Belgian Journal of Entomology 112: 1–19 (2021) ISSN: 2295-0214
www.srbe-kbve.be

urn: lsid:zoobank.org:pub:13BADEAF-4D6D-4C29-9898-8A998F5C6B18

Belgian Journal of Entomology

Pyrops auratus, a new lanternfly from the Philippines and taxonomic note on Bornean *P. gunjii* (Satô & Nagai, 1994) (Hemiptera: Fulgoromorpha: Fulgoridae)

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Published: Brussels, 08 March 2021

Citation: CONSTANT J., 2021. - *Pyrops auratus*, a new lanternfly from the Philippines and taxonomic note on Bornean *P. gunjii* (Satô & Nagai, 1994) (Hemiptera: Fulgoromorpha: Fulgoridae). *Belgian Journal of Entomology,* 112: 1–19.

ISSN: 1374-5514 (Print Edition)
ISSN: 2295-0214 (Online Edition)

The Belgian Journal of Entomology is published by the Royal Belgian Society of Entomology, a non-profit association established on April 9, 1855.

Head office: Vautier street 29, B-1000 Brussels.

The publications of the Society are partly sponsored by the University Foundation of Belgium.

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Front cover: *Pyrops auratus* sp. nov., male holotype (RBINS). Left to right: habitus, dorsal view; habitus, lateral view; habitus, ventral view. © J. Constant.

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Pyrops auratus, a new lanternfly from the Philippines and taxonomic note on Bornean *P. gunjii* (Satô & Nagai, 1994) (Hemiptera: Fulgoromorpha: Fulgoridae)

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Abstract

A new species of the Fulgoridae genus *Pyrops* Spinola, 1839 is described from the Philippines: *Pyrops auratus* sp. nov. from Samar. The new species is compared with the closely related *P. nishiyamai* Nagai & Porion, 2002 from Panay and *P. philippinus* (Stål, 1870) from Mindanao. All treated species are illustrated from type specimens and a distribution map is provided. The male genitalia of *P. auratus* sp. nov. and *P. philippinus* are illustrated including the inflated phallus of the latter. A checklist of the 14 species of *Pyrops* from the Philippines is provided. *Pyrops gunjii* (Satô & Nagai, 1994) stat. rev. from Borneo is reinstated as a valid species from recent unjustified treatment as a subspecies of *P. effusus* (Distant, 1891).

Keywords: Fulgoroidea, Lanternbug, Philippines, Planthopper

Introduction

The family Fulgoridae contains the largest and most spectacular planthoppers, the lanternflies, and are among the most famous of all insects. It groups 142 genera and 773 species worldwide (BOURGOIN, 2021), distributed mostly in the wet tropics but with some genera extending to the temperate regions. The Oriental Region contains about 300 described species, representing about 40% of the diversity of the family. The Philippine fauna of Fulgoridae comprises 26 species in 6 genera and all Philippine species except one, *Penthicodes farinosa* (Weber, 1801), are endemic in the archipelago. The first three species of the genus *Pyrops* from the Philippines were described by STÅL (1870) from material collected by Semper, *P. aeruginosus* (Stål, 1870), *P. lautus* (Stål, 1870) and *P. philippinus* (Stål, 1870), and SCHMIDT (1907) described the fourth one, *P. zephyrius* (Schmidt, 1907). The most important contribution to the Philippine *Pyrops* was that of BAKER (1925). He described five additional species, *P. agusanensis* (Baker, 1925), *P. fumosus* (Baker, 1925), *P. maquilinganus* (Baker, 1925), *P. polillensis* (Baker, 1925) and *P. samaranus* (Baker, 1925), provided identification keys, illustrations, information on natural history and distribution, and defined species groups within the genus. In his revision of the Oriental and Australian Fulgoridae, LALLEMAND (1963) provided a key to all species of *Pyrops* but gave an ambiguous treatment of *P. polillensis* and *P. samaranus*: he keyed them as separate species while he simultaneously estimated that *P. samaranus* is probably a local form or even the male of *P. polillensis*. Furthermore, he noticed some misidentifications in the work of BAKER (1925), e.g. for *P. aeruginosus* and *P. philippinus*. More recently, NAGAI & PORION (1996) synonymized *P. samaranus* under *P. polillensis* and later (NAGAI & PORION 2002) described *P. nishiyamai* Nagai & Porion, 2002. The last described species are *P. priscilliae* Nagai, Porion & Audibert, 2016, *P. nishiguroi* Nagai, Porion & Audibert, 2017 and *P. kozlovi* Porion & Audibert, 2020 (NAGAI *et al*. 2016, 2017; PORION & AUDIBERT, 2020). Another species, *P. silighinii* Porion & Audibert, 2017 was synonymized under *P. samaranus*, which was reinstated as a valid species, by YAP *et al*. (2017).

The study of recent material in the collections of the Royal Belgian Institute of Natural Sciences, allowed the recognition of a new species among Philippine *Pyrops*. The present paper

aims to describe the new species, compare it with the superficially similar ones and provide a distribution map of the treated species and a checklist of the Philippine species of *Pyrops*. It also reinstates the status of valid species for the Bornean *P. gunjii* (Satô & Nagai, 1994) stat. rev. which was recently treated as a subspecies of *P. effusus* (Distant, 1891) without justification by BOSUANG *et al*. (2017).

Material and methods

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 pieces were examined in ethanol, and then placed in glycerine with the pinned specimen for preservation. Observations were made using a Leica MZ8 stereo-microscope. Pictures were taken with a Canon EOS 700 D camera with Sigma DG Macro lens, stacked with CombineZ software and optimized with Adobe Photoshop CS3 software. The inflation of the phallus was not done for all specimens due to the difficulty obtaining replicable results and because it is not required to separate the species of *Pyrops*. For the transcription of the labels of the types, the wording on each single label is delimited by square brackets. The distribution map was produced with SimpleMappr (SHORTHOUSE, 2010).

Measurements were taken as in CONSTANT (2004) with the additions of CONSTANT (2015) for *Pyrops* and the following abbreviations are used:

BF	=	maximum breadth of the frons
BTg	=	maximum breadth of the tegmen
BPrH	=	breadth of the cephalic process at half length
LF	=	length of the frons in median line (excluding cephalic process)
LPr	=	length of the cephalic process
LTg	=	maximum length of the tegmen
TL	=	total length (apex of head to apex of tegmina)

(LF, LPr and TL measured to/from anteocular carina at the base of the cephalic process)

Acronyms used for the collections:

MFNB	=	Museum für Naturkunde, Berlin, Germany
NHRS	=	Naturhistoriska riksmuseet, Stockholm, Sweden
RBINS	=	Royal Belgian Institute of Natural Sciences, Brussels, Belgium

The species are treated in alphabetical order in the text.

Taxonomy

Order Hemiptera Linnaeus, 1758
Suborder Auchenorrhyncha Duméril, 1806
Infra-order Fulgoromorpha Evans, 1946
Superfamily Fulgoroidea Latreille, 1807
Family Fulgoridae Latreille, 1807

Genus *Pyrops* Spinola, 1839

Pyrops SPINOLA, 1839: 231.

TYPE SPECIES: *Pyrops candelaria* (Linnaeus, 1758) by subsequent designation by DUPONCHEL (1840: 200).

Hotinus AMYOT & SERVILLE, 1843: 490 [synonymized by BLANCHARD 1845: 425].

TYPE SPECIES: *Pyrops candelaria* (Linnaeus, 1758) by original designation.

The definition of the genus given by CONSTANT (2015) is followed. See this work also for a historical review of the genus-level nomenclature of *Pyrops*.

CHECKLIST OF THE 14 SPECIES OF *PYROPS* FROM THE PHILIPPINES

Pyrops aeruginosus (Stål, 1870) [Mindanao (BAKER, 1925)]
Pyrops agusanensis (Baker, 1925) [Mindanao (BAKER, 1925)]
Pyrops auratus sp. nov. [Samar]
Pyrops fumosus (Baker, 1925) [Samar (BAKER, 1925)]
Pyrops kozlovi Porion & Audibert, 2020 [Mindanao (PORION & AUDIBERT, 2020)]
Pyrops lautus (Stål, 1870) [Luzon (BAKER, 1925)]
Pyrops maquilinganus (Baker, 1925) [Luzon, Mindoro (BAKER, 1925)]
Pyrops nishiguroi Nagai, Porion & Audibert, 2017 [Palawan (NAGAI *et al*., 2017)]
Pyrops nishiyamai Nagai & Porion, 2002 [Panay (NAGAI & PORION, 2002)]
Pyrops philippinus (Stål, 1870) [Mindanao (BAKER, 1925)]
Pyrops polillensis (Baker, 1925) [Polillo, Luzon (BAKER, 1925; NAGAI & PORION, 1996)]
Pyrops priscillae Nagai, Porion & Audibert, 2016 [Mindoro (NAGAI *et al*., 2016)]
Pyrops samaranus (Baker, 1925) [Samar, Leyte, Mindanao (BAKER, 1925; YAP *et al*., 2017)]
= *P. silighinii* Porion & Audibert, 2017 (synonymized by YAP *et al*., 2017)
Pyrops zephyrius (Schmidt, 1907) [Polillo (SCHMIDT, 1907; BAKER, 1925)]

***Pyrops auratus* sp. nov.**

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(Figs 1–3)

Fulgora philippina – BAKER, 1925: 349 [keyed], 351 [described based on specimens from Samar Island], pl. 1, fig. 5 [dorsal view], pl. 2 fig. 3 [lateral view] (based on misidentified specimens!)

ETYMOLOGY. The species epithet, *auratus* (adj., Latin) means "golden" and refers to the extended bright yellow area of the posterior wings.

MATERIAL EXAMINED. TYPE MATERIAL. PHILIPPINES, Samar: Holotype ♂ (Fig. 1): [Coll. I.R.Sc.N.B., Philippines, Samar, Hinabangan, 11°42'N, 125°04'E, xi.2004, local collector, I.G.: 32.907] (RBINS).

DIAGNOSIS. This species can be separated from all other species of *Pyrops* by the following combination of characters:

(1) posterior wings bright yellow with narrow black band along apical margin (Fig. 1 A);

(2) cephalic process elongate, weakly curved and weakly narrowing from base to mid-length, then weakly widening towards apex in dorsal view (Fig. 1 C, E–F);

(3) head with vertex castaneous, frons, ventral half of genae and proximal portion of cephalic process ventrally pale yellowish, dorsal part of genae to anteocular carina black, cephalic process green with apex yellow (Fig. 1 C, E–F);

(4) tegmina green with three transverse yellow bands on proximal half, the most distal one interrupted; two additional yellow markings in costal area; cells black in a marginal area extending from distal half of costal area, along distal margin, to apex of clavus; about 12 round yellow spots in distal zone of black cells; 4–5 yellow spots in green portion of distal half (Fig. 1 A, D).

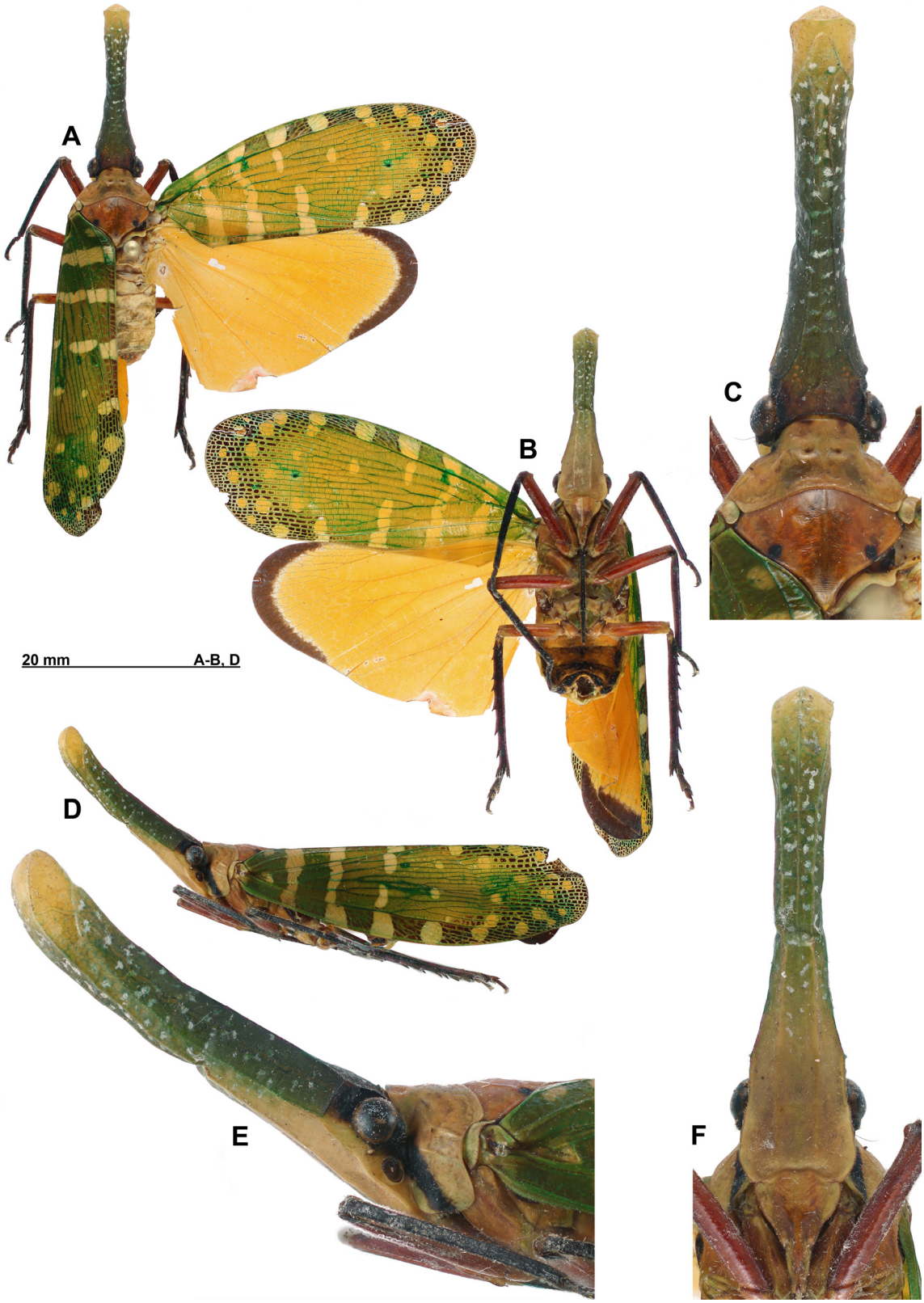

Fig. 1. *Pyrops auratus* sp. nov., male holotype (RBINS). A, habitus, dorsal view. B, habitus, ventral view. C, head, pro and mesonotum, dorsal view. D, habitus, lateral view. E, head and thorax, lateral view. F, head, perpendicular view of frons.

DIFFERENTIAL DIAGNOSIS. The most similar species is *P. nishiyamai* Nagai & Porion, 2002 (Fig. 4) from which *P. auratus* sp. nov. differs by its more robust (LPr/BPrH = 7.56 *vs* 10.6 in *P. nishiyamai*) and mostly green cephalic process (mostly brown in *P. nishiyamai*), the yellow transverse bands of the tegmina (only yellow spots on tegmina of *P. nishiyamai*) and the wider area with black cells along apical margin. *Pyrops philippinus* (Stål, 1870) (Figs 5–8) somewhat resembles *P. auratus* sp. nov. but can be separated at first glance by the black area of posterior wings covering distal 1/3 (only a narrow black band along apical margin in *P. auratus* sp. nov.).

DESCRIPTION. *Measurements and ratios*: TL: ♂ (n = 1): 35.1 mm; TL+process: ♂ (n = 1): 47.9 mm; LTg/BTg = 2.62; BF/BPrH = 2.37; LPr/LF = 3.25; LPr/BPrH = 7.56.

Head: (Fig. 1 C, E–F) vertex castaneous basally with sides blackish; frons, ventral half of genae and proximal portion of cephalic process ventrally pale yellowish; dorsal part of genae to anteocular carina black; cephalic process green with apex yellow; cephalic process with spots of white wax; clypeus pale yellowish with apex slightly darker; labium and antennae black; ocelli yellowish. Cephalic process elongate, weakly curved and weakly narrowing from base to mid-length, then weakly widening towards apex in dorsal view; dorsal and ventral margins subparallel in lateral view. Two longitudinal carinae on frons extending on sides of cephalic process up to apex. Median, ventral carina on distal 2/3 of cephalic process. Frons subquadrate. Clypeus elongate with smooth median carina. Labium shortly surpassing posterior trochanters.

Thorax: (Fig. 1 C, E–F) pronotum pale yellowish with descending oblique black line on paranotal lobes; mesonotum castaneous, slightly paler towards scutellum and with black spot on each side along posterior margin; tegulae pale yellowish. Pronotum very weakly wrinkled with two impressed points on disc, without median dorsal carina and with weak, incomplete oblique lateral carinae; paranotal lobes with two carinae behind eye. Mesonotum smooth, weakly wrinkled on disc, with obsolete median and lateral oblique carinae

Tegmina: (Fig. 1 A, D) green with three transverse yellow bands on proximal half, the most distal one interrupted; two additional yellow markings in costal area; cells black in a marginal area extending from distal half of costal area, along distal margin, to apex of clavus; about 12 round yellow spots in distal zone of black cells; 4–5 yellow spots in green portion of distal half. Tegmina elongate, broadening from base to nodal line, with costal margin broadly rounded, apical margin obliquely rounded and apical angles rounded.

Posterior wings: (Fig. 1 A–B) bright yellow with narrow black band along apical margin; veins concolorous with background. Hind wings strongly broader than tegmina.

Legs: (Fig. 1 A–B) all coxae, trochanters and femora brownish red; pro- and mesofemora darker than metafemora; tibiae and tarsi black weakly tinged with reddish. All legs slender and elongate. Pro- and mesofemora broader than corresponding tibiae. Metatibiae with 7 lateral spines.

Abdomen: (Fig. 1 A–B) terga yellowish; sterna brown with segments darker towards apex; anal tube and genital segments brown.

Male terminalia: (Fig. 2) brown with anal tube darker and a paler oblique area on basidorsal portion of gonostyli. Pygofer higher than long, with posterior margin sinuate in lateral view (Fig. 2 A) and bisinuate ventrally (Fig. 2 E). Gonostyli (Fig. 2 A, E) elongate, 1.50 times longer than high in lateral view, not surpassing apex of anal tube, with dorsal margin broadly rounded and apical margin with weak posterior projection; lateral hooks of gonostyli short, pointing anteroventrally (Fig. 2 A, E). Aedeagus membranous with pair of elongate ventral endosomal processes widening on distal half (Fig. 2 C–D, F). Anal tube elongate (Fig. 2 A–B), 1.25 times longer than broad in dorsal view, broadest at half of total length (Fig. 2 B); lateral margins

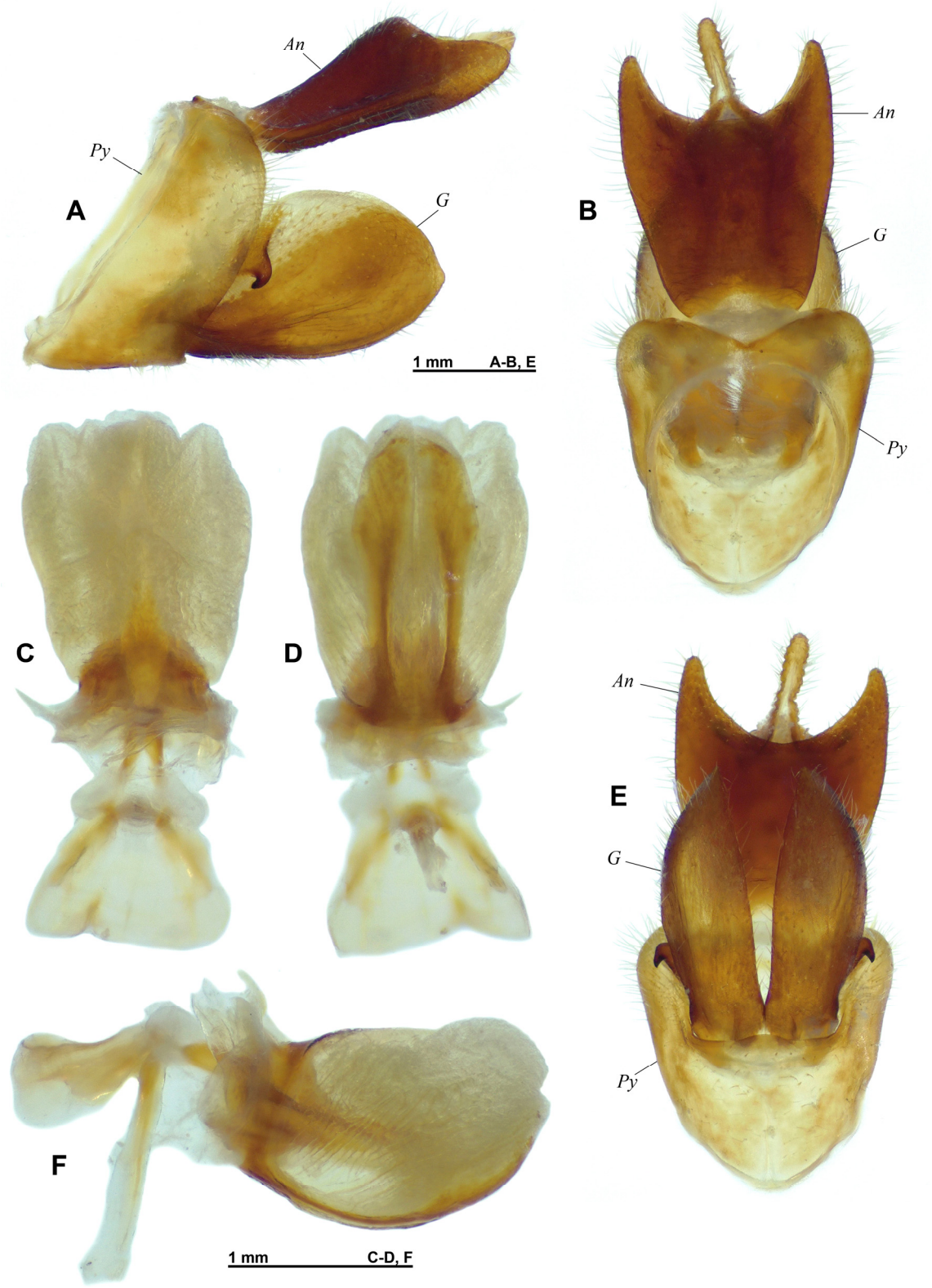

Fig. 2. *Pyrops auratus* sp. nov., holotype, male genitalia (RBINS). A, pygofer, anal tube and gonostylus, left lateral view. B, anal tube and pygofer, dorsal view. C, aedeagus, dorsal view. D, aedeagus, ventral view. E, pygofer and gonostyli, posteroventral view. F, aedeagus, lateral view. *An*: anal tube; *G*: gonostylus; *Py*: pygofer.

broadly rounded, subparallel for a distance along distal half (Fig. 2 B) and apical margin deeply, roundly notched in dorsal view (Fig. 2 B).

DISTRIBUTION. Philippines: Samar Island (Fig. 3).

BIOLOGY. Unknown.

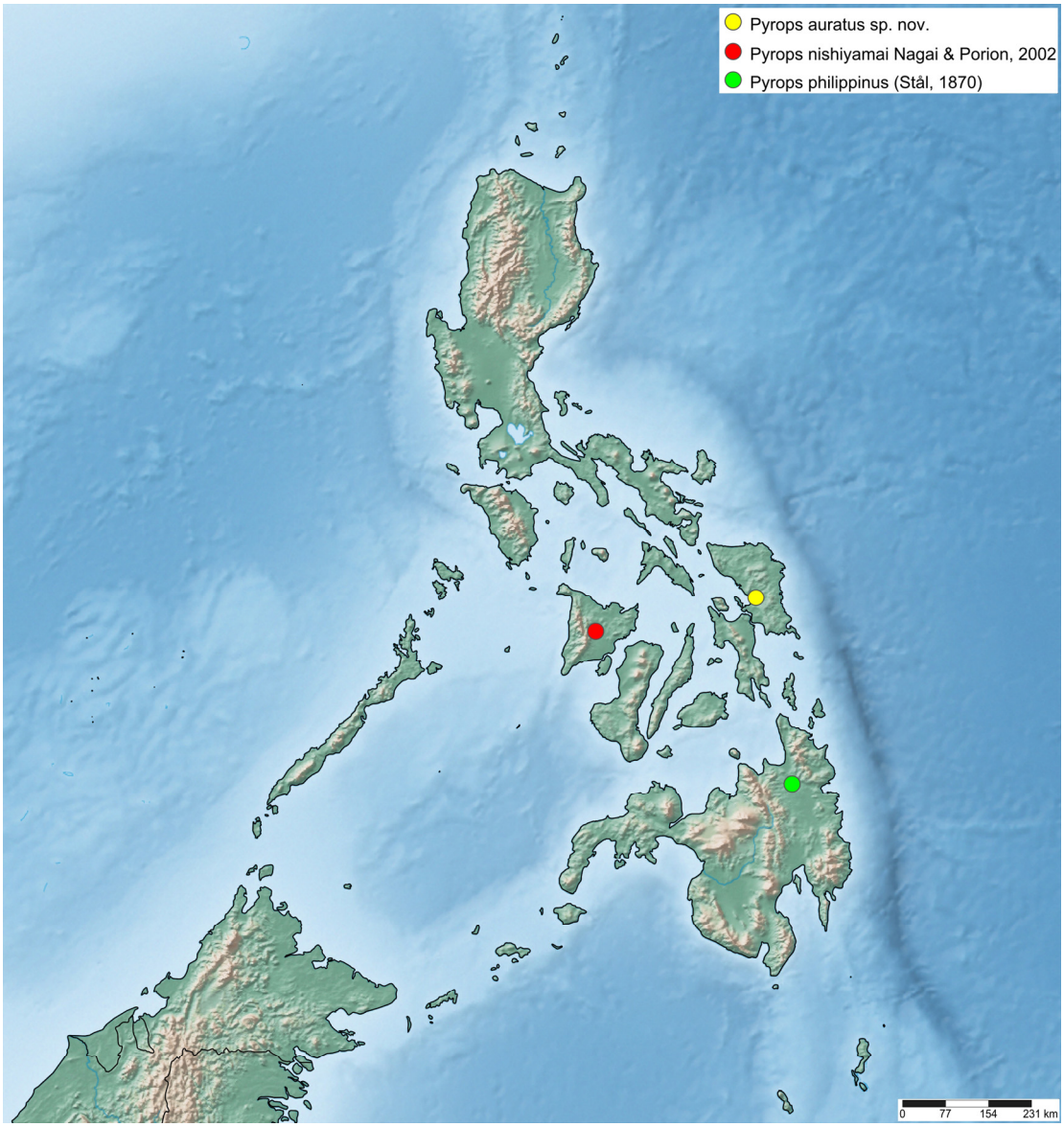

Fig. 3. *Pyrops auratus* sp. nov., *P. nishiyamai* Nagai & Porion, 2002 and *P. philippinus* (Stål, 1870), distribution map.

***Pyrops gunjii* (Satô & Nagai, 1994) stat. rev.**

Fulgora whiteheadi gunjii SATÔ & NAGAI, 1994: 308; figs 2, 9 (Type in EUM) [described, illustrated and compared with *P. whiteheadi* and *P. effusus*, the latter mentioned as "*F. whiteheadi viridicastanea*"].
Pyrops whiteheadi gunjii – NAGAI & PORION, 1996: 26; pl. 17 fig. 210 [transferred to *Pyrops*; listed, illustrated]. — LIANG 1998: 45 [listed, erroneous mention of new combination already proposed by NAGAI & PORION (1996)!].

Pyrops gunjii – CONSTANT 2015: 6 [keyed]; 9 [good species, diagnosed, description of male genitalia, distribution]; fig. 3 [illustrated], fig. 6 [distribution map], fig. 8 [male genitalia], fig. 10 B [live specimen].

Pyrops effusus gunjii – BOSUANG *et al*., 2017: 69 [subspecies of *P. effusus*: error!]; fig. 91 [habitus], figs 92–93 [live specimen].

NOTE. A full taxonomic treatment of *P. gunjii*, including the description of the male genitalia was recently provided to support its status as a valid species from original placement as a subspecies of *P. whiteheadi* (Distant, 1889) (CONSTANT, 2015). However, BOSUANG *et al.* (2017) were not aware of this taxonomic change and considered the taxon as a subspecies of *P. effusus* without providing any evidence to their new view. The latter action is hence considered erroneous and the status of a valid species is here reinstated for *P. gunjii* following the conclusions of my 2015 study.

DISTRIBUTION. Borneo, south-eastern East Kalimantan.

Pyrops nishiyamai Nagai & Porion, 2002
(Figs 3–4)

Pyrops nishiyamai NAGAI & PORION, 2002: 6 [described; compared with *P. lautus* (Stål, 1870, *P. zephyrius* (Schmidt, 1907) and *P. fumosus* (Baker, 1925)]; pl. 1, fig. 4 [dorsal view of habitus]. Type in EUM.

Pyrops nishiyamai – YAP *et al*., 2017: 4 [listed].

DIAGNOSIS. This species can be separated from all other species of *Pyrops* by the following combination of characters:

(1) posterior wings bright yellow with narrow black band along apical margin (Fig. 4 A);

(2) cephalic process elongate, weakly curved and narrowing from base to mid-length, not widening towards apex in dorsal view (Fig. 4 A, C, E);

(3) head brown dorsally and on sides of cephalic process; frons, ventral half of genae and cephalic process ventrally pale yellowish, dorsal part of genae to anteocular carina black (Fig. 4 A, C, E);

(4) tegmina green with unclear yellow markings forming poorly defined bands on proximal half; 5–6 large yellow markings in costal area; cells black in a narrow area extending from costal area, along distal margin, to apex of clavus; about 6–7 round yellow spots in distal zone of black cells; 4–5 yellow spots in green portion of distal half (Fig. 4 A–B).

DIFFERENTIAL DIAGNOSIS. The most similar species is *P. auratus* sp. nov. (Fig. 1) from which *P. nishiyamai* differs by its more slender (LPr/BPrH 10.6 = *vs* 7.56 in *P. auratus* sp. nov.) and mostly brown cephalic process (mostly green in *auratus* sp. nov.), the unclear yellow spots on tegmina (yellow transverse bands on tegmina of *auratus* sp. nov.) and the narrower area with black cells along apical margin. *Pyrops philippinus* (Stål, 1870) (Fig. 8) somewhat resembles *P. nishiyamai* but can be separated at first glance by the black area of posterior wings covering distal 1/3 (only a narrow black band along apical margin in *P. nishiyamai*).

MATERIAL EXAMINED. TYPE MATERIAL. PHILIPPINES, Panay: holotype ♀ (examined from photographs – Fig. 4): [(Philippines) Panay I., 15.IX.1996'] [*Pyrops nishiyamai* n. sp., Holotype ♀, Nagai - Porion 2002] (EUM).

DISTRIBUTION. Philippines: Panay.

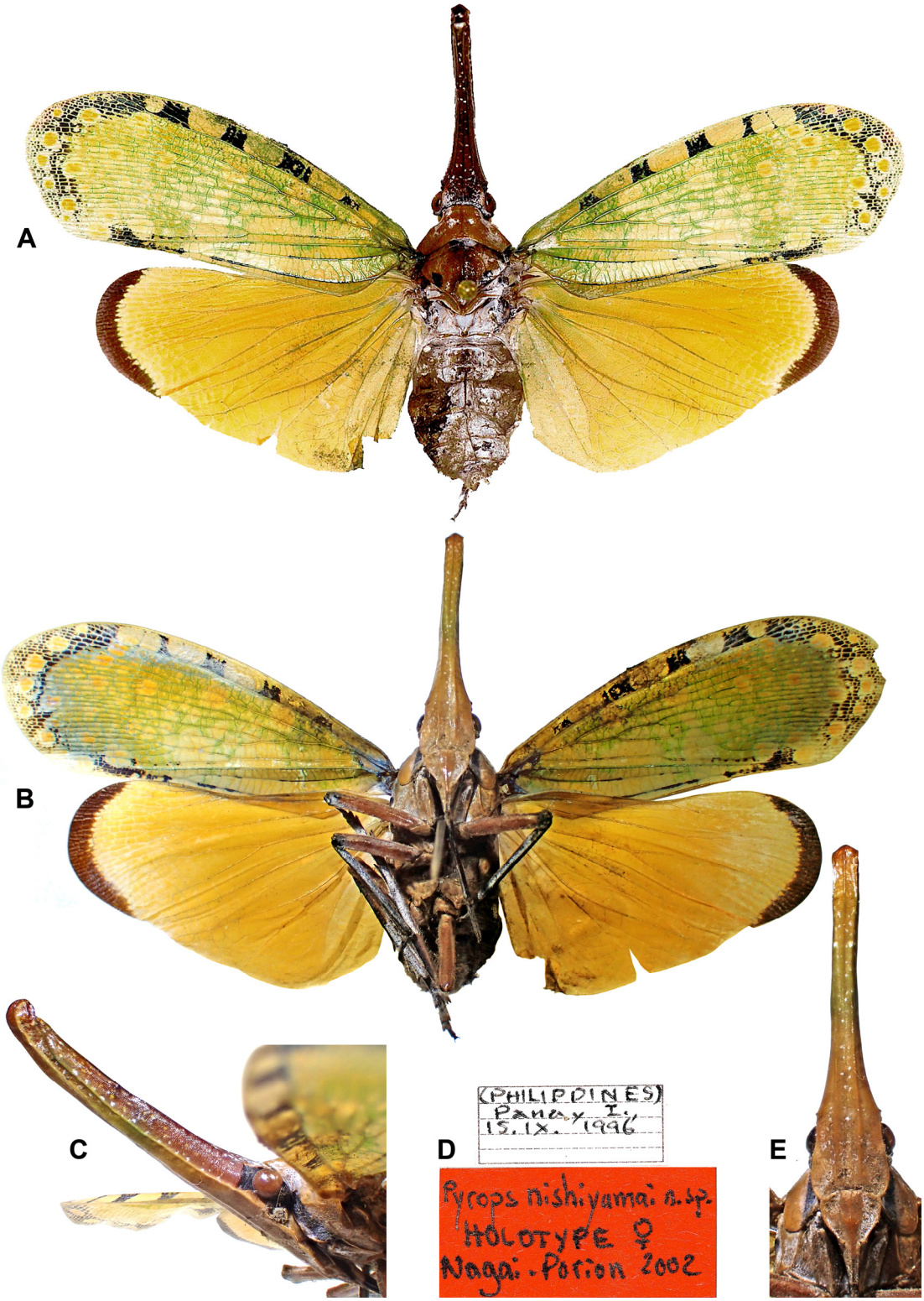

Fig. 4. *Pyrops nishiyamai* Nagai & Porion, 2002, female holotype (EUM). A, habitus, dorsal view. B, habitus, ventral view. C, head, pro and mesonotum, lateral view. D, labels. E, head, perpendicular view of frons. © H. Yoshitomi.

***Pyrops philippinus* (Stål, 1870)**

(Figs 3, 5–9)

Fulgora philippina STÅL, 1870: 740 [described, compared with *Pyrops lathburii* Kirby, 1818]. Syntypes in NHRS and MFNB.

Fulgora philippina – ATKINSON, 1885: 130 [listed in section A grouping species with orange posterior wings]. — LALLEMAND, 1963: 75 [keyed, described, compared to *P. candelaria* (L., 1758) and *P. spinolae* (Westwood, 1842)].

Laternaria philippina – METCALF, 1947: 202 [catalogued, transferred to *Laternaria*].

Pyrops philippina – NAGAI & PORION, 1996: 25 [catalogued, transferred to *Pyrops*]; pl. 14, fig. 193 [syntype illustrated].

Pyrops philippinus – LIANG, 1998: 44 [catalogued].

non *Fulgora philippina* – BAKER, 1925: 349 [keyed], 351 [described based on specimens from Samar Island], pl. 1, fig. 5 [dorsal view], pl. 2 fig. 3 [lateral view] (based on misidentified specimens!).

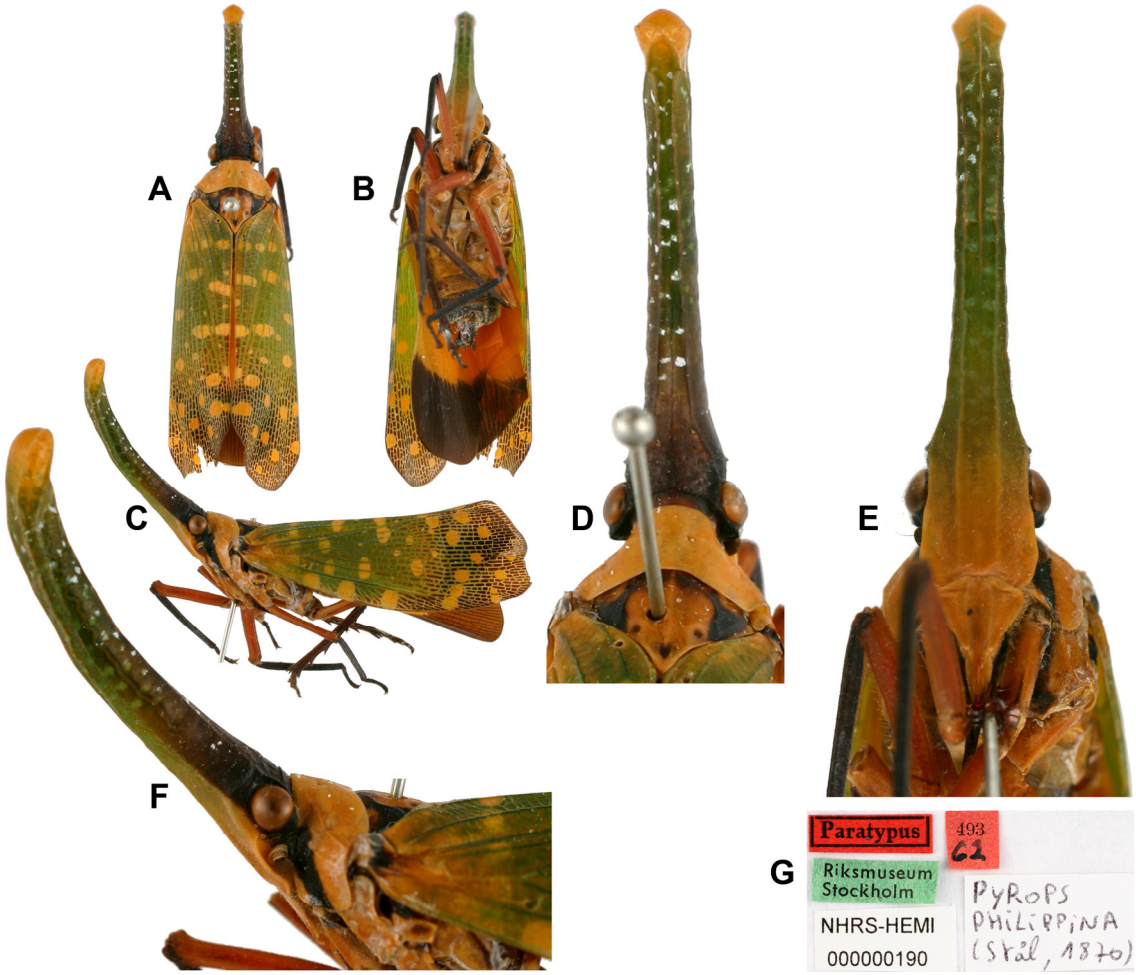

Fig. 5. *Pyrops philippinus* (Stål, 1870), male syntype (NHRS). A, habitus, dorsal view. B, habitus, ventral view. C, habitus, lateral view. D, head and thorax, dorsal view. E, head, perpendicular view of frons. F, head and thorax, lateral view. G, labels.

DIAGNOSIS. The species can be separated from all other species of *Pyrops* by the following combination of characters:

(1) posterior wings bright yellow with distal third black brown (Fig. 8 A);

(2) cephalic process elongate, curved and narrowing from base to proximal 1/3, then parallel-sided in dorsal view (Fig. 8 C, E–F);

(3) dorsum and sides of head brown-black basally progressively turning to green after proximal 1/4–1/3; frons pale and base of cephalic process ventrally pale yellowish turning to green after proximal 1/4–1/3 of process; apex of cephalic process bright yelllow (Fig. 8 C, E–F);

(4) tegmina with ground colour green and veins concolorous on corium, then with ground colour black-brown and yellow venation beyond nodal line; numerous small bright yellow dots distributed over tegmina, including 4 in costal area before nodal line (Fig. 8 A, D);

(5) pronotum entirely yellow (Fig. 8 A).

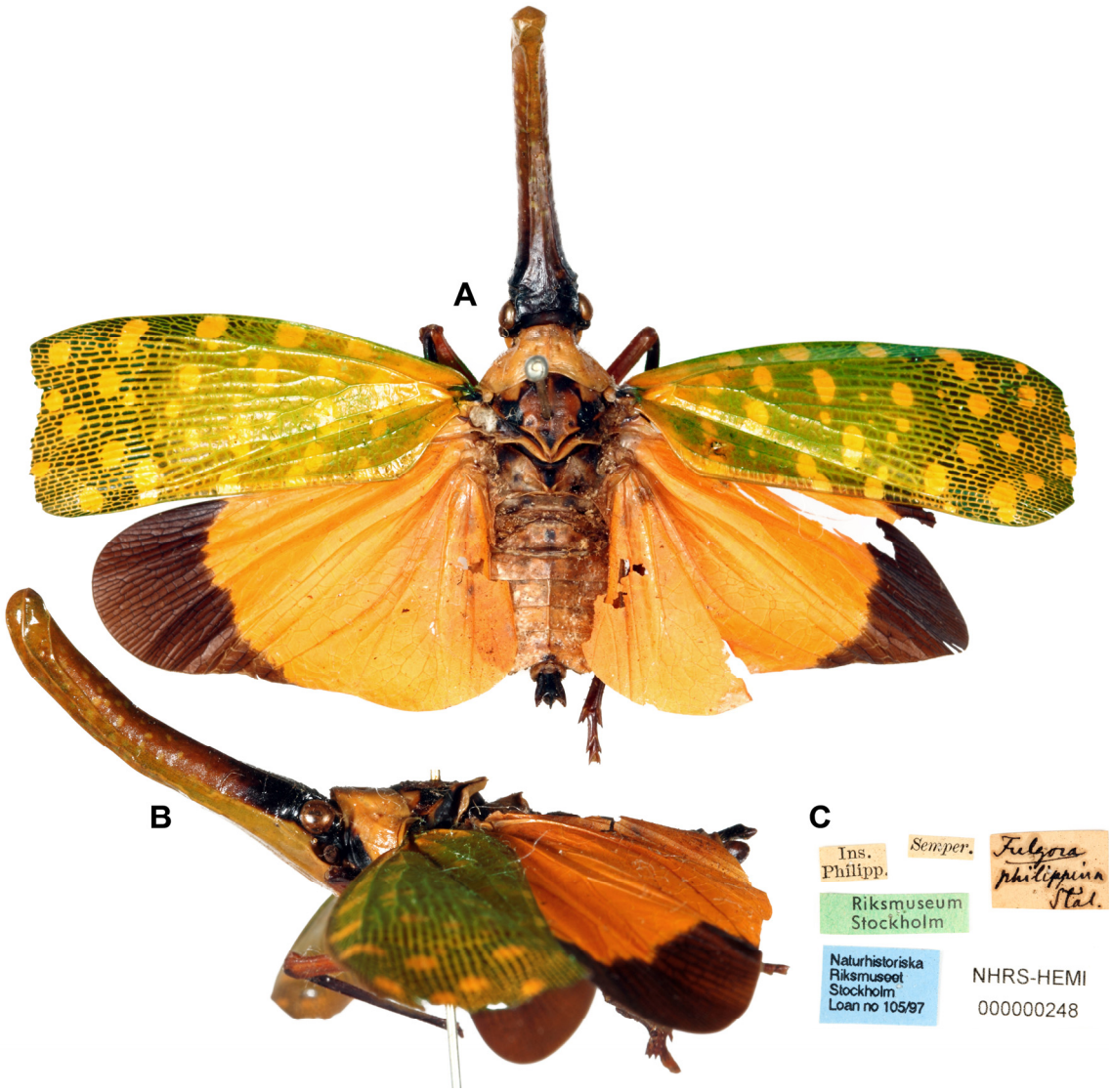

Fig. 6. *Pyrops philippinus* (Stål, 1870), male syntype (NHRS). A, habitus, dorsal view. B, habitus, lateral view. C, labels. Photographs by G. Lindberg (© 2010 NHRS, made available by the NHRS under Creative Commons Attribution 4.0 International Public License, CC-BY 4.0).

Fig. 7. *Pyrops philippinus* (Stål, 1870), syntypes (MFNB). A–F, female. A, habitus, dorsal view. B, habitus, ventral view. C, head and thorax, dorsal view. D, head and thorax, lateral view. E, head, perpendicular view of frons. F, labels. G–L, female. G, habitus, dorsal view. H, habitus, ventral view. I, head and thorax, dorsal view. J, labels. K, head and thorax, lateral view. L, head, perpendicular view of frons.

DIFFERENTIAL DIAGNOSIS. The most similar species in the Philippines are *P. auratus* sp. nov. and *P. nishiyamai*, both with bright yellow posterior wings, from which *P. philippinus* differs by the black area of the posterior wings covering the distal 1/3 (only a narrow black band along apical margin in both other species).

The continental species *P. astarte* (Distant, 1914), *P. candelaria* (L., 1758), *P. condorinus* (Lallemand, 1960), *P. delessertii* (Guérin-Méneville, 1840), *P. lathburii* (Kirby, 1818), *P. peguensis* (Schmidt, 1911), *P. spinolae* (Westwood, 1848) and *P. viridirostris* (Westwood, 1848), as well as *P. jasmini* Chew Kea Foo, Porion & Audibert, 2010 from Sulawesi, share the character of the bright yellow posterior wings but *P. philippinus* can be easily separated from all these species by its entirely yellow pronotum.

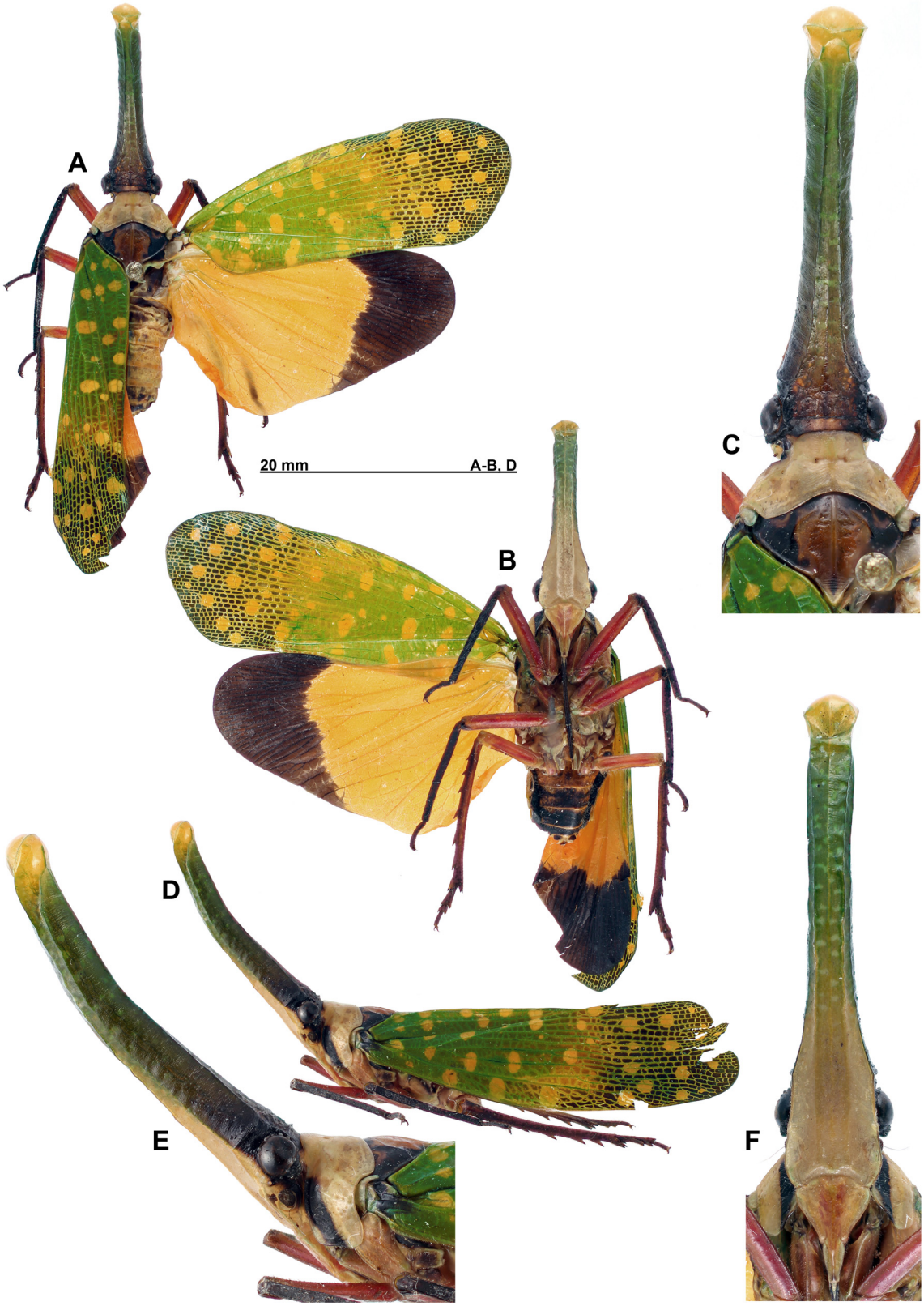

Fig. 8. *Pyrops philippinus* (Stål, 1870), male from Mindanao, Esperanza (RBINS). A, habitus, dorsal view. B, habitus, ventral view. C, head, pro and mesonotum, dorsal view. D, habitus, lateral view. E, head and thorax, lateral view. F, head, perpendicular view of frons.

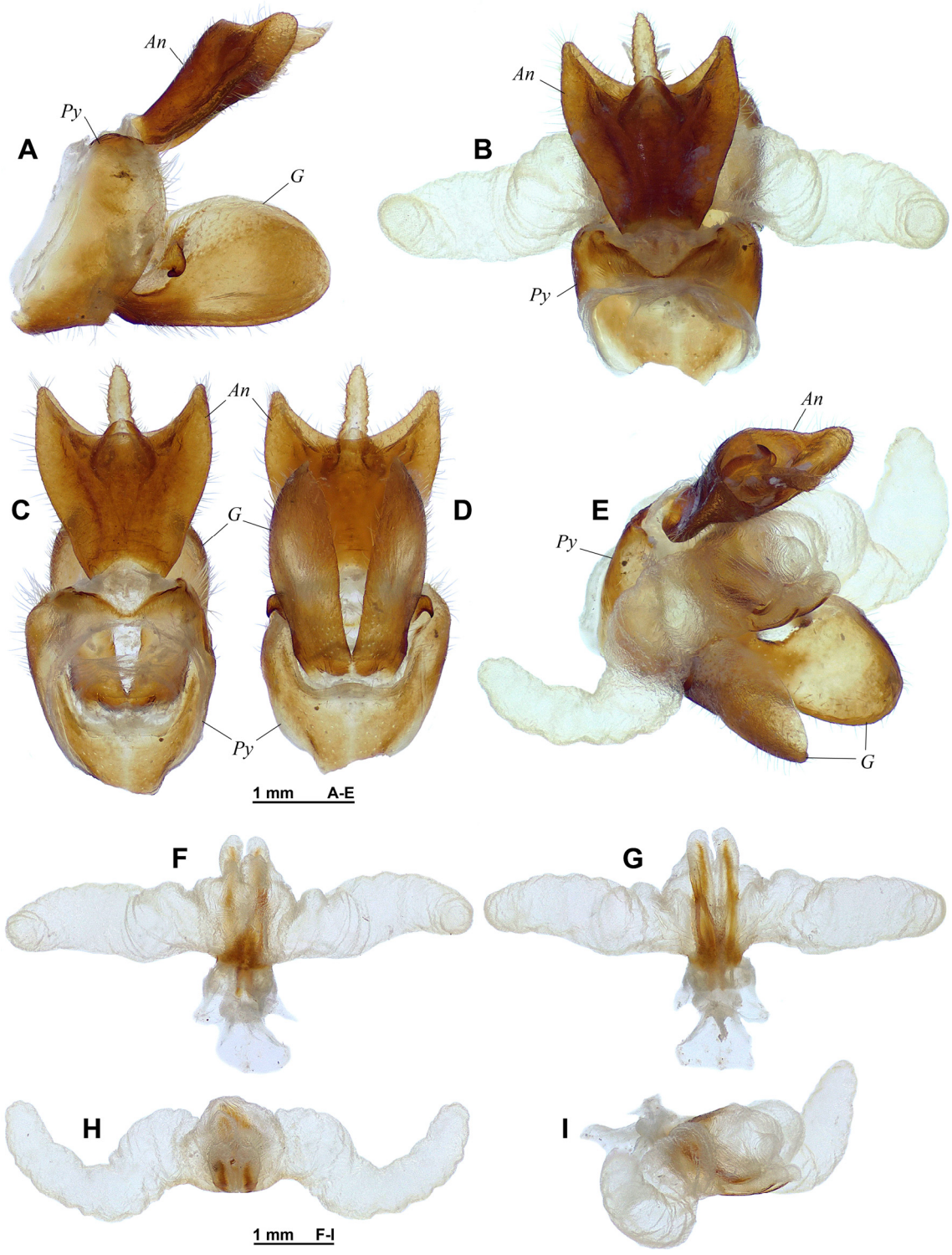

Fig. 9. *Pyrops philippinus* (Stål, 1870), male from Mindanao, Esperanza, genitalia with inflated aedeagus (RBINS). A, pygofer, anal tube and gonostylus, left lateral view. B, anal tube, pygofer and aedeagus, dorsal view. C, anal tube and pygofer, dorsal view. D, pygofer and gonostyli, posteroventral view. E, anal tube, pygofer, gonostyli and aedeagus, posterolateral view. F, aedeagus, dorsal view. G, aedeagus, ventral view. H, aedeagus, posterior view. I, aedeagus, posterolateral view. *An*: anal tube; *G*: gonostylus; *Py*: pygofer.

MATERIAL EXAMINED. TYPE MATERIAL. PHILIPPINES: 4 syntypes: 1♂ (Fig. 5) [Paratypus] [493 62] [Riksmuseum Stockholm] [NHRS-HEMI 000000190] (NHRS); 1♂ (Fig. 6) [Ins. Philipp.] [Semper] [*Fulgora philippina* Stål] [Riksmuseum Stockholm] [NHRS-HEMI 000000248] (NHRS); 1♀ (Fig. 7 A–F) [*philippinus* Stål* Philippi Semper] [8296] [Typus] (MFNB); 1♀ (Fig. 7 G–L) [*philippinus* n. Fulgor. *philippina* Stål Ins. Philipp. Semper] [Typus] (MFNB).

NOTES. BAKER (1925) erroneously described and illustrated a specimen of *P. auratus* sp. nov. under the name *P. philippinus* (mentioned as *Fulgora philippina*). The differences in the markings of the tegmina and hindwings between the type specimens of *P. philippinus* and Baker's illustrations were already mentioned by LALLEMAND (1963).

The type series of *P. philippinus* consists of 4 syntypes (2 in MFNB and 2 in NHRS) instead of one holotype and one paratype in NHRS as stated by LALLEMAND (1963). STÅL (1870) did not designate a holotype for his new species.

ADDITIONAL MATERIAL. PHILIPPINES, Mindanao: 1♂ (Fig. 8): Philippines, Mindanao, Agusan del Sur, Esperanza, IV. 2014, 8°41'N 125°39'E, local collector, I.G.: 32.882 (RBINS).

SUPPLEMENTARY DESCRIPTION. *Male terminalia*: (Fig. 9) brown with anal tube darker and a paler oblique area on basidorsal portion of gonostyli. Pygofer higher than long, with posterior margin broadly rounded in lateral view (Fig. 9 A) and bisinuate ventrally (Fig. 9 D). Gonostyli (Fig. 9 A, D) elongate, 1.67 times longer than high in lateral view, not surpassing apex of anal tube, with dorsal margin broadly rounded, apical margin rounded and ventral margin straight in lateral view; lateral hooks of gonostyli short, strongly curved and pointing anteroventrally (Fig. 9 A, D). Aedeagus membranous with pair of elongate ventral endosomal processes widening on distal half and supporting each a membranous process (Fig. 9 E–I); one long membranous subcylindrical process on each side directed laterad, nearly straight in dorsal view and sinuate in posterior view; two membranous processes directed posterad dorsally to endosomal processes. Anal tube moderately elongate (Fig. 9 A–C), 1.1 times longer than broad in dorsal view, broadest at 2/3 of total length (Fig. 9 C); lateral margins broadly rounded, subparallel for a distance along distal 1/3 (Fig. 9 C) and apical margin deeply, roundly notched in dorsal view (Fig. 9 C).

DISTRIBUTION. Philippines, Mindanao.

Discussion

The present paper adds one new species of lanternfly to the fauna of the Philippines in the genus *Pyrops*, leading to a total of 14 species for the country. The genus is the most speciose of all lanternfly genera recorded from the Philippines compared with *Scamandra* Stål, 1863 (5 Philippine species), *Penthicodes* Blanchard, 1845 (3 – a 4th one, *P. variegata* Guérin-Méneville, 1829 was mentioned from the Philippines by WALKER (1851) but never confirmed (CONSTANT, 2010) and seems very unlikely to be part of the Philippine fauna), *Dichoptera* Spinola, 1839 (3), *Egregia* Chew Kea Foo, Porion & Audibert, 2011 (1) and *Prolepta* Walker, 1851 (1) (BOURGOIN, 2021). However, *Pyrops* species are known from only eight islands, a relatively small number as compared to the 7,600+ islands of the Archipelago. They are recorded from Mindanao (5 species – first record in 1870), Luzon (4 – 1870), Samar (3 – 1925), Polillo (2 – 1907), Leyte (1 – 2017), Mindoro (1 – 2016), Palawan (1 – 2017) and Panay (1 – 2002) while no species is recorded to date from other large islands like Negros, Bohol, Masbate, Cebu, Marinduque, Catanduanes etc.

The first Philippine *Pyrops* species were described by STÅL (1870) based on material collected by Semper, who also collected the fourth species later described by SCHMIDT (1907). The

collecting and study effort of BAKER (1925) allowed the addition of five new species while the description of the next Philippine species had to wait another 77 years (NAGAI & PORION, 2002). Since then no less than six species were described, including one, *P. silighinii* Porion & Audibert, 2017 that later appeared to be a junior synonym of species previously described by BAKER (1925) (PORION & AUDIBERT, 2017; YAP *et al*., 2017).

The above data leads to the conclusion that the current availability of fulgorid workers, if combined with collecting efforts in new locations in the Philippines, will end up in the discovery and description of additional species of *Pyrops* and of Fulgoridae more generally.

Acknowledgements

I thank Dr Jürgen Deckert (MFNB), Mrs Gunvi Lindberg (NHRS) and Dr Hiroyuki Yoshitomi (EUM) for physical or virtual access to the specimens under their care; Mr Pol Limbourg, Mr Joachim Bresseel, Dr Patrick Grootaert, Dr Thierry Backeljau (RBINS) and Prof. Dr T. Bourgoin (Muséum National d'Histoire Naturelle, Paris, France) for their support; Miss Mado Berthet (RBINS) for her help in improving the plates. This study benefitted from funds from the European Union for a visit to the collections of NHRS (Synthesys Project – Grant SE-TAF-527).

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