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

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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)

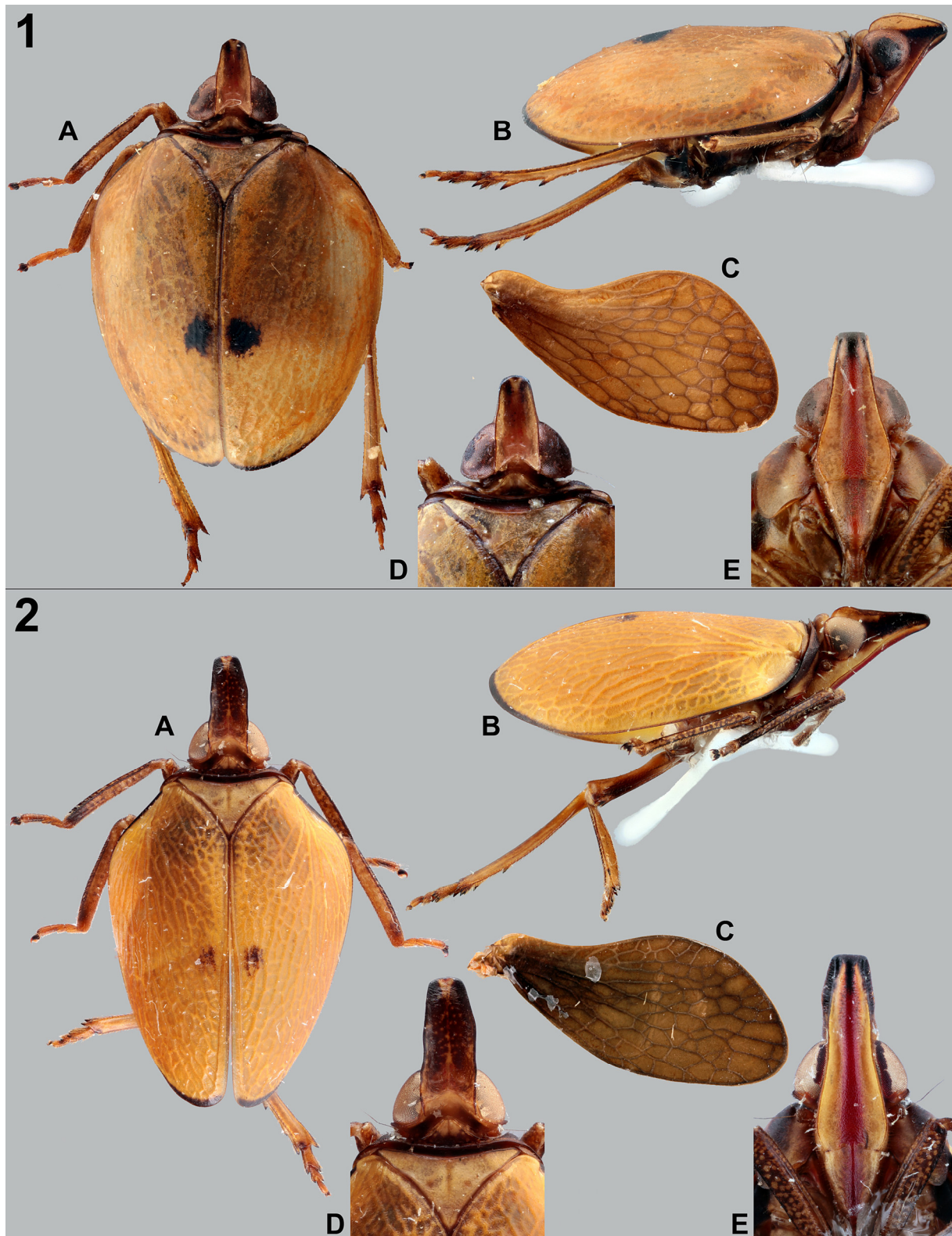
DIAGNOSIS. The species is easily recognized by the frons and vertex both elongate, but less so than in *M. pertinax* Fennah, 1978.

DESCRIPTION. LT: ♂ (n = 1): 7.7 mm.

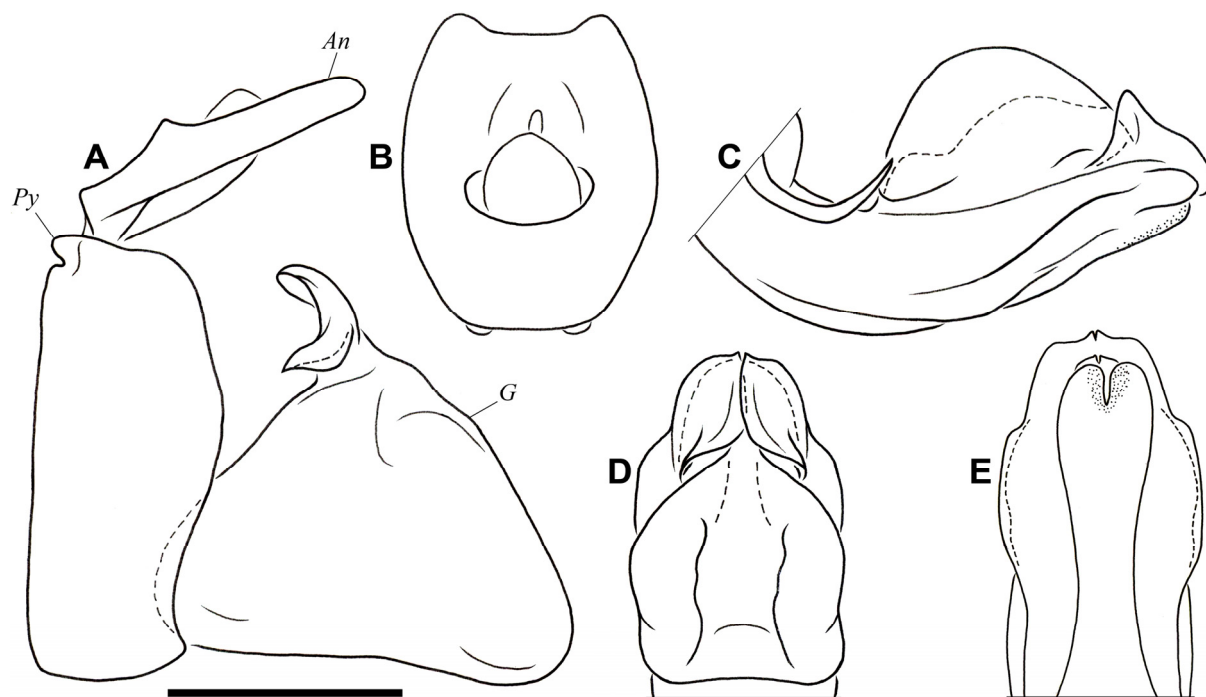
Head: mainly olivaceous-yellow with short cephalic process (Figs 1 A, B). Vertex elongate and narrow, deeply grooved (Fig. 1 D) with sides elevated and laminate (Fig. 1 B); black-brown markings near apex (Fig. 1 D). Genae with horizontal black line from upper margin of eye to apex of head (Fig. 1 B). 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, unilobed, 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).

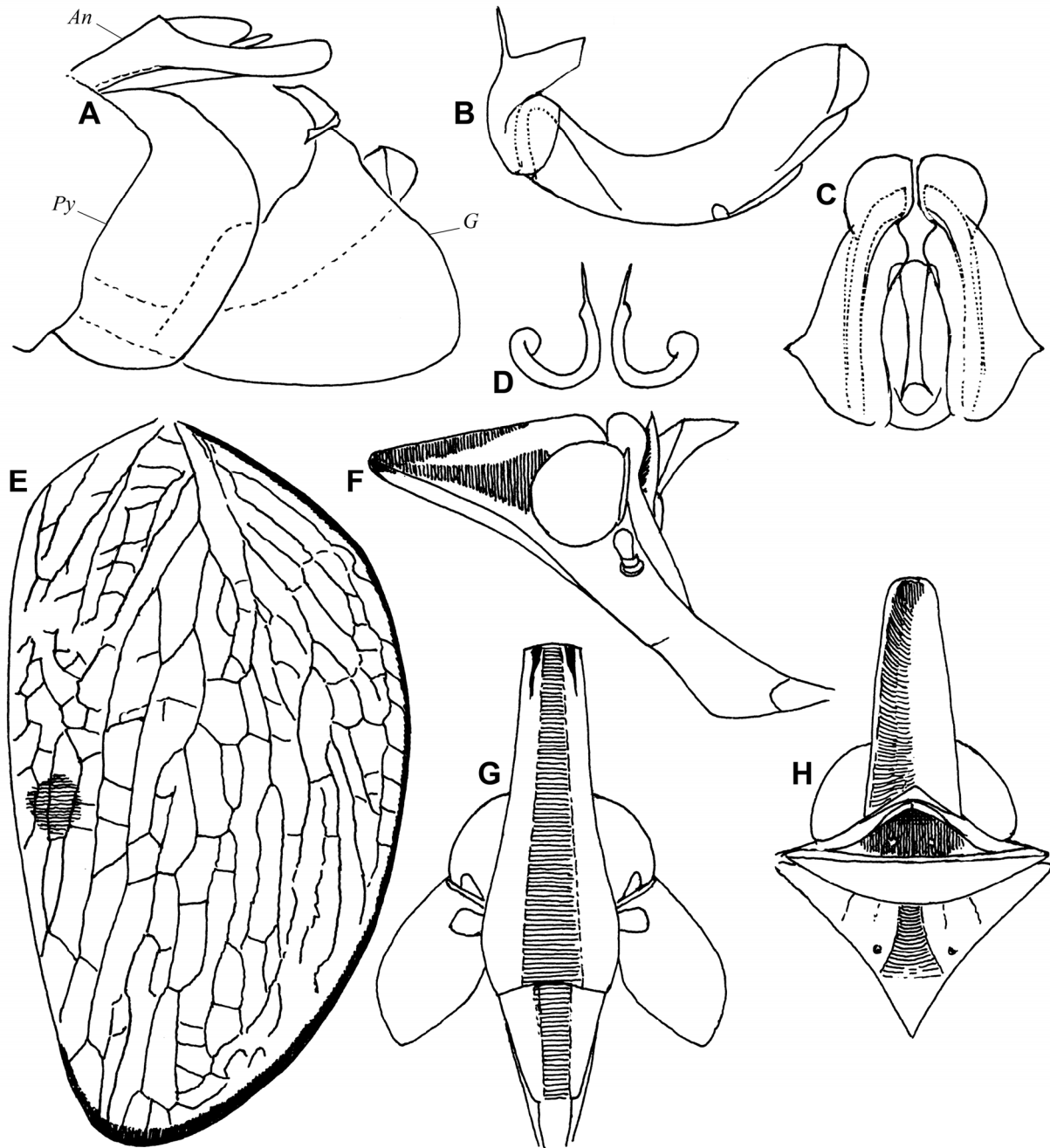
BIOLOGY. *M. brevinaso* sp. nov. was collected on lower vegetation, in moist evergreen low mountain forest together with specimens of *M. pertinax* Fennah, 1978. Typical biotope for those species is illustrated in GNEZDILOV & CONSTANT (2012).

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).

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