

New larval host plants of *Euchrysops cnejus* (Fabricius, 1798) and *Rapala manea schistacea* (Moore, 1879) from Eastern India (Lepidoptera: Lycaenidae)

Arajush Payra & Chintan Bhatt

Abstract

In the present communication we report *Vigna stipulacea* (Lam). Kuntze as a larval host plant of *Euchrysops cnejus* (Fabricius, 1798) and *Caesalpinia bonduc* (L.) Roxb. as a larval host plant of *Rapala manea schistacea* (Moore, 1879) for the first time from the coastal areas of Purba Medinipur district, West Bengal, India. The study also report new record of *Vigna stipulacea* for the state West Bengal.

Keywords: Lepidoptera, Lycaenidae, new records, Fabaceae, Purba Medinipur, India.

Nuevas plantas nutricias de larvas de *Euchrysops cnejus* (Fabricius, 1798) y *Rapala manea schistacea* (Moore, 1879) de la India oriental (Lepidoptera: Lycaenidae)

Resumen

En la presente comunicación registramos a *Vigna stipulacea* (Lam). Kuntze como planta nutricia de *Euchrysops cnejus* (Fabricius, 1798) y *Caesalpinia bonduc* (L.) Roxb. como planta nutricia de *Rapala manea schistacea* (Moore, 1879) por primera vez en las zonas costeras del distrito de Purba Medinipur, Bengala Occidental, India. El estudio también informa de un nuevo registro de *Vigna stipulacea* para el estado de Bengala Occidental.

Palabras clave: Lepidoptera, Lycaenidae, nuevos registros, Fabaceae, Purba Medinipur, India.

Introduction

Recording data on the larval host plants of Lepidoptera is very crucial in order to understand their ecology, as well as significant for the formulation of conservation strategies. The diversity and distribution of Lepidoptera chiefly governed by the diversity and distribution of their larval host plants. Some of the major contributions to the documentation of larval host plants of Indian Lepidoptera are of Bell (1909, 1910, 1927), Wynter-Blyth (1957), Kunte (2000), Kalesh & Prakash (2007), Naik & Mustak (2015), Nitin et al. (2018) and Karmakar et al. (2018). In recent five years several authors have reported new larval host plants of Lepidoptera from different parts of the West Bengal (Dey, 2021; Payra, 2021; Mukherjee 2021, 2022; Banerjee et al. 2023). In the present communication, we report for the first time *Vigna stipulacea* (Lam). Kuntze as a larval host plant of *Euchrysops cnejus* (Fabricius, 1798) and *Caesalpinia bonduc* (L.) Roxb. as host plant of *Rapala manea schistacea* (Moore, 1879) from the coastal areas of Purba Medinipur district, West Bengal, India.

Results and discussions

E. cnejus is widely distributed from Indian Subcontinent to Myanmar, China, Thailand, Lao PDR, Cambodia, Vietnam, Taiwan, Japan, West Malaysia, Singapore to New Guinea, Northeastern Australia, Fiji and Samoa (Inayoshi, 2023). In India, it occurs throughout the country except in some parts of north Indian states (western Rajasthan and southern Punjab) and in some states of Northeast India (Arunachal Pradesh and Mizoram) (Varshney & Smetacek, 2015; Kehimkar, 2016; van Gasse, 2021). In the adjoining coastal areas of Purba Medinipur district, West Bengal the status of the Lycaenidae is “Common” (Payra et al. 2017). The larval stages of this Lycaenidae are known to feed mainly on the members of Fabaceae family (Robinson et al. 2010) and the previously recorded larval host plants of this species are *Acacia caesia* (L.) Willd., *Butea monosperma* (Lam.) Taub., *Cajanus cajan* (L.) Millsp., *Canavalia ensiformis* (L.) DC, *Lablab purpureus* (L.) Sweet, *Ougeinia oojeinensis* (Roxb.) Hochr., *Paracalyx scariosus* (Roxb.) Ali, *Phaseolus*, *Pisum sativum* L., *Pueraria phaseoloides* (Roxb.) Benth., *Vigna cylindrica* (L.) Skeels, *Vigna radiata* (L.) R. Wilczek, *Vigna trilobata* (L.) Verdc., and *Vigna unguiculata* (L.) Walp. (Wynter-Blyth, 1957; Kunte, 2000; Robinson et al. 2010; Nitin et al. 2018). On 09-VII-2020 a female of *Euchrysops cnejus* was observed laying eggs underneath the leaves of a *Vigna* plant near Kuliyata village (21°39'47.93"N, 87°34'11.44"E), Purba Medinipur, West Bengal (Figure 1. A-H). On the same day several caterpillars were also observed underneath the leaves, on stem, stipule, flowers and pods of the plant. Later on, during July-August 2020 several caterpillars were observed at the same place. A final instar caterpillar was collected from the field during August and reared. The *Vigna* plant was identified as *V. stipulacea* by the characteristics of angular stem, large stipule, raceme above foliage, compact inflorescence, purple keel, oblong shaped hilum, and which can easily be separated from its closely allied species *V. trilobata*. Aforementioned records show *V. stipulacea* was unreported as larval host plant of this Lycaenidae. Moreover, previous distribution records of this plant indicate, it has never been reported from West Bengal (Yadav et al. 2014, Bhattacharjee et al. 2019; Gore et al. 2019). Hence the present record from Purba Medinipur district represents new locality of this plant and resulting in 11th *Vigna* spp. of the state West Bengal. This study also reports *V. stipulacea* as the first larval host plant of an Indian Lepidoptera.

R. manea schistacea widely occurs in Oriental region, distributed from Indian subcontinent to Myanmar, southern China, Thailand, Lao PDR and Vietnam (Inayoshi, 2023). It occurs throughout India, except northern Arid region and Northeastern state Mizoram (Varshney & Smetacek, 2015; Kehimkar, 2016; van Gasse, 2021). This Lycaenidae stated as “Not Rare” in the adjoining coastal areas of Purba Medinipur district, West Bengal (Payra et al. 2017). Until now, the recorded larval host plants of *R. manea schistacea* are *Mangifera indica* L. and *Spondias pinnata* (L.f.) Kurz (Anacardiaceae); *Combretum indicum* (L.) DeFilipps (Combretaceae); *Mallotus repandus* (Willd.) Müll.Arg. (Euphorbiaceae); *Acacia caesia* (L.) Willd., *Acacia megaladena* Desv., *Acacia pennata* (L.) Willd. *Calliandra heamotocephala* Hassk. *Mimosa diplotricha* C. Wright ex Sauvalle, *Saraca asoca* (Roxb.) Willd., *Senegalia torta* (Roxb.) Maslin, Seigler & Ebinger and *Senna tora* (L.) Roxb. (Fabaceae); *Clerodendrum infortunatum* L. (Lamiaceae); *Syzygium* sp. (Myrtaceae); *Urena lobata* L. (Malvaceae); *Averrhoa bilimbi* L. (Oxalidaceae); *Antidesma acidum* Retz. and *Antidesma ghaesembilla* Gaertn. (Phyllanthaceae); *Ziziphus* spp. (Rhamnaceae); *Ixora* sp. (Rubiaceae); *Lepisanthes tetraphylla* Radlk. and *Litchi chinensis* Sonn. (Sapindaceae); *Camellia sinensis* (L.) Kuntze (Theaceae); *Lantana camara* (Verbenaceae) (Wynter-Blyth, 1957; Kunte, 2000; Robinson et al. 2010; Bhakare & Ogale, 2018; Nitin et al. 2018; Naik & Mustak, 2020; Mukherjee 2021, 2022; Banerjee et al. 2023). On 22-VIII-2020, two females of *R. manea schistacea* were observed laying eggs on the inflorescence and leaves of *C. bonduc* near Shankarpur (21°38'47.17"N, 87°34'18.09"E), Purba Medinipur, West Bengal (Figure 2 A-F). On the same day a caterpillar was also observed inside the inflorescence. Later on 26-X-2020, an individual was observed laying eggs on the inflorescence of *C. bonduc*, near Nilpur Village (21°39'1.50"N, 87°33'52.29"E). Although, the caterpillar was not reared, findings of caterpillar and egg laying observations suggest *C. bonduc* as a putative larval host plant of *Rapla manea schistacea*. *C. bonduc* already been reported as larval host plant of *Nacaduba beroe gythion* Fruhstorfer, 1916,

Nacaduba kurava canaraica Toxopeus, 1927 (Lycaenidae). *Charaxes bharata* C. Felder & R. Felder, [1867] (Nymphalidae); *Eurema blanda* (Boisduval, 1836) (Pieridae) (Nitin et al. 2019, Payra, 2020).

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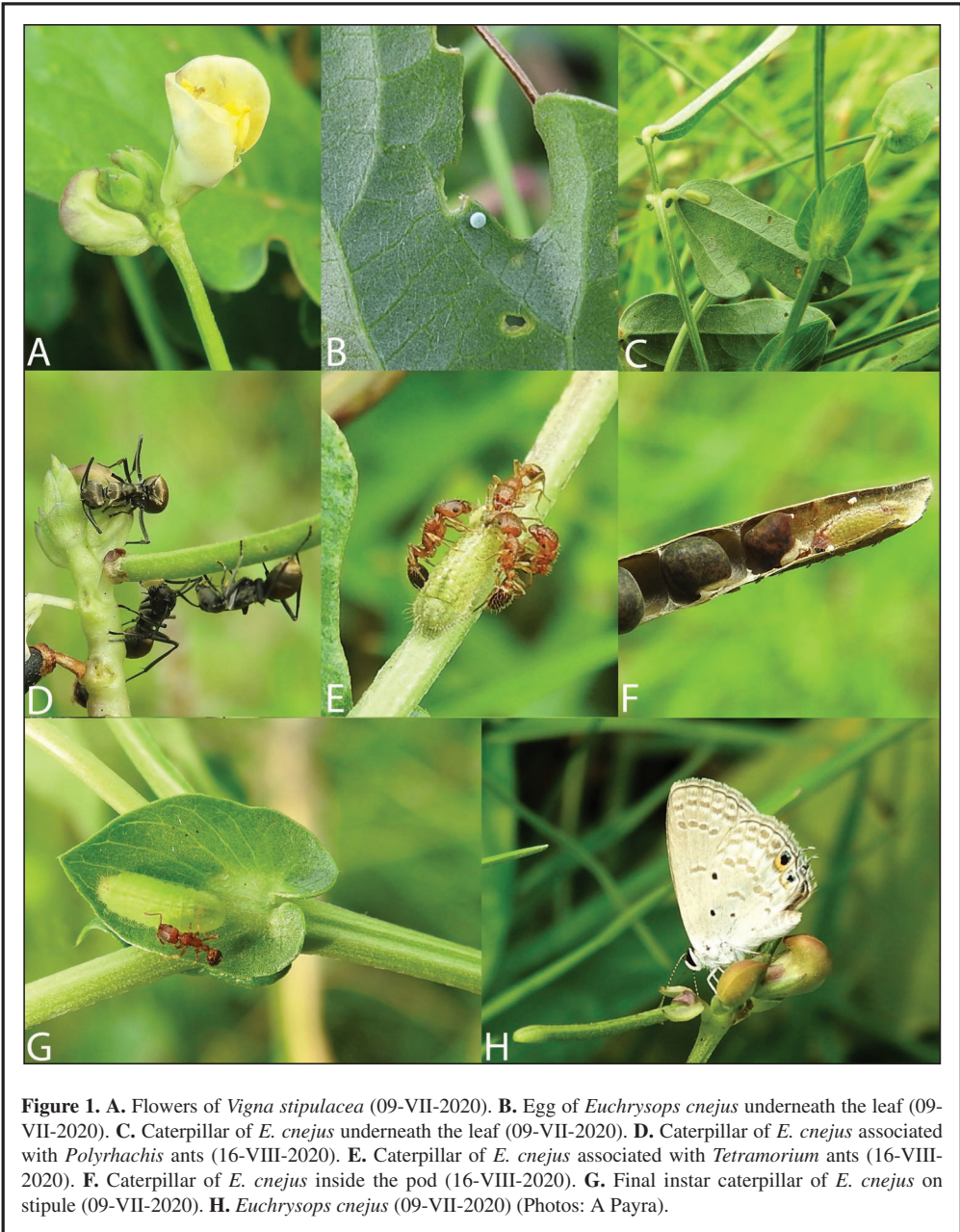
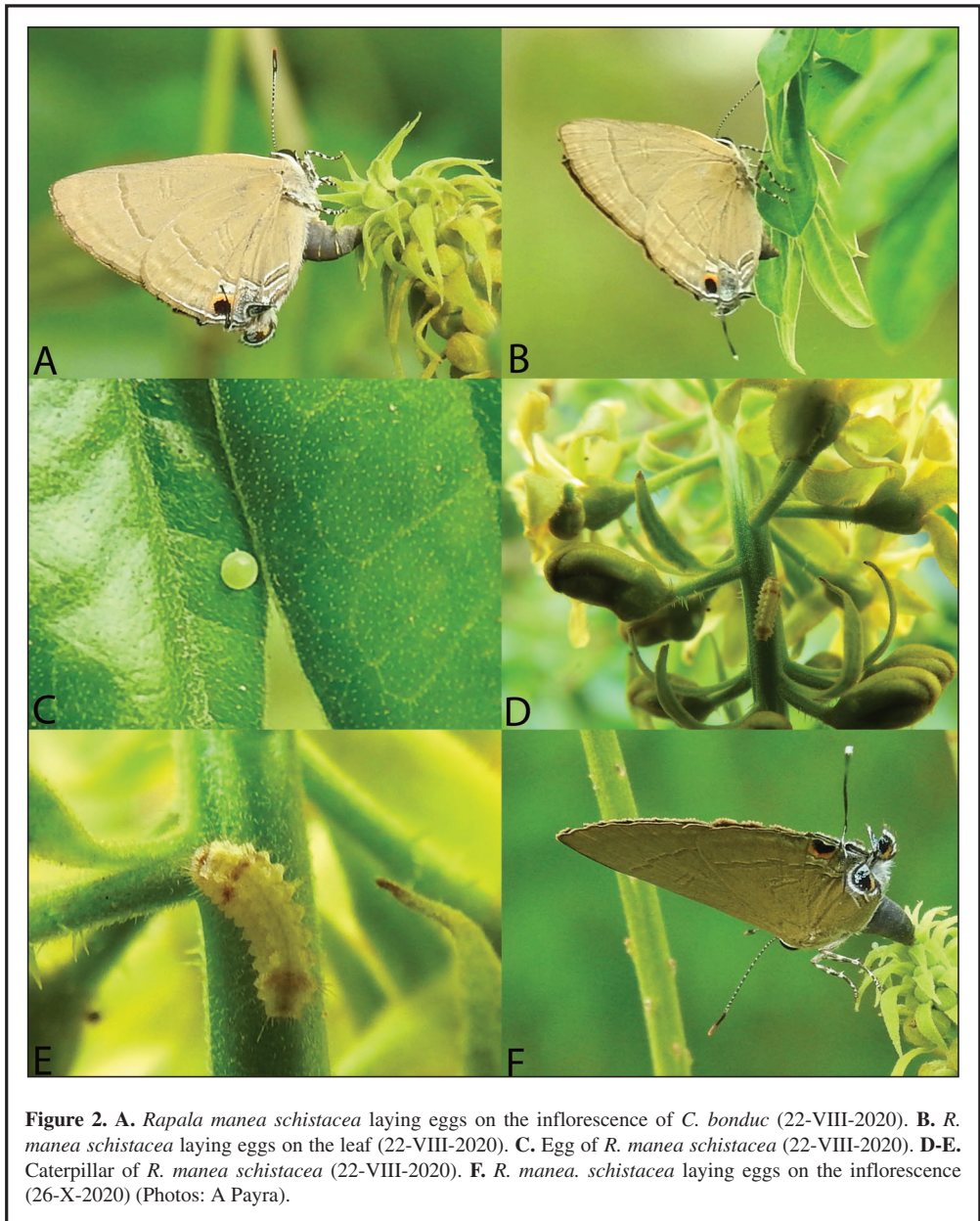


Figure 1. A. Flowers of *Vigna stipulacea* (09-VII-2020). B. Egg of *Euchrysops cnejus* underneath the leaf (09-VII-2020). C. Caterpillar of *E. cnejus* underneath the leaf (09-VII-2020). D. Caterpillar of *E. cnejus* associated with *Polyrhachis* ants (16-VIII-2020). E. Caterpillar of *E. cnejus* associated with *Tetramorium* ants (16-VIII-2020). F. Caterpillar of *E. cnejus* inside the pod (16-VIII-2020). G. Final instar caterpillar of *E. cnejus* on stipule (09-VII-2020). H. *Euchrysops cnejus* (09-VII-2020) (Photos: A Payra).





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