



Revision of the genus *Homa* Distant (Hemiptera: Cicadellidae: Typhlocybinae)



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Abstract

The leafhopper genus *Homa* Distant is revised. Four new species, *H. osificata* Xu, Dietrich & Qin **sp. nov.**, *H. oretinia* Xu, Dietrich & Qin **sp. nov.**, *H. asilata* Xu, Dietrich & Qin **sp. nov.**, and *H. algulata* Xu, Dietrich & Qin **sp. nov.**, are described from Thailand. *H. haematoptilus* (Kirkaldy) is redescribed based on specimens from the Oriental Region. All included species are illustrated and a key is provided to separate species for which males are known.

Key words: Auchenorrhyncha, Empoascini, systematics, key, distribution

Introduction

The leafhopper genus *Homa* appears to be widespread and fairly common in the Oriental and tropical parts of the Australian regions. It was erected by Distant in 1908 for a single species, *Homa insignis* Distant, 1908 from Sri Lanka (as Ceylon). Subsequent study of the genus (Dworakowska 1971, 1984, 1993) and Qin *et al.* (2011) has resulted in the inclusion of four valid species: *H. haematoptilus* (Kirkaldy, 1906), *H. katoi* Dworakowska, 1984, *H. rubrodorsata* Kato, 1933 and *H. sinensis* Qin & Zhang, 2011 were previously included in the genus. The type of *H. rubrodorsata* Kato is female and the male genitalia of this species have not been studied. Therefore, its status remains uncertain. Here we provide a revised diagnosis of the genus, add four new species, redescribe *H. haematoptilus* (Kirkaldy, 1906), and provide an identification key to all *Homa* species.

Material and methods

The specimens studied are deposited in the insect collections of the Entomological Museum, Northwest A&F University, Yangling, Shaanxi, China (NWAUFU), Illinois Natural History Survey, Champaign, Illinois (INHS), the Vietnam National Museum of Nature, Hanoi (VNMN) and the Queen Sirikit Botanical Garden, Chiang Mai, Thailand (QSBG). Morphological terminology used in this work follows Xu *et al.* (2021). All of the main diagnostic characters are labeled in the figures and illustrations. Males of multiple *Homa* species that appear identical in external appearance occurred together with females in several of the samples examined from Thailand. Therefore, it was not possible to associate male and female specimens belonging to a single species unambiguously based on morphology and, thus, we do not provide measurement data for females in the treatments of individual species.

Taxonomy

Homa Distant, 1908

Homa Distant, 1908: 400. Type species: *Homa insignis* Distant, 1908 = *Homa haematoptilus* (Kirkaldy, 1906)

Diagnosis. Body white or stramineous, usually with bold symmetrical red markings dorsally. Head including eyes distinctly broader than pronotum in dorsal view (Figs 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 78, 81). Crown slightly longer medially than next to eye, coronal suture short, not extended beyond mid-length of crown (Figs 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 78, 81). Eyes large, as wide as distance between basomedial angles (Figs 3, 7, 11, 15, 19, 78, 81). Ocelli distinct, separated from eyes by less than half of ocellar diameter (Figs 4, 8, 12, 16, 20, 82). Face broad and convex in profile, lateral frontal suture not extended ventromesad of ocelli, anteclypeus strongly swollen and broadened in some species (Figs 4, 8, 12, 16, 20, 82). Forewing narrow, rounded apically, veins R2, RM and MCu dissociated at their base, all arising from m cell. Hind wing with CuA and MP fused for entire length (Figs 21, 22).

Front femur row AV with 1 basal seta distinctly enlarged or setae subequal or gradually decreasing in size distally; AM1 distinctly enlarged. Middle femur with 1 dorsoapical macroseta. Hind tibia row AV with 4 preapical macrosetae.

Male basal abdominal sternal apodemes (1T apodemes) developed, 2S and 3T apodemes absent (Figs 23, 26, 29, 32, 35, 83). Male pygofer elongate, with few rigid microsetae along posterior margin, ventral appendage absent, dorsal bridge well developed (Figs 24, 25, 27, 28, 30, 31, 33, 34, 36, 37, 84, 85). Subgenital plate broadest at base and narrowing apically toward sclerotized and pigmented apex; basal setae densely grouped and stout, blunt-tipped; marginal microsetae rare, along dorsal margin of plate; macrosetae uniseriate, not reaching tip of plate; feeble microsetae present (Figs 24, 27, 30, 33, 36). Style base broad and distinctly bent mesad at point of articulation to plate, terminating in a strong arcuate and abruptly narrowed apical dentifer, dentifer with a few, small teeth, subapically with several setae and few sensory pits (Figs 44, 52, 60, 67, 76). Aedeagal shaft tubular, with or without process(es), dorsoatrium absent. Connective fused with the base of aedeagus (Figs 42, 43, 50, 51, 58, 59, 65, 66, 73–75). Anal tube with basal anterior appendage well developed (Figs 45, 53, 61, 68, 77).

Remarks. *Homa* is unique among known genera of the *Usharia* group (Xu *et al.*, 2021) in having 1T apodemes (Figs 23, 26, 29, 32, 35, 83). This feature is rare in Empoascini, most genera of which have a well-developed 2S apodemes or 3T apodemes. It is similar to *Baguoidea* Mahmood, 1967 in body shape and color, but differs in having forewing veins R2 and RM dissociated at their base (Fig. 21) (confluent for a short distance in *Baguoidea* Mahmood, 1967); and in lacking a pygofer appendage (ventral appendage present in *Baguoidea* Mahmood, 1967).

Distribution. China (Yunnan and Taiwan Provinces), Thailand, Vietnam, Japan, Sri Lanka, Philippines, Malaysia, Australia.

Key to species of the genus *Homa* Distant (males) (excluding *H. rubrodorsata*)

1. Anteclypeus strongly swollen and more broadened in male than in female (Figs 8, 20). 2
- Anteclypeus somewhat swollen but not broadened in male. 3
2. Basal setae of subgenital plate fully truncated apicad (Fig. 72); 1T apodemes developed, divergent posteriorly (Fig. 35).
 *H. algulata* Xu, Dietrich & Qin **sp. nov.**
- Basal setae of subgenital plate not truncated; 1T apodemes parallel posteriorly (Fig. 26)
 *H. osificata* Xu, Dietrich & Qin **sp. nov.**
3. Aedeagus shaft without appendage (Figs 58, 59). *H. oretinia* Xu, Dietrich & Qin **sp. nov.**
- Aedeagus shaft with one or more appendage(s). 4
4. Aedeagus with pair of symmetrical appendages (Figs 65, 66). *H. asilata* Xu, Dietrich & Qin **sp. nov.**
- Aedeagus with asymmetrical appendages 5
5. Aedeagus shaft fairly broad in lateral view (Fig. 42). *H. haematoptilus* (Kirkaldy, 1906)
- Aedeagus shaft slim in lateral view. 6
6. Subgenital plate with lobe bearing basal setal group acutely produced (Fig. 84). *Homa sinensis* Qin & Zhang, 2011
- Subgenital plate with lobe bearing basal setal group right angled. *Homa katoi* Dworakowska, 1984

***Homa haematoptilus* (Kirkaldy, 1906)**

(Figs 1–4, 23–25, 38–45)

Eupteryx haematoptilus Kirkaldy, 1906: 362.

Homa insignis Distant, 1908: 400, synonymized by Dworakowska, 1969.

Cicadella haematoptila, Metcalf, 1968: 685.

Homa haematoptilus, Dworakowska, 1969: 48.

Material examined.

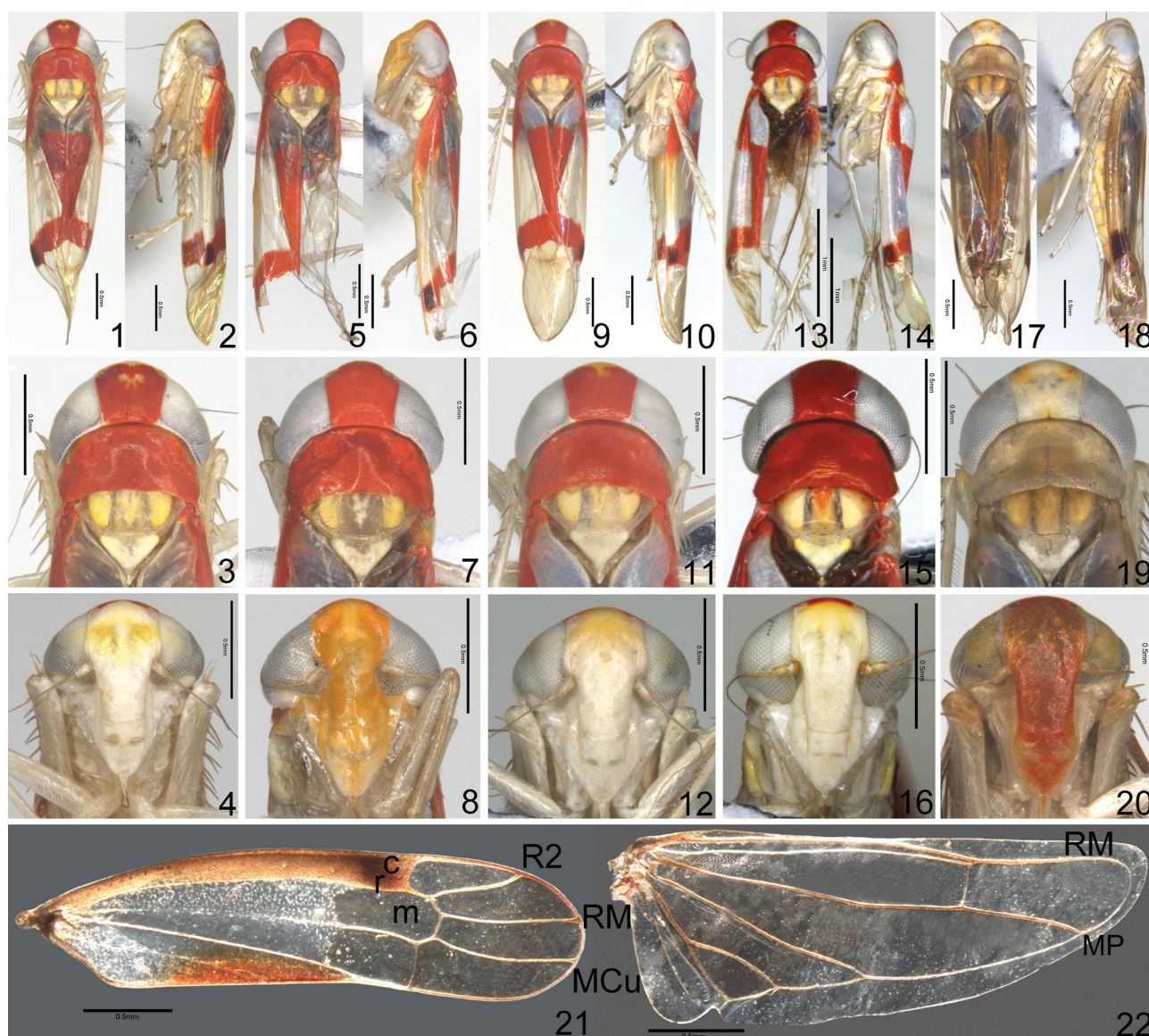
Type material: state details of holotype. unavailable now (mentioned below).

Other materials: 10 ♂♂, Thailand Nakhon Nayok Khao Yai NP Behind Football field, 14°24.619'N101°22.778'E, 770 m, Malaise trap, July 5–12, 2006, Pong Sandao, leg. T142 (INHS, QSBG); 1 ♂, China, Yunnan, Jinghong City, Wild Elephant Valley, April 29–May 4, 2017, Ye Xu (NWAUFU).

Description.

Measurements. Body length: male 3.9–4.1 mm.

Ground color red. Forewing with red transverse band broad, apical 1/3 transparent.

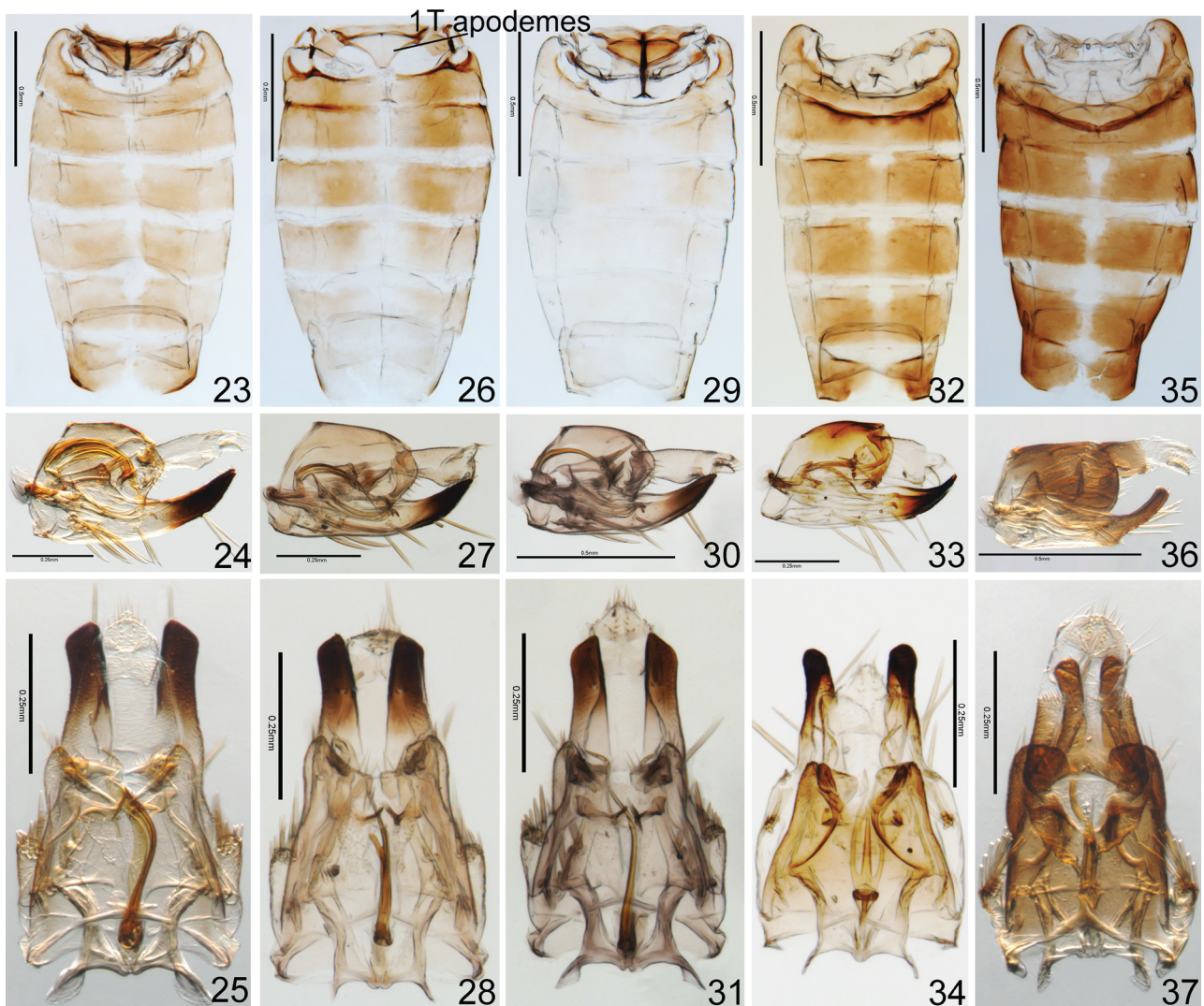


FIGURES 1–22. 1–4: *H. haematoptilus* (Kirkaldy); 5–8: *H. osificata* Xu, Dietrich & Qin **sp. nov.**; 9–12: *H. oretinia* Xu, Dietrich & Qin **sp. nov.**; 13–16: *H. asilata* Xu, Dietrich & Qin **sp. nov.**; 17–22: *H. algulata* Xu, Dietrich & Qin **sp. nov.** 1, 5, 9, 13, 17, male adult, dorsal view; 2, 6, 10, 14, 18, male adult, left lateral view; 3, 7, 11, 15, 19, head and thorax, dorsal view; 4, 8, 12, 16, 20, face; 21, fore wing; 22, hindwing.

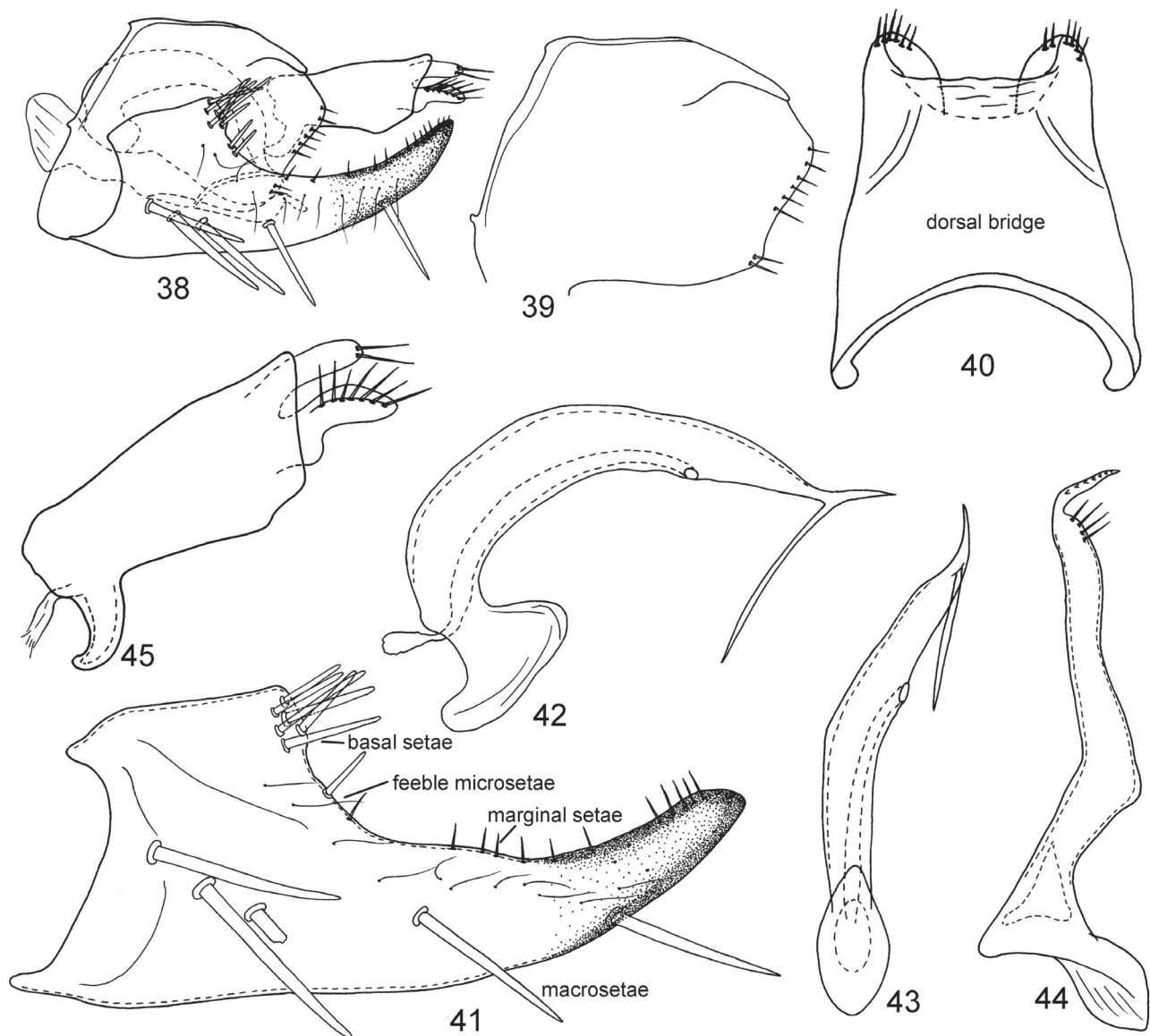
1T apodemes forming almost right triangle, not extended to segment II (Fig. 23). Male pygofer in profile with apex slightly protruded, bearing 8–10 rigid microsetae along posterior margin, dorsal bridge well developed, occupying 4/5 length of pygofer in dorsal aspect (Figs 24, 25, 38–40). Subgenital plate in lateral view gradually curved dorsad apically; basal setae (7–8) situated on broadest section of plate, one or two setae separated from bristle clusters; marginal setae (10–11) arranged in a single row; macrosetae (5) discrete, not extended to tip of plate; feeble microsetae (11–12) inconspicuous, slightly longer than marginal setae (Figs 24, 38, 41). Aedeagus shaft in lateral view tapered distally, with stiff, peg-like process directed basad, gonopore subapical on ventral side (Figs 42, 43). Style broad at base, dentifer distinctly narrower than basal section, with 6–7 tiny teeth and 3–4 short setae (Fig. 44). Anal tube process short, tapered (Fig. 45).

Remarks. *Homa haematoptilus* was described based on a specimen collected from Queensland by Kirkaldy (1906), and it was originally placed in *Eupteryx* Curtis, 1829. However, Dworakowska (1969) transferred *Eupteryx haematoptilus* Kirkaldy, 1906 to *Homa* and synonymized *H. insignis* Distant, 1908 after studying the *Homa* specimens deposited in the British Museum, creating a new combination: *H. haematoptilus* (Kirkaldy, 1906). Unfortunately, the genitalia of *H. insignis* Distant is missing now. Mahmood (1967) redescribed *Homa insignis* Distant, 1908 based on specimens of the male type deposited at the Natural History Museum, London, and illustrated the male genitalia for the first time. The specimens illustrated here were identified based on drawings (Plate 10: 2c, 2e) provided by Mahmood.

Distribution. Ceylon, Australia (Queensland), Philippines, Thailand and China (Yunnan).



FIGURES 23–37. 23–25: *H. haematoptilus* (Kirkaldy); 26–28: *H. osificata* Xu, Dietrich & Qin **sp. nov.**; 29–31: *H. oretinia* Xu, Dietrich & Qin **sp. nov.**; 32–34: *H. asilata* Xu, Dietrich & Qin **sp. nov.**; 35–37: *H. algulata* Xu, Dietrich & Qin **sp. nov.**; 23, 26, 29, 32, 35, abdominal apodemes; 24, 27, 30, 33, 36, male genitalia, left lateral view; 25, 28, 31, 34, 37, male genitalia, dorsal view.



FIGURES 38–45. *H. haematoptilus* (Kirkaldy, 1906): 38, male genitalia, left lateral view; 39, pygofer side, left lateral view; 40, pygofer, dorsal view; 41, subgenital plate; 42, aedeagus, left lateral view; 43, aedeagus, ventral view; 44, style; 45, anal tube appendage, left lateral view. Photos not to scale.

***Homa osificata* Xu, Dietrich & Qin sp. nov.**

(Figs 5–8, 26–28, 46–53)

Holotype. ♂, Thailand Phetchabun Nam Nao NP Heliport, 16°43.156'N, 101°35.118'E, 890 m, Pan trap, December 21–22, 2006, Noopean Hongyothi & Leng Janteab (QSBG). **Paratypes.** 2♂♂, same data as holotype (NWAUFU); 13♂♂, same data as holotype (INHS); 12♂♂, Nakhon Nayok Khao Yai NP Behind Football field, 14°24.619'N, 101°22.778'E, 770 m, Malaise trap, July 5–12, 2006, Pong Sandao (QSBG).

Description.

Measurements. Body length: male: 3.8–4.1 mm.

Ground color red. Anteclypeus slightly broader in male than in female (Fig. 8).

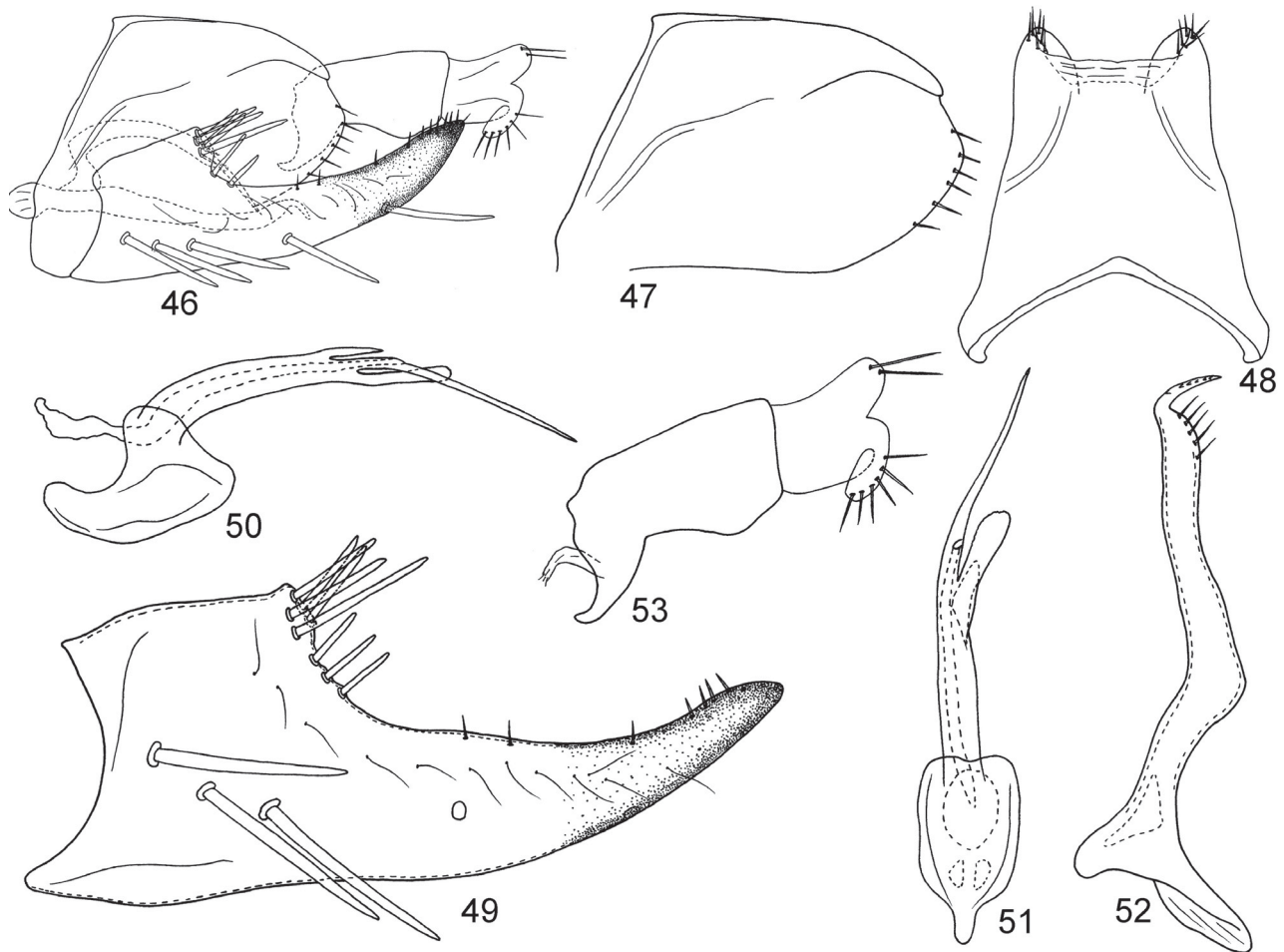
1T apodemes forming arc bending apicad, not extended to segment II (Fig. 26). Male pygofer in profile with apex rounded, bearing 6–7 rigid microsetae along posterior margin, dorsal bridge well developed (Figs 27, 28, 46–48). Subgenital plate far exceeding pygofer lobe, gradually curved toward pygofer ventral margin; basal setae (7–8) situated on broadest section of plate, two or three setae separated from bristle clusters; marginal setae (6–8)

sparse, arranged in single row; macrosetae (5) discrete, not extended to tip of plate; feeble microsetae (10–12) inconspicuous (Figs 27, 46, 49). Aedeagus shaft tubular, with attenuate distal extension and pair of shorter asymmetrical processes subapically, one rounded and longer, other shorter and pointed; gonopore subapical on ventral side (Figs 50, 51). Style bearing 6–7 tiny teeth apically and 5–6 fine setae subapically (Fig. 52). Anal tube process smooth (Fig. 53).

Etymology. The name is an arbitrary combination of letters.

Remarks. This new species is similar to *H. haematoptilus* in having the 1T apodemes not extended to segment II and triangular in shape (Fig. 26). However, *H. osificata* differs from *H. haematoptilus* in having the aedeagus with three distal projections, all extended distad (Fig. 50). The aedeagus *H. haematoptilus* has only two distal projections, one extended ventrad (Fig. 42).

Distribution. Thailand.



FIGURES 46–53. *H. osificata* Xu, Dietrich & Qin **sp. nov.**: 46, male genitalia, left lateral view; 47, pygofer side, left lateral view; 48, pygofer, dorsal view; 49, subgenital plate; 50, aedeagus, left lateral view; 51, aedeagus, ventral view; 52, style; 53, anal tube appendage, left lateral view. Photos not to scale.

Homa oretinia* Xu, Dietrich & Qin **sp. nov.*

(Figs 9–12, 29–31, 54–61)

Holotype. ♂, Thailand Nakhon Nayok Khao Yai NP Behind Football field, 14°24.619'N, 101°22.778'E, 770 m, Malaise trap, July 5–12, 2006, Pong Sandao (QSBG). **Paratypes.** 2♂♂, same data as holotype (NWAUFU); 3♂♂, same data as holotype (INHS); 10♂♂, Thailand Phetchabun Nam Nao NP Heliport, 16°43.156'N, 101°35.118'E, 890 m, Pan trap, July 21–22, 2006, Noopean Hongyothi & Leng Janteab (INHS); 10♂♂, Thailand Phetchabun Nam Nao NP Heliport, 16°43.156'N, 101°35.118'E; 890 m; Pan trap, July 21–22, 2006, Noopean Hongyothi & Leng Janteab (QSBG).

Description

Measurements. Body length: male: 3.8–4.1 mm.

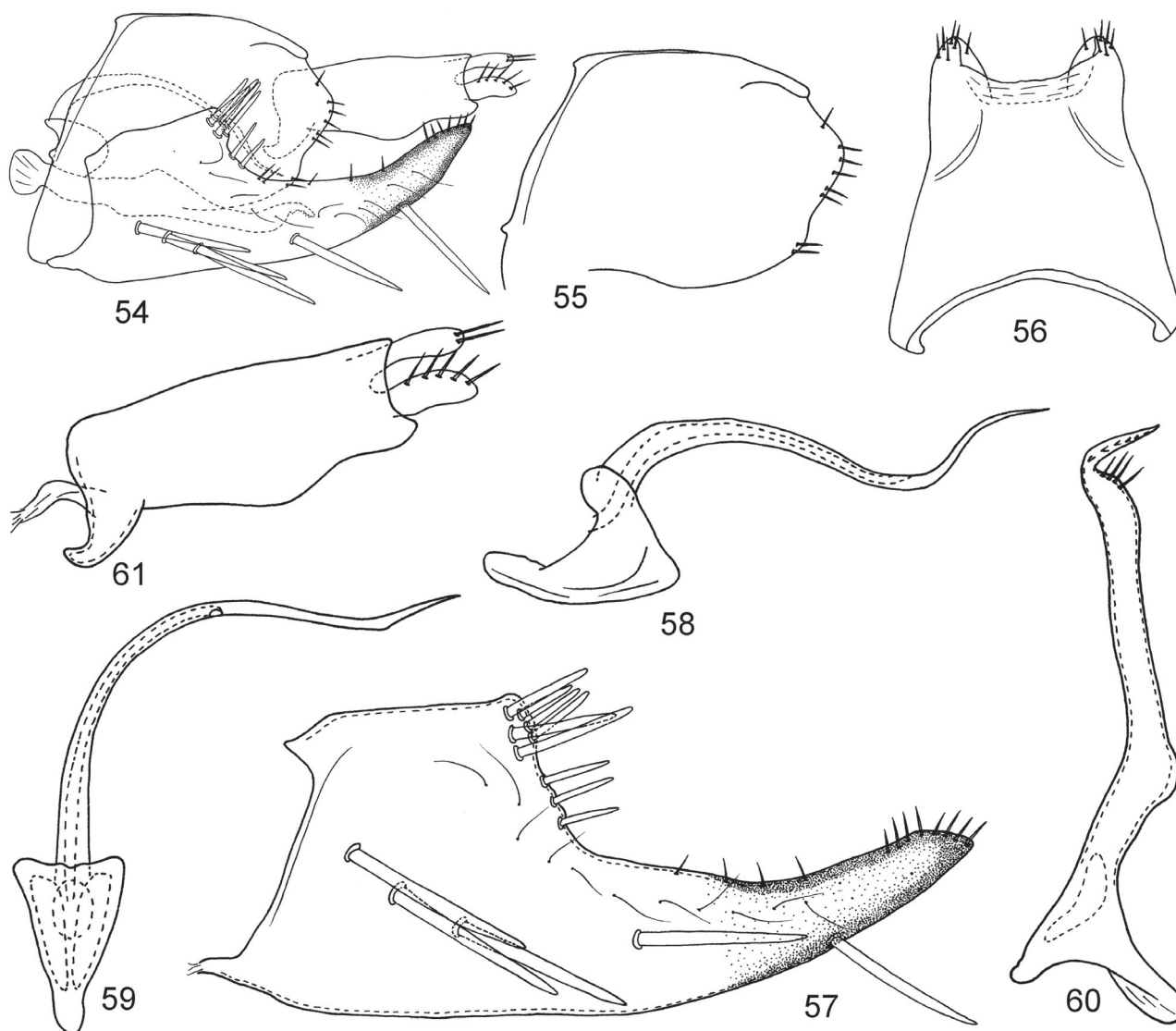
Ground color red. Forewing transparent in apical third, veins orange. Anteclypeus weakly convex, not expanded.

1T apodemes reaching posterior margin of segment II, parallel sided apically (Fig. 29). Male pygofer posterior margin concave medially, bearing 7–8 microsetae, dorsal bridge more than 4/5 total length of lobe (Figs 30, 31, 54–56). Subgenital plate much surpassing pygofer lobe, narrowing apicad; basal setae (9–10) densely grouped in 2–3 irregular rows, marginal setae (9–11) in one row; macrosetae (5) arising near base, not extended to tip of plate; feeble microsetae (9–12) weakly developed (Figs 30, 54, 57). Aedeagus shaft without process, sinuate in lateral view, curved to right in ventral view; gonopore subapical on dorsal side (Figs 58, 59). Style bearing 6–7 tiny teeth apically and 4–5 fine setae subapically (Fig. 60). Anal tube process slightly broadened near apex and curved apically (Fig. 61).

Etymology. The name is an arbitrary combination of letters.

Remarks. This new species is unique among known species in having the aedeagus shaft without one or more processes (Figs 58, 59). The aedeagus shaft is smooth and S-shaped in lateral view. Other species have the shaft in lateral view straight or arcuate.

Distribution. Thailand.



FIGURES 54–61. *H. oretinia* Xu, Dietrich & Qin **sp. nov.**: 54, male genitalia, left lateral view; 55, pygofer side, left lateral view; 56, pygofer, dorsal view; 57, subgenital plate; 58, aedeagus, left lateral view; 59, aedeagus, ventral view; 60, style; 61, anal tube appendage, left lateral view. Photos not to scale.

***Homa asilata* Xu, Dietrich & Qin sp. nov.**

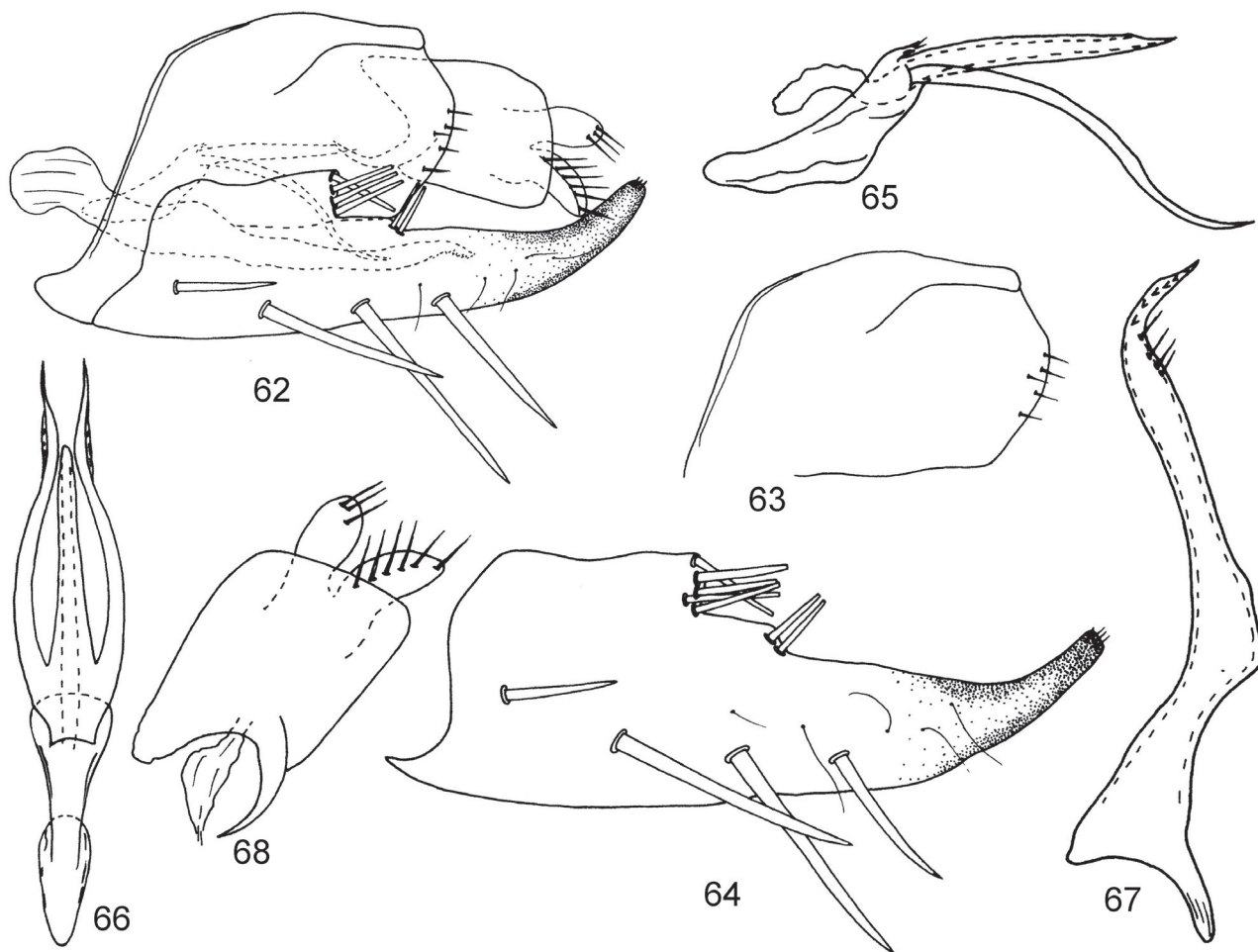
(Figs 13–16, 32–34, 62–68)

Holotype. ♂, Thailand Khonkaen Nam Pong NP office, 16°37.201'N, 102°34.481'E, 218 m, Malaise trap, July 26–August 2, 2006, Khamphol Jaidee (QSBG). **Paratypes.** 1♂, Thailand Chiang Mai Doi Chiang Dao WS Nature trail, 19°24.278'N, 98°55.311'E, 491 m, Malaise trap, March 10–17 2008, Songkran & Apichart (INHS); 1♂, Thailand Nakhon Si Thammarat Namtok Yong NP Behind campground lavatory, 8°10.434'N, 99°44.508'E, 80 m, Malaise trap, September 23–30, 2008, U-prai K (QSBG).

Description

Measurements. Body length: male: 3.8–4.1 mm.

Ground color red. Anteclypeus tapered and weakly convex, not expanded.



FIGURES 62–68. *H. asilata* Xu, Dietrich & Qin sp. nov.: 62, male genitalia, left lateral view; 63, pygofer side, left lateral view; 64, subgenital plate; 65, aedeagus, left lateral view; 66, aedeagus, ventral view; 67, style; 68, anal tube appendage, left lateral view. Photos not to scale.

1T apodemes reaching to middle of segment III, divergent posteriorly (Fig. 32). Male pygofer with dorsal margin slightly protruded in profile apically, bearing 5–6 rigid microsetae along posterior margin (Figs 33, 34, 62, 63). Subgenital plate far exceeding pygofer lobe, strongly narrowed apicad; basal setae (7–8) fully truncated and restricted to end of caudal protrusion in basal 1/3; marginal setae (3–4) strictly distributed apicad; macrosetae (4) inconsistent, basal one distinctly shorter than others; feeble microsetae (4–5) sparse, indistinct (Figs 33, 62, 64). Aedeagus shaft tubular, relatively short and tapered distally, with pair of long, slender, symmetrical processes arising near base, bowed laterad then curved posteromesad and surpassing shaft apex; gonopore apical in dorsal view (Figs 65, 66). Style S-shape in outline, dentifer bearing 5–6 teeth and about 4–5 setae on lateral surface near apex (Fig. 67). Anal tube process evenly curved and attenuate (Fig. 68).

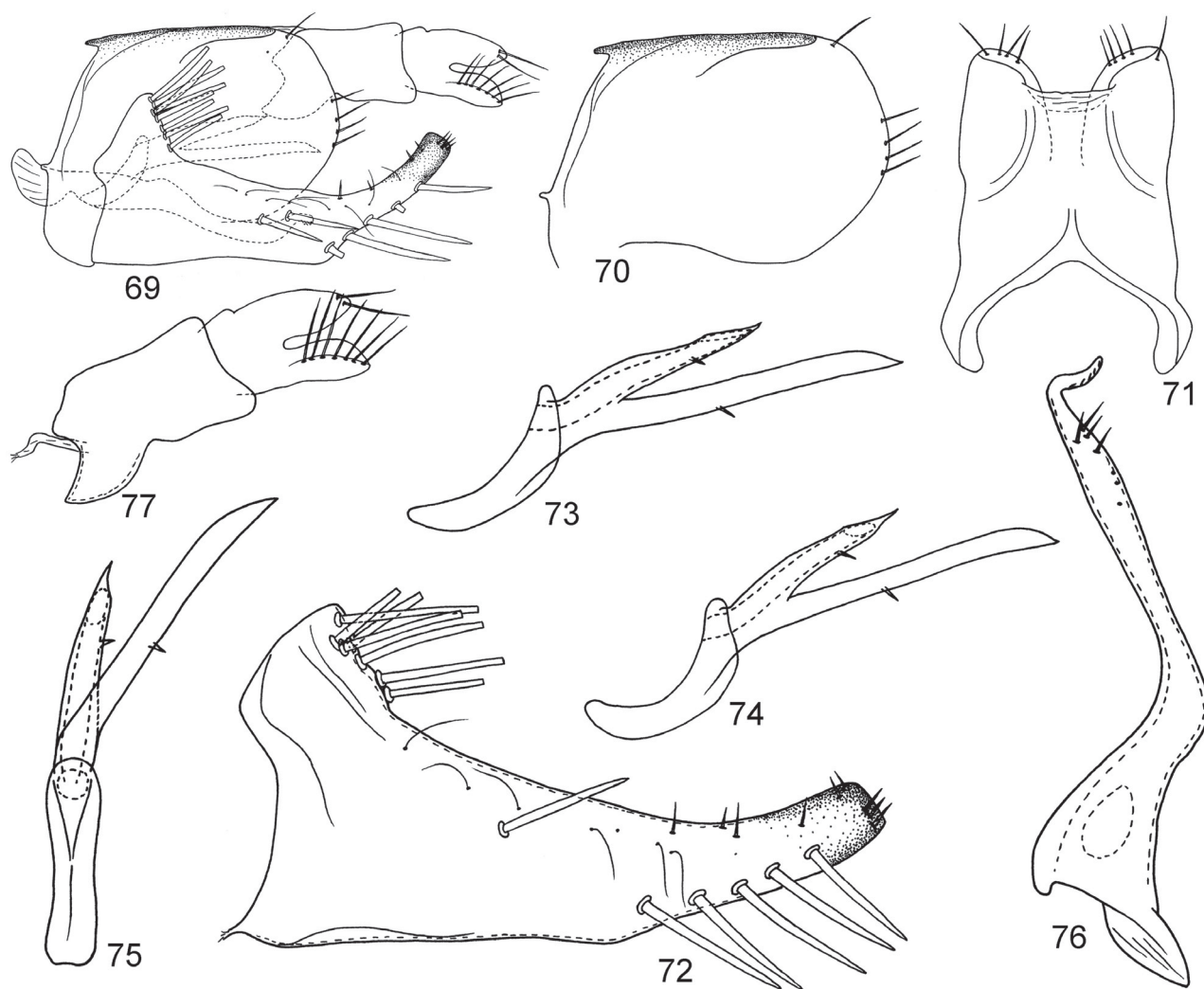
Etymology. The name is an arbitrary combination of letters.

Remarks. This new species is similar to *H. sinensis* in having the subgenital plate strongly narrowed in the distal 2/3 and folded in the section with basal setae (Fig. 64). However, *H. asilata* differs from *H. sinensis* in having the 1T apodemes strongly divergent (Fig. 32) (1T apodemes almost parallel in *H. sinensis* (Fig. 83)). It also differs from *H. sinensis* in having the aedeagus shaft with a pair of symmetrical ventrobasal processes (Figs 65, 66) (aedeagus shaft with asymmetrical distal processes in *H. sinensis*). This species appears to be the least common species of the genus occurring in Thailand. Out of the >100 male specimens from Thailand dissected, only three belong to this species.

Distribution. Thailand.

***Homa algulata* Xu, Dietrich & Qin sp. nov.**

(Figs 17–22, 35–37, 69–77)



FIGURES 69–77. *H. algulata* Xu, Dietrich & Qin sp. nov.: 69, male genitalia, left lateral view; 70, pygofer side, left lateral view; 71, pygofer, dorsal view; 72, subgenital plate; 73, 74, aedeagus, left lateral view; 75, aedeagus, ventral view; 76, style; 77, anal tube appendage, left lateral view. Photos not to scale.

Holotype. ♂, Thailand Khonkaen Nam Pong NP office, 16°37.201'N, 102°34.481'E, 218 m, Malaise trap, July 26–August 2 2006, Khamphol Jaidee (QSBG). **Paratypes.** 5♂♂, same data as holotype (NWAUFU); 20♂♂, Thailand Nakhon Nayok Khao Yai NP Behind Football field, 14°24.619'N, 101°22.778'E, 770 m, Malaise trap, July 5–12 2006, Pong Sandao (INHS); 30♂♂, Thailand Nakhon Nayok Khao Yai NP Behind Football field, 14°24.619'N, 101°22.778'E, 770 m, Malaise trap, July 5–12 2006, Pong Sandao (QSBG); 1 ♂, Vietnam Ninh Binh, Cuc Phuong NP

center 20.3522°N 105.5983°E, 370 m, July 5-8 2019, C.H.Dietrich, Malaise trap in 2° forest, VN19-2-2 (VNMN); 1 ♂, Vietnam Ninh Binh, Cuc Phuong NP, ca. entrance 20.2501°N 105.7145°E 156m, July 7 2019, C.H.Dietrich, Hg. vapor light, VN19-1-6 (INHS).

Description.

Measurements. Body length: male 3.8–4.1 mm.

Ground color reddish brown. Face crimson, ocelli surrounded by dark patches (Fig. 20). Anteclypeus strongly swollen and broader in male than in female (Fig. 20).

1T apodemes not extending to end of segment III, divergent posteriorly (Fig. 35). Male pygofer in lateral view with rounded apex, bearing 5–6 rigid microsetae along posterior margin (Figs 36, 37, 69–71). Subgenital plate widest at base and terminated in rectangle; basal setae (7–8) slightly shorter than macrosetae; marginal setae (8–10) arranged in irregular 1–2 rows, discrete; macrosetae (6–7) somewhat pointed, not reaching tip of plate; feeble microsetae (6–8) weakly developed (Figs 69, 72). Aedeagus shaft tubular, with long unpaired basal process surpassing shaft apex, both shaft and process with single tiny preapical spine, gonopore apical in dorsal view (Figs 73–75). Style strongly curved medially, dentifer bearing 5–6 tiny teeth and about 4–5 setae (Fig. 76). Anal tube lamellate, tapered to acute apex (Fig. 77).

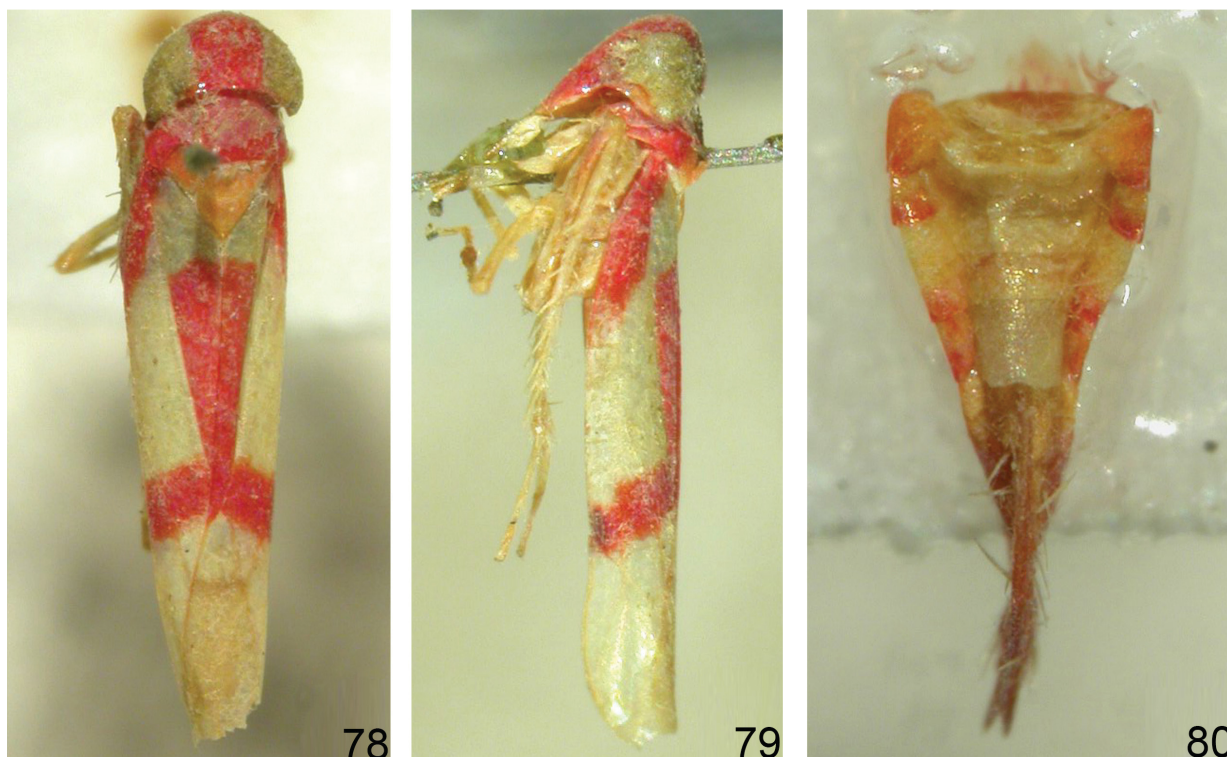
Etymology. The name is an arbitrary combination of letters.

Remarks. This species is similar to *H. osificata* in having the male anteclypeus strongly swollen and broadened (Figs 8, 20), but differs from the latter in having the subgenital plate macrosetae concentrated near the plate apex (Fig. 72) (concentrated near base in *H. osificata* (Fig. 49)). *H. algulata* is also similar to *H. asilata* in having the 1T apodemes divergent posteriorly (Figs 32, 35). However, it differs from *H. asilata* in having the anal tube process broad basally (Fig. 77) (anal tube process narrowed basally in *H. asilata* (Fig. 68)). *H. algulata* differs from all other known species of *Homa* in having a single well-developed basal aedeagal process surpassing the shaft apex (Figs 73, 74).

Distribution. Thailand and Vietnam.

***Homa rubrodorsata* Kato, 1933**

(Figs 78–80)



FIGURES 78–80. *H. rubrodorsata* Kato. 78, female adult, dorsal view; 79, female adult, lateral view; 80, female abdomen. Photos not to scale.

Homa rubrodorsata Kato, 1933: 452.

Materials examined: 1♀ (Holotype), China (Taiwan), NO. 233.

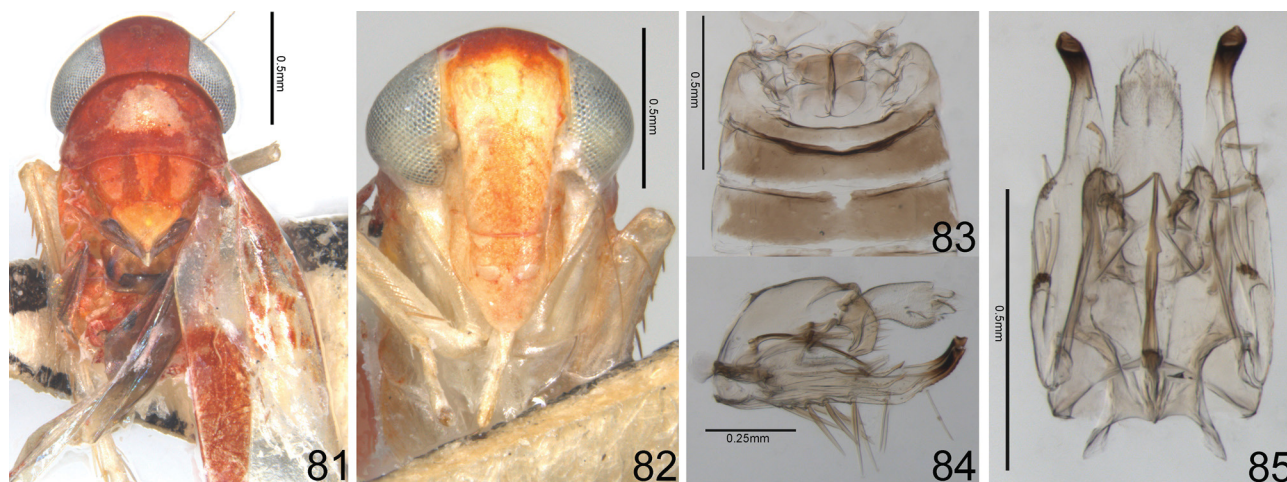
Remarks. *H. rubrodorsata* was described based on the female holotype from Taiwan. The male remains unknown and, therefore, the status of this species remains uncertain although it clearly belongs in this genus. Here we provide photos of the holotype.

Homa sinensis Qin & Zhang, 2011

(Figs 81–85)

Homa sinensis Qin & Zhang, 2011 in Qin *et al.*, 2011: 32.

Materials examined: 1♂ (holotype), China Yunnan Province, Bubeng, Mengla, December 15, 1999, I. Dworakowska (NWAUFU); 3♂♂, Thailand Khonkaen Nam Pong NP office, 16°37.201'N, 102°34.481'E, 218 m, Malaise trap, July 26–August 2, 2006, Khamphol Jaidee (NWAUFU); 2♂♂, Thailand, Phetchabun Nam Nao NP Heliport, 16°43.156'N, 101°35.118'E, 890 m, Pan trap, December 21–22, 2006, Noopean Hongyothi & Leng Janteab (INHS); 2♂♂, Thailand Phetchabun Nam Nao NP Heliport, 16°43.156'N, 101°35.118'E, 890 m, Pan trap, December 21–22, 2006, Noopean Hongyothi & Leng Janteab (QSBG).



FIGURES 81–85. *H. sinensis* Qin & Zhang. 81. head and thorax, dorsal view; 82. face; 83. abdominal apodemes; 84. male genitalia, leaf lateral view; 85. male genitalia, dorsal view.

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