

## RESEARCH ARTICLE

**Systematic study of the subgenus *Aphantorhaphopsis* of the genus *Siphona* in East Asia and the Oriental Region (Diptera: Tachinidae)**Takuji TACHI<sup>1)</sup> & Hiroshi SHIMA<sup>2)</sup><sup>1)</sup> Biosystematics Laboratory, Faculty of Social and Cultural Studies, Kyushu University, Motoooka 744, Fukuoka 819-0395, Japan; e-mail: tachi@scs.kyushu-u.ac.jp; <https://orcid.org/0000-0003-0013-9638><sup>2)</sup> Kyushu University Museum, Kyushu University, Hakozaki, Fukuoka, 812–8581 JapanAccepted:  
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**Abstract.** Nineteen species of the subgenus *Aphantorhaphopsis* Townsend, 1926 of the genus *Siphona* Meigen, 1803 from East Asia and the Oriental Region are revised. Of these, 14 species are classified into three species groups based mainly on the male postabdomen: the *S. perispoliata* group, the *S. selecta* group and the *S. siphonoides* group. Autapomorphies of each species group are defined and illustrated. Ten species are described as new: *Siphona* (*Aphantorhaphopsis*) *apicisetosa* sp. nov., *S. (A.) coactilis* sp. nov., *S. (A.) curta* sp. nov., *S. (A.) curvata* sp. nov., *S. (A.) expleta* sp. nov., *S. (A.) hongkongensis* sp. nov., *S. (A.) kanmiyai* sp. nov., *S. (A.) matsumotoi* sp. nov., *S. (A.) nepalensis* sp. nov., and *S. (A.) seminigra* sp. nov. A key is provided for the 19 East Asian and Oriental species.

**Key words.** Diptera, Tachinidae, morphology, new species, postabdominal character, species group, taxonomy, Oriental Region, Palaearctic Region

**Zoobank:** <http://zoobank.org/urn:lsid:zoobank.org:pub:3256463E-FEA1-4BA2-AB4D-4161FA1138C4>

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**Introduction**

*Aphantorhaphopsis* was established by TOWNSEND (1926) as a monotypic genus for the new species *A. orientalis*, from Sumatera (as Sumatra), Indonesia. However, this taxon name was not used until O'HARA (1989) found that *Aphantorhaphopsis* has priority over *Asiphona* proposed by MESNIL (1954) as a subgenus of *Siphona* Meigen, 1803. As a result, the following 20 species were transferred to *Siphona* (*Aphantorhaphopsis*): *Crocuta* (*Siphona*) *alticola* Mesnil, 1953, *Actia angustifrons* Malloch, 1930, *Ac. brunnescens* Villeneuve, 1921, *C. (S.) crassulata* Mesnil, 1953, *S. (Asiphona) fera* Mesnil, 1954, *S. (As.) laboriosa* Mesnil, 1957, *Ac. laticornis* Malloch, 1930, *Ac. mallochiana* Gardner, 1940, *S. (As.) nigronitens* Mesnil, 1954, *Ac. norma* Malloch, 1929, *As. picturata* Mesnil, 1977, *S. (As.) pudica* Mesnil, 1954, *Ac. samarensis* Villeneuve, 1921, *Ac. selangor* Malloch, 1930, *Thryptocera selecta* Pandellé, 1894, *Gymnopareia siphonoides* Strobl, 1898, *S. (As.) speciosa* Mesnil, 1954, *Ac. starkei* Mesnil, 1952, *Ac. verralli* Wainwright, 1928, and *S. (As.) xanthosoma* Mesnil, 1954. These species are widely distributed in the Old World (20 species: 6 Afrotropical, 6 Palaearctic, and 8 Oriental) and Australia (1 species).

All members of *Aphantorhaphopsis* are small (3–5 mm) in body size. Apart from a few exceptional cases, adults have been generally recognized by the following combination of external morphological characters among the Old World siphonines: palpus clavate; labella usually pad-like; lower proepimeral seta absent or hair-like; katapisternum without a row of hairs anterior to mid coxa; lower katapisternal seta subequal in length to upper anterior seta; and wing vein CuA+CuP reaching wing margin (O'HARA 1989, ANDERSEN 1996, as anal vein). Accordingly, *Aphantorhaphopsis* is currently regarded as the assemblage of Old World *Siphona sensu lato* species not belonging to *Siphona sensu stricto* or *Ceranthia* Robineau-Desvoidy, 1830 (O'HARA 1989, ANDERSEN 1996).

In this paper we recognize 19 species of *Aphantorhaphopsis* including 10 new species from East Asia and the Oriental Region, of which 14 are classified into 3 species groups based on morphological traits. The remaining 5 species are treated as incertae sedis. *Aphantorhaphopsis* is here treated as a subgenus of the genus *Siphona* following O'HARA (1989) and the treatment and reason for this ranking are noted below. Descriptions and illustrations of all species are given. A key to the 19 species is provided.



## Materials and methods

Specimens originated mainly from the collection of the Biosystematics Laboratory, Kyushu University (BLKU). Additional materials were examined from the following collections:

BPBM	Bernice P. Bishop Museum, Honolulu, Hawaii, USA;
CNC	Canadian National Collection of Insects, Agriculture and Agri-Food Canada, Ottawa, Canada;
KUM	Kyushu University Museum, Kyushu University, Hakozaki, Fukuoka, Japan;
NHMUK	Natural History Museum, London, United Kingdom;
SEHU	Systematic Entomology, Hokkaido University, Sapporo, Japan;
SMNH	Swedish Museum of Natural History, Stockholm, Sweden;
ZMU	Zoological Museum of the University, Helsinki, Finland.

Label data of the holotypes are given verbatim, using a single forward slash (/) to separate lines and a double forward slash (//) to separate labels. New distributional records are marked with an asterisk (\*).

The width of the vertex was measured between the inner margins of the compound eyes in comparison with the width of the head in dorsal view. The eye height and the width of the gena were measured in lateral view. The width of the parafacial at middle height was measured at the horizontal position. The pedicel and postpedicel were measured in lateral view, and the width of the postpedicel was measured at the widest position. Terminology of adult morphology mainly follows CUMMING & WOOD (2017).

## Systematics

### Taxonomic treatment of *Aphantorhaphopsis*

The taxonomic treatment of *Aphantorhaphopsis* varies among researchers. TOWNSEND (1926) described *Aphantorhaphopsis* as a new genus. MESNIL (1954) founded *Asiphona* as a subgenus of the genus *Siphona*. Later, ANDERSEN (1983) treated *Asiphona* as a genus following MESNIL (1977). As mentioned in the Introduction, O'HARA (1989) regarded the concept of *Aphantorhaphopsis* as the same as that of *Asiphona*. HERTING (1984) and HERTING & DELY-DRASKOVITS (1993) arranged members of *Asiphona* (= *Aphantorhaphopsis*) under the genus *Ceranthia* in the catalog of Palaearctic Tachinidae. However, *Aphantorhaphopsis* can be distinguished from *Ceranthia* by the features of palpus, male pregonite, and male distiphallus (ANDERSEN 1983, 1996; O'HARA 1989). O'HARA (1989) and ANDERSEN (1996) analyzed phylogenetic relationships among genera within the Siphonini using morphological characters. O'HARA (1989) recognized *Aphantorhaphopsis* as a subgenus of the genus *Siphona* together with eight other subgenera, whereas ANDERSEN (1996) treated it as a genus. In this paper we provisionally assign *Aphantorhaphopsis* to a subgenus of *Siphona* following O'HARA (1989) because too little is known about the species of *Aphantorhaphopsis* to permit a phylogeny-based classification. Specimens of *Aphantorhaphopsis* tend to be infrequently collected and there are likely many undescribed species that have yet to be discovered. It is premature to revise the classification of *Siphona s. l.* at this time and we leave the relationships within *Aphantorhaphopsis* and between it and other subgenera unresolved.

### Genus *Siphona* Meigen, 1803

*Crocota* Meigen, 1800: 39. Type species: *Musca geniculata* De Geer, 1776, by subsequent designation of COQUILLET (1910: 528). Suppressed by the ICZN (1963: 339, Opinion 678).

*Siphona* Meigen, 1803: 281. Type species: *Musca geniculata* De Geer, 1776, by designation of the ICZN (1974: 157, Opinion 1008).

See O'HARA (1989) for a complete list of synonyms.

**Remarks.** Species of the genus *Siphona* are distinguished from other genera of the Siphonini by the following combination of characters: CuA+CuP reaching wing margin; lower katepisternal seta strong and subequal in length to anterior one; lower proepimeral seta hair-like and directed upward or absent. O'HARA (1988) examined the first instar larva of the Siphonini and found the same features in the genus *Siphona*: 2–10 large spinules and a dominant row of spinules on the posteroventral margin of the abdominal segments 6 and 7, respectively.

### Key to the subgenera of *Siphona* in the Palaearctic and Oriental Regions

- 1 Palpus clavate apically and 1.0–1.5 times as long as postpedicel. .... 2
- Palpus cylindrical (not apically clavate) and short; male postabdomen with pregonite usually bearing 1 strong seta on dorsal part; distiphallus with developed posterolateral margin (TACHI & SHIMA 2005: Figs 5–6). .... *Ceranthia* Robineau-Desvoidy, 1830
- 2 Labella elongate, as long as or longer than prementum; male postabdomen with pregonite lacking seta on dorsal part. .... *Siphona* Meigen, 1803
- Labella pad-like in most species, if labella rather elongate then male pregonite usually with 1 seta on dorsal part. .... *Aphantorhaphopsis* Townsend, 1926

### Subgenus *Aphantorhaphopsis* Townsend, 1926

*Aphantorhaphopsis* Townsend, 1926: 34. Type species: *A. orientalis* Townsend, 1926 (original designation).

*Asiphona* Mesnil, 1954: 9 (as subgenus of *Siphona*). Type species: *Thryptocera selecta* Pandellé, 1894 (original designation).

**Diagnostic characters of the *Aphantorhaphopsis* species of East Asia and the Oriental Region.** *Head.* Compound eye large, in female subequal to or slightly smaller than in male; ocellar setae strong, directed anteriorly or anterolaterally; fronto-orbital plate with some fine setae; 2 proclinate orbital setae, anterior seta subequal in length to posterior one; four to five frontal setae; upper occiput and postgena with some fine white setae and several black setae; antenna with postpedicel suboval to subrectangular; first aristomere short; 2nd aristomere 2–4 times as long as wide; 3rd aristomere bare or pubescent, thickened in basal 1/3–1/2; palpus clavate; prementum short to rather long; labella pad-like or elongate.

*Thorax.* Three postpronotal setae in a straight line; 3 presutural and 4 postsutural acrostichal setae; 3 presutural and 3–4 postsutural dorsocentral setae; 1 presutural and 3 postsutural intra-alar setae; scutellum with short fine apical setae; subapical setae strong, 1.5–2.5 times as long as scutellum; lateral and basal setae present; lower proepimeral seta absent or hair-like and directed upwards;

3 katapisternal setae, lower seta strong and subequal in length to upper anterior one.

*Wing.*  $R_1$  bare or setulose dorsally on apical half, bare ventrally;  $R_{4+5}$  setulose dorsally at most to crossvein r-m, with a strong setula at base ventrally;  $M_4$  bare; CuA+CuP reaching wing margin.

*Legs.* Fore tibia with 1–5 anterodorsal, 2–5 posterodorsal and 1 posterior setae; middle tibia with 1 anterodorsal, 1–4 posterodorsal and 1 ventral setae; hind tibia with 2–6 anterodorsal, 2–5 posterodorsal and 2–5 ventral setae; claws short.

*Abdomen.* Syntergite 1+2 without median marginal setae; tergite 3 usually with a pair each of lateral and median marginal setae (but *S. perispoliata* group lacking these setae); tergites 4–5 each with usually 4–6 marginal setae; male sternite 5 with a pair of rounded or elongate median lobes on inner edges.

*Male postabdomen.* Epandrium nearly trapezoidal with some setae in lateral view; surstylus usually nearly straight in lateral view; cerci nearly triangular in dorsal view; pregonite curved ventrally in lateral view with or without 1 short dorsal seta; postgonite nearly rectangular in lateral view or lacking; epiphallus present or absent; distiphallus broadly sclerotized with some spinules ventrally, dorsal part membranous.

*Female postabdomen.* Tergite 5 nearly rectangular with some setae; tergites 6–7 absent or weakly sclerotized; sternite 6 nearly rectangular with some setae, wider than long; sternite 7 subrectangular with some setae (rarely transparent setae), usually smaller than sternite 6; tergite 8 present; sternite 8 present with some rather long setae; epiproct strongly reduced with a pair of setae; spiracles 6 and 7 present.

**Species groups of the Palaearctic and Oriental *Aphantorhaphopsis*.** *Aphantorhaphopsis* is probably a non-monophyletic group that includes species of different lineages within *Siphona sensu lato*. The species cannot be adequately regrouped at present and more detailed studies are needed on morphological characters such as the male postabdomen (O'HARA 1989). DNA sequencing may also help resolve the phylogenetic relationships among *Aphantorhaphopsis* species.

In this study we recognize the following 3 species groups for the Palaearctic and Oriental *Aphantorhaphopsis* species based on their morphological characters: the *S. perispoliata* group, the *S. selecta* group, and the *S. siphonoides* group. The *S. perispoliata* group is characterized by several peculiar features as noted below. Two species, *Siphona (Aphantorhaphopsis) perispoliata* (Mesnil, 1953) and *S. (A.) expleta* sp. nov., are assigned to this group. Members of the *S. selecta* group have some long setae on the inner basal part of the male surstylus. Two Palaearctic species, *S. (A.) samarensis* (Villeneuve) and *S. (A.) selecta* (Pandellé), have the above-mentioned character according to ANDERSEN (1996). Additionally, *Siphona (A.) coactilis* sp. nov., *S. (A.) kanmiyai* sp. nov., *S. (A.) laboriosa* (Mesnil), *S. (A.) matsumotoi* sp. nov., and *S. (A.) selangor* (Malloch) are included in this group. One of the features of the *S. siphonoides* group is a short seta on the dorsal portion

of the male pregonite. In the descriptions and illustrations of ANDERSEN (1996), the dorsal seta on the pregonite can be recognized in the following Palaearctic species: *S. (A.) brunnescens* (Villeneuve), *S. (A.) siphonoides* (Strobl), *S. (A.) starkei* (Mesnil), and *S. (A.) verralli* (Wainwright). Also, *Siphona (A.) crassulata* (Mesnil), *S. (A.) curta* sp. nov., *S. (A.) laticornis* (Malloch), and *S. (A.) orientalis* (Townsend) are added to this group.

#### Key to East Asian and Oriental species of *Aphantorhaphopsis*

- 1 Abdomen shining black in ground color (Figs 86–87); abdominal tergite 3 without median marginal setae. .... 2
- Abdomen yellowish, brownish or blackish in ground color (Figs 88–91, 95); abdominal tergite 3 with a pair of median marginal setae. .... 3
- 2  $R_1$  setulose dorsally on entire length. .... *S. (A.) expleta* sp. nov.
- $R_1$  setulose dorsally on apical half. .... *S. (A.) perispoliata* (Mesnil, 1953)
- 3 Labella pad-like (Figs 88, 90, 98). .... 4
- Labella elongate, 0.8–1.0 times as long as prementum (Figs 94–96). .... 15
- 4  $R_1$  setulose dorsally on apical half. .... 5
- $R_1$  bare or with 1–3 setulae dorsally on apical portion. .... 7
- 5 Three postsutural dorsocentral setae. .... 6
- Four postsutural dorsocentral setae. .... *S. (A.) hongkongensis* sp. nov.
- 6 Abdomen shining light brown in ground color, with whitish pruinosity on anterior margin of each tergite; gena wide, approximately 0.25 of eye height (Fig. 92); ultimate section of  $M_4$  0.8–1.0 times as long as crossvein dm-m. .... *S. (A.) samarensis* (Villeneuve, 1921)
- Abdomen yellow in ground color, almost without pruinosity, posterior half of tergites 3–5 black; gena narrow, approximately 0.2 of eye height; ultimate section of  $M_4$  1.3 times as long as crossvein dm-m. .... *S. (A.) seminigra* sp. nov.
- 7 Three postsutural dorsocentral setae. .... 8
- Four postsutural dorsocentral setae. .... 14
- 8 Vertex very narrow, approximately 0.17 of head width. .... *S. (A.) angustifrons* (Malloch, 1930)
- Vertex 0.30–0.45 of head width. .... 9
- 9 Abdomen orange or light yellow in ground color, without pruinosity. .... 10
- Abdomen varied in ground color, with pruinosity. ... 11
- 10 Fronto-orbital plate with yellow pruinosity; frontal vitta orange; vertex approximately 0.32 of head width; gena 0.17–0.20 of eye height (Fig. 93). .... *S. (A.) selangor* (Malloch, 1930)
- Fronto-orbital plate with brownish pruinosity; frontal vitta pale brown; vertex 0.33–0.37 of head width; gena 0.20–0.23 of eye height (Fig. 90). .... *S. (A.) laboriosa* Mesnil, 1957
- 11 Abdominal tergites 4–5 entirely blackish, with whitish gray pruinosity on anterior part (Fig. 89). .... *S. (A.) kanmiyai* sp. nov.
- Abdominal tergites 4–5 brownish or yellowish in

- ground color, with blackish longitudinal vitta or bands on posterior 1/2–4/5 (Fig. 88). ..... 12
- 12 Fronto-orbital plate with brownish pruinosity; frontal vitta reddish brown; thoracic dorsum slightly dark gray. .... ***S. (A.) coactilis* sp. nov.**
- Fronto-orbital plate with yellowish pruinosity; frontal vitta orange or light yellow; thoracic dorsum gray. .... 13
- 13 Male postabdomen with surstylus nearly straight and tapered to apex in lateral view (Fig. 63). ..... ***S. (A.) orientalis* (Townsend, 1926)**
- Surstylus thickened and slightly curved dorsally on apical 1/5 in lateral view (Fig. 25). ..... ***S. (A.) matsumotoi* sp. nov.**
- 14 Abdomen blackish in ground color; gena approximately 0.25 of eye height;  $R_1$  bare. .... ***S. (A.) laticornis* (Malloch, 1930)**
- Abdomen gray in ground color; gena approximately 0.18 of eye height (Fig. 97);  $R_1$  with 1–3 setae dorsally on apical portion. .... ***S. (A.) apicisetosa* sp. nov.**
- 15 Three postsutural dorsocentral setae;  $R_1$  bare. .... 16
- Four postsutural dorsocentral setae;  $R_1$  bare or setulose dorsally on apical half. .... 17
- 16 Prementum subequal in length to eye height; labella slightly shorter than prementum (Fig. 95). ..... ***S. (A.) crassulata* (Mesnil, 1953)**
- Prementum long, approximately twice as long as eye height; labella subequal in length to prementum (Fig. 96). ..... ***S. (A.) nepalensis* sp. nov.**
- 17  $R_1$  setulose dorsally on apical half. .... ***S. (A.) curvata* sp. nov.**
- $R_1$  bare. .... 18
- 18 Labella elongate, subequal in length to prementum; gena narrow, approximately 0.15 of eye height (Fig. 94). ..... ***S. (A.) alticola* (Mesnil, 1953)**
- Labella approximately 0.8 times as long as prementum; gena wide, approximately 0.2 of eye height. .... ***S. (A.) curta* sp. nov.**

### *Siphona perispoliata* group

**Diagnosis.** Abdomen. Shining black in ground color; tergite 3 without median marginal setae; male sternite 5 (Figs 4, 8) with a pair of developed apical lobes bearing pointed inner process. Male postabdomen (Figs 1–3, 5–7): pregonite fused with hypandrium at base, without seta; postgonite lacking. Female postabdomen (Figs 9–10): tergite 8 narrowly fused with each other in anterodorsal part; sternite 8 with some strong setae.

**Remarks.** The character states described above are peculiar and thus are considered apomorphic. *Siphona* (*Aphantorhaphopsis*) *expleta* sp. nov. and *S. (A.) perispoliata* belong to this group and are distributed in the Oriental Region.

### *Siphona (Aphantorhaphopsis) expleta* sp. nov.

(Figs 1–4, 86)

**Type material.** HOLOTYPE: ♂ (BPBM), LAOS: / Vientiane Prov. / Ban Van Eue, 750m / forest streambed / 10–11.IV.1965 // J.L. Gressitt / Malaise trap / BISHOP MUSEUM. PARATYPES: LAOS: VIENTIANE PROVINCE: 1 ♂ (BPBM), Ban Van Eue, 15.i.1966 Native Collector. MALAYSIA: BORNEO: SARAWAK: 1 ♂ (BPBM), Nanga Pelagus nr. Kapit 180–585 m,

7–14.viii.1958, T.C. Maa. PHILIPPINES: MINDANAO: 1 ♂ (KUM), Mt. Apo, Agko 1350 m, 1.viii.1978 (malaise trap), A. Nakanishi & O. Yata. THAILAND: KHAOPHAPPHA PROVINCE: 1 ♀ (BPBM), Khaochang, 200 m, Trang, 11–15.i.1964, G.A. Samuelson.

**Diagnosis.** This species is very similar to *S. (A.) perispoliata*, but can be easily distinguished from it by  $R_1$  dorsally setulose on its entire length.

**Description.** Body length 3.0–3.3 mm. **Male.** Head. Vertex approximately 0.3 of head width; parafacial subequal in width to width of 2nd aristomere at middle height; gena approximately 0.17 of eye height; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate, approximately twice as long as posterior seta; antenna with postpedicel subrectangular approximately twice as long as wide, and approximately 4 times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened in basal 1/3; palpus clavate; prementum 3–4 times as long as wide and approximately 0.4 times as long as eye height; labella pad-like.

**Thorax.** Dorsum light gray in ground color, with whitish-yellow pruinosity; pleura brownish, with yellowish pruinosity; 3 presutural and 4 postsutural dorsocentral setae; scutellum with a pair of discal setae.

**Wing.** Tegula blackish; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 6 : 3; ultimate section of  $M_4$  approximately 0.67 times as long as penultimate section, and approximately twice as long as crossvein m-cu;  $R_1$  setulose dorsally on entire length, bare ventrally.

**Legs** blackish in ground color. Fore tibia with 5 anterodorsal, 5 posterodorsal, and 1 posterior setae; hind tibia with 5 anterodorsal, 5 posterodorsal, and 4 ventral setae.

**Abdomen** shining blackish in ground color; anterior 1/8 of tergite 3 and 1/4 of tergites 4–5 with whitish pruinosity. Syntergite 1+2 without distinct lateral marginal setae; tergite 3 without median marginal setae and with a pair of lateral marginal setae; sternite 5 with a pair of rounded median lobes on inner edge; inner side of apical lobes pointed basally.

**Male postabdomen.** Surstylus fused with epandrium at base, nearly straight in lateral view; cerci curved dorsally in middle, apical half narrowed and curved ventrally at tip in lateral view; pregonite fused basally with hypandrium, apical 1/3 strongly narrowed in lateral view; postgonite absent; distiphallus broadly sclerotized in lateral view with some spinules ventrally, apex membranous dorsally.

**Female.** As in male. Female postabdomen as in *S. (A.) perispoliata*.

**Etymology.** The specific name “*expleta*” is taken from the setae on the entire length of the dorsal surface on wing vein  $R_1$ ; an adjective.

**Host.** Unknown.

**Distribution.** Laos, Malaysia, Philippines, Thailand.

### *Siphona (Aphantorhaphopsis) perispoliata* (Mesnil, 1953)

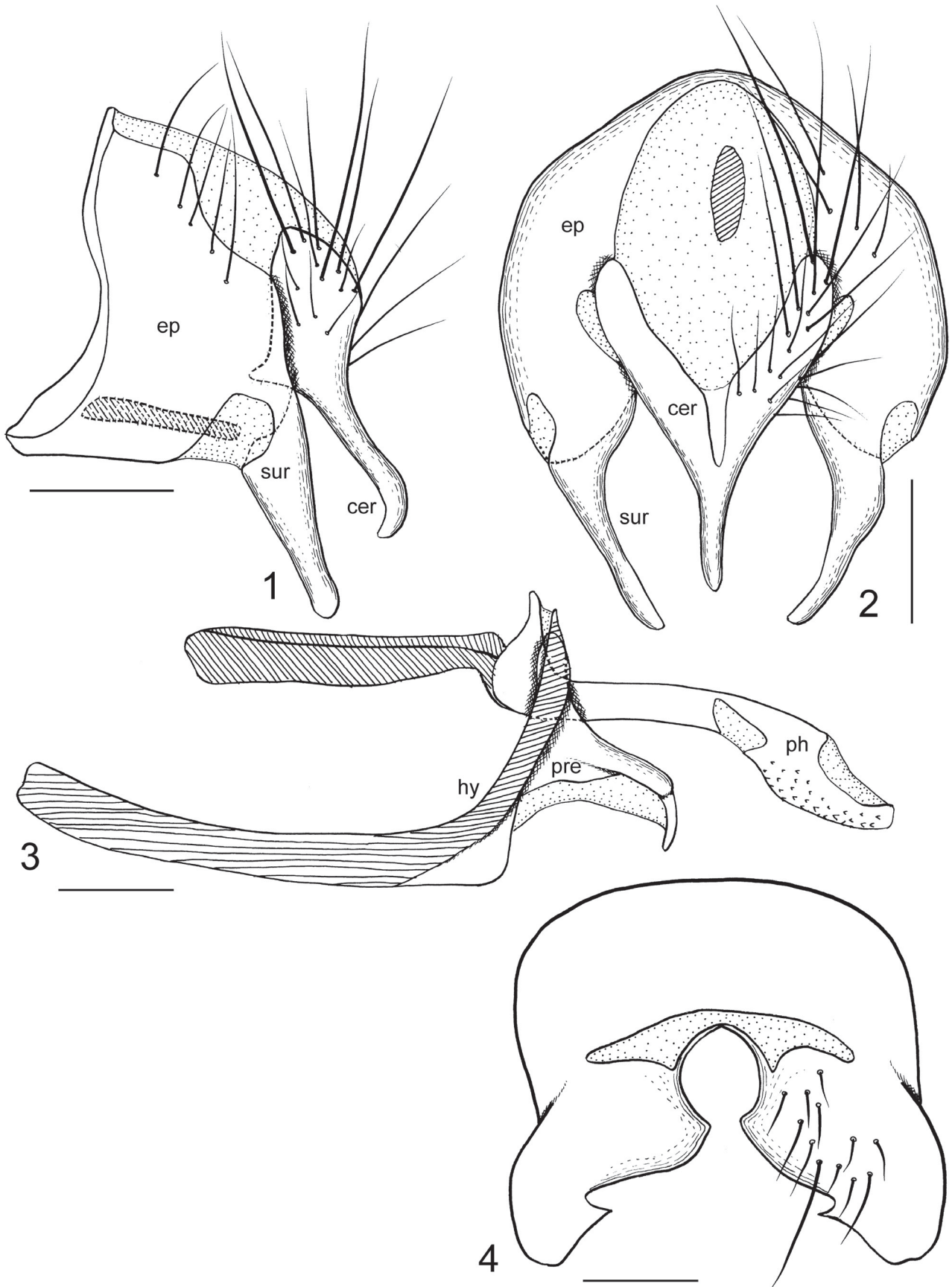
(Figs 5–10, 87)

*Actia perispoliata* Mesnil, 1953: 108. Type locality: China, Guangdong, Guangzhou [as “Canton”].

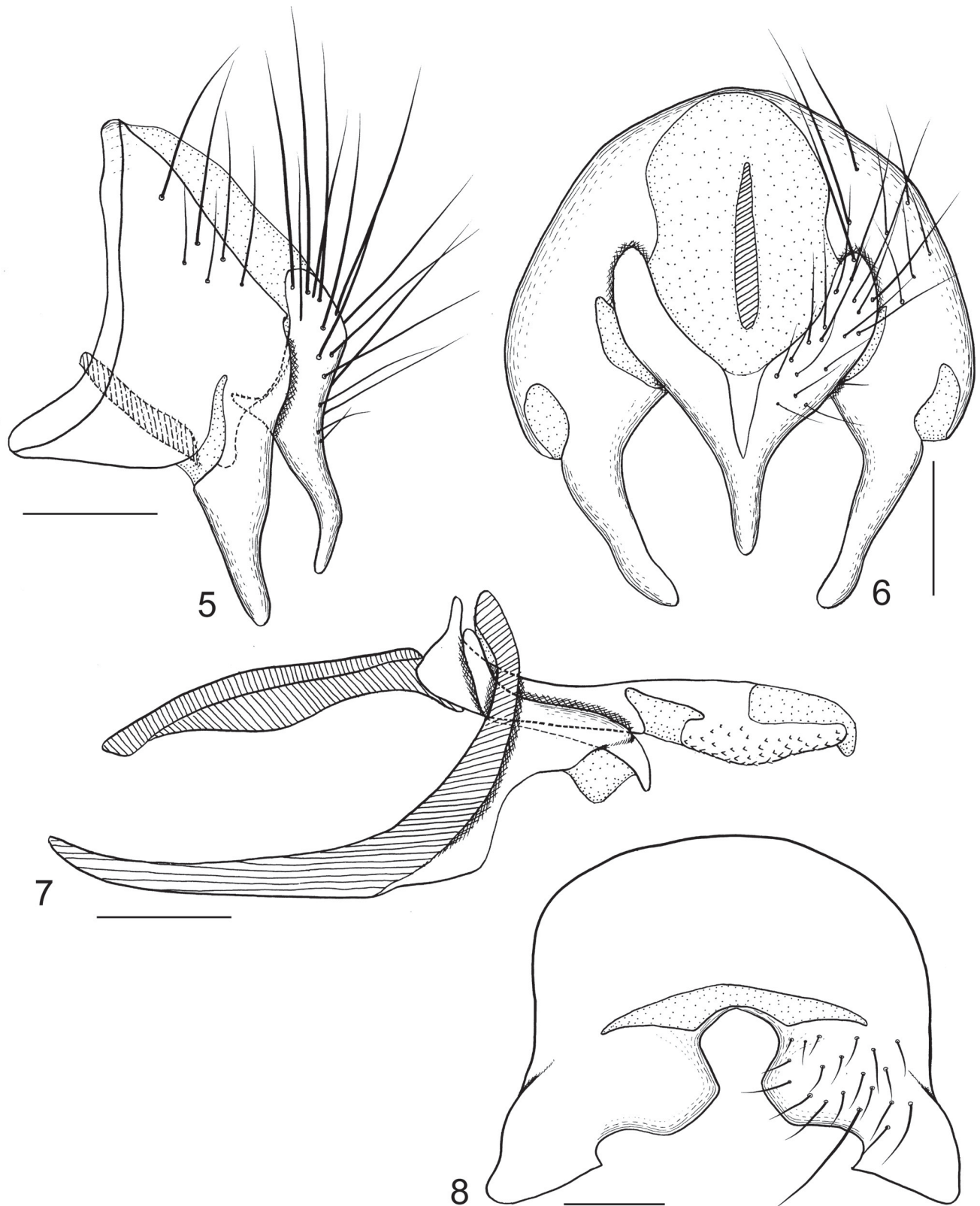
*Actia mallochiana* Gardner, 1940: 178. *Nomen nudum*.

*Siphona (Asiphona) perispoliata*: MESNIL (1954: 10).

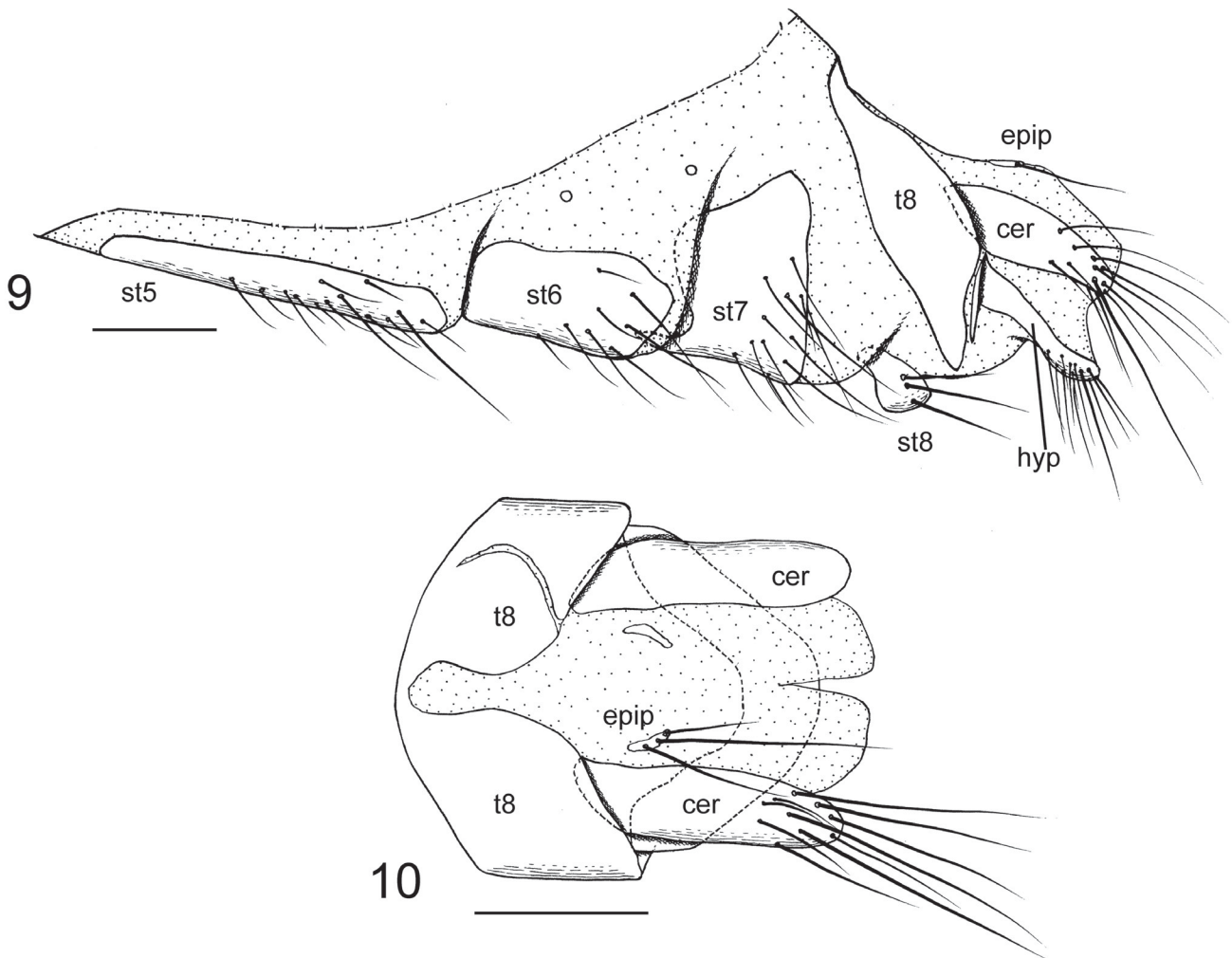
*Siphona (Aphantorhaphopsis) perispoliata*: O’HARA et al. (2020: 799).



Figs 1–4. Male postabdomen of *Siphona (Aphantorhaphopsis) expleta* sp. nov. (paratype, Laos). 1 – epandrium, cerci and surstylus in lateral view; 2 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 3 – hypandrium, pregonite, postgonite and phallus in lateral view; 4 – fifth abdominal sternite in ventral view (setae omitted on left side). Scale bars = 0.1 mm. Abbreviations: cer – cerci; ep – epandrium; hy – hypandrium; ph – phallus; pre – pregonite; sur – surstylus.



Figs 5–8. Male postabdomen of *Siphona (Aphantorhaphopsis) perispoliata* (Mesnil, 1953) (Hong Kong, Taipokau). 5 – epandrium, cerci and surstylus in lateral view; 6 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 7 – hypandrium, pregonite, postgonite and phallus in lateral view; 8 – fifth abdominal sternite in ventral view (setae omitted on left side). Scale bars = 0.1 mm.



Figs 9–10. Female postabdomen of *Siphona (Aphantorhaphopsis) perispoliata* (Mesnil, 1953) (Hong Kong, Taipokau). 9 – postabdomen in lateral view; 10 – tip of postabdomen in dorsal view. Abbreviations: cer – cerci; epip – epiproct; hyp – hypoproct; st – abdominal sternite; t – abdominal tergite.

**Type material examined.** HOLOTYPE: ♂ (NHMUK), CHINA / Canton / W.E. Hoffman.

**Additional material examined.** CHINA: HONG KONG: 8 ♂♂ 5 ♀♀ (BPBM), Kowloon, 20,26.vi.1965, 20,24,29.vii.1965, 10,19.viii.1965, 21.ix.1965 (Malaise & Light trap), Lee Kit Ming & Hui Wai Ming. YUNNAN: 1 ♂ 1 ♀ (KUM), Honghe Hekou, 200 m, Nanxi, 28.ii.1995, H. Shima & T. Saigusa. TAIWAN: 1 ♂ 1 ♀ (BLKU), Fushan (400–600 m), Wulai-hsiang, Taipei-hs., 28.xi.1997 (Malaise trap), K. Masunaga & K. Yoshizawa. THAILAND: TRANG PROVINCE: 3 ♂♂ (BPBM), Khaophapha, Khaochang, 200 m, 1–3, 9–11, 11–15.i.1964, G.A. Samuelson.

**Diagnosis.** Abdomen shining black in ground color; legs blackish; vein  $R_1$  setulose dorsally on apical half.

**Redescription.** Body length 3.0–3.3 mm. **Male and female.** Head whitish in ground color; fronto-orbital plate light gray, with yellowish pruinosity; frontal vitta reddish brown; antenna with scape, pedicel, and arista orange; postpedicel brownish; palpus orange. Vertex 0.34–0.36 of head width; parafacial subequal in width to length of 2nd aristomere at middle height; gena 0.18–0.20 of eye height; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate; fronto-orbital plate with a row of setulae; antenna with postpedicel subrectangular, approximately 2.3 times as long as wide, and approximately 4.5

times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened in basal 1/3; palpus somewhat clavate; prementum 3–4 times as long as wide and approximately 0.4 times as long as eye height; labella pad-like.

**Thorax.** Dorsum gray, with yellowish pruinosity; apical 1/4 of scutellum yellowish; pleura blackish, with grayish pruinosity. Three presutural and 4 postsutural dorsocentral setae; scutellum with a pair of discal setae.

**Wing.** Tegula blackish; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 6 : 3; ultimate section of  $M_4$  approximately 0.8 times as long as penultimate section, and approximately 2.2 times as long as crossvein m-cu;  $R_1$  setulose dorsally on apical half, bare ventrally.

**Legs** blackish in ground color. Fore tibia with 4–5 anterodorsal, 2–3 posterodorsal, and 1 posterior setae; hind tibia with 4 anterodorsal, 4 posterodorsal and 2 ventral setae.

**Abdomen** shining black in ground color; anterior 1/4 of tergites 3–5 with whitish pruinosity. Syntergite 1+2 without lateral marginal setae; tergite 3 with a pair of lateral marginal setae; sternite 5 with a pair of rounded median lobes

on inner edge; inner side of apical lobes pointed medially.

**Male postabdomen.** Surstylus fused basally with epanthrium, nearly straight and broad on basal 2/3 in lateral view; cerci curved dorsally at middle, apex curved ventrally in lateral view; pregonite fused basally with hypandrium, apex slightly broad in lateral view; distiphallus broadly sclerotized in lateral view with some spinules ventrally, apex membranous dorsally.

**Female postabdomen.** Tergite 5 nearly square with setae; tergites 6–7 absent; sternite 6 subrectangular with setae; sternite 7 with very short anterior apodeme; tergite 8 slightly slender and narrowed to anterodorsal part in lateral view, anterior parts narrowly fused in dorsal view; sternite 8 with some strong lateral setae; epiproct strongly reduced with some long setae.

**Host.** Lepidoptera: Hesperidae: *Pelopidas mathias* (Fabricius, 1798) (CROSSKEY 1976).

**Distribution.** China (Hong Kong, Yunnan), India, Malaysia, Taiwan, Thailand\* (O'HARA et al. 2020).

### *Siphona selecta* group

**Diagnosis.** Male postabdomen: surstylus with some long setae on inner side basally (Figs 12, 17, 21, 26, 31, 36); pregonite bare; epiphallus absent; distiphallus subrectangular or subtrapezoidal in lateral view.

**Remarks.** This group is considered monophyletic, which is supported by the presence of the inner basal setae on the surstylus. This condition is not found in other siphonines except for a few species of *Actia* (*A. darwini* Shima, 1970, *A. destituta* Tachi & Shima, 1998 and *A. pokharana* Shima, 1970). ANDERSEN (1996) redescribed two European species, *S. (A.) samarensis* and *S. (A.) selecta*, which have several inner setae on the basal portion of the male surstylus. Additionally, this character state is common to the following species: *S. (A.) coactilis* sp. nov., *S. (A.) kanmiyai* sp. nov., *S. (A.) laboriosa*, *S. (A.) matsumotoi* sp. nov., and *S. (A.) selangor*.

#### *Siphona (Aphantorhaphopsis) coactilis* sp. nov.

(Figs 11–15, 88)

**Type material.** HOLOTYPE: ♂ (SMNH), MALAYSIA, Pahang / Bukit Fraser, 1200 m / Malaise-trap, in jungle / 2–6.04.1992. / H & H. Hippa. PARATYPES: MALAYSIA: PENINSULA: PAHANG: 30 ♂♂, same data as holotype; 13 ♂♂ 8 ♀♀, Cameron Highlands, Gunung Jasar, 1700 m, 20–23, 24–27.xi.1994, T. Pape. BORNEO: SABAH: 1 ♂ 1 ♀, Kinabalu Park, 1600 m, 2–9.xi.1994, T. Pape (all in SMNH).

**Diagnosis.** Fronto-orbital plate with brownish pruinosity and with a row of short setae on lower part; frontal vitta reddish brown; 3 postsutural dorsocentral setae; abdomen with whitish pruinosity.

This species is similar to *S. (A.) kanmiyai* sp. nov. in general appearance but differs from it in a row of short setae on the fronto-orbital plate.

**Description.** Body length 3.5–4.0 mm. **Male.** Head whitish in ground color; fronto-orbital plate with brownish pruinosity; frontal vitta reddish brown; antenna with scape and pedicel light brown; postpedicel dark brown; basal half of arista light brown, blackish in apical half; palpus yellow. Vertex approximately 0.34 of head width; parafacial

narrower than width of 2nd aristomere at middle height; gena approximately 0.22 of eye height; anterior reclinate orbital seta posterior to middle of fronto-orbital plate; fronto-orbital plate with row of short setae on lower part; antenna with postpedicel subrectangular, approximately twice as long as wide, and approximately 4 times as long as pedicel; 2nd aristomere approximately 3 times as long as wide; 3rd aristomere thickened in basal 1/3; palpus clavate; prementum approximately 4 times as long as wide and approximately half as long as eye height; labella pad-like.

**Thorax.** Dorsum slightly dark gray, with yellowish pruinosity; apical 1/3 of scutellum orange; pleura brown, with gray pruinosity. Three presutural and 3 postsutural dorsocentral setae.

**Wing.** Tegula black; basicosta orange. Relative lengths of costal sectors two, three, and four approximately 1 : 7 : 3; ultimate section of  $M_4$  approximately 0.3 times as long as penultimate section, and subequal in length to crossvein  $dm-m$ ;  $R_1$  bare.

**Legs** yellow in ground color; tarsi blackish. Fore tibia with 2–4 anterodorsal, 3–4 posterodorsal and 1 posterior setae; hind tibia with 2–4 anterodorsal, 2–4 posterodorsal and 3–5 ventral setae.

**Abdomen** yellow in ground color, with whitish pruinosity on anterior margin of tergites 3–5; posterior 1/2–4/5 of tergites 3–5 blackish. Syntergite 1+2 without lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of relatively rounded median lobes on inner edge.

**Male postabdomen.** Surstylus somewhat narrowed in middle in lateral view and longer than cerci; cerci nearly entirely thickened in lateral view; postgonite curved ventrally in middle and rounded apically; pregonite somewhat pointed apically in lateral view, without seta; epiphallus absent; distiphallus mostly sclerotized in lateral view, with some tiny spinules ventrally.

**Female.** Differing from male as follows: gena approximately 0.17 of eye height; postpedicel approximately 3.5 times as long as wide.

**Female postabdomen.** Tergites 6–7 absent; sternite 7 nearly fan-shaped with a short anterior apodeme.

**Etymology.** The name “*coactilis* (made thick)” is taken from the cerci of the male postabdomen; an adjective.

**Host.** Unknown.

**Distribution.** Malaysia (Pahang, Sabah).

#### *Siphona (Aphantorhaphopsis) kanmiyai* sp. nov.

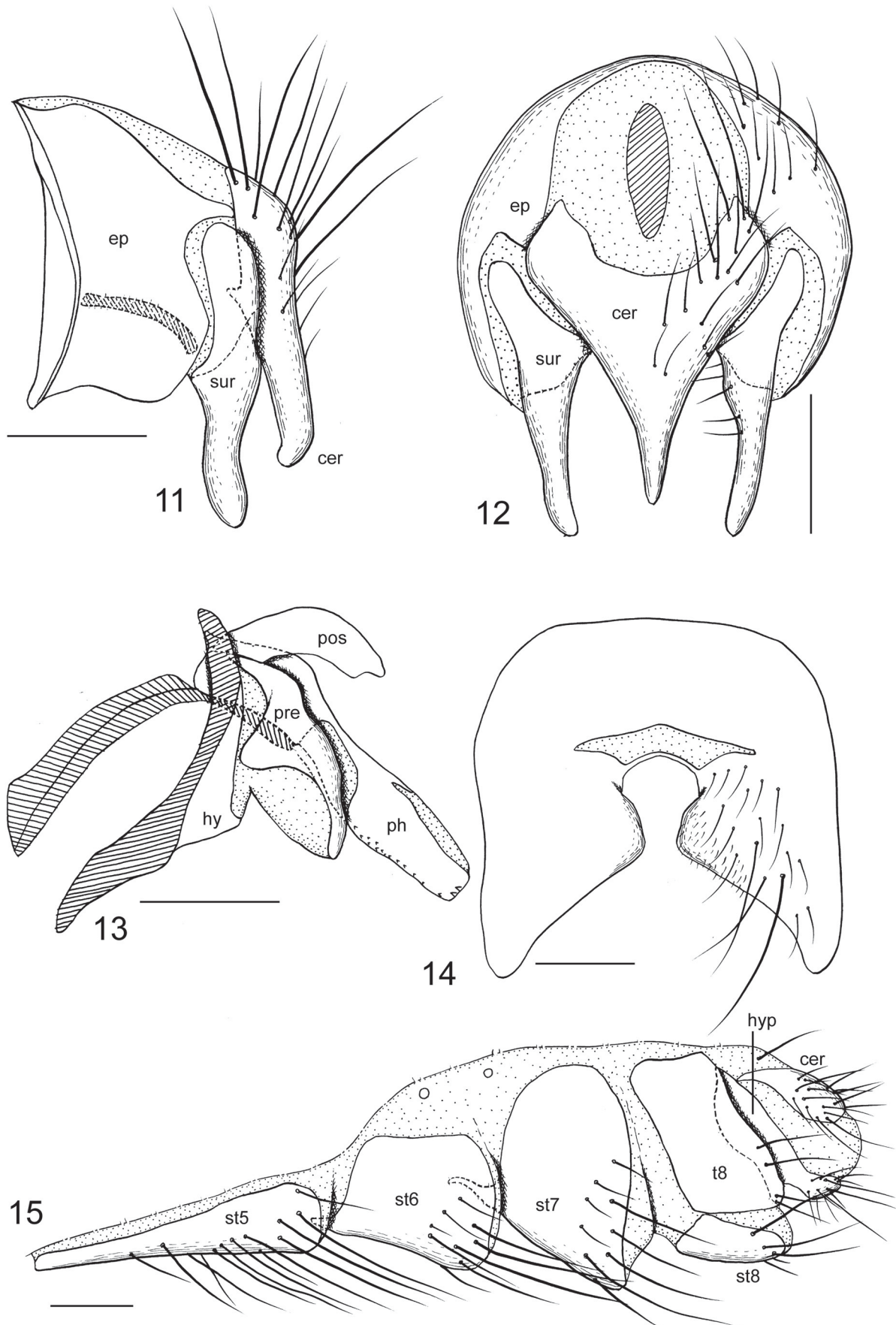
(Figs 16–19, 89)

**Type material.** HOLOTYPE: ♂ (BLKU), TAIWAN / Huanshan / Chichiawanchi / Taichung Hsien / 6 Nov. 1985 / K. Kanmiya. PARATYPES: TAIWAN: 4 ♂♂ (KUM), same data as holotype; 1 ♂ (KUM), Mt. Lishan, Taiwan, 1.vi.1971, K. Kanmiya.

**Diagnosis.** Fronto-orbital plate with yellowish pruinosity, bearing a row of short setae on lower part; 3 postsutural dorsocentral setae; abdominal tergites 4–5 entirely blackish, with whitish gray pruinosity on anterior part.

This species is very similar to *S. (A.) coactilis* sp. nov. and *S. (A.) matsumotoi* sp. nov., but is easily distinguished from them in having nearly straight surstylus of the male postabdomen in lateral view.





Figs 11–15. Male and female postabdomen of *Siphona (Aphantorhaphopsis) coactilis* sp. nov. (paratype, Taiwan, Taichung). 11 – epandrium, cerci and surstylus in lateral view; 12 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 13 – hypandrium, pregonite, postgonite and phallus in lateral view; 14 – male fifth abdominal sternite in ventral view (setae omitted on left side); 15 – female postabdomen in lateral view. Scale bars = 0.1 mm. Abbreviations: cer – cerci; ep – epandrium; hy – hypandrium; hyp – hypoproct; ph – phallus; pos – postgonite; pre – pregonite; st – abdominal sternite; sur – surstylus; t – abdominal tergite.

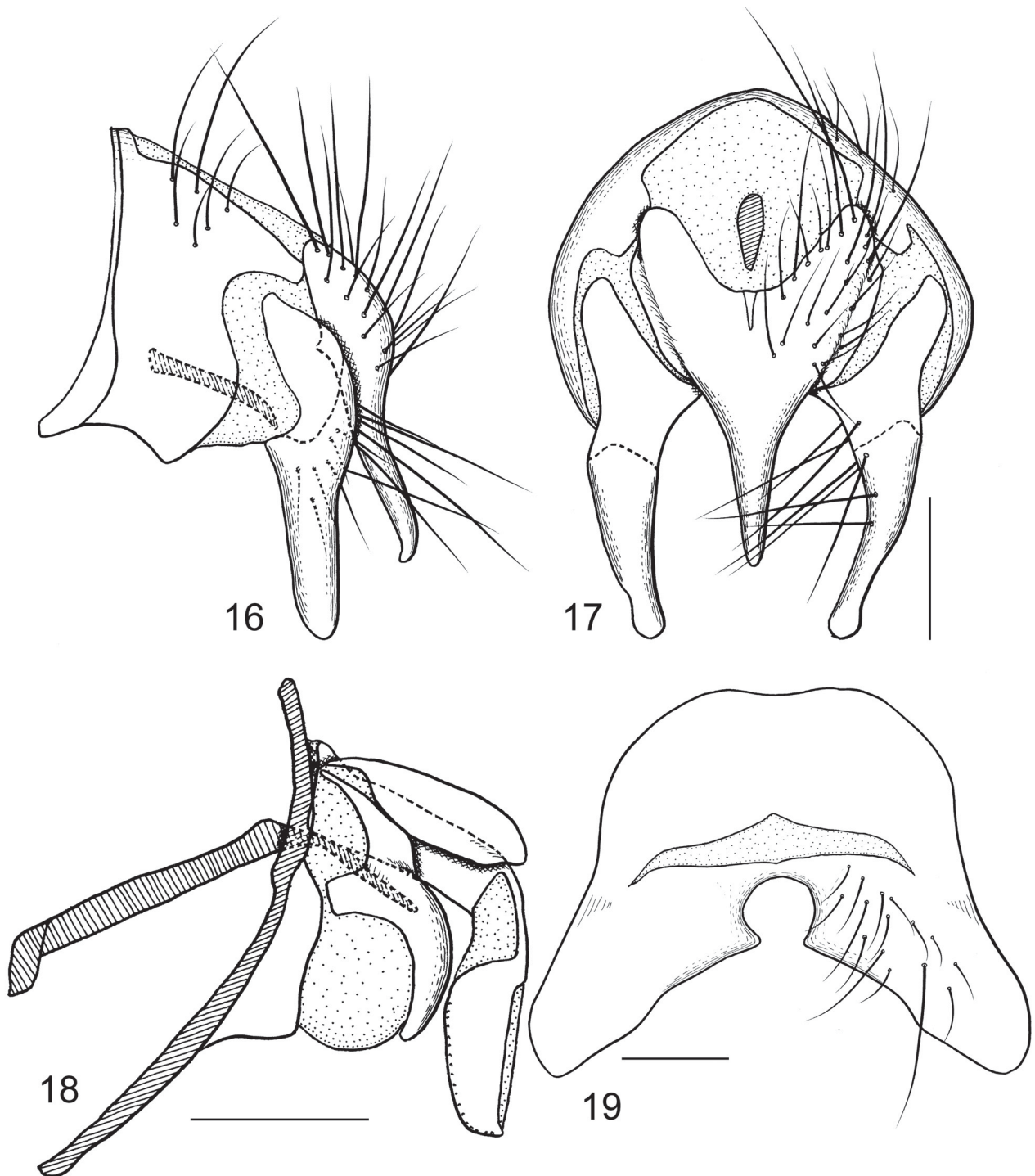
Very similar to *S. (A.) matsumotoi* sp. nov., but differing from it as follows:

**Description.** Body length 3.5–4.0 mm. **Male. Head.** Antenna with postpedicel blackish; arista brown. Vertex approximately 0.37 of head width; parafacial subequal in width to width of 2nd aristomere at middle height; fronto-orbital plate with row of short setae on lower part; prementum 3–4 times as long as wide and approximately 0.4 times as long as eye height; labella pad-like.

**Thorax.** Dorsum light gray in ground color, with whitish pruinosity; postpronotal lobe light yellow in ground color; apical half of scutellum yellowish; pleura brownish, with whitish gray pruinosity.

**Abdomen.** Syntergite 1+2 yellowish; tergite 3 yellowish, with whitish pruinosity on anterior margin; tergites 4–5 blackish entirely with whitish gray pruinosity on anterior 2/3.

**Male postabdomen.** Surstylus nearly straight in apical



Figs 16–19. Male postabdomen of *Siphona (Aphantorhaphopsis) kanmiyai* sp. nov. (paratype, Taiwan, Taichung). 16 – epandrium, cerci and surstylus in lateral view; 17 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 18 – hypandrium, pregonite, postgonite and phallus in lateral view; 19 – fifth abdominal sternite in ventral view (setae omitted on left side). Scale bars = 0.1 mm.

half in lateral view, bearing long and strong inner setae; cerci weakly curved dorsally in middle in lateral view, apex slightly curved ventrally; pregonite somewhat rounded apically, without seta; postgonite rounded apically; epiphallus absent; distiphallus mostly sclerotized in lateral view with some spinules at base ventrally.

**Female.** Differing from male as follows: postpedicel slender, approximately 3.5 times as long as wide.

**Etymology.** This species is named in honor of Dr. K. Kanmiya (Kurume City, Japan), who collected the holotype.

**Host.** Unknown.

**Distribution.** Taiwan.

***Siphona (Aphantorhaphopsis) laboriosa* Mesnil, 1957**  
(Figs 20–24, 90)

*Siphona (Asiphona) laboriosa* Mesnil, 1957: 48. Type locality: Myanmar [Burma], Kambaiti.

*Ceromya laboriosa*: CROSSKEY (1976: 212), CROSSKEY (1977: 644).

*Siphona (Aphantorhaphopsis) laboriosa*: O'HARA (1989: 96), O'HARA et al. (2020: 798).

**Type material examined.** HOLOTYPE: ♂ (ZMU), N.E. Burma / Kambaiti, 7000 ft / 30.IV.1934 / R. Malaise.

**Additional material examined.** 26 ♂♂ 2 ♀♀ (SMNH), same locality as holotype, 7, 15, 26.iv., 7–17.v., 1–22.vi.1934, R. Malaise.

**Diagnosis.** Fronto-orbital plate with brownish pruinosity; 3 postsutural dorsocentral setae; abdomen without pruinosity.

This species is similar to *S. (A.) selangor* in general appearance, but is easily distinguished from it by brownish pruinose fronto-orbital plate (yellow pruinosity in *S. selangor*).

**Redescription.** Body length 3.5–4.8 mm. **Male.** Head with pale yellowish white pruinosity; fronto-orbital plate with brownish pruinosity; frontal vitta pale brown; antenna with scape and pedicel reddish yellow; postpedicel blackish; arista brown; palpus light yellow. Vertex 0.33–0.37 of head width; parafacial subequal in width to width of 2nd aristomere at middle height; gena 0.20–0.23 of eye height; anterior reclinate orbital seta situated slightly posterior to middle of fronto-orbital plate; fronto-orbital plate with row of short setae; upper occiput and post gena with many fine setulae; antenna with postpedicel subrectangular, 2.0–2.3 times as long as wide, and 4.0–4.5 times as long as pedicel; 2nd aristomere 2–3 times as long as wide; 3rd aristomere thickened in basal 1/3–1/2; palpus clavate; prementum approximately 4 times as long as wide and approximately 0.4 times as long as eye height; labella pad-like.

**Thorax.** Dorsum gray in ground color, with yellowish pruinosity; pleura brownish, with whitish pruinosity; scutellum yellowish in apical 1/5. Three presutural and 3 postsutural dorsocentral setae; scutellum with pair of discal setae.

**Wing.** Tegula blackish; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 2 : 10.5 : 5.5; ultimate section of  $M_4$  approximately 0.3 times as long as penultimate section and subequal in length to crossvein dm-m;  $R_1$  bare.

**Legs** light yellow in ground color; tarsi brownish. Fore tibia with 3–4 anterodorsal, 2–3 posterodorsal and 1 posterior setae; mid femora with 2 anterodorsal setae in middle and 1 posterodorsal setae at apex; hind tibia with

3–5 anterodorsal, 2–3 posterodorsal, and 3–4 ventral setae.

**Abdomen.** Syntergite 1+2, most of tergite 3, and anterior 1/4–1/2 of tergites 4–5 light yellowish, brownish on posterior 1/2–3/4 of tergites 4–5, without pruinosity. Syntergite 1+2 without lateral marginal setae; tergite 3 with a pair of lateral and median marginal setae; sternite 5 with a pair of relatively rounded median lobes on inner edges.

**Male postabdomen.** Surstylus nearly straight and slightly narrowed apically in lateral view; cerci weakly curved dorsally and somewhat thickened in middle in lateral view, apex curved ventrally and rounded; pregonite narrowed in apical 1/3 in lateral view, without seta; postgonite curved ventrally and rounded apically; distiphallus broadly sclerotized in lateral view with some tiny spinules ventrally.

**Female.** Differing from male as follows: antenna with postpedicel slender, approximately 3 times as long as wide. Female postabdomen. Tergites 6–7 absent; sternite 8 without anterior apodeme.

**Host.** Unknown.

**Distribution.** Myanmar [Burma] (Kambaiti, 2300m) (MESNIL 1957).

***Siphona (Aphantorhaphopsis) matsumotoi* sp. nov.**  
(Figs 25–29, 91)

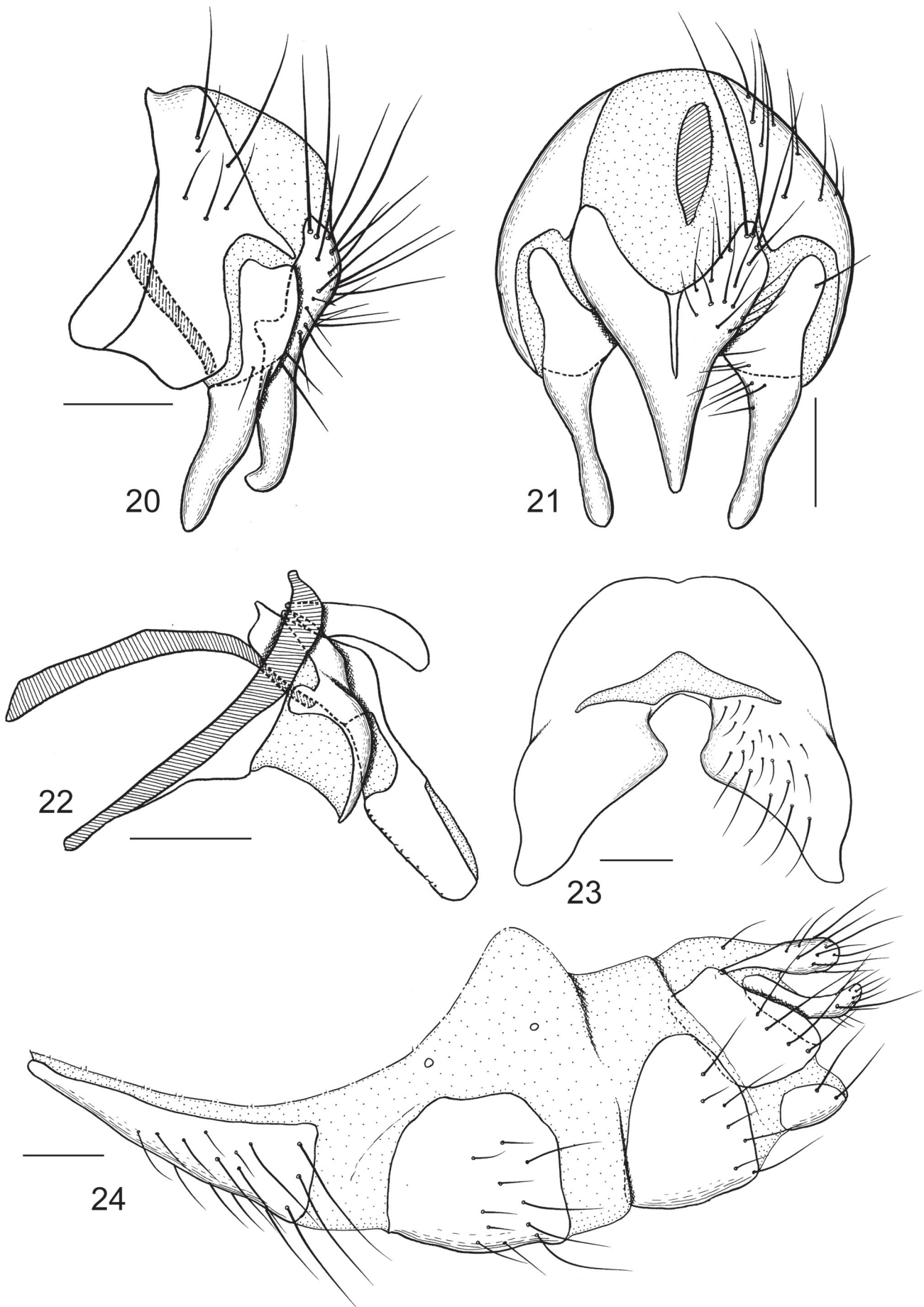
**Type material examined.** HOLOTYPE: ♂ (BLKU), [KYUSHU] / Fukuoka / Mt. Raizan / 17.ix.1995 / R. Matsumoto. PARATYPES: JAPAN: SHIKOKU: 1 ♂, Mount Odamiyama, Oda Town, Ehime Prefecture, 14.vii.1998, T. Tachi; 1 ♀, Mt. Takanawa, Hojyo City, Ehime Prefecture, R. Matsumoto; 1 ♂, Yanase, Umaji Village, Kochi Prefecture, 6.vii.1996, M. Sueyoshi. KYUSHU: 4 ♂♂, same data as holotype; 1 ♂, Takayama, Ebino City, Miyazaki Prefecture, 22.v.1996, M. Sueyoshi; 1 ♀, Miike, Miyazaki Prefecture, T. Tachi (all in BLKU).

**Diagnosis.** Fronto-orbital plate with yellowish pruinosity and with row of short setae; 3 postsutural dorsocentral setae; abdomen with whitish pruinosity on narrow anterior margins of tergites 3–5; male postabdomen with surstylus thickened and slightly curved dorsally in apical 1/5 in lateral view.

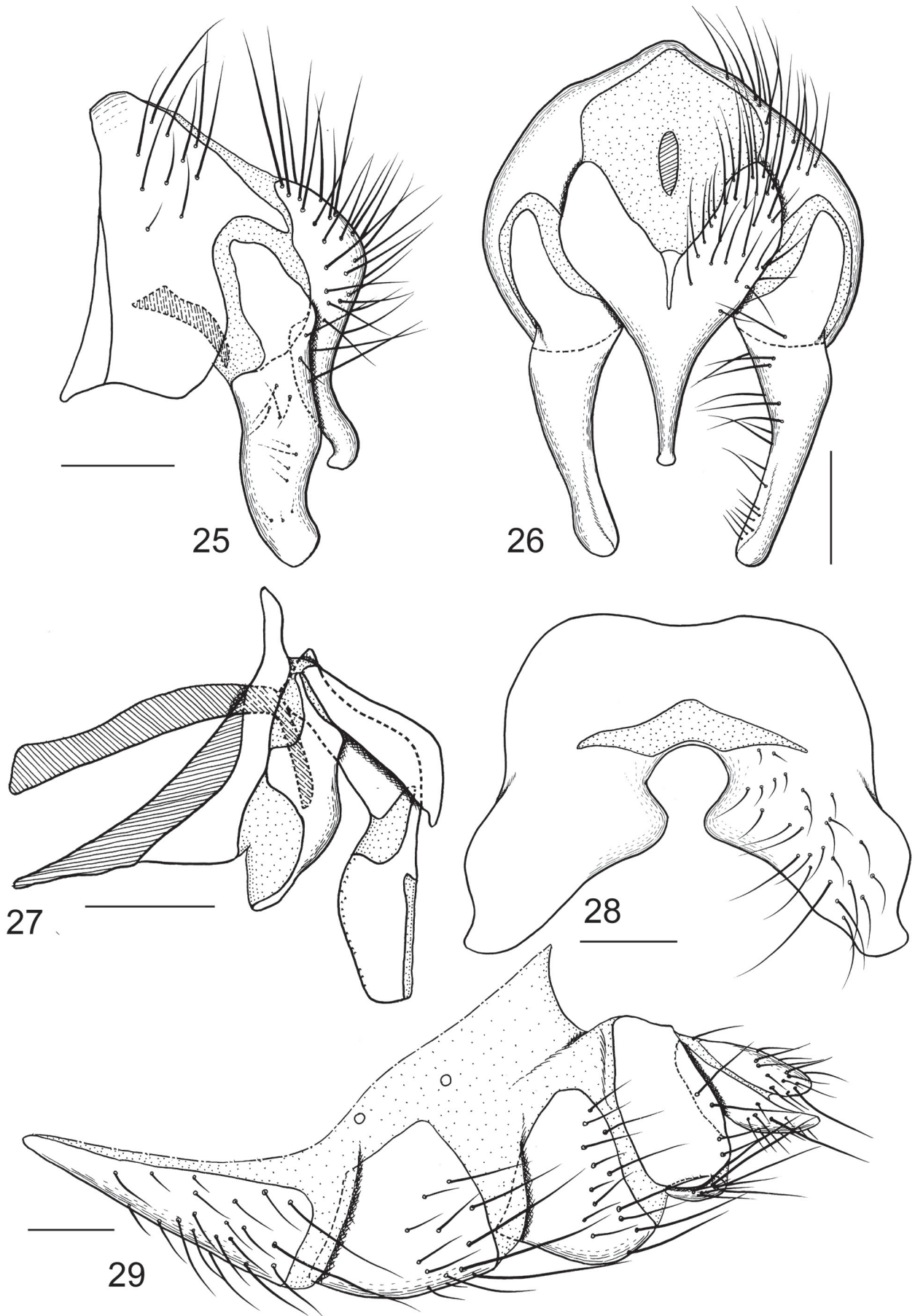
**Description.** Body length 3.7–4.0 mm. **Male.** Head whitish in ground color; fronto-orbital plate with yellowish pruinosity; frontal vitta light yellow; antenna with scape and pedicel orange; postpedicel and arista brownish; palpus yellow. Vertex 0.31–0.33 of head width; parafacial much narrower than width of 2nd aristomere at middle height; gena 0.18–0.20 of eye height; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate; fronto-orbital plate with a row of short setae; antenna with postpedicel subrectangular, 2.0–2.3 times as long as wide and approximately 5 times as long as pedicel; 2nd aristomere 2–3 times as long as wide; 3rd aristomere thickened in basal 2/5 and tapered to apex; palpus clavate; prementum 4–5 times as long as wide and 0.42–0.55 times as long as eye height; labella pad-like.

**Thorax.** Dorsum gray in ground color, with yellowish pruinosity; postpronotal lobe light yellow in ground color, with whitish pruinosity; apical half of scutellum yellowish; pleura brownish, with whitish gray pruinosity. Three postsutural dorsocentral setae.

**Wing.** Tegula black; basicosta light yellow. Relative lengths of costal sectors two, three and four approximately



Figs 20–24. Male and female postabdomen of *Siphona* (*Aphantorhaphopsis*) *laboriosa* Mesnil, 1957 (Myanmar, Kambaiti). 20 – epandrium, cerci and surstylus in lateral view; 21 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 22 – hypandrium, pregonite, postgonite and phallus in lateral view; 23 – fifth abdominal sternite in ventral view (setae omitted on left side); 24 – female postabdomen in lateral view. Scale bars = 0.1 mm.



Figs 25–29. Male and female postabdomen of *Siphona (Aphantorhaphopsis) matsumotoi* sp. nov. (paratype, Japan). 25 – epandrium, cerci and surstylus in lateral view; 26 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 27 – hypandrium, pregonite, postgonite and phallus in lateral view; 28 – fifth abdominal sternite in ventral view (setae omitted on left side); 29 – female postabdomen in lateral view. Scale bars = 0.1 mm.

2 : 12 : 5; ultimate section of  $M_4$  0.35–0.38 times as long as penultimate section and subequal in length to crossvein dm-m;  $R_1$  bare.

*Legs* orange in ground color; tarsi brownish.

*Abdomen* brownish in ground color, with whitish pruinosity on anterior 1/10 of tergites 3–5; tergites 3–5 with black median longitudinal vitta. Syntergite 1+2 without lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of relatively rounded median lobes on inner edge.

*Male postabdomen.* Surstylus thickened in lateral view, apex slightly curved dorsally, with many strong inner setae; cerci curved dorsally in middle in lateral view, apex curved ventrally; pregonite pointed apically in lateral view, without seta; postgonite not bifurcated apically, pointed apicoventrally; distiphallus mostly sclerotized in lateral view with tiny spinules ventrally.

*Female.* Similar to male, but differing as follows: gena narrower, approximately 0.16 of eye height; antenna with postpedicel slender, approximately 3.3 times as long as wide. Female postabdomen as in *S. (A.) laboriosa*.

**Etymology.** This species is named in honor of Dr. R. Matsumoto (Osaka Museum of Natural History), who collected the holotype.

**Host.** Unknown.

**Distribution.** Japan (Shikoku, Kyushu).

### *Siphona (Aphantorhaphopsis) samarensis*

(Villeneuve, 1921)

(Figs 30–34, 92)

*Actia samarensis* Villeneuve, 1921: 46. Type locality: Russia, Kujbysev [Samara].

*Asiphona samarensis*: MESNIL (1963: 845).

*Aphantorhaphopsis samarensis*: ANDERSEN (1996: 110).

*Siphona (Aphantorhaphopsis) samarensis*: O'HARA (1989: 96), O'HARA et al. (2020: 799).

**Material examined.** JAPAN: HOKKAIDO: 1 ♀ (SEHU), Sapporo, 25.vii.1911, Y. Nishijima. HONSHU: 1 ♂ (KUM), Shosenkyo, Yamanashi Prefecture, 30.iv.1972, T. Saigusa; 1 ♀ (BLKU), Hanase pass, Kyoto City, Kyoto Prefecture, 10.ix.1999, R. Matsumoto; 1 ♂ (BLKU), Mount Oya, Inagawa Town, Hyogo Prefecture, 16.vi.1999, R. Matsumoto. KYUSHU: 1 ♂ (KUM), Dazaifu City, Fukuoka Prefecture, 5.vii.2011, H. Shima. RUSSIA: PRIMOR'YE: 1 ♂ 1 ♀ (KUM), Ussuriysk Reserve 150m, 22–26.vi.1990, Malaise trap, T. Saigusa.

**Diagnosis.** Male gena approximately 0.25 of eye height; 3 postsutural dorsocentral setae; vein  $R_1$  setulose dorsally on apical half; ultimate section of  $M_4$  0.8–1.0 times as long as crossvein dm-m; abdomen with pruinosity.

The male postabdomen of this species is very similar to that of *S. (A.) seminigra* sp. nov., but is easily distinguished from it by having many long inner setae on the surstylus at the basal part.

Detailed description of this species was given by MESNIL (1963).

**Redescription.** Body length 4.3–4.5 mm. *Male.* Head whitish in ground color; fronto-orbital plate with yellow pruinosity; frontal vitta orange; ocellar triangle gray; palpus orange. Vertex 0.35–0.38 of head width; parafacial subequal in width to length of 2nd aristomere at middle height; gena approximately 0.25 of eye height; anterior reclinate orbital seta situated posterior to middle of fron-

to-orbital plate; antenna with postpedicel subrectangular, approximately twice as long as wide, and approximately 5 times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened in basal 2/5; palpus clavate; prementum 4–5 times as long as wide and approximately half as long as eye height; labella pad-like.

*Thorax.* Dorsum gray in ground color, with yellowish pruinosity; apical 1/3 of scutellum pale yellow; pleura brownish, with whitish pruinosity. Three postsutural dorsocentral setae.

*Wing.* Tegula black; basicosta orange. Relative lengths of costal sectors two, three, and four approximately 2 : 13 : 6; ultimate section of  $M_4$  0.30–0.35 times as long as penultimate section and 0.86–1.00 times as long as crossvein dm-m;  $R_1$  setulose dorsally on apical half, bare ventrally

*Legs* yellow in ground color.

*Abdomen* shining light brown in ground color; tergites 3–5 with black longitudinal vitta; anterior 1/4 of tergites 3–4 and anterior 1/3 of tergite 5 with whitish pruinosity; posterior half of tergites 3–5 with black band. Syntergite 1+2 without lateral marginal setae; tergites 3–4 with pair of lateral and median marginal setae; sternite 5 with pair of relatively rounded median lobes on inner edge; apical lobes rather pointed apically.

*Male postabdomen.* Surstylus slightly curved dorsally in apical 1/3 in lateral view, and with many strong inner setae; cerci weakly curved dorsally in middle in lateral view, apex slightly curved ventrally; pregonite rounded apically, without seta; postgonite with apical notch; distiphallus mostly sclerotized in lateral view with some spinules ventrally.

*Female.* Similar to male, differing as follows: gena wide, approximately 0.28 of eye height. Female postabdomen. Tergites 6–7 weakly sclerotized, tergite 7 smaller than tergite 6; sternite 7 with an anterior apodeme; sternite 8 with some short setae.

**Host.** Lepidoptera: Lymantriidae: *Lymantria dispar* (Linnaeus, 1758), *Telochurus recens* (Hübner, 1819) (TSCHORSNIG 2017: 283).

**Distribution.** Palaearctic: Europe, Russia, Japan\* (Hokkaido, Honshu, Kyushu) (O'HARA et al. 2020).

This species was introduced to Canada from Europe to control the gypsy moth (MILLS & NEALIS 1992) but was not established. This species is here recorded from Japan for the first time.

### *Siphona (Aphantorhaphopsis) selangor*

(Malloch, 1930)

(Figs 35–39, 93)

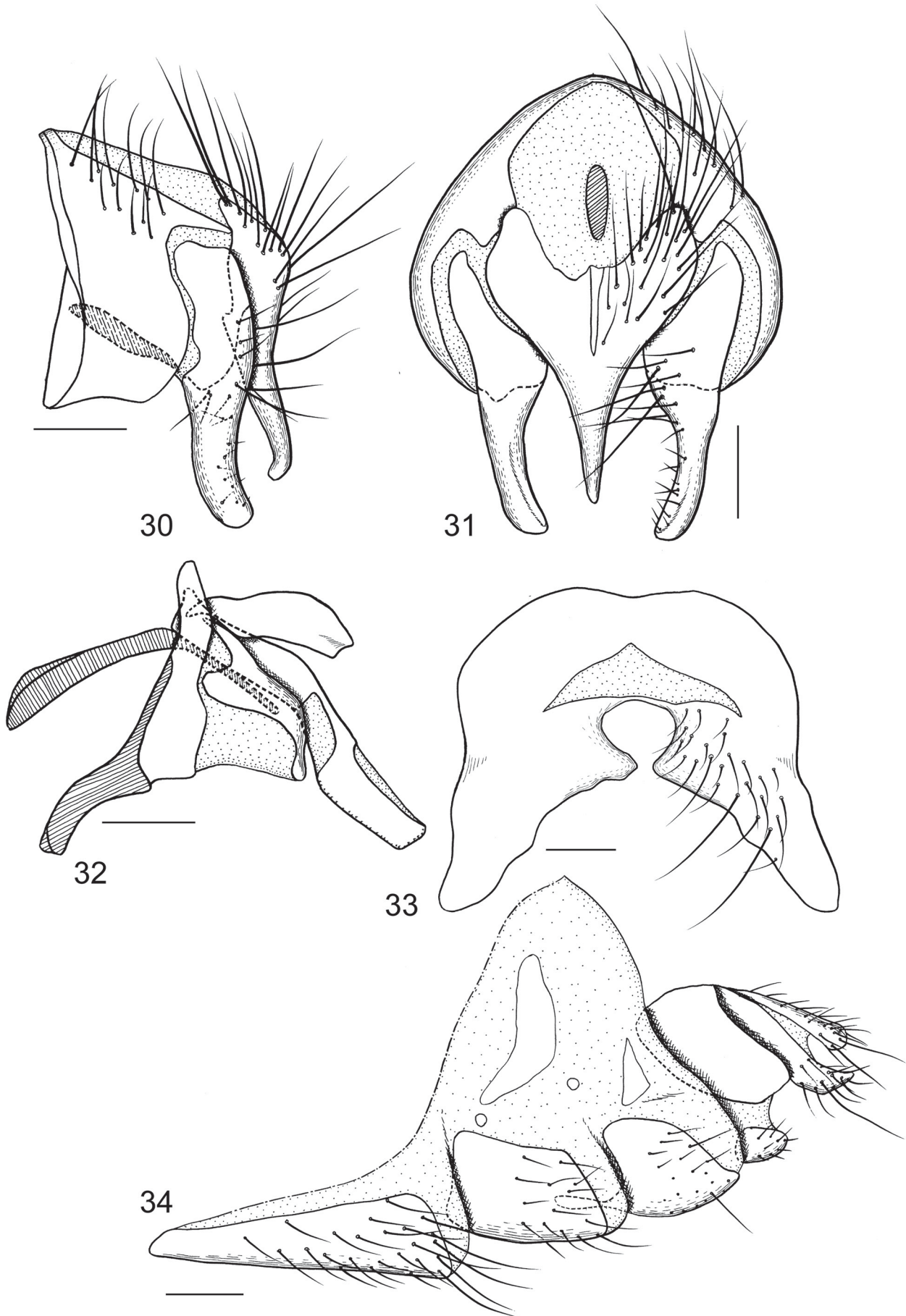
*Actia selangor* Malloch, 1930: 132. Type locality: Malaysia, Selangor.

*Ceromya selangor*: CROSSKEY (1976: 213), CROSSKEY (1977: 645).

*Siphona (Aphantorhaphopsis) selangor*: O'HARA (1989: 96), O'HARA et al. (2020: 799).

**Type material examined.** HOLOTYPE: ♂ (NHMUK), MALAY PENIN / Selangor / Bukit Kutu / 3,500 ft / April 20th 1926 / H. M. Pendlebury.

**Additional material examined.** CHINA: HONG KONG: [Taipokau] 21 ♂♂ 4 ♀♀, Kowloon, Taipokau, 6–31.vi.1964, 5,8.vi., 2,12.vii., 6,24,27.viii., 18.xi.1965. LAOS: VIENTIANE PROV.: 2 ♂♂, Ban Van Eue, 750 m, 10–11.iv.1965, Malaise trap, J.L. Gressitt. VIETNAM: 1 ♂, Fyan 900–1000 m, 11.vii.–9.viii.1961, N.R. Spencer; 1 ♂, Mt. Lang Bian, 1500–2000 m, 19.v.–8.vi.1961, N. R. Spencer (all in BPBM).



Figs 30–34. Male and female postabdomen of *Siphona (Aphantorhaphopsis) samarensis* (Villeneuve, 1921). (Russia, Primor'ye). 30 – epandrium, cerci and surstylus in lateral view; 31 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 32 – hypandrium, pregonite, postgonite and phallus in lateral view; 33 – fifth abdominal sternite in ventral view (setae omitted on left side); 34 – female postabdomen in lateral view. Scale bars = 0.1 mm.

**Diagnosis.** Fronto-orbital plate with yellow pruinosity; 3 postsutural dorsocentral setae; abdomen without pruinosity.

This species is similar to *S. (A.) laboriosa* in general appearance but differs from it in the male postabdomen: surstylus slender and weakly curved dorsally in lateral view; cerci very weakly curved dorsally in lateral view and somewhat narrowed in apical half.

**Redescription.** Body length 3.0–3.5 mm. **Male. Head** whitish in ground color; fronto-orbital plate with yellow pruinosity; frontal vitta orange; antenna with scape, pedicel, and arista orange; postpedicel brownish; palpus yellow. Vertex approximately 0.32 of head width; parafacial subequal in width to width of 2nd aristomere at middle height; gena 0.17–0.20 of eye height; 3–4 frontal setae; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate; fronto-orbital plate with row of short setae on lower part; antenna with postpedicel subrectangular, approximately 2.5 times as long as wide, and approximately 5 times as long as pedicel; 2nd aristomere 2–3 times as long as wide; 3rd aristomere thickened in basal 1/3; palpus clavate; prementum approximately 5 times as long as wide and approximately half as long as eye height; labella pad-like.

**Thorax.** Dorsum gray in ground color, with yellowish pruinosity; postpronotal lobe light yellow in ground color, with whitish pruinosity; scutellum brownish; pleura pale yellow. Three presutural and 3 postsutural dorsocentral setae.

**Wing.** Tegula blackish; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 5.5 : 3; ultimate section of  $M_4$  approximately 0.36 times as long as penultimate section, and subequal in length to crossvein dm-m;  $R_1$  bare.

**Legs** orange in ground color; tarsi blackish. Fore tibia with 3 anterodorsal, 4 posterodorsal, and 1 posterior setae; hind tibia with 4 anterodorsal, 3 posterodorsal, and 3–4 ventral setae.

**Abdomen** orange in ground color, almost without pruinosity; tergites 3–5 with blackish longitudinal vitta; posterior half of tergites 4–5 blackish. Syntergite 1+2 without lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of relatively rounded median lobes on inner edge.

**Male postabdomen.** Surstylus slender, nearly straight in lateral view; cerci very weakly curved dorsally in lateral view and somewhat narrowed in apical half, apex slightly curved ventrally; postgonite rounded apically; pregonite narrowed in middle in lateral view without seta; epiphallus absent; distiphallus mostly sclerotized in lateral view with some spinules ventrally.

**Female.** Differing from male as follows: antenna with postpedicel slender, approximately 3 times as long as wide.

**Female postabdomen.** Tergites 6–7 absent; sternite 7 with very short anterior apodeme.

**Host.** Unknown.

**Distribution.** China (Hong Kong)\*, Malaysia (Selangor) (MALLOCH 1930, O'HARA et al. 2020), Laos\*, Vietnam\*.

### *Siphona siphonoides* group

**Diagnosis.** Male postabdomen: pregonite with one weak seta on dorsal portion (Figs 42, 46, 51, 56, 60, 65); epiphallus absent or present; distiphallus subrectangular in lateral view.

**Remarks.** Monophyly of this group is provided by one short seta on the dorsal part of the male pregonite. The seta of the *S. siphonoides* group is distinctly different from that of *Ceranthia* which is strong and long. According to ANDERSEN (1996), among the European *Aphantorhaphopsis* species, *S. (A.) brunnescens* (Villeneuve), *S. (A.) siphonoides* (Strobl), *S. (A.) starkei* (Mesnil) and *S. (A.) verralli* (Wainwright) have the seta on the pregonite. The following East Asian and Oriental species are included in this group: *S. (A.) alticola* (Mesnil), *S. (A.) crassulata* (Mesnil), *S. (A.) curta* sp. nov., *S. (A.) laticornis* (Malloch), and *S. (A.) orientalis* (Townsend).

#### *Siphona (Aphantorhaphopsis) alticola* (Mesnil, 1953)

(Figs 40–43, 94)

*Crocota (Siphona) alticola* Mesnil, 1953: 110. Type locality: Myanmar [Burma], Kambaiti.

*Siphona (Aphantorhaphopsis) alticola*: O'HARA (1989: 96), O'HARA et al. (2020: 798).

**Type material examined.** HOLOTYPE: ♂ (ZMU), N.E. Burma / Kambaiti, 7000 ft / 11.5.1934, R. Malaise.

**Additional material examined.** 8 ♂♂ (SMNH), same locality as holotype, 23, 24, 28.iv., 12, 16, 17.v.1934, R. Malaise.

**Diagnosis.** Labella elongate, subequal in length to prementum or slightly shorter; gena approximately 0.15 of eye height; 4 postsutural dorsocentral setae.

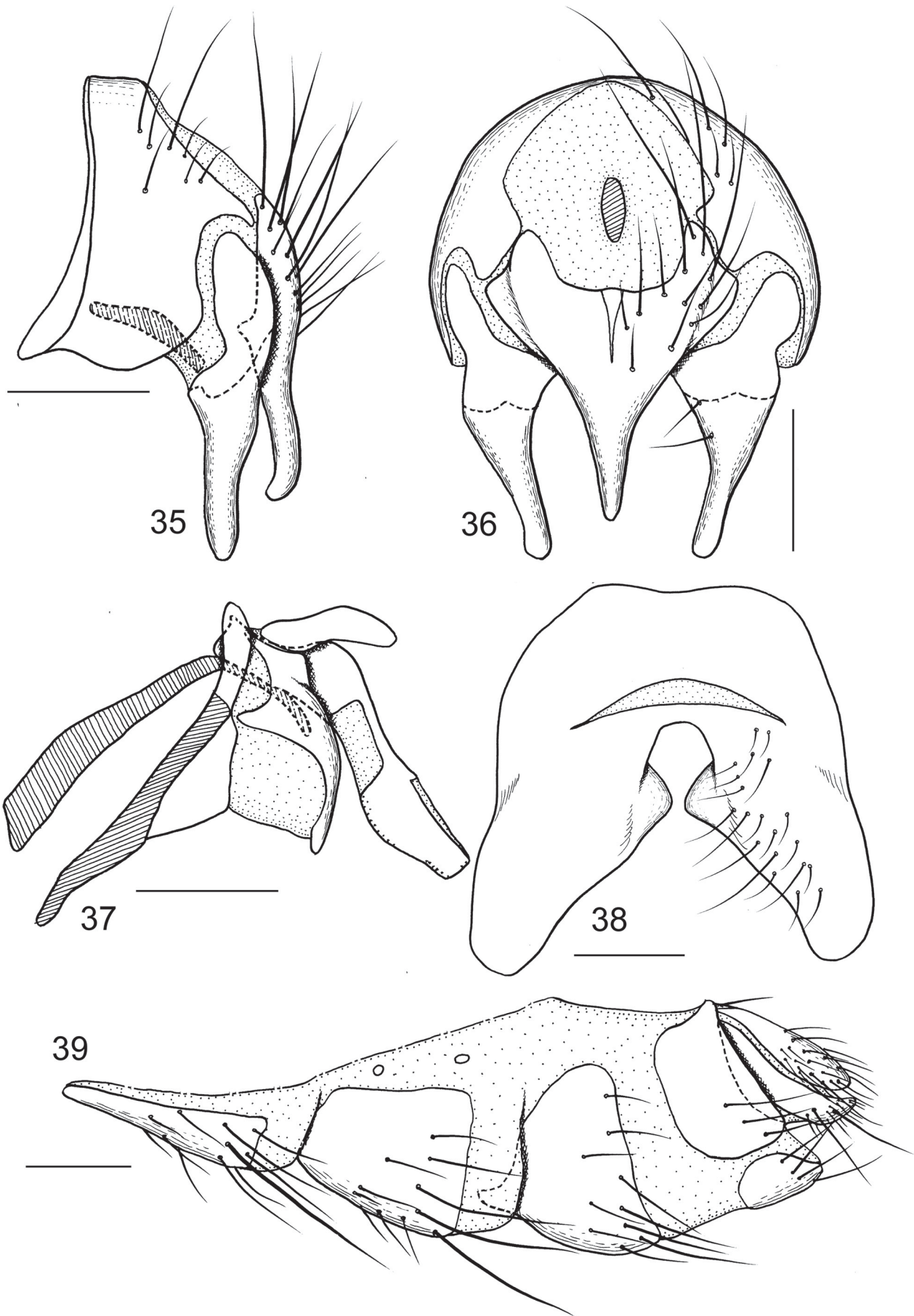
This species is similar to *S. crassulata* in its long labella but differs from it in having 4 (rather than 3) postsutural dorsocentral setae.

**Redescription.** Body length 3.8–4.5 mm. **Male. Head** whitish or yellowish in ground color; fronto-orbital plate dark brown; frontal vitta reddish brown; antenna with scape, pedicel, postpedicel and arista brownish; palpus pale orange to light yellow. Vertex approximately 0.36 of head width; parafacial approximately twice as wide as width of 2nd aristomere at middle height; gena approximately 0.14 of eye height; 3–4 frontal setae; anterior reclinate orbital seta situated slightly posterior to middle of fronto-orbital plate; antenna with postpedicel subrectangular, approximately 1.7 times as long as wide, and approximately 3 times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened in basal 1/2; palpus clavate; prementum 7–8 times as long as wide and subequal in length to eye height; labella elongate, subequal in length to prementum or slightly shorter.

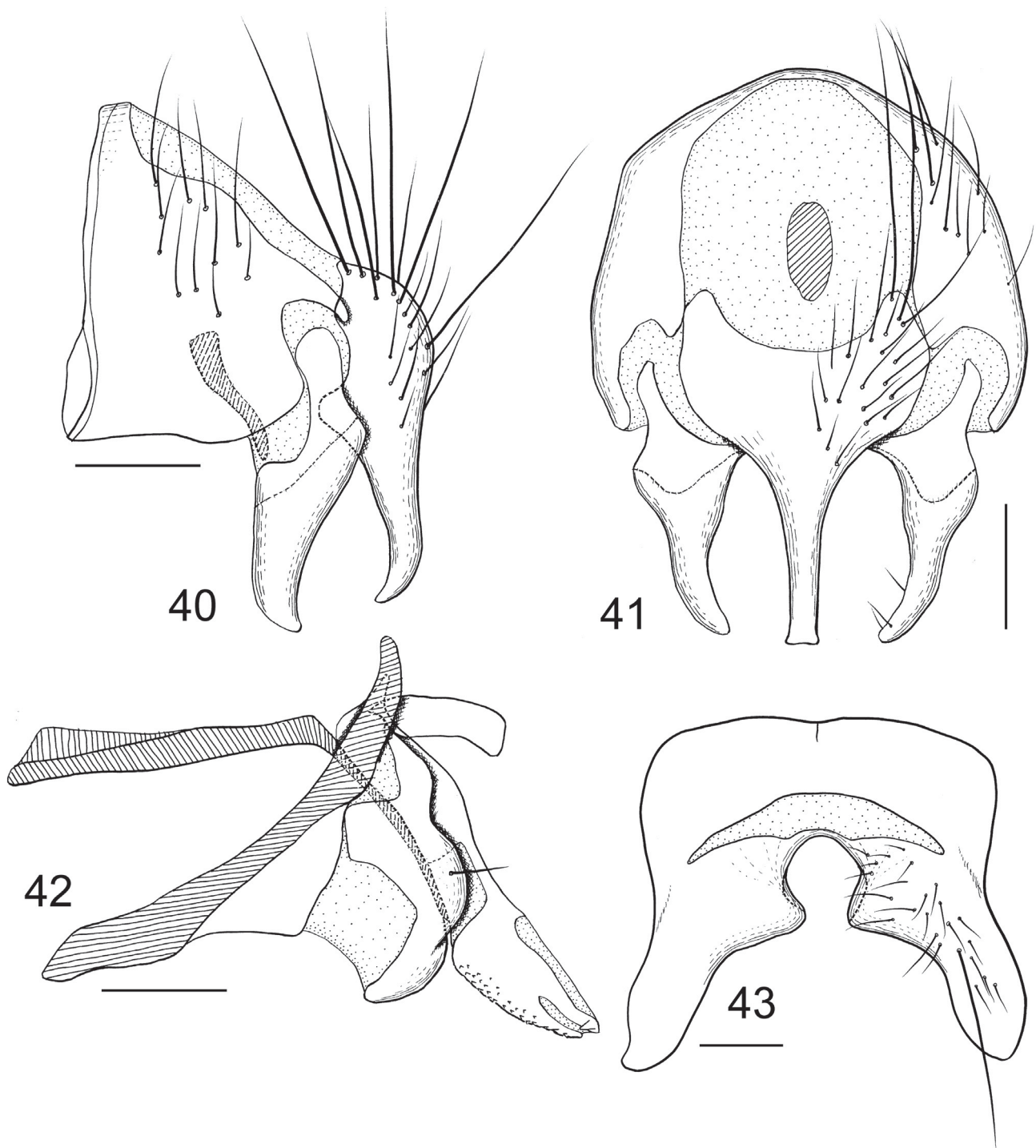
**Thorax.** Dorsum dark brown, with grayish pruinosity. Three presutural and 4 postsutural dorsocentral setae.

**Wing.** Tegula reddish brown to brown; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 5.5 : 2.5; ultimate section of  $M_4$  approximately 0.33 times as long as penultimate section, and approximately 1.2 times as long as crossvein dm-m;  $R_1$  bare.





Figs 35–39. Male and female postabdomen of *Siphona (Aphantorhaphopsis) selangor* (Malloch, 1930). (Hong Kong, Taipokau). 35 – epandrium, cerci and surstylus in lateral view; 36 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 37 – hypandrium, pregonite, postgonite and phallus in lateral view; 38 – fifth abdominal sternite in ventral view (setae omitted on left side); 39 – female postabdomen in lateral view. Scale bars = 0.1 mm.



Figs 40–43. Male postabdomen of *Siphona* (*Aphantorhaphopsis*) *alticola* (Mesnil, 1953). (Myanmar, Kambaiti). 40 – epandrium, cerci and surstylus in lateral view; 41 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 42 – hypandrium, pregonite, postgonite and phallus in lateral view; 43 – fifth abdominal sternite in ventral view (setae omitted on left side). Scale bars = 0.1 mm.

*Legs* yellow in ground color. Fore tibia with 3–4 antero-dorsal, 2–3 posterodorsal, and 1 posterior setae; hind tibia with 2–4 anterodorsal, 1–3 posterodorsal, and 4–5 ventral setae.

*Abdomen* yellowish in ground color, almost without pruinosity; posterior 1/3 of tergite 3, posterior 3/4 of tergite 4 and entire of tergite 5 blackish; tergites 3–5 with blackish median longitudinal vitta. Syntergite 1+2 with pair of lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of rounded median lobes on inner edges; apical lobe slightly developed.

*Male postabdomen.* Surstylus narrowed apically in lateral view, apex curved dorsally and pointed; cerci tapered to apex and curved ventrally in apical 1/5 in lateral view; pregonite somewhat broadly sclerotized in lateral view with one weak dorsal seta; postgonite rounded apically; epiphallus absent; distiphallus broadly sclerotized in lateral view bearing many spinules ventrally, apex with membranous area laterally.

*Female.* Unknown.

*Host.* Unknown.

*Distribution.* Myanmar [Burma] (MESNIL 1953, O'HARA et al. 2020).

***Siphona (Aphantorhaphopsis) crassulata (Mesnil, 1953)***

(Figs 44–48, 95)

*Crocota (Siphona) crassulata* Mesnil, 1953: 112. Type locality: Myanmar [Burma], Kambaiti.*Siphona (Aphantorhaphopsis) crassulata*: O'HARA (1989: 96), O'HARA et al. (2020: 798).**Type material examined.** HOLOTYPE: ♂ (ZMU), N.E. Burma / Kambaiti, 2000 m / 4.6.1934, R. Malaise.**Additional material examined.** 15 ♂♂ 4 ♀♀ (SMNH), same locality as holotype, 9.23.28.iv., 11–12.v., 23.vi.1934, R. Malaise.**Diagnosis.** Labella rather elongate, slightly shorter than prementum and eye height; gena approximately 0.2 of eye height; 3 postsutural dorsocentral setae.This species is very similar to *S. (A.) curta* sp. nov., but is distinguished from it by having elongate labella and 3 postsutural dorsocentral setae (whereas the latter species has labella distinctly shorter than prementum and 4 postsutural dorsocentral setae).**Redescription.** Body length 4.0–4.5 mm. **Male. Head** whitish in ground color; fronto-orbital plate light gray, with whitish pruinosity; frontal vitta orange; antenna with scape and pedicel orange; postpedicel blackish; arista brown; palpus light yellow. Vertex 0.38–0.40 of head width; parafacial subequal in width to width of 2nd aristomere at middle height; gena approximately 0.2 of eye height; fronto-orbital plate with some fine setae; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate, approximately 2.5 times as long as posterior seta; antenna with postpedicel subrectangular, approximately twice as long as wide, and 3.8–4 times as long as pedicel; 2nd aristomere subequal in length to width; 3rd aristomere thickened in basal 1/3; palpus clavate; prementum 7–8 times as long as wide and slightly shorter than eye height; labella slightly shorter than prementum.**Thorax.** Dorsum light gray, with yellowish pruinosity; 3 presutural and 3 postsutural dorsocentral setae.**Wing.** Tegula blackish; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 5.5 : 2.5; ultimate section of  $M_4$  approximately 0.45 times as long as penultimate section, and approximately 1.3 times as long as crossvein dm-m;  $R_1$  bare.**Legs** yellowish in ground color; tarsi blackish. Fore tibia with 3 anterodorsal, 1–2 posteroventral, and 1 posterior setae; hind tibia with 3–5 anterodorsal, 3–4 posterodorsal, and 3–5 ventral setae.**Abdomen** brownish to blackish in ground color; anterior half of tergites 3–5 with whitish pruinosity. Syntergite 1+2 with pair of lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of rounded median lobes on inner edge.**Male postabdomen.** Surstylus tapered to apex in lateral view and slightly curved dorsally at apex; cerci curved dorsally in middle in lateral view, strongly narrowed in apical half in dorsal view; pregonite narrowed in apical half in lateral view, with one weak dorsal seta; postgonite slightly curved ventrally, apex rounded; epiphallus present; distiphallus broadly sclerotized in lateral view with some tiny spinules ventrally.**Female.** Differing from male as follows: gena approximately 0.17 of eye height; antenna with postpedicel slender,

approximately 2.3 times as long as wide.

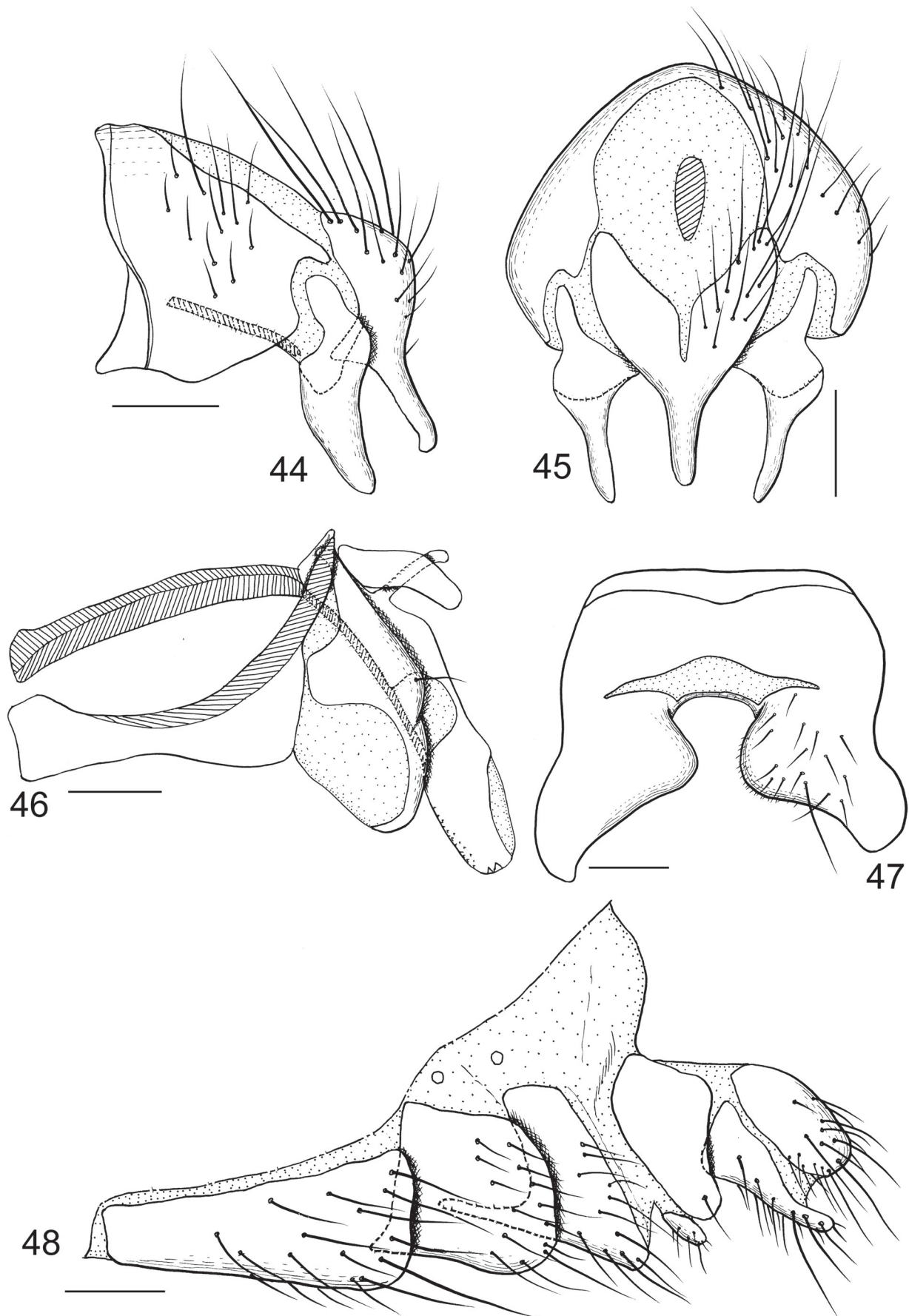
**Female postabdomen.** Tergites 6–7 absent; sternite 7 with anterior apodeme; sternite 8 small with some setae.**Host.** Unknown.**Distribution.** Myanmar [Burma] (MESNIL 1953, O'HARA et al. 2020).***Siphona (Aphantorhaphopsis) curta* sp. nov.**

(Figs 49–53)

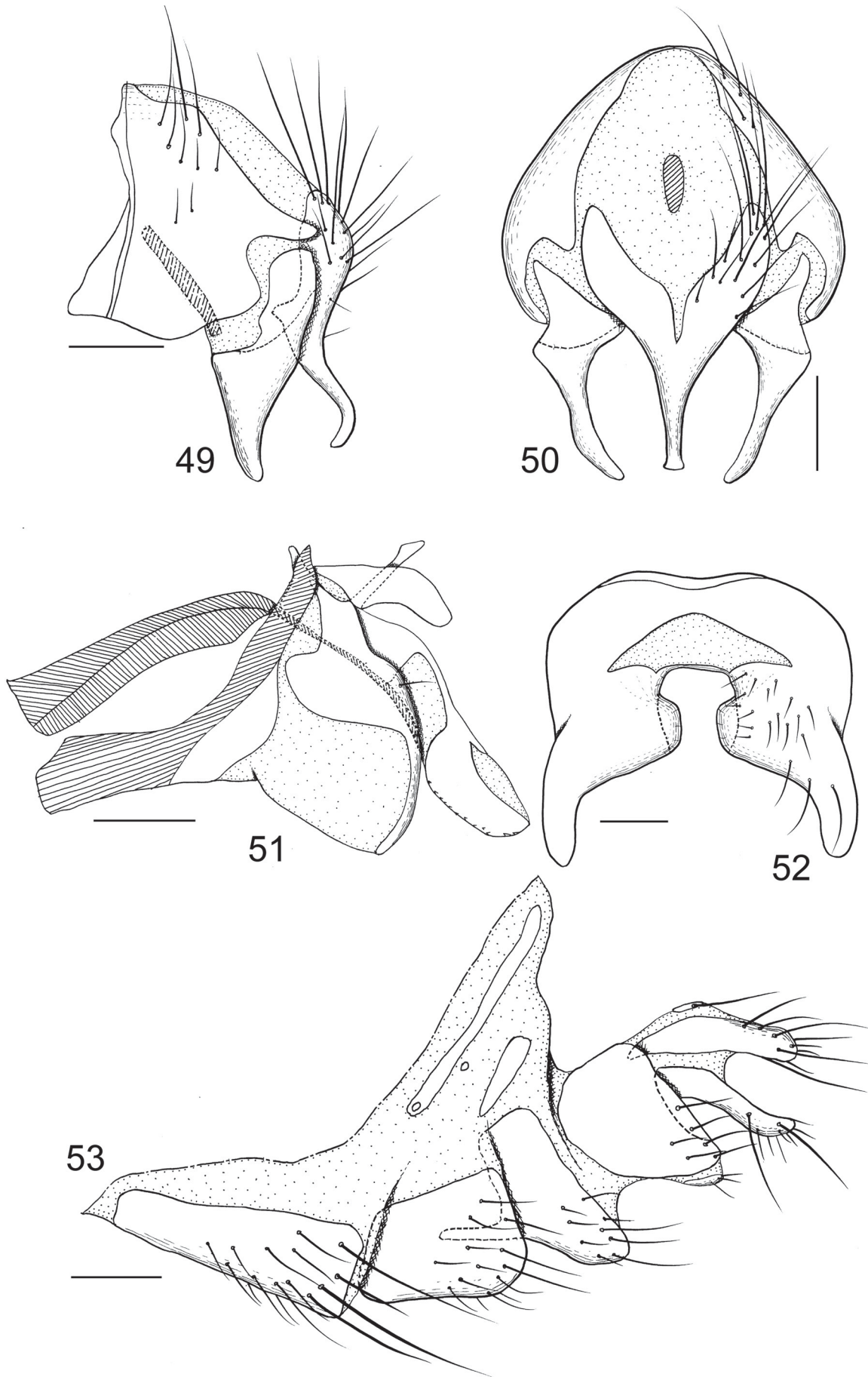
**Type material.** HOLOTYPE: ♂ (SMNH), N.E. BURMA / Kambaiti 2000m / R. Malaise 9/6 1934. PARATYPES: 8 ♂♂ 3 ♀♀ (SMNH), same data as holotype, R. Malaise.**Diagnosis.** Labella rather elongate, approximately 0.8 times as long as prementum; gena 0.18–0.20 of eye height; 4 postsutural dorsocentral setae.This species is similar to *S. (A.) alticola* in general appearance but differs from it in the male postabdomen: surstylus narrowed in apical 1/3 in lateral view; cerci strongly curved dorsally in middle in lateral view, apex strongly curved ventrally; epiphallus developed; distiphallus broadly sclerotized in lateral view.**Description.** Body length 4.0–4.3 mm. **Male. Head.** Vertex 0.35–0.38 of head width; parafacial subequal in width to width of 2nd aristomere at middle height; gena 0.18–0.20 of eye height; antenna with postpedicel suboval to subrectangular, 1.5–1.8 times as long as wide and 3.3–3.5 times as long as pedicel; labella rather elongate, approximately 0.8 times as long as prementum.**Thorax.** Dorsum gray, with brownish pruinosity.**Male postabdomen.** Surstylus strongly narrowed in apical 1/3 in lateral view, narrowed in apical half in dorsal view; cerci strongly curved dorsally in middle in lateral view and narrowed in apical half, apex strongly curved ventrally; pregonite narrowed in apical 1/3 in lateral view, with one weak dorsal seta; postgonite rounded apically; epiphallus present; distiphallus broadly sclerotized in lateral view with some tiny spinules ventrally.**Female.** Similar to male, differing from it as follows: antenna with postpedicel slender, approximately 3 times as long as wide.**Female postabdomen.** Tergites 6–7 tall and weakly sclerotized, tergite 7 shorter than tergite 6; sternite 7 with anterior apodeme; sternite 8 small with a few short setae; spiracle 6 present on tergite 6; spiracle 7 posterior to tergite 6.**Etymology.** The species is named after the labella, which are shorter than in the closely related species, *S. alticola*; an adjective.**Host.** Unknown.**Distribution.** Myanmar [Burma].***Siphona (Aphantorhaphopsis) laticornis (Malloch, 1930)***

(Figs 54–57)

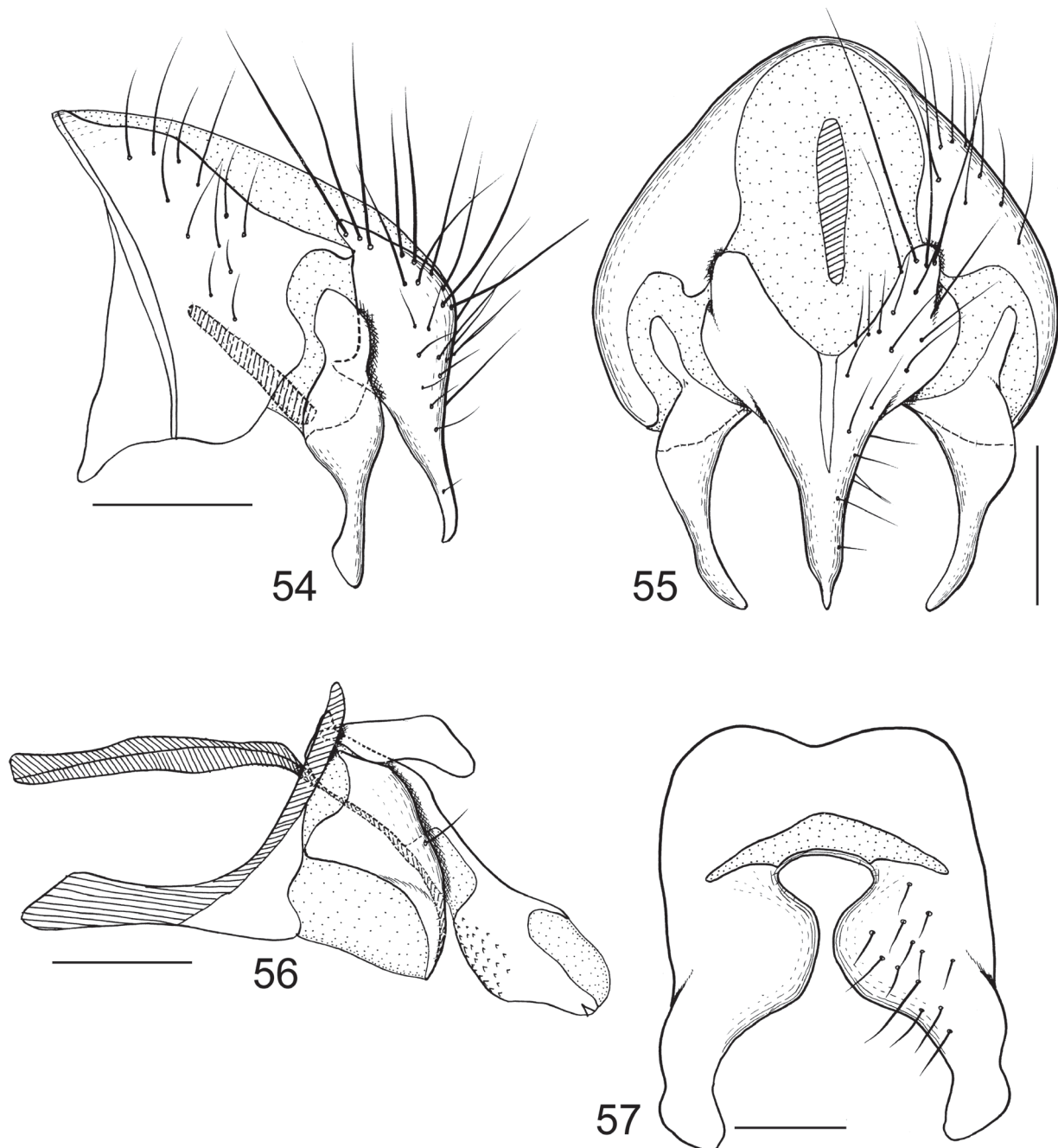
*Actia laticornis* Malloch, 1930: 131. Type locality: Malaysia, Selangor. *Ceromya laticornis*: CROSSKEY (1976: 212), CROSSKEY (1977: 644).*Siphona (Aphantorhaphopsis) laticornis*: O'HARA (1989: 96), O'HARA et al. (2020: 798).**Type material examined.** HOLOTYPE: ♂ (NHMUK), MALAYA PENIN / Selangor / Bukit Kutu / 3500 ft. / April 20th 1926 / H.M. Pendlebury.**Additional material examined.** MALAYSIA: PAHANG: 2 ♂♂ (SMNH), Cameron Highlands, Gunung Jasar 1700 m (malaise trap), 20–23, 24–27.xi.1994.



Figs 44–48. Male and female postabdomen of *Siphona* (*Aphantorhaphopsis*) *crassulata* (Mesnil, 1953). (Myanmar, Kambaiti). 44 – epandrium, cerci and surstylus in lateral view; 45 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 46 – hypandrium, pregonite, postgonite and phallus in lateral view; 47 – fifth abdominal sternite in ventral view (setae omitted on left side); 48 – female postabdomen in lateral view. Scale bars = 0.1 mm.



Figs 49–53. Male and female postabdomen of *Siphona (Aphantorhaphopsis) curta* sp. nov. (paratypes, Myanmar, Kambaiti). 49 – epandrium, cerci and surstylus in lateral view; 50 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 51 – hypandrium, pregonite, postgonite and phallus in lateral view; 52 – fifth abdominal sternite in ventral view (setae omitted on left side); 53 – female postabdomen in lateral view. Scale bars = 0.1 mm.



Figs 54–57. Male postabdomen of *Siphona* (*Aphantorhaphopsis*) *laticornis* (Malloch, 1930) (Malaysia, Pahang). 54 – epandrium, cerci and surstylus in lateral view; 55 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 56 – hypandrium, pregonite, postgonite and phallus in lateral view; 57 – fifth abdominal sternite in ventral view (setae omitted on left side). Scale bars = 0.1 mm.

**Diagnosis.** Abdomen blackish in ground color; labella pad-like; 4 postsutural dorsocentral setae.

This species has blackish abdomen similar to members of the *S. perispoliata* group, but the male postabdominal characters are distinctly different. The pregonite of this species has one weak dorsal seta, which is the feature of the *S. siphonoides* group.

**Redescription.** Body length 2.8–3.0 mm. **Male.** Head whitish in ground color; fronto-orbital plate with dark grayish pruinosity; frontal vitta brown; antenna with scape, pedicel and arista dark brown; postpedicel black; palpus reddish yellow. Vertex approximately 0.4 of head width; parafacial narrower than width of 2nd aristomere at middle height;

gena 0.25–0.28 of eye height; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate; fronto-orbital plate with row of short setae; antenna with postpedicel suboval, approximately twice as long as wide, and 4.5–5.0 times as long as pedicel; 2nd aristomere approximately 4 times as long as wide; 3rd aristomere thickened on basal 3/5; palpus somewhat clavate; prementum approximately 3 times as long as wide and approximately 0.38 times as long as eye height; labella pad-like.

**Thorax.** Dorsum blackish in ground color; postpronotal lobe with grayish pruinosity; apex of scutellum pale yellow; pleura brown, with grayish pruinosity. Three presutural and 4 postsutural dorsocentral setae.

**Wing.** Tegula black; basicosta light yellow; lower calypter dark brown. Relative lengths of costal sectors two, three, and four approximately 1 : 6 : 3; ultimate section of  $M_4$  approximately 0.55 times as long as penultimate section, and approximately 1.5 times as long as crossvein dm-m;  $R_1$  bare.

**Legs.** Coxae and femora brownish; trochanters and tibiae yellowish; tarsi blackish. Hind tibia with 3–6 anterodorsal, 2–4 posterodorsal, and 3 ventral setae.

**Abdomen** blackish in ground color; anterior 1/5 of tergites 3–4 and anterior 1/3 of tergite 5 with whitish pruinosity. Syntergite 1+2 without lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of rounded median lobes on inner edge; apical lobe somewhat elongated and slightly curved inwards.

**Male postabdomen.** Surstylus nearly straight and strongly narrowed in apical 1/3 in lateral view; cerci strongly narrowed and pointed apically in lateral view; pregonite somewhat pointed apically in lateral view, with one short dorsal seta; postgonite slightly curved ventrally and rounded apically; epiphallus absent; distiphallus suboval in lateral view, broadly sclerotized bearing some spinules ventrally.

**Female.** Unknown.

**Host.** Unknown.

**Distribution.** Malaysia (Pahang, Selangor) (MALLOCH 1930, O'HARA et al. 2020).

***Siphona (Aphantorhaphopsis) nepalensis* sp. nov.**

(Figs 58–62, 96)

*Siphona (Aphantorhaphopsis)* sp. 1: O'HARA (1989: 97).

**Type material.** HOLOTYPE: ♂ (BLKU), (E. NEPAL) / Thudam (3,500 m) / 27°45'N, 87°32'E / July 4, 1972 / Malaise Trap (1) / Kyushu Univ. Col. PARATYPES: NEPAL: 4 ♂♂ 4 ♀♀ (KUM), same locality as holotype, 21–30, 26.vi, 2,4.vii.1972; 1 ♂ (KUM), Bogara, 1700–2200 m, 83°23'E, 28°35'N, 20.ix.1971, A. Nakanishi.

**Diagnosis.** Gena 0.45–0.50 of eye height; prementum long, approximately twice as long as eye height; labella subequal in length to prementum; 3 postsutural dorsocentral setae; abdomen light gray in ground color with whitish pruinosity.

This species is very similar to members of the subgenus *Siphona* in having a long prementum and labella. However, this species is easily distinguished from them by having one weak seta on the dorsal part of the pregonite in the male postabdomen.

**Description.** Body length 4.5–5.0 mm. **Male. Head** whitish in ground color; fronto-orbital plate with whitish gray pruinosity; frontal vitta reddish brown; antenna with scape, pedicel, postpedicel, and arista blackish; palpus dark brown. Vertex 0.40–0.45 of head width; parafacial subequal in width to length of 2nd aristomere at middle height; gena 0.45–0.50 of eye height; anterior reclinate orbital seta situated near middle of fronto-orbital plate; fronto-orbital plate with some setae on lower part; antenna with postpedicel subrectangular, approximately 3 times as long as wide, and 5.5 times as long as pedicel; 2nd aristomere 3–4 times as long as wide; 3rd aristomere thickened on basal 2/5; palpus slender; prementum approximately twice as long as eye height; labella subequal in length to prementum.

**Thorax.** Light gray in ground color, with whitish pruinosity; postpronotal lobes with whitish pruinosity; apical

1/3 of scutellum yellowish; pleura brownish, with grayish pruinosity. Three presutural and 3 postsutural dorsocentral setae.

**Wing.** Tegula black; basicosta orange. Relative lengths of costal sectors two, three, and four approximately 2 : 9–11.5 : 4.5–5.0; ultimate section of  $M_4$  0.36–0.40 times as long as penultimate section and 1.3–1.6 times as long as crossvein dm-m;  $R_1$  bare.

**Legs** yellow in ground color; tarsi brownish. Fore tibia with 4 anterodorsal, 2–3 posterodorsal, and 1 posterior setae; hind tibia with 4 anterodorsal, 4 posterodorsal, and 6 ventral setae.

**Abdomen** light gray in ground color, with whitish pruinosity. Syntergite 1+2 with pair of lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of relatively rounded median lobes on inner edges; apical lobes expanded laterally.

**Male postabdomen.** Surstylus nearly straight in lateral view and narrowed in apical 1/5; cerci narrowed apically in lateral view, apex curved ventrally; pregonite narrowed apically in lateral view, with one short dorsal seta; postgonite slender and rounded apically; epiphallus absent; distiphallus trapezoidal in lateral view, broadly sclerotized with some spinules ventrally.

**Female.** Similar to male, but differing as follows: gena narrower, approximately 0.4 of eye height.

**Female postabdomen.** Tergites 6–7 present, weakly sclerotized; sternite 7 nearly triangular with some transparent setulae, bearing anterior apodeme; spiracle 6 on tergite 6; spiracle 7 in membrane anterior to tergite 7.

**Etymology.** This name is taken from the country, Nepal, where the type specimens were collected; an adjective.

**Host.** Unknown.

**Distribution.** Nepal.

***Siphona (Aphantorhaphopsis) orientalis* (Townsend, 1926)**

(Figs 63–66)

*Aphantorhaphopsis orientalis* Townsend, 1926: 35. Type locality: Indonesia, Sumatra.

*Ceromya orientalis*: CROSSKEY (1976: 213), CROSSKEY (1977: 645).

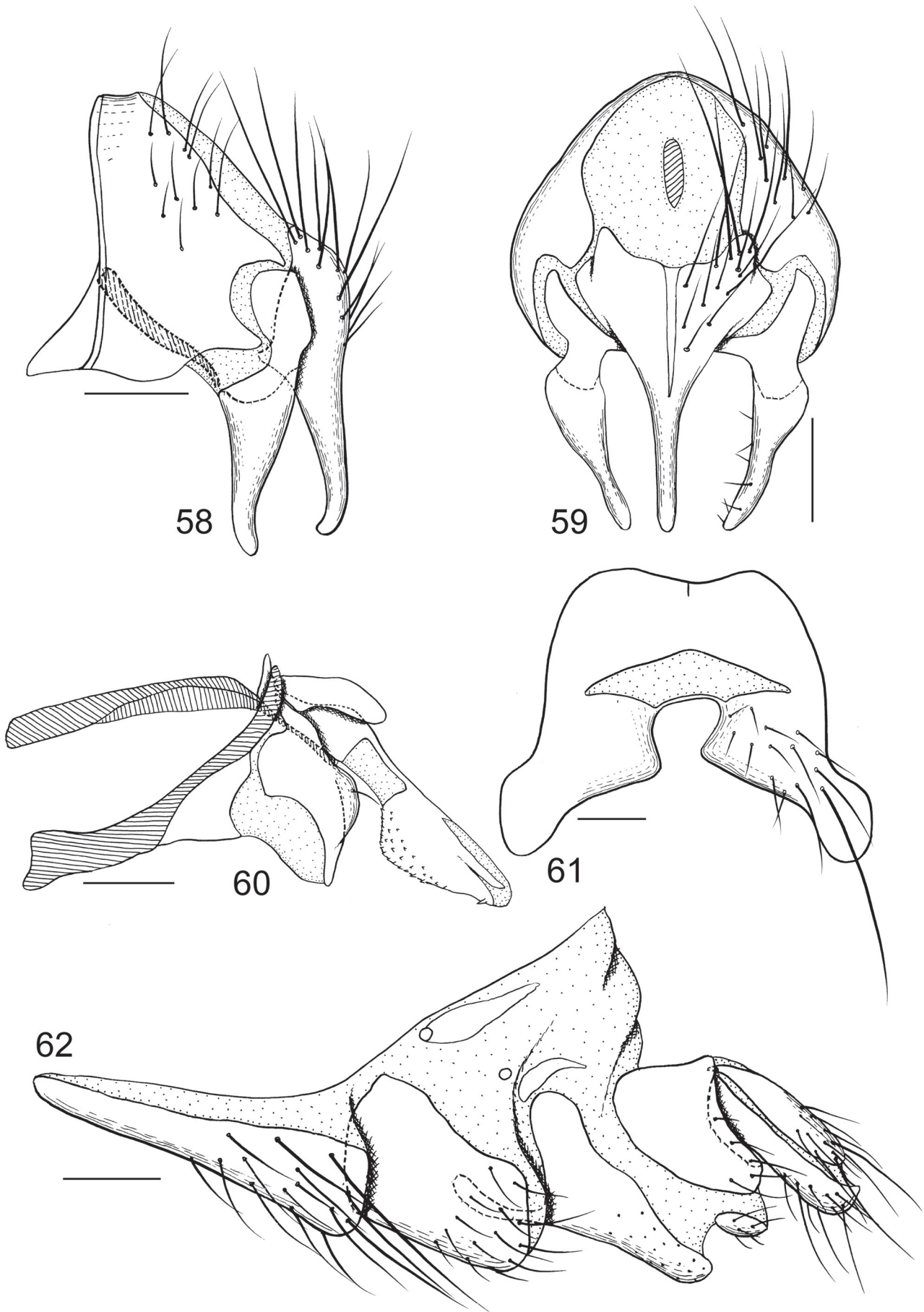
*Siphona (Aphantorhaphopsis) orientalis*: O'HARA (1989: 96), O'HARA et al. (2020: 799).

**Type material examined.** HOLOTYPE: ♂ (ZMU), Fort de Kock / (Sumatra) 920 M. / 1925 / leg. E. Jacobson.

**Additional material examined.** TAIWAN: TAIPEI-HS.: 1 ♂, Yehliu beach, Wanli-hsiang, 27.xi.1997, M. Sueyoshi; 2 ♂♂ 1 ♀, Fushan (400–600 m), Wulai-hsiang, 28.xi.1997 (Malaise trap), K. Masunaga, K. Yoshizawa & T. Saigusa. NANTO-HS.: 1 ♀, Tungyenchi (950 m), Meichi, Jenai-hsiang, 19.xi.1997, T. Saigusa; 1 ♂, Lienhauchi, 500–550 m, 28.iv.1981, H. Takemoto; 1 ♀, Nanshanchi 600 m, 22–23.iv.1981, H. Takemoto; 1 ♀, Meifeng-tsuigeng 2200–2300 m, 27.iv.1981, K. Ohara (all in KUM).

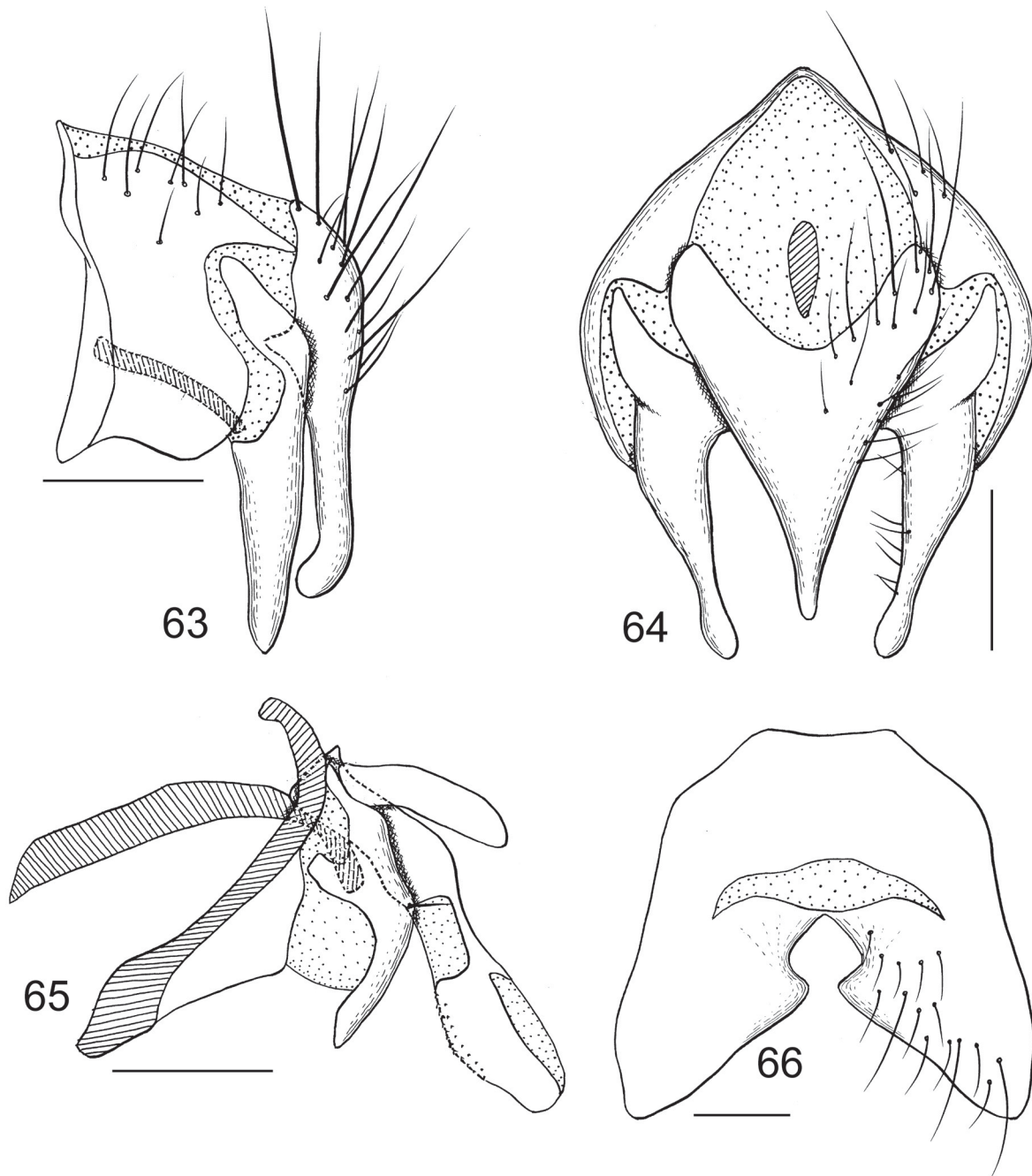
**Diagnosis.** Fronto-orbital plate with yellowish pruinosity, bearing a row of short setae on lower part; frontal vitta orange or light yellow; 3 postsutural dorsocentral setae; male postabdomen with surstylus nearly straight and tapered to apex in lateral view.

Taiwanese specimens examined in this study correspond well to the type of *Aphantorhaphopsis orientalis*, and thus we treat them as conspecific. This species is similar to *S. (A.) matsumotoi* sp. nov. in general appearance



Figs 58–62. Male and female postabdomen of *Siphona* (*Aphantorhaphopsis*) *nepalensis* sp. nov. (paratypes, Nepal). 58 – epandrium, cerci and surstylus in lateral view; 59 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 60 – hypandrium, pregonite, postgonite and phallus in lateral view; 61 – fifth abdominal sternite in ventral view (setae omitted on left side); 62 – female postabdomen in lateral view. Scale bars = 0.1 mm.





Figs 63–66. Male postabdomen of *Siphona (Aphantorhaphopsis) orientalis* (Townsend, 1926) (Taiwan, Taipei). 63 – epandrium, cerci and surstylus in lateral view; 64 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 65 – hypandrium, pregonite, postgonite and phallus in lateral view; 66 – fifth abdominal sternite in ventral view (setae omitted on left side). Scale bars = 0.1 mm.

but differs from it in the male postabdomen: surstylus nearly straight and tapered in lateral view; cerci somewhat thickened in apical half in lateral view; pregonite with one short dorsal seta.

**Redescription. Male.** Body length 3.6–4.0 mm. *Head* whitish in ground color; fronto-orbital plate with yellowish pruinosity; frontal vitta orange; antenna with scape, pedicel, and basal half of arista reddish yellow; postpedicel brownish; apical half of arista blackish; palpus pale yellow. Vertex approximately 0.32 of head width; parafacial narrower than width of 2nd aristomere at middle height; gena 0.16–0.20 of eye height; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate; fronto-orbital plate with a row of short setae; antenna with

postpedicel subrectangular, approximately 2.7 times as long as wide, and approximately 4 times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened in basal 1/3; palpus somewhat clavate; prementum approximately 4 times as wide and 0.4–0.5 times as long as eye height; labella pad-like.

*Thorax.* Dorsum gray in ground color, with yellowish pruinosity; postpronotal lobe with whitish pruinosity; apical half of scutellum yellowish; pleura brownish, with whitish gray pruinosity. Three presutural and 3 postsutural dorsocentral setae.

*Wing.* Tegula blackish; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 2 : 10.5 : 5; ultimate section of  $M_4$  approximately 0.36 times

as long as penultimate section, and 1.0–1.2 times as long as crossvein dm-m;  $R_1$  bare.

*Legs* yellow in ground color. Fore tibia with 4–5 anterodorsal, 3–4 posterodorsal, and 1 posterior setae; hind tibia with 3 anterodorsal, 3 posterodorsal, and 3 ventral setae.

*Abdomen* yellowish in ground color, with whitish pruinosity on anterior 1/5–1/6 on each tergite; tergites 3–5 with black median longitudinal vitta; posterior half of tergites 4–5 blackish. Syntergite 1+2 with a pair of lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of relatively rounded median lobes on inner edge.

*Male postabdomen.* Surstylus nearly straight and tapered to apex in lateral view; cerci somewhat thickened in apical half in lateral view, apex strongly curved ventrally and rounded; pregonite somewhat pointed ventrally in lateral view, with one short dorsal seta; postgonite rounded apically; epiphallus absent; distiphallus mostly sclerotized in lateral view with some spinules ventrally.

*Female.* Differing from male as follows: gena slightly narrow, approximately 0.15 of eye height; antenna with postpedicel slender, approximately 3 times as long as wide.

**Host.** Unknown.

**Distribution.** Indonesia (Sumatra), Taiwan (Nanto, Taipei)\* (O'HARA et al. 2020).

### *Siphona (Aphantorhaphopsis): species incertae sedis*

#### *Siphona (Aphantorhaphopsis) angustifrons* (Malloch, 1930)

*Actia angustifrons* Malloch, 1930: 131. Type locality: Malaysia, Kedah Peak.

*Ceromya angustifrons*: CROSSKEY (1976: 212), CROSSKEY (1977: 644).

*Siphona (Aphantorhaphopsis) angustifrons*: O'HARA (1989: 96), O'HARA et al. (2020: 798).

**Type material examined.** HOLOTYPE: ♂ (NHMUK), MALAY PENIN. / KEDAH PEAK / 3300 ft. / 11th March 1928.

**Additional material examined.** TAIWAN: KAOHSIUNG: 1 ♀ (BLKU), Hungshuichi 500 m, Liukuei-hsiang, 22.x.1997, T. Saigusa.

**Diagnosis.** Vertex narrow, approximately 0.17 of head width; arista somewhat long pubescent; labella pad-like; 3 postsutural dorsocentral setae; abdomen pale yellowish.

This species is distinct from other species of *Aphantorhaphopsis* by narrow vertex and rather long pubescent arista. Since the male postabdomen of this species is unavailable, we treat it here as incertae sedis.

**Redescription.** Body length 4.2–5.0 mm. *Male.* *Head* pale yellowish in ground color with white pruinosity; frontal vitta pale yellowish; antenna with scape and pedicel yellowish, base of postpedicel narrowly reddish yellow, other portion pale brown; palpus yellowish white. Vertex approximately 0.17 of head width; parafacial narrow, approximately 1/4 as wide as postpedicel at middle height; gena approximately 0.16 of eye height; ocellar setae very fine, hair-like; 3 frontal setae; 2 reclinate orbital setae, anterior seta slightly longer than posterior seta; antenna with postpedicel long and narrow, approximately 3.5 times as long as wide and approximately 4 times as long as pedicel; 2nd aristomere at most as long as wide; 3rd aristomere thickened in basal 1/4, rather long pubescent;

labella pad-like.

*Thorax.* Brown in ground color, posterior margin of scutellum and pleura paler; dorsum densely brownish pruinose. Three presutural and 3 postsutural dorsocentral setae.

*Wing.* Tegula dark brown; basicosta pale brown; wing weakly tinged with pale brown anteriorly. Relative lengths of costal sectors two, three, and four approximately 1.5 : 8 : 3.5; ultimate section of  $M_4$  subequal in length to crossvein dm-m;  $R_1$  bare.

*Legs* yellow in ground color; tarsi blackish. Fore tibia with 1 posterior seta; claws slightly shorter than length of tarsomere 5.

*Abdomen* pale reddish yellowish, brown to dark brownish on tergites 4–5 in ground color; thinly pale yellowish white pruinosity on anterior 1/7–1/8 of tergites 3–4 and anterior 1/2 of tergite 5. Syntergite 1+2 without lateral marginal setae; tergite 3 with pair of lateral and median marginal setae.

*Female.* Differing from male as follows: vertex approximately 0.15 of head width; postpedicel very slender, approximately 4.5 times as long as wide, and approximately 5 times as long as pedicel.

**Host.** Unknown.

**Distribution.** Malaysia (Kedah Peak) (MALLOCH 1930, O'HARA et al. (2020), Taiwan\*.

#### *Siphona (Aphantorhaphopsis) apicisetosa* sp. nov.

(Figs 67–71, 97)

**Type material.** HOLOTYPE: ♂ (BLKU), HOKKAIDO / Mt. Rausu / (200–900 m.) // 4.VIII.1967 / T. Saigusa. PARATYPES. JAPAN: HONSHU: 1 ♀, Mt. Kitadake, Yamanashi Prefecture, 28.viii.1980, T. Goto; 1 ♂, no locality, 2.vi.1975, T. Saigusa (both in KUM).

**Diagnosis.** Vein  $R_1$  with 1–3 setae dorsally on apical portion; labella pad-like; abdomen gray in ground color; 4 postsutural dorsocentral setae.

This species is similar to *S. (A.) hongkongensis* sp. nov., but differs from it in the male postabdomen: surstylus nearly straight in lateral view; cerci curved dorsally in middle in lateral view; postgonite truncated apically; epiphallus present. The male surstylus and pregonite are bare, and the female abdominal tergite 8 is not fused in this species. These characteristics are not found in any species group.

**Description.** Body length 4.5–4.7 mm. *Male.* *Head* yellowish in ground color; fronto-orbital plate with golden pruinosity; frontal vitta orange; antenna with scape and pedicel orange; postpedicel brownish; arista dark brown; palpus orange. Vertex approximately 0.4 of head width; parafacial approximately twice as wide as length of 2nd aristomere at middle height; gena approximately 0.18 of eye height; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate; antenna with postpedicel suboval, approximately 1.4 times as long as wide, and approximately 5 times as long as pedicel; 2nd aristomere approximately 4 times as long as wide; 3rd aristomere thickened in basal half; palpus clavate; prementum approximately 3 times as long as wide and approximately 0.43 times as long as eye height; labella pad-like.

*Thorax.* Dorsum gray in ground color, with yellowish pruinosity; postpronotal lobe with whitish pruinosity;

pleura brown, with whitish-gray pruinosity. Three presutural and 4 postsutural dorsocentral setae; scutellum with pair of discal setae.

**Wing.** Tegula reddish brown to brown; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 6 : 3.5; ultimate section of  $M_4$  approximately 0.5 times as long as penultimate section, and approximately 1.5 times as long as crossvein dm-m;  $R_1$  with 1–3 setulae dorsally on apical portion, bare ventrally;  $M_4$  bare.

**Legs** yellowish in ground color; tarsi blackish. Fore tibia with 2–3 anterodorsal, 3–4 posterodorsal, and 1 posterior setae; hind tibia with 3–5 anterodorsal, 2 posterodorsal, and 3 ventral setae.

**Abdomen** gray in ground color, clothed with whitish gray pruinosity. Syntergite 1+2 with pair of lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of elongate median lobes on inner edge.

**Male postabdomen.** Surstylus nearly straight and slightly narrowed apically in lateral view, apex slightly curved dorsally; cerci curved dorsally in middle in lateral view, apex somewhat pointed and curved ventrally; pregonite narrowed in apical half in lateral view, without seta; postgonite weakly curved ventrally and truncated apically; epiphallus present, slightly curved posteriorly and pointed apically; distiphallus broadly sclerotized in lateral view with some spinules ventrally.

**Female.** Differing from male as follows: antenna with postpedicel slender, approximately 2.5 as long as wide.

**Female postabdomen.** Tergite 6 elongate, weakly sclerotized; sternite 6 nearly square with some transparent setae; tergite 7 small, weakly sclerotized; sternite 7 with long anterior apodeme; spiracle 6 present on tergite 6; spiracle 7 in membrane anterior to tergite 7.

**Etymology.** This specific name is based on one of the features,  $R_1$  with 1–3 setae dorsally on the apical part; an adjective.

**Host.** Unknown.

**Distribution.** Japan (Hokkaido, Honshu).

### *Siphona (Aphantorhaphopsis) curvata* sp. nov.

(Figs 72–75)

**Type material.** HOLOTYPE: ♂ (SMNH), MALAYSIA, Pahang / Cameron Highlands / Gunung Jasar / Malaisetrapp, 1700 m / 24–27.xi.1994, T.Pape. PARATYPE: MALAYSIA: PAHANG: 1 ♂ (SMNH), same data as holotype.

**Diagnosis.** Vein  $R_1$  setulose dorsally on apical half; prementum and labella elongate; 4 postsutural dorsocentral setae.

This species is very similar to *S. (A.) crassulata* in general appearance but is easily distinguished from it in having 4 postsutural dorsocentral setae and setae on apical half on the dorsal part of wing vein  $R_1$ .

The male pregonite and surstylus of this species do not have the setae, and the characteristics of the *S. perispoliata* group are absent. Therefore, it is classified as incertae sedis.

**Description.** Body length 3.3–3.5 mm. **Male.** **Head** whitish in ground color; fronto-orbital plate brownish; frontal vitta reddish brown; antenna with scape and pedicel orange;

postpedicel dark brown to blackish; basal half of arista light brown, blackish in apical half; palpus orange. Vertex approximately 0.29 of head width; parafacial subequal to or slightly narrower than width of 2nd aristomere at middle height; gena approximately 0.12 of eye height; anterior reclinate orbital seta situated slightly posterior to middle of fronto-orbital plate; fronto-orbital plate with 4 fine setae; antenna with postpedicel subrectangular, approximately 2.7 times as long as wide, and approximately 5 times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened on basal 2/5–1/2; palpus clavate; prementum 4–5 times as long as wide; labella somewhat elongate, approximately 0.8 times as long as prementum.

**Thorax.** Dorsum gray in ground color, with yellowish pruinosity; postpronotal lobe with whitish-gray pruinosity; apical 1/3 of scutellum yellowish; pleura brownish, with grayish pruinosity. Three presutural and 4 postsutural dorsocentral setae.

**Wing.** Tegula black; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 5 : 2; ultimate section of  $M_4$  approximately 0.35 times as long as penultimate section, and approximately 1.3 times as long as crossvein dm-m;  $R_1$  setulose dorsally on apical half, bare ventrally.

**Legs** light yellow in ground color. Fore tibia with 3–4 anterodorsal, 3 posterodorsal, and 1 posterior setae; hind tibia with 3–5 anterodorsal, 3 posterodorsal, and 3–5 ventral setae.

**Abdomen** yellow in ground color, almost without pruinosity; posterior half of tergites 3–5 with blackish band. Syntergite 1+2 without lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of elongated median lobes on inner edge.

**Male postabdomen.** Surstylus narrowed in apical half in lateral view, apex somewhat pointed; cerci narrowed and pointed apically in lateral view; pregonite broadly sclerotized in lateral view and rounded apically, without seta; postgonite rounded apically; epiphallus present; phallus strongly curved ventrally in middle in lateral view; distiphallus broadly sclerotized in lateral view with some spinules ventrally.

**Female.** Unknown.

**Etymology.** This name is taken from the curved phallus; an adjective.

**Host.** Unknown.

**Distribution.** Malaysia (Pahang).

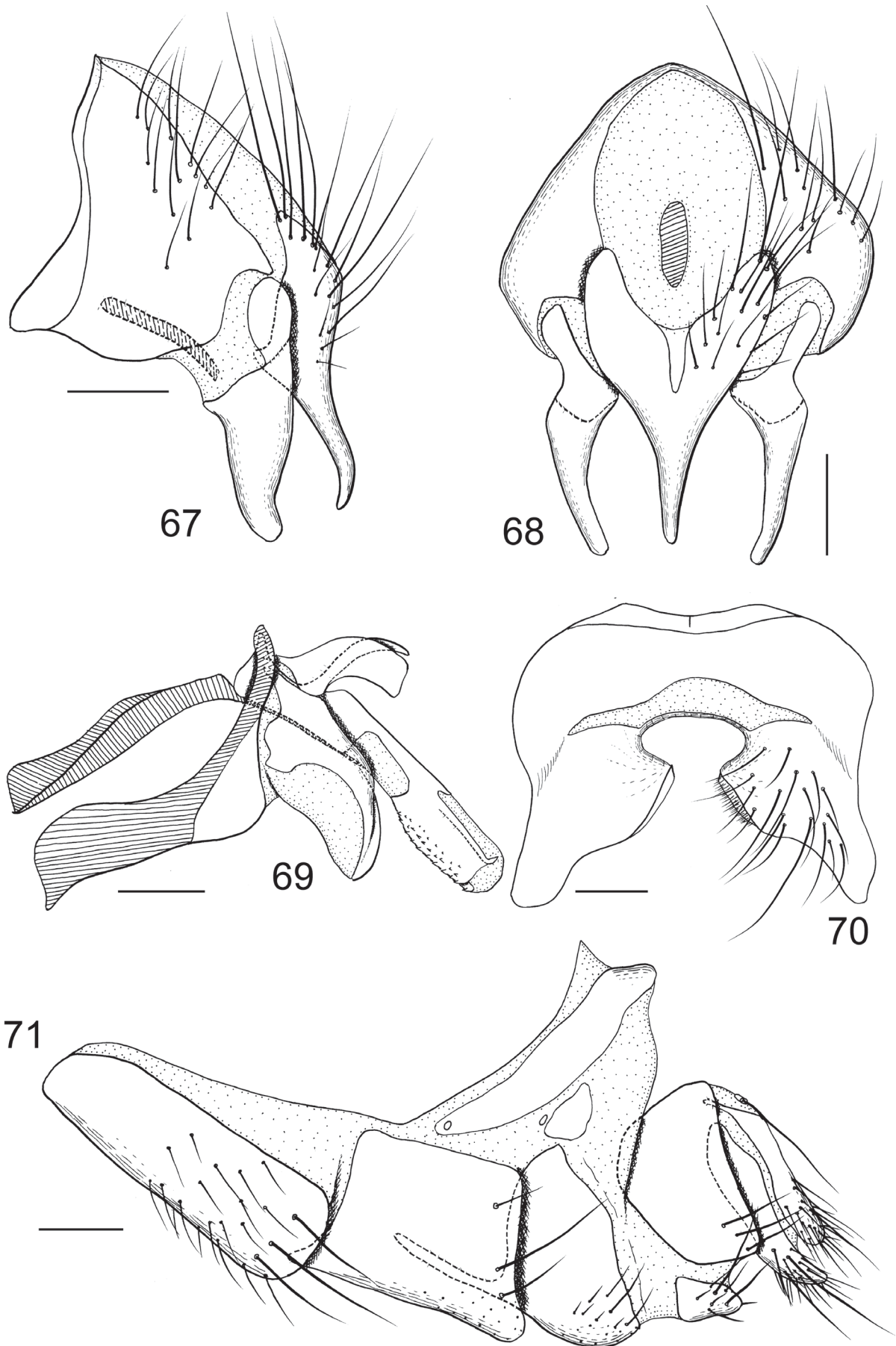
### *Siphona (Aphantorhaphopsis) hongkongensis* sp. nov.

(Figs 76–80, 98)

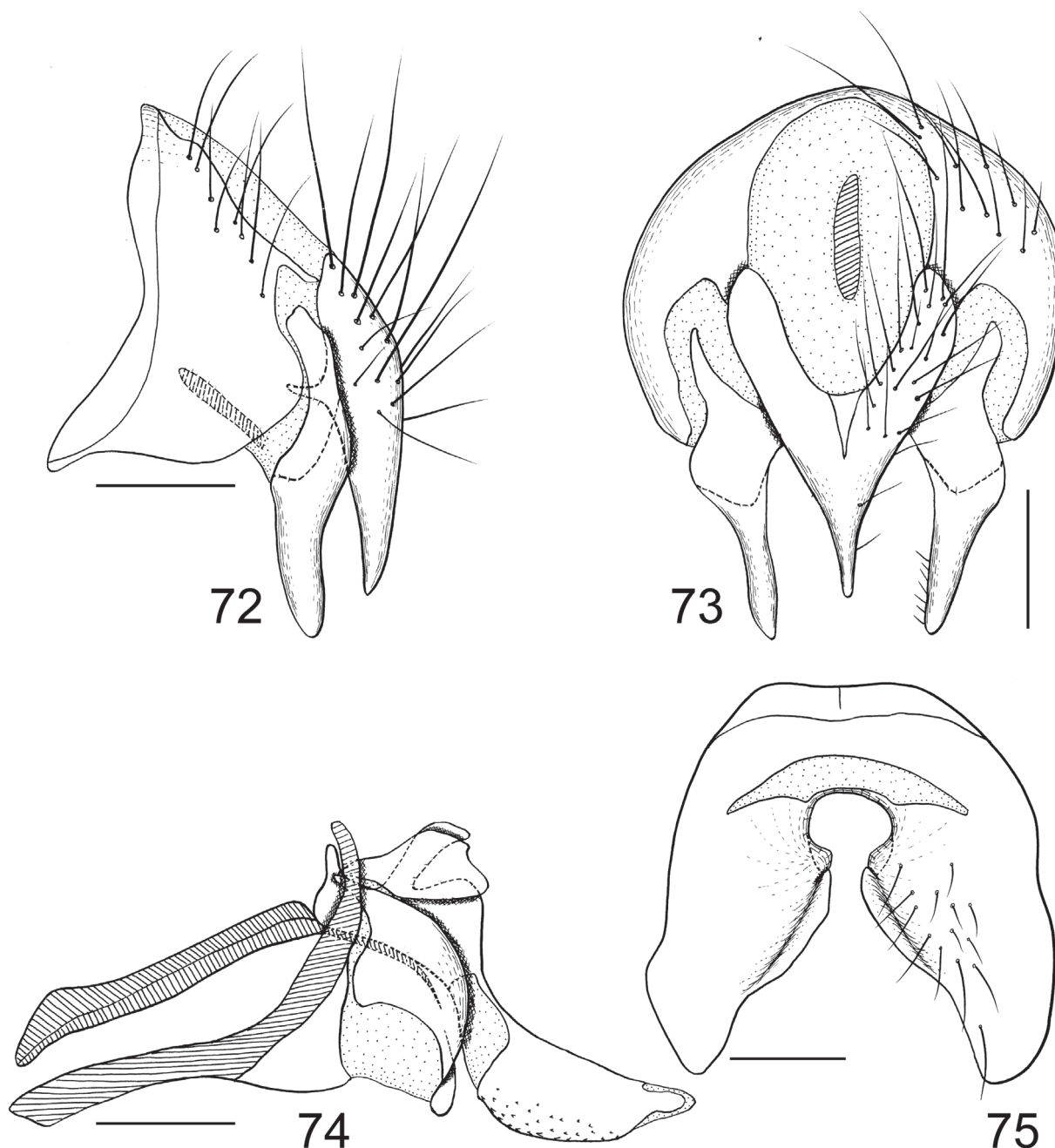
**Type material.** HOLOTYPE: ♂ (BPBM), HONG KONG: N.T. / Taipokau, Kowloon / 8.VI.1965 / Malaise trap // Lee Kit Ming / & Hui Wai Ming / Malaise Trap / BISHOP MUSEUM. PARATYPES: CHINA: HONG KONG: 5 ♂♂ 2 ♀♀, same locality as holotype, 14.iv., 31.v., 5.vi., 5.vii., 3, 6.viii., 13.ix., 1965. LAOS: 2 ♂♂, Ban Van Eue, Vientiane Province, 10–11. iv.1965, 15.iii.1966 (all in BPBM).

**Diagnosis.** Vein  $R_1$  setulose dorsally on apical half; labella pad-like; 4 postsutural dorsocentral setae.

This species is similar to *S. (A.) apicisetosa* sp. nov., but is easily distinguished from it by the following characters:



Figs 67–71. Male and female postabdomen of *Siphona* (*Aphantorhaphopsis*) *apicisetosa* sp. nov. (paratypes, Japan, Hokkaido). 67 – epandrium, cerci and surstylus in lateral view; 68 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 69 – hypandrium, pregonite, postgonite and phallus in lateral view; 70 – fifth abdominal sternite in ventral view (setae omitted on left side); 71 – female postabdomen in lateral view. Scale bars = 0.1 mm.



Figs 72–75. Male postabdomen of *Siphona (Aphantorhaphopsis) curvata* sp. nov. (paratype, Malaysia, Pahang). 72 – epandrium, cerci and surstylus in lateral view; 73 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 74 – hypandrium, pregonite, postgonite and phallus in lateral view; 75 – fifth abdominal sternite in ventral view (setae omitted on left side). Scale bars = 0.1 mm.

vertex narrow; 2nd aristomere approximately twice as long as wide; ultimate section of  $M_4$  subequal in length to crossvein dm-m.

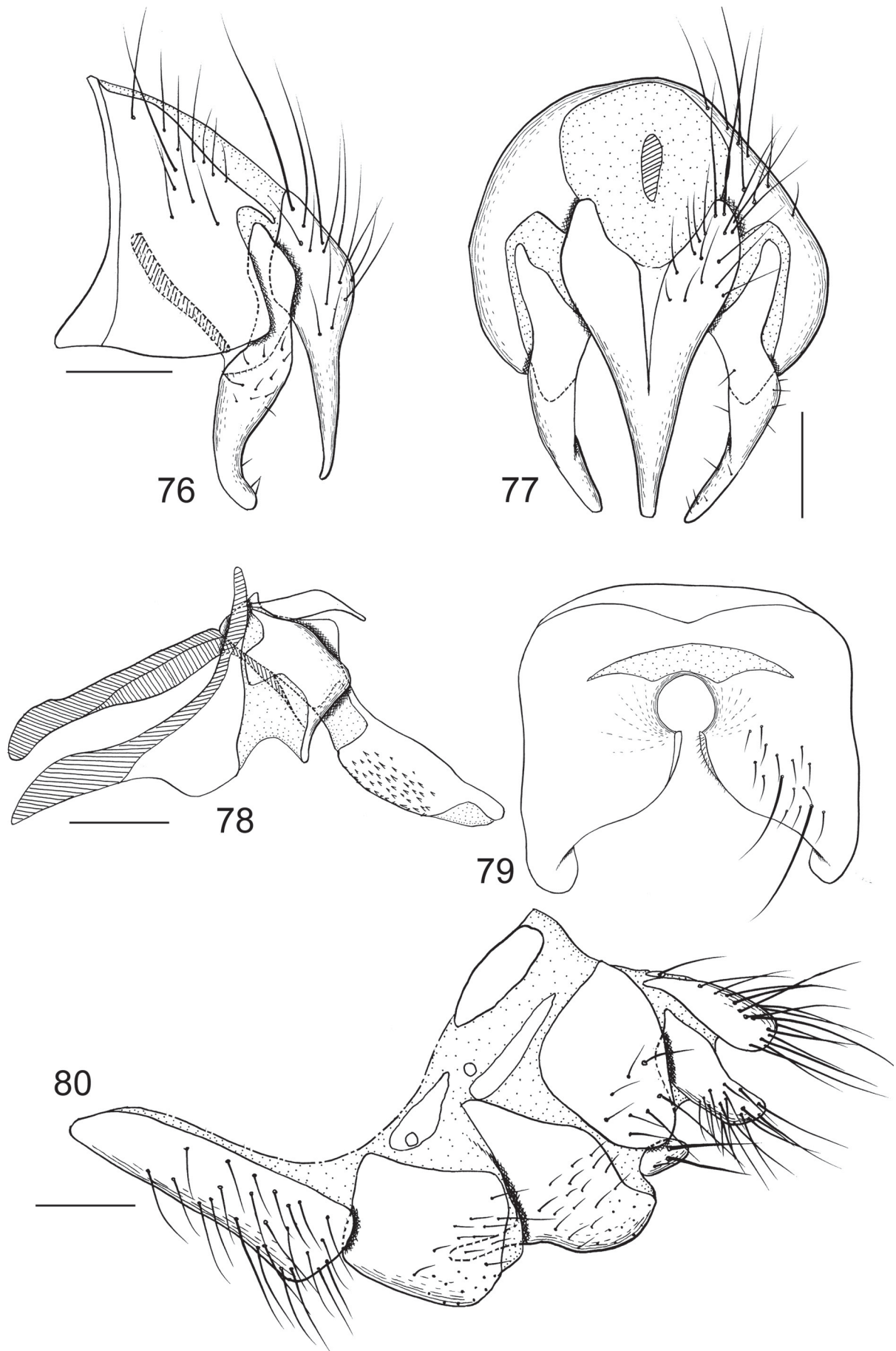
This species lacks certain traits commonly found in the aforementioned species groups such as shining black abdomen (*S. perispoliata* group), a seta on the male pregonite (*selecta* group), and long setae on the inner side of the surstylus (*S. siphonoides* group).

**Description.** Body length 2.8–4.1 mm. **Male.** Head whitish in ground color; frontal vitta reddish orange; fronto-orbital plate with yellowish pruinosity; antenna with scape and pedicel reddish orange; postpedicel and arista brownish; palpus orange. Vertex approximately 0.3 of head width; parafacial subequal in width to length of 2nd aristomere

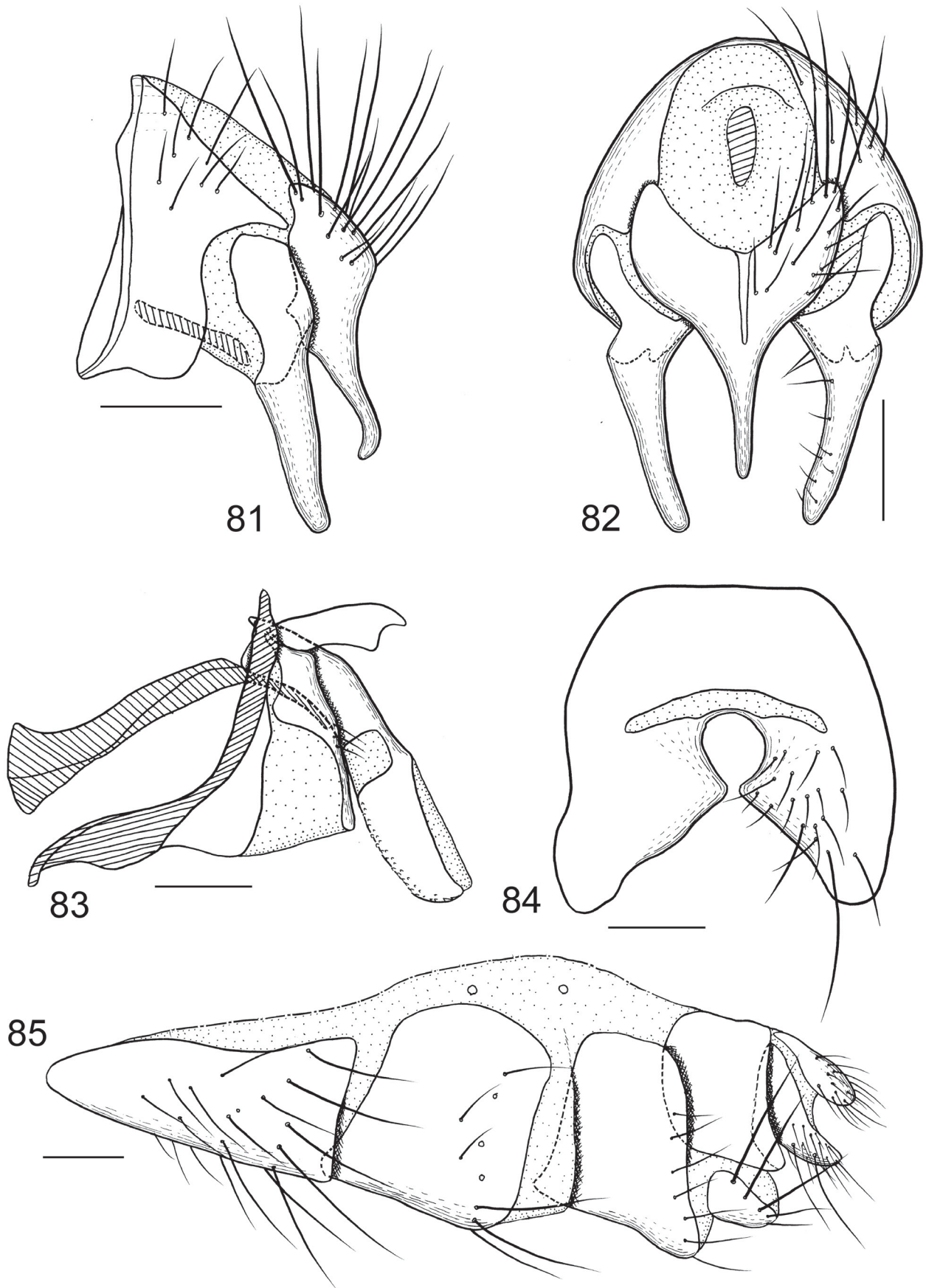
at middle height; gena 0.16–0.18 of eye height; anterior reclinate orbital seta situated nearly in middle of fronto-orbital plate; antenna with postpedicel suboval, approximately twice as long as wide, and 4.0–4.3 times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened in basal 1/4 and tapered to apex, with short pubescence; palpus clavate; prementum approximately 3 times as long as wide and approximately 0.38 times as long as eye height; labella pad-like.

**Thorax.** Dorsum and pleura light gray, with yellowish pruinosity. Three presutural and 4 postsutural dorsocentral setae.

**Wing.** Tegula blackish; basicosta orange. Relative lengths of costal sectors two, three, and four approximately 2 : 9 : 4; ultimate section of  $M_4$  approximately 0.38 times



Figs 76–80. Male and female postabdomen of *Siphona* (*Aphantorhaphopsis*) *hongkongensis* sp. nov. (paratypes, Hong Kong). 76 – epandrium, cerci and surstylus in lateral view; 77 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 78 – hypandrium, pregonite, postgonite and phallus in lateral view. 79 – fifth abdominal sternite in ventral view (setae omitted on left side); 80 – female postabdomen in lateral view. Scale bars = 0.1 mm.



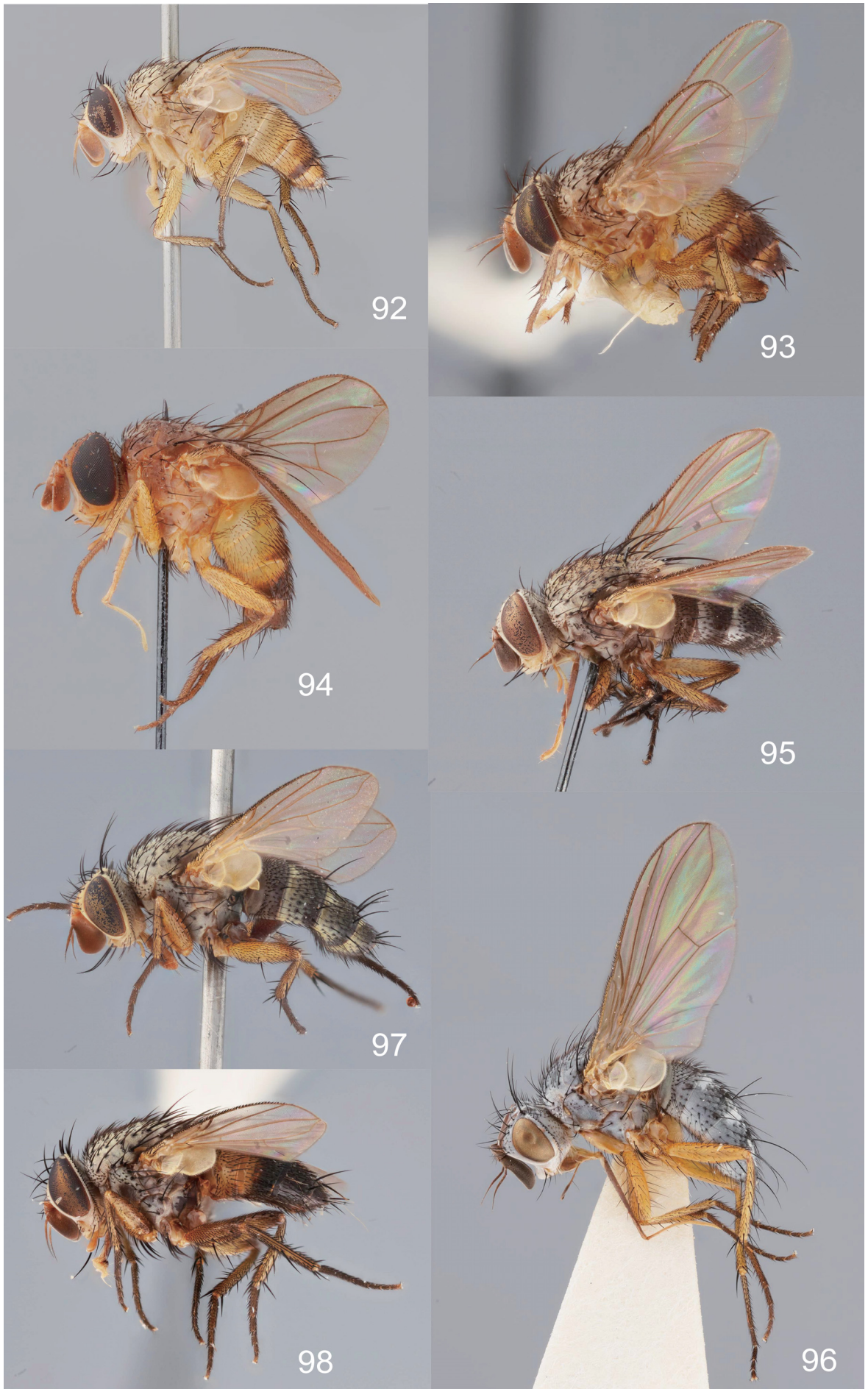
Figs 81–85. Male and female postabdomen of *Siphona (Aphantorhaphopsis) seminigra* sp. nov. (paratypes, Malaysia, Pahang). 81 – epandrium, cerci and surstylus in lateral view; 82 – epandrium, cerci and surstylus in dorsal view (setae omitted on left side); 83 – hypandrium, pregonite, postgonite and phallus in lateral view; 84 – fifth abdominal sternite in ventral view (setae omitted on left side); 85 – female postabdomen in lateral view. Scale bars = 0.1 mm.



Figs 86–91. Adult male habitus of *Siphona* (*Aphantorhaphopsis*) spp. 86 – *Siphona* (*Aphantorhaphopsis*) *expleta* sp. nov. (paratype, Philippines); 87 – *S.* (*A.*) *perispoliata* (Mesnil, 1953) (Hong Kong); 88 – *S.* (*A.*) *coactilis* sp. nov. (holotype, Malaysia); 89 – *S.* (*A.*) *kanmiyai* sp. nov. (holotype, Taiwan); 90 – *S.* (*A.*) *laboriosa* Mesnil, 1957 (Myanmar); 91 – *S.* (*A.*) *matsumotoi* sp. nov. (holotype, Japan).

Figs 92–97. Adult male habitus of *Siphona* (*Aphantorhaphopsis*) spp. 92 – *S.* (*A.*) *samarensis* (Villeneuve, 1921) (Japan); 93 – *S.* (*A.*) *selangor* (Malloch, 1930) (Hong Kong); 94 – *S.* (*A.*) *alticola* (Mesnil, 1953) (Myanmar); 95 – *S.* (*A.*) *crassulata* (Mesnil, 1953) (Myanmar); 96 – *S.* (*A.*) *nepalensis* sp. nov. (holotype, Nepal); 97 – *S.* (*A.*) *apicisetosa* sp. nov. (holotype, Japan); 98 – *S.* (*A.*) *hongkongensis* sp. nov. (holotype, Hong Kong).





as long as penultimate section, and subequal in length to crossvein dm-m;  $R_1$  setulose dorsally on apical half, bare ventrally.

**Legs** orange in ground color; tarsi blackish. Fore tibia with 4 anterodorsal, 3–4 posterodorsal, and 1 posterior setae; hind tibia with 4–5 anterodorsal, 3–5 posterodorsal, and 3–4 ventral setae.

**Abdomen.** Syntergite 1+2 and anterior 1/3–1/2 of tergite 3 yellowish; posterior 1/2–2/3 of tergite 3 and entire length of tergites 4–5 blackish; anterior 1/5 of tergite 3 and anterior half of tergites 4–5 with whitish gray pruinosity; tergites 3–5 with black longitudinal vitta. Syntergite 1+2 without distinct lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of elongated median lobes on inner edge; apical lobes slightly extended posteriorly.

**Male postabdomen.** Surstylus strongly curved dorsally in apical 1/3 in lateral view, apex pointed; cerci tapered and pointed apically in lateral view; pregonite broadly sclerotized in lateral view and pointed apically, without seta; postgonite greatly narrowed, pointed apically; epiphallus absent; distiphallus mostly sclerotized in lateral view with many setae ventrally, apex with membranous area ventrally.

**Female.** Similar to male but differing as follows: gena 0.14–0.16 of eye height; antenna with postpedicel slender, 2.3–2.6 times as long as wide.

**Female postabdomen.** Tergite 6 divided into two small weakly sclerotized hemitergites; sternite 6 nearly square with some transparent setae on posteroventral portion; tergite 7 reduced to tall, weakly sclerotized hemitergites; sternite 7 nearly fan-shaped with some transparent setae on posteroventral portion with an anterior apodeme; spiracle 6 on tergite 6; spiracle 7 in membrane anterior to tergite 7.

**Etymology.** This species is named after the type locality, Hong Kong; an adjective.

**Host.** Unknown.

**Distribution.** China (Hong Kong), Laos.

### *Siphona (Aphantorhaphopsis) seminigra* sp. nov.

(Figs 81–85)

**Type material.** HOLOTYPE: ♂ (SMNH), MALAYSIA, Pahang / Cameron Highlands / Gunung Jasar / Malaisetrapp, 1700 m / 24–27.xi.1994, T.Pape. PARATYPES: MALAYSIA: PAHANG: 3 ♀♀ (SMNH), same locality as holotype, 20–23, 24–27.xi.1994.

**Diagnosis.** Vein  $R_1$  setulose dorsally on apical half; labella pad-like; 3 postsutural dorsocentral setae; abdomen almost without pruinosity.

This species is similar to *S. (A.) samarensis* but is easily distinguished from it by the following characters: vertex approximately 0.33 of head width; gena approximately 0.2 of eye height; ultimate section of  $M_4$  approximately 1.3 times as long as crossvein dm-m.

This species is considered *incertae sedis* because it has a unique character state in the male pregonite bearing 2–3 transparent setae on the dorsal portion.

**Description.** Body length 3.0–3.5 mm. **Male. Head** yellowish in ground color; fronto-orbital plate brownish; frontal vitta reddish brown; antenna with scape and pedicel orange; postpedicel dark brown; arista brown;

palpus orange. Vertex approximately 0.33 of head width; parafacial subequal in width to length of 2nd aristomere at middle height; gena approximately 0.2 of eye height; anterior reclinate orbital seta situated posterior to middle of fronto-orbital plate; fronto-orbital plate with some fine setae; antenna with postpedicel subrectangular, approximately twice as long as wide, and approximately 4.5 times as long as pedicel; 2nd aristomere approximately twice as long as wide; 3rd aristomere thickened in basal 1/2; palpus clavate; labella pad-like.

**Thorax.** Dorsum gray in ground color, with yellowish pruinosity; postpronotal lobe with whitish pruinosity; apical 1/3 of scutellum yellowish; pleura dark brown, with grayish pruinosity. Three presutural and 3 postsutural dorsocentral setae.

**Wing.** Tegula black; basicosta light yellow. Relative lengths of costal sectors two, three, and four approximately 1 : 7 : 4; ultimate section of  $M_4$  approximately 0.4 times as long as penultimate section, and approximately 1.3 times as long as crossvein dm-m;  $R_1$  setulose dorsally on apical half, bare ventrally.

**Legs** yellow in ground color; tarsi blackish. Fore tibia with 3 anterodorsal, 4 posterodorsal, and 1 posterior setae; hind tibia with 4–5 anterodorsal, 3–4 posterodorsal, and 4 ventral setae.

**Abdomen** yellow in ground color, almost without pruinosity; posterior half of tergites 3–5 with blackish band. Syntergite 1+2 without lateral marginal setae; tergite 3 with pair of lateral and median marginal setae; sternite 5 with pair of relatively rounded median lobes on inner edge.

**Male postabdomen.** Surstylus nearly straight in lateral view and longer than cerci; cerci curved dorsally in middle in lateral view, apex strongly curved ventrally; pregonite strongly narrowed in lateral view and rounded apically, with 2–3 weak transparent setae on dorsal part; postgonite slightly broadly notched apically, upper part somewhat pointed apically; epiphallus absent; distiphallus subrectangular in form in lateral view, broadly sclerotized with some spinules ventrally.

**Female.** Similar to male.

**Female postabdomen.** Tergites 6–7 absent; sternite 7 without anterior apodeme.

**Etymology.** This species is named after the blackish band on the posterior half of tergites 3–5; an adjective.

**Host.** Unknown.

**Distribution.** Malaysia (Pahang).

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