

Study of Caddisfly Larvae in Veerbhadra Barrage, Rishikesh

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Abstract

The diversity of caddisfly larvae found in various seasons in the Rishikesh barrage. Caddisflies have aquatic larvae. Although caddisflies may be found in water bodies of changing qualities, the number of different species of caddisfly assemblages is usually through to indicate clean water. Most types of caddisflies are indicating to pollution sensitive. Caddisflies are a good indicator of water quality because they live with in a diversity of habitat. This feature is very important in biological analysis of water bodies. They are very important part of food Web in freshwater ecosystem.

Keywords: Caddisfly Larvae, Aquatic Environment, Pollution Sensitive, Water Indicator, Diversity, Bio-Indicator.

Introduction

Caddisfly are aquatic insects which found in fresh water body. Caddisfly are very necessary for aquatic ecosystem benefaction, mostly as secondary producer and also bio-indicator, determining the health of the ecosystem. Caddisflies are small holometabolous insects closely related to lepidoptera. Most caddisflies development in freshwater environment.

Review of literature

Since the beginning of the 20th century there have been numerous publications to study that caddisfly larvae.

1. Thomson RE (2019) A revision of the Neotropical caddisfly genus *Ascotrichia* Flint, 1983 (Trichoptera, Hydroptilidae). Peerj: 7: e7560.
2. John C. Morse, Frandsen, Graf Wolfram, Jessica A Thomas. 2019. Insects 10(5): 125. Diversity and Ecosystem Services of Trichoptera.
3. Caspar A Hallmann, Theo Zeegers et al. 2020; Insect Conservation and Diversity 13 (2), 127-139, 2020. Declining abundance of beetles, moths and caddisflies in the Netherlands.
4. Sonja M. Ehlers, Tamara Al Najjar, Jochen H.E. Koop. Environmental Science and Pollution Research 27, 22380-22389(2020). PVC and PET microplastics in caddisfly (*Lepidostoma basale*) cases reduce case stability.
5. Allan P.M. Santos, Leandro L. Dumas, Ana L. Henriques-Oliveira, W.Rafael M.Souza: et al. 2020. Taxonomic Catalog of the Brazilian Fauna: order Trichoptera (Insecta), diversity and distribution.
6. Jessica A Thomas, Paul B. Frandsen, Elizabeth Prendini, Xin Zhou, 2020. Systematic Entomology. 45 (3). A multigene phylogeny and timeline for Trichoptera (Insecta).

Aims of the Study

The aim of present work is to study the caddisfly larvae in Rishikesh barrage area in the state of Uttarakhand.

1. Study of caddisfly larvae and to find out the seasonal variation in their diversity.
2. Study of caddisfly is a good indicator of water quality.

Study Area

The area investigated to study caddisfly larvae was Rishikesh barrage. It is located near the Veerbhadra Mahadav temple.

Habitat

Caddisfly larvae are most varied in cool, flowing water but have occupied a vast (spacious) range of habitats. They are known to raise (build) cases out of silk and various other materials for shelter. Most caddisfly larvae can be found in benthic habitats in temperate lakes, streams and ponds (Fig.1).



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Fig.1; Caddisfly larvae: Rishikesh barrage.

**Distribution**

Caddisfly are one of the largest group of water insects with about 7100 described species world-wide. The larvae stages of caddisfly, very numerous diets and feeding strategies inhabited a range of trophic levels and functional feeding groups from predators and filter feeders.

Larvae are mainly herbivorous feeding mainly on fragments of plants materials living vegetation and other dead organisms. Adult caddisfly can only feed on liquids, since they do not have well developed mouth parts. They feed only on plant fluid such as nectar or may not feed to all.

Material and methods

Samples were collected with the help of plankton net and preserved in 4% formalin and then examine under microscope.

Result

In Rishikesh barrage caddisfly larvae were found in all seasons except autumn season.

Discussion

I have the opportunity to work in barrage area in the state of Uttarakhand. The identification of common species was done with the help of illustrated characteristics the taxonomic experts were later consulted to confirm the identification caddisfly larva was collected from the Rishikesh barrage. It was observed that caddisfly larvae were found in, all seasons except autumn in Rishikesh barrage.

Conclusion

Caddisfly are important organisms of food Web in freshwater ecosystem. It is pollution sensitive and a good indicator of water quality.

Caddisfly larvae are mainly herbivorous, scavengers, feeding mainly on fragments of plant material, living vegetation and other living and dead organisms.

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