International Research Journal of Biological Sciences _____ ISSN 2278-3202
Vol. **7(6),** 23-25, June **(2018)** *Int. Res. J. Biological Sci.*

Short Communication

Preliminary study on diversity of coleopteran fauna from Kopargaon Tahsil, District Ahmednagar, Maharashtra, India

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Available online at: www.isca.in, www.isca.me
Received 14th November 2016, revised 26th April 2018, accepted 7th June 2018

Abstract

Present communication reports the diversity of beetles from Kopargaon tahsil. The study period was from June 2015-May 2016 of different locality viz agro ecosystem, temporary reservoir and local residential rural area. Total of 29 species was recorded under 23 genera belonging to 8 families. Scarabaeidae was most divers family with 8 genera and 12 species followed by Cerambycidae with 4 genera and 4 species, Elateridae with 1 genera and 1 species, Meloidae with 2 genera and 3 species, Tenebrionidae with 2 genera and 3 species, Coccinellidea with 3 genera and 4 species, Buprestidae with 2 genera and 1 species, and Trogosiitidae with 1 genera and 1 species. Field based observation indicate relative abundant of beetles in monsoon than in winter and summer.

Keywords: Diversity, coleopteran fauna, seasonal variations, Kopargaon tahsil.

Introduction

Coleoptera (Linnaeus, 1758) is an exceedingly diverse order of class Insecta. They are distributed worldwide and are adapted for every possible habitat on our planet (except marine and polar regions)[1]. Habitat and food specificity make them ecologically and economically significant as indicator species and pests respectively[2]. The World record of identified species is 3,50,000[3] where as 17,431 species have been reported from India[4]. The beetle diversity is enormous; they display a great deal of ecological importance. Some of them are specialized feeder of animal and plant debris[5], while some are not. Many of species are destructive; by feeding on vital plant parts like flowers, fruits and seeds, which ultimately damage our economy. Numbers of the predatory species are important biological control agents of agricultural pests[6]. For example, beetles of the family Coccinellidae (lady bugs) feeds on insect pest like aphids that damages crops. They also play a crucial role in the ecosystem as a pray of several Pisces, Aves and Mammals. The present study helps in understanding the seasonal variation in the diversity of beetles from Kopargaon tahsil.

Materials and methods

Study area: Geographical location of Kopargaon tahsil is in between 19°53′ North latitudes and 74°29′ East longitude. The temperature varies from 15-41°C. The major freshwater source is Godavari River, ephemerals and irrigation canal. The region has a large area under crop cultivation.

The beetles were collected from diverse areas of Kopargaon tahsil as crop land, water bodies and grassland terrain. Light trap method was used for insect collection, majority of insect were collected between 06:00pm - 9:30pm. Pitfall trap as well as hand picking was also applied.

Filed visit was undertaken every 15 days, specimen was collected and preserved as per the standard procedure, and specimens were identified with the help identification literature and manuals[7-9] as well as different websites from the internet.

Results and discussion

A total of 29 species of 23 genera and 8 families were recorded. The Family wise distribution of the specimen collected is depicted in the pie chart. The effect of seasonal variation was noted and compared within the families during this period. Graphical representation of each season is also illustrated. Monsoon being the most favourable season of the beetles.

Literature survey indicates, V.G. Thakare and V.S. Zade surveyed the Melghat Tiger reserve and enlisted coleopteran diversity in the region. They have reported a total of 12 species belonging to 5 families[10]. Kazimi and Ramamurthy recorded 102 species belonging to 13 families from Thar Desert Rajasthan, India[11]. Pawara R. H et al. recorded 35 species belonging to 28 genera from Jalgaon district[1]. S.R. Aland et al. investigates 152 species under 101 genera belonging to 25 families from Amba Reserve forest, Western Ghat Kolhapur[12]. Dabhade *et al.* reported 25 beetles' species belonging to the 8 super families and 11 families from Mangrulpir Tahsil, Dist. Washim, and Maharashtra[13]. Namita Gajendra and Prasad S.K. updated the checklist of coleopteran fauna from Chhattisharh[14].

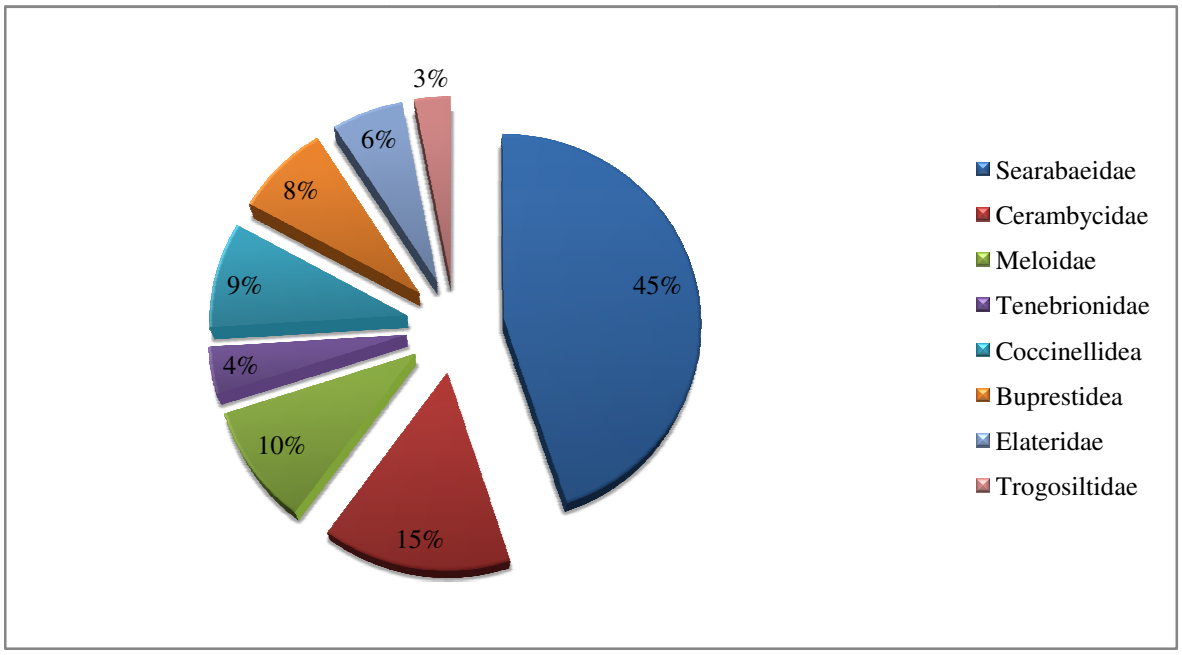

Figure-1: Family wise distribution of beetles on base of field observation from Kopargaon.

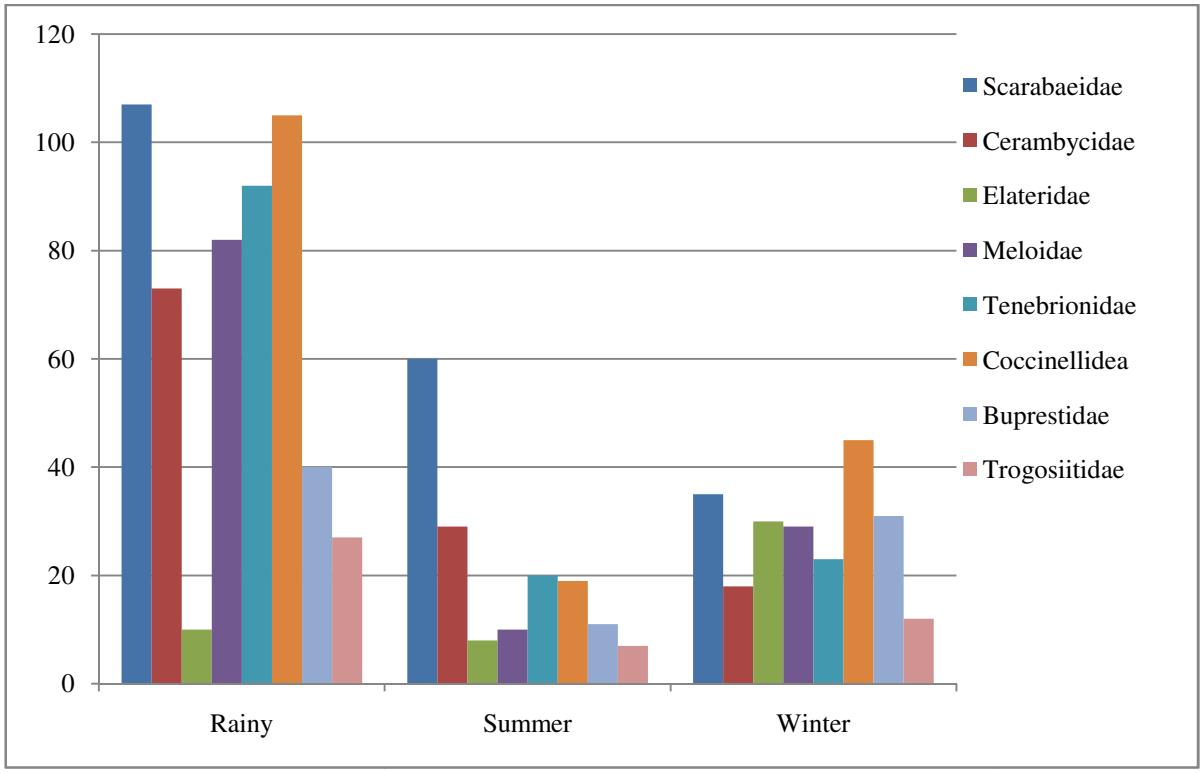

Figure-2: The season wise abundance of beetles.

Conclusion

This is a first report on the coleopteran fauna of Kopargaon tahsil, Dist. Ahmednagar. A total of 35 specimens of 8 families and 28 genera were recorded, availability of such a large number of specimen in short duration demonstrate richness of insect fauna of the region. On the basis of field observations it is concluded that beetles are most populous during the monsoon. Their population declines noticeably in winter and summer. Perhaps, many a species hibernate or aestivate to overcome the unfavourable climatic condition.

Table-1: The Diversity of Beetles recorded from Kopargaon Thasil.

Family	Generic name
Scarabaeidae	*Canthon vigilans* *Chiloloba orientalis* D and R *Onitis alexis* Klug *Deltochilum gibbosum* Fabricius. *Holotrichia fissa* Brinske *Onitis philemon* Fabricius *Onthophagus catta* Fabricius *Onitis philemon* Fabricius *Onthophagus dama* Fabricius *Onthophagus nasalis* Arrow *Pentodon idiota* Herbst. *Rhyniptia indica*
Cerambycidae	*Aeolestes holocericea* Fabricius *Aprodisium cantor* Hope. *Batocera rufomaculata* DeGeer *Monochamus nivosus* White
Elateridae	*Agrypnus fuscipes* Fabricius
Meloidae	*Mylabris pustulata* Oliver *Mylabris Sp* *Epicauta callosa* LeConte.
Tenebrionidae	*Platynotus belli* Fairmaire *Platynotus punctatipennis* Mulsant and Rey. *Derosphaerus Cribrum*
Coccinellidea	*Coccinella septempuncta* Linnaeus *Coccinella transvesalis* Fabricius *Cheilomens sexmaculata* Fabricius *Zygogramma bicolorata* Pallister
Buprestidae	*Chrysochror bugueti* Gory. *Sternocera sp*
Trogosiitidae	*Omorgus nodosus* Robinson.

Acknowledgment

The author acknowledges the invaluable help rendered by the Dr. S. B. Dahikar, Principal and Head of Zoology department, Dr. M.B. Shinde, Sanjivani Arts Commerce and Science College, Kopargaon, MH, India.

References

1. Pawara R.H., Patil N.G., Parawa J.V., Gavit P.J. and Ishi S.S. (2014). Beetles of Jalgaon District of Maharashtra, India. *Bio life.,* 2(3), 970-973.

2. Wankhade V., Manwar N. and Malu A. (2014). Preliminary Studies On Diversity of Order Coleoptera at Sawanga-Vithoba Lake Region, District Amravati M.H., India. *Journal of Entomology,* 11(3), 170-175.

3. New T.R. (2007). Beetles and Conservation. *J. Insect Conserv*., 11, 1-4.

4. Bharamal D.L., Koli Y.J. and Bhawane G.P. (2014). An Inventory of the Coleopteran Fauna of Sindhudurg District, Maharashtra, India. *International journal of Current Microbiology and Applied Sciences,* 3(12), 189-193.

5. Banerjee Moitryee (2014). Diversity and Composition of Beetles (Order - Coleoptera) of Durgapur, West Bengal, India. *Psyche Hindawi Publication Corporation, 792746*, 1-6.

6. Desai A.E., Bhamre P.R. and Deore S.R. (2015). First Record of Predatory Ladybird Beetles (Coleoptera Coccinellidae) From the Nasik District (Maharashtra), India. *International Science Journal, DAMA International,* 2(3), 7-16.

7. Lindroth C.H. (1992). Ground Beetles (Carabidae) of Fennoscandia A Zoogeographie Study Part I Specific Knowledge Regarding the Species 1992. *Amerind Publishing Co. Pvt. Ltd.,* New Delhi, India.

8. Bousquest Y. (1990). Beetles Associated with Stored Product in Canada: *An Identification Guide. Research Branch, Agriculture Canada, Canada,* ISBN: 9780660132662, 220.

9. Choate P.M. (2001). Manual for the identification of Ground beetles (Coleoptera: Carabidae)(including tiger beetles) of Florida. Department Entomology and Nematology University of Florida. http://www.entnemdept. ufl. edu/choate/florida_carabidae_new.pdf

10. Thakare T.V. and Zade V.S. (2012). Diversity of Beetles (Insect Coleoptera) From Vicinity of Semadho Makhala Road, Sipna Range, Melghat Tiger Reserve, (M.S) India. *Bioscience Discovery* 3 (1), 112-115.

11. Kazim S.I. and Ramamurty V.V. (2004). Coleopteran (Insect) Fauna from the India Thar Desert, Rajasthan. *Zoo's Print J*., 19(4), 1447-1448.

12. Aland S.R., Mamlayya A.B. and Bhawane G.P. (2012). Diversity of Beetles (Insect: Coleoptera) In and Around Amba Reaerve Forest, Western Ghat, Kolhapur. *Avishkar-Solapur University Research Journal,* 2, 31-41.

13. Dabhade D.S., Shinde A.H., Tayade S.N., Kulkarni M.D. and Lohiya V.N. (2012). A Study on Beetle Diversity in Mangrulpir Tahsil, Dist.Washim, Maharashtra. *Multilogic in Science,* 2(3), 45-49.

14. Gajenara N. And Prasad S.K. (2015). A Review of Coleoptera Diversity of Chhattisgarh: Updated Checklist 2015. *International Journal of Science and Research (IJSR),* 5(4), 711-714.