



Research article

urn:lsid:zoobank.org:pub:9AD31876-2799-46C1-AEF7-C624FA7C96B7

Review of the Oriental lantern-fly genus *Egregia* Chew Kea Foo, Porion & Audibert, 2011, with a new species from Sumatra (Hemiptera: Fulgoromorpha: Fulgoridae)

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Abstract. *Datua brevirostris* Lallemand, 1959 is transferred to the genus *Egregia* Chew Kea Foo, Porion & Audibert, 2011 in the Aphaeninae and the new combination *Egregia brevirostris* (Lallemand, 1959) comb. nov. is proposed. *Egregia marpessa* Chew Kea Foo, Porion & Audibert, 2011, the type-species of the genus *Egregia*, is synonymized with *Egregia brevirostris* (Lallemand, 1959). A second species, *Egregia laprincesse* sp. nov. is described from Sumatra, extending the distribution of the genus hitherto recorded only from Borneo. Distribution maps and an identification key are provided. The male genitalia of *E. brevirostris* are illustrated and described. The genus *Datua* Schmidt, 1911 now contains a single species, *D. bisinuata* Schmidt, 1911.

Keywords. Lantern bug, planthopper, Malaysia, Fulgoroidea, citizen science

Constant J. 2014. Review of the Oriental lantern-fly genus *Egregia* Chew Kea Foo, Porion & Audibert, 2011, with a new species from Sumatra (Hemiptera: Fulgoromorpha: Fulgoridae). *European Journal of Taxonomy* 92: 1–9. <http://dx.doi.org/10.5852/ejt.2014.92>

Introduction

In the process of revising the Old World fauna of Fulgoridae, it appeared necessary to propose some nomenclatural changes within the recently described genus *Egregia* Chew Kea Foo, Porion & Audibert, 2011. The genus currently contains the unique species *E. marpessa* Chew Kea Foo, Porion & Audibert, 2011 from Borneo.

Lallemand (1959) described *Datua brevirostris* based on a single female from Borneo. However, Lallemand (1963) did not mention *D. brevirostris* in his monograph on Oriental and Australian Fulgoridae, and it is also missing in the catalogue of Nagai & Porion (1996) and its supplements (Nagai & Porion 2002, 2004).

The study of the type specimens of both species revealed that they are conspecific. The present paper aims to clarify that nomenclatural issue and to describe a new species, *Egregia laprincesse* sp. nov. from Sumatra.

Material and methods

The type specimens have been examined. The male genitalia were dissected as follows: the pygofer was cut from the abdomen of the softened specimen with a needle blade, and then boiled for about one hour in a 10% solution of potassium hydroxide (KOH) at about 100°C. The phallic complex was dissected with a needle blade and all pieces examined in ethanol, the whole placed in glycerine for preservation. Observations were done with a Leica MZ8 stereo microscope. Pictures were taken with a Canon EOS 300 D camera with a Sigma DG Macro lens and optimized with Photoshop CS3. The inflation of the phallus was not done due to the difficulty in obtaining good results.

The measurements were taken as in Constant (2004) and the following abbreviations are used:

BF	=	breadth of the frons
BTg	=	breadth of the tegmen
BV	=	breadth of the vertex
LF	=	length of the frons
LTg	=	length of the tegmen
LV	=	length of the vertex
TL	=	total length

(LV, LF and TL measured to the base of the cephalic process)

Acronyms used for the collections (names of the curators in parentheses):

MHNL	=	Muséum d'Histoire Naturelle de Lyon, France (H. Labrique, J. Clary, C. Audibert)
MNHN	=	Museum national d'Histoire Naturelle, Paris, France (Thierry Bourgoïn)
NHRS	=	Naturhistoriska riksmuseet, Stockholm, Sweden (Gunvi Lindberg)

Results

Taxonomy

Family Fulgoridae Latreille, 1807
Subfamily Aphaeninae Blanchard, 1847
Tribe Aphaenini Distant, 1906

Genus *Egregia* Chew Kea Foo, Porion & Audibert, 2011

Type-species: *Egregia marpessa* Chew Kea Foo, Porion & Audibert, 2011 by original designation.

Identification key to the species of *Egregia*

- In lateral view, cephalic process slightly curved postero-dorsally at apex and narrower than eye (Fig. 14); hind wings with dark purple basal patch covering less than half of surface and prolonged by lines of spots along costal half (Figs 9–10)*Egregia brevirostris* (Lallemand, 1959)
- In lateral view, cephalic process strongly curved postero-dorsally at apex and broader than eye (Fig. 23); hind wings with red basal patch covering about half of surface and without additional spots (Figs 19–20)*Egregia laprincesse* sp. nov.

Egregia brevirostris (Lallemand, 1959) comb. nov.
Figs 1–18

Datua brevirostris Lallemand, 1959: 268.

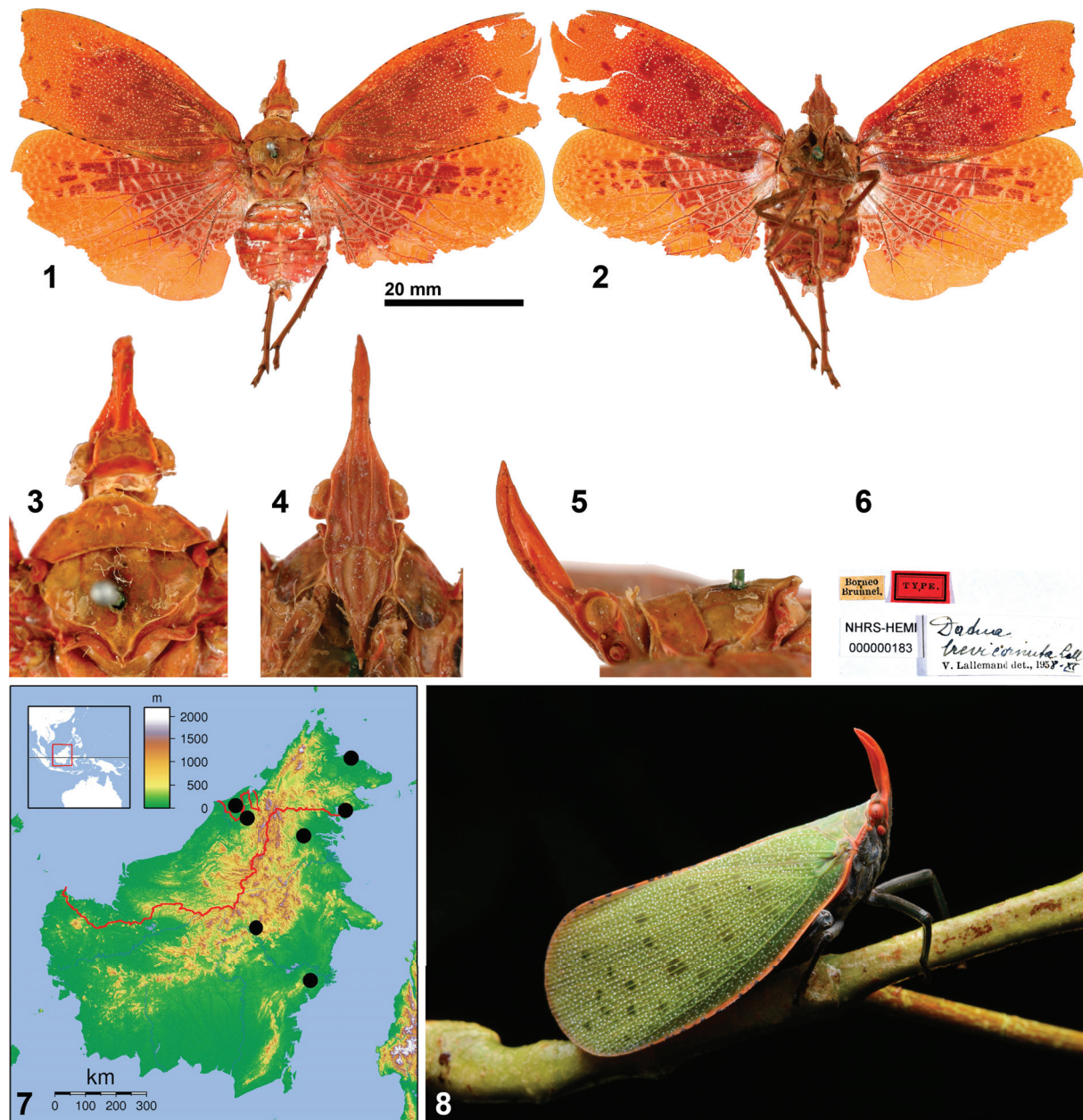
Egregia marpessa Chew Kea Foo, Porion & Audibert, 2011: 45, syn. nov.

Material examined

Type material

Holotype ♀ of *Datua brevirostris* (Figs 1–6) labelled: [Borneo, Brunnei.] [Type] [*Datua brevicornuta*, V. Lallemand det., 1958] [NHRS-HEMI 000000183] (NHRS).

Holotype ♂ of *Egregia marpessa*: Indonesia, centre of Kalimantan, Mont Payang 1200–1600 m, May 2008, Stanislav Jakl leg. (MHNL).



Figs 1–8. 1-6, *Egregia brevirostris* (Lallemand, 1959), holotype, ♀. 1. Dorsal view. 2. Ventral view. 3. Head and pronotum: dorsal view. 4. Frons: normal view. 5. Head and thorax: left lateral view (Figs 3-5 not to scale). 6. Labels. 7. Distribution map. 8. Specimen in nature at night, Sarawak, Mulu National Park, 50 m asl (photograph by Ch'ien C. Lee – www.wildborneo.com.my).

Paratype ♀ of *Egregia marpessa*: East-Malaysia, Sabah, Sandakan, 2 Nov. 2006, Steven Chew Kea Foo leg. (MHNL).

Additional material examined

MALAYSIA: 1 ♂ (Figs 9–14), East Malaysia, Sabah, Tawau, 6 Apr. 2010 (MHNL).

Material examined on photograph

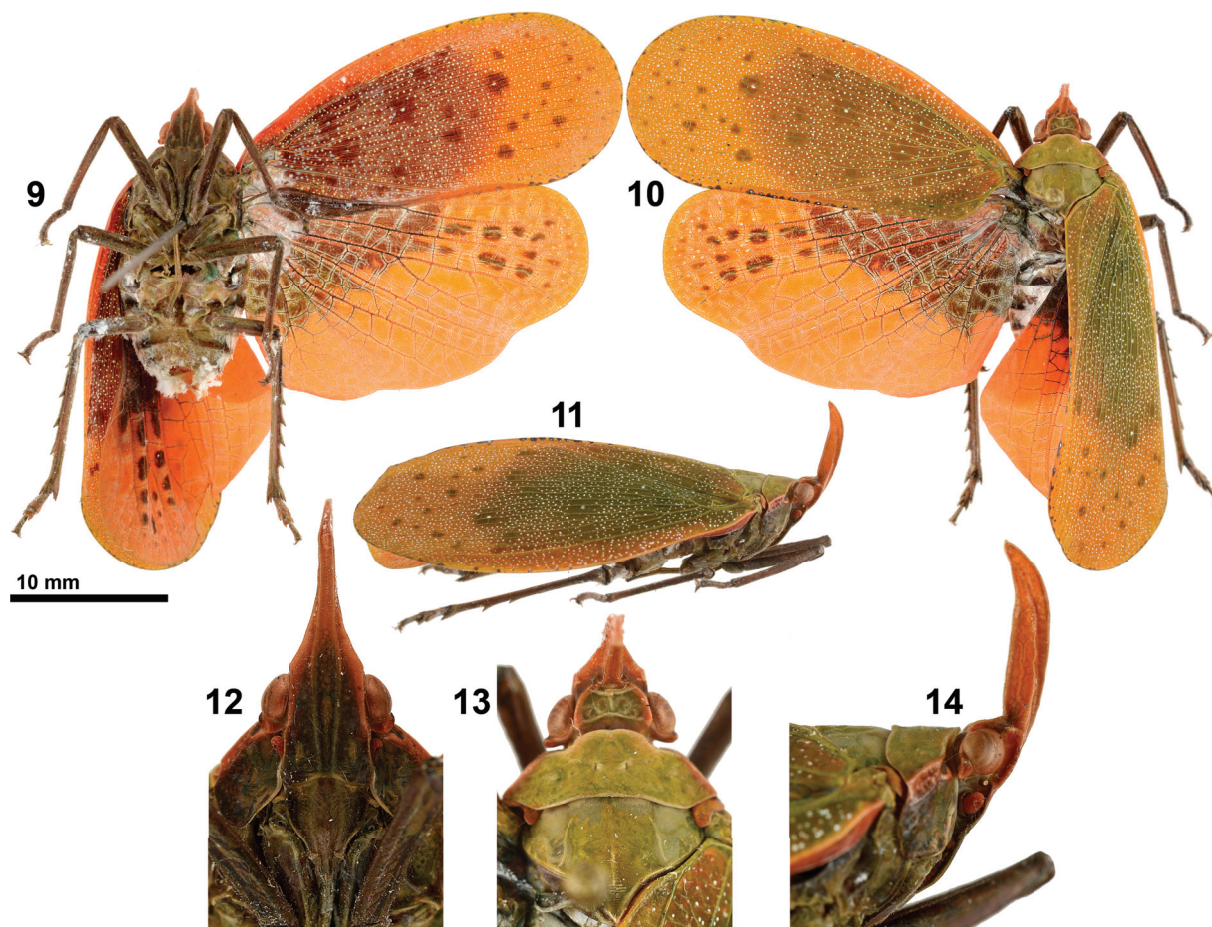
MALAYSIA: 1 specimen (probably ♂, Fig. 8), Sarawak, Mulu National Park, 4°03.107' N 114°81.666' E, c. 50 m asl, 23 Nov. 2012, 19:49, Ch'ien C. Lee (Lee, 2014).

Additional data

INDONESIA: (Edy Bhaskara pers. comm. 2013): 1 specimen, E Kalimantan, Long Bagun village; 1 specimen, E Kalimantan, Malinau village (about 150 m alt).

Note

Lallemand erroneously wrote *brevicornuta* instead of *brevirostris* on the identification label attached to the specimen.

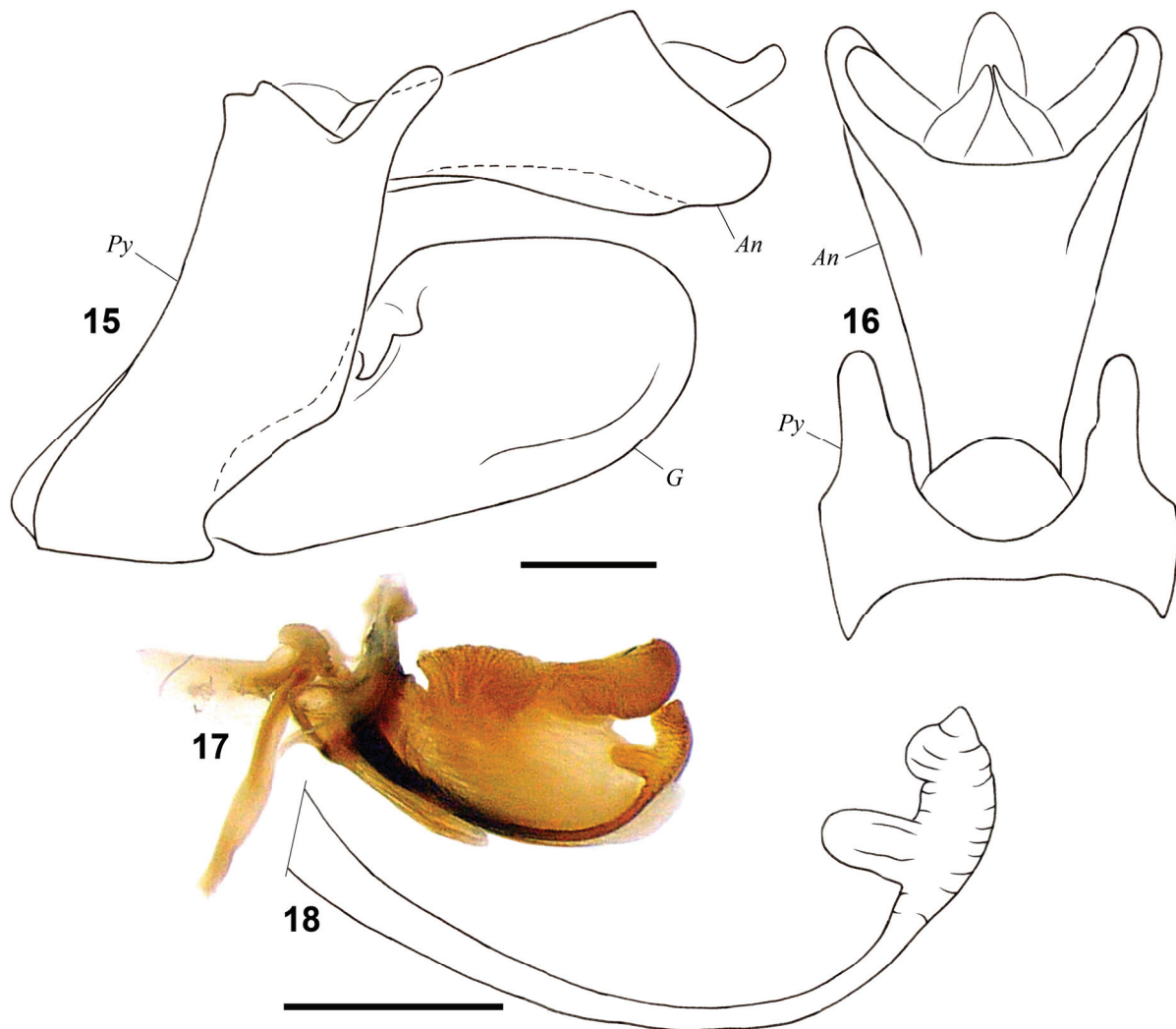


Figs 9–14. *Egregia brevirostris* (Lallemand, 1959), ♂, from Tawau (TL: 30.2 mm). **9.** Habitus: ventral view. **10.** Habitus, dorsal view. **11.** Habitus: right lateral view. **12.** Head: normal view of frons. **13.** Head and thorax: dorsal view. **14.** Head and thorax: right lateral view (Figs 12–14 not to scale).

MEASUREMENTS AND RATIOS. LTg/BTg (n = 2) = 2.22; BV/LV (n = 1) = 3.42; LF/BF (n = 1) = 1.21.

Male genitalia

Pygofer with digitiform process dorsally on each side of anal tube, directed dorso-posteriorly (Figs 15–16); posterior margin of pygofer strongly sinuate on ventral 1/3 in lateral view (Fig. 15). Anal tube elongate, about 1.34 times longer than broad near apex, with lateral margins diverging from base to apex in dorsal view (Fig. 16); ventral margin sinuate and apical margin rounded in lateral view (Fig. 15). Gonostyli elongate, twice as long as broad, with apex broadly rounded and dorsal and ventral margins subparallel in lateral view (Fig. 15); strong hook-shaped tooth under dorsal margin close to pygofer, curved ventro-posteriorly and prolonged by a small rounded lobe on gonostylus wall dorso-posteriorly (Fig. 15). Phallic complex with latero-ventral curved sclerotized process on each side (Fig. 17), processes with ante-apical expansion directed anteriorly (Fig. 18).



Figs 15–18. *Egregia brevirostris* (Lallemand, 1959), ♂, from Tawau, genitalia. **15.** Pygofer, anal tube and gonostylus: left lateral view. **16.** Pygofer and anal tube: dorsal view. **17.** Phallic complex: left lateral view. **18.** Latero-ventral sclerotized process of phallic complex, left lateral view. *An* = anal tube, *G* = gonostylus, *Py* = pygofer. Scale 1 mm (Fig. 17 not to scale).

Distribution

Borneo. The species seems widespread on the island (see map Fig. 7).

Egregia laprincesse sp. nov.

Figs 19-26

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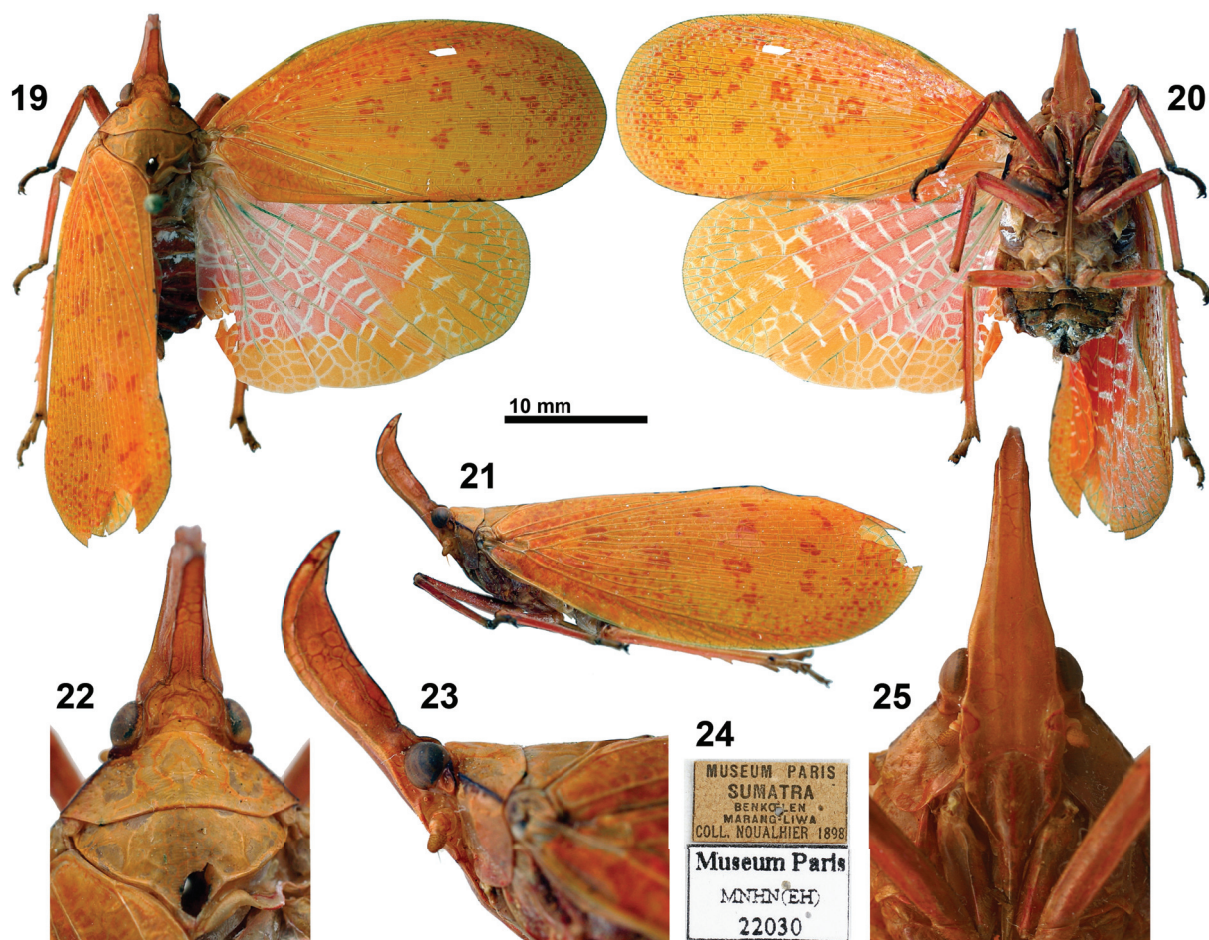
Etymology

The species name used in apposition is the contraction of “la princesse”, the original name of “Sleeping Beauty” in the classic 1697 fairytale by Charles Perrault. The name refers to the fact that the single known female has been sleeping in the collections of the MNHN for more than one century.

Type material

Holotype

INDONESIA: 1 ♀: [Museum Paris, Sumatra, Benkollen, Marang-Liwa, Coll. Noualhier 1898] [Museum Paris, MNHN (EH), 22030] (Fig. 24). Coordinates of Marang-Liwa: 5°04'S 104°06'E (Medler 1999).



Figs 19–25. *Egregia laprincesse* sp. nov., holotype, ♀ (TL: 31.6 mm). **19.** Habitus: dorsal view. **20.** Habitus, ventral view. **21.** Habitus: left lateral view. **22.** Head and thorax: dorsal view. **23.** Head and thorax: left lateral view. **24.** Labels. **25.** Head: normal view of frons (Figs 22-25 not to scale).

Description

MEASUREMENTS AND RATIOS. TL: 31.6mm; LTg/BTg = 2.08; BV/LV = 3.12; LF/BF = 1.11.

HEAD (Figs 22–23, 25). Entirely orange. Elongate with scimitar-shaped process projecting antero-dorsally and curved backwards apically; apex pointed; process broader than eye in lateral view and about as long as pro- and mesonotum together. Vertex before process broader than long and irregularly wrinkled; posterior and lateral margins carinate; lateral carinae extending to apex of process. Frons elongate with 2 smooth discal carinae extending to apex of process and getting more strongly marked from base to apex. Lateral margins of frons carinate, extending along sides of process and sub-parallel to anterior margin. Clypeus slightly narrower than frons and with sides sub-parallel on basal half. Postclypeus pointed. Labium reaching hind coxae (Fig. 20). Antennae with scape cylindrical and pedicel reniform.

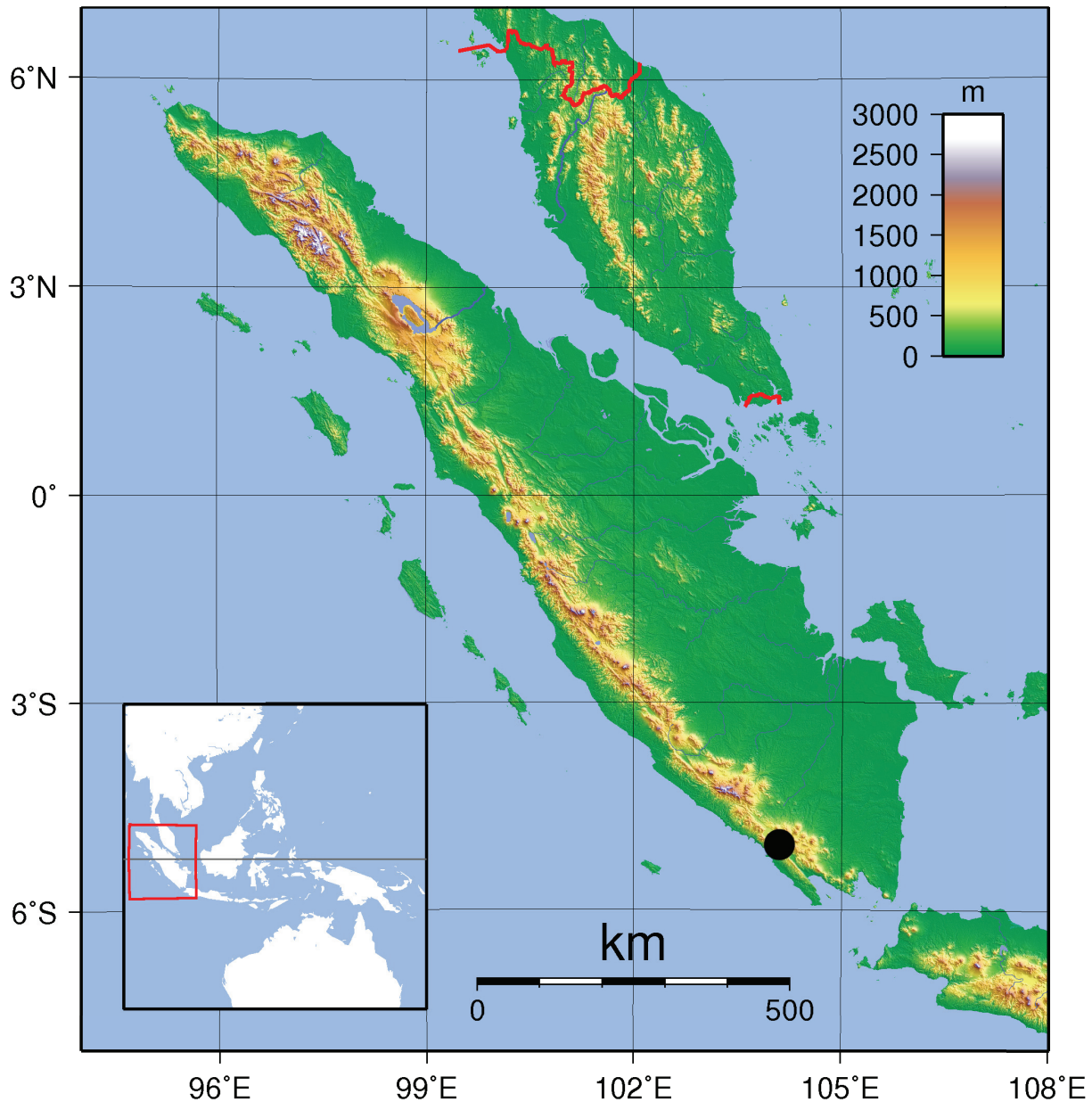


Fig. 26. *Egregia laprincessae* sp. nov., distribution map.

THORAX (Figs 22–23). Orange. Pronotum nearly smooth, with obsolete longitudinal carina and transverse wrinkles; dorso-lateral carinae with edge black-brown. Mesonotum with smooth peridiscal carinae. Longitudinal carina of metathoracic pleura black-brown. Tegulae orange.

TEGMINA (Figs 19– 21). Orange with irregular reddish spots, some of them with orange center. Sutural margin with 7 very small black-brown spots on edge. Costal and apical margins broadly rounded. Ventral surface slightly covered with white wax.

HIND WINGS (Figs 19–20). Broad, orange with rosy-red large basal patch covering about half of total surface. Numerous cross-veinlets marked with milky white and forming dense net on entire wing. Anal area well developed.

LEGS (Figs 19–20). Rosy orange with tarsi I and II yellow-brown. All tibiae slender. Tibiae III with 5 lateral and 7 apical spines.

ABDOMEN (Figs 19–20). Rosy red dorsally, yellow-brown ventrally.

Note

It is possible that the colour of living specimens is more or less olivaceous or green and that it faded to orange after death, as has also been observed in *E. brevirostris*.

Distribution

Sumatra (see map Fig. 26).

Discussion

The reason for the placement of *brevirostris* within *Datua* Schmidt, 1911 by Lallemand (1959) remains obscure, as *brevirostris* is very different from the single species contained in *Datua*, *D. bisinuata* Schmidt, 1911 (see also Nagai & Porion 1996 for illustrations).

Although the collecting date of the holotype described by Lallemand (1959) is unknown, at least 50 years passed until another specimen of *E. brevirostris* was collected. However, since the paper by Chew Kea Foo *et al.* (2011), it has been possible to gather a number of data showing that the species is actually widespread in Borneo, and proving once more that more collecting is necessary to improve our knowledge even of big and spectacular insects.

Collaboration with local naturalists and nature photographers via the internet is also an efficient way to collect information on species which can be identified from photographs: 3 of the 7 distribution data in the present work come from such “citizen science” sources.

Acknowledgements

I thank all the curators listed above for their help to study the material under their responsibility, Mr. Thierry Porion for interesting discussions, Mr. Ch’ien C. Lee (www.wildborneo.com.my) for the kind permission to use his photograph and data, Mr. Joachim Bresseel for informing the author about the picture on the internet, Mr. Edy Bhaskara for transmitting his data, and Dr. Patrick Grootaert (Royal Belgian Institute of Natural Sciences, RBINS) and Mr. Pol Limbourg (RBINS) for their support and comments. This study has also benefited from funds of the European Union for a visit to the collections of the NHRS (Synthesys project) and MNHN (Colparsyst Project), and from MHNL for a visit to its collections so kindly arranged by Mr. Cédric Audibert, Joël Clary and Harold Labrique. I warmly thank

Dr. Thierry Bourgoïn (MNHN) for reminding me of a specimen I had identified as a new genus and species nearly ten years ago.

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Manuscript received: 17 December 2013

Manuscript accepted: 1 July 2014

Published on: 5 August 2014

Topic editor: Koen Martens

Desk editor: Kristiaan Hoedemakers

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