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Biodiversity Studies of Insect Fauna Order Coleoptera of Ajmer

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Abstract: *Ajmer is located in the center of Rajasthan (INDIA) between 25 ^{0} 38 " and 26 ^{0} 58 " north 75 ^{0} 22" east longitude covering a geographical area of about 8481sq km hemmed in all sides by Aravalli hills . About 7 miles from the city is Pushkar lake created by the touch of lord Brahma. The Dargah of khawaja Moinuddin chisti is holiest shrine next to Mecca in the world. Ajmer is abode of certain flora and fauna that are particularly endemic to semi-arid and are specially adapted to survive in the dry waterless region of the state. Coleoptera. Availability of beetles were more during the night hours and population seemed to be Confined to the light areas.Beetles mean sheathed wings means two pairs of wings are present. Beetles have been Studied for centuries. Following Beetles are recorded in AJMER.*

Key words: *Ajmer, Faunal diversity, Coleoptera, Aravalis.*

I. Introduction

Ajmer is located in the center of Rajasthan (INDIA) between 25 ^{0} 38 " and 26 ^{0} 58 " north Latitude and 73 ^{0} 54 " and 75 ^{0} 22" east longitude covering a geographical area of about 8481sq km hemmed in all sides by Aravalli hills . About 7 miles from the city is Pushkar lake created by the touch of lord Brahma. The Dargah of khawaja Moinuddin chisti is holiest shrine next toMecca in the world.

Ajmer is abode of certain flora and fauna that are particularly endemic to semi-arid and are specially adapted to survive in the dry waterless region of the state. Coleoptera Beetles means sheathed wings means two pairs of wings are present.

Availability of beetles were more during the night hours and population seemed to be Confined to the light areas.

The order contains more species than any other order, constituting almost 25% of all known animal life-forms. About 40% of all described insect species are beetles (about 400,000 species), and new species are discovered frequently. The largest taxonomic family, the Curculionidae the weevils or snout beetles), also belongs to this order.

The diversity of beetles is very wide-ranging. They are found in almost all types of habitats, but are not known to occur in the sea or in the polar region They interact with their ecosystem 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.

Certain species are agricultural pests, such as the Colorado potato beetle Leptinotarsa decemlineata, the boll weevil Anthonomus grandis, the Red flour beetle Tribolium castaneum, and the mungbean or cowpea beetle Collosobruchus maculates while other species of beetles are important controls of agricultural pests. For example, beetles in the family Coccinellidae ("ladybirds" or "ladybugs") consumeaphids, scale insects, thrips, and other plant-sucking insects that damage crops.

II. Methodology

Field observations were made during March to April and September to November in different areas of Ajmer East, West, North and South AJMER with varied habitats like gardens, hilly areas parks mountains, vegetable areas , open fields, agricultural areas and other cultivated areas.

III. Observations and Results

During the course of present field investigations 180 families have been reported. The detail of Family, name of species and common name are given below . Tenebrionoidea was found to be most dominant Super family , followed by Super family Cucujoidea , followed by Elateroidea and then Scarabaeoidea followed by Adephaga.

Some species were found in all months except extreme winters i e December and January February and extreme summer May June. Some species were quick fliers others were shy in nature.

The present study reveals that Carabidae and Dytiscidae Were the first to emerge (March) and Curculionidae was the most late arrival emerging in the month emerging in the month of April. The peak Beetle activity was observed in the month of July to October.

Order Coleoptera
Suborder Adephaga (Schellenberg 1806).
Amphizoidae (Aquatic beetle Trout stream beetle Amphizoa striata.)
Aspidytidae (Cliff water beetles Aspidytes niobe.).
Carabidae (ground beetles).
Dytiscidae (Water diving beetles).
Gyrinidae (Whirling beetles).
Haliplidae(Water beetles crawling).
Hygrobiidae (Aquatic beetles native to Europe, N. Africa, China and Australia).
Meruidae (Aquatic beetles Meru phyllisae).
Noteridae (Burrowing water beetle).
Rhysodidae (Wrinkled bark beetle).
Trachypachidae (False ground beetle leaf litter conifer).

Suborder Archostemata Kolbe, 1908.
Crowsoniellidae (Monotypic sp) Italy calcareous soil base of chestnut tree.
Cupedidae Tenomerga mucida .
Jurodidae (East Russia).
Micromalthidae (Telephone pole beetle).
Ommatidae (Australia and South America).

Suborder Myxophaga
Hydroscaphidae(Water b Skiff Hydroscapha natans).
LepiceridaeMyxophagan beetles.
Sphaeriusidae (Sphaerius acaroids).
Torridincolidae (Torrent beetle)

SubOrder Polyphaga
Infra order a. Bostrichiformia
a 1 Super family Bostrichoidea
Anobiidae
Bostrichidae
Dermestidae (Skin beetle).
Jacobsoniidae
Nosodendridae
a 2 Superfamily Derodontoidea
Derodontidae
b Infra order Cucujiformia
b 1 Super family Chrycomeloidea
Cerambycidae (long horn beetle)
Chrysomelidae (Leaf beetle)
Bruchidae and Cassidae
Megalopodidae
Orsodacnidae

Superfamily cleroidea
Acanthocnemidae
Chaetosomatidae
Cleridae
Melyridae
Phloiophilidae
Phycosecidae

Prionoceridae
Trogossitidae

Super family cucujoidea
Alexiidae
Biphyllidae
Boganiidae
Bothrideridae
Byturidae
Cavognathidae
Cerylonidae

Coccinellidae (lady birds)
Corylophidae
Cryptophagidae
Cucujidae
Discolomatidae
Endomychidae
Erotylidae
Helotidae
Hobartiidae
Kateretidae
Laemophloeidae
Lamingtoniidae
Languriidae
Latridiidae
Monotomidae
Nitidulidae
Passandridae
Phalacridae
Phloeostichidae
Propalticidae
Protocucujidae
Silvanidae
Smicripidae
Sphindidae

Super family curculinoidea
Anthribidae
Attelabidae
Belidae
Brentidae
Caridae

Curculionidae (snout beetle true weevil)
Scolytinae bark beetle
Ithyceridae
Nemonychidae

Super family Lymexyloidea
Lymexylidae

Super family Tenebrionoidea
Aderidae
Anthicidae
Archeocrypticidae
Boridae
Chalcodryidae
Ciidae

Melandryidae
Meloidae gyllenhal blister beetle
Mordellidae
Mycetophagidae
Mycteridae
Oedemeridae
Perimylopidae
Prostomidae
Pterogeniidae
Pyrochroidae
Pythidae
Ripiphoridae
Salpingidae
Scraptiidae
Stenotrachelidae
Synchroidae
Tenebrionoidea (Darkling beetle false ground beetle.)
Tetratomidae
Trachelostenidae
Trictenotomidae
Ulodidae
Zopheridaer

Infra order Elateriformia
Superfamily Buprestoidea
Buprestidae
Schizopodidae
Super family Byrrhoidea
Super family Dascilloidea

Superfamily Elateroidea
Artematopodidae
Brachypsectridae
Cantharidae (Soldier and Sailor beetles)
Cerophytidae
Drilidae
Elateridae (Click beetles)
Eucnemidae
Lampyridae
Lycidae
Omalisidae
Phengodidae
Plastoceridae
Podabrocephalidae
Rhinorhipiodae
Telegeusidae
Throscidae

Super family Scirtoidea
Clambidae
Decliniidae
Eucinetidae
Scirtidae

Infra order Scarabaeiformia
Superfamily Scarabaeoidea
Belohinidae
Bolboceratidae
Ceratocanthidae

Diphyllostomatidae
Geotrupidae
Glaphyridae
Glaresidae
Hybosoridae
Lucanidae (Stag beetle)
Ochodaeidae
Passalidae
Pleocomidae
Scarabaeidae
Dynastidae(rhinoceros beetle)
Trogidae

Infraorder Staphyliniformia
Superfamily Hydrophiloidea
Histeridae
Hydrophilidae
Sphaeritidae
Synteliidae

Superfamily Staphylinoidea
Agyrtidae
Hydraenidae
Leiodidae
Ptiliidae
Scydmaenidae
Silphidae
Staphylinidae (rove beetle)
Scaphidiinae
Pselaphinae

SubOrder Protocoleoptera
Super family Tshekardocoleoidea
Tshekardocoleoidae
Labradorocoleoidae
Oborocoleoidae

Superfamily permocupedoidea
Permocupedidae
Taldycupedidae

Superfamily Permosynoidea
Ademosyndidae
Permosynidae

Table 1 Beetles of AJMER

S. No.	Family/Scientific name	M	Abundance	Habitat
1	*Amphizoidae*	*Rs*	*C*	*A*
2	*Aspidytidae*	*Rs*	*C*	*A*
3	*Carabidae*	*Rs*	*C*	*A*
4	*Dytiscidae*	*Rs*	*C*	*A*
5	*Gyrinidae*		*C*	*A*
6	*Haliplidae*	*Rs*	*C*	*A*
7.	*Hygrobiidae*		*C*	*A*
8	*Meruidae*	*Rs*	*C*	*A*
9	*Noteridae*	*Rs*	*C*	*A*
10	*Rhysodidae*	*Rs*	*C*	*A*
11.	*Trachypachidae*	*Rs*	*C*	*A*
12.	*Crowsoniellidae*	*Rs*	*C*	*T*
13	*Cupedidae*	*Rs*	*C*	*T*
14	*jurodidae*	*Rs*	*F*	*T*
15	*Micromalthidae*	*Rs*	*C*	*T*

16	*Ommatidae*	*Rs*	*C*	*T*
17	*Hydroscaphidae*	*Rs*	*C*	*T*
18	*lepiceridae*	*Rs*	*C*	*T*
19	*Sphaeriusidae*	*Rs*	*C*	*T*
20	*Torridincolidae*	*Rs*	*C*	*T*
21	*Anobiidae*		*C*	*T*
22.	*Bostrichidae*	*Rs*	*C*	*T*
23.	*Dermestidae*	*Rs*	*C*	*T*
24	*Jacobsoniidae*	*Rs*	*C*	*T*
25	*Nosodendridae*	*Rs*	*C*	*T*
26	*Derodontidae*	*Rs*	*C*	*T*
27	*Cerambycidae*	*Rs*	*C*	*T*
28	*Chrysomelidae(bruchidae and cassidae)*	*Rs*	*C*	*T*
29	*Megalopodidae*	*Rs*	*C*	*T*
30	*Orsodacnidae*	*Rs*	*C*	*T*
31	*Acanthocnemidae*	*Rs*	*C*	*T*
32	*Coccinellidae*	*Rs*	*C*	*T*
33	*Curculionidae*	*Rs*	*C*	*T*
34	*Meloidae*	*Rs*	*O*	*T*
35	*Scraptiidae*	*Rs*	*C*	*T*
36	*Tenebrionidae*	*Rs*	*C*	*T*
37	*Cantharidae*	*Rs*	*C*	*T*
38	*Elateridae*	*Rs*	*C*	*T*
39	*lucanidae*	*Rs*	*C*	*T*
40	*Scarabaeidae*	*Rs*	*C*	*T*
41.	*Dynastidae*	*Rs*	*C*	*T*
42.	*Hydrophilidaei*	*Rs*	*C*	*T*
43.	*Silphidae*	*Rs*	*C*	*T*
44.	*Staphylinidae*	*Rs*	*C*	*T*
45.	*Tshekardocoleoidae*	*Rs*	*C*	*T*
46.	*Permocupedidae*	*Rs*	*C*	*T*
47.	*Ademosyndidae*	*Rs*	*C*	*T*
48.	*Permosynidae*	*Rs*	*C*	*T*

Rs- Resident, Sm- Summer visitor, Wm- Winter Visitor, C- common, F- Frequent, O- Ocassional, R- Rare, T – Terrestrial, A-Aquatic.

IV. Discussion

During the course of present field investigation , 180 species of beetles were Observed. The detail list of family, name of species habitat, status, abundance is Provided.

Tenebrionoidea was found to be most dominant Super family , followed by Super family Cucujoidea , followed by Elateroidea and then Scarabaeoidea followed by Adephaga.

The present study reveals that Carabidae and Dytiscidae Were the first to emerge (March) and Curculionidae was the most late arrival emerging in the month emerging in the month of April. The peak Beetle activity was observed in the month of July to October.

There was no beetle activity during peak summer (May , June) and peak winter (December January February). The overall beetle activity was observed April during Night and September, October, November night .Depending upon weather, month, season, host plant temperature and type of species concerned.

V. Conclusion

The present field investigation revealed that district Ajmer is rich in floral and faunal Wealth. Specially in coleopteran beetle diversity. However its biological diversity not been documented till date. We can conclude that coleopteran fauna of the area is increasing . The area needs to be continuosly monitored and efforts be made to document its unknown floral and faunal wealth and there is need to have a vision document on the sustainable development of the district care and focus on documentation and conservation of its rich biodiversity.

The Aravallis are being continuously cut for house construction and urbanization. There should be a check on the activity.

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