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A PREMLIMINARY CHECKLIST STUDY OF ODONATA FAUNAL DIVERSITY IN AGRO AND RIPARIAN ECOSYSTEM

Dr Jisha Krishnan R.K., Assistant Professor, Department of Zoology, MES KEVEEYAM college Valanchery

Abstract

Dragonflies and damselflies, collectively called Odonates, are one of the most common insects flying over forest, fields, meadows, ponds and rivers. Approximately 6500 extant species in over 600 genera and 28 families are known all over the world. About 474 species in 112 genera and 19 families are identified from India, out of which 184 species are from Kerala. Here the main objective was to identify and analyse the pattern of Odonata diversity in both Agro and Riparian ecosystem in Valanchery, Kerala during September to November 2018. Here a total of 395 Odonates consisting of 17 different species categorized under 4 different families were observed. The representing families are Libellulidae, Coenagrionidae, Platicnemididae and Calopterygidae. Both ecosystems showed maximum species richness during September and October indicating the high availability of food and favorable aquatic habitat. The comparative study made between these 2 ecosystems showed that Agro ecosystem is the more diverse and species rich study area compared with Riparian ecosystem. The Agro ecosystem supported maximum number of dragonfly members while Riparian ecosystem by damselfly members. Libellulidae and Coenagrionidae represent the most dominant Dragonfly and damselfly family under study. Hence the present study concluded that Odonates can be used as indicators of healthy ecosystem.

Key words: Odonata,Diversity,Ecological indicators

Odonata is an order of aquatic palaeopterous insects consists of about 6500 extant species in 600 genera. Odonata consists of three groups: Anisoptera (dragonflies), Zygoptera (damselflies), and Anisozygoptera. Adult odonates are medium to large in size, often conspicuous and brightly colored insects and are aerial predators hunting by sight. They can be easily diagnosed by having long and slender abdomen, large compound eyes, 3 ocelli, very small antennae, mandibulate, mouthparts and two pairs of membranous wings, complex wing venation with many cells. They generally are found at or near fresh water although some species roam widely and may be found far from their breeding sites. The larvae are predatory, aquatic and occur in all types of inland waters.

Dragonflies differ from damselflies in several easily recognizable traits. They are strong fliers with fairly robust bodies and at rest hold their wings either out to the side or out and downward. Damselflies tend to be less robust, appearing weak in flight. Most species hold their wings folded back over the abdomen at rest. Dragonfly eyes occupy much of the animal's head, nearly touching each other across the face. In damselflies, there is typically a gap between the eyes.

Identification using Odonata can be based on the wing venation. In Anisoptera, (Dragonflies) the hind wing is broader than the forewing and in both wings a cross vein divides the discoidal cell into a triangle and super triangle. In Zygoptera the two pairs of wings are almost exactly equal in shape, size and venation. There may be numerous cross veins. Odonates are aquatic or semi-aquatic as juveniles. Adults are most often seen near bodies of water like streams, ponds and river and are frequently described as aquatic insects. They are carnivorous throughout their life mostly feeding on smaller insects.

Globally there is an estimate of 6256 species distributed in 39 families under 686 genera (Subramanian and Babu, 2017). The 39 families falling into 3 distinct suborders consisting of 27 families under Suborder Zygoptera and 11 families under Suborder Anisoptera and only one family under Suborder Anisozygoptera. About 488 species and 27 subspecies distributed in 154 genera and 18 families are known to be existing in India. This insect order is told to be abundantly found in Western Ghats, Eastern Himalayas and Andaman Nicobar islands in India. About 142 species spreading in 74 genera and