

## A new species of *Polydictya* from Lombok (Hemiptera, Fulgoromorpha, Fulgoridae)

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**Abstract.**— A new species of *Polydictya* Guérin-Méneville, 1844, *P. lombokana* n. sp., is described from Lombok Island, Indonesia. The species is compared with *Polydictya illuminata* Distant, 1906, described from Sumbawa Island, Indonesia. For both species, male genitalia and habitus are illustrated and a distribution map is given.

**Résumé.**— Une nouvelle espèce de *Polydictya* Guérin-Méneville, 1844, *P. lombokana* n. sp., est décrite de Lombok Island, Indonésie. L'espèce est comparée à *Polydictya illuminata* Distant, 1906, de Sumbawa Island, Indonésie. Pour les deux espèces, les genitalia et les habitus sont illustrés et leur répartition géographique est donnée.

**Keywords.**— Lantern-fly, Auchenorrhyncha, lesser Sunda.

### Introduction

The identification of recent material in the collections of RBINS has lead to the discovery of a new species of *Polydictya* Guérin-Méneville, 1844 from Lombok Island (Indonesia), very close superficially to *P. illuminata* Distant, 1906 described from the neighbouring Island of Sumbawa. Eighteen species are presently recognized in the genus *Polydictya* (METCALF, 1947; LALLEMAND, 1963; NAGAI & PORION, 1996, 2004; CONSTANT & PHAM, 2008; CONSTANT, 2009) which is widely distributed in South Eastern Asia, from Ceylon and India to Vietnam and Sulawesi. The present paper aims to describe the new species and compare it to *P. illuminata*.

### Materials and methods

The genitalia were dissected from softened specimens and placed in hot water for some hours. Fine dissection was made in alcohol using a needle blade. The organs are preserved in glycerin, in a plastic tube fixed on the pin of the corresponding specimen. A distribution map produced by the software *CFE 2.0* (BARBIER & RASMONT, 2000) and photos of habitus are provided.

The following acronyms are used for the measurements (taken as in Constant, 2004): BF, breadth of the frons – BT, breadth of the thorax – BTg, breadth of the tegmen – BV, breadth of the vertex – LF, length of the frons – LM, length of the mesonotum – LP,

length of the pronotum – LT, total length – LTg, length of the tegmen – LV, length of the vertex.

**Acronyms used for the collections:**

- BMNH The Natural History Museum, London, United Kingdom (M. Webb)  
 GGC Geert Goemans personal collection  
 MHNL Muséum d'Histoire Naturelle de Lyon, France (H. Labrique, J. Clary)  
 RBINS Royal Belgian Institute of Natural Sciences, Brussels, Belgium (P. Grootaert)

**Taxonomy**

**Family Fulgoridae Duméril, 1820**

**Subfamily Poiocerinae Haupt, 1929**

**Tribe Poiocerini Metcalf, 1938**

**Genus *Polydictya* Guérin-Méneville, 1844**

**Note:** in both treated species, it seems that testaceous parts may be greenish in fresh or living specimens.

***Polydictya illuminata* Distant, 1906**

Figs. 1-4, 9, 15-18.

*Polydictya illuminata* Distant, 1906: 26.

*Polydictya illuminata* Distant, 1906: Schmidt, 1912: 72.

*Polydictya illuminata* Distant, 1906: Lallemand, 1963: 17.

*Polydictya illuminata* Distant, 1906: Nagai & Porion, 1996: 13, pl. 2.

**Material examined:** 1 ♂: Sumbawa, i.1994 (MHNL); 1 ♀: Sumbawa, ex coll. Schouteden (RBINS).

**Notes:** (1) the original description is based on 2 females preserved in BMNH (Mick Webb, *pers. comm.*, 2009) and a male specimen of the MHNL is here used as reference for the recognition of the species on genitalic characters. (2) the specimen erroneously illustrated under *Polydictya illuminata* Distant, 1906 by NAGAI & PORION (1996) is a male of *P. lombokana* n. sp.

Additional description. LT: ♂ (n = 1): 25.7 mm; ♀ (n = 1): 29.6 mm.

Morphometry: ratio BV/LV = 3.2; BF/LF = 1.1; BT/LP+LM = 1.08; LP/LM = 0.5; LTg/BTg = 3.0.

**Genitalia** ♂: pygofer with ribbon-like process latero-dorsally on hind margin; processes rounded apically, projecting caudad and curved internally (figs. 1, 4); anal tube elongate, curved postero-ventrad; in dorsal view, lateral margins sinuate and apex about twice broader than base (figs. 1, 4); apex of anal tube in normal view longer than broad and with posterior margin strongly emarginate (fig. 2); phallic complex with latero-dorsal sclerified appendages with two ventral teeth and showing dorsal, apically truncate process strongly emarginate ventrally (fig. 3).

**Biology.** Nothing is known except that the species seems to be endemic on the Island of Sumbawa (fig. 9).

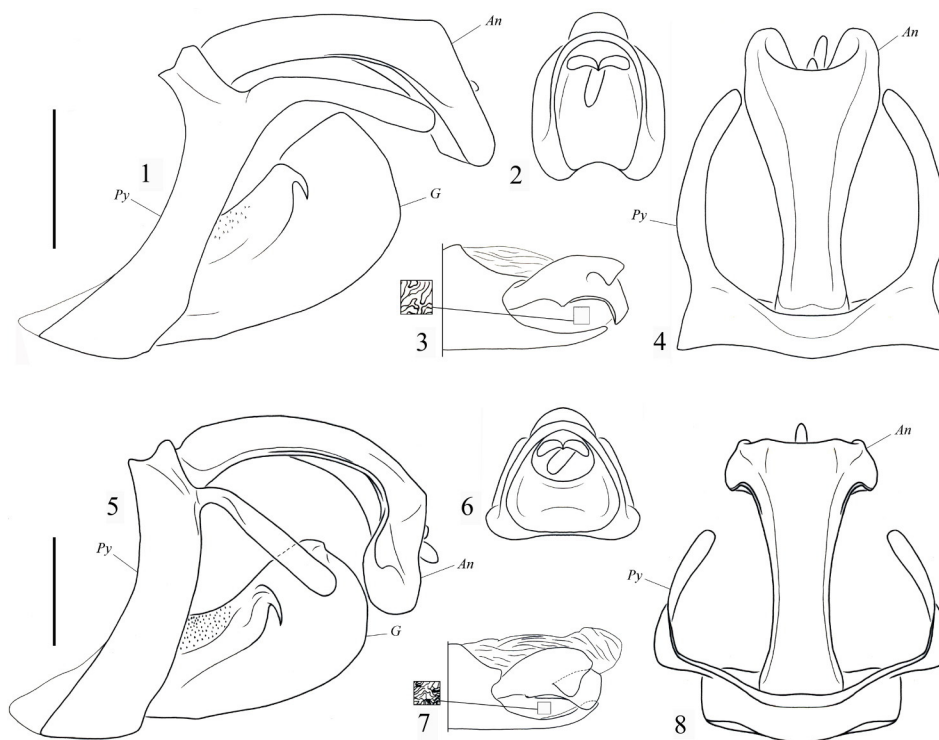


Fig. 1-8.– *Polydictya*, male genitalia. Fig. 1-4.– *P. illuminata*: 1.– pygofer, anal tube and gonostyli, lateral view; 2.– apex of anal tube, normal view; 3.– phallic complex, lateral view; 4.– pygofer and anal tube, dorsal view. Fig. 5-8.– *P. lombokana*, holotype: 5.– pygofer, anal tube and gonostyli, lateral view; 6.– apex of anal tube, normal view; 7.– phallic complex, lateral view; 8.– pygofer and anal tube, dorsal view. *An*: anal tube; *G*: gonostyli; *Py*: pygofer. Scale 2 mm.

***Polydictya lombokana* n. sp.**

Figs. 5-8, 9, 10-14.

**Material examined:** HOLOTYPE ♂: [Coll I.R.Sc.N.B., Indonesia, Lombok, iii.2003, ex coll. Geert Goemans, I.G.: 31.322] (RBINS). Paratypes: 1 ♂: [Coll I.R.Sc.N.B., Indonesia, Lombok, iii.2003, ex coll. Geert Goemans, I.G.: 31.322] (RBINS); 1 ♂, 2 ♀: [Coll I.R.Sc.N.B., Indonesia, Lombok, viii.2008, I.G.: 31.318] (RBINS); 3 ♂, 4 ♀: [Lombok, 1.96, Coll Thierry Porion] [Coll. générale Muséum de Lyon] (MHNL); 1 ♀: [Lombok, 1-95, Indonésie, col Thierry Porion] [Coll. générale Muséum de Lyon] (MHNL); 2 ♀: [Lombok, 4-93, Indonésie, col Thierry Porion] [Coll. générale Muséum de Lyon] (MHNL); 1 ♂: [Lombok, avril 93, Indonésie, Thierry Porion leg.] [Coll.

générale Muséum de Lyon] (MHNL); 2 ♀: [Lombok, Collection Patrick Mure] [Achat Drouot, 1997] [Coll. générale Muséum de Lyon] (MHNL); 1 ♀: [Mt Lombok, Lombok isld. vi.90, Indonesia, col. Thierry Porion] [Coll. générale Muséum de Lyon] (MHNL); 1 ♀: [Indonesia, Lombok, xii.2002, coll. G. Goemans] (GGC).

*Note:* the actual name of Mount Lombok is Gunung Rinjani.



Fig. 9.– Distribution of *Polydictya illuminata* and *P. lombokana* in the Sunda Islands.

Description. LT: ♂ (n = 3): 26.7 mm (26.0–27.7); ♀ (n = 3): 31.7 mm (31.5–32.2). Wingspan: ♂ (n = 4): 49.2 mm (46.8–51.5); ♀ (n = 9): 57.9 mm (52.3–62.0).

*Head:* eyes included, about 3/4 as broad as thorax; testaceous; vertex curved and concave, with all margins carinate; disc wrinkled and with 2 small impressed points; frons visible from above, separated from vertex by narrow groove (figs. 10, 13); frons subquadrate, smooth, convex, with slight, longitudinal, wrinkled groove on each side (fig. 14); clypeus narrower and shorter than frons (fig. 14); labium elongate, surpassing hind coxae, with last segment much shorter than penultimate (fig. 12); ocelli present; pedicel of antennae bulbous; ratio BV/LV = 3.7; BF/LF = 1.

*Thorax:* pronotum testaceous, rugulose, carinate on anterior margin of disc; carina fused with anterior margin of pronotum in middle; 2 very slightly impressed points on disc; obsolete median carina on posterior half; mesonotum brown with 3 pale yellow spots at apex and angles of scutellum; scutellum transversely wrinkled; metanotum black-brown (figs. 10,13); ratio BT/LP+LM = 1.04; LP/LM = 0.5.

*Tegmina:* testaceous, paler on membrane with irregular black-brown markings; largest and best defined markings on costal cell and on membrane, markings often confluent on latter; veins testaceous; costal and sutural margins subparallel, tegmina slightly broader near apex and with apical margin oblique (figs. 10-13); ratio LTg/BTg = 3.2.

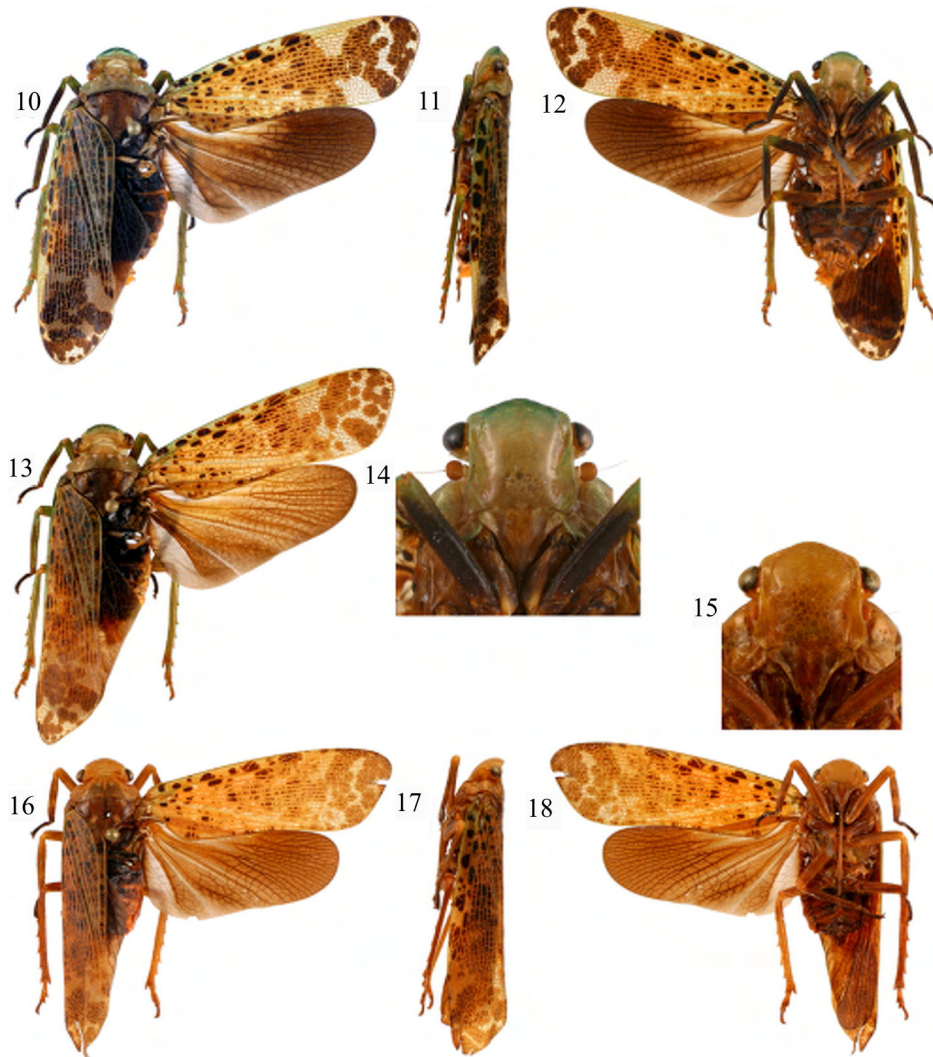


Fig. 10-18.— *Polydictya*, habitus. Fig. 10-14.— *P. lombokana*: 10.— habitus, dorsal view (LT: 31.5 mm); 11.— habitus, lateral view; 12.— habitus, ventral view; 13.— habitus, paler specimen, dorsal view (LT: 31.5 mm); 14.— frons, normal view. Fig. 15-18.— *P. illuminata*: 15.— frons, normal view; 16.— habitus, dorsal view (LT: 29.5 mm); 17.— habitus, lateral view; 18.— habitus, ventral view.

*Hind wings*: black-brown with baso-costal area whitish; anal area very pale brown; veins brown on basal half, black on apical half; maximal breadth near base; slightly broader than tegmina (figs. 10, 12, 13).

*Legs*: coxae I and II brown with apex testaceous; trochanters I and II brown; femora I and II black-brown with apex testaceous; tibiae I and II black-brown with base testaceous; tarsi I and II black; coxae and trochanters III brown; femora III brown with apex testaceous; tibiae and tarsi III testaceous slightly tinted with green; tibiae III with 5 lateral and 7-8 apical spines (figs. 10, 12, 13).

*Abdomen*: black with sides and intersegmental membranes testaceous (figs. 10, 12, 13).

*Genitalia* ♂: pygofer with ribbon-like process latero-dorsally on hind margin; processes rounded apically, projecting ventro-caudad and strongly curved internally (figs. 5, 8); anal tube elongate, strongly curved postero-ventrad; in dorsal view, abruptly broader at apex than at base, apex about twice as broad as base (figs. 5, 8); apex of anal tube in normal view subtriangular and with posterior margin slightly emarginate (fig. 6); phallic complex with latero-dorsal sclerified appendages with apical margin broadly rounded, ventral margin bisinuate, and showing postero-lateral, apically rounded process projecting latero-ventrad (fig. 8).

**Etymology.** The name of the species is derived from Lombok, the *locus typicus* of the species.

**Biology.** Nothing is known except that the species seems to be restricted on the Island of Lombok (fig. 9), but it might also be present on Sumbawa (see note *infra*).

*Note*: one male specimen labeled [Coll. P. Bleuzen, Mt Tambora, Sumbawa, ii.1997] (MHNL), with genitalia heavily damaged (anal tube broken near base and lateral processes of pygofer missing) has been examined. The colour of the specimen and the shape of the phallic complex leads to *P. lombokana*. This data would be the only one of *P. lombokana* on Sumbawa and it is here regarded as doubtful and needing confirmation: both species are largely available at insect sellers worldwide (most specimens examined during this study come from such sources) and mislabelling might have occurred at some stage.

## Discussion

*Polydictya lombokana* n. sp. and *P. illuminata* Distant, 1906 are very easily separated from all other *Polydictya* species by the following combination of characters: (1) hind wings black or dark brown with baso-costal paler area; (2) tegmina pale yellow with brown to black-brown markings; (3) head uniformly coloured.

*P. lombokana* and *P. illuminata* are easily separated by the male genitalia, especially the shape of the anal tube which is much longer and more strongly curved in *P. lombokana*. The two species are also distinct in colour (usually darker and more contrasted in *P. lombokana*) and might be allopatric on Lombok (*P. lombokana*) and Sumbawa (*P. illuminata*) (see also note *supra*).

The present description of a species which is represented in collections for a long time once more emphasizes the importance of the study of the male genitalia when identifying or describing species of Fulgoridae.

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