

STUDIES IN PACIFIC BOMBYLIIDAE (DIPTERA)

III. On *Heteralonia* (*Acrodisca*) from Southeast Asia, with a key to the speciesBy Neal L. Evenhuis¹

Abstract. Five new species, *Heteralonia* (*Acrodisca*) *alpha*, *H. (A.) chinensis*, *H. (A.) gressitti*, *H. (A.) polyphleba*, and *H. (A.) yoshimotoi*, are described and illustrated; a key to all known species of the subgenus *Acrodisca* in SE Asia is given.

Examination of numerous specimens of Bombyliidae from SE Asia in the collections of Bishop Museum (BISHOP) has revealed 5 new species of *Heteralonia* (*Acrodisca*) Bezzi. Two additional specimens from Laos represent yet another species, but they are too damaged to allow adequate description.

Originally *Acrodisca* was described by Bezzi (1921) as a subgenus of *Exoprosopa* Macquart. Bowden (1975) reallocated *Acrodisca* as a subgenus of *Heteralonia* Macquart and synonymized *Cladodisca* Bezzi with *Acrodisca*. Bowden's classification is followed in this paper.

Prior to this study, species in the subgenus *Acrodisca* were recorded only from the Ethiopian Region. The specimens from SE Asia described in this paper extend the distribution of the subgenus *Acrodisca* eastward from Africa to include the Oriental Region. An undescribed specimen from India may be a further representative of this subgenus, but additional material is required to confirm this.

The species described in this study may be separated from their Ethiopian counterparts in having the wings longer than the body, the vein between the discal and 2nd posterior cells straight, the absence of infuscation along the veins and presence of spotting in the hyaline posterior portion of the wing, and the basal apodeme of the male genitalia much reduced. Using Hesse (1956), the species presented here key to *Exoprosopa nephoneura* Hesse. They can be separated from this species by the diagnosis given above.

KEY TO THE SPECIES OF *Heteralonia* (*Acrodisca*) OF SE ASIA

1. Wing infuscated basally with spots in hyaline posterior portion either coalesced into bands or isolated 2
Wing totally tinted smoky gray-brown, without definite spots ... (China) **gressitti, n. sp.**
2. Vein M_3+Cu_1 with spot distally 4
Vein M_3+Cu_1 without spot distally 3
3. Vein R_4 with 2 spots distally; vein R_{2+3} sigmoid beyond junction with submarginal crossvein ... (China) **chinensis, n. sp.**
Vein R_4 with 1 spot distally; vein R_{2+3} "L" shaped beyond junction with submarginal crossvein ... (Laos) sp. A

1. Department of Entomology, Bishop Museum, P.O. Box 19000-A, Honolulu, Hawaii 96819, USA.

4. Sternites I-IV with predominantly yellow scales; intermixed black and yellow scales on succeeding segments; spots on distal portion of vein R_{2+3} separate 5
 Sternites I-IV with predominantly brown scales; yellow scales, if present, restricted to posterior margins and medial portions of those sternites; spots on distal portion of vein R_{2+3} coalesced into 1 ... (Vietnam) **yoshimotoi**, n. sp.
5. Wing with numerous anomalous crossveins in radial portion; vein R_4 with 1 spot distally; spot at apex of 1st posterior cell small, restricted to vein M_1 ; face with black pile ... (Macao)
 **polyphleba**, n. sp.
 Wing venation normal; vein R_4 with 2 spots distally; spot at apex of 1st posterior cell large, covering both R_5 and M_1 veins; face with yellow pile ... (Vietnam) **alpha**, n. sp.

Heteralonia (Acrodisca) alpha Evenhuis, new species

FIG. 1

♂. *Head*: black; eyes separated at vertex by slightly more than $3\times$ width of ocellar tubercle; face, frons and vertex black pilose; face with yellow pile intermixed with black below antennal bases and on genae; frons with sparse golden scales; occiput black tomentose dorsally, yellow tomentose laterally, pale yellow collar of short pile on occipital ridge; gula with fine yellow pubescence; oral margin yellow with yellow pile, small tuft of black pile at apex; antennae brown; segment I with dense black pile; segment II sparse short black pilose; segment III and stylar segments missing. *Thorax*: mesonotum dark brownish black, dense yellow pilose dorsally and laterally; scutellum brown, yellow tomentose, few black hairs on posterior margin; post alar callus light red-brown, yellow tomentose and sparse black pilose; pleura dark reddish brown, yellow pilose on meso-, meta-, hypo-, and sternopleura, bare elsewhere; macrochaetae yellow; halter yellowish white. *Legs*: fore and mid coxae reddish brown; fore coxa intermixed black and yellow pilose; mid coxa black pilose; hind coxa brown, yellow pilose; femora yellow with brown scales, sparse black spinose; fore tibia and tarsi missing; mid and hind tibiae yellow with brown scales and black spines; mid and hind tarsi brown, black spinose. *Wing* (FIG. 1): tinted brown basally, infuscation extending to end of R_1 and just beyond posterior crossvein; anal and axillary cells infuscated; dark brown spots in following areas: anterior and posterior crossveins, junction of submarginal crossvein and R_{2+3} , distal end of R_{2+3} , on R_{2+3} halfway between junction with submarginal crossvein and wing margin, junction of R_4 and submarginal crossvein, on R_4 at wing margin and slightly before wing margin, distal end of 1st posterior cell, distal end of discal cell, junction of M_3+Cu_1 and medial crossvein, and distal end of M_3+Cu_1 ; stump vein extending from medial crossvein into 3rd posterior cell; squama brown with yellow fringe. *Abdomen*: tergites brown-black, red spot laterally on tergite III; tergite I dense pale yellow pilose dorsally and laterally; segments II-VII sparse yellow pilose dorsally, intermixed black and yellow pile laterally; sternites dark brown, dense yellow pilose and tomentose. *Genitalia*: not dissected.

♀. Unknown.

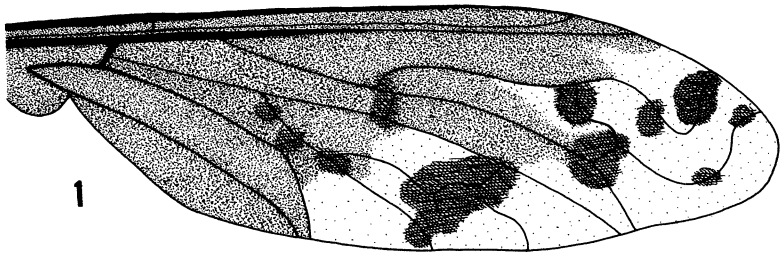
Holotype ♂, unique, VIETNAM: Ninh Hoa, N of Trang, 28.XI.1960, C.M. Yoshimoto (BISHOP 11,441).

H. (A.) alpha is closest in appearance to *H. (A.) yoshimotoi*, n. sp. and can be separated from it by the presence of isolated spots on R_{2+3} and distal end of the 1st posterior cell; these spots are coalesced with other wing infuscation in *H. (A.) yoshimotoi*, n. sp.

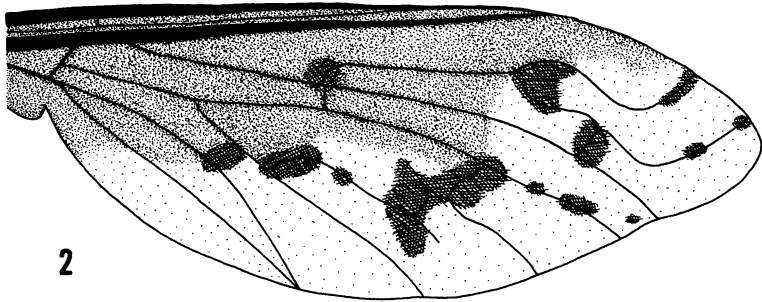
Heteralonia (Acrodisca) chinensis Evenhuis, new species

FIG. 2-4

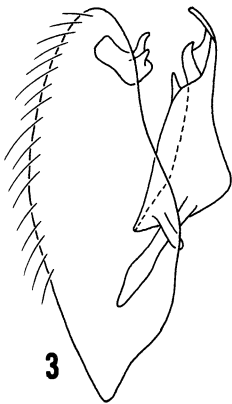
♂. *Head*: dark brown; eyes separated at vertex by slightly more than $3\times$ width of ocellar tubercle; face and frons black pilose with brown scales; gena with sparse yellow scales laterally near eye margin; vertex black-brown pilose; occiput yellow tomentose along eye margin, short dense black-brown pilose along occipital ridge, sparse elsewhere; gula bare; oral margin tan, black pilose, dense tuft of black pile at apex; antennae black-brown; segments I and II short black pilose; segment III and stylar segments bare. *Thorax*: brown; mesonotum dense yellow pilose anteriorly; yellow tomentum and fine short erect brown hairs on notal disc; scutellum yellow tomentose, long black hairs on posterior margin; pleura coppery brown, black



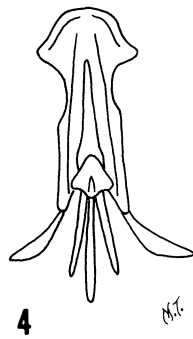
1



2



3



4

FIG. 1-4. 1, *Heteralonia (Acrodisca) alpha*, wing. 2-4, *Heteralonia (Acrodisca) chinensis*: 2, wing; 3, lateral view of ♂ genitalia; 4, ventral view of epiphallus.

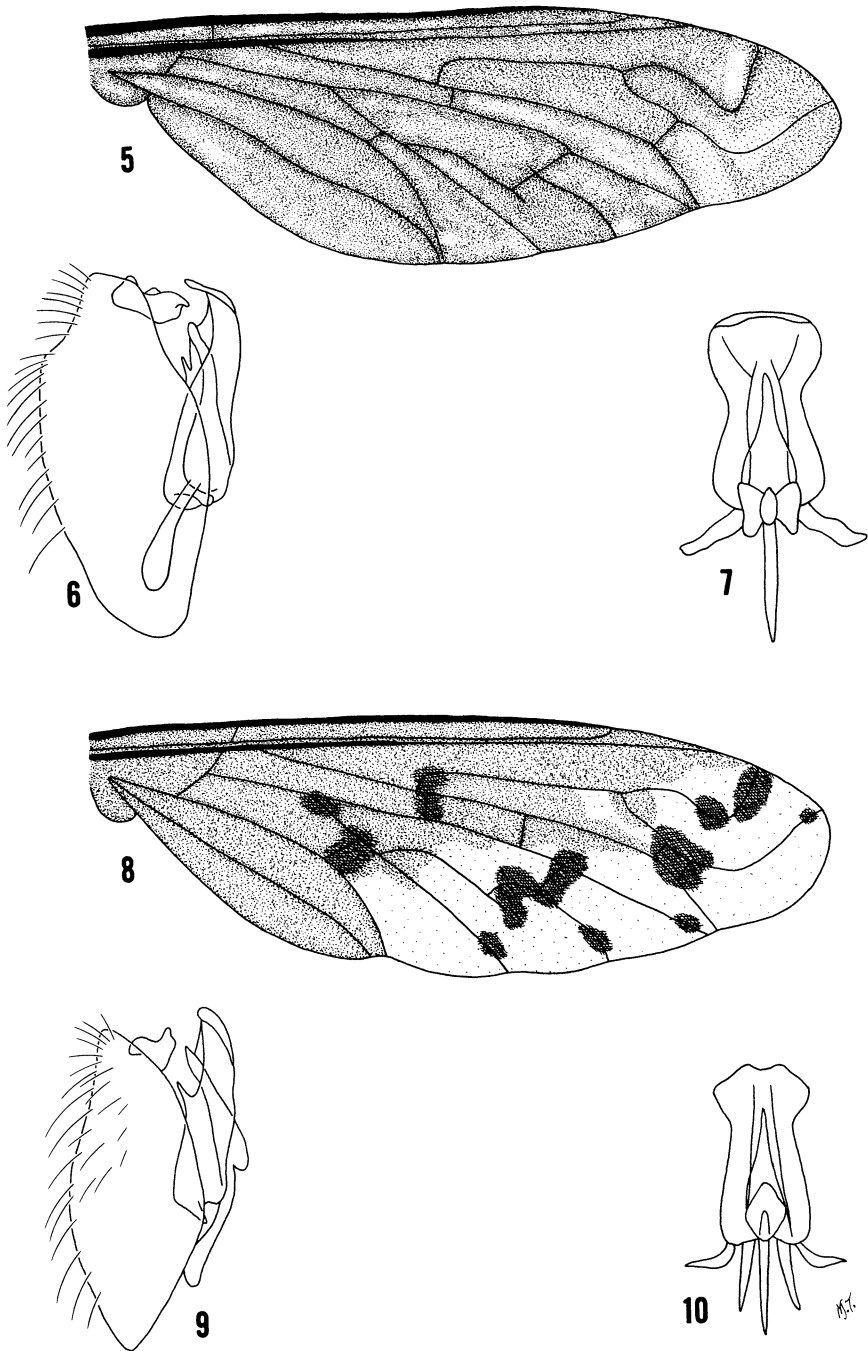


FIG. 5-10. 5-7, *Heteralonia (Acrodisca) gressitti*: 5, wing; 6, lateral view of δ genitalia; 7, ventral view of epiphallus. 8-10, *Heteralonia (Acrodisca) polyphleba*: 8, wing; 9, lateral view of δ genitalia; 10, ventral view of epiphallus.

pilose above wing base and on humeral callus, dense reddish brown pilose below, few yellow hairs on meso- and metapleura; supra alar pile intermixed black and yellow; post alar callus with long black bristles overlying yellow tomentum; halter brown. *Legs*: brown; fore coxa brown pilose; mid and hind coxae black pilose; femora with brown scales and tomentum; fore femur with fine brown hairs ventrally; mid femur with sparse black spines; hind femur with strong black spines; fore tibia fine brown setose; mid and hind tibiae black spinose; tarsi black spinose; claws black. *Wing* (FIG. 2): tinted as in *E. (A.) alpha* except for the following: spot on distal end of R_{2+3} coalesced with marginal cell infuscation, spot at basal portion of R_4 isolated from rest of wing infuscation, no spot present on distal end of M_3+Cu_1 ; vein connecting discal cell and 3rd posterior cell with long stump vein projecting into 3rd posterior cell, shorter stump vein projecting into discal cell. *Abdomen*: tergites black-brown; tergite I dense yellow pilose dorsally, intermixed yellow and black pilose laterally; tergites II–VII with each segment black tomentose anteriorly, yellow tomentose posteriorly and laterally forming transverse crossbands; apex with long brown scales; sternites brown, long brown pilose and tomentose. *Genitalia* (FIG. 3–4): basistylus subovate; dististylus short, broad, with bluntly hooked apex; tip of epiphallus in ventral view broadly rounded with small lateral processes; basal rami and apodeme greatly reduced, linear; aedeagus sigmoid apically.

♀. Unknown.

Holotype ♂ (BISHOP 11,442) and paratype ♂, CHINA: Yunnan Prov., Kunming, 15.VII.1940, T.C. Maa (BISHOP).

H. (A.) chinensis can be separated from its closest apparent relative, *H. (A.) yoshimotoi*, n. sp., by the absence of a spot on wing vein M_3+Cu_1 and the isolation of the spot at the base of vein R_4 .

***Heteralonia (Acrodisca) gressitti* Evenhuis, new species**

FIG. 5–7

♂. *Head*: brown; eyes separated at vertex by almost $4\times$ width of ocellar tubercle; frons, vertex, and oral margin black pilose; face black tomentose, black pile and tomentum on gena; occiput short black pilose dorsally, black tomentose laterally, collar of short brown pile on occipital ridge; gula bare; antennal segment I brown, dense black pilose dorsally and laterally, sparse black pilose mesally; segments II and III black; segment II black pilose; segment III bare; style segment I brown, same length as antennal segment I; style segment II yellow, minute, cone-shaped. *Thorax*: brown; mesonotum sparse long black pilose; scutellum black tomentose, long black pilose on posterior margin; post alar callus with long black bristles; macrochaetae black; pleura intermixed brown and black pilose; halter stem brown, knob yellow-brown. *Legs*: coxae yellow-brown with dark brown pile and scales; femora yellow-brown with dark brown scales; tibiae brown; fore tibia dense brown setose; mid and hind tibiae with dark brown scales and black spinules; tarsi brown, dense brown setose; claws black. *Wing* (FIG. 5): tinted smoky gray-brown throughout; lighter areas at distal end of marginal, 3rd submarginal, 2nd and 4th posterior cells and on R_4 ; stump veins projecting into discal and 3rd posterior cells; squama brown with yellow fringe. *Abdomen*: brownish orange; tergite I dense yellow pilose laterally and dorsally; tergites II–VII sparse black pilose and tomentose, black tufts of pile laterally; sternites black tomentose and long black pilose. *Genitalia* (FIG. 6–7): basistylus linear-ovate; dististylus $2\times$ as long as wide with blunt process apically; epiphallus in ventral view $2\times$ as long as wide, broad at tip; basal apodeme much reduced, linear; tip of aedeagus truncate.

♀. Unknown.

Holotype ♂, unique, CHINA: Yunnan Prov., Western Hills nr Kunming, 2100 m, 7.VII.1940, J.L. Gressitt (BISHOP 11,443).

This species is easily separated from its congeners in SE Asia by its brownish-orange body color and the entirely smoky gray-brown wing tinting. It is named in honor of its collector, Dr J. L. Gressitt.

***Heteralonia (Acrodisca) polyphleba* Evenhuis, new species**

FIG. 8–10

♂. *Head*: black; eyes separated at vertex by a little more than $3\times$ width of ocellar tubercle; face and

frons black pilose with intermixed black and yellow scales; vertex black pilose; occiput black tomentose along eye margin, collar of dense short yellow pile on occipital ridge, sparse yellow pile elsewhere; gula bare; oral margin yellow, sparse black pilose, dense black pilose at apex; antennae reddish orange; segments I and II black pilose; segment III and stylar segments missing. *Thorax*: brown; mesonotum dense yellow pilose anteriorly, recumbent yellow pile and tomentum on notal disc; scutellum yellow-brown pilose and brown tomentose, black hairs on posterior margin; supra alar pile black; post alar callus with long black bristles; pleura gray-brown, yellow pilose; halter orange-yellow. *Legs*: coxae gray-brown, yellow pilose and tomentose; femora brownish orange with yellow scales; fore femur with fine yellow hair ventrally; mid and hind femora with sparse black spines; fore tibia yellow, fine brown setose; mid and hind tibiae brown with brown scales and black spines; tarsi light brown, black spinose; claws black. *Wing* (FIG. 8): tinted as in *H. (A.) chinensis* except for the following: 1 spot on R_4 near wing margin, 2 spots on R_{2+3} between submarginal crossvein and wing margin, spot at distal ends of M_2 and M_3+Cu_1 , infuscation extending beyond r-m crossvein and connecting with spot at base of R_4 ; additional crossvein connecting base of R_4 with R_5 ; vein connecting discal and 3rd posterior cells with stump vein projecting into 3rd posterior cell, shorter stump vein projecting into discal cell; squama tan with yellow fringe. *Abdomen*: tergites black; tergite I dense yellow pilose dorsally and laterally; tergites II-VII with each segment black tomentose anteriorly, yellow tomentose posteriorly forming 2 transverse crossbands, intermixed black and yellow pilose laterally; sternites black-brown, dense yellow pilose and tomentose; small patches of brown tomentum laterally on sternites II-VII. *Genitalia* (FIG. 9-10): basistylus subovate, tapered sharply basally; dististylus short, broad with pointed apical process; epiphallus in ventral view broadened apically, small depression medially on apical edge; basal apodeme much reduced, long, thin; tip of aedeagus blunt.

♀. Unknown.

Holotype ♂, MACAO: [X.1906], F. Muir (BISHOP 11,444).

In addition to the anomalous crossveins present in this species, *H. (A.) polyphleba* can be separated from its closest apparent relative, *H. (A.) chinensis*, by the differences in wing spotting noted above and by the yellow pile and tomentum on the sternites in *E. (A.) polyphleba*, pile and tomentum of the sternites being brown in *H. (A.) chinensis*.

Heteralonia (Acrodisca) yoshimotoi Evenhuis, new species

FIG. 11-13

♀. *Head*: brown; face and frons with sparse erect black pile overlying yellow scales; vertex bare; occiput with pale yellow scales laterally and dorsolaterally, yellowish white pile on occipital ridge and directly behind vertex; gula bare; oral margin yellow, sparse black pilose becoming dense toward tip; antennal segment I dense black pilose; segment II sparse short black pilose; segment III $2\times$ length of segment I, bare; style segment I $\frac{2}{3}$ length of antennal segment I; style segment II minute, cone-shaped. *Thorax*: brown-black with greenish tinge anteriorly on mesonotum; mesonotum dense yellow pilose and short, fine golden tomentose; scutellum yellow tomentose, few black hairs on posterior margin; pleura with yellow pile on meso-, meta-, and hypopleura, intermixed yellow and black pile on sternopleuron; macrochaetae black; supra alar bristles black; halter yellow. *Legs*: coxae brown, brown-black pilose; femora yellow with brown scales, few black spines on mid and hind femora; tibiae yellow; fore tibia dense brown setose with row of minute yellow spicules; mid and hind tibiae with brown scales and black spines; tarsi brown, brown spinose; claws black. *Wing* (FIG. 11): tinted brown basally extending to end of R_1 , beyond r-m and posterior crossveins; basal $\frac{1}{2}$ of 4th posterior cell infuscated; brown spots present in the following areas: distal portion of R_{2+3} , 2 separated on distal portion of R_4 , submarginal crossvein, distal end of 1st posterior cell, median crossvein, and distal end of M_3+Cu_1 ; stump vein projecting from median crossvein into 3rd posterior cell; squama brown with yellow fringe. *Abdomen*: brown-black; tergite I dense pale yellow pilose dorsolaterally, yellow pilose laterally; tergites II-VII black pilose laterally; tergite II with transverse crossband of yellow tomentum anteriorly, black tomentose posteriorly; tergite III black tomentose medially, yellow tomentose dorsolaterally; tergite IV with thin black tomentose crossband anteriorly, yellow tomentose elsewhere; tergite V black tomentose; tergites VI-VII intermixed black and yellow tomentose; sternites

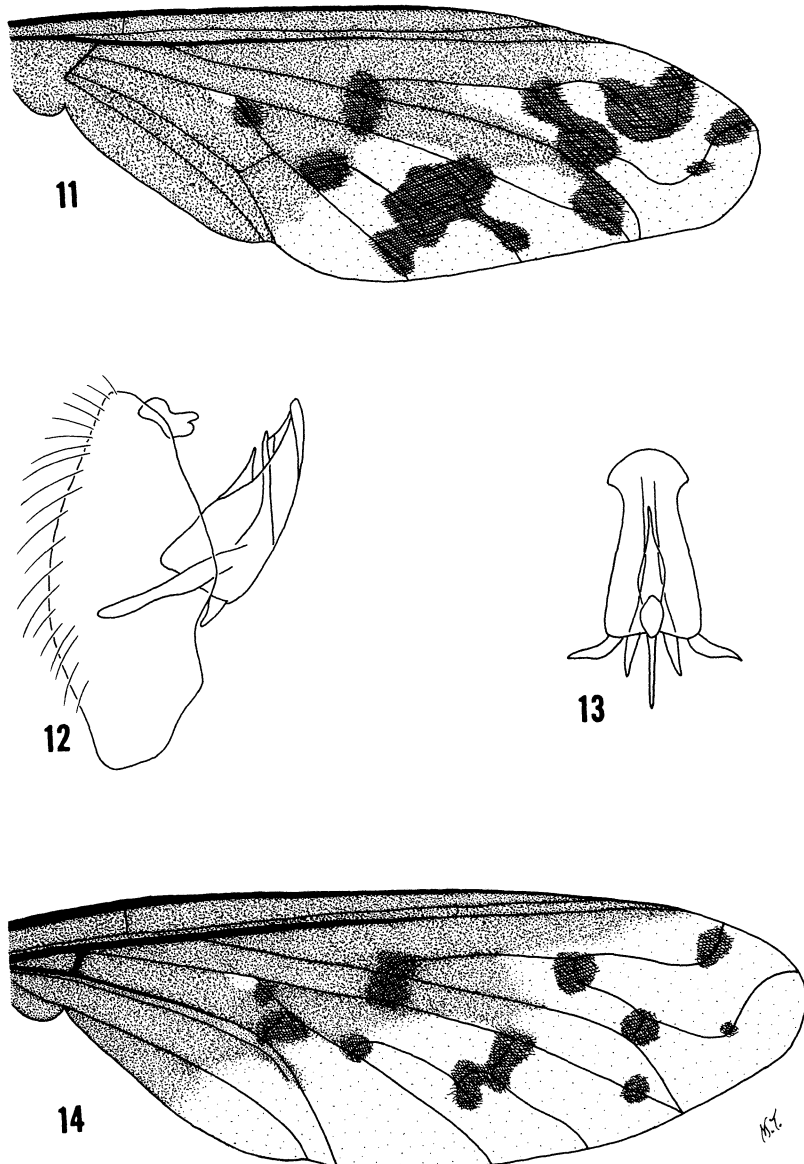


FIG. 11-14. 11-13, *Heteralonia (Acrodisca) yoshimotoi*: 11, wing; 12, lateral view of ♂ genitalia; 13, ventral view of epiphallus. 14, *Heteralonia (Acrodisca)* sp. A, wing.

brown; intermixed black and yellow pilose on sternites II-VII; sternites II and III yellow tomentose; sternites IV-VII black tomentose. *Genitalia*: not dissected.

♂. Similar to ♀ except as follows: yellow tomentum of sternites form a median longitudinal stripe and posterior transverse crossbands on each segment, black tomentose elsewhere. *Genitalia* (FIG. 12-13): basistylus subovate; dististylus short, broad, with blunt, hooklike process apically; epiphallus in ventral view

spatulate, $2\frac{1}{2}\times$ as long as wide; lateral rami much reduced; basal apodeme linear; aedeagus tapering sharply to tip.

Holotype ♀ (BISHOP 11,445) and allotype ♂ (BISHOP), VIETNAM: 55 km NW of Phan Rang, 8-16.XI.1960, C.M. Yoshimoto. 1 ♀ paratype, VIETNAM: Ninh Hoa N of Nha Trang, 28.XI.1960, C.M. Yoshimoto (BISHOP).

H. (A.) yoshimotoi can be separated from its congeners in SE Asia by the entirely coalesced spotting in the hyaline portion of the wing and the pile and tomentum of the sternites. It is named in honor of its collector, C. M. Yoshimoto.

Heteralonia (Acrodisca) sp. A

FIG. 14

Two specimens from Laos representing this taxon are either too abraded or too damaged to properly describe; however, the wing patterning (FIG. 14) shows them to be different from their congeners in this region. Until further specimens of this species are collected, it is best left undescribed.

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LITERATURE CITED

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