

A new record of *Glenochrysa zeylanica* (Banks, 1913) (Neuroptera: Chrysopidae) from India

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Abstract: The species, *Glenochrysa zeylanica* (Banks, 1913) belonging to the family Chrysopidae is rediscovered and recorded for the first time from India. Besides, the global distribution of *G. zeylanica* is also figured.

Keywords: green lacewing, taxonomy, Western Ghats, India.

Introduction

Chrysopidae commonly known as green lacewings is one of the predominant families of order Neuroptera with 1200 species under 80 genera from the world of which 74 species belong to 23 genera have been reported from India (BROOKS & BARNARD 1990, SINGH et al. 2020, WINTERTON & GUPTA 2020, WINTERTON et al. 2021, SURYANARAYANAN & BIJOY 2021a,b). Chrysopidae includes three extant subfamilies: Chrysopinae, Apochrysininae, and Nothochrysininae. Among these, Chrysopinae is the principal subfamily with Chrysopini as the chief tribe (40 genera worldwide). The genus *Glenochrysa* Esben-Petersen, 1920 belongs to the tribe Chrysopini with 16 species and 5 subspecies globally, of which three species are known from India i.e., *G. gloriosa* (Navás, 1931) from Maharashtra, *G. marmorata* (Needham, 1909) from Assam, West Bengal, Andaman and Nicobar Islands, *G. splendida* (van der Weele, 1909) from Andaman and Nicobar Islands (GHOSH & SEN 1977, GHOSH (1990, 1998, 2000), SINGH et al. 2020). According to SINGH et al. (2020), *G. gloriosa* (Navás, 1931) is the only species known from the Western Ghats.

G. zeylanica (Banks, 1913), a species previously thought to be endemic to Sri Lanka has been rediscovered after 111 years and reported for the first time from India (Western Ghats, Kerala region). This discovery validates the similarity between faunal elements in Sri Lanka and also in Southern Western Ghats (Kerala).

Material and methods

The adult specimens were collected using a sweep net and transferred into a killing jar filled with ethyl acetate (1-2 drops in cotton). After that, specimens were pinned, stretched, dried, labeled, and preserved as per standard procedures. The specimens were examined through Labomed® Luxeo 6Z Stereomicroscope. The terminology of wing venation and identification as follows BANKS (1913) and BREITKREUZ et al. (2017) respectively. The digital photos of the specimens were taken with Nikon Coolpix P900 digital camera with a Raynox 250 lens. The specimens were deposited in the Insect collections of Shadpada Entomology Research Lab (SERL), Kerala, India.

Abbreviations: Odescr – original description, Comb – new combination, Chlist – Checklist.

Results

Glenochrysa Esben-Petersen, 1920

Type species: *Glenochrysa typica* Esben- Petersen, 1920

Diagnosis: Distinctively black and dark-brown marked wings, frequently extensive, with additional iridescent embossed pustules on wing membrane, short subcostal (Sc) vein (meeting costa before wing apex), recurrent second cubital vein (Cu_2), tignum and pseudopenis absent in male terminalia, sternite 8+9 highly modified with medial and lateral projections bearing gonocristae (TJEDER 1966, NEW 1980, BROOKS & BARNARD 1990, WINTERTON et al. 2015).

Distribution: Afrotropical, Oriental, and Australasian regions (TJEDER 1966, NEW 1980, HÖLZEL 1991, BROOKS & BARNARD 1990, HÖLZEL & DUELLI 2001).

Glenochrysa zeylanica (Banks, 1913)

Chrysopa zeylanica Banks, 1913: 220. Odescr, Kimmins 1940: 449. Comb, Brooks & Barnard 1990: 273. Chlist.

Type locality: Kandy, Sri Lanka.

Type material:

Label information: / Type // Type / 11967 // Peradeniya / Ceylon 22 Jan[uary] // Green/coll // collection / N. Banks // *Chrysopa ceylonica* / type Bks // MCZ-ENT / 000011967 / In BANKS (1913): *Chrysopa zeylanica* n. sp.- Type. – ♂. From Kandy, Ceylon, May (Green). (Fig. 1A–F).

The type was deposited in MCZ (Museum of Comparative Zoology – United States, Massachusetts, Cambridge).

Comments: The data on the type specimen labels differ from the published data in several details, species name: *ceylonica* – *zeylanica*, collecting site: Peradeniya – Kandy, and collecting date 22 Jan – May, therefore the origin of the type specimen is doubtful.

Material examined: 1♀ INDIA, Kerala State, Wayanad Dist.[RICT], Mananthavady, 792 m, coordinates: 11°48'04.91"N, 76°00'15.74"E, 13.VI.2022, leg. Suryanarayanan. T. B., SERLNR317. 2♀ INDIA, Kerala State, Wayanad Dist.[RICT], Thirunelly, 862 m, coordinates: 11°54'40.17"N, 76°00'00.83"E, 21.VI.2022, leg. Suryanarayanan. T. B., SERLNR319, SERLNR320.

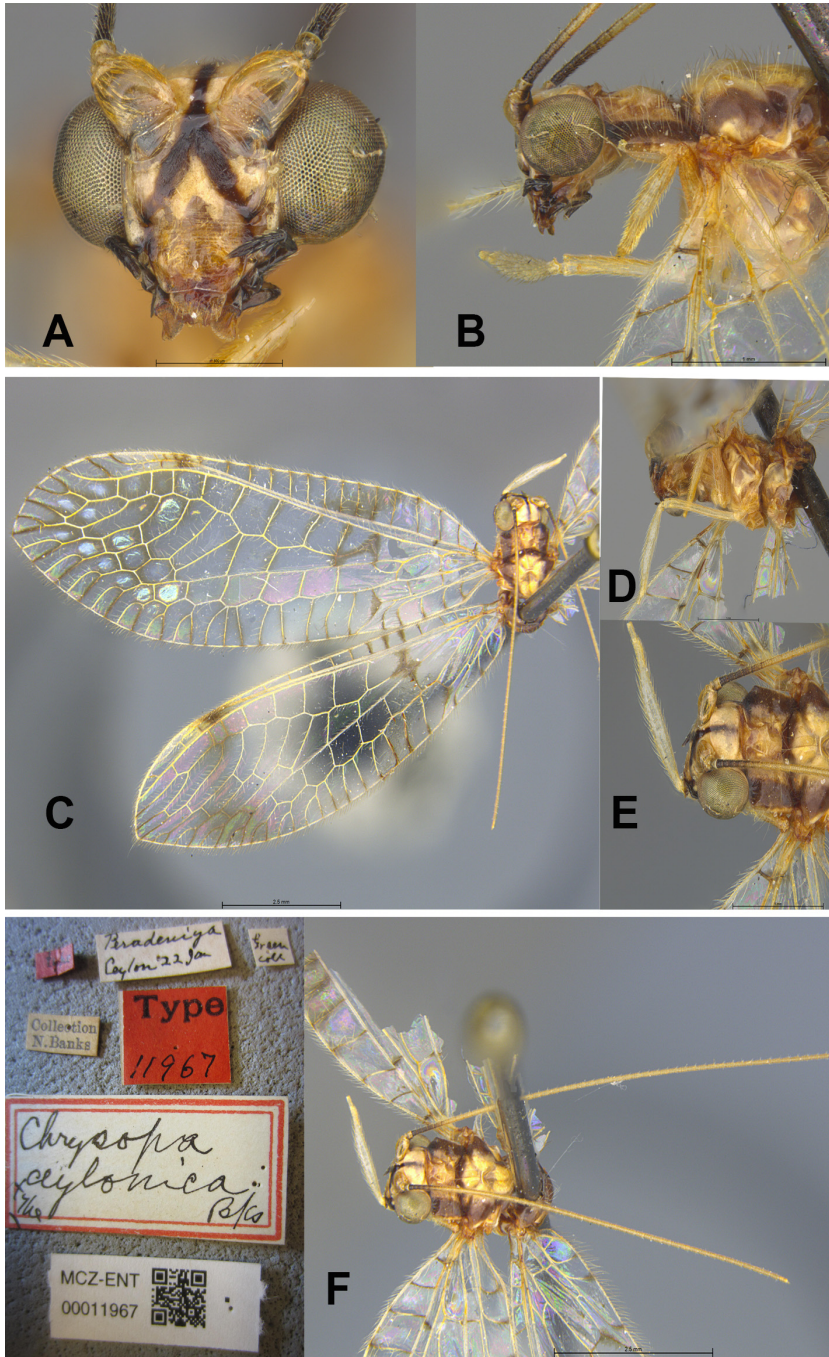


Fig. 1: Type male of *Glenochrysa zeylanica* (Banks, 1913), A – Head in frontal view; B – Head and thorax in lateral view; C – Wing venation; D – Head and thorax in ventral view; E – Head in dorsal view; F – Dorsal view (in MCZ collection).

Diagnosis. Face with a prominent distinctively brown inverted Y-mark, an oblique streak across costal area near base of forewing; gradate series and cross-veins between radial sector and radius faintly margined with brown; base of radial sector and cross-vein to median vein black, a dark spot in fork of cubital branch of forewing.

Description (Fig. 2A–C).

Measurements: Female: Length 9 mm from head to abdomen and 1 mm wide.

Head: Vertex yellow, medially separated by dark-brown stripe. Frons with a prominent dark-brown inverted Y-mark extending to vertex. Inter-antennal marking dark-brown. Eyes black, large, slightly wider than half of head width. 1-4 basal segments of antennae black and rest of antennal segments deep pale-brown.

Thorax: Pronotum nearly twice as wide as long, green, with dark-brown stripes on each lateral margin. Mesonotum green with dark-brown markings. Metanotum dark-brown.

Wings: narrow elongate and veins pale-yellow with dark-brown and yellowish-brown shading around crossveins and usually with iridescent pustules. Forewing 12 mm long and 4 mm wide, long quadrangular intramedian cell present. Oblique dark-brown streak across costal area near base of forewing. Cubital fork with dark-brown spot. Pterostigma long and narrow with light brown colour. Hindwing 10 mm long and 3 mm wide. Membrane with dark-brown veins in some costals, marginal veinlets.

Abdomen: green with dark-brown stripe in 4-5 abdominal segments.

Female easily distinguished from males by their broad abdominal tip and bilobed subgenital and a pillbox-shaped spermatheca with long coiled duct.

Habitat and flight period: The specimen was collected from forest ecosystem surrounded by short and tall trees. The live specimen was resting in the top of the leaf (Fig. 3A)

Distribution (Fig. 3B): Sri Lanka, India: Kerala (Wayanad Dist.: Mananthavady, Thirunelly).

Discussion

There is a definite decline in studies on the taxonomy of the order Neuroptera after the Ghosh research period (1977-2000) in India. Only one new species, *Joguina unimaculata* Winterton, Suryanarayanan & Bijoy, 2021, has been added to the Indian Chrysopidae after his research period. In the last five years, there has been a remarkable increase in research on Neuropteran families by KAUR et al. (2019a, 2019b, 2021); WINTERTON & GUPTA (2020); SURYANARAYANAN & BIJOY (2021a, 2021b, 2021c, 2021d, 2022, 2024); SURYANARAYANAN et al. (2022, 2023a, 2023b, 2024a, 2024b, 2024c, 2024d) through their revisions and distribution records. In this paper, a very rare green lacewing, *G. zeylanica* (Banks, 1913), originally described from Kandy, Sri Lanka, has been rediscovered and reported from India (Kerala) for the first time after 111 years. This connection highlights the close zoogeographical relationship between the Western Ghats and Sri Lanka, making the region ideal for more such exciting discoveries.

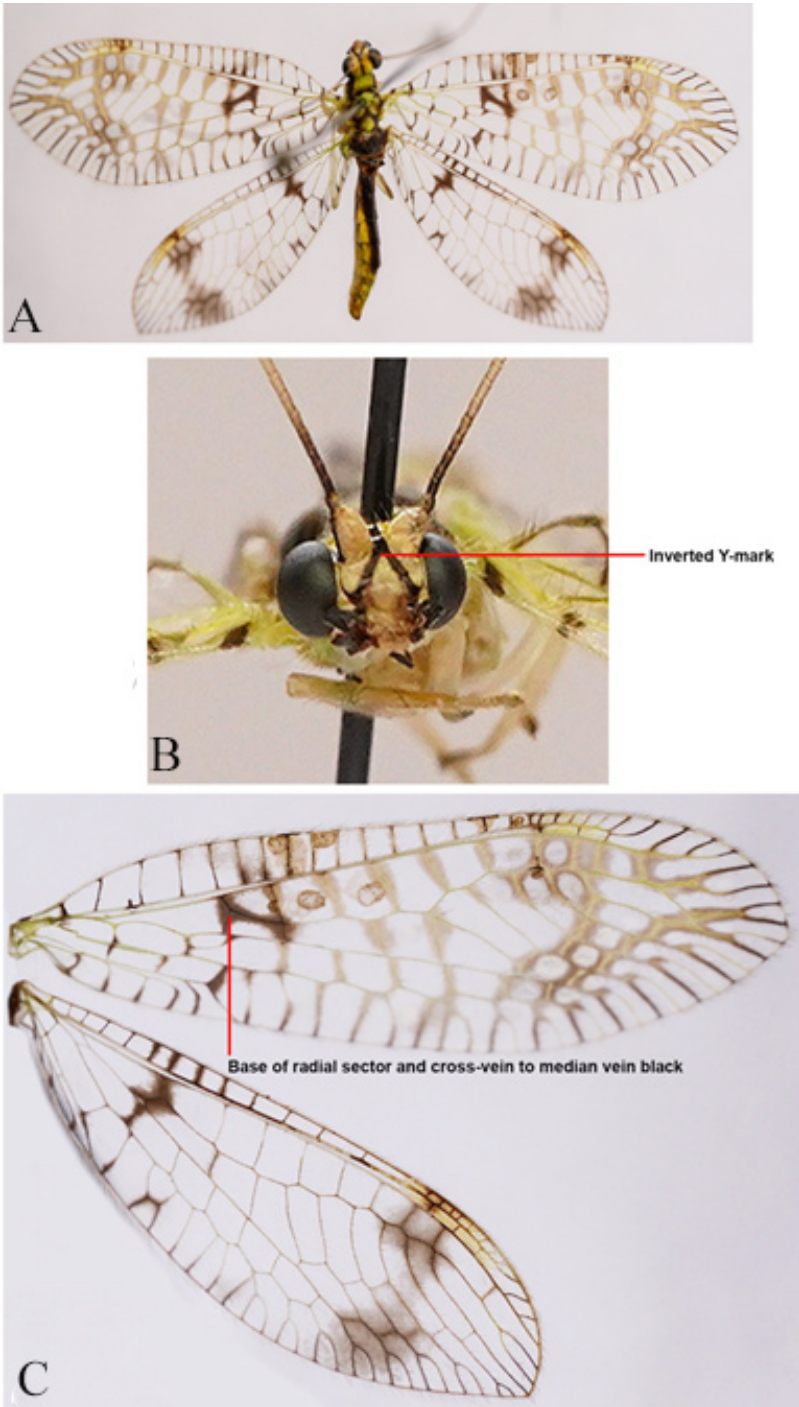


Fig. 1: *Glenochrysa zeylanica* (Banks, 1913),
A – Female habitus; B – Head in frontal view; C – Wing venation.

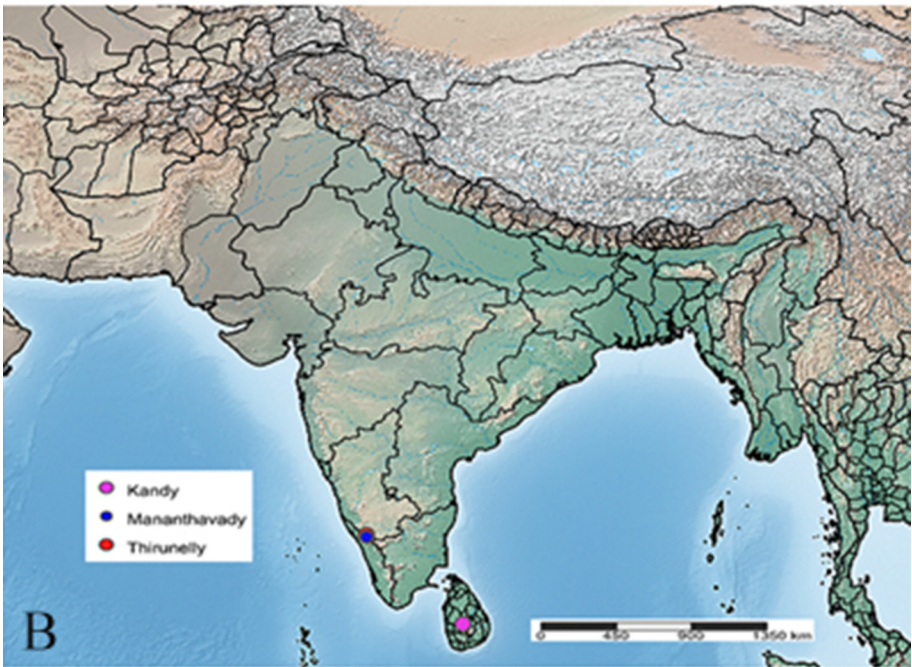


Fig. 3: A – Adult female of *Glenochrysa zeylanica* (Banks, 1913);
B – Distribution of *Glenochrysa zeylanica* (Banks, 1913) from the Oriental

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