

Diversity of Dung Beetles (Coleoptera: Scarabaeidae) in Shahuwadi Tehsil, Kolhapur District (Maharashtra) India

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Abstract

The dung beetle belongs to order Coleoptera and family Scarabaeidae. The family Scarabaeidae is one of the largest families in order Coleoptera. The family falls under super family Scarabaeoidea which currently includes approximately more than 37000 species under 2500 genera (Krajcik, 2012). Collection of dung beetles in Shahuwadi Tehsil of Kolhapur District, of Western Ghats Maharashtra was carried out from June 2025 to March 2026.. Dung beetles can be defined as coprophagous members of the Coleopteran families Scarabaeidae and Geotrupidae (Halffter and Matthews 1966). These beetles are found in almost every part of the world and great abundance in warmer regions (Arrow, 1931). Lindquist (1933) indicates that dung beetles fertilize the soil by burying the dung, by depositing their own excrement and by overturning the soil when they bring into the surface during the construction of their nests. In the literature survey, there is little information about the beneficial services of dung beetles to human being. Hence present study is undertaken to study the diversity of dung beetles in this area.

Key Words: Dung beetle, Scarabaeidae, Coleoptera, Soil

Introduction:

The dung beetle belonging to order Coleoptera and family Scarabaeidae. These are terrestrial and freshwater environments throughout the world. The dung beetle was polyphagous pest feeding of various agricultural crops Scarabaeidae family is a large and most diverse group of beetles and according to some estimates about 30,000 species in this family is known to throughout the world (Fincher 1981). The dung beetles, also known as coprophagous beetles play key role in recycling of dung by feeding on it. Chafers i. e. phytophagous scarab beetles are pests of various agricultural crops, plantation and forests (Chandra, 2000). Arrow (1910, 1917, 1931) published first comprehensive account of scarabaeid beetles of Indian region vide three volumes of fauna

of British India, in which he reported 1300 species from British India. A total 61 species was reported by Veenakumari & Veeresh (1997) from Bangalore, Karnataka, India. Priyadarsanan (2006) cited total 87 species of dung beetles distributed in seven tribes and 13 genera from Biligiri Rangasamy Temple Wildlife Sanctuary a part of Western Ghats.. Aland et. al (2012) Cited and collected 59 species of scarabaeid beetles in a Amba Reserved Forest of Western Ghats region Kolhapur district, Maharashtra. Bhawane et al (2012) listed 29 species of family Scarabaeidae. Bhawane et al (2014) made survey on collection of 26 species of dung beetles of Scarabaeinae subfamily from Sindhudurg district, Maharashtra, India. In the literature survey, it was found that little information was available about dung beetle in Shahuwadi Tehsil of Kolhapur district.

Hence, present study was undertaken to study the diversity of dung beetles in this area.

Materials and methods:

The dung beetles were collected during day time mainly in between 8.00 to 10.00 am. These beetles were collected from the open pasture of various sites of Shahuwadi Tehsil of Kolhapur District. Dung beetles were collected from two to three day old buffalo dung pads in months of June to March which was abundant period. For dung beetle collection the selected sites were Perid,Uchat, Amba,Kadve,Shahuwadi,Ambrde,Nile and Malkapur. Dung beetles are identified from the comparison of photographs of beetles which are available on internet and from literature (Arrow, 1931; Arrow, 1932; Chatterjee, 2010; Mittal, 2005 and Krikken (2013). Several morphological characteristics such as antennal segmentation, head shape, horn, ventral sclerites of the abdomen, elytra, claws of tarsi, body shape, middle and posterior tibiae, mesotibia, pygidium, were used for species identification (Borror et al., 1989; Booth et al., 1990)

Study area : Kolhapur district is situated on the banks of the Panchganga river and is surrounded by Sahyadri mountain ranges. Kolhapur is about 387 km from Mumbai, the financial capital of India. Situated at a latitude of 16.69130 and longitude is 74.24486., Kolhapur has a pleasant climate for the major portion of the year. It has an abundance of natural resources like water, fertile soil, minerals, natural vegetation, and animal wealth

Table 1: List of sub-families and species of dung beetles observed in Shahuwadi Tehsil

Sr.No.	Sub-Families	Name of the Species
1	Aphodinae	Aphodius granaries Aphodius oblitterates Aphodius rufipes
2	Coprinae	Onitis humerous Onitis falcatus Onthophagus gagates Sisyphus neglectus Heliocopriss bucephalus
3	Scarabaeinae	Catharsius molossus Catharsius pithecus Catharsius birmanensi Gymnopleurus parvus Gymnopleurus cyaneus

		Gymnopleurus miliaris Gymnopleurus flagellate Heliocopriss gigas Adoretus stoliczkae Anomala ruficapilla
4	Dynastinae	Phyllognathus dionysius
5	Melolonthinae	Maladera amboliensis
6	Cetoniinae	Chiloloba acuta Oxycetonia versicolor Anthracophoracrucifera
7	Rutelinae	Adoretus lasiopygus Anomala ruficapilla Rutelinae Phyllognathus

Result and discussion:

The present study revealed total 26 species of dung beetles (Scarabaeid) belonging to 7 subfamilies viz., Aphodinae(4),Coprinae(5), Scarabaeinae(10), Dynastinae(1), Rutelinae(3), Melolonthinae(1) and Cetoniinae(3) are shown in table-1.The subfamily Scarabaeinae were found to be dominant (50 %) over the other subfamilies. Beetles of this subfamily exclusively feed on dung and carrion and are commonly called 'dung beetles.The beetles of subfamilies like Dynastinae, Rutelinae, Melolonthinae and Cetoniinae are pests of various commercial crops and usually called 'Chafers'. The adults are phytophagous, they feed on foliage of different trees and grubs causes extensive damages to the roots of cereals, legumes causing extensive damage to field crops and fruits particularly growing during rainy season.

Conclusion:

From study area, first time author reporting Scarabaeid beetles collected through extensive survey. The study revealed 15 species of beetles belonging to 14 genera scattered in 5 subfamilies viz., Scarabaeinae, Dynastinae, Rutelinae, Melolonthinae and Cetoniinae. Bhawane et al., (2013) inventoried 55 species from Kolhapur district.Factors such as afforestation, mining, human interference etc. are adversely affect on population of dung beetle.As the dung beetles are major component of terrestrial food chain it is important to conserve dung beetle assemblages.

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