



First Record of Carpenter Bees (*Xylocopa Ruficornis* Fabricius, 1804) from South India.

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DOI: <https://doi.org/10.55248/gengpi.4.623.46079>

ABSTRACT

The paper deals with about carpenter bees (*Xylocopa ruficornis* Fabricius, 1804) female. A new record in Tamil Nadu, This the first-time record of south India. In this note discuss about bees' observations, importance and distributions.

Keywords; New species, *Xylocop* genus, First record, South India,

Introduction

The subfamily Xylocopinae incorporates honey bees that are exceptionally assorted in size and appearance, the enormous and powerful (13-33 mm long) Xylocopini to the little and thin (3-13 mm) Allodapini, Ceratinini and Manuelliini (Michener 2007). The clan Xylocopini is addressed by a solitary sort, *Xylocopa* Latreille, normally known as enormous craftsman honey bees since they typically home in dead wood, with the exception of individuals from the subgenus *Proxylocopa* which home in the ground (Hurd and Moure 1963). Enormous craftsman honey bees are one of the world's most assorted gatherings of lone honey bees, with 373 portrayed species in the realm of which 29 species are from India. Types of *Xylocopa* are significant pollinators of numerous local plants and horticultural yields (Gerling *et al.* 1989; Raju and Rao 2006; Keasar 2010).

Regarding the mellito fauna, many studies in North western Himalayas have been conducted in different agroecological areas where different (solitary) bees were reported Worldwide, there are approximately 995 species and 15 genera within the subfamily *Xylocopinae*, of which 59 species have been reported from India. 19 Of those are situated in the genus *Xylocopa* (ASCHER *et al.*, 2008).

In India, the examination on honey bee scientific classification is in a condition of disregard to keep up with biodiversity. The current report of craftsman honey bees, it is found in the Sri Lankan. To form preservation strategies for any species, one necessities data in regards to its nature and territory. This study was planned to create standard information with respect to types of *Xylocopa* by reporting variety across various scenes which thusly may help understanding their fertilization administrations in different agro-biological systems across the area.

Materials method

Study area

Carpenter bees (*Xylocopa ruficornis* Fabricius, 1804) from (Coordinates 9.9282, 78.1497), Near vandyur lake ,Madurai district ,Tamil Nadu state India (Figure 1).

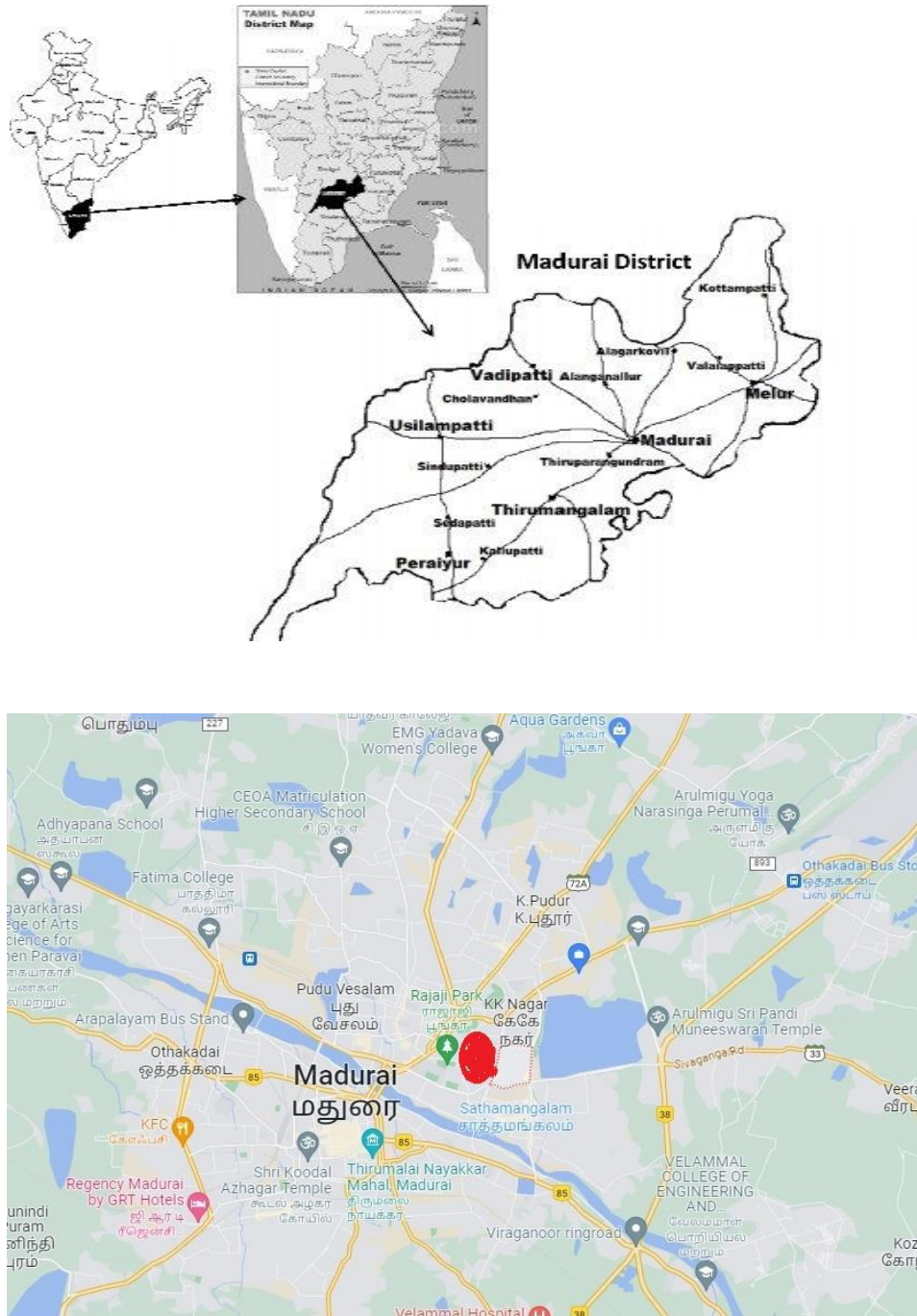


Figure 1. A map showing study area



Figure 2. Carpenter bees *Xylocopa ruficornis* Fabricius, 1804.

Distributions

In the species has been distribution of the following Country: India, Sri Lanka (Anuradhapura, Badulla, Murunkan), Philippines, Indonesia, Malaysia and Australia.

Importance of bees

The connection among creatures and mangrove timberlands is extremely interesting, where the two are related to one another. One of the elements of creatures is they are a significant specialist for fertilization of mangrove plants. Different specialists proposed that bats and birds are the principal fertilization specialists for mangroves (Bestmann *et al.* 1997; Knudsen & Tollsten 1995) besides insects, because most bats live in mangroves as their habitat (Bordignon 2006).

Bees can effectively move dust among various plant people of similar species. The cross fertilization that happens can make better and all the more hereditarily different plant populaces. Accordingly, the variety in mangrove woods can be kept up with which is by implication answerable for the ecological consistency, local area perseverance and local area or environment aggravation (Daniel 2008).

To date, there is very few publications about insect as the pollinator of mangrove plants specifically in Malaysia. Tomlinson *et al.* (1978) found that *Lumnitzera littorea* is pollinated predominantly by honeyeaters, whereas *L. racemosa* is visited by a variety of day-active insects such as wasps, bees, butterflies, and day-active moths.

Observations

The tribe *Xylocopini* comprises only one single genus, *Xylocopa*, which consists of large and robust bees (13 to 30 mm long). Their general appearance greatly differs from other tribes of the subfamily *Xylocopinae*. Principal characters of the genus are the loss of the stigma, the very long prestigma and marginal cell (DANFORTH, 1989).

X. valga are similar in morphology. *X. ruficornis* Fabricius, 1804, Females are black, larger than males (28–30 mm vs. 22–28 mm) and their wings display a purple iridescence. The mandible contains two teeth. On the outer apex of the hind tibia two spines account for two-third of the tibial length and scopa are found on the hind leg (basitarsus) to collect pollen. The male is also black, with larger eyes, which is also typical for other *Xylocopa* species. The head is smaller than that of the females and the wings are brownish-purple. There is no scopa on the hind leg of the males. Apart from a small amount of black hair on the anterior surface of the head, the body is covered with black hair. Yellow thoracic hairs is character of *Koptortosoma* female And the yellow hairs just around the wing base which doesn't extend too long below on the pleuro

(Figure 2).

X. hafizii closely resembles *X. ruficornis* especially the females look similar, but *X. hafizii* can be differentiated from *X. ruficornis* by the yellow pubescence on the mesopleuron not extending beyond the wing base and abundance of yellow plumose hairs. Males of *X. hafizii* can be separated from *X. ruficornis* by having more greenish yellow pubescence on thorax and sparsely so on the meta soma but in *X. ruficornis* the pubescence is more golden yellow on the thorax and dense on metasoma compared to that in *X. hafizii*. The male genitalia of *X. hafizii* are different from those of *X. ruficornis* by the median lobe arising from apex of the gonostylus but in *X. ruficornis* it arises from the base. This species was found nesting in wooden beams of the house roof (C. Prashantha *et al.*, 2016).

Discussions

The species of *Xylocopa* (Hymenoptera: Apoidea: Apidae: Xylocopinae) recorded so far in temperate conditions are *Xylocopa valga* gerstäcker, 1872 and *Xylocopa violacea* (LINNAEUS, 1758) (raju & purnachandra mattu, 2014; ARA *et al.*, 2019), while, in sub-tropical conditions, *Xylocopa collaris* lepeletier, 1841, *Xylocopa fenestrata* (FABRICIUS, 1758), *Xylocopa latipes* (DRURY, 1773) and *Xylocopa pubescence* SPINOLA, 1838 (ABROL *et al.*, 2012; tara *et al.*, 2014) were reported. Hence, first time record of carpenter bees *Xylocopa ruficornis* Fabricius, 1804) from Near vandiyur lake, Madurai district, Tamil Nadu state, India (Figure 2).

Almost certainly, the climate and environment is getting more appropriate for *X. valga*. From one perspective, there is a wealth of a few agri-and green vegetation as well as decorative plants developed in adjoining towns and town settlements that are utilized for taking care of and to gather dust. Then again, there is an excess (KEASAR, 2010). This is essentially a direct result of its capability to harm neighborhood, business and social property other than being genuinely scary. Thusly, a legitimate information on the woodworker honey bees' utilization and magnificence should bring about a more extensive attention to put together subsequent activities with respect to (I. e. harm control for specific structures; see GAO *et al.*, 2020 for an example).

In any case, no deliberate work has been finished in the area of Tamil Nadu, India, for *Xylocopa*. To figure out preservation arrangements for any species, one necessities data with respect to its biology and territory. There are no investigations of microorganisms in presented *Xylocopa* species. Would it be a good idea for them they happen, firmly related species are probably going to be defenseless to presented microorganisms. Extra observing in the waterway and Lakes Locale and metropolitan and farming areas of adjoining states is expected to screen the likely spread of this acquainted species and with better archive the present status of the local *Xylocopa* fauna.

Conclusion

This study is planned to research whether *Xylocopa ruficornis* is one of the fertilization specialists of woods local area in . It is trusted that discoveries from this study will give some data on the significant pretended by *Xylocopa ruficornis* as a fertilization specialist in the plants. In ongoing has been conveyed to Molecular science and DNA barcoding study

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