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SCARABAEID BEETLES (COLEOPTERA) OF KANHA TIGER RESERVE, MADHYA PRADESH

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INTRODUCTION

Kanha Tiger Reserve is one of the oldest and best managed wildlife reserves in Central India. This tiger reserve was included in Project Tiger in first phase *i.e.*, in the year 1973-74. The reserve is extended into the two districts *e.g.*, Mandla and Balalghat district in Madhya Pradesh. The total area of the tiger reserve is 1945 sq. km., the core zone includes the park area of 945 sq. km. and the buffer zone is 1000 sq. km. This is located in the Central Indian Highlands of the Satpura and the Maikal Range. Geographically, it lies between 22°1'5" and 22°27'48" North Latitudes and 80°26'10" and 81°4'40" East Longitudes and at 1299 m above sea level. It is well diversified area famous for its abundance of varieties of animals, including insects, birds and mammals.

The first comprehensive account of Scarabaeid beetles of the Indian region was published by Arrow (1910, 1917 and 1931) in three volumes of *Fauna of British India*, wherein 58 species were reported from Madhya Pradesh, which was the earlier part of Central India. Frey (1971) reported 3 species of genus *Holotrichia* from Central India. Kuitjen (1978, 1981 and 1984) revised the species of subfamily Hybosorinae of genus *Phaeochrous*, *Hybosorus* and reported 3 species from Central India. Chandra (2000) published an Inventory of Scarabaeid beetles of which revealed the presence of 94 species belonging to 30 genera under 9 subfamilies. While working on the faunal diversity of Pachmarhi Biosphere Reserve, Chandra and Singh (2004) recorded 18 species of Scarabaeid beetles belonging to 11 genera under 6 subfamilies. Newton and Malcolm (1985) is the only publication on dung beetles of Kanha Tiger Reserve, where in 15 species were recorded. Since then, no study on the group was undertaken. During the year 2003-04, four extensive surveys were undertaken and more than 700 specimens of the Scarabaeid beetles (applying the light trap and ground searching method) from various localities *i.e.*, Kisli rest house campus, Gubdudi nala, Kanha, Sonph, Sondhar, Shravan Tall, Baisanghat, Mukki, Supkhar *etc.* were collected from the

various kind of habitats (Table 2) and 61 species of Scarabaeid beetles belonging to 27 genera and eight subfamilies are identified (Table 1). Of these, 14 species are new to the fauna of Madhya Pradesh and 48 species are recorded for the first time from Kanha Tiger Reserve.

HABIT AND HABITAT

The Scarabaeid beetles occur in various habitats. The species of subfamily Scarabaeinae are dominant in the different kinds of dungs and manure. The species like *Onthophagus dama*, *O. catta*, *O. cervus*, *O. bonasus* and *Caccobius* sp. were found in the dung of elephant, where as on Gaur and cow dung more than 15 species collected and the species viz., *Onthophagus catta*, *O. bonassus*, *O. sagittarius*, *O. cervus*, *O. ramosus*, *O. tarandus* were common. Two species i.e., *Gymnopleurus* and *Sisyphus* sp. were commonly present in the Tiger (*Panthera tigris*) dung. The single specimen of *Onthophagus pactolus*, which occurred in the dung of Chital (*Axis axis*) and other species viz., *Onthophagus bonasus* and *O. catta* were collected in the dung of Barasingha. *Aphodius* and *Caccobius* species were present in the dung of Hanuman Langur. The genera *Onitis*, *Oniticellus* and *Drepanocerus* are mostly collected from the dry dung of Chital and Gaur in open grounds. *Copris* species have nesting behaviour, collect their food in the underground chamber inside the burrows and utilize it during the breeding period. The species of *Gymnopleurus gemmatus* and *G. cyaneus* and *Phalops divisus* and *P. olivaceus* are generally attracted to the wet dung of Wild boar during the rains and dung balls are made, which are rolled to their nest.

The Cetoniinae beetles are diurnal and collected from the long grasses of *Themeda*, *Granida* and *Sacchharum* in the meadows areas. Where as the species of Melolonthinae, Rutelinae and Dynastinae commonly known as grub beetle feed on leaf, stem and roots of the trees, are collected during the night by the light trap.

LIST OF SCARABAEID BEETLES OF KANHA TIGER RESERVE

(w.s.r. to their status in tiger reserve)

Species Name (Scientific)	Status	KNKTR/NRKTR/NRMP
Family SCARABAEIDAE		
I. Subfamily APHODIINAE		
1. <i>Aphodius moestus</i> Fabricius	VC	NRKTR
II. Subfamily BOLBOCERINAE		
2. <i>Bolboceras quadridens</i> (Fabricius)	R	NRKTR/NRMP
III. Subfamily HYBOSORINAE		
3. <i>Hybosorus orientalis</i> Westwood	C	NRKTR
4. <i>Phaeochrous</i> sp.	C	NRKTR

Species Name (Scientific)	Status	KNKTR/NRKTR/NRMP
IV. Subfamily SCARABAEINAE		
5. <i>Copris andrewesi</i> Waterhouse	VC	NRKTR
6. <i>Copris imitans</i> Felsche	C	NRKTR
7. <i>Copris carinicus</i> Gillet	C	Newton & Malcolm, 1985
8. <i>Copris davisoni</i> Waterhouse	C	Newton & Malcolm, 1985
9. <i>Copris repertus</i> Walker	C	Newton & Malcolm, 1985
10. <i>Catharsius pithecius</i> (Fabricius)	VC	NRKTR
11. <i>Catharsius molossus</i> (Linnaeus)	VC	NRKTR
12. <i>Catharsius sagax</i> (Queensland)	VC	NRKTR
13. <i>Drepanocerus setosus</i> (Wied.)	VC	NRKTR
14. <i>Gymnopleurus cyaneus</i> (Fabricius)	C	Newton & Malcolm, 1985
15. <i>Gymnopleurus gemmatus</i> Harold	C	NRKTR
16. <i>Gymnopleurus sinuatus</i> (Olivier)	VC	Newton & Malcolm, 1985
17. <i>Heliocopris bucephalus</i> (Fabricius)	VC	NRKTR
18. <i>Onthophagus bonasus</i> (Fabricius)	VC	NRKTR
19. <i>Onthophagus catta</i> (Fabricius)	VC	NRKTR
20. <i>Onthophagus cervus</i> (Fabricius)	VC	NRKTR/NRMP
21. <i>Onthophagus dama</i> (Fabricius)	VC	NRKTR
22. <i>Onthophagus griseosetosus</i> Arrow	VC	Newton & Malcolm, 1985
23. <i>Onthophagus pactolus</i> (Fabricius)	R	NRKTR
24. <i>Onthophagus ramosus</i> (Wied.)	C	NRKTR
25. <i>Onthophagus sagittarius</i> (Fabricius)	C	NRKTR
26. <i>Onthophagus tarandus</i> (Fabricius)	C	NRKTR/NRMP
27. <i>Onthophagus tragus</i> (Fabricius)	C	NRKTR/NRMP
28. <i>Onitis philemon</i> (Fabricius)	VC	NRKTR
29. <i>Onitis brahma</i> Lansberg	VC	NRKTR
30. <i>Onitis subopacus</i> Arrow	C	Newton & Malcolm, 1985
31. <i>Onitis virens</i> Lansberg	VC	NRKTR
32. <i>Oniticellus cinctus</i> (Fabricius)	VC	NRKTR
33. <i>Oniticellus pallens</i> (Olivier)	C	NRKTR/NRMP
34. <i>Oniticellus spinipes</i> Roth	C	NRKTR/NRMP
35. <i>Phalops divisus</i> (Wied.)	C	NRKTR
36. <i>Phalops olivaceus</i> Lansberg	C	Newton & Malcolm, 1985

Species Name (Scientific)	Status	KNKTR/NRKTR/NRMP
37. <i>Sisyphus crispatus</i> Gory	C	Newton & Malcolm, 1985
38. <i>Scarabaeus sanctus</i> (Fabricius)	C	NRKTR
V. Subfamily RUTELINAE		
39. <i>Anomala bengalensis</i> Blanchard	C	NRKTR
40. <i>Anomala biharensis</i> Arrow	VC	NRKTR
41. <i>Anomala cantori</i> (Hope)	VC	NRKTR/NRMP
42. <i>Anomala dorsalis</i> (Fabricius)	VC	NRKTR
43. <i>Anomala fraterna</i> (Burmeister)	VC	NRKTR
44. <i>Anomala varicolor</i> (Gyll.)	C	NRKTR
45. <i>Anomala rugosa</i> Arrow	C	NRKTR
46. <i>Anomala ruficapilla</i> (Burmeister)	C	NRKTR
47. <i>Adoretus bicolor</i> Brenske	C	NRKTR
48. <i>Adoretus bimarginatus</i> Ohaus	C	NRKTR/NRMP
49. <i>Adoretus lasiopygus</i> (Burmeister)	C	NRKTR
50. <i>Adoretus duvauceli</i> Blanchard	C	NRKTR
51. <i>Mimela inscripta</i> (Nonfried)	C	NRKTR/NRMP
52. <i>Mimela macleayana</i> (Vigors)	VC	NRKTR/NRMP
53. <i>Singhala robusta</i> (Ohaus)	VC	NRKTR/NRMP
VI. Subfamily MELOLONTHINAE		
54. <i>Apogonia</i> sp.	VC	NRKTR/NRMP
55. <i>Schizonycha ruficollis</i> (Fabricius)	C	NRKTR
56. <i>Holotrichia sculpticollis</i> Blanchard	C	NRKTR/NRMP
VII. Subfamily DYNASTINAE		
57. <i>Eophileurus perforatus</i> Arrow	C	NRKTR
58. <i>Heteronychus lioderes</i> (Burmeister)	C	NRKTR
59. <i>Xylotrupes gideon</i> (Linnaeus)	C	NRKTR
VIII. Subfamily CETONIIDAE		
60. <i>Clinteria klugi</i> (Hope)	VC	NRKTR
61. <i>Coencophilus trabecula</i> Schaum	C	NRKTR/NRMP

Abbreviation used :

K.T.R.–Kanha Tiger Reserve; KNKTR–Known from Tiger Reserve; NRKTR–New Record from Kanha Tiger Reserve; NRMP–New Record from Madhya Pradesh; C–Common; VC–Very Common; R–Rare; Coll.–Collection; exs.,–Number of examples.

Table 2 : Date wise collection of Scarabaeid beetles from Kanha Tiger Reserve

Date of coll.	Locality	Species	No. of exs.	Source
09.IX.2003	Kisli R. H.	<i>Catharsius molossus</i> (Linnaeus)	2	Light
"	"	<i>Anomala biharensis</i> Arrow	1	"
"	"	<i>Xylotrupes gideon</i> (Linnaeus)	2	"
10.IX.2003	"	<i>Singhala robusta</i> Ohaus	6	"
11.IX.2003	Kisli R. H.	<i>Phaeochrous</i> sp.	2	"
"	"	<i>Aphodius moestus</i> Fabricius	2	Dung
"	"	<i>Onthophagus dama</i> (Fabricius)	4	"
"	"	<i>Onthophagus ramosus</i> (Wiedmann)	5	"
"	"	<i>Onthophagus tarandus</i> (Fabricius)	1	"
"	"	<i>Onitis philemon</i> (Fabricius)	1	Light
"	"	<i>Oniticellus cinctus</i> (Fabricius)	1	Dung
"	"	<i>Anomala cantori</i> Hope	2	Light
"	"	<i>Singhala robusta</i> Ohaus	2	"
"	"	<i>Coenochilus trabecula</i> Schaum	1	"
12.IX.2003	"	<i>Oniticellus cinctus</i> (Fabricius)	5	Dung
13.IX.2004	Kisli R. H.	<i>Aphodius moestus</i> (Fabricius)	2	Light
"	"	<i>Bolboceras quadrigens</i> (Fabricius)	1	"
"	"	<i>Hybosorus orientalis</i> Westwood	2	"
"	"	<i>Phaeochrous</i> sp.	2	"
"	"	<i>Mimela inscripta</i> (Nonfried)	1	"
"	"	<i>Mimela macleayana</i> (Vigors)	7	"
"	"	<i>Singhala robusta</i> Ohaus	2	"
"	Digdola	<i>Clinteria klugi</i> (Hope)	5	On Plants
"	Kisli R. H.	<i>Coenochilus trabecula</i> Schaum	1	Light
14.IX.2003	Gudbudi nala	<i>Copris andrewesi</i> Waterhouse	2	Dung
"	"	<i>Copris imitans</i> Felsche	2	"
"	"	<i>Gymnopleurus sinuatus</i> (Olivier)	2	"
"	"	<i>Helicopris bucephalus</i> (Fabricius)	2	Light
"	"	<i>Onthophagus cervus</i> (Fabricius)	2	Dung
"	"	<i>Oniticellus cinctus</i> (Fabricius)	2	"
"	"	<i>Clinteria klugi</i> (Hope)	10	On Plants

Date of coll.	Locality	Species	No. of exs.	Source
15.IX.2003	Gudbudi nala	<i>Heliocopris bucephalus</i> (Fabricius)	1	Light
"	"	<i>Copris repertus</i> Walker	1	Dung
"	"	<i>Apogonia</i> sp.	3	Light
"	"	<i>Xylotrupes gideon</i> (Linnaeus)	1	"
16.IX.2003	Kanha R. H.	<i>Anomala cantori</i> Hope	1	"
"	"	<i>Adoretus duvauceli</i> Blanchard	1	"
17.IX.2003	"	<i>Anomala cantori</i> Hope	1	"
"	"	<i>Xylotrupes gideon</i> (Linnaeus)	1	"
"	"	<i>Eophileurus perforatus</i> Arrow	1	"
"	Sonph	<i>Onthophagus pactolus</i> (Fabricius)	1	Dung
18.IX.2003	"	<i>Mimela macleayana</i> (Vigors)	1	Light
"	"	<i>Xylotrupes gideon</i> (Linnaeus)	1	"
19.IX.2003	"	<i>Heteronychus lioderes</i> (Redtenbacher)	1	"
20.IX.2003	"	<i>Clinteria klugi</i> Hope	3	On Plants
21.IX.2003	Mukki R. H.	<i>Onthophagus dama</i> (Fabricius)	5	Dung
22.IX.2003	Sondhar	<i>Onthophagus dama</i> (Fabricius)	4	"
23.IX.2003	Mukki R. H.	<i>Xylotrupes gideon</i> (Linnaeus)	1	Light
"	"	<i>Anomala cantori</i> Hope	1	"
22.V.2004	Kisli R. H.	<i>Onthophagus bonasus</i> (Fabricius)	3	Dung
23.V.2004	"	<i>Gymnopleurus sinuatus</i> (Olivier)	1	"
24.V.2004	"	<i>Bolboceras quadridens</i> (Fabricius)	1	Light
"	"	<i>Hybosorus orientalis</i> Westwood	2	Light
"	"	<i>Catharsius pithecius</i> (Fabricius)	2	"
25.V.2004	"	<i>Gymnopleurus cyaneus</i> (Fabricius)	2	Dung
"	"	<i>Onthophagus catta</i> (Fabricius)	3	"
"	"	<i>Oniticellus spinipes</i> Roth.	5	"
"	"	<i>Oniticellus pallens</i> (Olivier)	1	"
"	"	<i>Onitis brahma</i> Lansberg	1	"
26.V.2004	"	<i>Onthophagus catta</i> (Fabricius)	5	"
"	"	<i>Onthophagus bonasus</i> (Fabricius)	3	"
"	"	<i>Oniticellus cinctus</i> (Fabricius)	3	"
"	"	<i>Phalops divisus</i> (Wiedman)	1	"

Date of coll.	Locality	Species	No. of exs.	Source
27.V.2004	Kisli R. H.	<i>Scarabaeus sanctus</i> (Fabricius)	1	Dung
"	"	<i>Anomala bengalensis</i> Blanchard	2	Light
"	"	<i>Anomala biharensis</i> Arrow	2	"
"	"	<i>Anomala varicolor</i> Gyll.	1	"
"	"	<i>Anomala rugosa</i> Arrow	1	"
"	"	<i>Anomala ruficapilla</i> Burmeister	1	"
"	"	<i>Adoretus bicolor</i> Brenske	2	"
"	"	<i>Phaeochrous</i> sp.	2	"
29.V.2004	"	<i>Drepanocerus setosus</i> (Wied.)	2	Dung
30.V.2004	"	<i>Drepanocerus setosus</i> (Wied.)	5	"
11.VI.2004	Mukki R. H.	<i>Onthophagus catta</i> (Fabricius)	5	"
21.VI.2004	"	<i>Phaeochrous</i> sp.	5	Light
24.VI.2004	"	<i>Apogonia</i> sp.	1	"
25.VI.2004	"	<i>Apogonia</i> sp.	5	Light
26.VI.2004	Kisli R. H.	<i>Schizonycha ruficollis</i> (Fabricius)	5	"
"	"	<i>Apogonia</i> sp.	3	"
28.VI.2004	Mukki R. H.	<i>Holotrichia sculpticollis</i> Blanchard	5	"
"	"	<i>Heliocopris bucephalus</i> (Fabricius)	2	"
"	"	<i>Catharsius molossus</i> (Linnaeus)	1	"
"	"	<i>Anomala dorsalis</i> (Fabricius)	1	"
"	"	<i>Anomala fraterna</i> Burmeister	1	"
"	"	<i>Adoretus bimarginatus</i> Ohaus	1	"
"	"	<i>Adoretus lasiopygus</i> Burm.	1	"
"	"	<i>Onitis virens</i> Lansberg	1	Dung
24.VII.2004	Kisli R. H.	<i>Copris andrewesi</i> Waterhouse	2	"
25.VII.2004	"	<i>Onthophagus sagittarius</i> (Fabricius)	2	"
26.VII.2004	"	<i>Onthophagus ramosus</i> (Wied.)	2	"
11.VIII.2004	"	<i>Onthophagus dama</i> (Fabricius)	10	"
"	"	<i>Onthophagus ramosus</i> (Wied.)	10	"
16.VIII.2004	"	<i>Onthophagus tragus</i> (Fabricius)	5	"
18.VIII.2004	"	<i>Heliocopris bucephalus</i> (Fabricius)	1	Light

Date of coll.	Locality	Species	No. of exs.	Source
18.VIII.2004	Kisli R. H.	<i>Onthophagus tragus</i> (Fabricius)	3	Dung
"	"	<i>Onthophagus ramosus</i> (Wied.)	5	"
"	"	<i>Catharsius molossus</i> (Linnaeus)	1	Light
"	"	<i>Catharsius pithecius</i> (Fabricius)	2	"
19.VIII.2004	"	<i>Heliocopris bucephalus</i> (Fabricius)	1	"
21.VIII.2004	"	<i>Mimela macleayana</i> (Vigors)	1	"
23.VIII.2004	"	<i>Catharsius sagax</i> Queensland	1	"
24.VIII.2004	"	<i>Copris imitans</i> Felsche	2	Dung
26.VIII.2004	"	<i>Onthophagus tragus</i> (Fabricius)	2	"
27.VIII.2004	"	<i>Onthophagus cervus</i> (Fabricius)	1	"

SUMMARY

The paper presents a comprehensive list of Scarabaeid beetles of Kanha Tiger Reserve collected from the various localities. The list also incorporates the status and their habitats in the Tiger Reserve. Total 61 species pertaining to 27 genera under eight subfamilies are known from the Kanha Tiger Reserve. Of which, 48 species are recorded for the first time from the Kanha Tiger Reserve and 14 are new to the fauna of Madhya Pradesh.

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