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Some new distributional records of scarabaeid beetles from Maharashtra

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Abstract

This paper communicates the addition to the Dung beetle fauna of Maharashtra. Total five dung beetles *Onthophagus (Serrophorus) rectecornutus* Lansberge, 1883; *Onthophagus (Proagoderus) amplexus* Sharp, 1875; *Scarabaeus (Escarabaeus) brahminus* (Castelnau, 1840); *Anomalochela bicolor* (Brenske, 1829) and *Apogonia mangalorensis* Moser, 1919 from two subfamilies of scarabaeidae have been reported for the first time from this region.

Keywords: Coleoptera, new records, scarabaeidae

Introduction

Scarabaeidae is the most diverse family in the order Coleoptera, consist of beneficial as well as harmful beetles. The coprophagous beetles improve the quality of soil and the phytophagous beetles feed on the various agricultural crops causing economic loss. The subfamily Scarabaeinae consists of 5700 species in 227 genera and 12 tribes^[6]. Of these, the tribe Onthophagini is said to be the largest tribe due to the genus *Onthophagus*, which includes 1500 species worldwide, 345 in oriental region, 205 from India, and is the largest animal genus^[11].

The beetles of subfamily Melolonthinae are phytophagous and commonly called as white grubs. They are economically important in Agriculture, as the grub feeds on the roots and adults are foliage feeders. It is also the diverse and largest subfamily with many ill-defined tribes, and groups of uncertain status^[14]. There are 29 tribes under Melolonthinae and 7 subtribes under the tribe Melolonthini^[7, 15]. The tribe Diplotaxini is represented by a single genus *Apogonia* Kirby, 1818 from India and consist of 64 species^[7].

Taxonomic work on Scarabaeid fauna from Maharashtra is lacking with few and scattered literature^[5, 8, 9, 10]. The present findings are an addition to the Scarabaeid beetle fauna of Maharashtra.

While working on the collections of Scarabaeid beetles, the five species viz., *Onthophagus (Serrophorus) rectecornutus* Lansberge, 1883; *Onthophagus (Proagoderus) amplexus* Sharp, 1875; *Scarabaeus (Escarabaeus) brahminus* (Castelnau, 1840); *Anomalochela bicolor* (Brenske, 1829) and *Apogonia mangalorensis* Moser, 1919 were encountered and found to be a new record for Maharashtra.

Materials and Methods

Specimens were collected using light traps installed in the night and by handpicking from the dung present in the field during day. Also, the unidentified specimens present in the collections of Western Regional Centre, Zoological Survey of India, Pune were studied. The collected specimens were killed using ethyl acetate and processed as per the standard techniques in coleopterology for further studies. They were identified by referring^[1-4, 12, 16]. The identified specimens were labeled, duly registered and stored in the fumigated entomological box. The identified specimens have been deposited at National Zoological Collection, Zoological Survey of India, Western Regional Centre, Pune, Maharashtra, India (ZSI-WRC). The images of the studied specimens are given in Plate 1.

Results and Discussion

Systematic Account

Order Coleoptera Linnaeus, 1758

Suborder Polyphaga Emery, 1886

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Family Scarabaeidae Latreille, 1802
Subfamily Scarabaeinae Latreille, 1802
Tribe Onthophagini Burmeister, 1846

1. *Onthophagus (Serrophorus) rectecornutus* Lansberge, 1883 (Fig.1 A)

1883. *Onthophagus rectecornutus* Lansberge, *Notes Leyd. Mus.* v, p. 49.

1907. *Onthophagus rectecornutus*, Arrow, *Ann. Mag. Nat. Rist.* (7) xix, p. 421.

1963. *Onthophagus (Serrophorus) rectecornutus*, Balthasar, *Mon. der Scarabaeidae und Aphodiidae der Palaeark. und Orientalis. Region* (Coleoptera: Lamellicornia), Coprinae, II: 498.

Material examined: ZSI-WRC-ENT-1/2690, 05.ix.2015, 02 ex., Gaganbawda, Kolhapur, Maharashtra, A.S. Kalawate & party.

Distribution: INDIA: Assam, Bihar, Karnataka, Kerala, Tamil Nadu, West Bengal [13].

Elsewhere: China, Sri Lanka, Sunda Islands, Thailand [13].

2. *Onthophagus (Proagoderus) amplexus* Sharp, 1875 (Fig.1 B)

1875. *Onthophagus amplexus* Sharp, *Col. Hefte*, xiv: 53.

1931. *Onthophagus amplexus*, Arrow, *Faun. Brit. India, Colept. Lamll. (Coprinae)* III:238-239.

1963. *Onthophagus (Proagoderus) amplexus*, Balthasar, *Mon. der Scarabaeidae und Aphodiidae der Palaeark. und Orientalis. Region* (Coleoptera: Lamellicornia), Coprinae, II: 271.

Material examined: ZSI-WRC-ENT-1/2575, 07.viii.1961, 01 ex., Kamthadi, Pune, Maharashtra, B.S. Lamba & party.

Distribution: India: Punjab, Madhya Pradesh, Uttarakhand [6].

Elsewhere: China, Java and Sumatra [6].

Tribe Scarabaeini Latreille, 1802

3. *Scarabaeus (Escarabaeus) brahminus* (Castelnau, 1840) (Fig.1 C)

1840. *Ateuchus brahminus* Cast., *Hist. Nat. Ins., Col.* ii, p. 64.

1931. *Scarabaeus brahminus*, Arrow, *Fauna Brit. India (Coleoptera: Lamellicornia)*, III: 42.

1963. *Scarabaeus brahminus*, Balthasar, *Monographie der Scarabaeidae und Aphodiidae der Palaearktischen und Orientalischen Region (Coleoptera: Lamellicornia)*, I: 168, Pl. IV, Fig. 2.

Material examined: ZSI-WRC-ENT-1/2582, 07.vii.1972, 03 ex., Rest house compound Manjalgaon, Beed, Maharashtra, M.B. Rao & party.

Distribution: INDIA: Andhra Pradesh, Bihar, Haryana [11], Kashmir [16], Rajasthan, Tamil Nadu, Uttar Pradesh [11].

Elsewhere: Bhutan, Pakistan, South Iran [16].

Subfamily Melolonthinae Leach, 1819

Tribe Melolonthini Leach, 1819

4. *Anomalochela bicolor* (Brenske, 1829) (Fig.1 D)

1829. *Brahmina bicolor* Brenske, *Berl. Entomol. Zeitsch.*, 37:97

1913. *Anomalochela bicolor ssp. belgaumensis* Moser, *Deut. Entomol. Zeitsch.*, 1: 60

Material examined: ZSI-WRC-ENT-1/2585, 06.ix.2015, 05 ex., Gaganbawda, Kolhapur, Maharashtra, A.S. Kalawate & party; ZSI-WRC-ENT-1/2693, 05.ix.2015, 02 ex., Gaganbawda, Kolhapur, Maharashtra, A.S. Kalawate & party; ZSI-WRC-ENT-1/2616, 01.x.2016, 01 ex., Gaganbawda, Kolhapur, Maharashtra, V.D. Hegde & party; ZSI-WRC-ENT-1/3312, 04.ix.2015, 02 ex., Gaganbawda, Kolhapur, Maharashtra, A.S. Kalawate & party; ZSI-WRC-ENT-1/2994, 15.vii.2017, 01 ex., Bhosgaon, Satara, Maharashtra, A.S. Kalawate & party.

Distribution: India: Karnataka, Kerala, Tamil Nadu [7].

Remark: Endemic to India. Earlier the genus *Anomalochela* was known only as a south Indian genus but now its range is extended towards Western India.

Tribe Diplotaxini Kirby, 1837

5. *Apogonia mangalorensis* Moser, 1919 (Fig.1 E)

1919. *Apogonia mangalorensis* Moser, *Beitrag zur Kenntnis der Melolonthiden* (Col.), IX. Stettiner Entomologische Zeitung, 80. 50.

Material examined: ZSI-WRC-ENT-1/2608, 03.x.2016, 02 ex. Gaganbawda, Kolhapur Maharashtra, V.D. Hegde & party.

Distribution: India: Karnataka [12].

Remark: Endemic to India.

As mentioned earlier, a total of five species in two subfamilies and four tribes were studied and recorded for the first time from Maharashtra. The scarabaeid beetle fauna published in fauna of Maharashtra [8] listed 89 species in 32 genera and 6 subfamilies from Maharashtra. Similarly Khadakkar *et al.* (2018) [10], enumerated 97 species of 39 genera belonging to 07 subfamilies from Maharashtra. Including the species reported in the present study and taking into account of the published literature on Scarabaeid beetle fauna from Maharashtra [8, 10] now the current scarabaeid beetle diversity stands at 102 species in 43 genera.

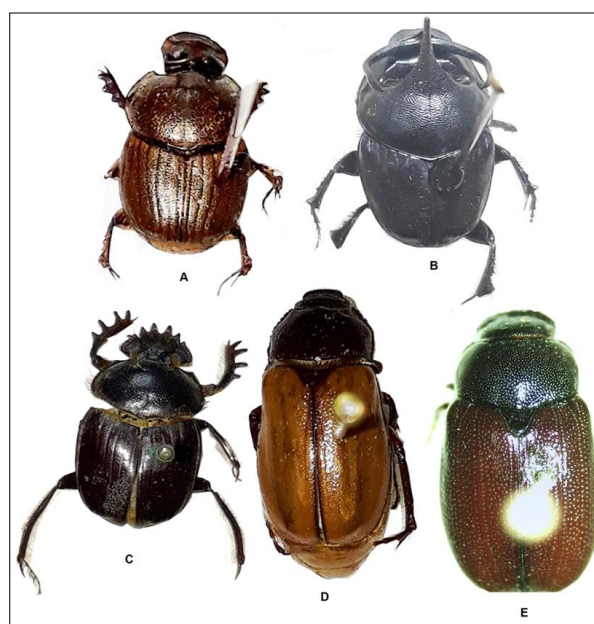


Plate 1: Dorsal Habitus A–*Onthophagus rectecornutus*, B–*Onthophagus (Proagoderus) amplexus*, C–*Scarabaeus brahminus*, D–*Anomalochela bicolor*, E–*Apogonia mangalorensis*.

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