

INVENTORY OF SCARABAEID BEETLES (COLEOPTERA) FROM MADHYA PRADESH, INDIA

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Abstract

Scarabaeid beetles (Coleoptera) were studied in Madhya Pradesh as part of an extensive study of biodiversity in the State by the Zoological Survey of India. This paper presents a checklist of scarabaeid beetles from Madhya Pradesh, which total up to 94 taxa belonging to 9 subfamilies.

Keywords

Scarabaeid beetles, coleoptera, Madhya Pradesh, distribution, checklist

Introduction

The scarabaeid beetles of the order Coleoptera include both useful as well as harmful insects. The coprophagous beetles generally known as dung beetles, play an important role in nature's sanitation by feeding on the dung. The phytophagous beetles commonly known as chafers are pests of agricultural crops, plantations and forests.

The family Scarabaeidae is the largest family of insects, which contains more than 30,000 species in the world (Fincher, 1981). The first comprehensive account of scarabaeid beetles of the Indian region was published by Arrow (1910, 1917, 1931) in three volumes of *Fauna of British India*, where in 58 species were reported from Madhya Pradesh, which was earlier part of Central India. Balthasar (1963a, 1963b, 1964) wrote monographs on the two subfamilies Scarabaeinae and Aphodiinae of Palaearctic and Oriental regions. Newton and Malcolm (1985) studied the dung beetles of wild mammals in Kanha Tiger Reserve and 22 species were recorded, of which 13 were identified up to species level. While working on the faunal diversity of Pachmarhi Biosphere Reserve (Hoshangabad), Chandra and Singh (communicated) recorded 18 species of scarabaeid beetles belonging to 11 genera under 6 subfamilies, which are new additions to the fauna of Hoshangabad.

Since comprehensive studies on insect diversity of Madhya Pradesh is lacking completely, the Zoological Survey of India, Central Regional Station, Jabalpur undertook detailed studies on all the groups of insects. This would not only help in the inventorisation of the faunal diversity of Madhya Pradesh but also in formulating management strategy for the conservation of biodiversity. In the first attempt, the scarabaeid beetles collected through extensive surveys of Madhya Pradesh by the Zoological Survey of India were worked out, which revealed the presence of 94 species belonging to 30 genera distributed under nine subfamilies (Table 1). Of these, six species viz. *Orphnus parvus* (Wied.), *Chiron cylindrus* (Fabricius), *Chironitis arrowi* Janssens, *Heliocopriss gigas* (Linnaeus), *Oxyadoretus nasutus* Arrow and *Protaetia alboguttata* Vigors are reported for the first time from Madhya Pradesh.

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Table 1. Scarabaeid beetles from Madhya Pradesh

Scientific Name	Distribution in M.P.	Reference	Scientific Name	Distribution in M.P.	Reference
<u>Subfamily: Hybosorinae</u>					
1 <i>Hybosorus illigeri</i> Reiche	M.P.	Kuijten, 1983	26 <i>Gymnopleurus dejeani</i> Castelnau	Indore	Chandra & Singh, comm. Arrow, 1931
2 <i>Hybosorus orientalis</i> (Westwood)	Jabalpur	Kuijten, 1983, Chandra & Singh, comm.	27 <i>Gymnopleurus gemmatus</i> Harold	Jabalpur	Arrow, 1931
<u>Subfamily: Orphninae</u>			28 <i>Gymnopleurus maculosus</i> Macleay	M.P.	Arrow, 1931
3 <i>Orphnus parvus</i> (Wied.)*	Jabalpur	JSB on 3.vii.1964	29 <i>Gymnopleurus miliaris</i> (Fabricius)	Hoshangabad, Jabalpur	Arrow, 1931; Chandra & Singh, comm.
<u>Subfamily: Chironinae</u>			30 <i>Gymnopleurus mundus</i> (Wiedman) (= <i>Garreta mundus</i>)	Hoshangabad, Mandla	Newton & Malcolm, 1985; Chandra & Singh, comm.
4 <i>Chiron cylindrus</i> (Fabricius)*	Jabalpur	JSB, MLK on 6.vii.1964; 19, 21.viii.1964	31 <i>Gymnopleurus opacus</i> (Redt.)	Hoshangabad	Chandra & Singh, comm.
<u>Subfamily: Aphodiinae</u>			32 <i>Gymnopleurus parvus</i> (Macl.)	Hoshangabad	Chandra & Singh, comm.
5 <i>Aphodius moestus</i> Fabricius	Jabalpur	Balthasar, 19	33 <i>Gymnopleurus sinuatus</i> (Olivier) (= <i>Progymnopleurus sinuatus</i> Olivier)	Mandla	Newton & Malcolm, 1985
6 <i>Aphodius (Loboparius) vitalisi</i> Bouc.	M.P.	Balthasar, 1964	34 <i>Gymnopleurus sumptuosus</i> Castelnau	Indore	Arrow, 1931
7 <i>Chaetopisthes (C.) fulvus</i> Westw.	M.P.	Balthasar, 1964	35 <i>Heliocopris bucephalus</i> (Fabricius)	Jabalpur, Mandla	Arrow, 1931
8 <i>Termitopisthes laticollis</i> Wasm.	Hoshangabad	Balthasar, 1964	36 <i>Heliocopris gigas</i> (Linnaeus)	Gwalior	RKS on 3.ix.1995
9 <i>Termitopisthesernutioustges wasmanni</i> (A. Schmidt)	Mandla	Balthasar, 1964	37 <i>Liatongus rhadamistus</i> (Fabricius)	Balaghat, Riwa, Umaria	Arrow, 1931
<u>Subfamily: Scarabaeinae</u>			38 <i>Oniticellus cinctus</i> (Fabricius)	Hoshangabad, Riwa, Shahdol	Arrow, 1931 Chandra & Singh, comm.
10 <i>Caccobius unicornis</i> (Fab.)	Hoshangabad	Arrow, 1931	39 <i>Oniticellus spinipes</i> Roth	Riwa, Shahdol, Umaria	Arrow, 1931
11 <i>Catharsius pithecius</i> (Fabricius)	Mandla, Jabalpur, Hoshangabad	Newton & Malcolm 1985; Chandra & Singh, comm.	40 <i>Onitis brahma</i> Lansberg	Betul, Balaghat	Arrow, 1931, Balthsar, 1963b
12 <i>Catharsius molossus</i> (Linnaeus)	Jabalpur, Narsinghpur	Newton & Malcolm, 1985	41 <i>Onitis castaneus</i> Redtenbacher	M.P.	Balthasar, 1963b
13 <i>Catharsius sagax</i> Queensland	Gwalior, Mandla, Jabalpur	Arrow, 1931	42 <i>Onitis crassus</i> Sharp	Jabalpur	Arrow, 1931, Balthsar, 1963b
14 <i>Chironitis arrowi</i> Janssens (= <i>Chironitis indicus</i> Lansberg)	Jabalpur	H.K. on 13.x.1965	43 <i>Onitis falcatus</i> (Wulfen)	M.P.	Balthasar, 1963b
15 <i>Copris andrewesi</i> Waterhouse	Indore, Seoni, Mandla, Jabalpur	Arrow, 1931	44 <i>Onitis philemon</i> Fabricius	Indore, Bastar, Hoshangabad	Arrow, 1931
16 <i>Copris carinicus</i> Gillet	Mandla	Newton & Malcolm, 1985	45 <i>Onitis subopacus</i> Arrow	Mandla, Balaghat, Riwa	Arrow, 1931; Newton & Malcolm, 1985
17 <i>Copris davisoni</i> Waterhouse	Mandla	Newton & Malcolm, 1985	46 <i>Onitis virens</i> Lansberg	Balaghat, Bastar	Arrow, 1931; Balthasar, 1963b
18 <i>Copris imitans</i> Felsche	Indore, Seoni, Riwa, Mandla, Balaghat, Shahdol, Umaria	Arrow, 1931; Balthasar, 1963a	47 <i>Onthophagus abreu</i> Arrow	Betul, Seoni	Arrow, 1931
19 <i>Copris pedarioides</i> Lansberg	M.P.	Balthasar, 1963a	48 <i>Onthophagus aguns</i> Gill	Indore, Seoni	Arrow, 1931
20 <i>Copris repertus</i> Walker	Indore, Mandla, Umaria, Bastar	Arrow, 1931; Newton & Malcolm, 1985	49 <i>Onthophagus bonasus</i> (Fabricius)	Betul, Balaghat	Arrow, 1931
21 <i>Copris signatus</i> Walker	M.P.	Arrow, 1931, Balthasar, 1963a	50 <i>Onthophagus brevicollis</i> Arrow	Balaghat, Raigarh	Arrow, 1931
22 <i>Copris surdus</i> Arrow	M.P.	Arrow, 1931	51 <i>Onthophagus catta</i> Fabricius	Indore, Betul, Balaghat	Arrow, 1931
23 <i>Drepanocerus setosus</i> (Wiedman)	Riwa, Shahdol, Umaria, Bastar	Arrow, 1931; Balthasar, 1963b	52 <i>Onthophagus centricornis</i> (Fabricius)	Balaghat, Raigarh	Arrow, 1931
24 <i>Drepanocerus sinicus</i> Harold	M.P.	Arrow, 1931; Balthasar, 1963b	53 <i>Onthophagus cervus</i> (Fabricius)	Balaghat, Riwa, Umaria	Arrow, 1931
25 <i>Gymnopleurus cyaneus</i> (Fabricius)	Hoshangabad, Mandla	Arrow, 1931; Newton & Malcolm, 1985;	54 <i>Onthophagus dama</i> (Fabricius)	Balaghat	Arrow, 1931
			55 <i>Onthophagus fasciatus</i> Boucomont	Riwa, Shahdol, Umaria	Arrow, 1931
			56 <i>Onthophagus furcillifer</i> Bates	Bilaspur	Arrow, 1931
			57 <i>Onthophagus griseosetosus</i> Arrow	Mandla, Balaghat, Raigarh	Arrow, 1931; Newton & Malcolm, 1985
			58 <i>Onthophagus gulo</i> Arrow	M.P.	Arrow, 1931

Scientific Name	Distribution in M.P.	Reference	Scientific Name	Distribution in M.P.	Reference
59 <i>Onthophagus hystrix</i> Boucomont	Mandla, Balaghat	Arrow, 1931	<u>Subfamily: Rutelinae</u>		
60 <i>Onthophagus laborans</i> Arrow	M.P.	Arrow, 1931	77 <i>Adoretus bicaudatus</i> Arrow	Hoshangabad	Chandra & Singh, comm.
61 <i>Onthophagus orientalis</i> Harold	Balaghat, Raigarh	Arrow, 1931	78 <i>Adoretus bicolor</i> Brenske	Hoshangabad, Jabalpur	Arrow, 1917; Chandra & Singh, comm.
62 <i>Onthophagus pactolus</i> (Fabricius) (= <i>Proagoderus pactolus</i> Fabricius)	Indore, Hoshangabad	Arrow, 1931; Newton & Malcolm, 1985; Chandra & Singh, comm.	79 <i>Adoretus duvauceli</i> Blanchard	Indore	Arrow, 1917
63 <i>Onthophagus quadridentatus</i> (Fabricius)	Riwa, Umaria	Arrow, 1931	80 <i>Adoretus lasiopygus</i> (Burm.)	Hoshangabad	Chandra & Singh, comm.
64 <i>Onthophagus ramosellus</i> Bates	Betul, Hoshangabad	Arrow, 1931	81 <i>Adoretus lobiceps</i> Arrow	Jabalpur	Arrow, 1917
65 <i>Onthophagus ramosus</i> (Wiedman)	Indore, Mandla	Arrow, 1931	82 <i>Adoretus longiceps</i> Frey	Jabalpur	Machatschke, 1972
66 <i>Onthophagus sagittarius</i> (Fabricius)	Riwa, Umaria	Arrow, 1931	83 <i>Adoretus stoliczkae</i> Ohaus	Betul, Jabalpur	Arrow, 1917
67 <i>Onthophagus tarandus</i> (Fabricius)	Balaghat, Riwa, Umaria	Arrow, 1931	84 <i>Adoretus versutus</i> Harold	Jabalpur	Arrow, 1917
68 <i>Onthophagus zebra</i> Arrow	Indore	Arrow, 1931	85 <i>Anomala dorsalis</i> (Fabricius)	Gwalior, Hoshangabad	Arrow, 1917; Chandra & Singh, comm.
69 <i>Phalops candezei</i> Lansberg	Indore	Arrow, 1931	86 <i>Anomala varicolor</i> (Gyll.)	Hoshangabad	Chandra & Singh, comm.
70 <i>Phalops divisus</i> (Wiedman)	Indore, Hoshangabad	Arrow, 1931; Chandra & Singh, comm.	87 <i>Oxyadoretus nasutus</i> Arrow*	Gwalior	RKS on 27.ix.1975
71 <i>Phalops olivaceous</i> Lansberg	Mandla	Newton & Malcolm, 1985	88 <i>Prodoretus indicus</i> Machatschke	Jabalpur	Machatschke, 1972
72 <i>Scarabaeus sanctus</i> (Fabricius)	Hoshangabad	Chandra & Singh, comm.	<u>Subfamily: Dynastinae</u>		
73 <i>Sisyphus crispatus hirtus</i> Wied. (= <i>Zizyphus crispatus</i> Gory)	Mandla	Newton & Malcolm, 1985	89 <i>Phyllognathus dionysius</i> (Fabricius)	Hoshangabad	Chandra & Singh, comm.
74 <i>Sisyphus longipes</i> (Olivier)	M.P.	Biswas & Chatterjee, 1991	<u>Subfamily: Cetoniinae</u>		
75 <i>Sisyphus neglectus</i> Gory	M.P.	Biswas & Chatterjee, 1991	90 <i>Anatona stillata</i> Newman	Indore	Arrow, 1910
<u>Subfamily: Melolonthinae</u>			91 <i>Oxycetonia versicolor</i> (Fabricius)	Indore	Arrow, 1910
76 <i>Schizonycha ruficollis</i> (Fabricius)	Hoshangabad	Chandra & Singh, comm.	92 <i>Protaetia alboguttata</i> Vigers*	Jabalpur	MLK on 21.vii.1999
			93 <i>Protaetia terrosa</i> G.&P.	Indore	Arrow, 1910
			94 <i>Chiloloba acuta</i> G.&P.	Indore	Arrow, 1910

H.K. = H. Khajuria; JSB = J.S. Bhatti; MLK = M.L.Khoshta; RKS = R.K. Singh

* New record from Madhya Pradesh

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NOTE

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LARGE CONGREGATION OF ROOSTING HARRIERS IN SECUNDERABAD, ANDHRA PRADESH

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On 17 December 1999, at about 1730 hr, while observing roosting harriers in a grassland in northern Secunderabad (c' 17°26' - 17°27' N & 78°27' - 78°28' E) we noted large congregation of 570-730 individuals of four species of harriers (Table 1) in 18 roosting spots. During our regular observation spanning seven years (1993-94 to 1999-2000) such a large congregation was seldom recorded. At the most 200-300 roosting individuals were noted. Altogether, five species of harriers, namely - Eurasian Marsh Harrier (*Circus aeruginosus*), Montagu's Harrier (*Circus*

pygargus), Pallid Harrier (*Circus macrourus*), Pied Harrier (*Circus melanoleucos*) and Hen Harrier (*Circus cyaneus*) have been recorded roosting here (pers. observ.; Kannaiah & Ganesh, 1995). The last species was the rarest, while Kannaiah & Ganesh (1995) reported Pied Harrier to be the rarest during their observation.

The harriers displayed the pre-roost behaviour of flying over the roosting site just before or after sunset (Satheesan & Rao 1990; Ganesh & Kannaiah 1991). Most of the harriers roosted on the ground in tall grass (> 100 cm), while some roosting spots were in areas with short grass (c' 40-60 cm) and on bare patches too.

Rahmani and Manakadan (1986) reported a large roost of harriers near Rollapadu comprising an estimated 800-1000 individuals. The large numbers of harriers indicate that the grassland in northern Secunderabad is an important assembly site for roosting and gathering of harriers over a few days before they finally depart on their migratory journey.

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Table 1. Estimated numbers of individuals of harriers observed roosting in a grassland in northern Secunderabad on 17 December 1999.

Species	Estimated number of individuals	
	Minimum	Maximum
Pallid Harrier (<i>Circus macrurus</i>)	220	280
Montagu's Harrier (<i>Circus pygargus</i>)	180	250
Pied Harrier (<i>Circus melanoleucos</i>)	100	120
Eurasian Marsh Harrier (<i>Circus aeruginosus</i>)	70	80
Total	570	730

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