex of clavus.

Measurements

Males: (holotype first) lc (2) 4.00, 4.34; IR (2) 6.41, 5.86; wt (2) 3.08, 2.42; lv (2) 0.42, 0.42; wv (2) 0.85, 0.85; lp (2) 0.53, 0.48; lf (2) 0.85, 0.69; wf (2) 1.01, 1.03.

Females: lc (4) 4.61 ± 0.11 (4.49–4.75), IR (4) 6.80 ± 0.21 (6.57–7.07), wt (4) 3.23 ± 0.14 (3.13–3.43), lv (4) 0.44 ± 0.02 (0.42–0.46), wv (4) 0.92 ± 0.03 (0.89–0.96), lp (4) 0.55 ± 0.02 (0.53–0.57), lf (4) 0.86 ± 0.06 (0.79–0.93), wf (4) 1.08 ± 0.01 (1.06–1.09).

Male genitalia. Pygofer without process. Paramere triangular with recurved pointed process (Fig. 41). Aedeagus as in Fig. 42.

Female genitalia. 3rd valvulae narrow triangular, with pilose area lateroventral. 2nd valvulae gap broadly U-shaped (Fig. 105).

Notes

The male genitalia indicate a close affinity with *S. anomala* and this is supported by the dark coloration of both species. No other species of *Siphanta* has this dark colouring except in localized patches on the tegmina.

Two of the female paratypes have darker markings on the tegmina. These markings are similar to those of some specimens of *S. patruelis* var. *maculata* Lallemand. The male paratype has narrower tegmina than the remainder of the type-series but the genitalia do not differ from those of the holotype.

Siphanta constricta, sp. nov.

(Figs 43–44, 106, 211–215)

Types

Holotype ♂, 12°23'S., 132°56'E., 7 km NW. by N. of Cahill's Crossing, East Alligator River, Northern Territory, 27.v.1973, Upton & McInnes, Reg. No. 9451 ANIC.

Paratypes. **Northern Territory:** 1♂, Katherine Gorge, 14°19'S., 132°25'E., 16.x.1972, M. S. Upton, BCRI; 1♂, 1♀, 12°43'S., 132°54'E., Mt Brockman, 14 km S. by E. of Mudginbarry Homestead, 11.vi.1973, R. L. Kitching, ANIC; 1♀, same locality as holotype, 9.vi.1973, R. L. Kitching, at light, BCRI.

Description

Coloration. Head and thorax testaceous or green with red speckling around carinae and margins. Frons apically pallid with red and black speckling over apical half. Pronotum with white granules. Tegmen grey green in male and leaf green (fading to yellow) in females with orange crossveins. Margin spotted with red from near base of costal margin around apical margin to apex of clavus. Tegminal granules black at tip usually with bright red area surrounding each. Clavus with outer 2 cells fuscous.

Morphology. Head (Figs. 213–215): frons elongate, flat over basal $\frac{2}{3}$ with rounded prominences level with antennae; apex of frons with 3 short longitudinal carinae; vertex apically curving upwards (Fig. 215), smooth with apical margin roundly produced forwards (Fig. 213). Tegmen (Fig. 211, ♂; Fig. 212 ♀): costal margin strongly convex to apex of costal cell, thence concave to rounded apical angle; costal margin more strongly sinuate in males than females; sutural angle rounded right-angle; M1 + 2 branched level with apex of clavus.

Measurements

Males: lc (3) 4.69 ± 0.20 (4.47–4.85), IR (3) 7.37 ± 0.31 (7.07–7.68), wt (3) 3.30 ± 0.21 (3.13–3.54), lv (3) 0.64 ± 0.12 (0.63–0.65), wv (3) 0.80 ± 0.04 (0.77–0.85), lp (3) 0.57 ± 0.05 (0.53–0.63), lf (3) 1.13 ± 0.09 (1.03–1.21), wf (3) 0.97 ± 0.04 (0.93–1.01).

Females: lc (2) 4.85, 5.15; IR (2) 7.52, 8.28; wt (2) 3.59, 4.11; lv (2) 0.69, 0.65; wv (2) 0.83, 0.88; lp (2) 0.55, 0.55; lf (2) 1.19, 1.21; wf (2) 1.01, 1.04.

Male genitalia. Pygofer without process differentiated from posterodorsal corner. Paramere triangular with recurved pointed process (Fig. 43). Aedeagus as in Fig. 44.

Female genitalia. 3rd valvulae short, triangular with pilose area ventral. 2nd valvulae gap shallow, widely U-shaped (Fig. 106).

Notes

This species is distinctive in its bright coloration, particularly in the female. The strongly sinuate costal margin of the tegmen and the ascending front margin of the vertex are also found in *S. anomala* but this latter species is brown in colour.

Siphanta gregaria Jacobi
(Figs 45-46, 107, 216-219)

Siphanta gregaria Jacobi, 1928, p. 18.

Types

Lectotype ♂ (here designated), Malanda, Queensland, Mjöberg, NRS.

Paralectotype, ♂, Malanda, Queensland, Mjöberg 1927/5 Typus Co., coll. : A. Jacobi, in Staatliches Museum für Tierkunde, Dresden.

Other Material Examined

Queensland: 1 ♂, 11 miles S. of Ravenshoe, 2700 ft, 20.iii.1964, I. F. B. Common & M. S. Upton, ANIC; 1 ♀, Mt Edith, 18 miles NE. of Atherton, 3400 ft, 18.iii.1964, I. F. B. Common & M. S. Upton, ANIC.

Description

Coloration. Green fading to yellow. Head with red along margins and carinae. Mesonotum with 2 red marks posteriorly. Tegmen with broad red to red-brown margin extending from near base of costal margin around apical margin and claval margin to apex of clavus, interrupted at vein endings. Tegminal disc with dark granules surrounded by broad brown areas so that tegmen has spotted appearance. Clavus with outer cell entirely or mostly brown in colour.

Morphology. Head (Figs 217-219): vertex short with front margin obtusely angulate; frons with 3 carinae extending over at least $\frac{2}{3}$ length of frons. Tegmen (Fig. 216): apical angle rounded; sutural angle right-angled; M1 + 2 branched about level with apex of clavus.

Measurements

Males: lc (3) 5.43 ± 0.09 (5.35-5.53), IR (3) 8.25 ± 0.29 (8.08-8.59), wt (3) 4.35 ± 0.08 (4.28-4.44), lv (3) 0.46 ± 0.06 (0.42-0.53), wv (3) 0.92 ± 0.02 (0.89-0.93), lp (3) 0.56 ± 0.02 (0.53-0.57), lf (3) 1.24 ± 0.08 (1.17-1.33), wf (3) 1.06 ± 0.01 (1.05-1.07).

Females: lc (1) 6.16, IR (1) 9.37, wt (1) 5.05, lv (1) 0.45, wv (1) 1.05, lp (1) 0.59, lf (1) 1.23, wf (1) 1.13.

Male genitalia. Pygofer with short blunt process curving slightly ventrally. Paramere with elongate process at about $\frac{2}{3}$ length of dorsal margin (Fig. 45). Aedeagus as in Fig. 46.

Female genitalia. 3rd valvulae broad at base with narrow triangular lobes posteriorly. 2nd valvulae gap wide with apices of valvulae incurving distally (Fig. 107).

Notes

In coloration, head structure and genitalia structure, *S. gregaria* approaches *S. occidentalis*, sp. nov., but the large size and the spots on the tegmina make it quite easily recognizable.

Siphanta occidentalis, sp. nov.

(Figs 47-48, 108, 220-223)

Types

Holotype ♂, Kununurra, W.A., Kerrs Light Trap, 16.xi.1967, Reg. No. 9452 ANIC.

Paratypes. **Western Australia.** 1 ♂, 2 ♀, same data as holotype, 1 ♂, 1 ♀ in BCRI, 1 ♀ in WADA; 1 ♂, Kimberley Research Station, 19.xi.1959, K. T. Richards, WADA; 1 ♂, Kimberley Research Station, 25.xi.1959, K. T. Richards, WADA; 1 ♂, Flora Valley Station, 12.x.1953, N. B. Tindale, SAM; 1 ♂, same data as previous, 9.x.1953, ESI 2464, SAM; 1 ♀, Kimberley Research Station, ex light trap, 10.iv.1960, K. T. Richards, WADA; 1 ♀, same data as previous, 28.iii.1960, WADA; 1 ♀, Oobagooma, 5.v.1975, T. E. Aplin, WADA; 1 ♀, Kununurra, 9.iv.1962, I. F. B. Common, ANIC; 1 ♀, at light, 25 miles ESE. Broome,

16.iv.1963, J. E. Dowse, ANIC; 1 ♀, Martin's Well, West Kimberley, 24.iv.1977, D. H. Colless, light trap, ANIC.

Description

Coloration. Head dark brown, speckled with red and black. Thorax orange (probably green in life), dark brown dorsally, speckled with red laterally. Tegmen orange (probably green in life), finely speckled with red, particularly on crossveins. Granules dark at tip (more so in some specimens than in others). Costal margin from apex of costal cell, apical margin and claval margin to apex of clavus red, broken at vein endings. Outer claval cell reddish brown or brown.

Morphology. Head (Figs 221–223): frons with lateral margins rounded, widest at level of antennae; apex of frons with obscure median longitudinal carina and faint lateral carinae; vertex with apical margin evenly rounded (Fig. 221). Tegmen (Fig. 220): costal margin strongly convex to apex of costal cell, thence straight or slightly concave to rounded apical angle; sutural angle rounded; M1 + 2 branched just proximal to level of apex of clavus.

Measurements

Males: lc (6) 4.51 ± 0.12 (4.39–4.73), IR (6) 6.65 ± 0.13 (6.51–6.87), wt (6) 3.18 ± 0.07 (3.08–3.28), lv (6) 0.42 ± 0.01 (0.40–0.44), wv (6) 0.90 ± 0.03 (0.85–0.93), lp (6) 0.55 ± 0.02 (0.53–0.57), lf (6) 0.79 ± 0.04 (0.73–0.85), wf (6) 1.08 ± 0.02 (1.05–1.09).

Females: lc (8) 4.97 ± 0.24 (4.55–5.35), IR (8) 7.26 ± 0.40 (6.59–7.88), wt (8) 3.74 ± 0.28 (3.43–4.19), lv (8) 0.44 ± 0.05 (0.34–0.51), wv (8) 0.94 ± 0.07 (0.85–1.05), lp (8) 0.57 ± 0.03 (0.53–0.63), lf (8) 0.86 ± 0.06 (0.77–0.95), wf (8) 1.11 ± 0.06 (1.01–1.17).

Male genitalia. Pygofer with short prominence from dorsolateral corner. Paramere triangular with short recurved process (Fig. 47). Aedeagus as in Fig. 48.

Female genitalia. 3rd valvulae short, triangular, with pilose area lateroventral. 2nd valvulae gap widely V-shaped (Fig. 108).

Notes

This species approaches *S. fusca* in external morphology and in the structure of the male genitalia. The brown coloration typical of *S. fusca* is restricted to the outer claval cell of *S. occidentalis*. The aedeagus, particularly the phallosoma, provides diagnostic characters for this species.

granulicollis Group

The following five species are rather consistent in shape, size and colour and can be readily distinguished from other members of the genus by their small size and rounded tegmina. They are here termed the *granulicollis* group and share the characters outlined below.

Head short, frons longer than widest part which is level with antennae. Vertex with apical margin evenly rounded or obtusely angulate. Apical and basal margins of vertex more or less parallel. Tegmen with apical and sutural angles rounded. Costal margin convex throughout, more strongly so on basal half, so that widest part of tegmen at about midlength. Clavus long, extending nearly to sutural angle, so branching of M1 + 2 well basal of claval apex. Colour green, fading to yellow or orange in dried specimens. Apex of head, fore- and mid-tibiae externally and usually tarsi, red. Tegmen usually with red border from apex of costal cell around apical margin and claval margin to apex of clavus, this border interrupted by green vein endings. Outer claval vein usually red. Tegminal granules black.

Siphanta granulicollis (Stål)

(Figs 49–50, 109, 224–227)

Poeciloptera granulicollis Stål, 1859, p. 282.

Siphanta minuta Melichar, 1902, p. 38. syn. nov.

Types

Holotype ♂, 'Sidney, Kinb' (Sydney, Kinberg), NRS.

Other type-material examined: 1 ♀, holotype of *S. minuta* Melichar, 'St Helena', NRS.

Other Material Examined

88 ♂, 160 ♀, from all parts of the range.

Known Distribution

Queensland: Russell Island, Blunder, Fraser Island, Isis Junction, Tewah Creek near Tin Can Bay, Caloundra, Elimbah, Beerwah, Bribe Island, Deception Bay, Brisbane, North Stradbroke Island, Southport, Stanthorpe, Burleigh Heads. **New South Wales:** Byron Bay, Broadwater National Park, Macksville, Booti Booti near Forster, Munghorn Gap Nature Reserve near Mudgee, Gosford district, Blue Mountains, Pittwater, Sydney area, Royal National Park, Barren Ground Nature Reserve near Kiama, Mittagong, Braidwood. **Victoria:** Nelson*. **South Australia:** Tapanappa near Cape Jervis*. **Western Australia:** Swan River.

Description

Coloration. As in *granulicollis* group. Sometimes lacking all red markings.

Morphology. Head (Figs 225-227) and tegmen (Fig. 224) as in *granulicollis*-group description.

Measurements

Males: lc (12) 3.42 ± 0.22 (3.18-3.89), lR (12) 4.42 ± 0.23 (4.04-4.75), wt (12) 2.43 ± 0.25 (2.22-3.03), lv (12) 0.23 ± 0.02 (0.20-0.26), wv (12) 0.67 ± 0.03 (0.62-0.73), lp (12) 0.36 ± 0.01 (0.33-0.38), lf (12) 0.78 ± 0.03 (0.75-0.84), wf (12) 0.81 ± 0.03 (0.75-0.85).

Females: lc (10) 3.70 ± 0.27 (3.33-4.14), lR (10) 4.69 ± 0.31 (4.34-5.05), wt (10) 2.64 ± 0.24 (2.42-2.93), lv (10) 0.23 ± 0.02 (0.20-0.26), wv (10) 0.70 ± 0.04 (0.65-0.76), lp (10) 0.37 ± 0.03 (0.32-0.40), lf (10) 0.81 ± 0.04 (0.73-0.87), wf (10) 0.85 ± 0.05 (0.77-0.93).

Male genitalia. Pygofer with blunt triangular process (much reduced in specimens from Nelson, Vic.). Paramere narrow, with narrow triangular process at $\frac{4}{5}$ length (Fig. 49). Aedeagus as in Fig. 50. The variation indicated above involves the degree of prominence of the process of the conjunctiva.

Female genitalia. 3rd valvulae elongate triangular with pilose area ventral. 2nd valvulae gap widely U-shaped (Fig. 109).

Notes

S. granulicollis is the most widespread species in the *granulicollis* group and over most of that range is consistent in the structure of the male genitalia. Specimens from south-east Australia show some variation, indicating recent or rapid species radiation in that area.

S. minuta Melichar (not Fabricius, see below) is based on a single female specimen labelled simply 'St Helena'. Melichar's original description differentiates *S. minuta* from *S. granulicollis* on the basis of colour differences and Melichar states that no structural differences are apparent. The colour differences described by Melichar are not of species significance and are exhibited by some males of *S. granulicollis*. Kirkaldy (1907) suggested that *S. minuta* Melichar was a variety of *S. granulicollis* and this view is upheld here.

If Melichar's type-locality refers to the island of St Helena in the South Atlantic Ocean, then this species is the only *Siphanta* known to occur outside the Australasian region.

* Males from these areas show minor variation from the type in structure of the genitalia. (Material examined: 1 ♂, 1 ♀, Glenelg R., 4 miles NNE. of Nelson, Vic. 25.xi.1966, Neboiss, MV; 1 ♂, Tapanappa near Cape Jervis, Sth Aust, 5-9.xii.1949, G. F. Gross, N. B. Tindale, SAM.)

Melichar (1902) implied that the locality was outside Australia by the use of 'Australien' and 'St Helena' as alternatives in his key to help separate *S. minuta* from *S. granulicollis*. Due to the restricted nature of the distributions of the Australian genera of Flatidae, even in SE. Asia and the Pacific islands, it was assumed that the record from St Helena would have been due to an introduction.

An attempt was made to obtain further specimens from St Helena to confirm the introduction. Professor Arthur Loveridge, the leading authority on insects in St Helena, has not collected any Flatidae that could conceivably be placed in *Siphanta* and, to his knowledge, no other person has collected *Siphanta* on St Helena during the past 25 years. No reference to *Siphanta* on St Helena has been made other than by Melichar (1923) and Metcalf (1957) who merely listed the species and its type-locality. No specimens of *Siphanta* from St Helena are present in the collections of the BMNH despite the fact that C. R. Wallace collected insects on St Helena for 2 years for the Commonwealth Institute of Entomology. It thus appears certain that the species does not occur on St Helena and possibly never did.

The data label on Melichar's type either:

(1) is incorrect, the wrong data label having been inadvertently placed on the specimen, or

(2) is correct, the specimen having been collected on recently introduced Australian plants and the species not subsequently becoming established, or

(3) refers to an Australian locality of the same name.

This third possibility seems most likely. An island in Moreton Bay, near Brisbane, Queensland is also named St Helena. *S. granulicollis* is very common in south-east Queensland and is the only species of its shape and size to occur there. It seems most likely that Melichar's specimen originated in this area and is thus the same as *S. granulicollis*.

Siphanta parva, sp. nov.

(Figs 51-52, 110, 228-231)

Types

Holotype ♂, Myponga, South Australia, 26.xi.1948, Reg. No. 21157 SAM; allotype ♀, same data as holotype, SAM (holotype and allotype mounted together).

Paratypes. **South Australia:** 3♂ (mounted together), Mt Lofty, A. M. Lea, SAM; 1♂, Mt Magnificent, by sweeping, 16.x.1956, G. F. Gross, SAM; 2♂, by sweeping, Ravine des Casoars, Kangaroo Island, 20.x.1951, G. F. Gross, ESI 1031, SAM; 4♂, 3♀, Mt Lofty, A. M. Lea, taken with sweep net, BCRI; 1♂, sweeping Mt Lofty summit, 20.xi.1964, G. F. Gross, SAM; 2♂, sweeping *Banksia marginata*, Ravine des Casoars, Kangaroo Island, 23.x.1951, G. F. Gross, ESI 1026, SAM; 1♂, Sandy Creek, — illegible —, 20.x.1888, Tepper, SAM; 1♂ (head missing), Mt Lofty, 9.x.1885, Tepper, SAM; 1♀, Pt Noarlunga, A. M. Lea, SAM; 1♀ on *Banksia*, Mt Compass, R. Harvey, SAM; 2♀ by beating 10 miles W. of Vivonne Bay, Kangaroo Island, 12.x.1966, N. McFarland & M. Pate, SAM; 1♀, Williamstown, 'Syph. Sand.', 22.x.1888, Tepper, SAM; 1♀, Myponga, A. H. Elston, SAM; 1♀ on *Eucalyptus cosmophylla*, Waterfall Gully, 4.xi.1885, Tepper, SAM; 1♀ on *Hakea* shrubs, Williamstown, 20.x.1888, Tepper, SAM; 1♀ on *Acacia* sp., Williamstown, 20.x.1888, Tepper, SAM; 1♀ sweeping, Mt Lofty summit, 20.xi.1964, G. F. Gross, SAM; 1♀, Mylor, 9.xi.1952, G. F. Gross, ESI 269, SAM; 1♀, *Hakea* and *Acacia*, Sandy Creek, 20.x.1888, Tepper, SAM; 1♀, Aldgate, October 1929, F. E. Wilson, MV.

Description

Coloration. As in *granulicollis*-group description. Abdomen of males with tergites and sternites dark brown.

Morphology. Head (Figs 229-231) and tegmen (Fig. 228) as in *granulicollis*-group description.

Measurements

Males: lc (10) 3.56 ± 0.17 (3.33–3.84), IR (10) 4.74 ± 0.19 (4.49–5.05), wt (10) 2.47 ± 0.05 (2.42–2.53), lv (10) 0.22 ± 0.02 (0.20–0.26), wv (10) 0.69 ± 0.02 (0.65–0.71), lp (10) 0.34 ± 0.02 (0.30–0.36), lf (10) 0.80 ± 0.03 (0.77–0.83), wf (10) 0.78 ± 0.03 (0.73–0.82).

Females: lc (10) 3.92 ± 0.19 (3.64–4.19), IR (10) 5.01 ± 0.21 (4.75–5.40), wt (10) 2.83 ± 0.22 (2.53–3.18), lv (10) 0.21 ± 0.02 (0.16–0.26), wv (10) 0.76 ± 0.03 (0.71–0.81), lp (10) 0.38 ± 0.02 (0.36–0.40), lf (10) 0.86 ± 0.04 (0.79–0.93), wf (10) 0.88 ± 0.03 (0.83–0.93).

Male genitalia. Pygofer with long narrow process extending to at least $\frac{1}{2}$ length of paramere. Paramere narrow with pointed apex and incurved process perpendicular to dorsal edge of paramere (Fig. 51). Aedeagus as in Fig. 52.

Female genitalia. 3rd valvulae triangular with pilose area ventral. 2nd valvulae gap U-shaped, parallel-sided (Fig. 110).

Notes

This species is distinguished from other species in the *granulicollis* group by the length of the pygofer process in the male. In other species this process is short and broad. The structure of the aedeagus is close to that of *S. granulicollis*. *S. parva* has only been recorded from the south-eastern part of South Australia, including Kangaroo Island.

Siphanta tasmanica, sp. nov.

(Figs 53–54, 111, 232–235)

Types

Holotype σ , Orford, Tasmania, 20.i.1975, F. J. D. McDonald, BCRI.

Paratypes. **Tasmania:** 1 φ , same data as holotype, BCRI; 1 σ , 2 φ , 'Serpentine/Lake Pedder, presumably Lake Pedder, near Serpentine River, S.W. Tasmania', 20–21.ii.1967, Mr J. Swift, Reg. No. F1204 (in alcohol) TM; 1 φ , Buckland, 18.i.1975, F. McDonald, BCRI; 1 φ , Mt Wellington, G. H. Hardy, K45374, AM; 1 φ , Mt Wellington, 5.i.1916/28, K45375, AM; 1 φ , Mt Nelson, 12.i.1960, F. J. D. McDonald, QU; 1 φ , Hobart, Lea, 5167, K53649, AM; 1 φ , Tasman Peninsula, A. Musgrave, 22.i.1928, K57819, AM.

Description

Coloration. As in *granulicollis*-group description. Abdomen of male dark brown.

Morphology. Head (Figs 233–235) and tegmen (Fig. 232) as in *granulicollis*-group description.

Measurements

Males: (holotype first) lc (2) 3.33, 3.54; IR (2) 3.94, 4.14; wt (2) 2.49, 2.49; lv (2) 0.22, 0.22; wv (2) 0.73, 0.73; lp (2) 0.34, 0.36; lf (2) 0.79, 0.77; wf (2) 0.84, 0.85.

Females: lc (9) 3.84 ± 0.28 (3.43–4.19), IR (9) 5.03 ± 0.33 (4.65–5.61), wt (8) 2.89 ± 0.25 (2.47–3.13), lv (9) 0.20 ± 0.03 (0.14–0.24), wv (9) 0.76 ± 0.05 (0.67–0.85), lp (9) 0.36 ± 0.03 (0.32–0.40), lf (9) 0.87 ± 0.04 (0.81–0.93), wf (9) 0.88 ± 0.05 (0.81–0.97).

Male genitalia. Pygofer with dorsolateral corner triangularly prominent posteriorly, process not clearly differentiated. Paramere narrow with prominent blunt process (Fig. 53). Aedeagus as in Fig. 54. Lateral hook from conjunctiva smaller than in other species in group.

Female genitalia. 3rd valvulae blunt at apex with pilose area ventral. 2nd valvulae gap U-shaped, inner margins of valvulae parallel for most of length (Fig. 111).

Notes

S. tasmanica can be differentiated from other species in the *granulicollis* group by comparison of the male genitalia. The second valvulae gap is parallel-sided in *S. tasmanica* and this feature separates this species from *S. granulicollis* and *S. thambeos*, sp. nov.

Siphanta thambeos, sp. nov.

(Figs 55-56, 112, 236-239)

Types

Holotype ♂, Mallacoota, Victoria, 23.xi.1965, Neboiss, Reg. No. T.8122 MV.

Paratypes. **Victoria:** 1♂, same data as holotype, BCRI; 1♀, Beaconsfield, F. E. Wilson, 23.x.1955, MV.*Description**Coloration.* As in *granulicollis*-group description. Male abdomen dark.*Morphology.* Head (Figs 237-239) and tegmen (Fig. 236) as in *granulicollis*-group description.*Measurements**Males:* (holotype first) lc (2) 3·43, 3·23; IR (2) 4·52, 4·24; wt (2) 2·73, 2·42; lv (2) 0·20, 0·20; wv (2) 0·73, 0·69; lp (2) 0·30, 0·32; lf (2) 0·81, 0·79; wf (2) 0·80, 0·73.*Females:* lc (1) 3·38, IR (1) 4·49, wt (1) 2·53, lv (1) 0·20, wv (1) 0·73, lp (1) 0·36, lf (1) 0·83, wf (1) 0·81.*Male genitalia.* Pygofer with blunt triangular process. Paramere narrow, with prominent blunt process (Fig. 55). Aedeagus as in Fig. 56.*Female genitalia.* 3rd valvulae blunt with pilose area ventral. 2nd valvulae gap oval, inner margins of 2nd valvulae roundly converging apically (Fig. 112).*Notes**S. thambeos* can be differentiated from other species in the *granulicollis* group by the structure of the aedeagus, particularly the apical processes of the phallosoma, which extend beyond the apex of the aedeagus, and by the shape of the second valvulae gap. The species is known only from eastern Victoria but the limits of the distribution are unknown due to the paucity of material available.*Siphanta gallowayi*, sp. nov.

(Figs 57-58, 113, 240-243)

Types

Holotype ♂, in dry vegetation, 64 km SE. Normanton, Qld, 4.vi.1975, I. D. Galloway, D-vac, Reg. No. T.9391 QM.

Paratypes. **Queensland:** 1♂, 1♀, same data as holotype, BCRI; 1♂, 7♀, same data as holotype, QDPI; 2♀, Rocky River, Massy Creek, Silver Plains, Cape York Peninsula, 1.x.1961, J. K. Wassell, ANIC; 1♀, Prince of Wales Island, Torres Strait, 29.v.1969, Neboiss, MV.*Description**Coloration.* Head and ventral surface of body, including legs, dark testaceous to brown marked with red, particularly around lateral margins of frons and apex of head. Pronotum, orange or brown with green granules. Midline of pronotum without granules but bordered with 2 lines of granules. Mesonotum orange with 3 longitudinal green stripes between lateral carinae of disc. Tegmen coloured as in *granulicollis*-group description.*Morphology.* Head (Figs 241-243) and tegmen (Fig. 240) as in *granulicollis*-group description.*Measurements**Males:* lc (3) 2·53±0·00 (2·53), IR (3) 3·05±0·06 (2·98-3·08), lt (3) 3·23±0·05 (3·18-3·28), wt (3) 1·80±0·08 (1·72-1·87), lv (3) 0·16±0·02 (0·14-0·17), wv (3) 0·51±0·02 (0·49-0·53), lp (3) 0·36±0·02 (0·34-0·37), lf (3) 0·75±0·02 (0·73-0·77), wf (3) 0·67±0·02 (0·65-0·69).

Females: lc (11) 2.71 ± 0.13 (2.47-2.86), IR (11) 3.25 ± 0.15 (2.93-3.43), lt (11) 3.45 ± 0.17 (3.18-3.74), wt (11) 1.98 ± 0.11 (1.77-2.17), lv (11) 0.14 ± 0.02 (0.12-0.16), wv (11) 0.54 ± 0.02 (0.50-0.57), lp (11) 0.38 ± 0.03 (0.34-0.40), lf (11) 0.77 ± 0.05 (0.69-0.85), wf (11) 0.70 ± 0.02 (0.67-0.73).

Male genitalia. Pygofer with short recurved process. Paramere rounded with short pointed process (Fig. 57). Aedeagus as in Fig. 58.

Female genitalia. 3rd valvulae short, broad basally with short narrow tips and pilose area ventral. 2nd valvulae gap U-shaped (Fig. 113).

Notes

S. gallowayi is the smallest known species of the genus. The structure of the head and shape of the tegmen link the species with the *granulicollis* group but the bright coloration and the structure of the male genitalia indicate that the relationship is not as close as between the other species in the group. Since vein R enters the costal margin some distance from the apical angle, measurement of maximum tegmen length is given as well as length to end of R.

The species is named after Dr Ian Galloway, QDPI, who collected most of the type-series.

roseicincta group

The following nine species share the characteristics outlined below and are termed the *roseicincta* group.

Head short, vertex no more than $\frac{1}{2}$ as long as wide at base. Apical margin of vertex roundly or angularly produced slightly. Frons wider than long or as wide as long with strong median longitudinal carina but lateral carinae obsolete or indicated at very apex only. Tegmen narrow with apical angle rounded and sutural angle rounded or obtusely angulate, never produced. M1 + 2 branched at about middle of tegmen, well before apex of clavus. Green, fading to yellow or orange in dried specimens. Frons dark brown in most species. Apex of head, carinae of frons, outer claval vein, fore- and mid-tibiae and all tarsi usually marked with red. Tegminal granules black at tip. Margin of tegmen except base of costal margin and claval margin to apex of clavus marked with red.

Siphanta roseicincta (Walker), comb. nov.

(Figs 59-66, 114, 244-248)

Poeciloptera roseicincta Walker, 1862, p. 313.

Parasalurnis insularis Distant, 1910a, p. 310. syn. nov.

Type

Holotype ♀, Moreton Bay, Queensland, Pascoe, 93-152, BMNH.

Other type-material examined: 1 ♀, holotype of *Parasalurnis insularis* Distant, Bandin I. (sic, presumably Baudin Island, Western Australia), 91-82, 1189, BMNH.

Other Material Examined

58 ♂, 60 ♀, from all parts of the range.

Known Distribution

Queensland: Springsure, Gayndah, Kingaroy, Maroochydhore, Moreton Bay, Brisbane, Lawes, Bundamba, Nerang. **New South Wales:** Rivertree, Ballina, Upper Colo, Blue Mountains, Pittwater, Sydney district. **Australian Capital Territory:** Black Mountain. **Victoria:** Kiata, Horsham. **South Australia:** Poochera, Belair, Coonalpyn, Kangaroo Island, Tintinara. **Western Australia:** Baudin Island, Boll Creek, Moora, Yanchep, Perth, Lake Cronin, Yallingup, Karridale, Cape Leeuwin, Albany, King Georges Sound.

Description

Coloration. Green, fading to orange in dried specimens. Frons brown with red at base and along carinae. Vertex red with pale granulations. Thorax with broad red stripe along midline, sometimes extending laterally on pronotum. Tegmen with orange crossveins. Costal margin may be red from base or only beyond apex of costal cell. Outer claval vein, and usually outer claval cell and most of median claval cell, red. Red markings may be very much reduced or absent on all parts except granules around base of outer claval cell and apex of head. Specimens from Cape Leeuwin with costal margin greenish. Otherwise as in *roseicincta*-group description.

Morphology. Head (Figs 246–248): lateral carinae of frons obsolete; vertex slightly concave on disc; apical margin of vertex angularly produced so vertex slightly longer in midline than against eyes. Tegmen (Figs 244–245): costal margin convex throughout. Other characters as in *roseicincta*-group description.

Measurements

Males: lc (22) 4.32 ± 0.29 (3.81–4.85), IR (21) 6.32 ± 0.34 (5.54–6.82), wt (21) 3.43 ± 0.22 (3.00–3.70), lv (21) 0.31 ± 0.03 (0.26–0.36), wv (21) 0.78 ± 0.04 (0.73–0.87), lp (21) 0.43 ± 0.02 (0.38–0.47), lf (24) 0.87 ± 0.05 (0.74–0.94), wf (24) 0.87 ± 0.04 (0.81–1.00).

Females: lc (16) 4.85 ± 0.40 (4.24–5.45), IR (16) 6.96 ± 0.55 (6.26–8.08), wt (16) 3.88 ± 0.32 (3.43–4.39), lv (16) 0.33 ± 0.04 (0.26–0.40), wv (16) 0.85 ± 0.07 (0.77–1.01), lp (16) 0.48 ± 0.04 (0.44–0.59), lf (16) 0.92 ± 0.06 (0.83–1.01), wf (16) 0.95 ± 0.06 (0.85–1.06).

Male genitalia. Pygofer with large process, which may be apically rounded (Fig. 59) or pointed (Figs 61, 63, 65). Paramere with strong pointed process. Aedeagus as in Figs 60, 62, 64, 66. Variation indicated is continuous from Western Australia to eastern Australia.

Female genitalia. 3rd valvulae elongate triangular with pilose area ventral. 2nd valvulae gap widely U-shaped as wide as deep (Fig. 114).

Notes

This species, in its eastern colour form, is distinguishable from many specimens of *S. lynaе*, sp. nov., *S. subgranulosa* Kirkaldy and *S. rubra* Schmidt only by reference to the male genitalia. The structure of the aedeagus in *S. roseicincta*, however, approaches that of *S. angustata*, sp. nov. and *S. lucindae* Kirkaldy and is very different from that of *S. lynaе*, *S. subgranulosa* and *S. rubra*. The variation displayed by the aedeagus of *S. roseicincta* from east to west may justify specific separation but there does not appear to be sufficient separation between the forms in the material examined.

Siphanta angustata, sp. nov.

(Figs 67–70, 115, 249–252)

Types

Holotype ♂, 150 km SE. by E. Broome, Western Australia (18°55'S., 123°14'E.), 12.viii.1976, I. F. B. Common, Reg. No. 9453 ANIC.

Paratypes. **Western Australia:** 3♂, same data as holotype, 1 in ANIC, 2 in BCRI; 1♀ at light, 17 miles SW. Mundiwindi, 26.iv.1963, J. E. Dowse, BCRI; 1♀ between wells 41 and 42, Canning Stock Route, 15.xii.1971, N.S. Expedition, P. Williams, WAM. **Northern Territory:** 2♂, near McLaren Creek, 30 km N. Wauchope, 20°22'S., 134°14'E., 13.x.1972, M. S. Upton, ANIC. **Queensland:** 1♂, Mt Isa Mines, 16.i.1958, H. J. Lavery, QM. **South Australia:** 1♂, Lake Palankarina, 3.iii.1972, E. Matthews, SAM; 1♀, Flinders Ranges, September 1925, SAM; 1♀ at light, Coward Springs, 9.xi.1966, G. F. Gross, SAM.

Other Material Examined

1♂ (lacking apices of tegmina), Spring Creek, Mt Isa, 14.i.1958, H. J. Lavery, QDPI; 1♂ (with stunted phallosoma, see Fig. 70), Windy Ck, 22 km N. of Beltana, South Australia, 14.ix.1972,

Z. Liepa, ANIC; 1♂ (phallosoma stunted), Dedari, 40 miles W. of Coolgardie, Western Australia, 11-12.i.1936, R. E. Turner, BMNH.

Description

Coloration. Pale green with yellow veins. Costal margin of tegmen pale cream to apex of costal cell. Outer claval vein not red. Otherwise as in *roseicineta*-group description.

Morphology. Head (Figs 250-252): frons wider than long with lateral carinae indicated at apex. Tegmen (Fig. 249) with numerous crossveins; apical margin shallowly convex between angles; first branch of M1+2 just beyond $\frac{2}{3}$ length of tegmen. Otherwise as in *roseicineta*-group description.

Measurements

Males: lc (11) 3.82 ± 0.31 (3.33-4.29), IR (10) 5.59 ± 0.48 (5.05-6.26), wt (11) 2.46 ± 0.28 (2.12-3.03), lv (11) 0.27 ± 0.04 (0.24-0.36), wv (11) 0.69 ± 0.06 (0.59-0.77), lp (11) 0.39 ± 0.04 (0.36-0.46), lf (11) 0.70 ± 0.08 (0.59-0.81), wf (11) 0.80 ± 0.08 (0.69-0.89).

Females: lc (10) 4.10 ± 0.29 (3.72-4.60), IR (10) 5.84 ± 0.42 (5.15-6.57), wt (10) 2.55 ± 0.22 (2.17-2.58), lv (10) 0.28 ± 0.03 (0.24-0.36), wv (10) 0.74 ± 0.04 (0.67-0.81), lp (10) 0.40 ± 0.04 (0.36-0.48), lf (9) 0.74 ± 0.06 (0.65-0.85), wf (9) 0.82 ± 0.07 (0.73-0.97).

Male genitalia. Pygofer process short, triangular, pointed, sometimes curved ventrally. Paramere rectangular with narrow pointed process at very apex. Dorsal margin continued posteriorly beyond process to form 'shoulder' against which apex of anal tube normally fits (Figs 67, 69). Aedeagus as in Fig. 68.

Female genitalia. 3rd valvulae bilaterally flattened apically with pilose area on inner surfaces. 2nd valvulae gap wider than deep, U- or V-shaped (Fig. 115).

Notes

This species is similar in general facies to *S. lucindae* Kirkaldy and *S. granulata* Kirkaldy, from which it can be distinguished by the shape of the paramere in the male. Females can be distinguished by the characters given in the key.

The male genitalia indicate a close affinity with *S. roseicineta* (Walker). The shapes of the pygofer process and the paramere process vary slightly within the species. Two male specimens examined have the phallosoma stunted (Fig. 70), the lateral arms only half as long as in the typical form (Fig. 68). The structure of the phallosoma is unchanged despite the distortion and this condition is considered to be an aberration.

Siphanta lucindae Kirkaldy

(Figs 71-72, 116, 253-256)

Siphanta lucindae Kirkaldy, 1906, p. 455.

Type

Holotype ♂, by monotypy, Lucinda Point, Queensland, July 1904, BPB.

Other Material Examined

14♂, 57♀, from all parts of the range.

Known Distribution

Queensland: Jardine River, Archer River, Meringa, Gordonvale, Lucinda Point, Ingham, Townsville, Bolingbroke, Emerald, Greenhill, Gayndah, Gatton, Lawes, Hatton Vale, Warwick. **Northern Territory:** Rimbija Island, Cooper Creek, Maningrida, Oenpelli, Mt Brockman near Mudginbarry HS, Mt Cahill district, East Alligator River, Katherine,

Tindal, Victoria River Downs. **Western Australia:** Wyndham, Oobagooma, Broome district. **New Guinea:** Goroka.

Description

Coloration. As in *roseicincta*-group description. Costal margin pallid from base to apex of costal cell. 1st marginal cell beyond apex of clavus completely red or reddish brown.

Morphology. Head (Figs 254–256): eyes prominent. Tegmen as in Fig. 258. Details in *roseicincta*-group description.

Measurements

Males: lc (10) 3.60 ± 0.13 (3.33–3.74), IR (10) 5.54 ± 0.17 (5.15–5.66), wt (10) 2.77 ± 0.06 (2.68–2.88), lv (10) 0.25 ± 0.08 (0.24–0.32), wv (10) 0.66 ± 0.04 (0.61–0.73), lp (10) 0.40 ± 0.04 (0.32–0.44), lf (10) 0.79 ± 0.04 (0.73–0.83), wf (10) 0.87 ± 0.05 (0.77–0.93)

Females: lc (10) 4.19 ± 0.12 (4.04–4.44), IR (10) 6.30 ± 0.24 (5.91–6.67), wt (10) 3.12 ± 0.11 (2.96–3.33), lv (10) 0.29 ± 0.02 (0.24–0.32), wv (10) 0.77 ± 0.03 (0.73–0.83), lp (10) 0.45 ± 0.01 (0.44–0.48), lf (10) 0.86 ± 0.04 (0.81–0.93), wf (10) 0.91 ± 0.04 (0.83–0.95).

Male genitalia. Pygofer with long narrow pointed process reaching to $\frac{2}{3}$ length of paramere. Paramere narrow with large hooked process near apex (Fig. 71). Aedeagus as in Fig. 72.

Female genitalia. 3rd valvulae apically broad, triangular with pilose area ventral. 2nd valvulae gap narrow U-shaped, deeper than wide (Fig. 116). Apices of 2nd valvulae sometimes slightly convergent.

Notes

S. lucindae is a delicately formed species that in external morphology matches *S. granulata* Kirkaldy. Both species have narrow tegmina, prominent eyes and the first marginal cell beyond the apex of the clavus usually completely red or red-brown. The structure of the aedeagus indicates an affinity with *S. luteolineata*, sp. nov., from which it is easily differentiated by colour. *S. lucindae* can be reliably differentiated from *S. granulata* only by examination of the genitalia.

Siphanta granulata Kirkaldy

(Figs 73–74, 117, 257–260)

Siphanta granulata Kirkaldy, 1906, p. 455.

Type

Holotype ♂, by monotypy, Cairns, Queensland, 1904, BPB.

Other Material Examined

39♂, 13♀, from all parts of the range.

Known Distribution

Queensland: Cairns, Gordonvale, Emerald, Carnarvon Gorge, Chinchilla, Gatton, Lawes, Tamborine Mountain. **Northern Territory:** Moa Island, Rimbija Island, Nabarlek, Katherine, Tindal, Macdonald Downs. **South Australia:** Tallaringa Well, near Vokes Hill Junction. **Western Australia:** Sir Graham Moore Island, Broome district, Gill Pinnacle, Coolgardie district.

Description

Coloration. As in *roseicincta*-group description. Frons brown in most specimens. Tegmina fading to translucent yellow or orange. 1st marginal cell beyond apex of clavus usually completely red or reddish brown. Costal margin usually pale to apex of costal cell.

Morphology. Head (Figs 258–260): lateral carinae of frons obsolete; vertex depressed medially so that apical margin of frons appears angulately concave in anterior view; eyes prominent. Tegmen as in Fig. 257. Otherwise as in *roseicincta*-group description.

Measurements

Males: lc (10) 3.78 ± 0.21 (3.35–4.04), IR (10) 5.61 ± 0.34 (5.07–6.23), wt (10) 2.75 ± 0.20 (2.42–3.12), lv (10) 0.28 ± 0.01 (0.26–0.30), wv (10) 0.71 ± 0.04 (0.65–0.77), lp (10) 0.42 ± 0.03 (0.38–0.46), lf (10) 0.79 ± 0.04 (0.73–0.83), wf (10) 0.83 ± 0.05 (0.75–0.91).

Females: lc (9) 4.53 ± 0.30 (4.14–4.85), IR (9) 6.52 ± 0.55 (5.86–7.22), wt (9) 3.02 ± 0.42 (2.58–3.59), lv (9) 0.29 ± 0.04 (0.24–0.36), wv (9) 0.78 ± 0.06 (0.73–0.87), lp (9) 0.42 ± 0.04 (0.36–0.48), lf (9) 0.81 ± 0.08 (0.73–0.93), wf (9) 0.87 ± 0.06 (0.79–0.97).

Male genitalia. Pygofer with long straight process, slightly clavate towards apex. Paramere largely desclerotized, with only dorsal edge and pointed process near apex sclerotized (Fig. 73). Aedeagus as in Fig. 74.

Female genitalia. 3rd valvulae bilaterally flattened in apical portion, with pilose area on inner surfaces. 2nd valvulae gap U-shaped, about as deep as wide (Fig. 117).

Notes

The structure of the paramere is unlike any other in the genus *Siphanta*. The structure of other parts of the male genitalia is also very distinctive. In external features, *S. granulata* closely resembles *S. lucindae* although the tegmen generally takes on a more translucent colour than in *S. lucindae*. Both species are tropical in distribution but *S. granulata* extends farther southwards in Queensland and reaches the northern parts of South Australia in the centre of the continent.

Siphanta luteolineata, sp. nov.

(Figs 75–76, 118, 261–264)

Types

Holotype ♂, Savannah woodland, Rocky River, Queensland, 18.vi.1960, C. N. Smithers, AM.

Paratypes. **Queensland:** 4♂, same data as holotype, AM; 1♂, 1♀, same data as holotype, BCRI; 2♂, Gunshot Creek, 11°45'S., 142°28'E., Cape York Peninsula, 12–15.vii.1975, G. B. Monteith, QM; 2♂, gum and wattle, Massy Spur, Silver Plains, Cape York Peninsula, 23.ix.1961, J. L. Wassell, ANIC; 1♂, Claudie River, J. A. Kershaw, November 1912–February 1913, MV; 1♀, from grass, Rocky River, 14.vi.1960, C. N. Smithers, AM; 1♀, Riverine forest, Rocky River, 16.vi.1960, C. N. Smithers, AM; 1♀, Lizard Island, NNE. Cooktown, 18.xi.1974, M. S. & B. J. Moulds, AM; 1♀, Somerset, on foliage at edge of rainforest, 12.vii.1976, P. Webber, AM; 1♀, Upper Lankelly Creek, Coen district, 10–11.vi.1971, G. B. Monteith (pallid specimen probably originally stored in ethanol), QU; 1♀, Olive River, Cape York Peninsula, 12.viii.1923, G. H. Wilkins, W.A.I. Exp., Brit. Mus. 1923-412, BMNH.

Description

Coloration. Frons dark brown. Vertex orange with front margin evenly spotted with red and cream. Pronotum orange with 3 green longitudinal stripes, 1 in midline and 1 along each lateral carina reaching hind margin. Lateral portion of pronotum below level of eyes green. Mesonotum orange with median green stripe and lateral green stripes just inside lateral carinae. Lateral portion of mesonotum near tegulae green. Green fading to yellow or cream in dried specimens. Tegmen pale green with all veins broadly orange. Costal margin to apex of costal cell pale, not marked with red. Otherwise as in *roseicincta*-group description.

Morphology. Head (Figs 262–264): lateral carinae of frons obsolete; vertex concave, surface smooth, without granulations. Tegmen (Fig. 261): claval cell closest to claval suture

without crossveins; occasionally with 1 or 2 very faintly indicated. Otherwise as in *roseicincta*-group description.

Measurements

Males: lc (11) 3.87 ± 0.15 (3.69–4.14), IR (10) 5.62 ± 0.25 (5.25–6.04), wt (10) 3.07 ± 0.13 (2.93–3.33), lv (11) 0.24 ± 0.02 (0.22–0.27), wv (11) 0.72 ± 0.03 (0.67–0.77), lp (11) 0.42 ± 0.02 (0.40–0.46), lf (11) 0.83 ± 0.03 (0.79–0.87), wf (11) 0.84 ± 0.04 (0.79–0.93).

Females: lc (7) 4.30 ± 0.19 (4.04–4.55), IR (7) 6.14 ± 0.22 (5.88–6.54), wt (7) 3.37 ± 0.13 (3.13–3.54), lv (7) 0.26 ± 0.02 (0.24–0.28), wv (7) 0.77 ± 0.05 (0.72–0.87), lp (7) 0.45 ± 0.02 (0.44–0.48), lf (7) 0.90 ± 0.03 (0.86–0.95), wf (7) 0.90 ± 0.05 (0.86–1.01).

Male genitalia. Pygofer with long straight pointed process reaching nearly to apex of paramere. Paramere narrow with broad recurved process near apex (Fig. 75). Aedeagus as in Fig. 76.

Female genitalia. 3rd valvulae triangular with pilose area ventral. 2nd valvulae gap U-shaped with apices of valvulae convergent (Fig. 118).

Notes

The evenly concave, smooth vertex, the paucity of crossveins in the sutural cell of the clavus and the bright coloration make this species quite distinctive. The structure of the aedeagus indicates an affinity with *S. lucindae*.

Siphanta minuta (Fabricius), comb. nov.

(Figs 77–78, 119, 265–268)

Cicada minuta Fabricius, 1775, p. 683.

Siphanta sensilis Kirkaldy, 1907, p. 101. syn. nov.

Type

Holotype ♂, Australia, 63/47, in the Joseph Banks Collection of the BMNH.

Other type-material examined: 1 ♂, holotype of *S. sensilis* Kirkaldy, Cairns, Qld, July 1904, BPB; 1 ♂, paratype of *S. sensilis* Kirkaldy, same data as preceding, BPB; 1 ♂, paratype of *S. sensilis* Kirkaldy, same data as preceding, August 1904, BPB.

Other Material Examined

Queensland: 1 ♂, Cairns, 16.vii.1904, coll.: Koebele, W. M. Giffard colln, BPB; 1 ♂, 5 ♀, Cairns, 16.vii.1904, coll.: Koebele, W. M. Giffard colln, BPB; 2 ♂, 2 ♀, from grass, Rocky River, 14–16.vi.1960, C. N. Smithers, AM; 1 ♂, Gordonvale, July, BCRI; 1 ♀, Townsville, January 1945, B. Malkin, SI. **Northern Territory:** 1 ♂, 12°17'S., 133°20'E., Cooper Creek, 11 km S. by W. of Nimbawah Rock, 3.vi.1973, R. L. Kitching, ANIC; 1 ♀, Marrakai Station, 28–31.vii.1929, I. M. Mackerras & T. G. Campbell, ANIC; 1 ♀, 48 miles SW. of Daly River, 14°11'S., 130°08'E., 6.ix.1968, M. Mendum, ANIC; 1 ♀, 5 m, Maningrida, Arnhem Land, 22.iii.1961, J. L. & M. Gressitt, Malaise trap, BPB.

Description

Coloration. Frons and vertex testaceous, heavily spotted with red. Pronotum orange becoming green laterally, with 2 longitudinal green stripes between lateral carinae and with granules around hind margin laterally. Mesonotum orange with 3 longitudinal green stripes. Tegmen yellow with pale green patch in centre of each cell. Base of costal area usually spotted with red, but red border to tegmen often not extending basal of apex of costal cell. Other claval vein orange over basal half, thence spotted with red to apex of clavus. Otherwise as in *roseicincta*-group description.

Morphology. Head (Figs 266–268): frons with broad ridges on each side of disc but lateral carinae absent; vertex very short, longer against eyes than in midline. Tegmen (Fig. 265): sutural angle obtusely angled; costal margin straight from apex of costal cell to apical angle. Otherwise as in *roseicincta*-group description.

Measurements

Males: lc (6) 3.52 ± 0.19 (3.23–3.79), IR (5) 5.14 ± 0.21 (4.87–5.43), wt (5) 2.54 ± 0.16 (2.32–2.73), lv (6) 0.15 ± 0.03 (0.14–0.20), wv (6) 0.63 ± 0.03 (0.60–0.68), lp (6) 0.36 ± 0.02 (0.33–0.38), lf (6) 0.81 ± 0.06 (0.73–0.89), wf (6) 0.81 ± 0.05 (0.75–0.89).

Females: lc (5) 3.80 ± 0.19 (3.54–3.94), IR (5) 5.44 ± 0.16 (5.20–5.58), wt (5) 2.71 ± 0.13 (2.53–2.83), lv (5) 0.15 ± 0.01 (0.13–0.16), wv (5) 0.67 ± 0.03 (0.61–0.69), lp (5) 0.38 ± 0.02 (0.37–0.41), lf (5) 0.87 ± 0.05 (0.83–0.95), wf (5) 0.88 ± 0.03 (0.85–0.91).

Male genitalia. Pygofer with short broadly triangular process. Paramere with prominent pointed process (Fig. 77). Aedeagus as in Fig. 78.

Female genitalia. 3rd valvulae narrow, triangular with pilose area ventral. 2nd valvulae gap V-shaped (Fig. 119).

Notes

The shape of the tegmen and the bright coloration distinguish this species from other *Siphanta* species. The Fabricius type in the BMNH is in excellent condition, although the colour is somewhat faded. It is the largest of the males examined.

Siphanta lynae, sp. nov.

(Figs 79–80, 120, 269–272)

Types

Holotype σ , on leaves of *Eucalyptus eximia*, Galston Gorge, near Sydney, New South Wales, 26.xi.1977, L. S. Fletcher, BCRI.

Paratypes. **New South Wales:** 1 σ , 2 ♀ , same data as holotype, BCRI; 1 σ , Sydney, Lea, SAM; 1 σ , Ku-ring-gai Chase National Park, 8.xi.1967, J. & M. Sedlacek, BPB. **Queensland:** 1 σ , Ashgrove, 16.xi.1930, H. Hacker, C. J. Drake colln 1956, SI; 1 σ , Brisbane, 2.xi.1925, H. Hacker, C. J. Drake colln 1956, SI. **Locality unknown:** 1 σ , Australia 58-124, BPB.

Description

Coloration. Frons very dark brown. Pronotum and mesonotum orange with greenish granules but lacking obvious striping. Tegmen generally translucent pale green with yellow on all veins. Costal margin red from near base. Otherwise as in *roseicincta*-group description.

Morphology. Head (Figs 270–272): frons lacking lateral carinae; vertex evenly concave, not smooth. Tegmen as in Fig. 269.

Measurements

Males: lc (7) 4.09 ± 0.12 (3.92–4.24), IR (7) 6.20 ± 0.21 (5.96–6.57), wt (7) 3.30 ± 0.24 (3.03–3.74), lv (7) 0.25 ± 0.01 (0.24–0.27), wv (7) 0.76 ± 0.02 (0.73–0.79), lp (7) 0.44 ± 0.02 (0.41–0.46), lf (7) 0.86 ± 0.02 (0.83–0.89), wf (7) 0.87 ± 0.03 (0.84–0.91).

Females: lc (2) 4.14, 4.55; IR (2) 6.21, 6.57; wt (2) 3.23, 3.61; lv (2) 0.26, 0.27; wv (2) 0.77, 0.84; lp (2) 0.44, 0.44; lf (2) 0.89, 0.93; wf (2) 0.91, 0.95.

Male genitalia. Pygofer process elongate, nearly straight, slightly clavate. Paramere elongate, somewhat pointed apically. Paramere process short, thick, perpendicular to dorsal edge of paramere (Fig. 79). Aedeagus as in Fig. 80.

Female genitalia. 3rd valvulae triangular, thick with pilose area ventral. 2nd valvulae gap narrow U-shape (Fig. 120).

Notes

In external morphology *S. lynae* closely matches *S. roseicincta* and females are very difficult to identify to species. Consequently, only the two females collected with the holotype have been designated paratypes. The male genitalia of *S. lynae* are very different from those of *S. roseicincta* but have close similarity to those of *S. rubra* Schmidt and

S. subgranulosa Kirkaldy. However, the small differences are constant and the three forms appear to be stable. Females of *S. lynaе* can be differentiated from those of *S. rubra* and *S. subgranulosa* by the absence of clear stripes on the thoracic nota.

The species is named after my wife who collected the type-specimen and has been of considerable assistance to me during the preparation of this work.

Siphanta rubra Schmidt

(Figs 81–82, 121, 273–276)

Siphanta rubra Schmidt, 1904, p. 358.

Types

Syntypes, 2 ♀ (not seen), 'Queensland', stated by Schmidt as being the property of Stettin Museum.

Other Material Examined

24 ♂, 66 ♀, from all parts of the range.

Known Distribution

Queensland: Lindeman Island, Mackay, Bolingbroke, Gladstone, Bundaberg, Carnarvon Gorge, Cooloola, Borumba Mountain, Caloundra, Tibrogargan Creek, Harlin, Bribie Island, Moreton Bay, Brisbane, Corinda, Archerfield, Gatton, Toowoomba, North Stradbroke Island, Tamborine Mountain, Canungra, Mt Edwards, Currumbin. **New South Wales:** Bonville, Moffat Beach, Pearl Beach, Pittwater, Sydney, Illawarra.

Description

Coloration. As in *roseicincta*-group description. Veins of tegmen usually yellow or orange giving striped appearance. Pronotum and mesonotum striped longitudinally with green and orange.

Morphology. Head (Figs 274–276): frons lacking lateral carinae; vertex shallow concave, not smooth. Tegmen as in Fig. 273. Otherwise as in *roseicincta*-group description.

Measurements

Males: lc (10) 4.19 ± 0.14 (3.99–4.39), IR (10) 6.32 ± 0.22 (5.96–6.62), wt (10) 3.38 ± 0.12 (3.23–3.59), lv (10) 0.27 ± 0.02 (0.24–0.28), wv (10) 0.78 ± 0.03 (0.75–0.83), lp (10) 0.46 ± 0.02 (0.44–0.50), lf (10) 0.87 ± 0.02 (0.83–0.91), wf (10) 0.90 ± 0.03 (0.85–0.93).

Females: lc (11) 4.61 ± 0.28 (4.19–4.95), IR (11) 6.84 ± 0.41 (6.16–7.42), wt (11) 3.62 ± 0.28 (3.13–4.04), lv (11) 0.29 ± 0.02 (0.26–0.32), wv (11) 0.82 ± 0.05 (0.73–0.91), lp (11) 0.50 ± 0.04 (0.42–0.57), lf (11) 0.91 ± 0.06 (0.81–1.01), wf (11) 0.95 ± 0.05 (0.87–1.03).

Male genitalia. Pygofer with long, slightly curved, slightly clavate process. Paramere rounded apically, with short thick process perpendicular to dorsal edge (Fig. 81). Aedeagus as in Fig. 82.

Female genitalia. 3rd valvulae triangular, thick, with pilose area ventral. 2nd valvulae gap narrow U-shape (Fig. 121).

Notes

S. rubra was synonymized with *S. roseicincta* by Distant (1910a) but the holotype of *S. roseicincta* lacks clear stripes on the thoracic nota whereas Schmidt describes such stripes on *S. rubra*. The significance of this feature in this group of species allies *S. rubra* with *S. subgranulosa* Kirkaldy. Kirkaldy (1907) suggested the possibility of synonymy between *S. rubra* and *S. subgranulosa* but the male genitalia exhibit a small, though consistent, difference and the species are here considered to be distinct.

Siphanta subgranulosa Kirkaldy

(Figs 83–84, 122, 277–280)

Siphanta subgranulosa Kirkaldy, 1906, p. 455.*Siphanta granulicollis* Kirkaldy, 1906, p. 455.*Types*

Lectotype ♂, here designated, Cairns, Q. Austr., July 1904, BPB.

Paralectotype, sex unknown (abdomen missing), same data as lectotype, BPB.

Other Material Examined

Queensland: 3 ♂, grasses, eucalyptus, 300 m, Evelyn Tableland, Herberton, 3.xi.1956, J. L. Gressitt, BPB; 1 ♂, Cairns, 16.vii.1904, coll.: Koebeler, W. M. Giffard colln, BPB; 1 ♂, 1 ♀, Ravenshoe, 28.ix.1930, A. J. Turner, C. J. Drake colln 1956, BPB.

Description

Coloration. As in *roseicincta*-group description. Pronotum and mesonotum longitudinally striped with green and orange, former with 2 green stripes formed by lines of granules, latter with 3 green stripes between lateral carinae.

Morphology. Head (Figs 278–280): frons lacking lateral carinae; vertex shallow concave, not smooth. Tegmen as in Fig. 277. Otherwise as in *roseicincta*-group description.

Measurements

Males: lc (7) 4.32 ± 0.15 (4.14–4.55), lR (7) 6.38 ± 0.19 (6.16–6.67), wt (7) 3.38 ± 0.14 (3.18–3.59), lv (7) 0.26 ± 0.02 (0.21–0.28), wv (7) 0.79 ± 0.02 (0.77–0.81), lp (7) 0.45 ± 0.01 (0.44–0.47), lf (7) 0.90 ± 0.03 (0.85–0.95), wf (7) 0.92 ± 0.03 (0.89–0.97).

Females: lc (5) 4.48 ± 0.34 (4.19–5.05), lR (5) 6.75 ± 0.34 (6.36–7.27), wt (5) 3.52 ± 0.34 (3.23–4.09), lv (5) 0.28 ± 0.02 (0.26–0.30), wv (5) 0.82 ± 0.05 (0.75–0.89), lp (5) 0.46 ± 0.03 (0.42–0.51), lf (5) 0.92 ± 0.03 (0.89–0.97), wf (5) 0.96 ± 0.04 (0.93–1.01).

Male genitalia. Pygofer with long, slightly curved, slightly clavate, process. Paramere rounded apically, with short thick process perpendicular to dorsal edge (Fig. 83). Aedeagus as in Fig. 84.

Female genitalia. 3rd valvulae short, triangular with pilose area ventral. 2nd valvulae gap ovate, narrowly U-shaped, valvulae converging apically (Fig. 122).

Notes

S. subgranulosa is very close to *S. rubra* and *S. lynae*. From the latter it can be distinguished by the striping on the thorax. From both it can be distinguished by the structure of the aedeagus and by apparent distributional differences.

Other material of this species in BPB labelled 'paratype' apparently by Muir, is labelled Aug 1904 and this does not correspond with Kirkaldy's original description of *S. subgranulosa*, which stated that the type-material was collected in July 1904. The material labelled Aug 1904 is almost certainly part of the material referred to as *S. granulicollis* (Stål) in Kirkaldy (1906). Kirkaldy misidentified *S. granulicollis* and this explains his surprise at the low value given by Stål for the length of this species.

acutipennis Group

The following two species share the characters outlined below and are obviously closely related.

Frons transversely concave, with short carinae laterally near apex. Median carina absent. Vertex flat near base but curving dorsally towards apex. Apical margin of vertex broadly produced. Tegmen large, apical angle broadly rounded, sutural angle produced dorsally to point. M1 + 2 branched at about middle of tegmen. Pale green with very fine reddish granulations around apex of head, along clavus and on fore- and mid-femora and tibiae and all tarsi. Costal margin of tegmen pale to apex of costal cell, thence red in apical cells around

apical and claval margins to apex of clavus. Males often with additional red markings on tegmen.

Siphanta acutipennis Kirkaldy

(Figs 85–86, 123, 281–284)

Siphanta acutipennis Kirkaldy, 1906, p. 454.

Siphantoides alboconspersus Distant, 1910a, p. 305. syn. nov.

Siphantoides conspicuus Distant, 1910a, p. 306. syn. nov.

Siphantoides trimaculatus Distant, 1910a, p. 306. syn. nov.

Types

Lectotype ♂ (here designated), Cairns, Q, Austr. July 1904, BPB.

Paralectotypes. **Queensland:** 1 ♂, Cairns, August 1904, BPB; 3 ♀, Cairns, July 1904, BPB.

Other type-material examined: 1 ♂, holotype of *Siphantoides trimaculatus* Distant, Queensland, F. P. Dodd 1907-54, BMNH; 1 ♂, holotype of *Siphantoides alboconspersus* Distant, Queensland, F. P. Dodd 1907-54, BMNH; 1 ♀, holotype of *Siphantoides conspicuus* Distant, Townsville, Queensland, 25.x.1901, F. P. Dodd 1902-319, BMNH.

Other Material Examined

Queensland: 1 ♂, Gordonvale, 12.iii.1928, W.A.McD., C. J. Drake colln 1956, SI; 1 ♂, Cairns, E. Jarvis, C. J. Drake colln 1956, SI; 1 ♂, Thursday Island, A. M. Lea, SAM; 1 ♂, Dodd colln, QDPI; 1 ♂, 40-77, QDPI; 1 ♂, M1573, QDPI; 1 ♂, Meringa, 3-17.xi.1926, AM; 1 ♂, Hammond Island, November 1963, M. I. Nikitin, BM 1963-497, BMNH; 1 ♀, ex forest, Gordonvale, 24.v.1918, Edmund Jarvis colln, 23406, SI; 1 ♀, Magnetic Island, 12.iii.1922, H. Hacker, C. J. Drake colln 1956, SI; 1 ♀, Stannery Hills, March 1909, Dr Bancroft, QDPI; 1 ♀, Atherton, 21.iv.1941, A.R.B., QDPI; 1 ♀, Meringa, 1.ii.1947, J. Rosser, QU; 1 ♀, Station Creek, Silver Plains, 21.ii.1960, C. N. Smithers, AM; 1 ♀, 16.ii.1914, MV; 1 ♀, Townsville, June 1901, F. P. Dodd, W. W. Froggatt colln, ANIC; 2 ♀, Thursday Island, A. M. Lea & C. T. McNamara, SAM. **Northern Territory:** 1 ♂, 1 ♀, Groote Eylandt, N. B. Tindale, SAM; 1 ♀, Koongarra Soak, 16 km E. by N. of Mt Cahill, 12°50'S., 132°51'E., 16.xi.1972, M. S. Upton, ANIC; 1 ♀, Baroalba Creek, 19 km NE. by E. of Mt Cahill, 12°47'S., 132°51'E., 16.xi.1972, M. S. Upton, ANIC.

Description

Coloration. As in *acutipennis*-group description. Males usually, and females occasionally, with additional dark red spots on tegmen, these often forming broad transverse bands in males.

Morphology. Head (Figs 282–284) and tegmen (Fig. 281) as in *acutipennis*-group description.

Measurements

Males: lc (10) 6.10 ± 0.42 (5.56–6.77), IR (10) 7.99 ± 0.55 (7.27–9.09), wt (10) 5.47 ± 0.21 (4.92–6.26), lv (9) 0.80 ± 0.06 (0.71–0.88), wv (9) 1.05 ± 0.04 (0.99–1.13), lp (10) 0.66 ± 0.03 (0.61–0.71), lf (9) 1.41 ± 0.06 (1.33–1.49), wf (9) 1.20 ± 0.06 (1.13–1.29).

Females: lc (10) 6.65 ± 0.46 (5.66–7.12), IR (10) 8.84 ± 0.67 (7.47–9.70), wt (10) 5.96 ± 0.50 (4.85–6.51), lv (10) 0.81 ± 0.11 (0.65–1.01), wv (10) 1.10 ± 0.07 (0.96–1.17), lp (10) 0.69 ± 0.06 (0.61–0.81), lf (10) 1.48 ± 0.13 (1.31–1.70), wf (10) 1.26 ± 0.07 (1.13–1.37).

Male genitalia. Pygofer with long clavate process. Paramere triangular with broad elongate pointed process (Fig. 85). Aedeagus as in Fig. 86.

Female genitalia. 3rd valvulae broadly triangular with pilose surface ventral. 2nd valvulae gap narrow, parallel-sided (Fig. 123).

Notes

Distant separated this species into a new genus and described three of the colour forms as separate species. The structure of the male genitalia is uniform throughout the colour

forms and is close to that of the type-species of *Siphanta*. On this basis, the species is retained in *Siphanta*. *S. acutipennis* Kirkaldy has priority.

S. acutipennis appears to be restricted to the tropical parts of Queensland and the Northern Territory and is closely related to *S. expatria*, sp. nov. from New Guinea. These two species are the largest in the genus and immediately distinguishable from all other species by the shape of the head. *S. acutipennis* can be distinguished from *S. expatria* by features of male and female genitalia.

Siphanta expatria, sp. nov.

(Figs 87-88, 124, 285-288)

Types

Holotype ♂, New Guinea, Neth, Eramboe, 80 km ex Merauke, 29.i.1960, T. C. Maa, BPB.

Description

Coloration. Yellow, probably green in life, paler in tegminal cells. Red on apex of scutellum. Otherwise as in species-group description.

Morphology. Head as in Figs 286-288. Tegmen (Fig. 285): sutural angle absent in holotype but apparently produced to acute angle. Holotype damaged with circular hole through tegmina and wings in region of M1. Otherwise as in *acutipennis*-group description.

Measurements

Holotype: lc 6.16, IR 8.28, wt 5.56, lv 0.65, wv 1.05, lp 0.61, lf 1.33, wf 1.23.

Male genitalia. Pygofer with broad triangular process. Paramere with dorsal margin produced to form broad square process (Fig. 87). Aedeagus as in Fig. 88.

Female genitalia. Identity of female uncertain. 2nd valvulae gap of specimen thought to be this species is shown in Fig. 124.

Notes

This is the only species of *Siphanta* not recorded from Australia but it is very closely related to *S. acutipennis* from north Queensland (q.v.). A female from Daru Island, Papua (2 m, on *Eucalyptus*, 24.x.1960, J. L. Gressitt) in BPB may be this species but the paucity of material from New Guinea precludes the confirmation of this. The female differs from females of *S. acutipennis* in having the second valvulae gap circular instead of U-shaped (see Fig. 124).

Siphanta insularis Jacobi

This species, described from Flores (Jacobi, 1941, p. 289) is a junior synonym of *Sanurus venosus* Melichar (1902), which does not occur in Australia.

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Alan Westcott prepared the line illustrations and, with Max Hill, prepared the photographs.

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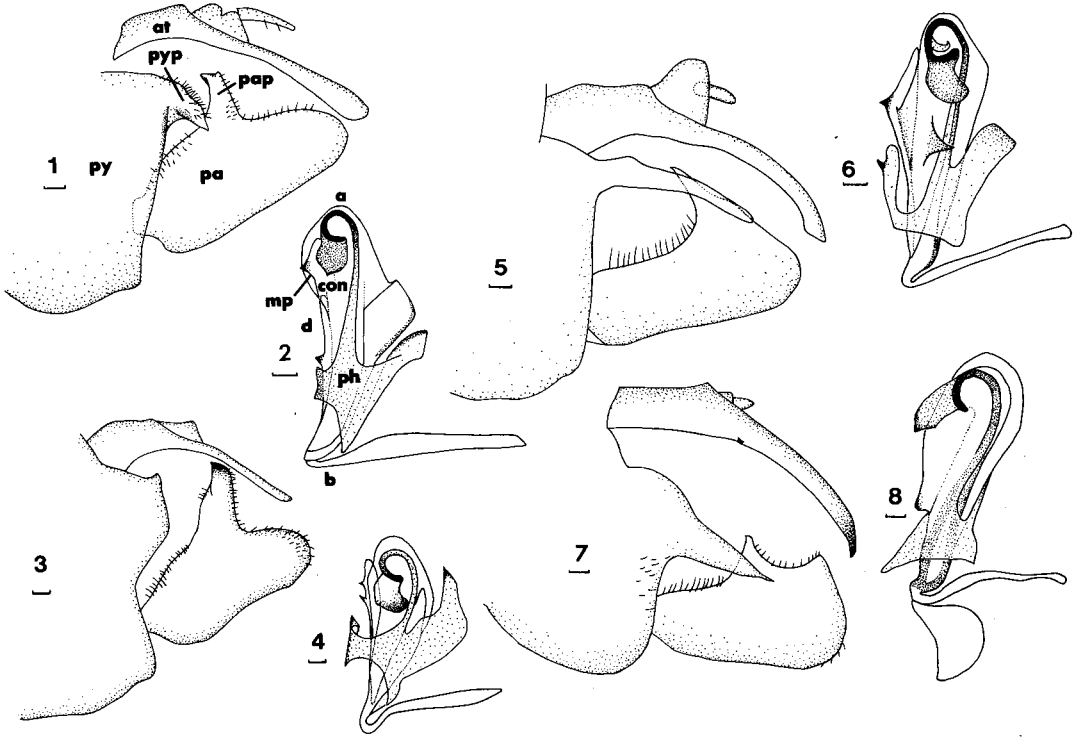
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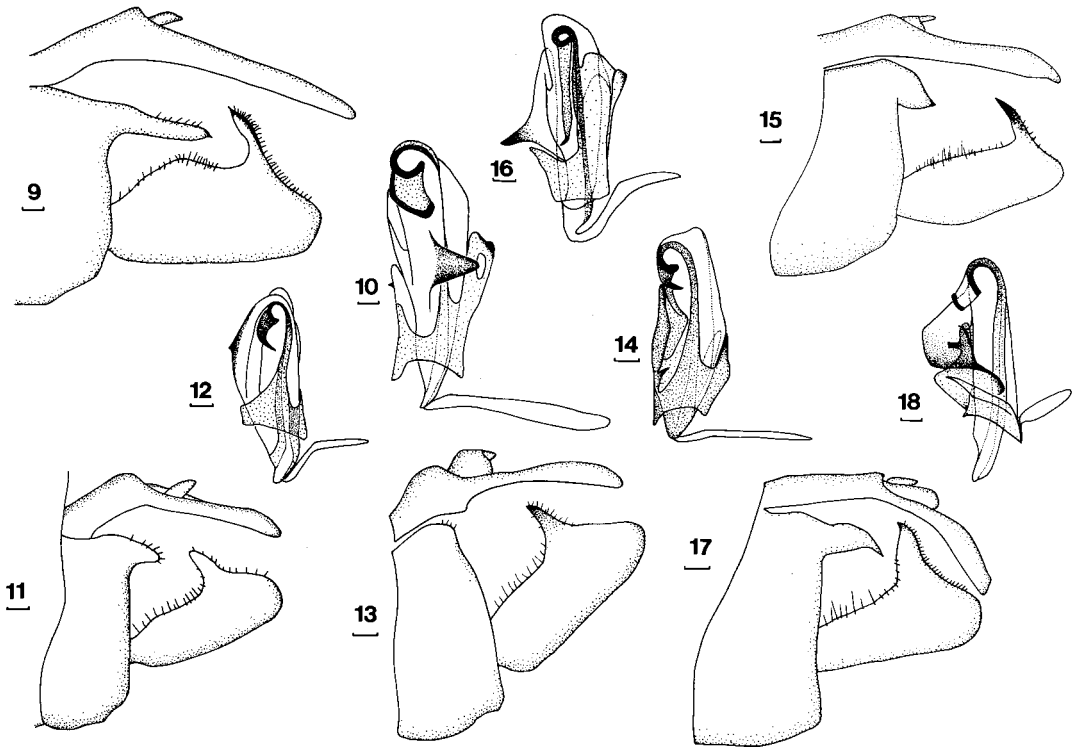
All species belong to *Siphanta* unless otherwise indicated. Names given in *italics* are synonyms. Page numbers in **bold** indicate major entries

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<i>galeata</i> Kirkaldy	5,11,12,13,23
<i>gallowayi</i> , sp. nov.	5,30
<i>glauca</i> , sp. nov.	4,5,12,13,23
<i>granulata</i> Kirkaldy	6,33,34
<i>granulicollis</i> Kirkaldy	39
<i>granulicollis</i> Stål (Poeciloptera)	26
<i>granulicollis</i> (Stål)	6,26,29,39
<i>gregaria</i> Jacobi	6,22,25
<i>griseoviridis</i> , sp. nov.	4,5,12
<i>hackeri</i> , sp. nov.	5,13,14,17,18
<i>hebes</i> Walker (Poeciloptera)	14
<i>hebes</i> (Walker)	4,9,11,14,15,16,18,23
<i>infumata</i> Distant (Parasalurnis)	19
<i>insularis</i> Distant (Parasalurnis)	31
<i>insularis</i> Jacobi	41
<i>javana</i> Kirkaldy	19
<i>kurandae</i> , sp. nov.	5,15,18
<i>lucindae</i> Kirkaldy	6,32,33,35,36
<i>luteolineata</i> , sp. nov.	4,6,34,35
<i>lynae</i> , sp. nov.	4,6,32,37,39
<i>maculata</i> Lallemand (<i>Siphanta patruelis</i> var)	19,24
<i>minuta</i> Fabricius (Cicada)	36
<i>minuta</i> (Fabricius)	5,6,36
<i>minuta</i> Melichar	26,27,28,42
<i>montana</i> , sp. nov.	5,16,17

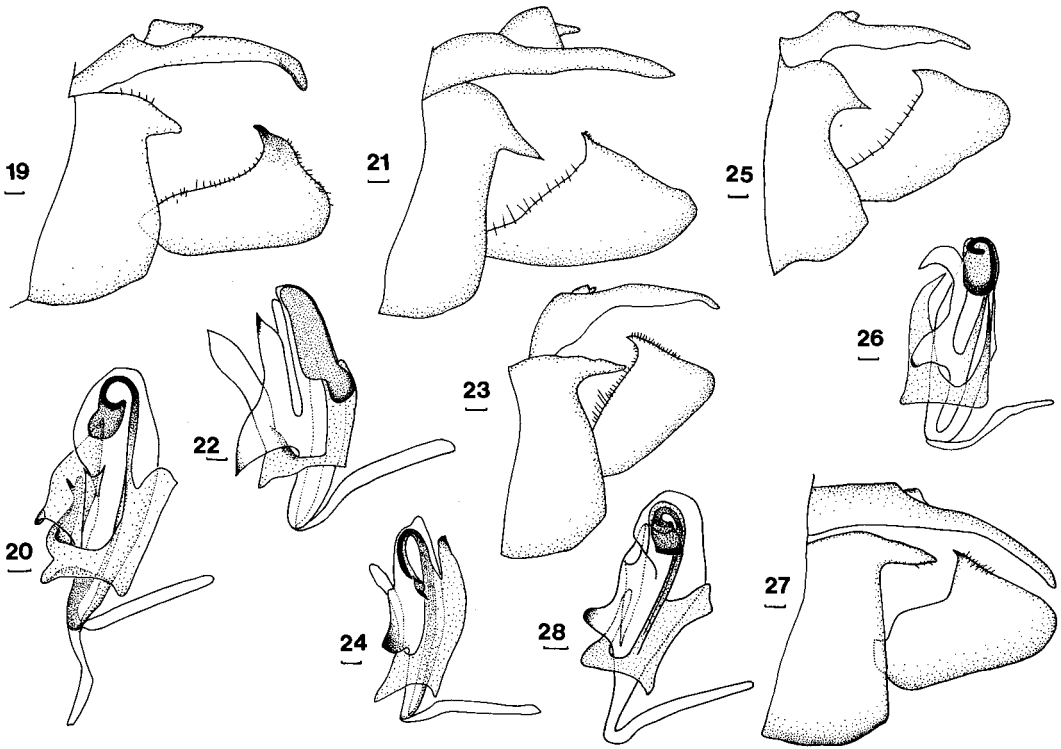
nubecula Jacobi	6,21
occidentalis, sp. nov.	6,22,25
parva, sp. nov.	4,5,28
<i>patruelis</i> Stål (Phyllyphanta)	19
<i>patruelis</i> (Stål)	1,5,19,21
peracuta, sp. nov.	5,8,16
recurva, sp. nov.	5,16,18
<i>roseicincta</i> Walker (Poeciloptera)	31
<i>roseicincta</i> (Walker)	6,31,33,37,38
rubra Schmidt	6,32,37,38,39
<i>schauinslandi</i> Kirkaldy (Phalainesthes)	7
<i>sensilis</i> Kirkaldy	36
<i>similis</i> , sp. nov.	5,14,17,18
<i>solitaria</i> , sp. nov.	5,16,17,18
<i>stigma</i> Distant	14
<i>subgranulosa</i> Kirkaldy	6,32,38,39
tasmanica, sp. nov.	6,29
thambeos, sp. nov.	5,29,30
<i>toga</i> Kirkaldy	19
<i>trimaculatus</i> Distant (Siphantoides)	40
tropica, sp. nov.	4,18
venosus Melichar (Sanurus)	41



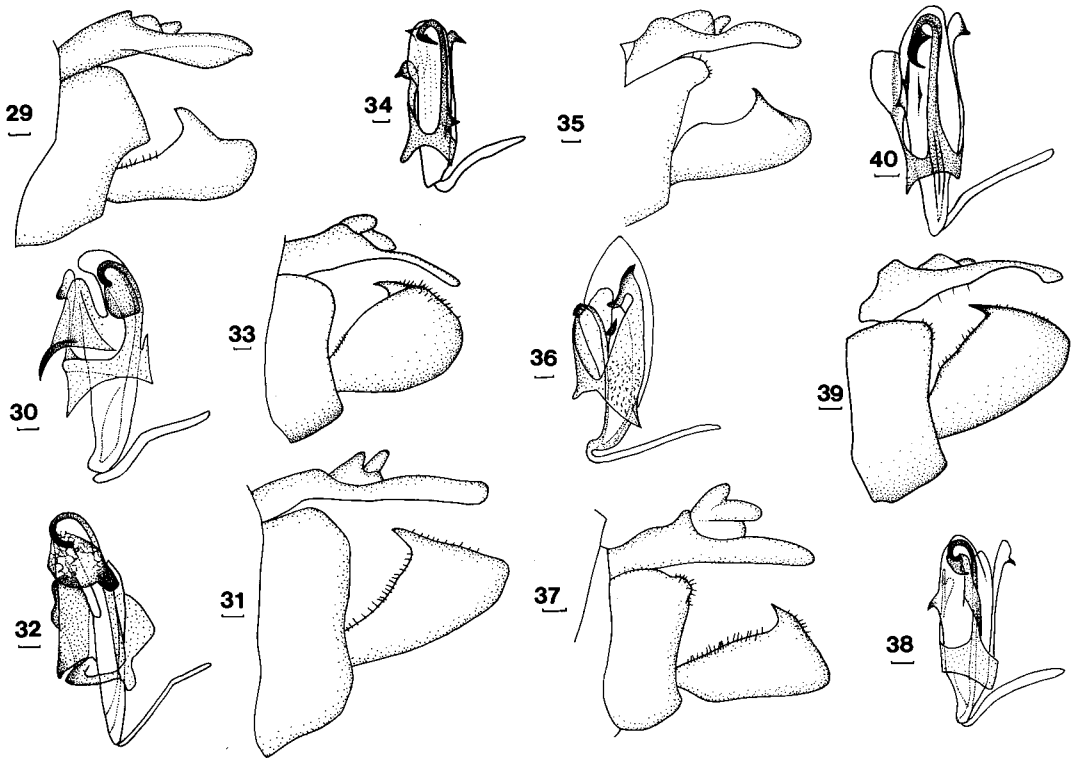
Figs 1-8. Male terminalia and aedeagus: 1, 2, *S. acuta*; 3, 4, *S. peracuta*; 5, 6, *S. angularis*; 7, 8, *S. bifida*. Scales 0.1 mm. *a*, apical; *at*, anal tube; *b*, basal; *con*, conjunctiva; *d*, dorsal; *mp*, mediodorsal process of phallosoma; *pa*, paramere; *pap*, paramere process; *ph*, phallosoma; *py*, pygofer; *pyp*, pygofer process.



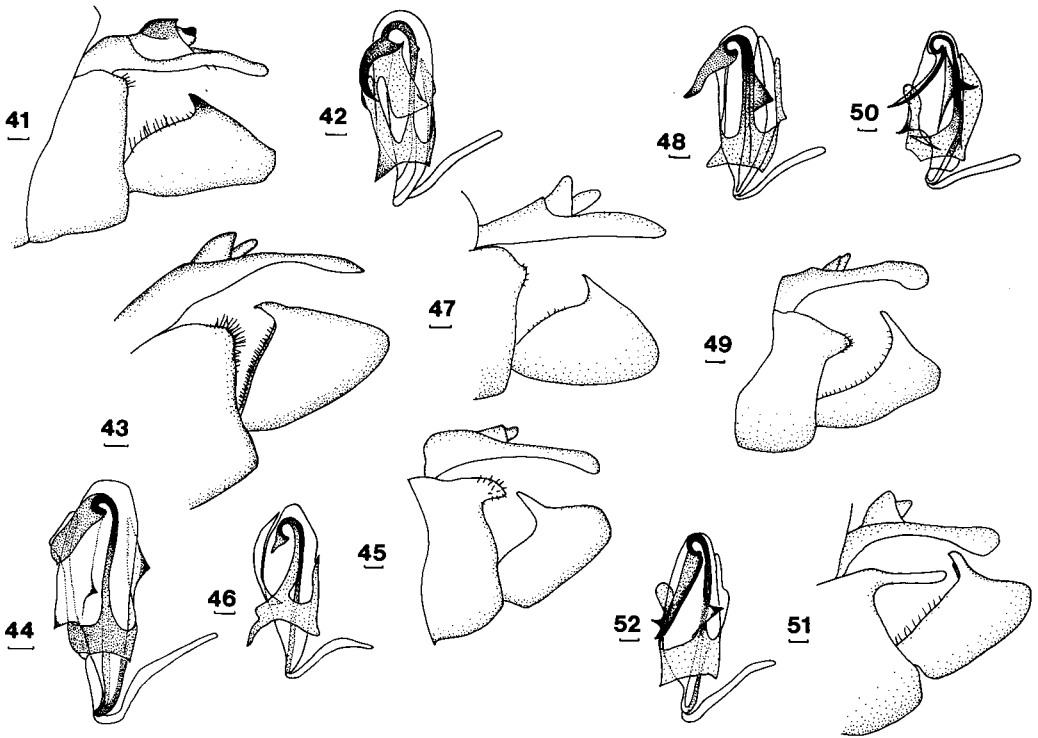
Figs 9-18. Male terminalia and aedeagus: 9, 10, *S. eberhardi*; 11, 12, *S. galeata*; 13, 14, *S. glauca*; 15, 16, *S. griseoviridis*; 17, 18, *S. hackeri*. Scales 0.1 mm.



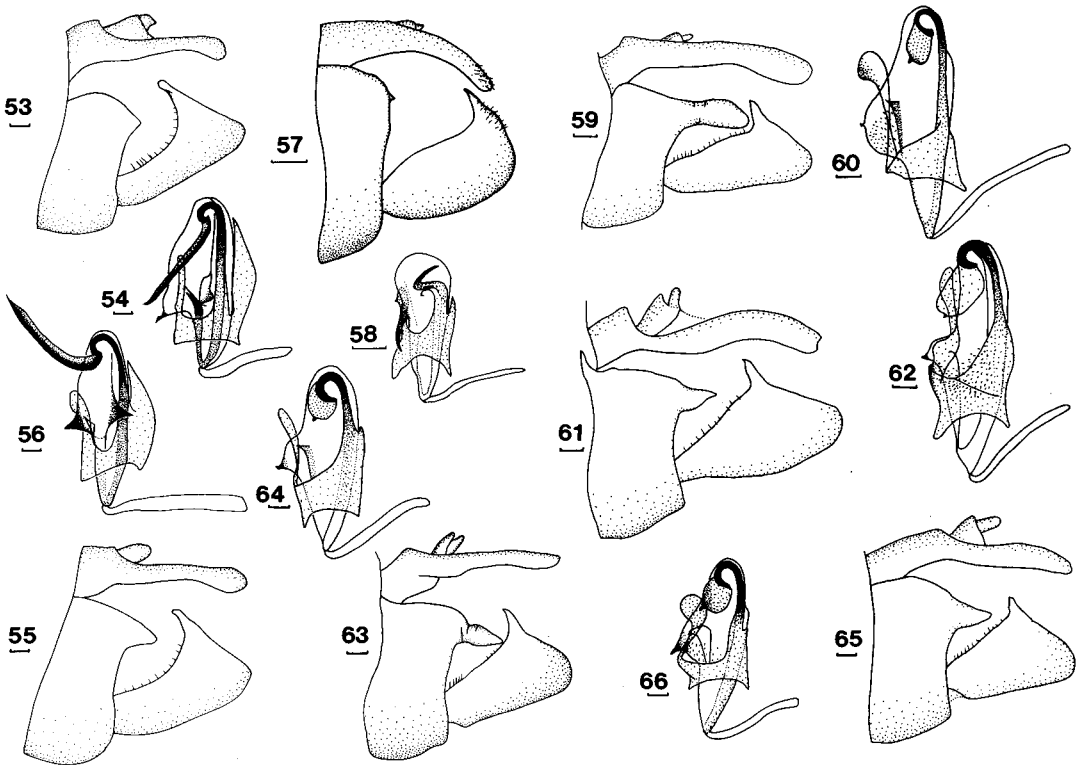
Figs 19-28. Male terminalia and aedeagus. 19, 20, *S. hebes*; 21, 22, *S. kurandae*; 23, 24, *S. montana*; 25, 26, *S. recurva*; 27, 28, *S. similis*. Scales 0.1 mm.



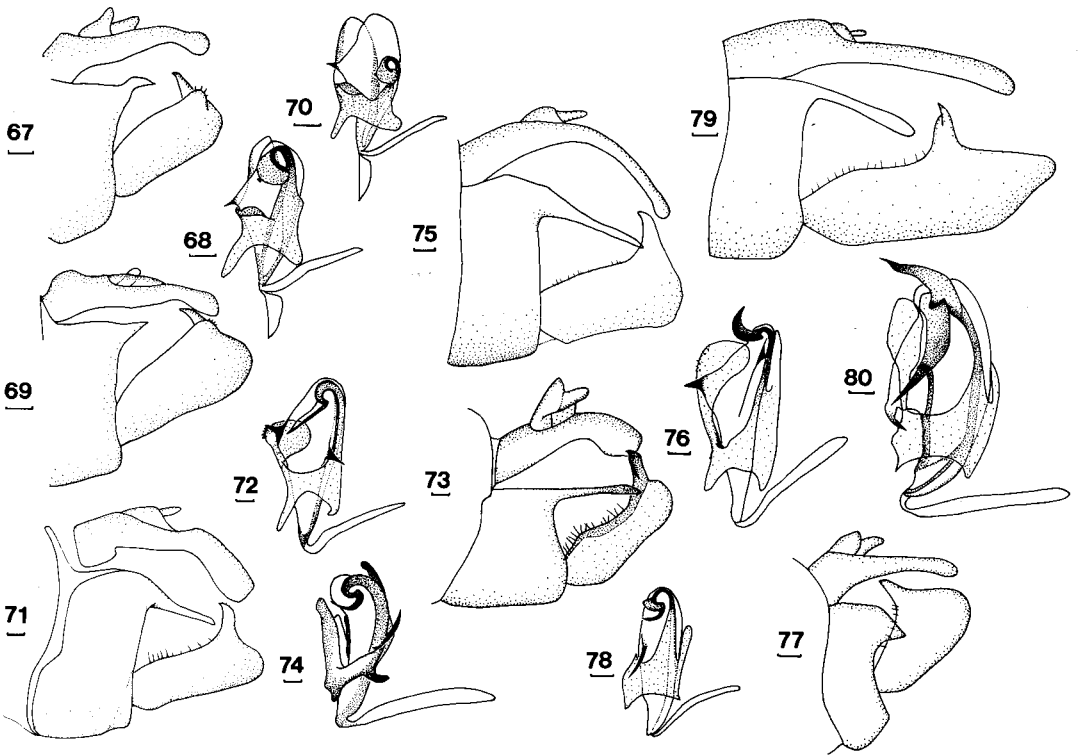
Figs 29–40. Male terminalia and aedeagus. 29, 30, *S. solitaria*; 31, 32, *S. tropica*; 33, 34, *S. patruelis*; 35, 36, *S. compacta*; 37, 38, *S. nubecula*; 39, 40, *S. anomala*. Scales 0·1 mm.



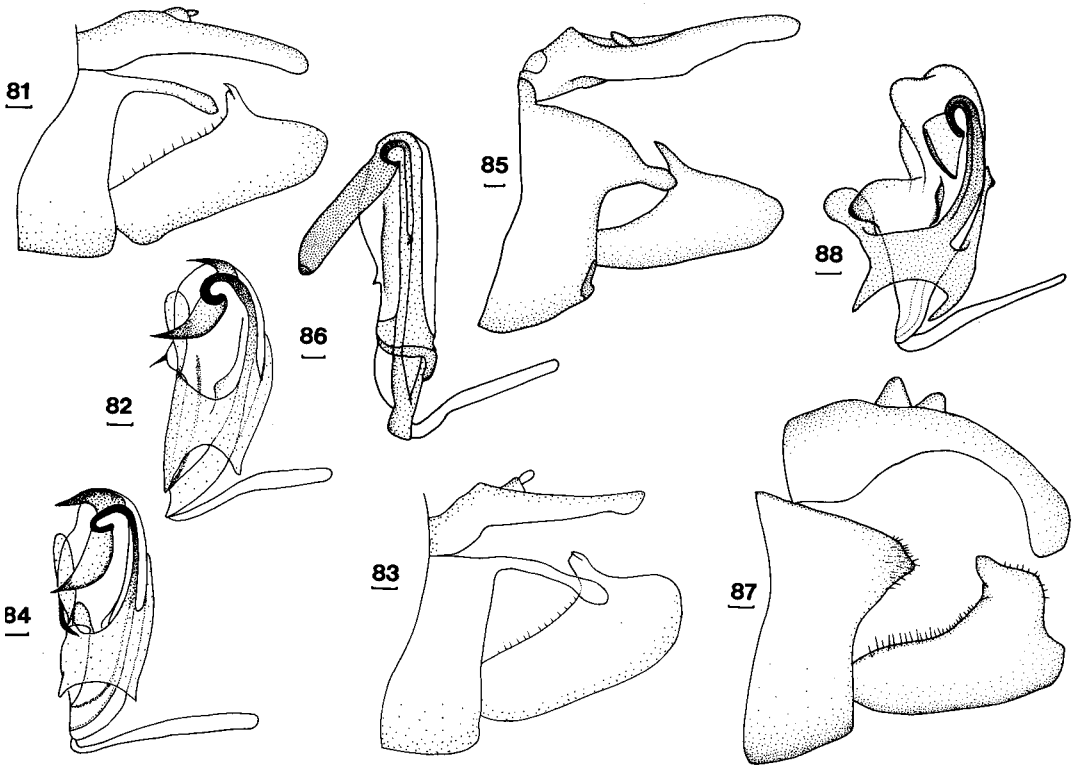
Figs 41-52. Male terminalia and aedeagus: 41, 42, *S. fusca*; 43, 44, *S. constricta*; 45, 46, *S. gregaria*; 47, 48, *S. occidentalis*; 49, 50, *S. granulicollis*; 51, 52, *S. parva*. Scales 0.1 mm.



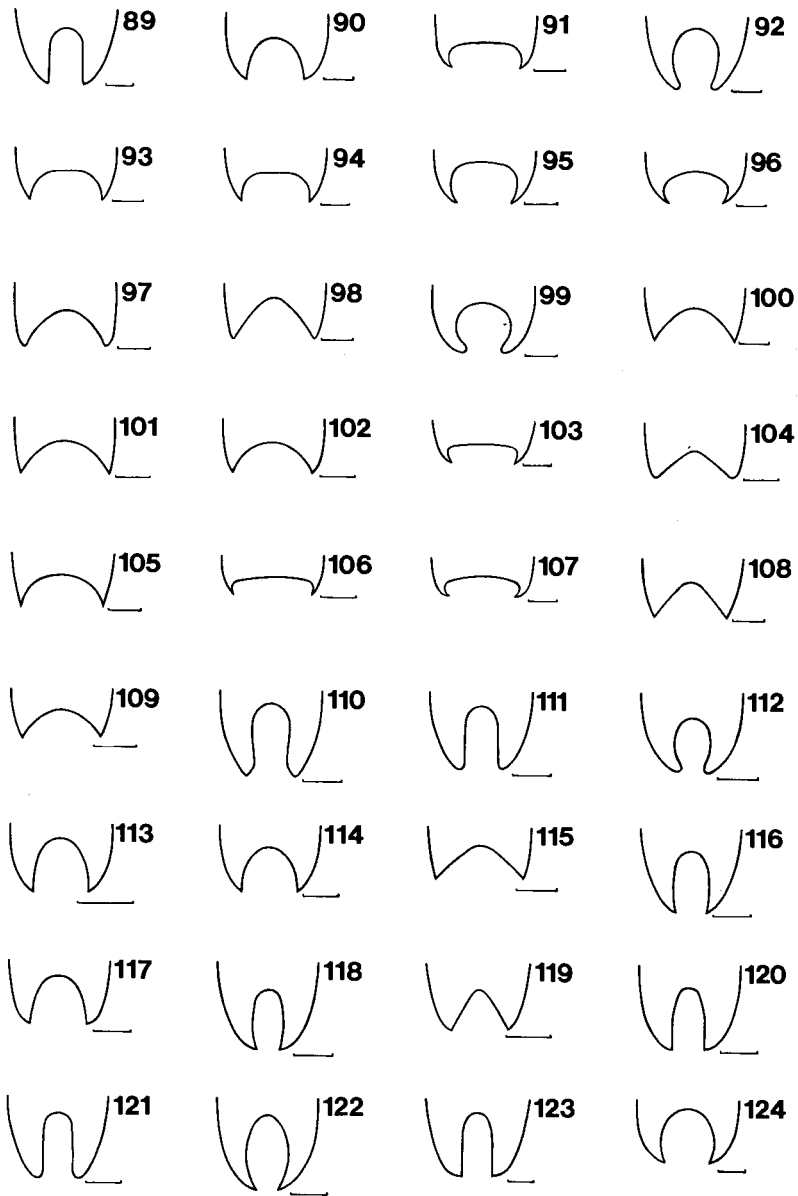
Figs 53–66. Male terminalia and aedeagus: 53, 54, *S. tasmanica*; 55, 56, *S. thambeos*; 57, 58, *S. gallowayi*; 59, 60, *S. roseincta* (Western Australian form); 61, 62, *S. roseincta* (South Australian form); 63, 64, *S. roseincta* (New South Wales form); 65, 66, *S. roseincta* (Queensland form). Scales 0.1 mm.



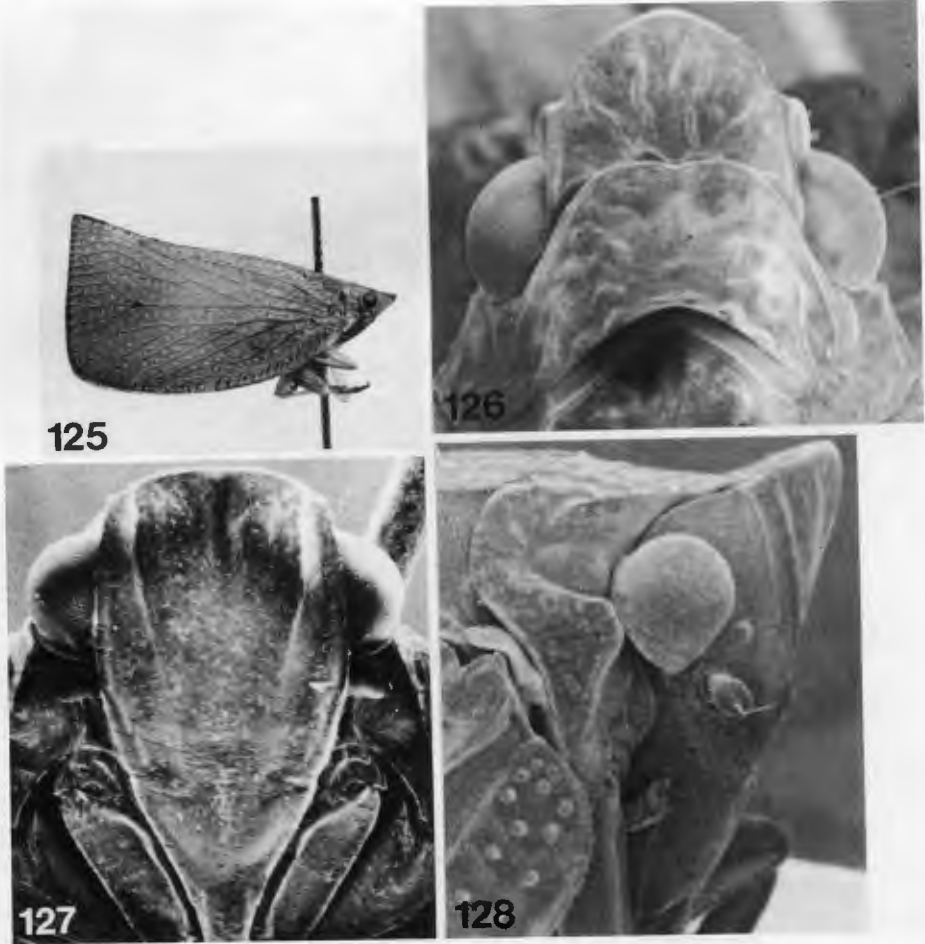
Figs 67-80. Male terminalia and aedeagus: 67, 68, *S. angustata* (normal form); 69, 70, *S. angustata* (form with stunted phallosoma); 71, 72, *S. lucindae*; 73, 74, *S. granulata*; 75, 76, *S. luteolineata*; 77, 78, *S. minuta*; 79, 80, *S. lynae*. Scales 0.1 mm.



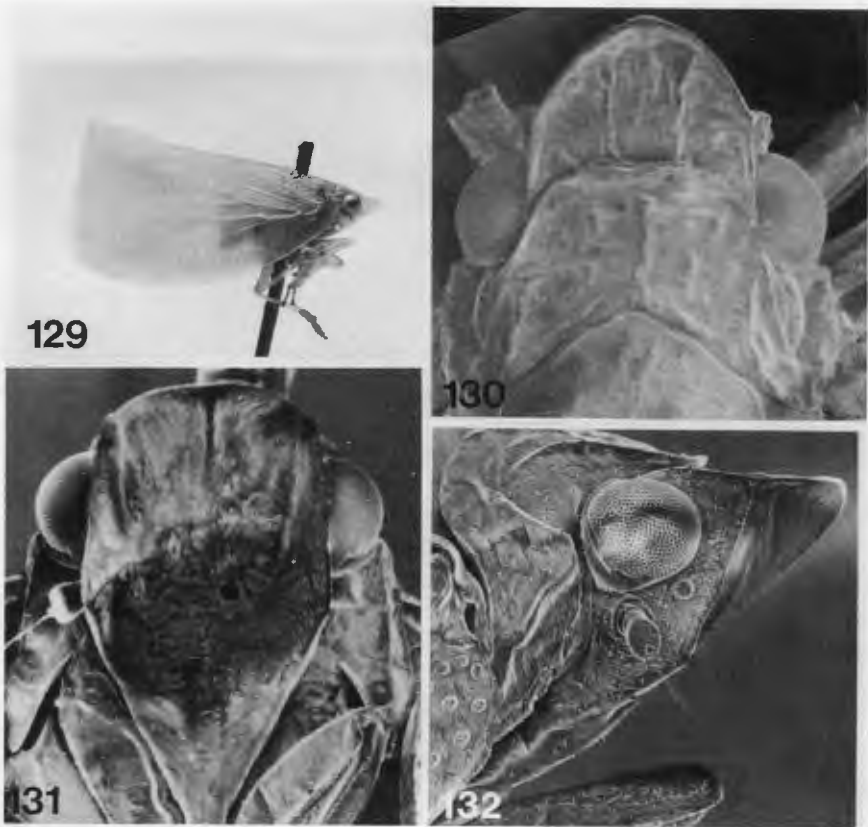
Figs 81-88. Male terminalia and aedeagus: 81, 82, *S. rubra*; 83, 84, *S. subgranulosa*; 85, 86, *S. acutipennis*; 87, 88, *S. expatria*. Scales 0.1 mm.



Figs 89–124. Female, second valvulae, dorsal view: 89, *S. acuta*; 90, *S. angularis*; 91, *S. bifida*; 92, *S. eberhardi*; 93, *S. galeata*; 94, *S. glauca*; 95, *S. griseoviridis*; 96, *S. hackeri*; 97, *S. hebes*; 98, *S. kurandae*; 99, *S. similis*; 100, *S. tropica*; 101, *S. patruelis*; 102, *S. compacta*; 103, *S. nubecula*; 104, *S. anomala*; 105, *S. fusca*; 106, *S. constricta*; 107, *S. gregaria*; 108, *S. occidentalis*; 109, *S. granulicollis*; 110, *S. parva*; 111, *S. tasmanica*; 112, *S. thambeos*; 113, *S. gallowayi*; 114, *S. roseicincta*; 115, *S. angustata*; 116, *S. lucindae*; 117, *S. granulata*; 118, *S. luteolineata*; 119, *S. minuta*; 120, *S. lynae*; 121, *S. rubra*; 122, *S. subgranulosa*; 123, *S. acutipennis*; 124, *S. expatria*. Scales 0·1 mm.



Figs 125–128. *S. acuta*: 125, habitus; 126, head, dorsal view; 127, head, frontal view; 128, head, lateral view.



Figs 129–132. *S. peracuta*: 129, habitus; 130, head, dorsal view; 131, head, frontal view; 132, head, lateral view.



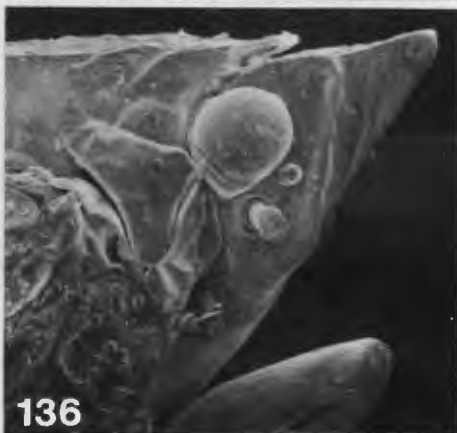
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Figs 133–136. *S. angularis*: 133, habitus; 134, head, dorsal view; 135, head, frontal view; 136, head, lateral view.



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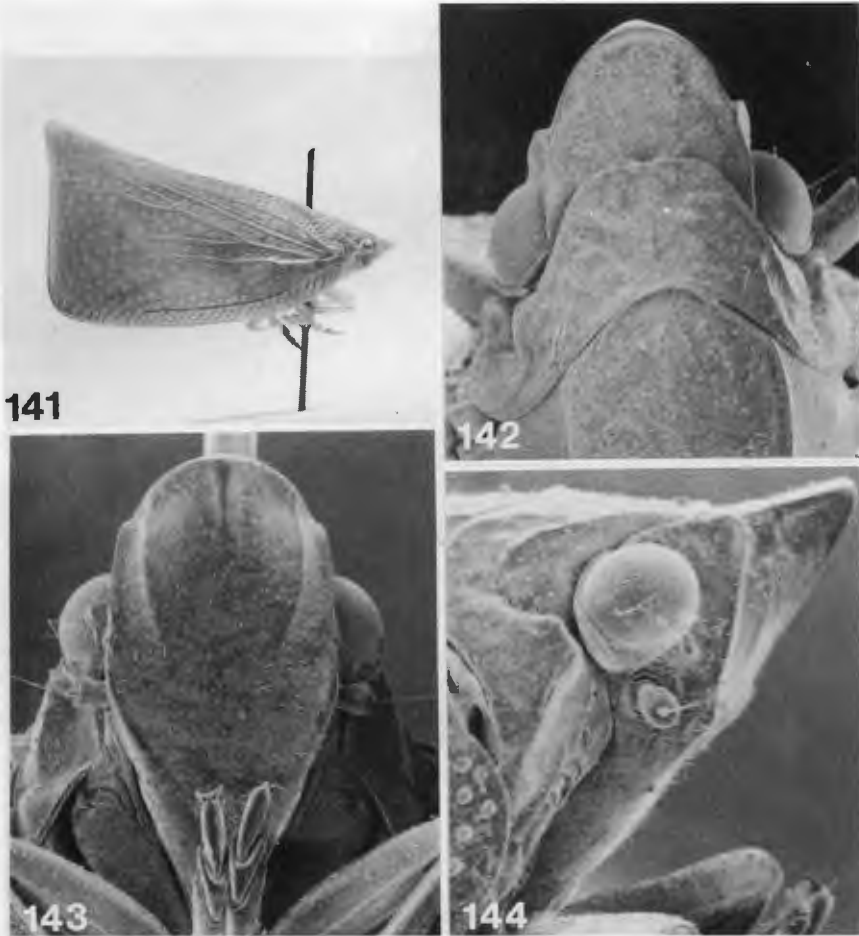


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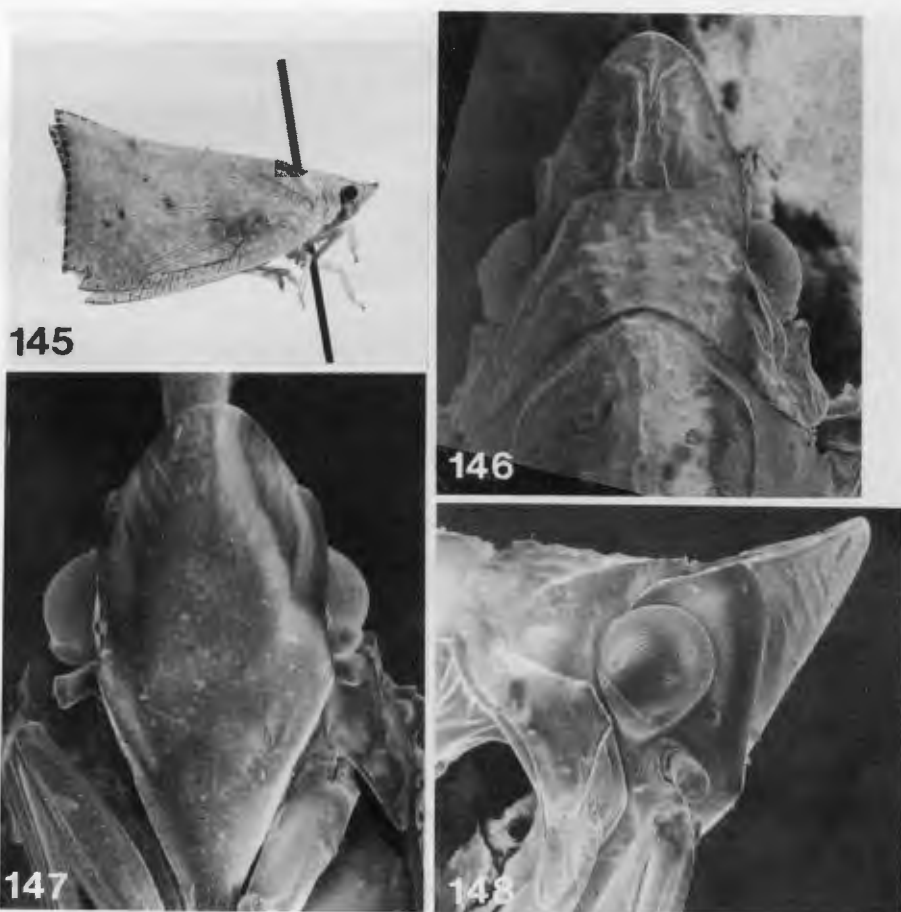


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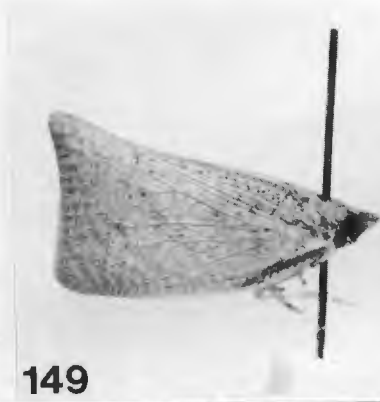
Figs 137–140. *S. bifida*: 137, habitus; 138, head, dorsal view; 139, head, frontal view; 140, head, lateral view.



Figs 141–144. *S. eberhardi*: 141, habitus; 142, head, dorsal view; 143, head, frontal view; 144, head, lateral view.



Figs 145–148. *S. galeata*: 145, habitus; 146, head, dorsal view; 147, head, frontal view; 148, head, lateral view.



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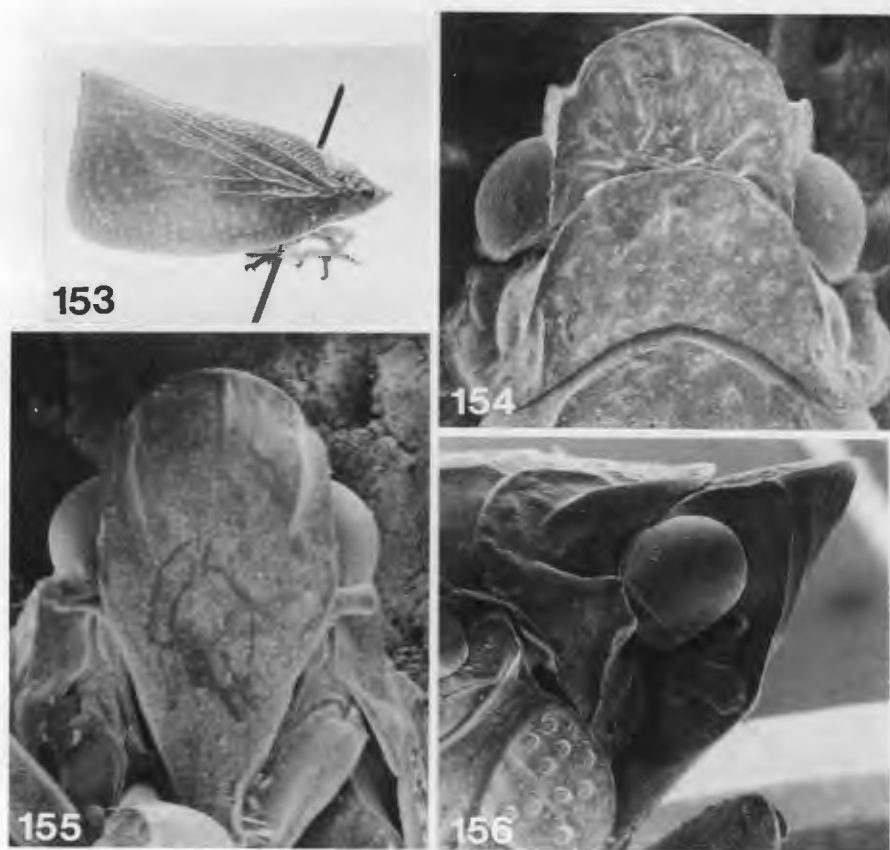


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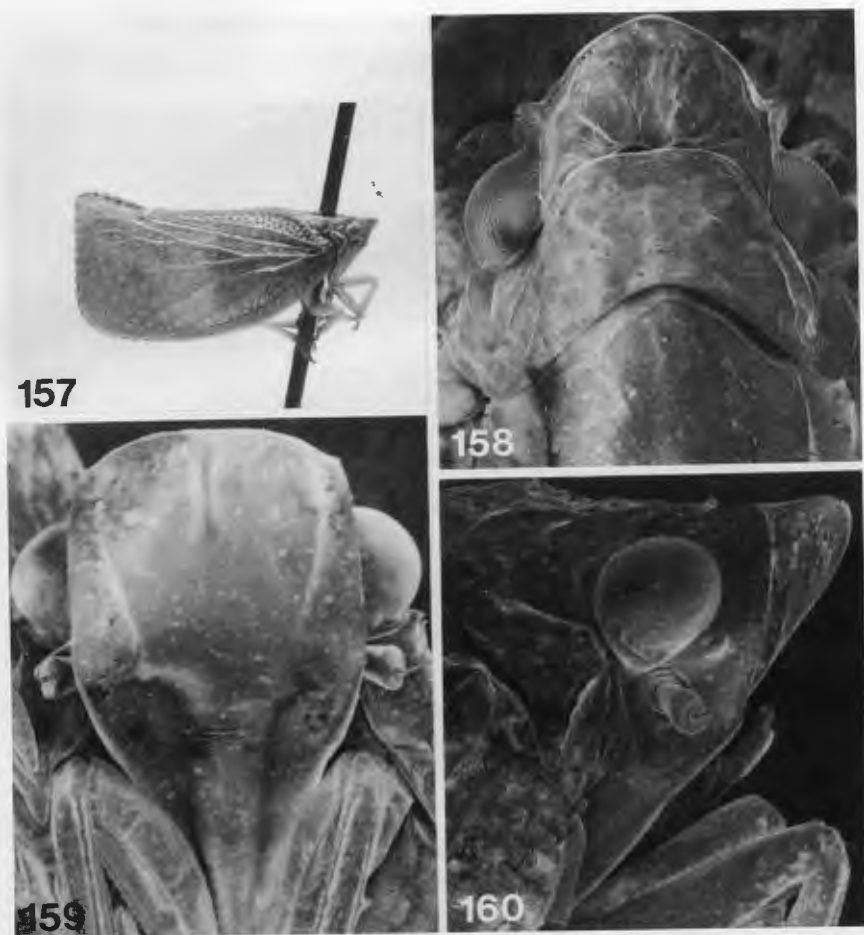


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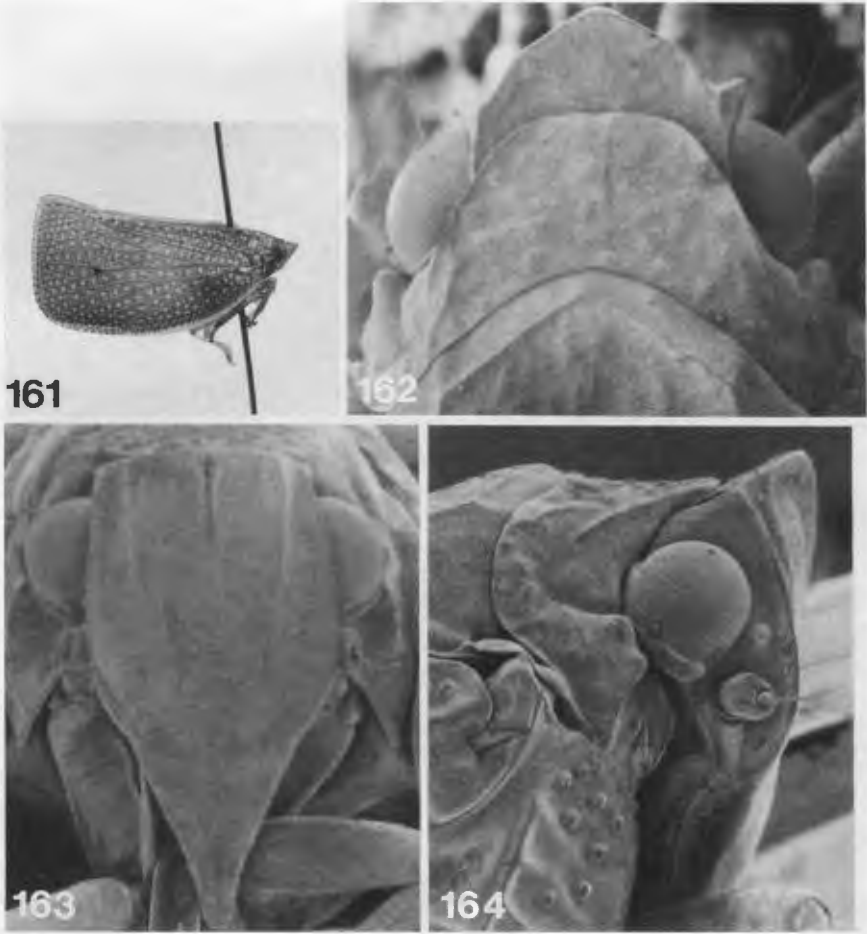
Figs 149–152. *S. glauca*: 149, habitus; 150, head, dorsal view; 151, head, frontal view; 152, head, lateral view.



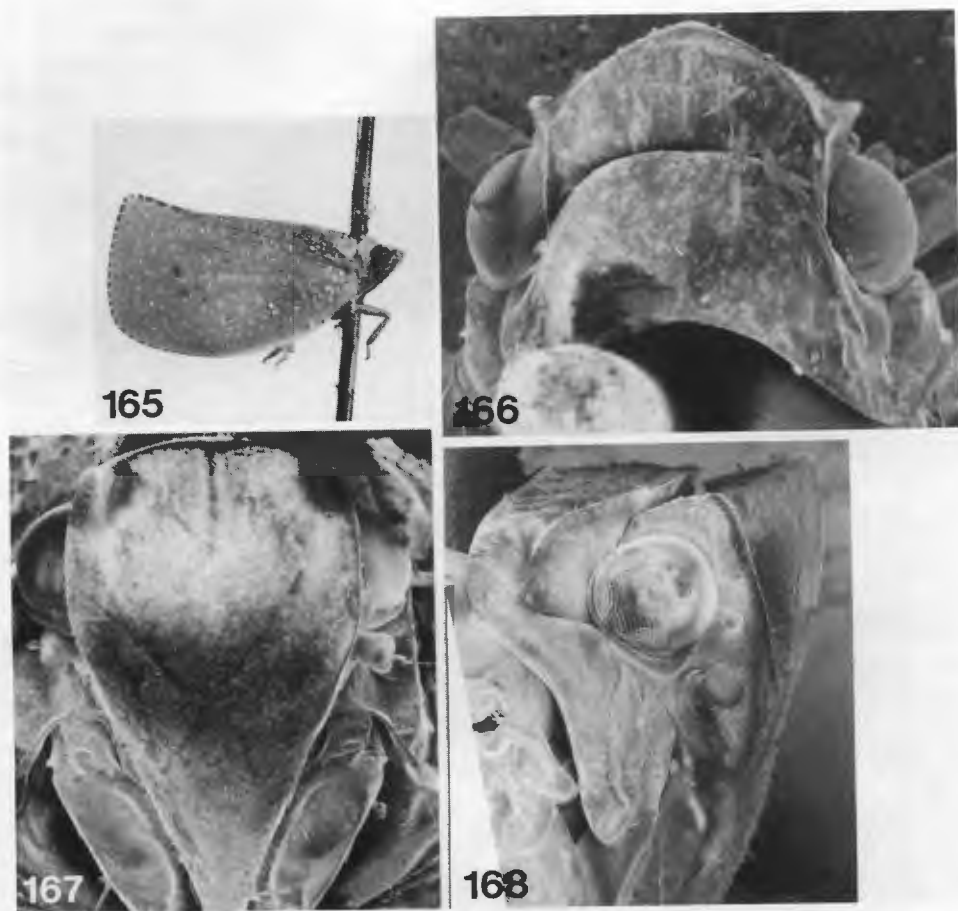
Figs 153–156. *S. griseoviridis*: 153, habitus; 154, head, dorsal view; 155, head, frontal view; 156, head, lateral view.



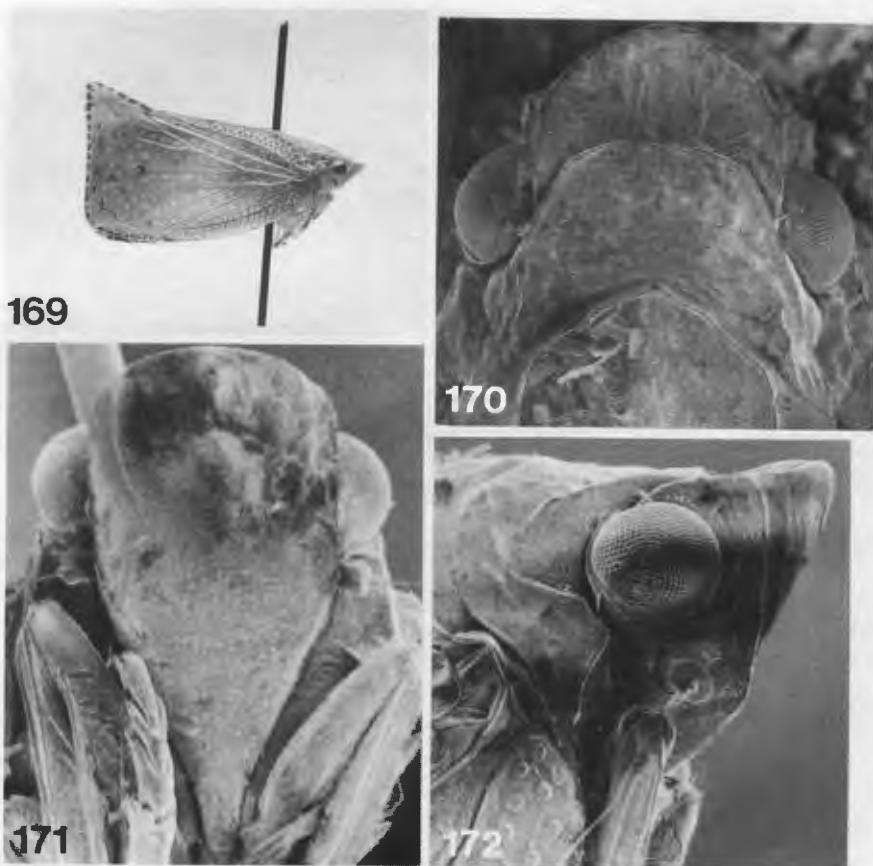
Figs 157-160. *S. hackeri*: 157, habitus; 158, head, dorsal view; 159, head, frontal view; 160, head, lateral view.



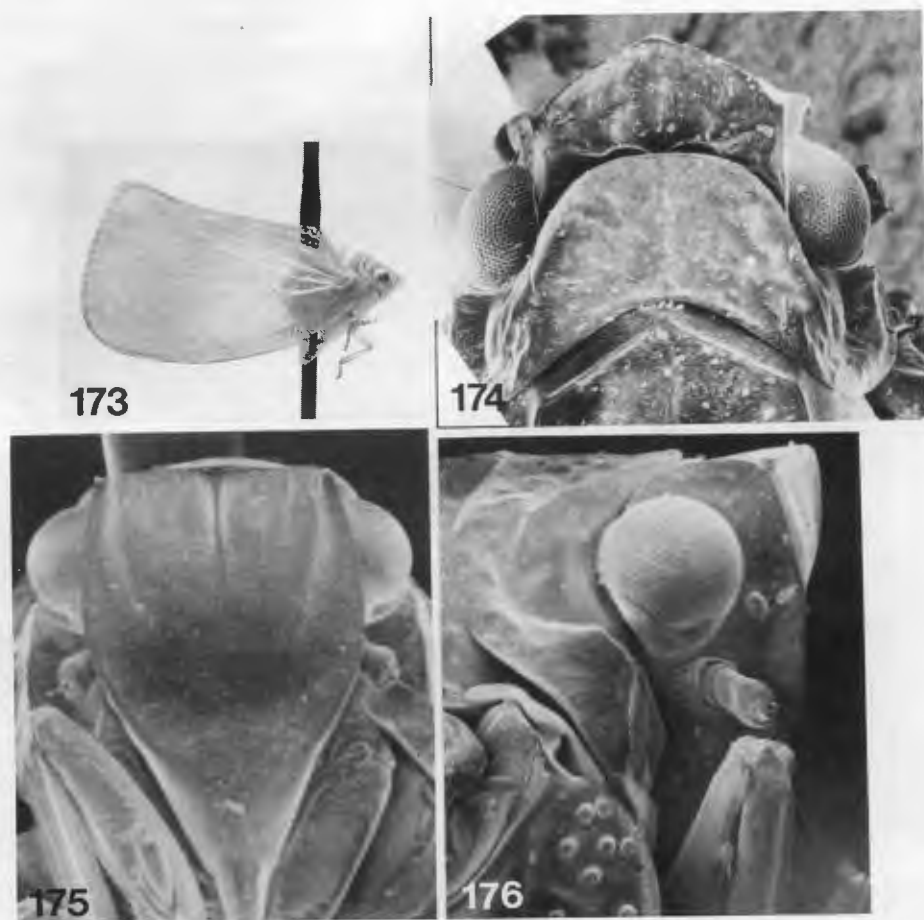
Figs 161–164. *S. hebes*: 161, habitus; 162, head, dorsal view; 163, head, frontal view; 164, head, lateral view.



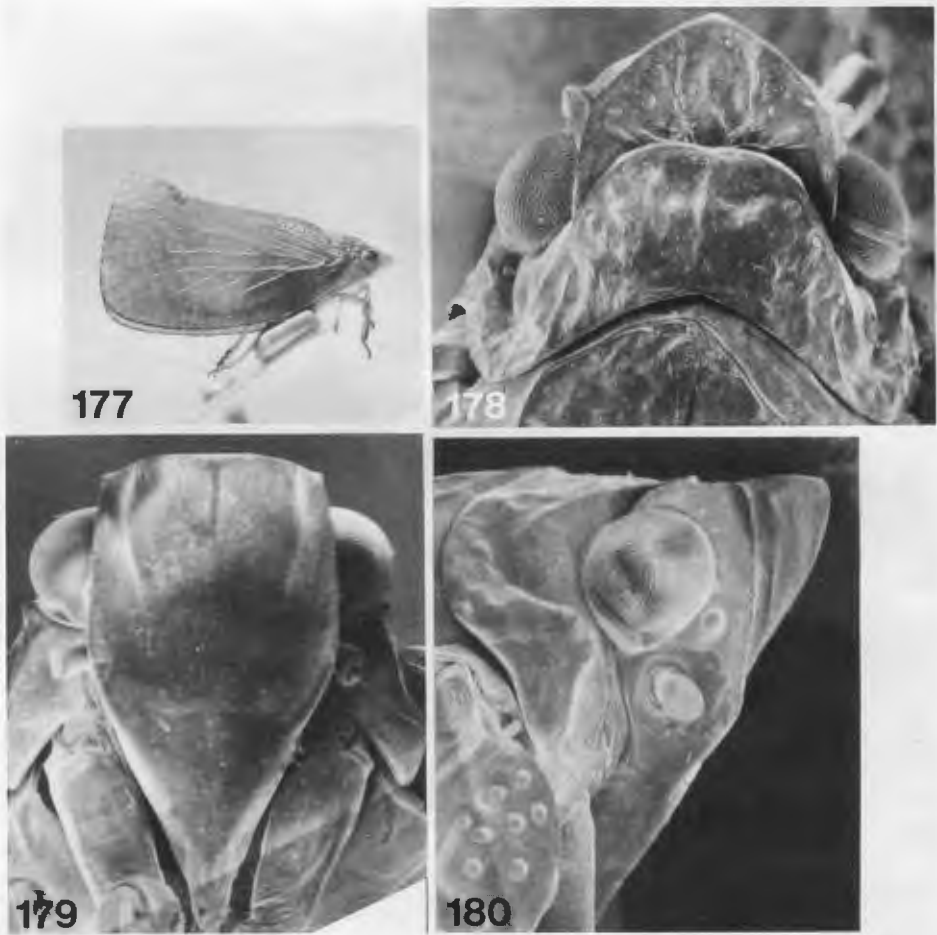
Figs 165–168. *S. kurandae*: 165, habitus; 166, head, dorsal view; 167, head, frontal view; 168, head, lateral view.



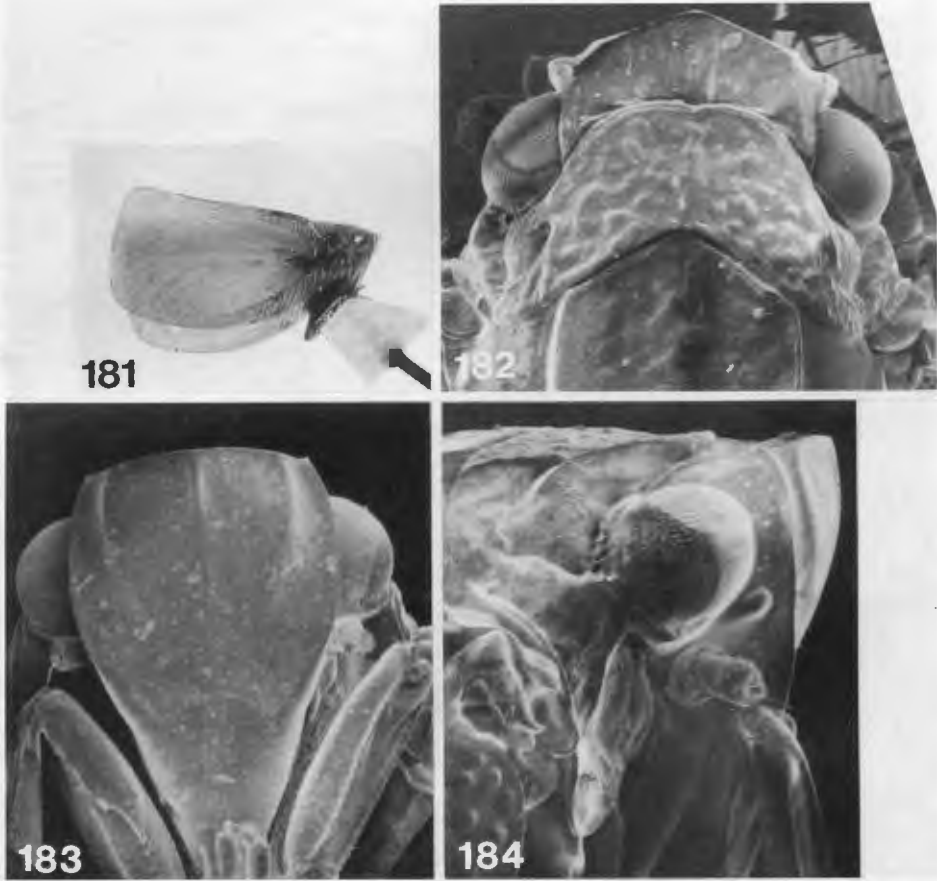
Figs 169–172. *S. montana*: 169, habitus; 170, head, dorsal view; 171, head, frontal view; 172, head, lateral view.



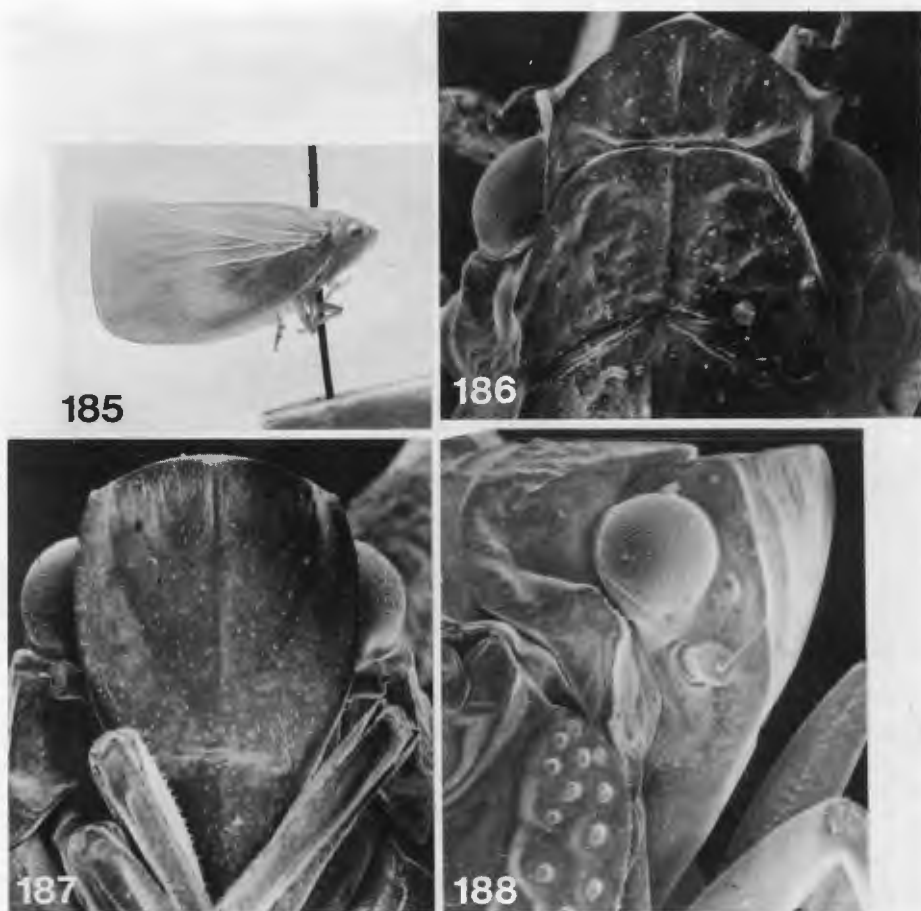
Figs 173–176. *S. recurva*: 173, habitus; 174, head, dorsal view; 175, head, frontal view; 176, head, lateral view.



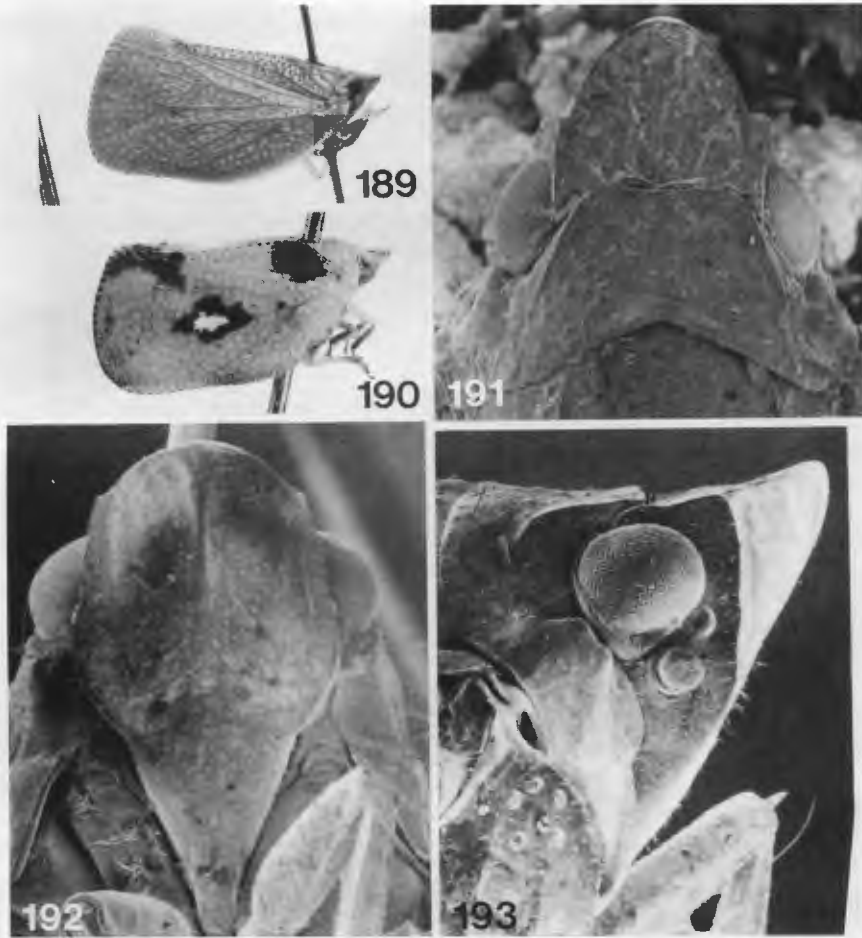
Figs 177–180. *S. similis*: 177, habitus; 178, head, dorsal view; 179, head, frontal view; 180, head, lateral view.



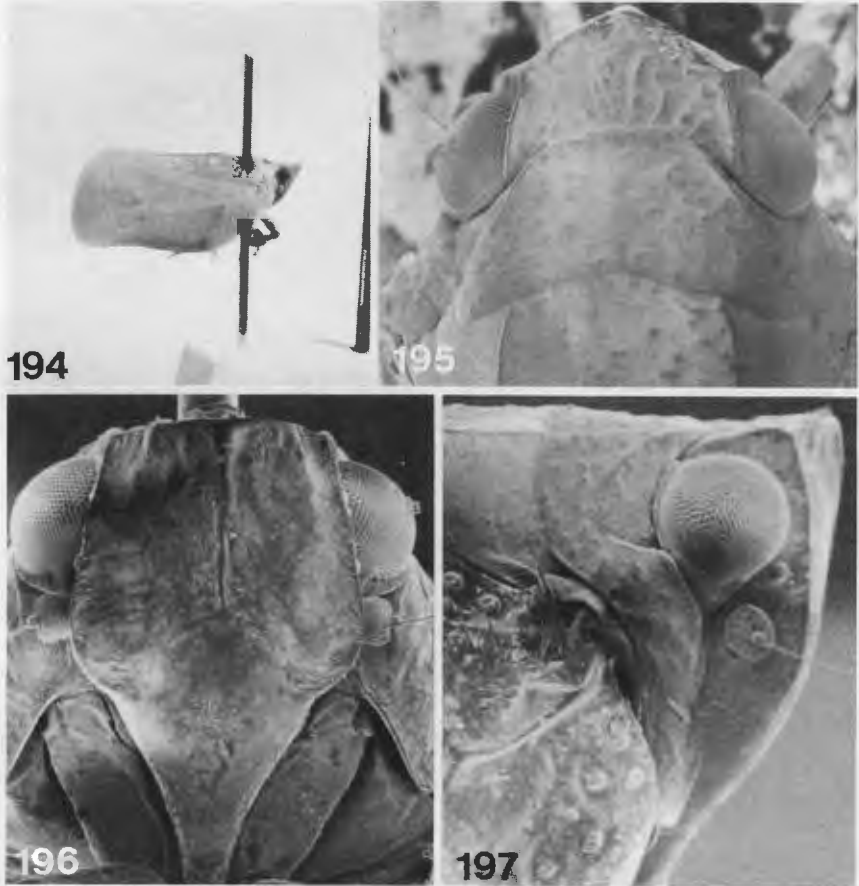
Figs 181–184. *S. solitaria*: 181, habitus; 182, head, dorsal view; 183, head, frontal view; 184, head, lateral view.



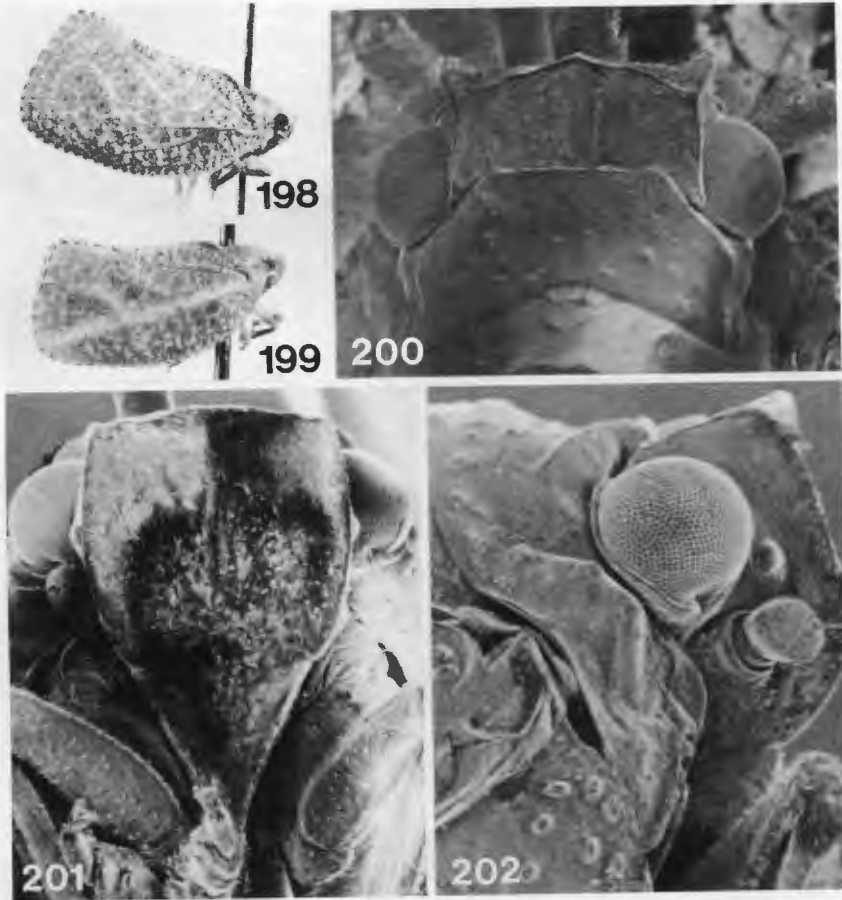
Figs 185–188. *S. tropica*: 185, habitus; 186, head, dorsal view; 187, head, frontal view; 188, head, lateral view.



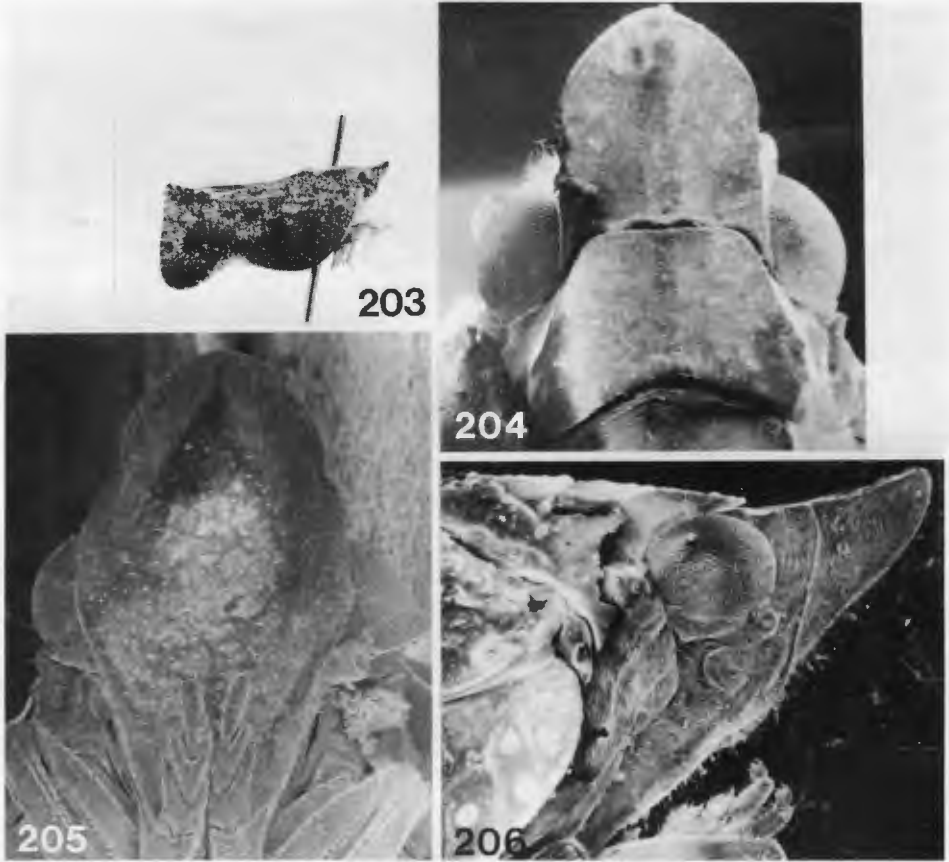
Figs 189–193. *S. patruelis*: 189, habitus; 190, habitus, variant; 191, head, dorsal view; 192, head, frontal view; 193, head, lateral view.



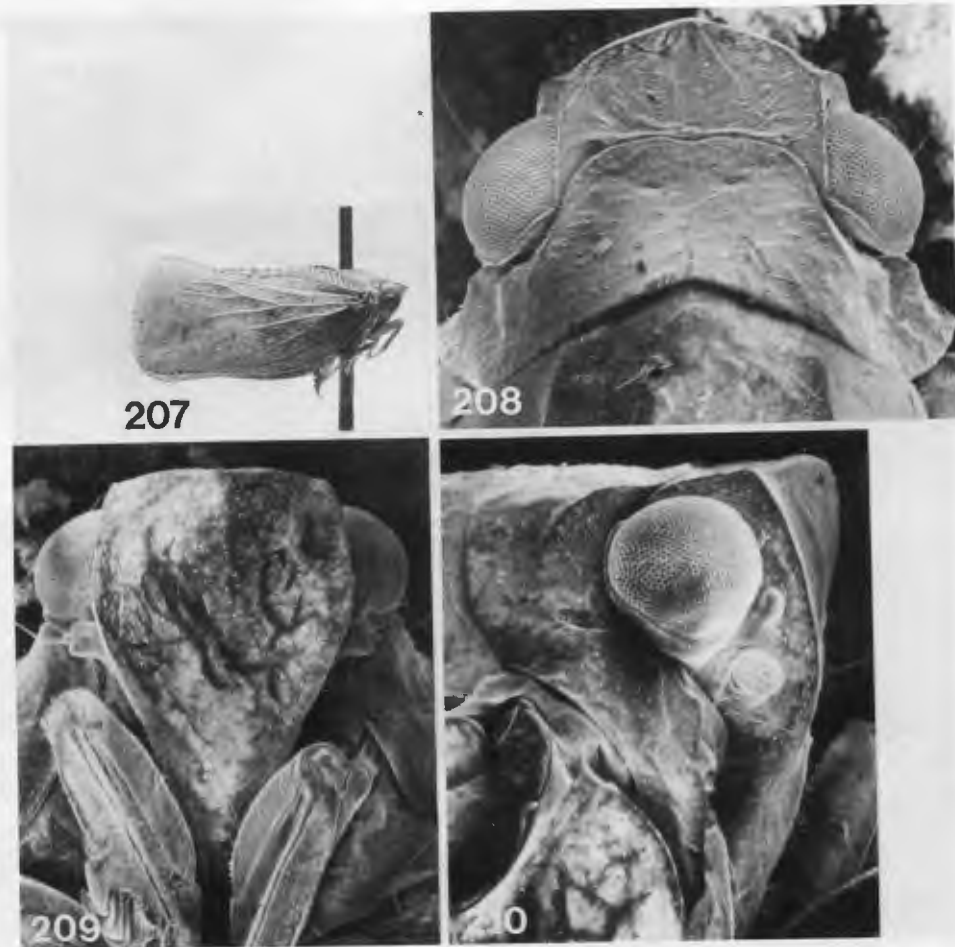
Figs 194–197. *S. compacta*: 194, habitus; 195, head, dorsal view; 196, head, frontal view; 197, head, lateral view.



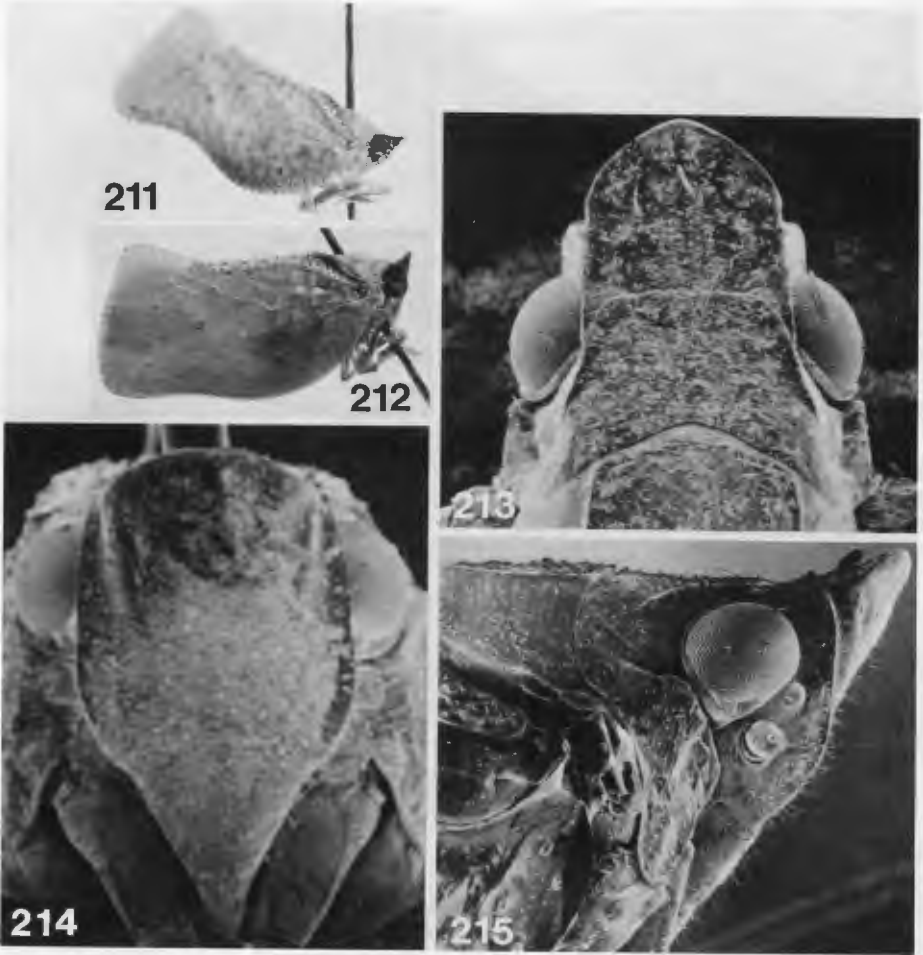
Figs 198–202. *S. nubecula*: 198, habitus; 199, habitus, variant; 200, head, dorsal view; 201, head, frontal view; 202, head, lateral view.



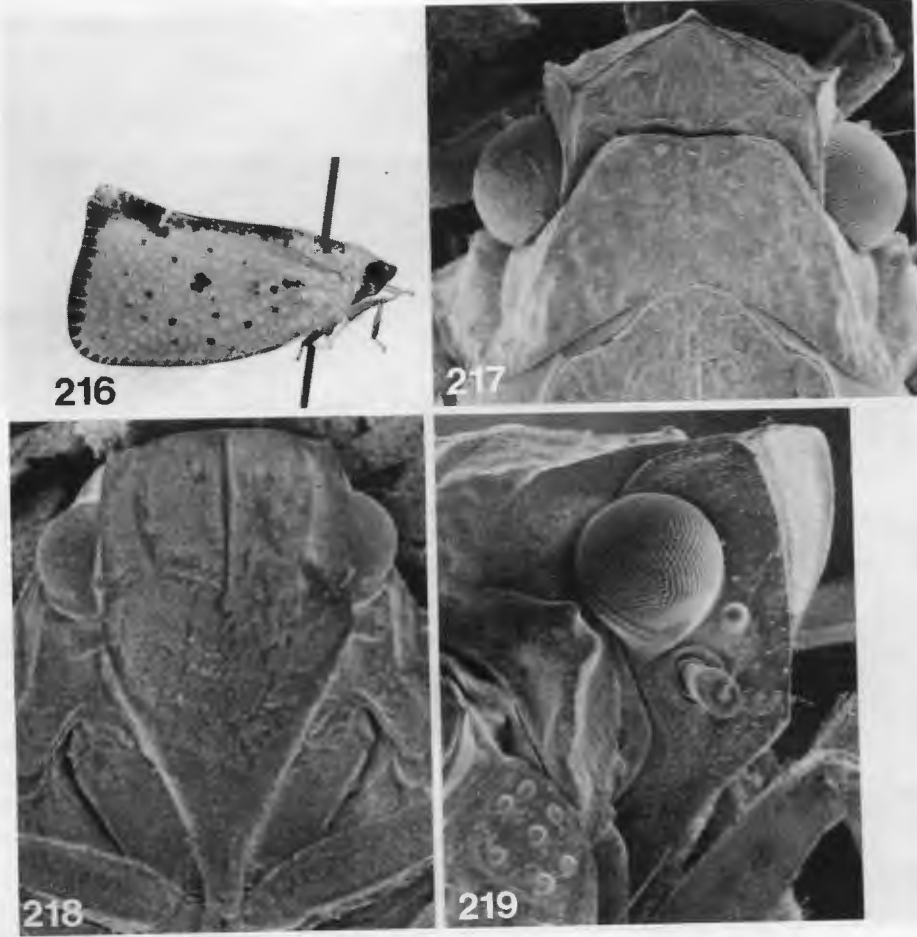
Figs 203-206. *S. anomala*: 203, habitus; 204, head, dorsal view; 205, head, frontal view; 206, head, lateral view.



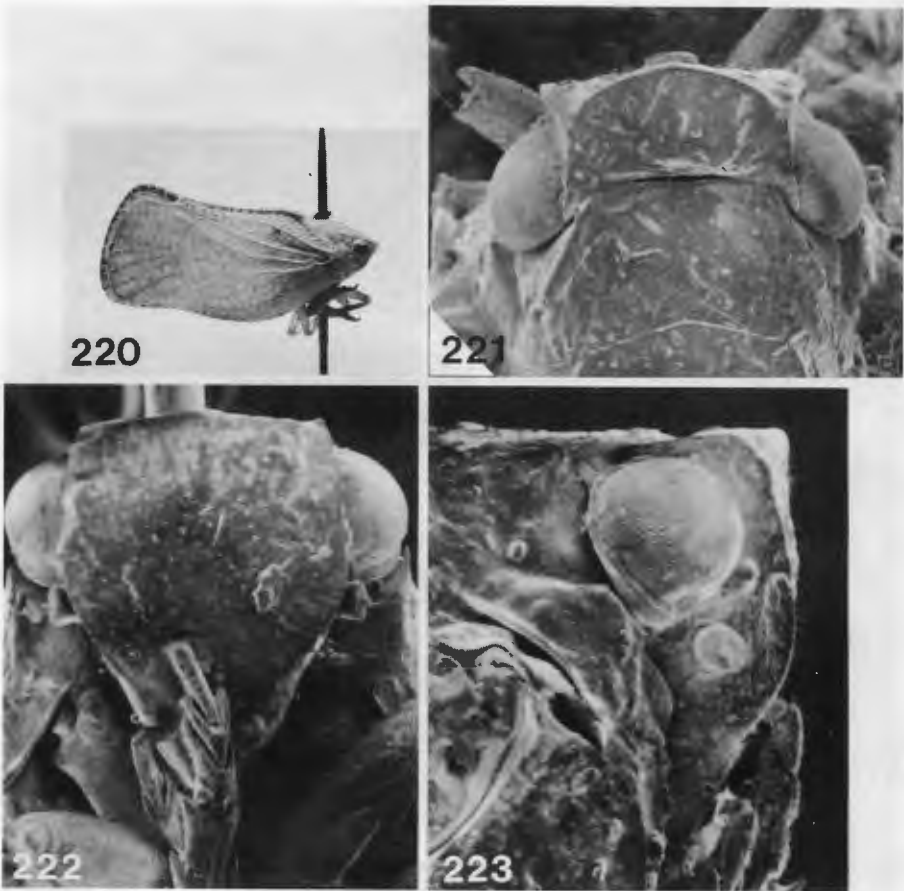
Figs 207-210. *S. fusca*: 207, habitus; 208, head, dorsal view; 209, head, frontal view; 210, head, lateral view.



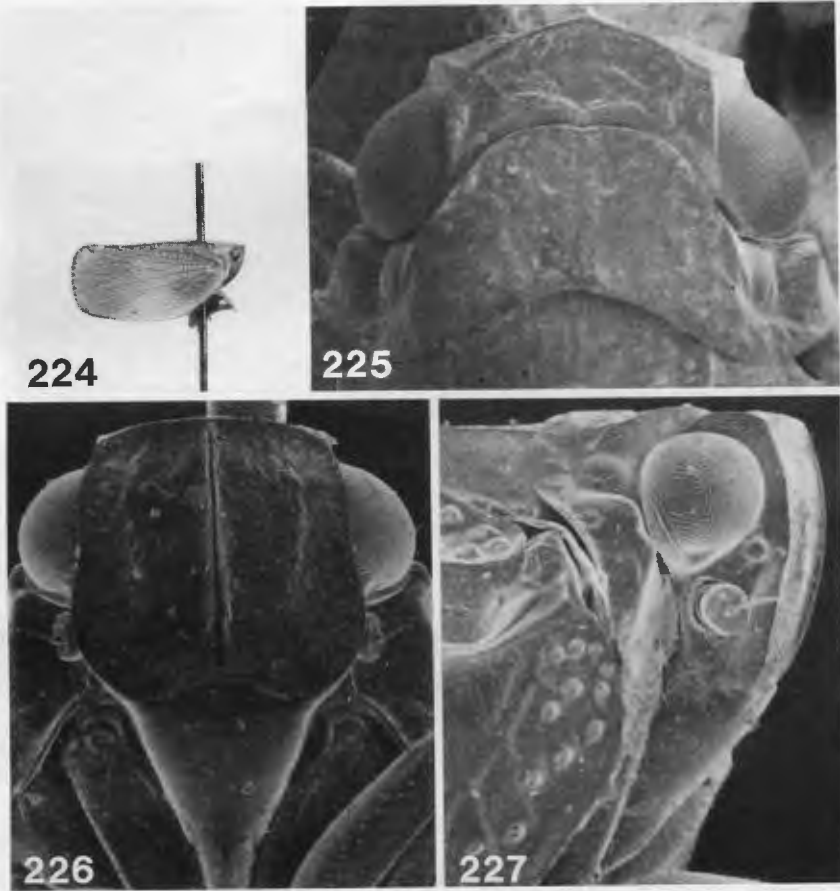
Figs 211–215. *S. constricta*: 211, habitus; 212, habitus, variant; 213, head, dorsal view; 214, head, frontal view; 215, head, lateral view.



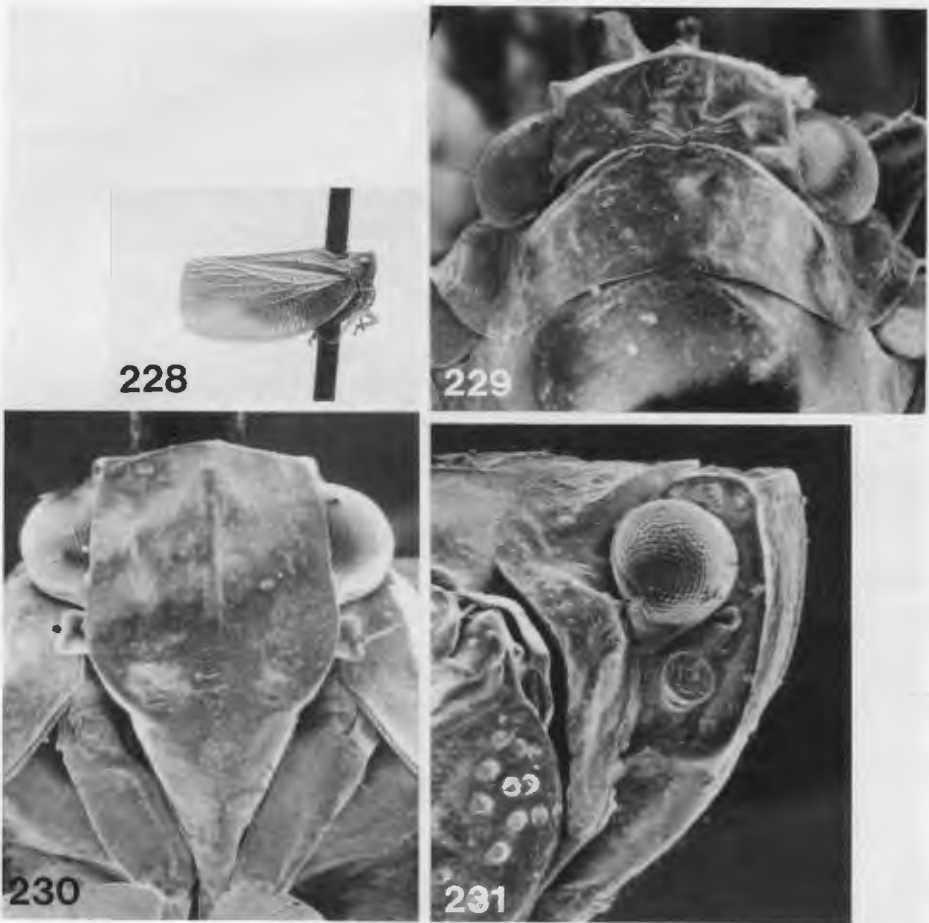
Figs 216-219. *S. gregaria*: 216, habitus; 217, head, dorsal view; 218, head, frontal view; 219, head, lateral view.



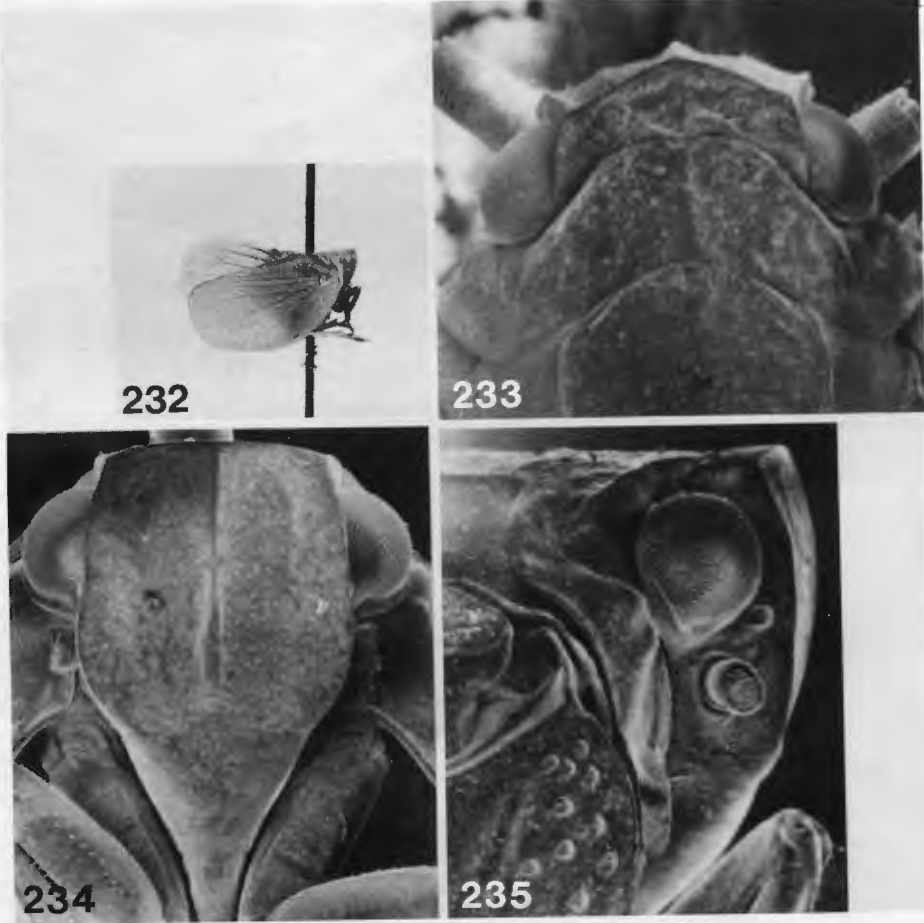
Figs 220–223. *S. occidentalis*: 220, habitus; 221, head, dorsal view; 222, head, frontal view; 223, head, lateral view.



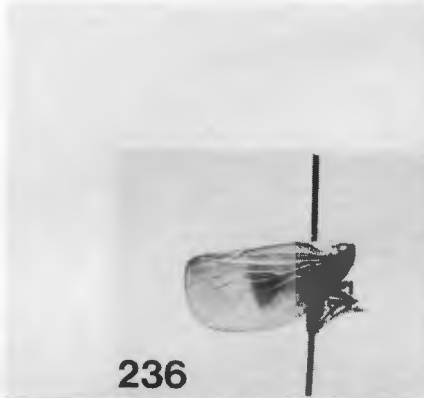
Figs 224–227. *S. granulicollis*: 224, habitus; 225, head, dorsal view; 226, head, frontal view; 227, head, lateral view.



Figs 228–231. *S. parva*: 228, habitus; 229, head, dorsal view; 230, head, frontal view; 231, head, lateral view.



Figs 232-235. *S. tasmanica*: 232, habitus; 233, head, dorsal view; 234, head, frontal view; 235, head, lateral view.



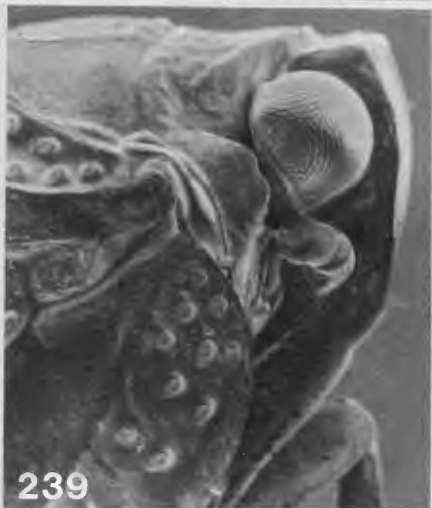
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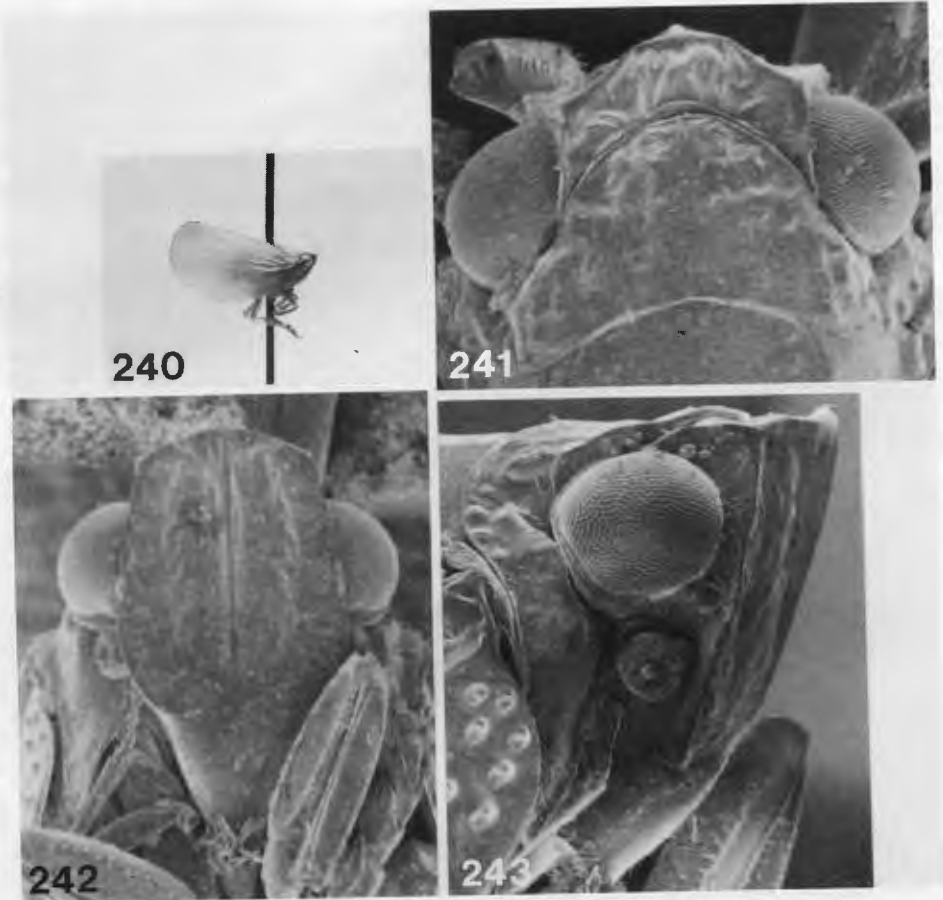


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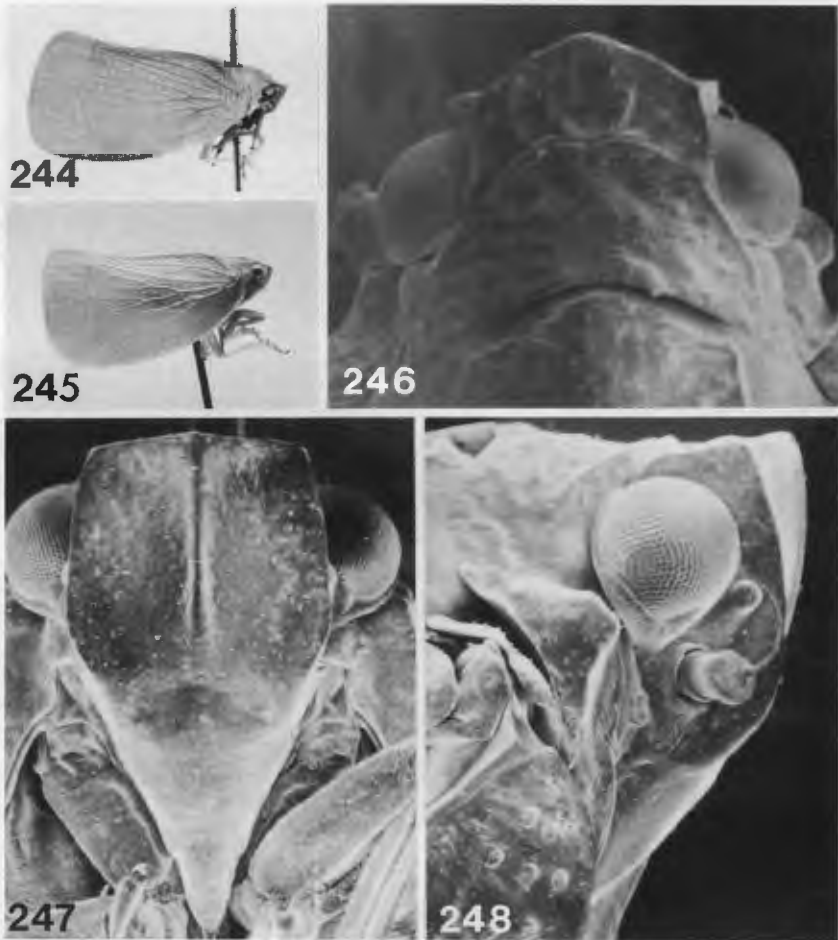


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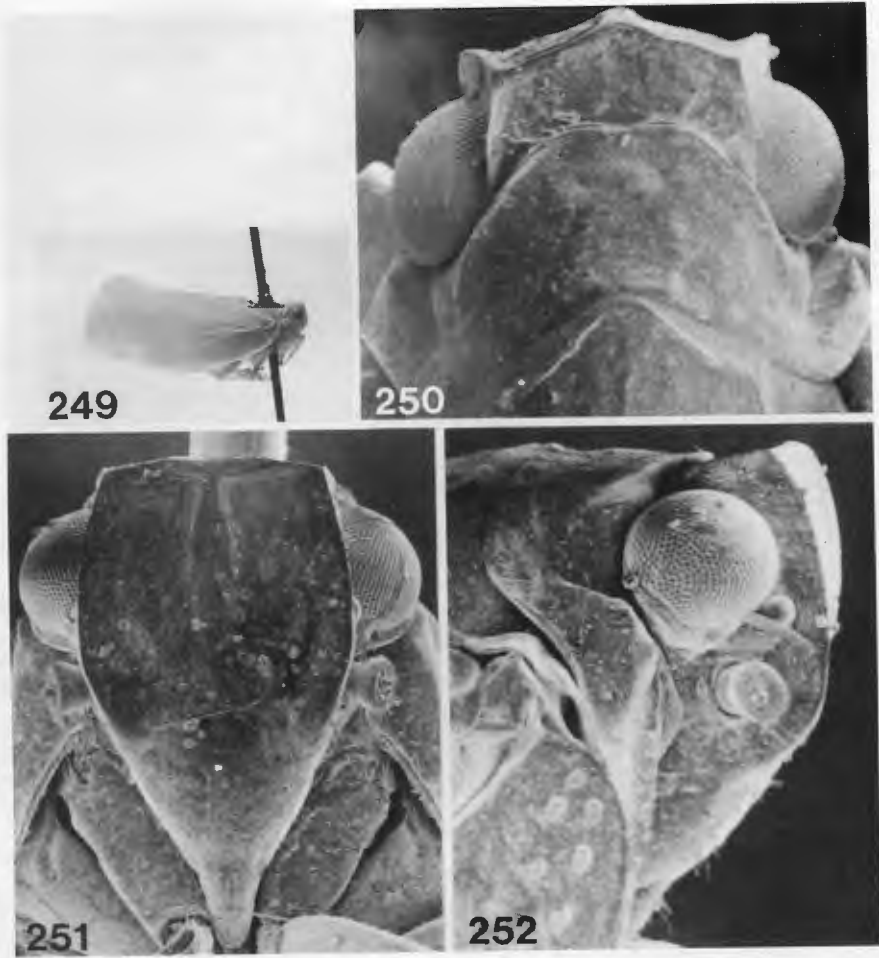
Figs 236–239. *S. thambeos*: 236, habitus; 237, head, dorsal view; 238, head, frontal view; 239, head, lateral view.



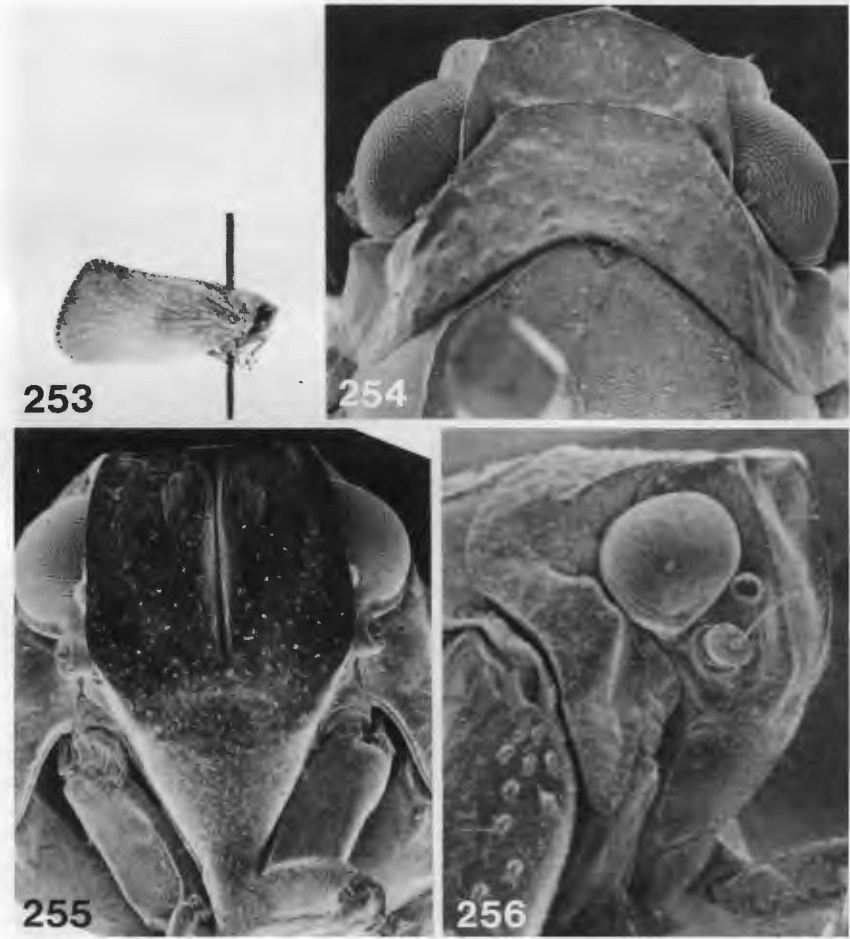
Figs 240–243. *S. gallowayi*: 240, habitus; 241, head, dorsal view; 242, head, frontal view; 243, head, lateral view.



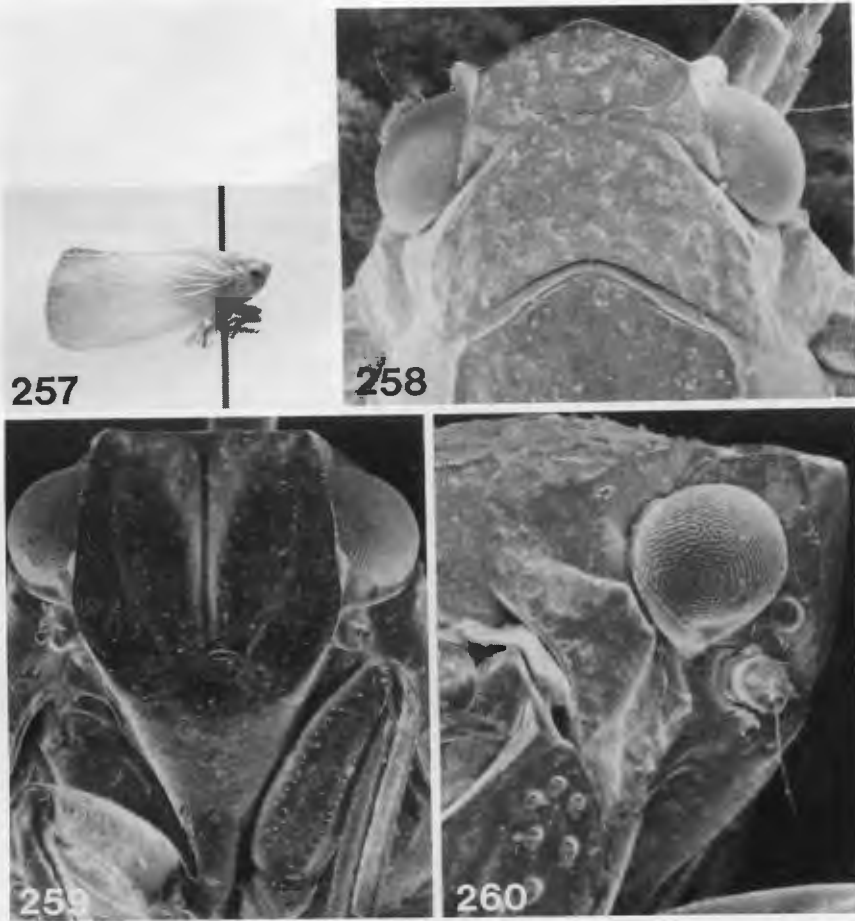
Figs 244–248. *S. roseicincta*: 244, habitus, eastern Australian form; 245, habitus, Western Australian form; 246, head, dorsal view; 247, head, frontal view; 248, head, lateral view.



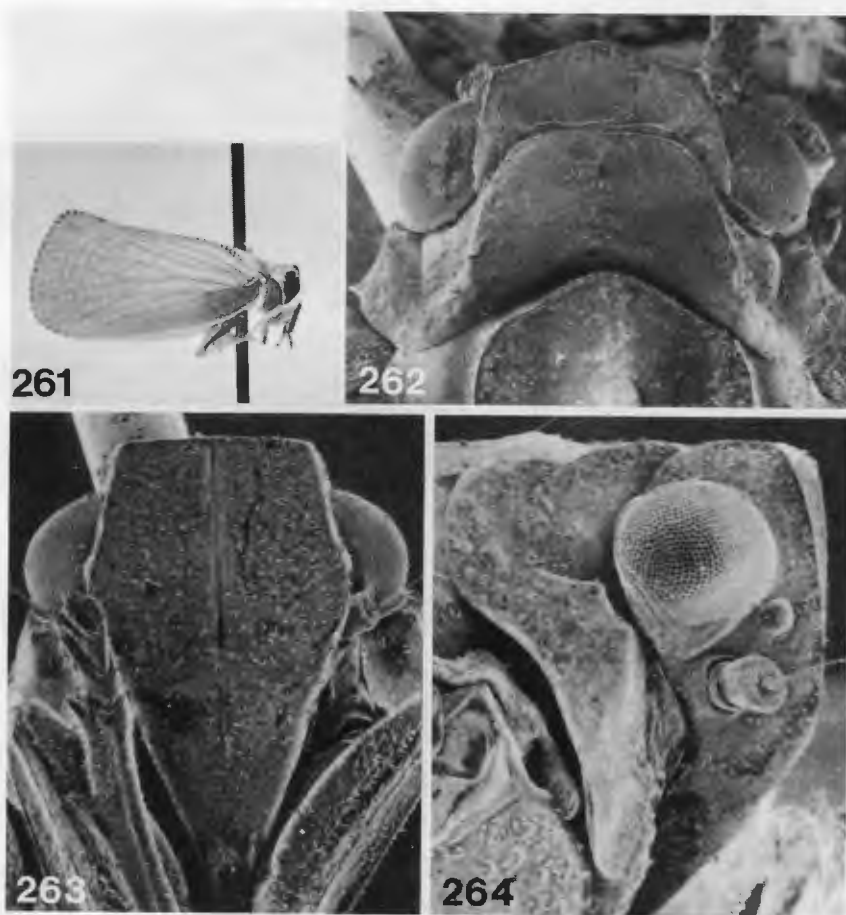
Figs 249–252. *S. angustata*: 249, habitus; 250, head, dorsal view; 251, head, frontal view; 252, head, lateral view.



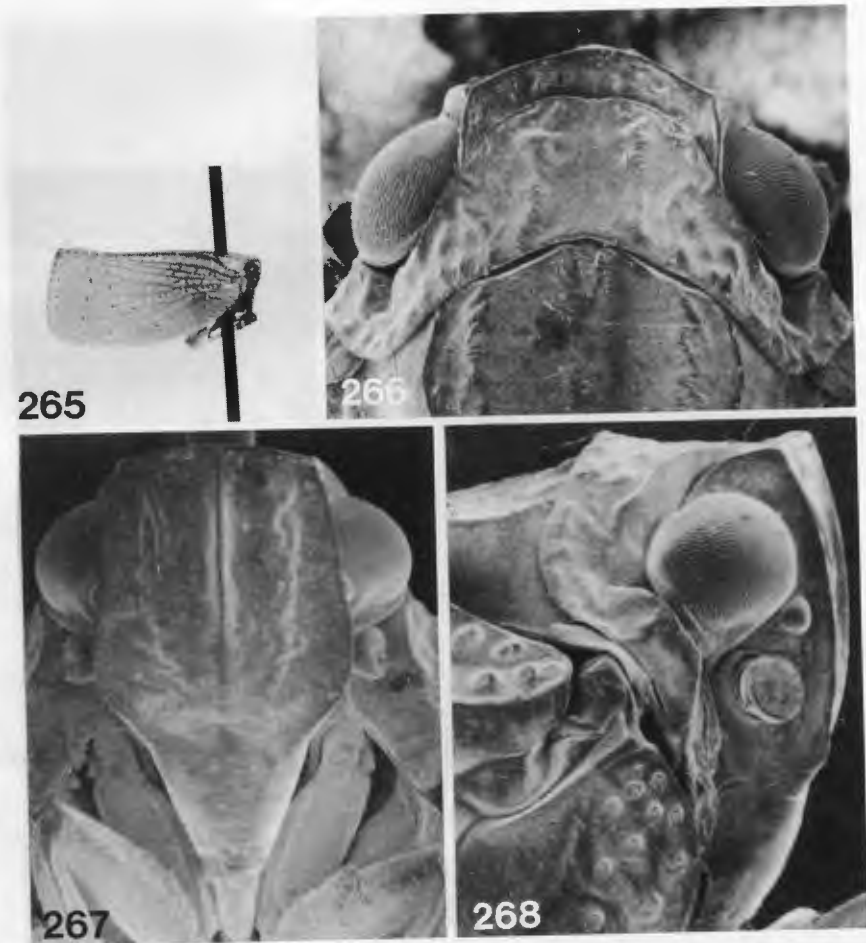
Figs 253–256. *S. lucindae*: 253, habitus; 254, head, dorsal view; 255, head, frontal view; 256, head, lateral view.



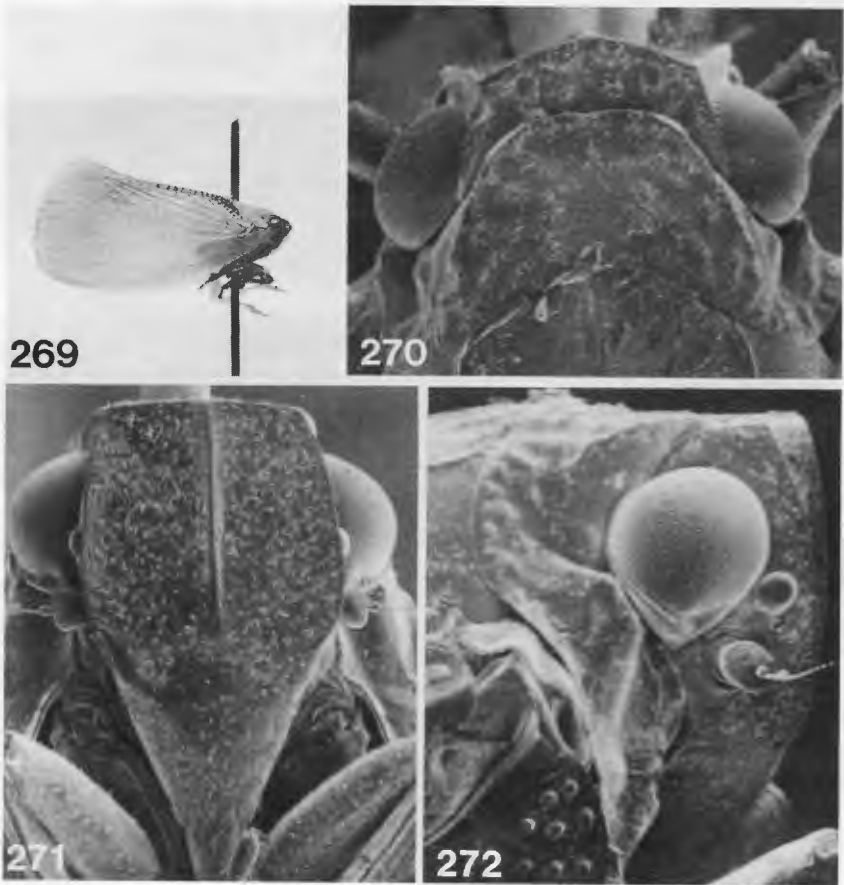
Figs 257–260. *S. granulata*: 257, habitus; 258, head, dorsal view; 259, head, frontal view; 260, head, lateral view.



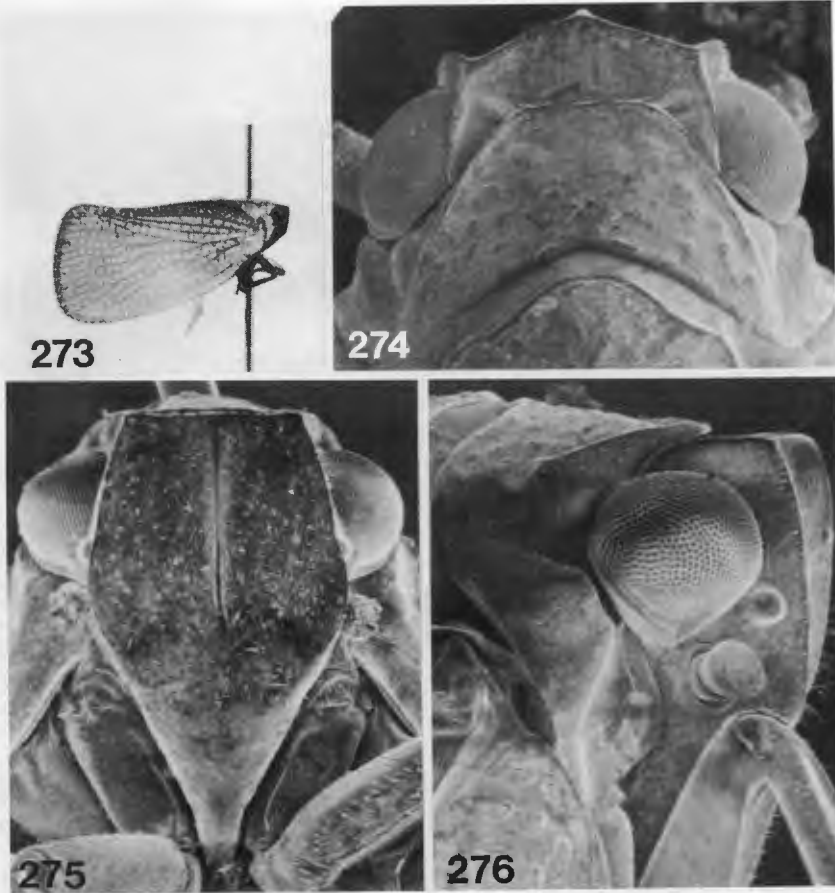
Figs 261–264. *S. luteolineata*: 261, habitus; 262, head, dorsal view; 263, head, frontal view; 264, head, lateral view.



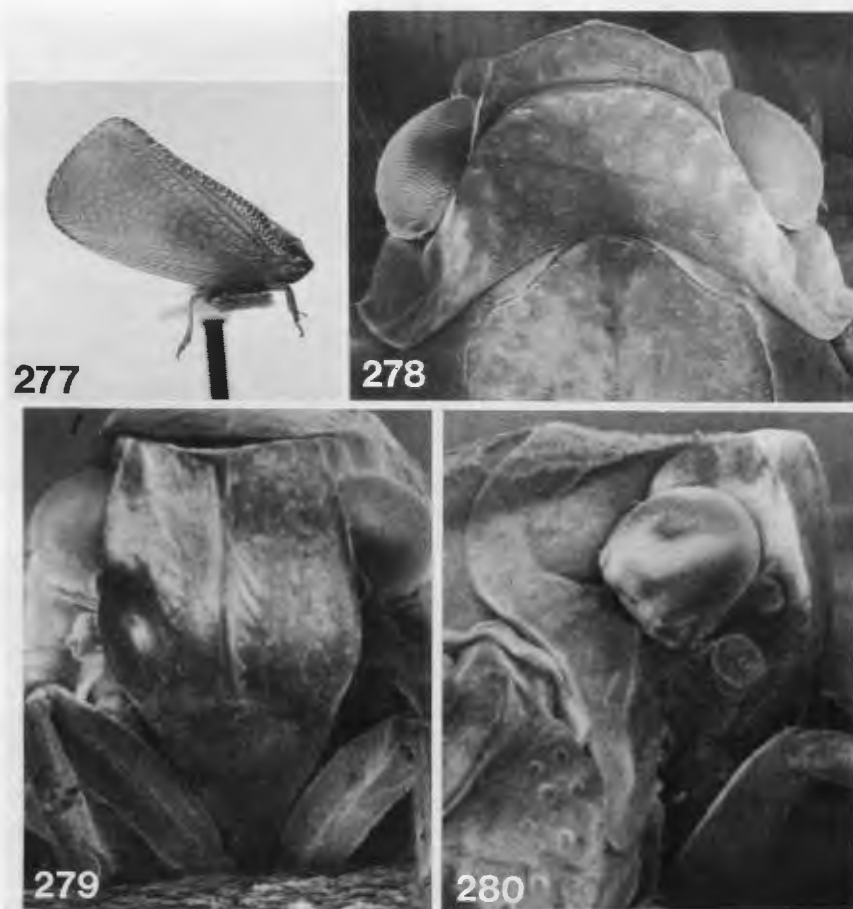
Figs 265–268. *S. minuta*: 265, habitus; 266, head, dorsal view; 267, head, frontal view; 268, head, lateral view.



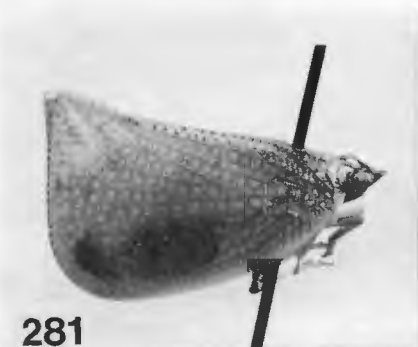
Figs 269–272. *S. lynae*: 269, habitus; 270, head, dorsal view; 271, head, frontal view; 272, head, lateral view.



Figs 273–276. *S. rubra*: 273, habitus; 274, head, dorsal view; 275, head, frontal view; 276, head, lateral view.



Figs 277–280. *S. subgranulosa*: 277, habitus; 278, head, dorsal view; 279, head, frontal view; 280, head, lateral view.



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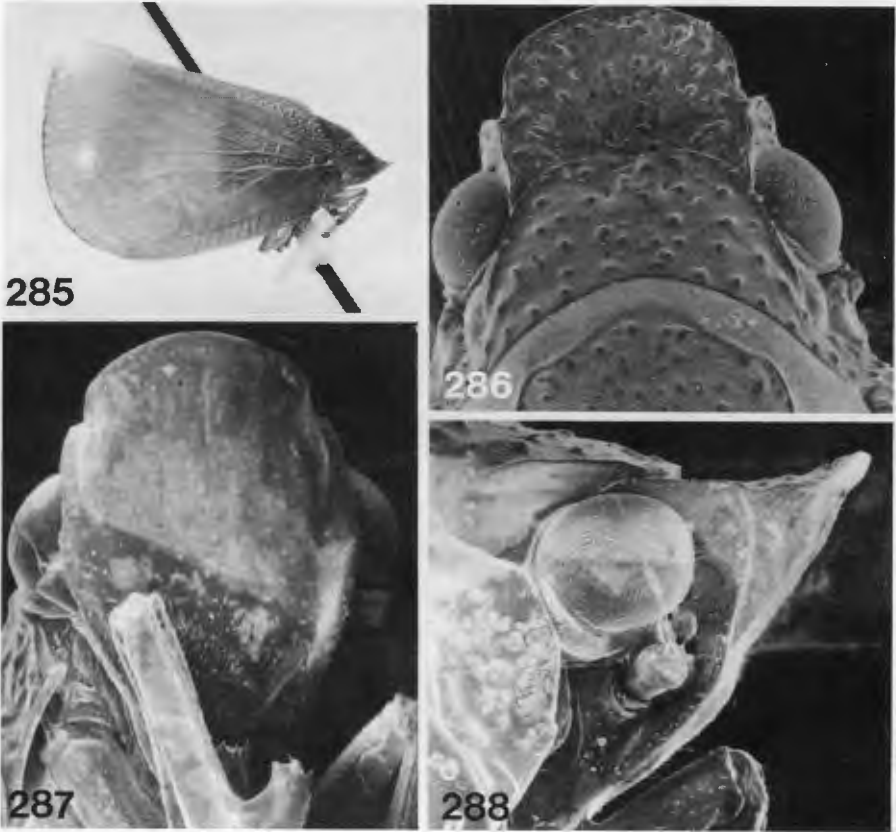


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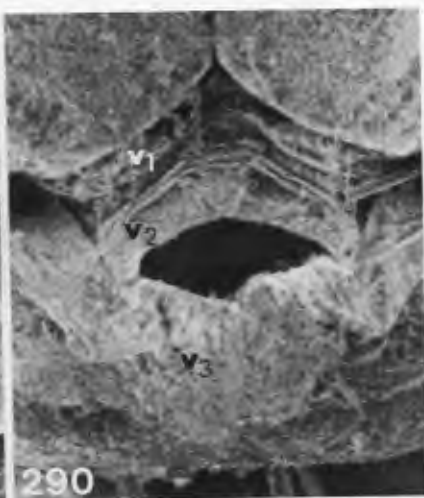
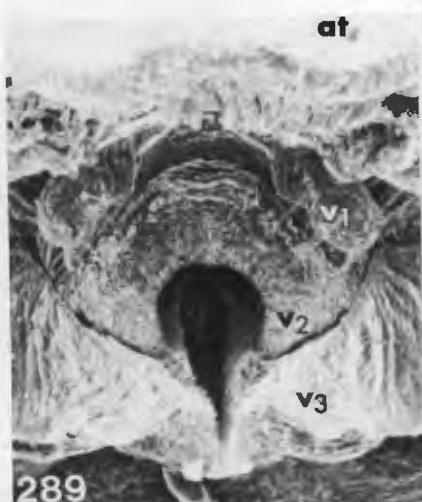


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Figs 281–284. *S. acutipennis*: 281, habitus; 282, head, dorsal view; 283, head, frontal view; 284, head, lateral view.



Figs 285–288. *S. expatria*: 285, habitus; 286, head, dorsal view; 287, head, frontal view; 288, head, lateral view.



Figs 289–291. Female genitalia, posterior view: 289, *S. acuta*; 290, *S. hebes*; 291, *S. hackeri*. Scale 0.1 mm. at, anal tube; v1, first valvula; v2, second valvula; v3, third valvula.