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Late Dr. R. K. Varshney, Aligarh, India

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India
petersmetacek@gmail.com

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India
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Address for Correspondence

Butterfly Research Centre, Bhimtal,
Uttarakhand 263 136, India. Phone: +91
8938896403.

Email: butterflyresearchcentre@gmail.com

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Cover Photo of founder of BIONOTES *Late* Dr. R.K. Varshney

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FOUR ADDITIONS TO THE LANTERNFLY (INSECTA: FULGOROIDEA: FULGORIDAE) FAUNA OF NEPAL

SAJAN K.C.¹ AND BISHNU PRASAD NEUPANE²

¹*Pokhara, Lakeside, Kaski - 33700, Nepal*

sajankc143@gmail.com

²*National Entomology Research Center, Nepal Agricultural Research Council, Khumaltar, Lalitpur - 44700, Nepal*

Reviewer: Peter Smetacek

Abstract

Four species are added to the known Fulgoridae fauna of Nepal. One species, *Polydictya tricolor* (Westwood, 1845) was recorded from Sundarbazar, Lamjung in June 2017, while the other three, *Aphaena (Aphaena) submaculata* (Duncan, 1843), *Lycorma imperialis* White, 1846 and *Penthicodes (Ereosoma) atomaria* (Weber, 1801) were reported from a single location at Bhedetar, Dhankuta, all in August 2021. With this, there are altogether eight species of Fulgoridae recorded from Nepal.

Keywords: Fulgoridae, lanternflies, lantern bugs, planthopper, Nepal

Introduction

The members of Fulgoridae are commonly known as lantern bugs or lanternflies. Bourgoin (2021) lists 774 species of Fulgoridae under 142 genera around the world. These insects are mostly found in the tropics while some genera are also found in temperate regions. About 300 species are found in the Oriental Region alone, which represents about 40% of all known Fulgorids (Constant & Pham, 2019).

The Fulgoridae fauna of Nepal is not well known. Thapa (2000) mentions only four species in this family viz. *Fulgora oculata* Westwood, 1841 (now *Pyrops oculus* (Westwood, 1838)), *F. pyrorhyncha* Donovan, 1800 (now *Pyrops pyrorhynchus* (Donovan, 1800)), *Pyrops punctata* Walker, 1851 (now *Zanna affinis* (Westwood, 1838)) and *Saiva cardinalis* (Butler, 1874). *Zanna affinis* was also listed for Nepal by Constant *et al.* (2016). Thus, so far, only four species have been reported from Nepal.

Methods and Methodology

The findings are based on opportunistic surveys carried out by the first author across

random districts of Nepal, specifically looking for butterflyflies. The insects were photographed using Canon 7D MarkII camera coupled with 100mm f/2.8L Macro IS USM lens. The GPS location along with altitudes are stored in the camera itself. For identification purpose, Distant (1906) was used. The photographs were sent to Mr. Jerome Constant (Belgium) for further confirmation who identified the specimens based on the photographic evidence.

Observation

List of Species

Suborder Auchenorrhyncha Duméril, 1806
 Infraorder Fulgoromorpha Evans, 1946
 Family Fulgoridae Latreille, 1807

Genus *Aphaena* Guérin-Méneville, 1834

1. *Aphaena (Aphaena) submaculata* (Duncan, 1843)

A single individual of *A. submaculata* was seen in Bhedetar, Dhankuta on 12.viii.2021, at 750 masl. The individual was feeding on tree sap inside a forest along with many

individuals of *Lycorma imperialis* White, 1846.

Distribution: Sikkim, Darjiling. (Distant, 1906)

This genus is in need of revision (Constant *et al.*, 2016).

Genus *Penthicodes* Blanchard, 1845

2. *Penthicodes (Ereosoma) atomaria* (Weber, 1801)

One individual of *P. atomaria* was seen in Bhedetar, Dhankuta on 12.viii.2021 at 700 masl. The individual was perched on a leaf along a forest trail.

Distribution: India, Bhutan, China, Cambodia, Indonesia, Malaysia, Laos, Thailand, Vietnam. (Constant, 2010; Jiranaisakul *et al.*, 2018)

Genus *Lycorma* Stal, 1863

3. *Lycorma imperialis* (White, 1846)

Several individuals of *L. imperialis* were seen in Bhedetar, Dhankuta from 11 to 21.viii.2021 at 640-750 masl. Most of the individuals were seen in a group feeding on the sap of an unknown tree, while some were found on forest trails.

Distribution: Sikkim, Assam, Darjiling. (Distant, 1906)

Genus *Polydictya* Guérin-Ménéville, 1844

4. *Polydictya tricolor* (Westwood, 1845)

An individual of *P. tricolor* was found in Sundarbazar, Lamjung on 6.vi.2017 at 610 masl by the first author.

Distribution: Assam, Darjiling (Distant, 1906); India, Assam and Vietnam (Nagain & Porion, 1996).

Updated Checklist for Nepal

1. *Aphaena (Aphaena) submaculata* (Duncan, 1843)*
2. *Pyrops pyrorrhynchus* (Donovan, 1800) = *Fulgora pyrorrhyncha* Donovan, 1800
3. *Pyrops oculatus* (Westwood, 1838) = *Fulgora oculata* Westwood, 1841
4. *Lycorma imperialis* (White, 1846)*
5. *Penthicodes (Ereosoma) atomaria* (Weber, 1801)*
6. *Polydictya tricolor* (Westwood, 1845)*
7. *Saiva cardinalis* (Butler, 1874)

8. *Zanna affinis* (Westwood, 1838)

*Additions for Nepal

Discussion

The Fulgoridae of Nepal have not been well studied. There are very meager records in the literature and practically no preserved specimens. The location of Nepal makes it one of the best places for Fulgoridae, especially in the middle ranges in the east of the country. In the central hills though, we have never come across many of them. A thorough review and much field work on this group is required to come up with a more complete checklist for Nepal. With these four records, and the previous four, only eight species of this group are recorded from Nepal so far.

Acknowledgement

The authors are grateful to Mr. Jerome Constant (Royal Belgian Institute of Natural Sciences, Belgium) for verifying the identifications, and Nepal Agricultural Research Council (NARC), Khumaltar, Lalitpur for supporting the research.

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Fig1: *Aphaena submaculata* (Duncan, 1843)



Fig.2: *Aphaena submaculata* (Duncan, 1843)



Fig.3: *Lycorma imperialis* White, 1846



Fig.4: *Penthicodes atomaria* (Weber, 1801)



Fig.5: *Polydictya tricolor* (Westwood, 1845), Dorsum



Fig.6: *Polydictya tricolor* (Westwood, 1845), Venter



Fig.7: *Polydictya tricolor* hind tibia showing the distinctive four spines, the one near the base smallest (Distant, 1906)