



## Research Paper

### New Record of Green Jewel Bug *Chrysocoris stollii* (Wolf, 1801) (Hemiptera: Scutelleridae) from Chhatarpur, Madhya Pradesh (India), with its Systematic Account, Host Plants and Biological Control

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**Abstract:** Present communication deals with the new record of *Chrysocoris stollii* (Wolf, 1801), the Jewel Bug, belonging to family Scutelleridae under order Hemiptera, from Chhatarpur, Madhya Pradesh (India), with its systematic account, distribution, food & feeding, life cycle, host plants, symptoms & damage caused and biological control. Earlier it was recorded from Kanha Tiger Reserve.

**Keywords:** New record, *Chrysocoris stollii*, Chhatarpur, M. P.

#### Introduction:

Hemipteran fauna of Madhya Pradesh has attracted the attention of various workers (Joshi *et al.*, 2004; Ramakrishna *et al.* 2006; Chandra, 2008, 2009, 2015; Chandra & Kushwaha, 2012, 2013; Chandra *et al.*, 2010, 2011, 2012, 2014, 2015; Dhamorikar, 2015, 2016) during the past and it is mostly on Kanha Tiger Reserve. Recently A metallic shield bug *Chrysocoris stollii* (Wolf, 1801), belonging to family Scutelleridae (Jewel or Shield-backed Bugs), was sighted on *Karonda* plant (*Carissa carandas*) leaf at

Chhatarpur which has not been reported earlier from this district and the rest of state except Kanha Tiger Reserve by Dhamorikar (2015, 2016) and hence recorded here as new to the place.

#### STUDY SITE: CHHATARPUR (MADHYA PRADESH)

**Physiography:** Chhatarpur is located at coordinates 24. 63°N and 79.5°E with an average elevation of 305 m. It lies in the north-east of the state, bordering Uttar Pradesh state.

**Climate:** Humid-subtropical with hot (47° C in June) summers, cool (1° C in January) winters and rainy monsoon season during July-August.

**Flora:** Trees: *Lannea coromandelica* (Anacardiaceae), *Holarrhena pubescens* (Apocynaceae), *Boswellia serrata* (Burseraceae), *Anogeissus latifolia*, *A. pendula*, *Terminalia chebula* (Combretaceae), *Diospyros malabarica*, *D. montana* (Ebenaceae), *Acacia catechu*, *A. farnesiana*, *A. leucophloea*, *Butea monosperma* (Leguminosae), *Phyllanthus emblica* (Phyllanthaceae), *Lagerstroemia*

*parviflora* (Lythraceae), *Ziziphus oenopolia*, *Z. xylopyrus* (Rhamnaceae), *Madhuca longifolia* (Sapotaceae).

**Shrubs:** *Carissa carandas* (Apocyanaceae), *Capparis decidua*, *Maerua arenaria* (Capparaceae), *Euphorbia nivulia* (Euphorbiaceae), *Vitex negundo* (Lamiaceae), *Mimosa himalayana*, *Prosopis juliflora*, *Senna auriculata*, *S. stipulacea* (Leguminosae), *Woodfordia fruticosa* (Lythraceae), *Helicteres isora* (Mavaceae), *Nyctanthes arbor-tristis*, *Olex scandens* (Olacaceae), *Ixora pavetta* (Rubiaceae), *Flacourtia indica* (Salicaceae), *Buddleja asiatica* (Scrophulariaceae), *Lantana camara* (Verbenaceae).

**Herbs:** *Anisomeles indica*, *Hyptis suaveolens*, *Leonotis nepetifolia* (Lamiaceae), *Senna tora*, *Tephrosia purpurea* (Leguminosae), *Aristida hystrix*, *Heteropogon contortus*, *Iseilema laxum*, *Themeda quadrivalvis* (Poaceae).

### **CHRYSOCORIS STOLLII (WOLF, 1801)**

#### **(Systematic account and Distribution)**

#### **Synonyms:**

*Cimex stollii* Wolf, 1801. *Icones Cimicum descriptionibus illustratae*, 2: 48.

*Scutellera stockerus* Guerin-Meneville, 1838. *Crustaces et insectes*. In: Duperrey, L. I., *Voyage autour de Monde, execute par ordre du Roi, sur la Corvette de sa Majeste, la Coquille pendant 1822-1825*, I (*Zoologie*), Paris: 159.

*Callidea porphyricola* Walker, 1867. *Catalogue of the specimens of Heteropterous-Hemiptera in the collection of the British Museum*. Part I. *Scuta*: 29; Distant, 1899. *Annals and Magazine Natural History*, (7) 4: 39.

*Chrysocoris stollii*, Distant, 1902. *Faun. Brit. India, Rhynchota*, 1: 58; Ghosh *et al.*, 1989. *Fauna of Orissa. State Fauna Series*, 1: 206; Chakraborty *et al.*, 1994. In: *Fauna of West Bengal. State Fauna Series*, 3 (Part-5): 488; Chakraborty & Ghosh, 1998. In: *Fauna of Meghalaya. State Fauna*

*Series*, 4 (Part-4): 407; Chakraborty & Ghosh, 2002. In: *Fauna of Tripura. State Fauna Series*, 7 (2): 424; Ghosh, 2008. *Handbook on Hemipteran Pests in India*: 392, 414-415, fig. 448; Biswas *et al.*, 2014. *Rec. zool. Surv. India*, 114 (Part-2): 212, 225-226, pl. IV, fig. 36 (Bhilai, Rampur and Saja, Durg dist; Balamdehi riv., Raipur dist., Bakavand, Jagdalpur dist.).

*Chrysocoris stollii*, Dhamorikar, 2015. *Some Insects & Spiders of Kanha Tiger Reserve*: 68, 188, pl. 16, fig. 16a; Dhamorikar, 2016. *A Field Guide to Insects & Spiders of Kanha Tiger Reserve*: 88, 217, pl. 16, fig. 16b.

**Common Names:** Green Jewel Bug, Jewel Bug, Metallic Shield Bug, Litchi Bug, Lychee Shield Bug.

**Classification:** Class Insecta, order Hemiptera, suborder Heteroptera, infraorder Pentatomorpha, superfamily Pentatomoidea, family Scutelleridae (Jewel Bugs, Shield-backed Bugs), subfamily Scutellerinae Leech, 1815, genus *Chrysocoris* Hahn, 1834.

**Material Examined:** 1 example (on *Carissa carandas*, the *Karonda* plant leaf), Chhatarpur, Madhya Pradesh, 9.xi.2020, by 2<sup>nd</sup> author (AKD).

#### **Diagnostic Features:**

**Morphological Characters:** Head declivent; antennae five-segmented; labium four segmented; pronotum with convex base; scutellum slightly convex at base, covered almost whole of abdomen; fore femora shortest, hind longest while middle tibiae shortest and hind longest in legs; abdomen almost equal in its length and breadth, convex ventrally, a pair of spiracles on each sides of 3<sup>rd</sup> to 7<sup>th</sup>, in female 3<sup>rd</sup> to 7<sup>th</sup> segments toothed or spiny on sides.

**Colouration:** Body metallic green above with black spots over pronotum and scutellum; pronotum with eight black spots, three near anterior margin, three larger and basal on posterior margin/disc and one on each lateral angles; scutellum

with seven spots, six of which arranged in pairs and a central one large sub-ovate; ventral side purplish-blue or black with green spots on sternum, abdomen brown or brownish-yellow, lateral margin pink or purple and stigma spots black.

Size: 13.0-14.5 mm in length (Ghosh, 2008); male 13.6 mm, female 15.6 mm in length (Parveen *et al.* 2013).



**Figure:** *Chrysocoris stollii*, the Jewel Bug on Karonda leaf, Chhatarpur

**Distribution:** South-east Asia.

**Chhatarpur:** Present record.

**Rest of Madhya Pradesh:** Kanha Tiger Reserve (Mandla and Balaghat dists.)

**Rest of India:** Andaman & Nicobar Islands, Assam, Bihar, Chhattisgarh (Bastar, Durg and Raipur dist.), Delhi, Kerala, Maharashtra, Meghalaya, Nagaland, Odisha, Sikkim, Telangana, Uttarakhand, Uttar Pradesh and West Bengal.

**Elsewhere:** Bangladesh, Cambodia, China, Indonesia, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Taiwan, Thailand and Viet Nam.

Tsai *et al.* (1991) considered literature records from Indonesia, Korea, Philippines and Sri Lanka as erroneous. However, Wijeweera *et al.* (2020) recorded from Sri Lanka, associated with *Calotropis gigantea*. Distribution in the Philippines is mentioned in Thailand Nature Project ([thailandnatureproject.com](http://thailandnatureproject.com)).

**Food & Feeding:** Polyphagous, feeding on host plant juices.

**Life Cycle:** After long mating the female lays about 20 creamy-white spherical eggs in single or 2-3 batches. Nymphs emergence takes within about a week. The bright-green nymphs, reddish on emergence, measure about 9-10 mm and moult five times. The life cycle completes in about a month (Ghosh, 2008).

Singh (1968) studied the female reproductive organs and their development in detail.

### HOST PLANTS

Polyphagous larvae infest the following host plants (Verma *et al.*, 1978; Hill, 1983; Swamy *et al.*, 1993; Swamy & Rajagopal, 1995; Meshram & Garg, 1999; Shankar & Dhyani, 2006; Ambika *et al.*, 2007; Dhiman & Kumar, 2008; Ghosh, 2008; Parveen, *et al.*, 2013; Dhamorikar, 2016; [jungledragon.com](http://jungledragon.com); [nbair.res.in](http://nbair.res.in); thailand nature project).

*Senna occidentalis* (syn. *Cassia occidentalis*), the Coffee Senna (Leguminoae)

*Justicia adhatoda* (syn. *Adhatoda vasica*), the Malabar nut, *Aduca* (Acanthaceae).

*Calotropis procera*, the Rubber tree (Apocynaceae).

*Areca catechu*, the Areca Nut (Arecaceae).

*Cheilocostus speciosus* (syn. *Costus speciosus*), the Crepe-ginger (Costaceae).

*Croton bonplandianus* (syn. *Croton sparsiflorus*), the *Ban Tulsi*, *Kala Bhangra*; *Jatropha curcas*, the Poison Nut (Euphorbiaceae).

*Cajanus cajan*, the Pigeon Pea; *Pongamia pinnata* (syn. *Millettia pinnata*), the Indian Beech; *Senna occidentalis* (syn. *Cassia occidentalis*), the Coffee Senna (Leguminosae).

*Musa acuminata*, the Banana (Musaceae).

*Phyllanthus emblica* (syn. *Embllica officinalis*), the Indian Gooseberry (Phyllanthaceae).

*Pennisetum glaucum* (syn. *Pennisetum typhoides*), the Pearl Millet (Poaceae).

*Dimocarpus longan*, the Logan; *Litchi chinensis*, the Litchi (Sapindaceae).

*Lantana camara*, the Common Lantana, *Raimunya* (Verbenaceae).

*Vitis vinifera*, the Grapevines and other Berries (Vitaceae).

### SYMPTOMS & DAMAGE CAUSED

The vitality of plants including their fruits is very much reduced as a result of sucking its sap both by nymphs, larvae and adults (Ghosh, 2008).

### BIOLOGICAL CONTROL

Dhiman & Kumar (2008) dealt with bio-control agents and their efficacy as under:

**Predators:** *Rhynocoris marginatus* (syn. *Harpactor marginatus*) (Hemiptera : Reduviidae), a red coloured bug which paralyzes the pest by injecting some enzymes (proteolytic or lysing) through saliva and then sucks the body fluid or dissolved substance.

*Camponotus compressus* and *Solenopsis geminata* (Hymenoptera: Formicidae) feed on eggs and early nymphal stages.

**Fungal Infestation:** *Aspergillus flavus* and *A. niger* (Eurotiales : Trichocomaceae), the saprotrophic and pathogenic, infect the bug.

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<https://www.thailandnatureproject.com/chrysocoris-stolli.html>