



Ground beetles (Coleoptera: Carabidae) of Melghat Tiger Reserve, Central India

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ABSTRACT

The collection of beetles was done from the month of February 2009 to December 2010. Almost all the habitats were explored in Melghat Tiger Reserve in search of carabids. Total 10 species of ground beetles belonging to 6 subfamilies of family Carabidae were collected and examined. The systematic account, checklist and distribution of the recorded species are given in the present paper. The diversity study of beetles of Amravati region is relatively untouched field; hence an effort was made in the present work to study the diversity of carabid beetles in this region.

Key Words: Ground Beetles, Melghat Tiger Reserve, Coleoptera, Central India

INTRODUCTION

Carabids are usually predators and primary importance of the family Carabidae lies in the variety and the location of the food they consume while some species are omnivorous, some phytophagous and most of them are carnivorous (Lobl and Smetana 2003; Larsen *et al.* 2003). Lindroth (1969) provided useful data for those becoming acquainted with ground beetles. Carabids are good indicators of environmental change. They are ubiquitous, abundant, easy to sample, and have well-known life histories so that changes in their diversity and activity abundance can be related to observed changes in the environment (Lovei and Sunderland 1996; Niemela *et al.* 2000).

Indian carabid fauna can be studied with the help of The Fauna of British India including Ceylon and Burma; Coleoptera: Carabidae (Andrewes 1929) and Catalogue of Indian Insects; Carabidae (Andrewes 1930). The diversity study of beetles of Amravati region is relatively untouched field; hence an effort was made in the present work to study the diversity of carabid beetles in this region

STUDY AREA

A study was conducted in the protected area of the Melghat Tiger Reserve (MTR), Vidarbha region, Maharashtra. The geographical coordinates of the study area are 21^o29.96'N, 077^o12.338' E. Melghat Tiger Reserve is located at southern offshoot of Satpuda hill range in Central India also called as Gawilgarh hill range in Maharashtra. The forest area of MTR is tropical and dry deciduous in nature dominated with teak (*Tectona grandis*).

METHODOLOGY

The collection of beetles was done from the month of February 2009 to December 2010. Almost all the habitats were explored in Melghat Tiger Reserve in search of carabids. Each region of the study area was visited at different hours of day and the night for the collection of beetles. The Geographical coordinates of each collecting site was also noted.

RESULTS

Total 10 species of ground beetles of belonging to 6 subfamilies of family Carabidae were collected and

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Subfamily:Anthiinae Bonelli

10. *Anthia sexgutata* Fabricius

Details of the Ground beetle species examined

1. *Melanius* sp.

Material examined: MTR, Raipur, (Lat. 21°33.913'N, Long. 077°17.573'E, Alt. 691m), 02.07.2009. (1example), Coll. V.G. Thakare

2. *Chlaenius* sp. 1

Material examined:

- i) MTR, Tarubanda, Comp no. 762 (Lat. 21°24.546'N, 077°482.33' E, Alt. 505), 12.10.2010, (1example), Coll. V.G. Thakare.
- ii) MTR, Semadoh(Lat. 21°29.800'N, Long. 077°18.680'E, Alt. 511m.), 02.10.2010, (1example), Coll. V.G. Thakare

3. *Chlaenius* sp. 2

Material examined: MTR, Tarubanda, Comp no. 762 (Lat. 21°24.546'N, 077°482.33' E, Alt. 505), 12.10.2010, (1example), Coll. V.G. Thakare

4. *Pheropsophus* sp.

Material examined: MTR, Jarida (Lat. 21°39.987'N, Long. 077°29.252'E, Alt. 660m), 06.07.2009, (2examples), Coll. V.G. Thakare

5. *Brachinus* sp.

Material examined: MTR, Tarubanda Compt. no.762 (Lat. 21° 28' 198' N, Long. 077° 10 281' E, Alt. 505m), 12.10.2010, (1example), Coll. V.G. Thakare

6. *Scarites* sp. 1

Material examined:

- i) MTR, Kolkas (Lat. 21°31'.100'N, Long. 077°12.418', Alt.-512m), 07.07.2009, (1example), Coll. V.G. Thakare.
- ii) MTR, Semadoh (Forest Rest House) (Lat. N 21° 29.865' E, Long. 077° 18 .681', Alt. 511m.), 07.07.2009, (1example), Coll. V.G. Thakare

7. *Scarites* sp. 2

Material examined:

- i) MTR, Semadoh (Lat. 21°29.800'N, Long. 077°18.780'E, Alt. 510m), 02.10.2010, (1example), Coll. V.G. Thakare
- ii) MTR, Tarubanda, Compt. no. 762 (Lat. 21°24.416N, Long. 077°312.33'E Alt. 505m), 12.10.2010, (1example), Coll. V.G. Thakare

8. *Calosoma orientale* Hope

Material examined:

- i) MTR, Semadoh (Lat. 21°29.878'N, Long. 077°18.891'E, Alt. 511m), 02.10.2010. (1example), Coll. V.G. Thakare
- ii) MTR, Kolkas (Lat. 21°31'.107'N, Long. 077°12.588', Alt. 512m), 07.07.2009, (1 example), Coll. V.G. Thakare
- iii) MTR, Chourakund (Lat. 21°38.078'N, Long. 077°07.286'E, Alt. 458m) ,18.07.2010, (2 examples), Coll. V.G. Thakare
- iv) MTR, Raipur, (Lat. 21°33.913'N, Long. 077°17.573'E, Alt. 691m), 02.07.2009, (2 examples), Coll. V.G. Thakare
- v) MTR, Tarubanda, Compt. no. 762 (Lat. 21°24.546N, Long. 077°482.33'E Alt. 505m), 12.10.2010, (1 example), Coll. V.G. Thakare

9. *Siagona* sp.

Material examined:

- i) MTR, Kolkas (Lat. 21°31'.177'N, Long. 077°12.508', Alt. 512m), 07.07.2009, (1example), Coll. V.G. Thakare
- ii) MTR, Semadoh, Forest Rest House (GPS- 21°29.875'N, Long. 077°18.881'E , Alt. 511m), 02.10.2010, (1example), Coll. V.G. Thakare

10. *Anthia sexgutata*

Material examined: MTR, Kolkas (Lat. 21°31'.107'N, Long. 077°12.588', Alt. 512m), 07.07.2009, (1example), Coll. V.G. Thakare

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REFERENCES

- Andrewes HE. 1929. The Fauna of British India including Ceylon and Burma (Coleoptera:Carabidae)Vol.1, Carabinae: 1-431.
- Andrewes HE. 1930. Catalogue of Indian Insects. (Carabidae) Part 18:1 389.
- Larsen JK, Work TT. and Purrington FF. 2003. Habitat Use Patterns By Ground Beetles (Coleoptera: Carabidae) of Northeastern Iowa. *Pedobiologia*. 47: 288-299.
- Lindroth CH. 1961-1969. The ground-beetles (Carabidae, excl. Cicindelinae) of Canada and Alaska, Parts 1-6, *Opuscula Entomologica Supplementa*. Berlingska Boktryckeriet, Lund, Sweden.
- Lobl I and Smetana A. 2003. Catalogue of Palaartic Coleoptera. Volume I. Archostemata-Myxophaga-Adephaga. Apollo Books. Stenstrup, Denmark 819 pp.
- Lovei GL and Sunderland KD. 1996. Ecology and behavior of ground beetles (Coleoptera: Carabidae). *Annual Revision Entomol.* 41:231-256.
- Niemela J, Kotze J, Ashworth A, Brandmayr P, Desender K, New T, Penev L, Samways M, and Spence J. 2000. The search for common anthropogenic impacts on biodiversity: A global network. *Journal of Insect Conservation* 4:3-9.