DIVERSITY OF BEETLES (INSECTA: COLEOPTERA) FROM THE VICINITY OF SEMADOH-MAKHALA ROAD, SIPNA RANGE, MELGHAT TIGER RESERVE, (M.S.) INDIA

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ABSTRACT

The present investigation was conducted in the month of Oct –Nov 2009 on the coleopteran diversity from the vicinity of Semadoh-Makhala Road, Sipna Range, and Melghat Tiger Reserve. A total of 12 species belonging to 5 different families of beetles viz. Gyrinidae, Tenebrionidae, Carabidae, Scarabaeidae and Meloidae were collected and identified from various habitats.

Keywords: Coleoptera, Beetles, Insecta, Arthropoda, Sipna

INTRODUCTION

The order Coleoptera which include beetles is the most diverse order of class Insecta (Phylum: Arthropoda). This is the largest group of comparable units among all animals. India being situated in tropics is well known for richness of Coleopteran fauna. Beetles are found in almost every habitat and range in size from 1-100 mm. It includes more than 3, 50000 identified species and represents about 40% of all insects and 30% of all animals (Choate, 2003). About 1,5088 species of coleopteran insects are known from Indian region (Kazmi, 2004). Perhaps the single most important factor in the success of coleopterans is the development of elytra which protect the folded hindwings permitting occupation of encoded spaces and hidden habitats by adult. Beetles are tiny to very large insects of variable shape and color but mostly strongly sclerotized, compact and more or less flattened. The compound eyes are normally conspicuous. Some species have reduced wings (Arnett, 1973). Beetles are exceedingly variable both ecologically and biologically. The majorities of beetle are terrestrial herbivores; many are predatory, frequently with highly specialized host ranges or life cycles (Forest Science Project (FSP) Technical Report). While the identity and activity of a few of the forest beetles are well known, most of those, other than the major pests, have been little studied. Their complex ecosystem roles have not been determined. Although some of this deficiency is owing to a general lack of emphasis on total ecosystem function and dynamics, it is well know that lack of identification manuals has severely hindered studies of the whole beetle component of forest diversity (Scudder *et al.,* 2005).

MATERIALS AND METHODS

I) Study area

The area in the vicinity of Semadoh-Makhala road consists of a very diverse type of flora & fauna; hence this region of Sipna Range in the Melghat Tiger Reserve was selected as a study area (Fig. I). Melghat Tiger Reserve is located as a southern offshoot of Satpuda hill range in central India called Gawilgarh hill in the Indian State of Maharashtra. Presently the total area of the Reserve is around 1677 sq. km. The forest is tropical dry deciduous in nature dominated by teak *Tectona grandis*. A survey of beetles was undertaken in the study area along five different transects.

Transect I - Area containing the wetlands
Transect II - Dry area with shrubs
Transect III - Area predominant with teak trees *(Tectona grandis)*
Transect IV - The area containing dung patches
Transect V - Area containing stones and rocks

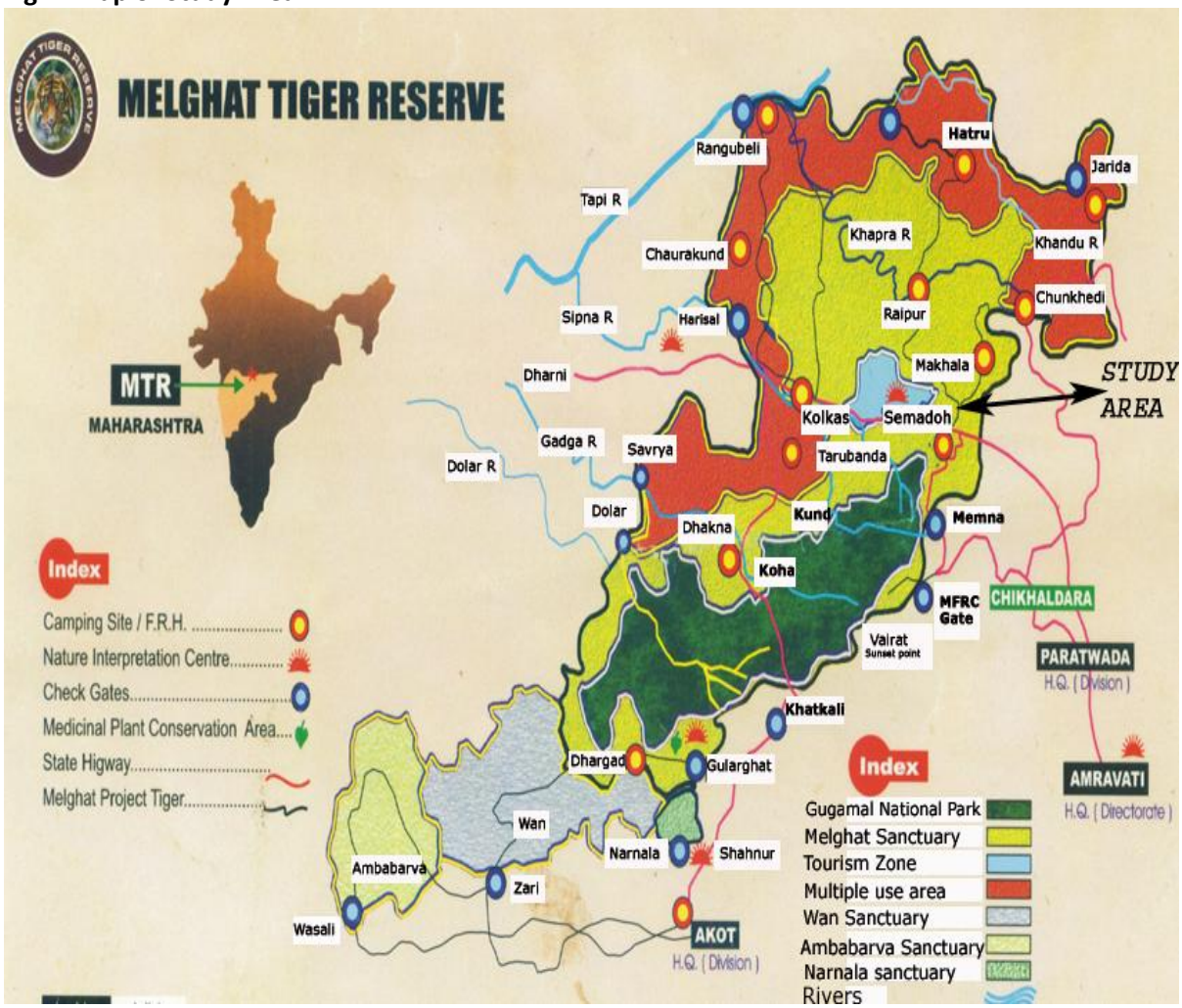
II) Collection and identification of beetles

In order to adequately sample the beetles from various habitats, a wide variety of collecting and trapping methods were used. Most beetles are harmless and were collected by hand. Butterfly nets were employed for catching flying beetles. A simple umbrella method was used for collecting beetles from trees. Some beetles were collected during night with the help of light traps with a source of white light. Dung beetles from the family Scarabaeidae were collected from the dung with the help of forceps.

RESULTS AND DISCUSSION

In the present investigation, 12 species of beetles were identified. The checklist of beetles, their habitat is given in Table I. In present study diversity of beetles of 5 different families viz. Gyrinidae (Whirligig beetles), Tenebrionidae (Darkling beetles), Carabidae (Ground beetles), Scarabaeidae (Scarab beetles) and Meloidae (Blister beetles) were recorded. The percentage of different beetle families recorded in the study area is given in Fig. II. A preliminary study was conducted on beetles of Kalatop-Khanjjiar Wildlife Sanctuary, Himachal Pradesh that enumerated 18 species to 16 genera over nine families (Sharma *et al.,* 2004). The Coleopteran fauna from the Indian Thar Desert, Rajasthan was examined (Kazmi *et al.,* 2004) in which 102 species of 13 different families were recorded.

Fig. I: Map of Study Area



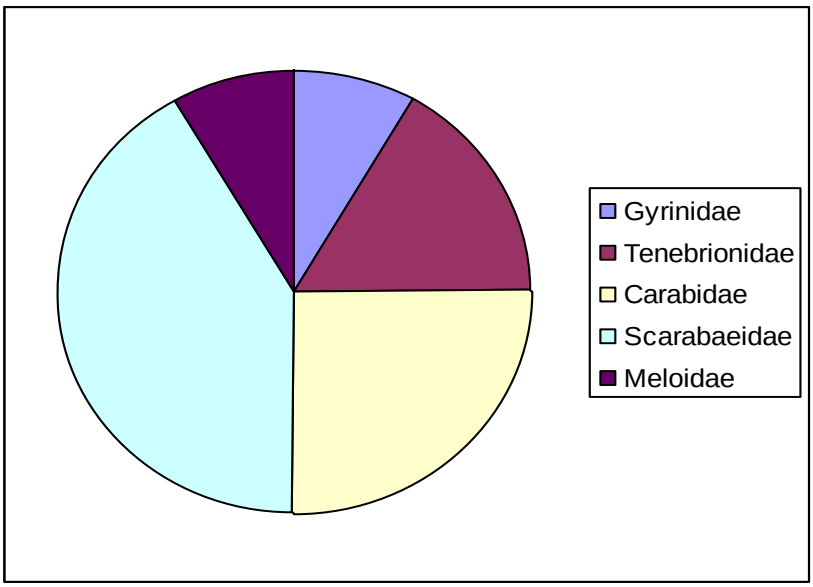
Aquatic coleoptera (Insecta) belonging to 40 taxa in 7 families of streams in the Nizke Beskydy Region (Slovakia) were studied (Zatovicova *et al.* 2004). Total 13 species of water beetles belonging to families Dytiscidae, Hydrophilidae & Gyrinidae were recorded from the Kolkas region of Melghat Tiger Reserve, Central India (Thakare *et al*., 2011). In the present study, single water beetle from family Gyrinidae (Whirligig beetles) was recorded.

5 species of Scarab beetles from the subfamilies Scarabaeinae and Cetoniinae of family Scarabaeidae were recorded in this study. The study of scarab beetles of Bandhavgarh National Park, Madhya Pradesh recorded 44 species in 24 genera and 8 subfamilies (Chandra *et al.,* 2005). The faunistic record of scarabaeidae from the G.N.H.P. Himachal Pradesh, India documented 9 species of 4 subfamilies (Chandra *et al.,* 2007).Biodiversity pattern of cavernicolous ground beetles and their conservation status in the Azores were studied (Borges *et al.,* 2007) in which total 10 species were studied. In the present study 3 ground beetles (Coleoptera: Carabidae) were recorded from the study area.

Table I: Checklist of beetles and their habitat from the study area

Family/ Genus	Occurrence
Gyrinidae	
Dineutus indicus	Transect I
Tenebrionidae	
Platynotus sp.	Transect V
Cossyphus depressus	Transect V
Carabidae	
Calosoma orientale	Transect II
Chaenius sp. 1	Transect III
Scarites sp.	Transect V
Scarabaeidae	
Onitis sp.	Transect IV
Chiloloba acuta	Transect II
Onthophagus catta	Transect IV
Onthophagus dama	Transect IV
Copris sp.	Transect IV
Meloidae	
Mylabris sp.	Transect II

Fig. II: Family wise distribution of beetles in the study area



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