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A SURVEY OF BEETAL FROM WASHIM REGION MAHARASHTRA, INDIA

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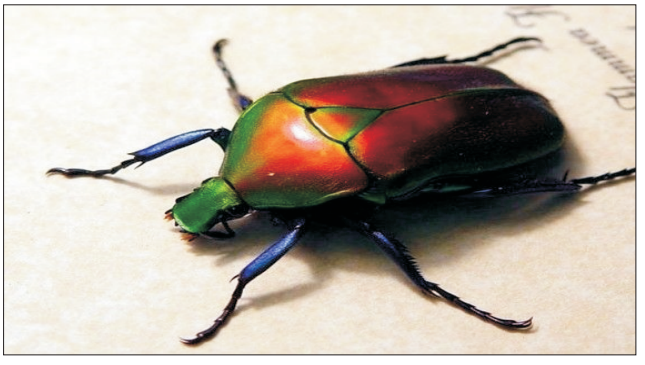
ABSTRACT

The present study on beetles conducted during September 2016 to January 2017. This study reports 10 species of beetles belonging to 2 orders that is Hemiptera and Coleoptera. On the basis of number of identified species Pentatomidae was the most dominant family represented by 3 species and family Coridae represented by 2 species each and Dinidoridae, Histeridae Dytiscidae, Coccinellidae and Scarabaeidea family represented by single species each.

KEYWORDS: *Beetles, Survey.*

INTRODUCTION:

Beetles an interesting organism form Phylum Arthopoda which is the largest phylum of Animal Kingdom including about 1,13,40,000 species in all habitats, which constitute about 83% of all known species of animals. About 40%



(40, 0000) of all described insect species are beetles and approximately 15,088 species were recorded India. There are particular species that are adapted to practically every kind of diet **Pawar (2014)**. Beetles constitute a large proportion of total insect biodiversity and play a pivotal role in tropic chains **Banerjee (2014).** Beetles are by far the largest order of insects, with 350, 000–400,000 species in two orders Coleoptera and Hemiptera four suborders (Adephaga, Archostemata, Myxo phaga and Polyphaga) making up about 40% of all insect species described, and about 30% of all animals. Though classification at the family level is a bit unstable, about 500 families and subfamilies are recognized. They found in rotten wood, under bark, stones and logs, feeding on decaying vegetation, dung, seeds, cereals, fungi, roots etc. They are varied in shape and size (2-35 mm in length), generally smooth, brown or black **Thakare *et al.*, (2012).** Coleoptera are found in nearly all natural habitats, including freshwater and marine habitats, everywhere vegetative foliage is found, from trees and their bark to flowers, leaves and underground near roots- even inside plants in galls, in every plant tissue, including dead or decaying ones certain species are agricultural pests Ground beetles (family Carabidae) are common predators of many different insects and other arthropods including fly eggs, caterpillars, wireworms and others.

Dung beetles are taxonomically as well as functionally very important component of terrestrial ecosystem **Dagobert (2008).** The life cycle of the stag beetles includes three instars Egg, larva and Pupa. Changes in the environmental factors due to various human activities may affect life cycle of beetles as it is associated to soil and ground litter **Wankhade (2014).** A wide variety of literature was available on the beetal diversity, **Thakare *et al.*, (2012)** studied on Darkling Beetles (Coleoptera: Tenebrionidae) of Melghat Tiger Reserve Central India. The

Diversity of Beetles form Jalgaon District Maharashtra India was studied by **Pawar *et al*., (2014)** and the study recorded 35 species belonging to 28 genera under 13 families of the order Coleoptera (Linnaeus, 1758).

Aland *et al*., (2012) investigates the Diversity of Beetles in and around Amba Reserve Forest, It also provides baseline data for upcoming researchers and gives wide scope for further study. The Preliminary Studies on Diversity of Order Coleoptera at Sawanga Vithoba Lake Region District Amravati, Maharashtra, India **Wankhede *et al*., (2014).** A survey of beetle faunal diversity and composition was reported by **Banerjee (2013)** in Durgapur Municipal Corporation, Durgapur, west Bengal. The Diversity and distribution of ladybird beetles in District Dir Lower, Pakistan was studied by **Rahatullah (2011)**. Morphology of Beetle Some of the association of characters had evolved independently in different phyletic lines, which was important step towards the understanding of their functional morphology as well as ecological strategies of species such fictional diversity in brooder sense noted by **Ribera *et al*., (1998).** Beetles are very sensitive to environmental changes and they play an important role in maintaining the balance of an ecosystem as they feed on detritus and convert it into usable form for plant. Apart of this the ground beetles reduces the amount of weed seeds in the soil. The main objective of the present study is to collect a primary data about the occurrence and diversity of beetles in the present study area.

MATERIALS AND METHODS

Beetles were observed from different places of Washim district during September 2016 to January 2017 to determine their diversity. Washim is located in the eastern region of Vidarbha. Washim is a district in Maharashtra, India. The headquarters is at Washim. The area of the district is 5,150 km2. Akola lies to north, Amaravati lies to its north-east, Hingoli lies to its south, Buldhana lies to its west, and Yavatmal lies to east.

Sampling sites:- For the present study the 6 different sampling sites was selected. The sites include Ekbhurji dam area of Washim, Panjabrao Deshmukh Krushi Vidyapith branch of Akola in Washim, R. A. College garden and campus area, area of Katepurna River Chaka near Malegaon and Hingoli naka Washim.

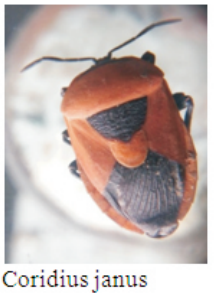
Collection of beetles: Beetles was collected by hand picking method.

Species identification: Collected specimens was identified by using the standard identification key of the group on facebook Insect India, Bug guide.net while some species are identified by using photograph and available literature.

RESULT AND DISCUSSION

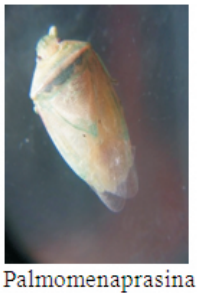
Beetles interact with their ecosystems in several ways. They often feed on plants and fungi, break down animal and plant debris, and eat other invertebrates. Some species are prey of various animals including birds and mammals. The present study reveals the occurrence of 10 species of beetles belonging to 2 orders Hemiptera and Coleoptera **(Table I and Photoplate I).** On the basis of number of identified species Pentatomidae was the most dominant family represented by 3 species and family Coridae, represented by 2 species each and Dinidoridae, Histeridae Dytiscidae, Coccinellidae and Scarabaeidea family represented by single species each. This study has proved invaluable as it has helped in creating a specimen bank of good number of beetle specimen from Washim region. The present investigation reveals that the Washim district of Maharashtra state is rich in beetle diversity and more intense studies would certainly yields more information about beetles. A long term study is needed to observe the species occurred in all seasons and their interaction with the environmental changes. **Aland *et al*., (2012)** studied 152 species belonging to 25 families of beetles and they concluded that the family Scarabaeidae to be dominant. **Thakare *et al*., (2012)** studied on Darkling Beetles total eight species of darkling beetles belonging to family Tenebrionidae were recorded from the study area. **Banerjee (2014)** studied on the Diversity and Composition of Beetles in Durgapur, West Bangal, India, total of 9 families were reported from the study site **Wankhede *et al*., (2014). Gaikwad *et al*., (2016)** also studied that midgut secrets various carbohydrates digestive enzymes, **Venugopal *et al*., (2012)** studied diversity and community structure of dung beetles, **Andrew *et al*., (2004)** studied species diversity and structure of Phytophagous beetles. Detailed classification included in following table and Photo plate,

Sr.no	Common Name	Class	Order	family	Genus	Species	Collection site
1	Red pumpkin bug	Insecta	Hemiptera	Dinidoridae	Coriodius	Janus	Washim
2	Green shink bug	Insecta	Hemiptera	Pentatomidae	Chinava	Hilaris	Washim
3	Squash bug	Insecta	Hemiptera	Coreidae	Anasa	Tristis	Malegaon
4	Green shield bug	Insecta	Hemiptera	Pentatomidae	Palmomena	Prasina	PDKV
5	Pentatomid bug	Insecta	Hemiptera	Pentatomidae	Econthecona	Spp	Malegaon
6	Leaf footed bug	Insecta	Hemiptera	Coreidae	Acanthocephala	Acanthocehala	Chaka
7	Hister Beetle	Insecta	Coleoptera	histeridae	Acritus	Spp.	Washim
8	Lady bird	Insecta	Coleoptera	Coccinellidae	Harmonia	Axyridius	PDKV
9	Giant water bug	Insecta	Coleoptera	Dytiscidae	Cybister	Fimbriolatus	Malegaon
10.	Dung roller	Insecta	Coleoptera	Scarabaeidae	Odenteus	liebecki	PDKV


Coridius janus


Chinava hilaris


Anasatristis


Palmomenaprasina


Econthecana spp.


Acanthocephala


Acritus


Hormonia axyridis


Cybisterfimbriolatus


Odentus

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