

urn:lsid:zoobank.org:pub:1FD1A0E4-CA5B-4131-BD1D-1ECF4FB433B0

Belgian Journal of Entomology

A new species of *Macrodaruma* Fennah, 1978 from Northern Vietnam (Hemiptera: Fulgoromorpha: Issidae)

Jérôme CONSTANT¹ & Hong Thai PHAM²

¹Royal Belgian Institute of Natural Sciences, Department of Entomology, Vautier street 29, B-1000 Brussels, Belgium (e-mail: jerome.constant@naturalsciences.be (corresponding author))

²Vietnam National Museum of Nature, Vietnam Academy of Science and Technology (VAST), 18 Hoang Quoc Viet Street, Hanoi, Vietnam (e-mail: phamthai1976@yahoo.com)

Published : Brussels, August 26, 2014

A new species of *Macrodaruma* Fennah, 1978 from Northern Vietnam (Hemiptera: Fulgoromorpha: Issidae)

Jérôme CONSTANT & Hong Thai PHAM

ISSN : 1374-5514 (Print Edition)

ISSN : 2295-0214 (Online Edition)



Le Belgian Journal of Entomolgy est édité par la Société royale belge d'Entomologie, association sans but lucratif, fondée le 9 avril 1855.

Siège social : rue Vautier 29, B-1000 Bruxelles

De Belgian Journal of Entomology is uitgegeven door de Koninklijke Belgische Vereniging voor Entomologie, vereniging zonder winstoogmerk, opgericht op 9 april 1855.

Sociale zetel : Vautierstraat 29, B-1000 Brussel

Les publications de la Société sont financées avec le concours de la Fondation Universitaire de Belgique

De publicaties van de Vereniging worden gefinancierd met de steun van de Universitaire Stichting van België.

In compliance with Article 8.6 of the ICZN, printed versions of all papers are deposited in the following libraries :

- Bibliothèque royale de Belgique, 4 Boulevard de l'Empereur, B-1000 Bruxelles
- Bibliothèque de l'Institut royal des Sciences naturelles de Belgique, Rue Vautier 29, B-1000 Bruxelles
- American Museum of Natural History Library, Central Park West at 79th street, New York, NY 10024-5192, USA
- Bibliothèque centrale du Museum national d'Histoire naturelle, 38 rue Geoffroy Saint-Hilaire, 75005 Paris, France
- Naturalis – Library, PO Box 9517, 2300 RA Leiden, The Netherlands
- Zoological Record, Thomson Reuters, Enterprise Hous, Heslington, York, YO10 5NQ, UK

A new species of *Macrodaruma* Fennah, 1978 from Northern Vietnam (Hemiptera: Fulgoromorpha: Issidae)

Jérôme CONSTANT¹ & Hong Thai PHAM²

¹ Royal Belgian Institute of Natural Sciences, Department of Entomology, Vautier street 29, B-1000 Brussels, Belgium (e-mail: jerome.constant@naturalsciences.be (corresponding author))

² Vietnam National Museum of Nature, Vietnam Academy of Science and Technology (VAST), 18 Hoang Quoc Viet Street, Hanoi, Vietnam (e-mail: phamthai1976@yahoo.com)

Abstract

A second species of the genus *Macrodaruma* Fennah, 1978 (Issinae, Hemisphaeriini), *M. curtinaso* sp. nov. is described from Tam Dao National Park, Northern Vietnam. It is compared to *M. pertinax* Fennah, 1978, the single species hitherto described in the genus. A key to the species is given. Habitus and male genitalia are illustrated.

Keywords: Global Taxonomic Initiative, Tonkin, Planthopper, Fulgoroidea, Homoptera.

Introduction

FENNAH (1978) described the genus *Macrodaruma* to accommodate one new species from Northern Vietnam: *Macrodaruma pertinax* Fennah, 1978 and stated that the genus is close to *Darumara* Metcalf, 1952. GNEZDILOV (2009) synonymized *Darumara* Metcalf, 1952 under *Gergithoides* Schumacher, 1915 in the Hemisphaeriini Melichar, 1906. GNEZDILOV & CONSTANT (2012) formally placed *Macrodaruma* in the Hemisphaeriini and gave new faunistic records and *in situ* photographs for *M. pertinax*.

The examination of a series of *Macrodaruma* collected in 2011 in Tam Dao during fieldwork in the frame of a Global Taxonomic Initiative project by the authors revealed a second species for the genus, which is here described.

Material and methods

The material has been treated as in CONSTANT, 2009. The definition of the genus given by FENNAH (1978) is followed.

For each picture a number of photographs were taken with a Canon camera and processed with Zerene Stacker software. They were optimized with Adobe Photoshop CS3.

The measurements were taken as in CONSTANT (2004) and the following abbreviations are used: BF—breadth of the frons, BV—breadth of the vertex, LF—length of the frons, LT—total length, LV—length of the vertex.

Acronyms used for the collections (name of the curator in parentheses):

RBINS: Royal Belgian Institute of Natural Sciences, Brussels, Belgium (W. Dekoninck).

VNMN: Vietnam National Museum of Nature, Vietnam Academy of Science and Technology, Hanoi, Vietnam (H. T. Pham).

Taxonomy

Family Issidae Spinola, 1839

Subfamily Issinae Spinola, 1839

Tribe Hemisphaeriini Melichar, 1906

Genus *Macrodaruma* Fennah, 1978

Type species: *Macrodaruma pertinax* Fennah, 1978 by monotypy and original designation.

Identification key to the species of *Macrodaruma*

- Vertex strongly elongate, twice as long (on median line) as broad: LV/BV = 2.0 (Fig. 2 D); frons strongly elongate, 2.7 times longer than broad (Fig. 2 E); dorsal lobe of phallobase not inflated dorsally (Fig. 4 B) ***Macrodaruma pertinax* Fennah, 1978**
- Vertex less elongate, 1.7 times longer (on median line) than broad (Fig. 1 D); frons 1.96 times longer than broad (Fig. 1 E); dorsal lobe of phallobase strongly inflated dorsally (Figs 3 C, D) ***Macrodaruma brevinaso* sp. nov.**

***Macrodaruma brevinaso* sp. nov.**

Figs 1 A–E, 3 A–E

ETYMOLOGY. The species name derives from the Latin words *brevus* (adj.) meaning short, and *naso* meaning nose. It refers to the shorter vertex compared to the other species, *M. pertinax* Fennah, 1978.

TYPE MATERIAL EXAMINED: Holotype ♂ (dissected, right hind wing mounted): [Coll. I.R.Sc.N.B., Vietnam, Tam Dao N. P., 21°31'N 105°33'E, 25-30.VI.2011 day collecting, Leg. J. Constant & J. Bresseel, I.G.: 31.993] (RBINS)

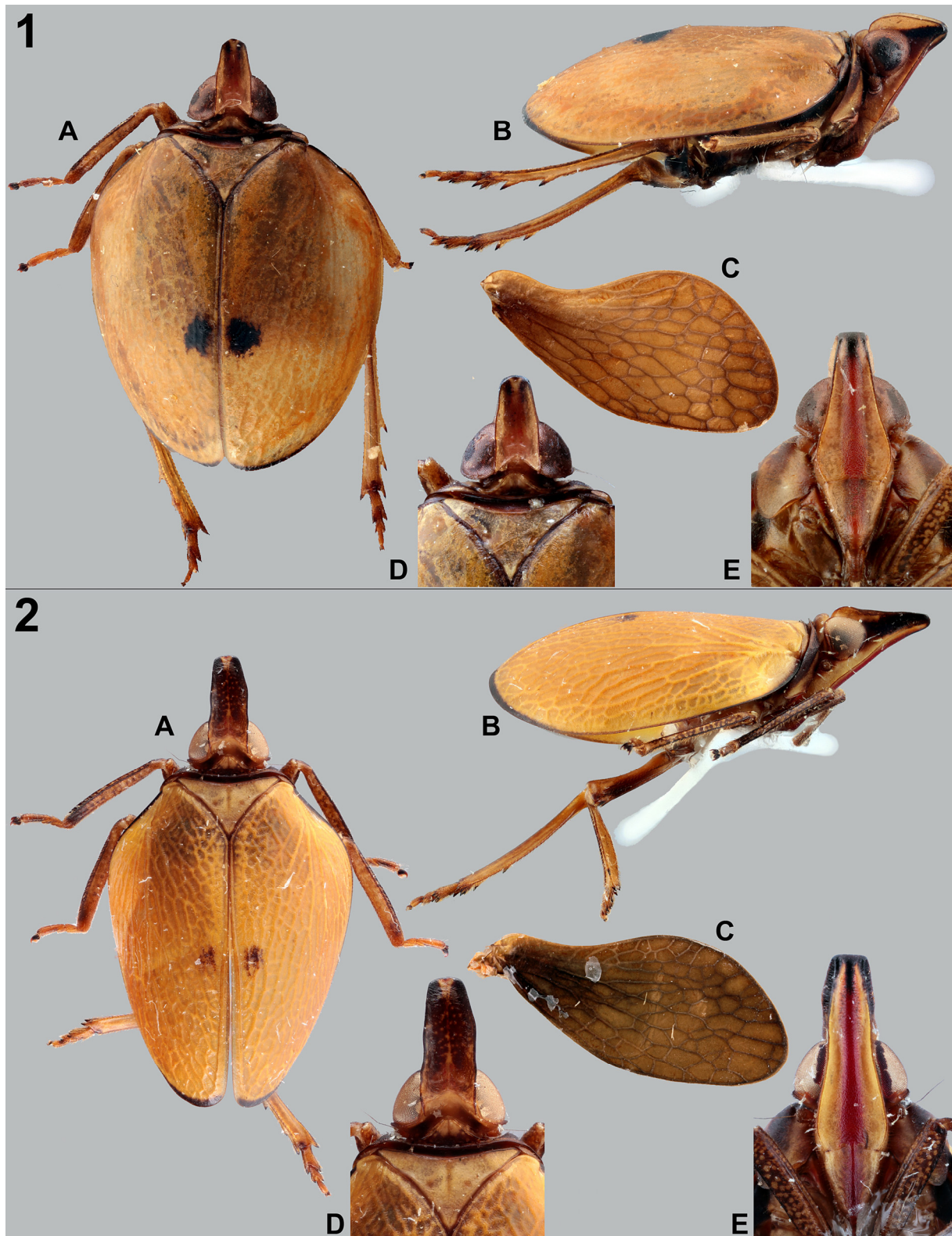
DIAGNOSIS. The species is easily recognized by the frons and vertex both elongate, but less so than in *M. pertinax* Fennah, 1978.

DESCRIPTION. LT: ♂ (n = 1): 7.7 mm.

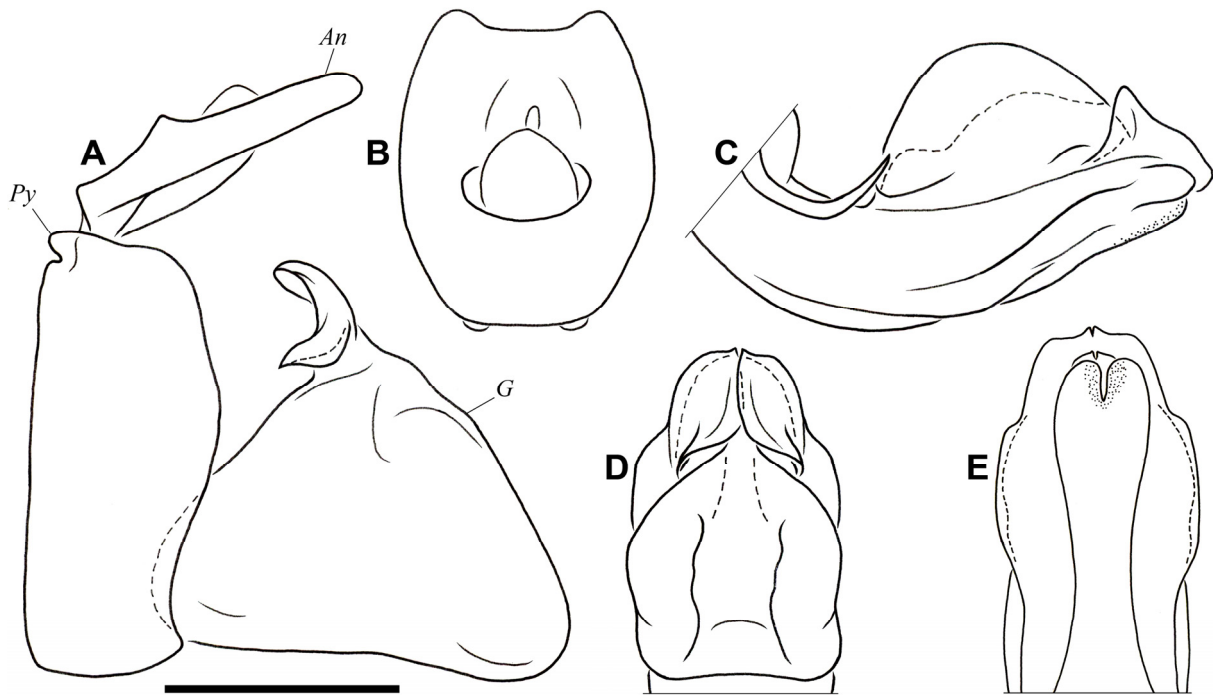
Head: mainly olivaceous-yellow with short cephalic process (Figs 1 A, B). Vertex elongate and narrow, deeply grooved (Fig. 1 D) with sides elevated and laminate (Fig. 1 B); black-brown markings near apex (Fig. 1 D). Genae with horizontal black line from upper margin of eye to apex of head (Fig. 1 B). Frons elongate with slightly elevated median red line extending to apex of clypeus; sides of frons black on apical half (Fig. 1 E); apex of frons and of red line turning to black (Fig. 1 E). Scape short, ring-shaped; pedicel bulbous (Fig. 1 E). Ratio LV/BV = 1.7; LF/BF = 1.96.

Thorax: olivaceous-yellow (Figs 1 B, D, E). Pronotum very short with posterior margin and discal carinae laminate (Fig. 1 D); disc hollowed with median groove on anterior half (Fig. 1 D); centre of disc and broad line along dorsal margin of lateral lobes brown (Figs 1 B, D, E). Mesonotum short, smooth with transverse bisinuate carina along anterior margin (Fig. 1 D). Tegulae brown-black (Figs 1 B, D).

Tegmina: (Figs 1 A, B) olivaceous-yellow, broadly semicircular, subcoriaceous. Venation reticulate with main longitudinal veins barely distinct basally and numerous cross-veinlets. Costal margin very narrowly black along basal third. Apical margin bordered with narrow black-brown line. Black-brown spot near sutural margin at level of nodal line.



Figs 1–2. 1. *Macrodaruma brevinaso* sp. nov., holotype, total length: 7.7 mm. 2. *Macrodaruma pertinax* Fennah, 1978, total length: 8.5 mm. A, habitus, dorsal view. B, habitus, right lateral view. C, right hind wing. D, head and thorax, dorsal view. E, frons, normal view.



Figs 3 A–E. *Macrodaruma brevinaso* sp. nov., genitalia ♂. A, pygofer, anal tube and gonostyli, left lateral view. B, anal tube, dorsal view. C, phallic complex, left lateral view. D, phallic complex, dorsal view of apical half. E, phallic complex, postero-ventral view. An: anal tube; G: gonostyli; Py: pygofer. Scale 1mm.

Hind wings: (Fig. 1 C) brown, unlobed, with veins darker, slightly shorter than tegmina. Venation reticulate with main longitudinal veins distinct basally and numerous cross-veinlets. Costal margin strongly sinuate.

Legs: (Figs 1 A, B) elongate and slender, olivaceous yellow. I and II with numerous small brown dots and with longitudinal brown line on tibiae ventrally. Tibiae III with 2 lateral spines on apical 1/3 and 6 apical spines.

Genitalia ♂: pygofer higher than broad and with posterior margin sinuate in lateral view, slightly broader in middle (Fig. 3 A). Gonostyli subtriangular in lateral view (Fig. 3 A); dorsal process spoon-shaped with latero-basal hook-shaped spine directed ventro-anteriorly (Fig. 3 A). Anal tube 1.25 times longer than broad, dorso-ventrally flattened with sides broadly rounded and apex concave (Figs 3 A, B); postero-lateral angles slightly projecting in dorsal view (Fig. 3 B). Dorsal lobe of phallobase with basal hook-shaped processes baso-laterally (Fig. 3 C); strongly inflated dorsally and with apical folded overlapping laminae (Figs 3 C, D). Ventral lobe of phallobase spatulate; bifid with minute tubercles apically (Figs 3 D, E).

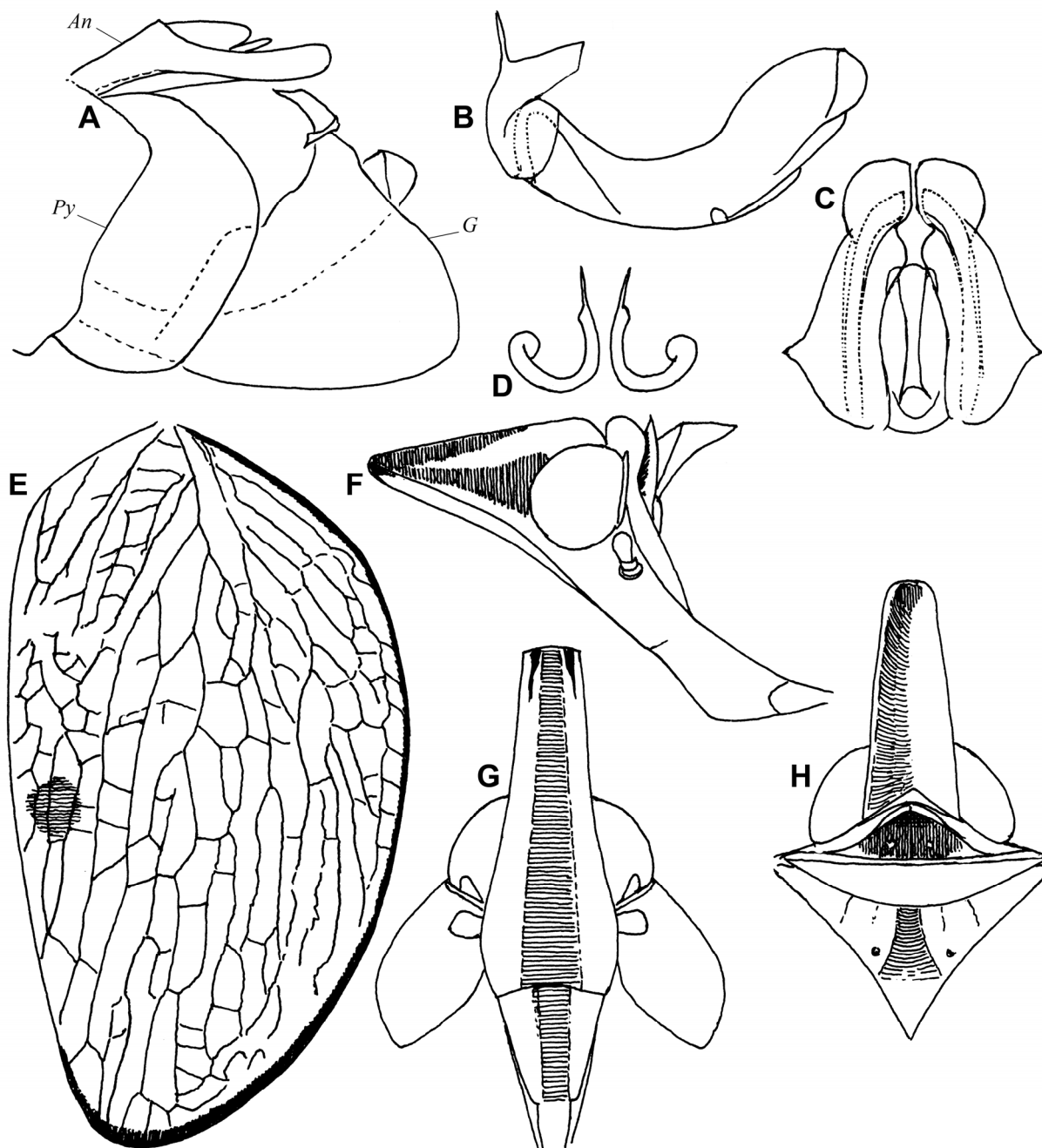
BIOLOGY. *M. brevinaso* sp. nov. was collected on lower vegetation, in moist evergreen low mountain forest together with specimens of *M. pertinax* Fennah, 1978. Typical biotope for those species is illustrated in GNEZDILOV & CONSTANT (2012).

Note: it is possible that the main colour of living specimens is green rather than olivaceous-yellow as was shown for *M. pertinax* by GNEZDILOV & CONSTANT (2012).

***Macrodaruma pertinax* Fennah, 1978**

Figs 2 A–E, 4 A–H.

MATERIAL EXAMINED: Vietnam, Vinh Phuc province, Tam Dao N. P., 21°31'N 105°33'E: 2♂ (1 dissected, right hind wing mounted), 5♀: 25-30.VI.2011 day collecting, leg. J. Constant & J. Bresseel (RBINS); 2♂, 2♀: 1.VII.2003, leg. H.T. Pham (RBINS); 1♂: Vietnam, Tam Dao N.P., 22.VI.2008, leg. H.T. Pham (VNMN); 2♂: idem, 5.V.2013 (VNMN).



Figs 4 A–H. *Macrodaruma pertinax* Fennah, 1978, genitalia ♂ and details. A, pygofer, anal tube and gonostyli, left lateral view. B, phallic complex, left lateral view. C, phallic complex, postero-ventral view. D, lower ends of suspensorium. E, right tegmen. F, head and thorax, left lateral view. G, head and lateral lobes of pronotum, antero-ventral view. H, head and thorax, dorsal view. *An*: anal tube; *G*: gonostyli; *Py*: pygofer. Modified from FENNAH (1978), courtesy of Annales Zoologici, Warsaw.

The illustrations given by FENNAH (1978) in the original description are given in a larger size to facilitate comparison between the two species (Figs 4 A–H).

Acknowledgments

We thank Mr Joachim Bresseel (collaborator RBINS) and Mr Hoang Vu Tru (Institute of Ecology and Biological Resources, VAST, Hanoi, Vietnam) for their permanent enthusiasm during our collecting trips in Vietnam. The authors' collecting trips were supported through a grant issued by the capacity building

Programme of the Belgian Global Taxonomic Initiative National Focal Point that runs with financial support from the Belgian Directorate-General for Development Cooperation. We also thank Mr Jonathan Brecko for taking the photographs of the specimens and processing them with Zerene Stacker. Dr Adam Stroinski (Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland) is thanked for sending a scan of the original drawings of Fennah and allowing its use in the present paper. The second author thanks IDEA WILD who donated equipment for this study. The present study was partially supported by the National Foundation for Science and Technology Development (NAFOSTED-106.12-2012.63), Vietnam, the International Foundation for Science (IFS-No D/5181-1), Sweden, and the Nagao Natural Environment Foundation, Japan. We thank Dr Michael Wilson (Museum of Wales, Cardiff, U.K.) for reviewing the manuscript.

References

- CONSTANT J., 2004. - Révision des Eurybrachidae (I). Le genre *Amychodes* Karsch, 1895 (Homoptera: Fulgoromorpha: Eurybrachidae). *Bulletin de l'Institut royal des Sciences naturelles de Belgique*, 74: 11-28.
- CONSTANT J., 2009. - Revision of the Afrotropical genus *Scolopsomorpha* (Hemiptera: Fulgoromorpha: Tropiduchidae). *Zootaxa*, 2219: 38-48.
- FENNAH R.G., 1978. - Fulgoroidea (Homoptera) from Vietnam. *Annales Zoologici* (Warszawa), 34(9): 207-279.
- GNEZDILOV V.M., 2009. - Revisionary notes on some tropical Issidae and Nogodinidae (Hemiptera: Fulgoroidea). *Acta Entomologica Musei Nationalis Pragae*, 49(1): 75-92.
- GNEZDILOV V.M. & CONSTANT J., 2012. - Review of the family Issidae (Hemiptera: Fulgoromorpha) in Vietnam with description of a new species. *Annales Zoologici* (Warszawa), 62(4): 571-576.