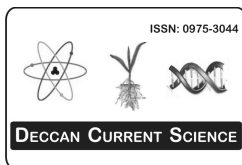


Research Article



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Study of Scarabaeid Beetles (Coleoptera) of Veerangana Durgavati Wildlife Sanctuary, Damoh, Madhya Pradesh, India

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Abstract:

The present paper incorporates an account of Scarabaeid beetles of Veerangana Durgavati Wildlife Sanctuary (VDWS), Damoh, Madhya Pradesh, India, comprising 28 species belonging to 14 genera and five subfamilies. All the species are recorded for the first time from VDWS, of which five species viz. *Onthophagus bengalensis* Harold, *Apogonia ferruginea* (Fabricius), *Apogonia proxima* Waterhouse, *Idionycha excisa* Arrow and *Anomala polita* Blanchard are new record to the fauna of Madhya Pradesh.

Key words: Madhya Pradesh, *Veerangana Durgavati Wildlife Sanctuary* and *Scarabaeid beetles*.

Introduction:

Veerangana Durgavati Wildlife Sanctuary (VDWS) is situated in Damoh district of Madhya Pradesh and lies between 23°30' and 23°35' N latitudes and 79°40' and 79° 50' E longitudes. The sanctuary stretches over a total area of 24 km² with undulating terrain. The area of the sanctuary consists of well reserved forest classified as tropical mixed dry deciduous forests of medium and dense quality. The main plantation of the sanctuary area are saja (*Terminalia atata*), tendu (*Diospyros melanoxylon*), mahua (*Madhuca latifolia*), teak (*Tectona grandis*), and palas (*Butea monosperma*). The sanctuary is attributed with all kinds of habitat, number of water resources and rich floral and faunal diversity with fairly well stocked wildlife. Main wildlife

attractions of the sanctuary are tiger, leopard, jungle cat, striped hyena, wolf, jackal, chital, black buck, chinkara, langur, blue bull, monkeys and mongoose etc.

Scarabaeid beetles belong to the largest order Coleoptera, which includes 30,000 species throughout the world (Fincher G. T., 1981). This family contains both beneficial (coprophagous) and harmful (phytophagous) beetles. Among which coprophagous ones are known as 'Scavenger or Dung beetles' that feed on animal excreta, carrion and dead vegetable matters and are significantly important in nutrient cycling, parasite suppression, soil aeration, and fly control. On the other hand phytophagous ones or leaf-chafers are agricultural pests of various commercial

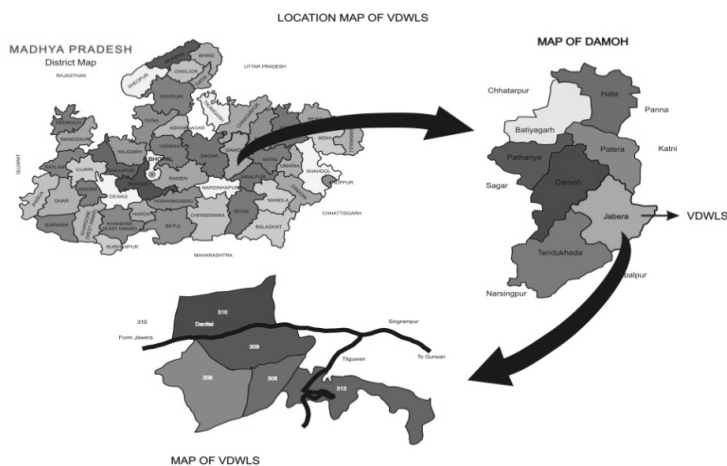
crops, feeding mostly on leaves, flowers, fruits, roots and other parts of plants.

The first comprehensive account of Scarabaeid beetles of the Indian region were published in three volumes of '*Fauna of British India*', where in 58 species were reported from Central India (Arrow, 1910, 1917, & 1931). Three species of the subfamily Hybosorinae were reported from Central India (Kuijten, 1978 & 1983). An inventory of Scarabaeid beetles of Madhya Pradesh was published and 94 species belonging to 30 genera and 9 subfamilies were included (Chandra K., 2000). A comprehensive account on Scarabaeid beetles of Madhya Pradesh was published, which included the report of 124 species

belonging to 45 genera under 11 subfamilies (Chandra & Ahirwar, 2007). Keeping in view the scarcity of available taxonomic record of the beetle diversity of VDWS, studies were conducted to prepare a taxonomic inventory of Scarabs of the sanctuary.

Altogether, 28 species (Table 1) of Scarabaeid beetles belonging to 14 genera and five subfamilies are identified. All the species are recorded for the first time from VDWS, of which five species viz. *Onthophagus bengalensis* Harold, *Apogonia ferruginea* (Fabricius), *Apogonia proxima* Waterhouse, *Idionycha excisa* Arrow and *Anomala polita* Blanchard are new record to the fauna of Madhya Pradesh (Plate-1).

Study Area:



Materials and Methods:

During the years 2009-2010, six surveys of VDWS were undertaken by the scientific team of Zoological Survey of India, Jabalpur, which resulted in the collection of 136 specimens of these beetles (applying Light trap and hand picking method) from various localities i.e. Giridarshan, Singorgarh, Bhaisaghat, Dan Sah, Kodi Kalan, Singrampur, Kola Nala, Tilgua, and Danital.

Results and Discussion:

The paper presents an account of Scarabaeid Beetles of Veerangana Durgavati Wildlife Sanctuary (VDWS), Damoh, Madhya Pradesh. Total 136 specimens were collected which resulted in the identification 28 species (Table 1) comprising 14 genera and five subfamilies. Locality wise species distribution list (Table 2) is also provided. Maximum number of species (11) are collected from Kodi Kalan

locality, followed by Bhisaghat (9), Tilgua (8), Giridarshan and Singorgarh 7 each, Kola Nala (4), Singrampur (5), Danital (3), and Dan Sah with least number of species(1) (Table 3). Most of the species were attracted towards light and collected by applying light trap while 3 species viz. *Gymnopleurus dejeani* Castelnau, *Oniticellus spinipes* Roth and *Onthophagus pactolus*

(Fabricius) were collected from dung pats during day period. All the species are recorded for the first time from VDWS among which 5 species viz. *Onthophagus bengalensis* Harold, *Apogonia ferruginea* (Fabricius), *Apogonia proxima* Waterhouse, *Idionycha excisa* Arrow and *Anomala polita* Blanchard are new record to the fauna of Madhya Pradesh.

Table 1: LIST OF SCARABAEID BEETLES OF VEERANGANA DURGAVATI WILDLIFE SANCTUARY, DAMOH AND MADHYA PRADESH.

Species name	Status
FAMILY: SCARABAEIDAE	
I. Subfamily: HYBOSORINAE	
1. <i>Hybosorus orientalis</i> Westwood	VC
II. Subfamily: SCARABAEINAE	
2. <i>Catharsius pithecius</i> (Fabricius)	VC
3. <i>Catharsius molossus</i> (Linnaeus)	C
4. <i>Catharsius sagax</i> (Quens.)	VC
5. <i>Copris imitans</i> Felsche	R
6. <i>Copris repertus</i> Walker	R
7. <i>Copris surdus</i> Arrow	VC
8. <i>Gymnopleurus dejeani</i> Castelnau	R
9. <i>Heliocopris bucephalus</i> (Fabricius)	C
10. <i>Onthophagus bengalensis</i> Harold*	R
11. <i>Onthophagus catta</i> (Fabricius)	VC
12. <i>Onthophagus dama</i> (Fabricius)	VC
13. <i>Onthophagus hindu</i> Arrow	VC
14. <i>Onthophagus pactolus</i> (Fabricius)	C
15. <i>Onthophagus ramosus</i> (Wiedmann)	C
16. <i>Onthophagus quadridentatus</i> (Fabricius)	C
17. <i>Onitis philemon</i> Fabricius	R
18. <i>Onitis subopacus</i> Arrow	R
19. <i>Oniticellus spinipes</i> Roth	C
III. Subfamily: RUTELINAE	

20. <i>Anomala dorsalis</i> (Fabricius)	VC
21. <i>Anomala polita</i> Blanchard*	R
22. <i>Anomala ruficapilla</i> Burmeister	VC

IV. Subfamily: MELOLONTHINAE

23. <i>Apogonia ferruginea</i> (Fabricius)*	C
24. <i>Apogonia proxima</i> Waterhouse*	R
25. <i>Idionycha excisa</i> Arrow*	C
26. <i>Schizonycha ruficollis</i> Fabricius	C

V. Subfamily: DYNASTINAE

27. <i>Eophileurus platypterus</i> Wiedmann	R
28. <i>Phyllognathus dionysius</i> (Fabricius)	R

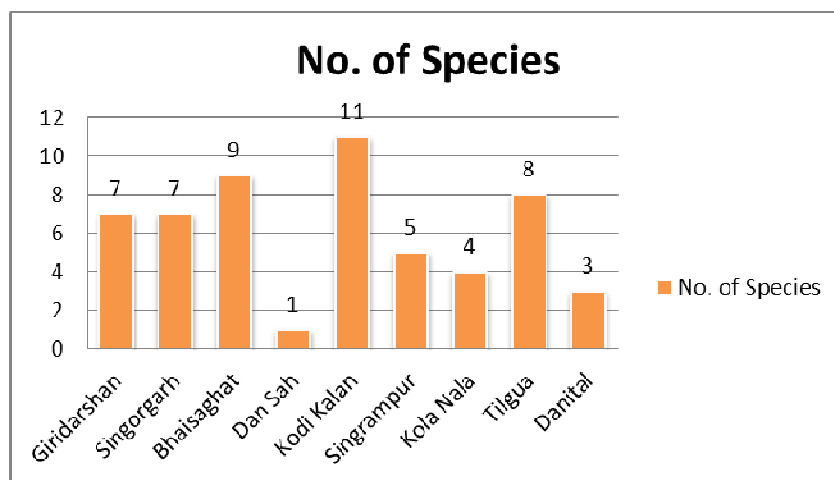
Abbreviations used:

*New record from Madhya Pradesh. C- Common, VC- Very Common, R- Rare.

Table 2: DATE WISE COLLECTION OF SCARABAEID BEETLES FROM VEERANGANA DURGAVATI WILDLIFE SANCTUARY.

Date	Locality	Species	No. of ex.	Source
20.VI.2009	Singrampur	<i>Apogonia proxima</i> Waterhouse	1	Light
25.VI.2009	Giridarshan	<i>Eophileurus platypterus</i> Wiedmann	1	"
21.VII.2009	Singorgarh	<i>Anomala ruficapilla</i> Burmeister	2	"
"	"	<i>Catharsius sagax</i> (Quens.)	10	"
"	"	<i>Onthophagus dama</i> (Fabricius)	5	"
"	"	<i>Onthophagus quadridentatus</i>		
"	"	(Fabricius)	1	"
"	"	<i>Onthophagus hindu</i> Arrow	6	"
"	"	<i>Onthophagus ramosus</i> Wiedmann	3	"
"	"	<i>Schizonycha ruficollis</i> Fabricius	1	"
"	Bhaisaghat	<i>Catharsius sagax</i> (Quens.)	9	"
22.VII.2009	Bhaisaghat	<i>Onthophagus hindu</i> Arrow	3	"
24.VII.2009	Dan Sah	<i>Onthophagus hindu</i> Arrow	1	"
24.VIII.2009	Giridarshan	<i>Onitis philemon</i> Fabricius	1	"
19.XI.2009	Bhaisaghat	<i>Catharsius molossus</i> (Linnaeus)	1	"
"	"	<i>Copris repertus</i> Walker	1	"
23.VI.2010	Kodi Kalan	<i>Anomala dorsalis</i> (Fabricius)	6	"
"	"	<i>Apogonia ferruginea</i> Fabricius	2	"
"	"	<i>Catharsius pithecius</i> (Fabricius)	1	"
"	"	<i>Copris imitans</i> Felsche	1	"
"	"	<i>Copris surdus</i> Arrow	1	"

"	"	<i>Hybosorus orientalis</i> Westwood	4	"
"	"	<i>Onthophagus catta</i> (Fabricius)	2	"
"	"	<i>Onthophagus dama</i> (Fabricius)	1	"
"	"	<i>Onthophagus hindu</i> Arrow	1	"
"	"	<i>Onthophagus quadridentatus</i> (Fabricius)	1	"
"	"	<i>Phyllognathus dionysius</i> (Fabricius)	1	"
24.VI.2010	Singrampur	<i>Anomala dorsalis</i> (Fabricius),	2	"
"	"	<i>Hybosorus orientalis</i> Westwood	3	"
"	"	<i>Onitis subopacus</i> Arrow	1	"
25.VI.2010	Kola Nala	<i>Eophileurus platypterus</i> Wiedmann	1	"
"	"	<i>Hybosorus orientalis</i> Westwood	1	"
"	"	<i>Onthophagus ramosus</i> Wiedmann	1	"
"	"	<i>Onthophagus catta</i> (Fabricius)	2	"
26.VI.2010	Bhaisaghat	<i>Anomala dorsalis</i> (Fabricius)	1	"
"	"	<i>Hybosorus orientalis</i> Westwood	1	"
"	Singrampur	<i>Onthophagus hindu</i> Arrow	1	"
27.VI.2010	Giridarshan	<i>Anomala dorsalis</i> (Fabricius)	4	"
"	"	<i>Catharsius pithecius</i> (Fabricius)	7	"
"	"	<i>Catharsius molossus</i> (Linnaeus)	1	"
"	Bhaisaghat	<i>Copris surdus</i> Arrow	7	"
"	Giridarshan	<i>Onthophagus catta</i> (Fabricius)	1	"
"	"	<i>Onthophagus hindu</i> Arrow	1	"
28.VI.2010	Tilgua	<i>Anomala dorsalis</i> (Fabricius)	1	"
"	"	<i>Anomala polita</i> Blanchard	1	"
"	"	<i>Catharsius molossus</i> (Linnaeus)	1	"
"	"	<i>Catharsius pithecius</i> (Fabricius)	1	"
"	"	<i>Catharsius sagax</i> (Quens.)	3	"
"	"	<i>Heliocopris bucephalus</i> (Fabricius)	1	"
"	"	<i>Idionycha excisa</i> Arrow	2	"
"	"	<i>Onthophagus catta</i> (Fabricius)	2	"
08.IX.2010	Danital	<i>Gymnopleurus dejeani</i> Castelnau	1	Dung
"	"	<i>Oniticellus spinipes</i> Roth	4	"
"	"	<i>Onthophagus pactolus</i> (Fabricius)	3	"
"	Bhaisaghat	<i>Onthophagus bengalensis</i> Harold	1	Light
"	"	<i>Onthophagus catta</i> (Fabricius)	7	"
"	"	<i>Onthophagus hindu</i> Arrow	6	"



Graph showing localities wise species distribution data

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References:

Arrow, G. J. (1910); The Fauna of British India including Ceylon and Burma. Col. Lamell. I (Cetoniinae & Dynastinae). Taylor & Francis, London, V-XIV, 1-322.

Arrow, G. J. (1917); The Fauna of British India including Ceylon and Burma. Col. Lamell. II (Rutelinae). Taylor & Francis, London, V-XIII, 1-387, 7 fig., 5 pls.

Arrow, G. J. (1931); The Fauna of British India including Ceylon and Burma. Col. Lamell. III, (Coprinae). Taylor & Francis, London, XII: 1-428, 61 fig., 19 pls., map.

Chandra, K. (2000); Inventory of Scarabaeid beetles (Coleoptera) from Madhya Pradesh, India, Zoo's Print Journal, **15**(11): 359-362.

Chandra, K. and Ahirwar, S. C. (2007); Insecta: Coleoptera: Scarabaeidae, Fauna of Madhya Pradesh (including Chhattisgarh), State Fauna Series, 15 (Part-1): 273-300.

Fincher, G. T. (1981); The Potential value of dung beetles in pasture ecosystem. Journal of the Georgia Entomological Society, 16(2): 316-333.

Kuijten, P. J. (1978); Revision of the Genus *Hybosorus* Macleay (Coleoptera: Scarabaeidae : Hybosorinae). Zoologische verhandelingen/uitgegeven door het Rijksmuseum van Natuurlijke Historie te Leiden, 203: 1-49.

Kuijten, P. J. (1983); Revision of the Genus *Phaeochrous* Castelnau (Coleoptera : Scarabaeidae : Hybosorinae). Zoologische verhandelingen/uitgegeven door het Rijksmuseum van Natuurlijke Historie te Leiden, 165: 1-40.

Plate - 1



Onthophagus bengalensis Harold



Anomala polita Blanchard



Apogonia ferruginea (Fabricius)



Apogonia proxima Waterhouse



Idionycha excisa Arrow