

Survey of Dung Beetles in Mahad Tehsil Western Ghats, Raigad District, Maharashtra, India

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Abstract: *Surveys and collection of dung beetles in Mahad Tehsil of Raigad District, of Western Ghats Maharashtra was carried out from July 2019 March 2020. During the study period, we documented 22 species of dung beetles belonging to 12 genera representing 03 subfamilies namely Aphodiinae, Geotrupinae and Scarabaeinae were reported. Subfamily Scarabaeinae represented 19 species.*

Keywords: Survey, Dung beetles, Mahad Tehsil, Western Ghats, etc.

I. INTRODUCTION

The dung beetle belonging to order Coleoptera and family Scarabaeidae. The order coleoptera is enormously rich in species and wide spread in many terrestrial and freshwater environments throughout the world. The dung beetle was polyphagous pest feeding of various agricultural crops and causing economic that affects the GDP of the country. Almost all biologists are well familiar that beetles are most diverse in all animal groups, with 3, 50, 000 described species (New, 2007). 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 order of Coleoptera includes useful as well as harmful i. e. pestiferous insects. It contains more than 27,800 species in the world (Ratcliffe, 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. The species diversity study gave an idea about pest management starggies.

Balthasar (1963a, 1963b, 1964) had written monographs on subfamilies Scarabaeinae and Aphodinae of Palaearctic and Oriental regions. Scarbaeid beetles already have attracted attention of researchers in other parts of Maharashtra, where considerable work has been done on various aspects. A total 61 species was reported by Veenakumari & Veeresh (1997) form Bangalore, Karnataka, India. Priyadarsanan (2006) ciated total 87 species of dung beetles distributed in seven tribes and 13 genera form Biligiri Rangasamy Temple Wildlife Sanctuary a part of Western Ghats. Jadhav and Sharma (2012) documented fauna of Maharashtra state part-II fauna series and ciated 89 species in 32 genera belonging to 6 families. Aland et. al (2012) Ciated 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. David and Petr (2013) recorded 29 species of Aphodiinae tribes (Coleoptera: Scarabaeidae) from the state of Goa, Maharashtra and Rajasthan (India). Bhawane et al (2014) made survey on collection of 26 species of dung beetles of Scarabaeinae subfamily from Sindhudurg district, Maharashtra, India.

Sathiandran et.al (2015) recorded 36 dung beetle species from Periyar Tiger Reserve in south Western Ghats. Kalawate (2018) documented little work in Raigad district Patole (2019) an updated checklist of 15 species (14 genera) of Scarabaeid beetles (Coleoptera: Scarabaeidae) belonging to 5 and 14 genera form Sakri Tehsil of Dhulia district, Maharashtra, India. Western Ghats. On the literature survey, it was found that scanty information was available for dung beetle in Kokan region of Mahad Tehsil of Raigad district. Hence, present attempt was made to evaluate the diversity of dung beetles in this area.

II. MATERIALS AND METHODS

Adult beetles were collected with the help of light trap method and by handpicking from dung present in the field. Surveys and collection were carried out for a period of one year in 15-day interval in the evening from 6.00 – 8.00 pm. fluorescent lamp was used to attract them. A bamboo pole measuring nearly 10 feet long was used to shake branches of their host plants (Lolage and Patil, 1988). A few beetles were collected, killed pinned and preserved. These specimens were identified with available literature i.e., Arrow (1919, 1917, 1931), Balthasar 1963, 1964) and Krikken (2013).

III. RESULT AND DISCUSSION

In all, 22 species of dung beetles were encountered during the present surveys and collection belonging to 12 genera representing 03 subfamilies namely Aphodiinae, Geotrupinae and Scarabaeinae. The Scarabaeinae was the dominant Pinero and Avila (2004) studied dung insect community composition of South-Eastern Spain Chandra and Ahirwar (2005) studied Scarabaeid beetle fauna of Bandhavgarh National Park, Madhya Pradesh which revealed, in all 44 species in 24 genera and eight subfamilies. The dung beetles play crucial roles in nutrient cycling, soil aeration, secondary seed dispersal and regulation of enteric parasites as well as dung breeding dipterans pests (Mittal, 2005). The study revealed that, beetles' assemblage was very diverse including 135 species from nine families. Percent of Scarabaeid beetle was 21.1%. Sabu et al. (2006) thoroughly studied guild structure, diversity and succession of dung beetles with special reference to Indian elephant dung in South-Western Ghats forests. Kalawate (2018) reported 50 species of dung beetles represented 25 genera, 17 tribes and 7 subfamilies.

Table 1: Dung beetles of Mahad Tehsil of Western Ghats of Raigad District, Maharashtra, India

Sr.No.	Families	Scientific name of Species
01	Subfamily: Aphodiinae	1. <i>Aphodius sp.</i>
		2. <i>Aphodius sp.</i>
02	Subfamily: Geotrupinae	3. <i>Boloboceras nigricans</i> (Westwood)
03	Subfamily: Scarabaeinae	4. <i>Sisyphus neglectus</i> (Gory)
		5. <i>Heliocopris bucephalus</i> (Fabricius)
		6. <i>Heliocopris tyrannus</i> (Thomson)
		7. <i>Catharcus molossus</i> (Linnaeus)
		8. <i>Catharcus pithecius</i> (Fabricius)
		9. <i>Copris sp.</i>
		10. <i>Copris repertus</i> (Walker)
		11. <i>Phalops divisus</i> (Wiedeman)
		12. <i>Onthophagus sp.</i>
	Subfamily: Scarabaeinae	13. <i>Onthophagus unifaciatus</i> (Schaller)
		14. <i>Onthophagus catta</i> (Fabricius)
		15. <i>Onthophagus acuticollis</i> (Gillet)
		16. <i>Onthophagus agnus</i> (Gillet)
		17. <i>Onthophagus cervus</i> (Fabricius)
		18. <i>Onthophagus sp.</i>
		19. <i>Liatongus rhadamistus</i> (Fabricius)
		20. <i>Drepanocerus setosus</i> (Wiedeman)
		21. <i>Onitis phiemon</i> (Fabricius)
		22. <i>Chironitis arrowi</i> (Janssens)

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