



Descriptions of Two New Species of the *Platylomia spinosa* Species Group (Hemiptera: Cicadidae)

Author: June Lee, Young

Source: Florida Entomologist, 92(2) : 338-343

Published By: Florida Entomological Society

URL: <https://doi.org/10.1653/024.092.0219>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

DESCRIPTIONS OF TWO NEW SPECIES OF THE
PLATYLOMIA SPINOSA SPECIES GROUP (HEMIPTERA: CICADIDAE)

YOUNG JUNE LEE

University of Connecticut, Department of Ecology and Evolutionary Biology, 75 North Eagleville Road,
Storrs, CT 06269, USA

ABSTRACT

Two new species, *Platylomia constanti* Lee, **sp. nov.** and *Platylomia maxima* Lee, **sp. nov.**, of the *Platylomia spinosa* species group are described from Luzon, Philippines. These new species are distinguished from their congeners by the combination of the following characters: larger body, long operculum, wide abdomen, presence of infuscation only at bases of apical cells 2 and 3 on the fore wing, blackish ground color of the dorsal and ventral parts of the body, and the different shape of the uncal lobe. The 2 new species are different from each other not only in collection altitude and season but also in morphology such as the shape of the dorsal beak, shape of the male operculum, shapes of some markings on the body, and the length of the basal vein of the apical cell 1.

Key Words: *Platylomia constanti*, *Platylomia maxima*, Luzon, Philippines, Cicadini, Dundubiina

RESUMEN

Se describen dos nuevas especies, *Platylomia constanti* Lee, **sp. nov.** y *Platylomia maxima* Lee, **sp. nov.**, del grupo de especies de *Platylomia spinosa* de Luzon, Filipinas. Se distinguen estas nuevas especies de sus congéneres por la combinación de las siguientes características: cuerpo más grande, opérculo largo, abdomen ancho, presencia de un área oscura solamente en las bases de las células apicales 2 y 3 en el ala anterior, el color negruzco de las partes dorsales y ventrales del cuerpo y la forma diferente del lóbulo uncal. Los 2 nuevas especies se distinguen entre ellas no solamente por el hábitat de altitud y estación del año pero también en su morfología, como lo son, la forma del pico dorsal, la forma del opérculo del macho, la forma de algunas manchas en el cuerpo y la longitud de la vena basal de la célula 1 apical.

Stål (1870) erected the genus *Platylomia* as a subgenus of *Cosmopsaltria* Stål, 1866 with *Cicada flavida* Guérin-Ménéville, 1834 as the single species of the genus. This genus belongs to the subtribe Dundubiina of the tribe Cicadini in the subfamily Cicadinae, following the classification of Lee (2008).

The current concept of *Platylomia* should include paraphyletic groups (Beuk 2002), some of which are believed to belong to new genera. Beuk (1999) proposed the *Platylomia spinosa* species group with 9 species—*P. spinosa* (Fabricius), *P. abdulla* (Distant), *P. viridimaculata* (Distant), *P. nigra* (Distant), *P. virescens* Distant, *P. meyeri* (Distant), *P. wallacei* Beuk, *P. celebensis* Distant, and *P. aerata* (Distant)—providing a key to the species.

The *P. spinosa* species group is characterized by the head wider than the mesonotum, the male opercula widely apart from each other, the male abdomen longer than twice as long as maximum width of the mesonotum, the sternite VII narrowed posteriorly, and the uncus with a distinct ridge from one uncal lobe to the other, encircling the area where the uncal lobes meet medially (Beuk 1999).

This paper presents the description of 2 new species of the *Platylomia spinosa* species group from Luzon, Philippines, which were found in the collections of the Institut royal des Sciences naturelles de Belgique, Brussels, Belgium (IRSN). Morphological measurements were made with a Mitutoyo™ vernier caliper. Morphological terminology follows that of Moulds (2005).

DESCRIPTION OF NEW SPECIES

Platylomia constanti Lee, **sp. nov.**, (Figs. 1A, C, 2)

Type Material. Holotype: male (Fig. 1A, C), "Coll. I.R.Sc.N.B. // Philippines // the Philippines N.Luzon // CAR border Abra/Kalinga // E of Malibcong Basiwag // N17°30.200' E 120°58.881' // 1690 m 17/18 April 2007 // 20°C JH Lourens leg" (printed yellow and white label) (IRSN).

Etymology. The species is named for Dr. Jerome Constant in IRSN who has supported the author with loan of specimens.

Measurements of Types (in mm, 1 male). Length of body: 58.1; length of fore wing: 65.4; width of fore wing: 20.8; length of head: 6.1; width

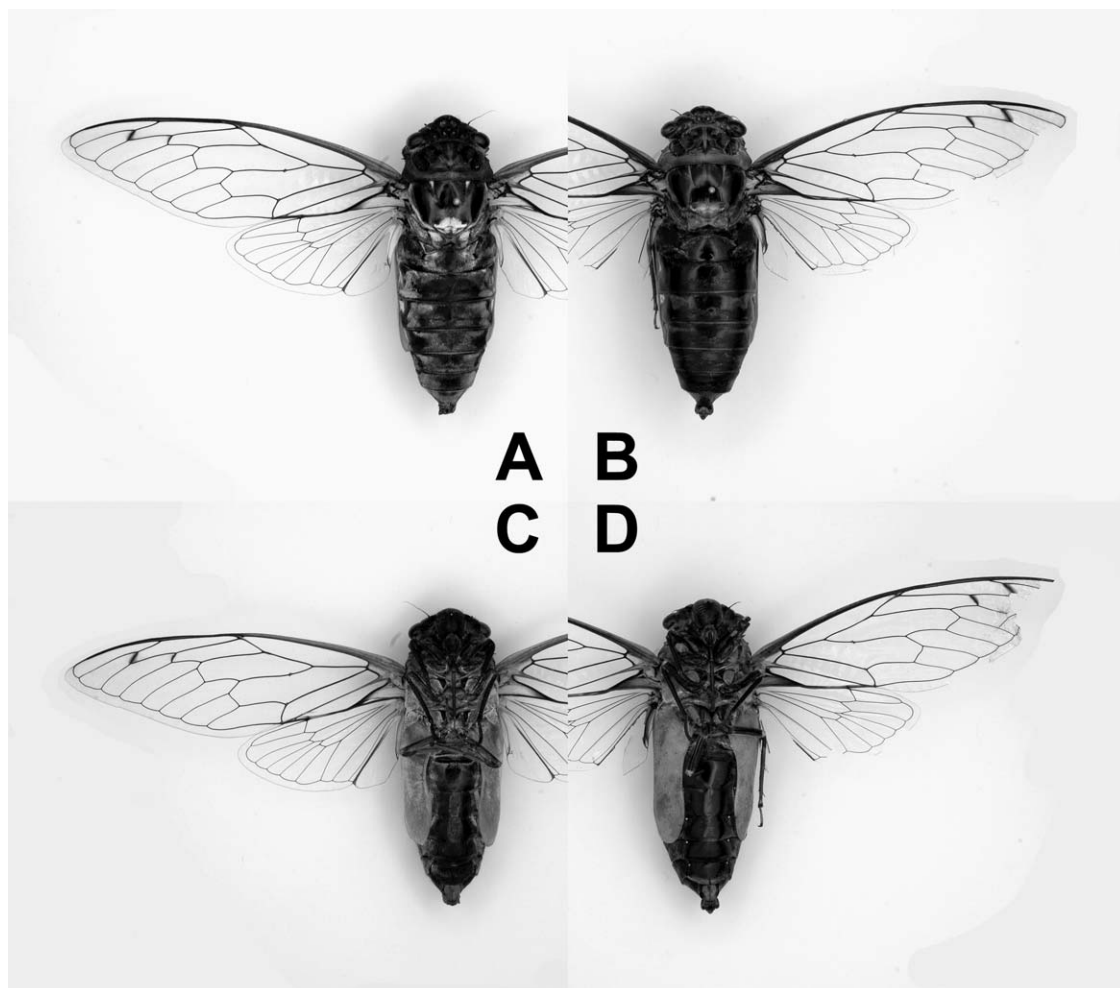


Fig. 1. Holotypes of *Platylomia constanti* Lee, **sp. nov.** and *Platylomia maxima* Lee, **sp. nov.** A. *P. constanti*, male, in dorsal view, N. Luzon, Philippines, 18-IV-2007. B. *P. maxima*, male, in dorsal view, E. Luzon, Philippines, 6-IX-2007. C. *P. constanti* in ventral view. D. *P. maxima* in ventral view.

of head including eyes: 16.0; width of pronotum: 17.6; width of mesonotum: 15.3; wing span: 146.1.

Diagnosis. This new species is closely allied to *Platylomia meyeri* from northern Sulawesi in having long operculum, wide abdomen, and the infuscation only at the bases of the apical cells 2 and 3 on the fore wing but is distinguished by blackish coloration of the dorsal and ventral parts of the body and the uncal lobe in a different shape. This species is also allied to *Platylomia nigra* in having long operculum, black ground color of the dorsal and ventral parts of the abdomen, and the uncal lobe in a similar shape but is distinguished by much larger body, wide abdomen, and the lack of a series of tiny spots on the subapical margin of the fore wing.

Description of Male (Fig. 1A, C). Ratio of body length to head width about 3.63. Head greenish

ochraceous to ochraceous with the following black to fuscous markings: a median large spot enclosing ocelli, of which anterior end reaching frontoclypeal suture and anterolateral angles extending to posterior margins of supra-antennal plates; and a pair of irregular-shaped large spots on both sides of the median spot, which are slightly smaller than the median spot, laterally reaching compound eyes. Distance between lateral ocelli and compound eyes about as wide as twice distance between two lateral ocelli. Postclypeus much swollen. Antennae fuscous. Ventral part of head ochraceous with black to fuscous markings. Postclypeus with a large median spot on posterior 2/3 of postclypeus and fasciae along ridges between transverse grooves. Anteclypeus with a large irregular but symmetrical marking. Rostrum brown to ochraceous with fuscous apical

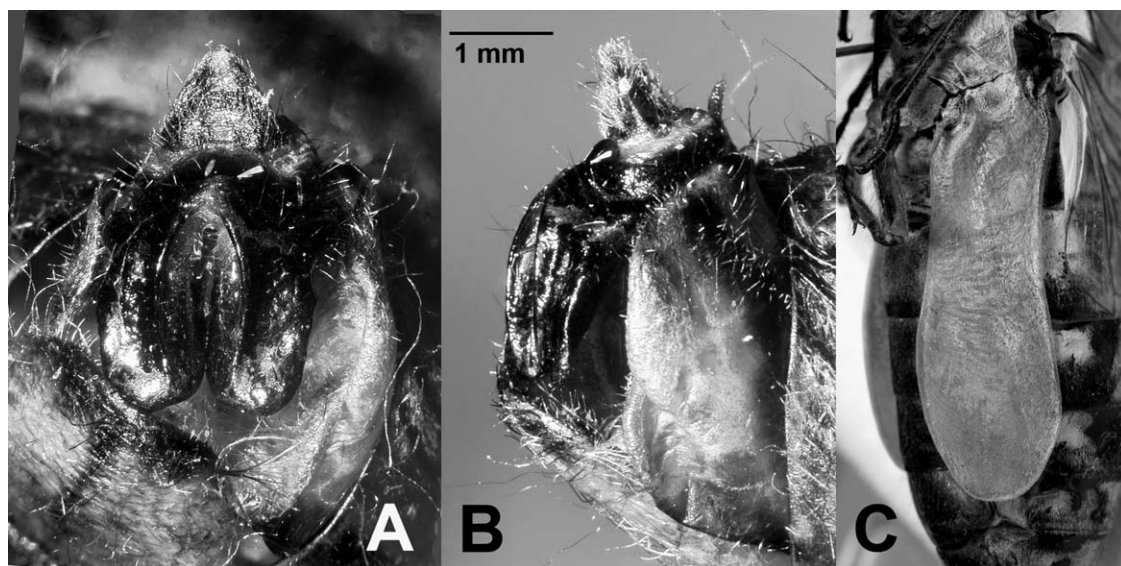


Fig. 2. Male pygofer and operculum of *Platylomia constanti* Lee, **sp. nov.** A. male pygofer in ventral view. B. male pygofer in lateral view. C. male operculum, left, in lateroventral view.

part; not reaching posterior margin of hind coxae. Lorum mostly fuscous except ochraceous inner margin. Gena with a broad transverse fascia between antenna and compound eye.

Pronotum greenish ochraceous to ochraceous. Inner area of pronotum with following black to fuscous markings: a pair of central longitudinal fasciae, extending from anterior margin of pronotum to pronotal collar and dilated both anteriorly and posteriorly, which are discontinued before posterior end; a pair of short, oblique branches from middle of the central longitudinal fasciae along paramedian fissures; a pair of obliquely longitudinal fasciae between median parts of paramedian fissures and posterior ends of lateral fissures, which are connected to the short branches; a pair of fasciae along lateral fissures; a pair of curved fasciae along lateral margin of inner area; and other small irregular spots. Pronotal collar without distinct markings but narrowly margined with fuscous except anterolateral part. Anterolateral pronotal collar slightly developed and dentate.

Mesonotum black with following ochraceous markings: a pair of delicate longitudinal fasciae along inner margins of submedian sigilla; a pair of longitudinal fasciae on lateral sides of parapsidal sutures, which distinctly extending to posterior margin of mesonotum, divided into two branches; a pair of fasciae along lateral margins of mesonotum; a pair of small spots on anterior margins of submedian sigilla; and a pair of small spots on anterior submarginals of lateral sigilla. Anterior margins of parapsidal sutures and posterior medial margin of mesonotum densely covered with white polinosity. Cruciform elevation

greenish ochraceous with black to fuscous anterior subapical parts and posterior margin. Ventral part of thorax greenish ochraceous.

Fore leg mostly black to fuscous with an ochraceous marking on coxa, trochanter, femur, and pretarsal claw. Fore femur with a small subapical spine as well as primary and secondary spines. Mid and hind coxae ochraceous with a large fuscous paramedian spot. Mid and hind trochanters mostly black. Mid and hind femora ochraceous to brown with a fascia along ventral side of femur. Fascia on mid femur discontinued in middle. Mid tibia and tarsus black. Hind tibia and tarsus mostly ochraceous with irregular fuscous markings. Mid and hind pretarsal claw fuscous apically.

Wings hyaline, fore wing with an infuscation on radial and radiomedial crossveins. Venation dark brown in both fore wing and hind wing. Basal cell slightly tinged with ochraceous and partly with light jade green. Basal membrane light jade green. Hind wing jugum whitish but partly light jade green at base. Basal vein of apical cell 1 longer than 1/3 of longitudinal vein of apical cell 1.

Operculum (Fig. 2C) ochraceous, partly but irregularly tinged with green, with very small fuscous areas on anterior margin and lateral base; long, passing posterior margin of sternite V; slightly concave at middle of both inner and lateral margins, with round apex. Lateral margin of operculum weakly sinuate at base. Two opercula widely apart from each other, of which gap about as wide as operculum.

Abdomen obconical, considerably longer than distance from head to cruciform elevation; black

with transversely arranged ochraceous irregular markings on tergites 2-8; irregularly covered with white pollinosity on tergites 2-8; densely covered with silvery hairs. Posterior margin of tergite 3 wider than anterior margin of mesonotum. Timbal cover fuscous; quarter round. Timbal concealed with timbal cover in dorsal view. Ventral part of abdomen fuscous except ochraceous sternite VIII.

Male genitalia (Fig. 2A, B). Pygofer nearly spherical in ventral view. Upper lobes of pygofer absent. Dorsal beak long and slender with acute tip. Uncal lobe broad with medial margin nearly straight, distal margin nearly straight and slightly oblique toward inner side, and lateral margin slightly convex. Aedeagus thin, protruding from venter of uncus. Basal lobe of pygofer narrow in ventral view, rounded in lateral view.

Platylomia maxima Lee, **sp. nov.**, (Figs. 1B, D, 3)

Type Material. Holotype: male (Fig. 1B, D), "Coll. I.R.Sc.N.B. // the Philippines E.Luzon // Aurora S. Madre 50 m // 15 km W of Dibulo // 16°32.866'N 122°14.134'E // 5-6 Sept. 2007 // JH Lourens leg." (printed yellow and white label), "Coll. IRSNB // Achat J. H. Lourens // I.G.: 31.096" (printed yellow label) (IRSN).

Etymology. The specific name, *maxima*, means 'largest' in reference to the fact that this species has larger body size than any of the known species of the *Platylomia spinosa* species group.

Measurements of Types (in mm, 1 males). Length of body: 61.4; length of fore wing: 65.9; width of fore wing: 20.5; length of head: 6.7; width

of head including eyes: 16.7; width of pronotum: 18.5; width of mesonotum: 15.8; wing span: 147.0.

Diagnosis. This species is closely allied to *P. constanti* but is distinguished by the triangular dorsal beak (long and slender in *P. constanti*), the different shape of the male operculum, the shapes of some markings on the body, and the very short basal vein of the apical cell 1 (Fig. 1B). This species occurs in low altitude area (collected at 50 m, not as high as 1690 m as in *P. constanti*) in wet season (collected in early Sep, not mid Apr (dry season) as in *P. constanti*).

Description of Male (Fig. 1B, D). Ratio of body length to head width about 3.68. Head ochraceous with the following black to fuscous markings: a median large spot enclosing ocelli, of which anterior end reaching frontoclypeal suture and anterolateral angles extending to posterior margins of supra-antennal plates; and a pair of irregular-shaped large spots on both sides of the median spot, which are slightly smaller than the median spot, laterally reaching compound eyes. Distance between lateral ocelli and compound eyes about as wide as twice distance between 2 lateral ocelli. Postclypeus much swollen. Antennae fuscous. Ventral part of head ochraceous with black to fuscous markings. Postclypeus with a large median spot on posterior 2/3 of postclypeus and fasciae along ridges between transverse grooves. Anteclypeus with a large irregular but symmetrical marking. Rostrum fuscous except about anterior 1/4 brown to ochraceous medially; not reaching posterior margin of hind coxae. Lorum mostly fuscous except ochraceous inner margin. Gena with a broad transverse fascia between antenna and compound eye.

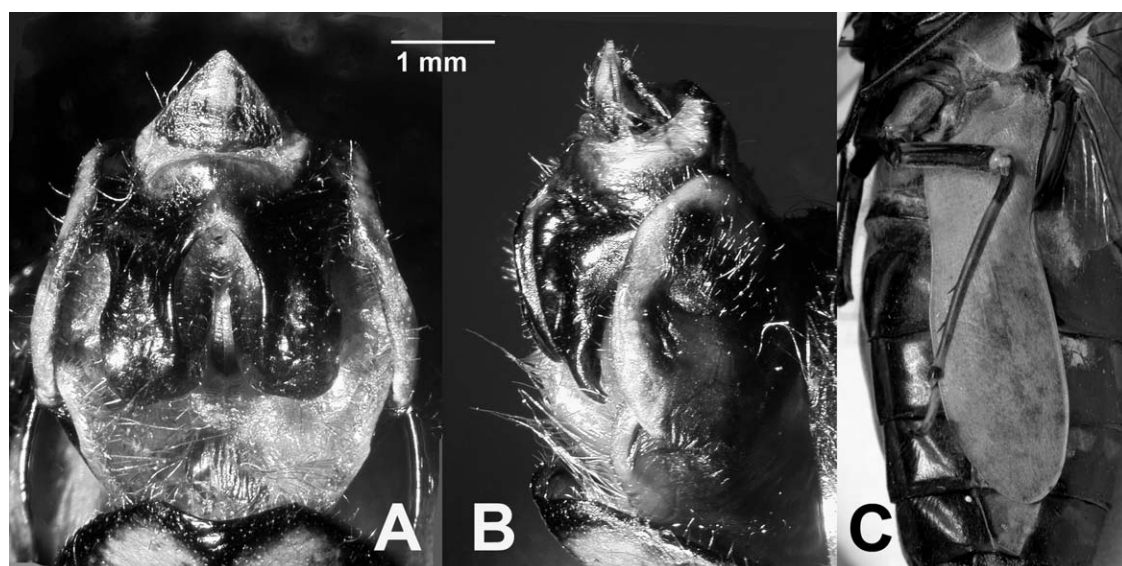


Fig. 3. Male pygofer and operculum of *Platylomia maxima* Lee, **sp. nov.** A. male pygofer in ventral view. B. male pygofer in lateral view. C. male operculum, left, in lateroventral view.

Pronotum ochraceous except lateral corner tinged with green. Inner area of pronotum with following black to fuscous markings: a pair of central longitudinal fasciae, extending from anterior margin of pronotum to pronotal collar and dilated both anteriorly and posteriorly; a pair of short, oblique branches from middle of the central longitudinal fasciae along paramedian fissures; a pair of obliquely longitudinal fasciae between median parts of paramedian fissures and posterior ends of lateral fissures, which are connected to the short branches; a pair of fasciae along lateral fissures; a pair of curved fasciae along lateral margin of inner area; and other small irregular spots. Pronotal collar without distinct markings but narrowly margined with fuscous except lateral part. Anterolateral pronotal collar slightly developed and dentate.

Mesonotum black with following ochraceous markings: a pair of delicate longitudinal fasciae along inner margins of submedian sigilla; a pair of longitudinal fasciae on lateral sides of parapsidal sutures, which indistinctly extending to posterior margin of mesonotum, divided into two branches; a pair of fasciae along lateral margins of mesonotum; a pair of small spots on anterior margins of submedian sigilla; and a pair of small spots on anterior submargins of lateral sigilla. Posterior medial margin of mesonotum sparsely covered with white pollinosity. Cruciform elevation ochraceous with black to fuscous anterior subapical parts and posterior margin. Ventral part of thorax ochraceous.

Fore leg mostly black to fuscous with an ochraceous marking on coxa, trochanter, femur, and pretarsal claw. Fore femur with a small subapical spine as well as primary and secondary spines. Mid and hind coxae ochraceous with a large fuscous paramedian spot. Mid and hind trochanters mostly black. Mid and hind femora ochraceous to brown with a fascia along ventral side of femur. Mid tibia and tarsus black. Hind tibia and tarsus mostly ochraceous with irregular fuscous markings. Mid and hind pretarsal claw fuscous apically.

Wings hyaline, fore wing with a infuscation on radial and radiomedial crossveins. Venation dark brown in both fore wing and hind wing. Basal cell slightly tinged with ochraceous and partly with light jade green. Basal membrane smoky gray. Hind wing jugum whitish but partly light jade green and partly smoky gray. Basal vein of apical cell 1 very short, about 1/4 of longitudinal vein of apical cell 1.

Operculum (Fig. 3C) ochraceous, partly but irregularly tinged with green, with very small fuscous area on anterior margin and lateral base and narrowly margined with fuscous on about anterior 1/3 of lateral margin; long, more slender than *P. constanti*, passing posterior margin of sternite V; slightly concave at middle of both inner and lat-

eral margins, with roundish apex, more narrowly rounded than *P. constanti*. Lateral margin of operculum weakly sinuate at base. Two opercula widely apart from each other, of which gap about as wide as operculum.

Abdomen obconical, considerably longer than distance from head to cruciform elevation; black with transversely arranged ochraceous irregular markings on tergites 2-6; irregularly covered with white pollinosity on tergites 3-5; very sparsely covered with silvery hairs. Posterior margin of tergite 3 wider than anterior margin of mesonotum. Timbal cover fuscous; quarter round. Timbal concealed with timbal cover in dorsal view. Ventral part of abdomen fuscous except ochraceous posterior margin of sternite VII and mostly ochraceous sternite VIII. Sternite VIII with a delicate median longitudinal fuscous fascia and margined with fuscous.

Male genitalia (Fig. 3A, B). Pygofer nearly spherical in ventral view. Upper lobes of pygofer absent. Dorsal beak short, triangular, nearly shaped as a regular triangle. Uncal lobe broad with medial margin nearly straight, distal margin nearly straight and slightly oblique toward inner side, and lateral margin convex. Aedeagus thin, protruding from venter of uncus. Basal lobe of pygofer narrow in ventral view, rounded in lateral view.

ACKNOWLEDGMENTS

I am indebted to Dr. Jerome Constant (Institut royal des Sciences naturelles de Belgique, Brussels, Belgium) for loan of specimens. I am grateful to anonymous reviewers for suggestions that improved the manuscript. This work benefited from support from the University of Connecticut and the National Science Foundation under Grant Numbers DEB 05-29679 and DEB 07-20664. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the NSF.

REFERENCES CITED

- BEUK, P. L. TH. 1999. Revision of the cicadas of the *Platylomia spinosa* group (Homoptera: Cicadidae). *Oriental Insects* 33: 1-84.
- BEUK, P. L. TH. 2002. On the systematics, phylogeny and biogeography of the cicada subtribes Dundubiina and Cosmopsaltriina (Homoptera: Cicadidae), pp. 179-323 *In* Cicadas Spreading by Island or by Spreading the Wings? Historic Biogeography of Dundubiine Cicadas of the Southeast Asian Continent and Archipelagos. Ph.D. Dissertation, Universiteit van Amsterdam, Amsterdam, 323 pp.
- GUÉRIN-MÉNEVILLE, F. E. 1834. Insectes, pp. 441-512, pls. 1-5 *In* M. C. Bélanger, Voyage aux Indes-Orientales, par le nord de l'Europe, les provinces du Caucase, la Géorgie, l'Arménie et la Perse, suivi de détails topographiques, statistiques et autres sur le Pégou, les Isles de Java, de Maurice et de Bourbon, sur le Cap-de-Bonne-Espérance et Sainte-Hélène, pendant les années 1825, 1826, 1827, 1828 et 1829,

- publié sous les auspices de LL. EE. MM. les Ministres de la Marine et de l'Intérieur, zoologie. H. Bertrand, Paris. xxxix + 535 pp.
- LEE, Y. J. 2008. A checklist of Cicadidae (Insecta: Hemiptera) from Vietnam, with some taxonomic remarks. *Zootaxa* 1787: 1-27.
- MOULDS, M. S. 2005. An appraisal of the higher classification of cicadas (Hemiptera: Cicadoidea) with special reference to the Australian fauna. Records of the Australian Museum 57: 375-446.
- STÅL, C. 1866. Hemiptera, Homoptera Latr. Hemiptera africana 4: 1-276.
- STÅL, C. 1870. Hemiptera insularum Philippinarum.— Bidrag till Philipponska öarnes Hemipter-fauna. Öfversigt af Kongl. Vetenskaps-akademiens förhandlingar 27: 607-776, pls. 7-9.