



NEW RECORDS OF XYLOCOPA (HYMENOPTERA: APIDAE: XYLOCOPINAE) FROM  
DUMNA NATURE PARK JABALPUR, INDIA

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ABSTRACT

Four new records of family Xylocopinae viz. *Xylocopa latipes*, *X. tenuiscapa*, *X. aestuans* and *X. acutipennis* were recorded from Dumna Nature Park, Jabalpur. All the four species are new records to the state of Madhya Pradesh.

Key words:

Xylocopa, Dumna Nature Park, Puncture, Sulcation, Hyaline, Fuscous.

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INTRODUCTION

The bee species belonging to genus *Xylocopa* (Order: Hymenoptera; Family: Apidae; Subfamily: Xylocopinae) are known as carpenter bees as they nest in the woods [6, 8]. They are robust and hairy bee species found almost throughout the year [16]. Species of *Xylocopa* play vital role in the pollination of many native plants and agricultural crops [5, 7]. The characteristic feature of family Xylocopinae is having three sub-marginal cells with second sub-triangularly elongated, ocelli in a triangle and labrum only slightly exerted, not prominent, 6-jointed maxillary palpi, posterior tibiae densely pubescent [4]. About 450 species under genus *Xylocopa* has been reported globally [9], among which 29 species are from India [1].

Dumna Nature Park (DNP) is a forest area and an ecotourism site located in the Jabalpur district of Madhya Pradesh. No work on insect fauna except few species of Hemiptera and Hymenoptera has been reported from the Park [11, 12, 13, 14, 15]. In this paper, we are reporting four species of subfamily Xylocopinae from DNP; all are new records to the Madhya Pradesh.

METHODOLOGY

Study area

The state of Madhya Pradesh is located in the center of India and lies between 210 to 250 N and longitudes 740 to 840 E. The DNP covers an area of 1058 ha and is located (23° 10', 80° 1') on the way to Dumna Airport Road. It is an Eco-tourism centre and mainly embraces two major ecosystems viz. a forest ecosystem (Bamboo forest) and a fresh water ecosystem (Khandhari water reservoir).

Sampling

Two sampling methods viz. Sweep Net and Light Trap were used to collect the species belonging to genus *Xylocopa* from March 2014 to March 2016. However, all the species were collected through Sweep Net and no species could be sampled by Light Trap. The collection was carried on weekly basis.

RESULTS

Four species of subfamily Xylocopinae were recorded. The species were *Xylocopa latipes*, *X. tenuiscapa*, *X. aestuans* and *X. acutipennis*.

Systematic list

Order	Hymenoptera
Superfamily	Apoidea
Family	Apidae
Subfamily	Xylocopinae

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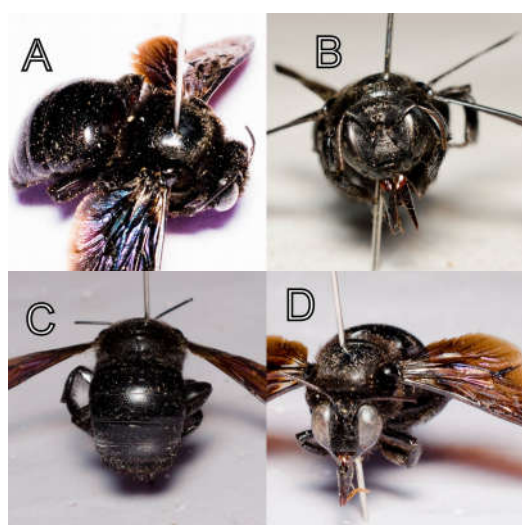
Tribe Xylocopini  
Genus *Xylocopa*

**Systematic account**

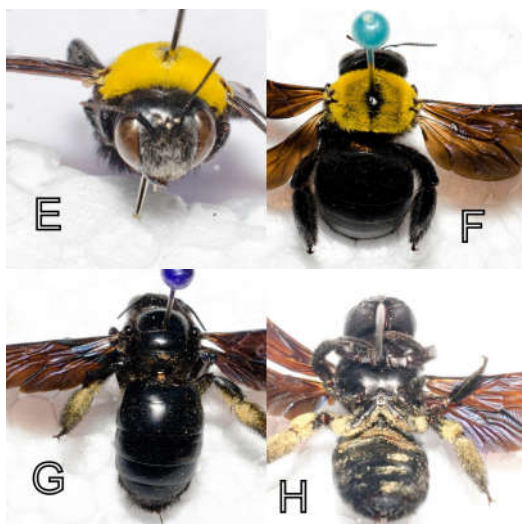
Genus: *Xylocopa* Latreille, 1802

**Diagnostic characters**

Head transverse; ocelli in a triangle just below the vertex; eyes larger in the male; antennae geniculate, the scape sometimes dilated or incrassate; the flagellum cylindrical, apical joint obliquely truncate; mandibles short, stout, grooved exteriorly, the apex with two, sometimes three teeth; labial palpi 4-jointed, basal joint nearly 5x the length of the second joint, thorax short; forewing with the radial cell elongate, acute at apex; three cubital cells, the third longest, second subtriangular; posterior tibiae and tarsi always densely pubescent, the former with two simple spines at apex; legs of male generally elongate, the posterior femora sometimes curved and subdentate below.



**Fig A** Dorsal view of *X. latipes* B. Frontal view of *X. latipes*. C. Posterior view of *X. tenuiscapa*. D. Frontal view of *X. tenuiscapa*.



**Fig E** Frontal view of *X. aestuans*. F. Dorsal view of *X. aestuans*. G. Dorsal view of *X. acutipenni*. H. Ventral view of *X. acutipenni*.

***Xylocopa latipes* (Drury, 1773)**

1970. *Apis latipes* Drury. *Ill. Exot. Ins.*, 2:48.

1773. *Xylocopa latipes* (Drury) Maa. *Ree. Indian Mils.*, 40 : 325-327.

**Diagnostic characters**

Body with black or sooty-brown pubescence; head punctured; two deep sulcations on the front from below the base of the antennae to beyond the posterior ocelli; scape of the antennae widened towards apex; wings dark fuscous, with green, coppery and purple effulgence changing when light falls. Black, with black pubescence, thick and velvety on the mesonotum anteriorly and long and tufted on the lateral margins of the abdominal segments, gastral tergum II-VI with very sparsely pubescent. Length: 33 mm (Fig. A and B).

**Material examined:** India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 3. xi. 2015, Coll. Altaf Hussain Sheikh.

**Distribution**

India: Assam, Kerala, Sikkim and Tamil Nadu; Elsewhere: Burma, extending to China and the Malayan region [3, 4, 10].

*Xylocopa tenuiscapa* Westwood, 1840

1840. *Xylocopa tenuiscapa* Westwood, *Jard. Nat. Lib., Ent.* 7: 271.

**Diagnostic characters**

Front with sulcations but do not extend to the ocelli; scape at apex not dilated but narrow; abdomen less punctured; scape of antenna is cylindrical. The rest characters resemble the *X. latipes*. Length: 30 mm (Fig. C and D).

**Material examined:** India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 8. xi. 2015, Coll. Altaf Hussain Sheikh.

*Xylocopa aestuans* Lepeletier, 1841

1954. *Xylocopa aestuans* Lepel, *Hym.* 2:193.

**Diagnostic characters**

Head finely punctured, thorax densely pubescent, mesonotum disc smooth and impunctate under the pubescence; transverse clypeus with oblique sides; clypeus not carinate; pubescence on the head, thorax, face and abdomen black; wings dark fuscous reflect purple effulgence; abdomen finely punctured. Male paler and darker with hyaline wings. Length: 22 mm (Fig. E and F).

**Material examined:** India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 2. xi. 2014, Coll. Altaf Hussain Sheikh.

**Distribution**

India: Throughout India; Elsewhere: Burma and Pakistan [10].

*Xylocopa acutipennis* Smith, 1954

1954. *Xylocopa acutipennis* Smith, *Cat.* 2: 355, *M; Dall. Torr: Cat.*, 10:202.

**Diagnostic characters**

Head sparsely punctured; thorax smooth, fine scattered punctures along the sides of the scutellum; clypeus flat and subtriangular, antennae raised into a broad carina; antennae and the mesonotum anteriorly with brown pubescence; sides of the thorax, sides of the abdomen and the legs with black pubescence; wings narrow and acute, fuscous with rich metallic lights; abdomen densely punctured. In case of male scutellum and mesonotum more punctured, clypeus black, mandibles with a spot at base, wings fuscous with greenish

effulgence and more acute at apex than female. Length: 26 mm (Fig. G and H).

*Material examined:* India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 5. x. 2014, Coll. Altaf Hussain Sheikh.

#### **Distribution**

India: Sikkim and Tamil Nadu; Elsewhere: Sri Lanka [3, 4].

#### **CONCLUSION**

There are more than 450 species of family Xylocopinae reported worldwide. Among which 29 belong to India. A total of four species (*X. latipes*, *X. tenuiscapa*, *X. aestuans* and *X. acutipennis*) belonging to genus *Xylocopa* were recorded from Dumna Nature Park, Jabalpur. All the four species are new records to the state of Madhya Pradesh. *Xylocopa* plays a vital role in the pollination as most species are pollen generalists, hence visit many flowers.

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