

## SCARAB (SCARABAEIDAE) FAUNA OF SINDHUDURG DISTRICT, MAHARASHTRA, INDIA

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### ABSTRACT

Efforts were made to study the dung beetle of Sindhudurg district during 2009-10. During the survey and collection 26 species and distributed over 17 genera belonging to 6 subfamilies of dung beetle were reported. Subfamily Scarabaeinae was dominant with 14 species followed by subfamily Rutellinae, Dynastinae, Melolonthinae, Cetoniinae and Aphodiniinae with 4, 3, 3, 1 and 1 species respectively.

**Keywords:** Scarab, Sindhudurg, fauna

### INTRODUCTION

The dung beetle family Scarabaeidae has a worldwide distribution with some 27,800 described species (Cambefort, 1991; Jameson and Ratcliffe, 2005). Dung beetles play an important role in many ecological processes, especially in nutrient cycling and fertilization and aeration of soils, but also in seed dispersal and the dynamics of some parasite species (Andresen, 2002; Mittal, 1993).

The diversity of local dung-beetle communities is primarily influenced by vegetation cover, soil type and moisture, and resource (dung) availability (Doube 1986, Davis 2002). Since dung beetles have different preferences for dung of different mammals based on texture, of the dung-beetle communities is influenced by the local mammalian fauna.

The review of literature suggests that 89 species of dung beetle were previously recorded for the

state of Maharashtra (Jadhav, 2012), 96 species for the Madhya Pradesh (Chandra, 2000), Chandra and Ahirwer (2007) and Chandra (2013) published a comprehensive account of scarabaeid beetle of Madhya Pradesh and Chhattisgarh and recorded 124 species.

In Indian subcontinent literature on dung beetle started with listing of species by Arow (1910, 1917, 1931), Chandra (1986, 1999), Gupta (1986), Chandra (2000, 2003), Chandra and Ahirwer (2007), Chandra and Singh (2010) presented comprehensive list of dung beetle from different region of India.

### Geographical information (Table 1):

The Sindhudurg district comes under Konkan zone and lies between 15°37' North to 16°40' North latitude and 73°19' East to 74°13' East longitude. The total area of the district is 5087.5 sq. km. The forests in the district cover an area about 409.06 sq.km under the Forest Department, out of which 285.45 sq.km in

Savantvadi and Kudaltalukas and 12.61 sq.km in remaining talukas. The district is surrounded by Ratnagiri district in the north Sahyadri hills and beyond Sahyadri, Kolhapur district, the state of Goa in south and Arabian Sea towards the west. Physiographical this area is rugged and complex one. The height of the region varies from sea level up to 1300 m.

## MATERIAL AND METHODS

A beetle were collected manually from cattle pastures, mostly for fecal deposits and the adjacent surface soil in areas of Vengurla, Kudal, Kankavli, Savantwadi and Amboli region during 2009 to 2010. The beetles were collected directly by forceps from dung. The collected specimens were pinned and transferred to the Department of Zoology, Shivaji University Kolhapur for species identification and comparing them with deposited specimens.

**Table -2. The diversity of dung beetle in Sindhudurg District, Maharashtra, India as recorded in the present study.**

Family	Subfamily	Species	
Scarabaeidae	Ruteliinae	<i>Adoretuslobiceps</i> Arrow, 1931	
		<i>Anomalabengalensis</i> Blandchar, 1851	
		<i>Anomalabiharensis</i> Arrow, 1917	
		<i>Mimelamacleayana</i> Vigors, 1825	
	Cetoniinae	<i>Anthracophoracrucifera</i> Olivier, 1789	
		Aphodinae	<i>Aphodiushaafi</i> Petrovitz, 1961
	Melolonthinae		<i>Apogonia</i> sp.
			<i>Maladeracastanea</i> , Arrow
			<i>Maladeraholosericea</i> , Scopoli
	Dynastinae		<i>Oryctes rhinoceros</i> Linnaeus, 1758
			<i>Phyllognathus Dionysius</i> Fabricius, 1792
			<i>Xylotrupesgiedon</i> Linnaeus, 1767
	Scarabaeinae		<i>Brahminacrinicollis</i>
			<i>Brahmina</i> sp.
			<i>Catharcusmolossus</i> Linnaeus, 1758
			<i>Chilolobaacuta</i> Wiedemann, 1823
			<i>Chilolobaacuta</i> Wiedemann, 1823
			<i>Chilolobaacuta</i> Wiedemann, 1823
			<i>Helicoprisbucephalus</i> Fabricius, 1775
			<i>Holotrichiafissa</i> Brenske
		<i>Holotrichiakarschi</i> Brenske	
		<i>Onitisphilemon</i> Fabricius 1801	
	<i>Onitisfalcatatus</i> Wuifen, 1786		
	<i>Onthophagusagnus</i> Gillet, 1925		
	<i>Onthophaguscatta</i> Fabricius 1787		
	<i>Onthophagusdama</i> Fabricius 1798		

**Table-1. Geographic coordinates of collection localities in Sindhudurg District**

Collection localities	Latitude (N)	Longitude (S)	Altitude (ft)
Vengurla	15 <sup>0</sup> 51'00.48"	73 <sup>0</sup> 37'56.15"	56
Kudal	16 <sup>0</sup> 00'29.19"	73 <sup>0</sup> 41'13.31"	98
Savantwadi	15 <sup>0</sup> 54'19.32"	73 <sup>0</sup> 49'16.65"	374
Kankavli)	16 <sup>0</sup> 16'31.76"	73 <sup>0</sup> 42'23.65"	136
Amboli	15 <sup>0</sup> 57'46.62"	73 <sup>0</sup> 59'52.14"	2352

## RESULTS

The study revealed that of 26 species belonging to 17 genera and 6 subfamilies of Scarab beetle from Sindhudurg district.

## DISCUSSIONS AND CONCLUSION

Scarab beetle fauna of Maharashtra was studied by Jadhav (2012). Bhawaneet *al.* (2012) reported

152 species under 101 genera belonging to 25 families of beetles, they concluded family Scarabaeidae to be dominant with 65 species from Amba Reserve Forest, Western Ghat, Kolhapur. Bhawane et al., (2013) inventoried 55 species from Kolhapur district. But the information on dung beetles of Sindhudurg district has been very poorly studied and very few species are reported. In the present study 26 species belonging to 17 genera and 6 subfamilies were reported (Table 2). The subfamily Scarabaeinae dominated with 53.84 % of the total species recorded, followed by the subfamily Ruteliinae 15.38 %, Dynastinae and Melolonthinae 11.53 % each and Cetoniinae and Aphodiinae 3.84 %.

After this faunal study of dung beetle it can be concluded that, factors such as afforestation, mining, human interference and litter accumulation are adversely affect on dung beetle population, which will be major component of food web. Thus, appropriate management of harmful ecosystem is of key importance for the conservation of dung beetle assemblages.

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