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Study Of Aquatic Insects Of The Man Made Reservoir In Pathardi Tahasil, Hmednagar District (ms), India

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Abstract: Insects represent the most diverse group of organisms, not only in terrestrial but also in aquatic, especially freshwater, habitats. Among the most diverse aquatic insect orders are the Trichoptera, Diptera and Coleoptera; although Ephemeroptera can locally also be very abundant and diverse., the taxonomically best known orders of aquatic insects are the caddisflies (Trichoptera), dragonflies (Odonata) and stoneflies (Plecoptera) and within the Dipterans, groups of medical importance have received special attention. The interesting aquatic insect has been constantly growing in Pathardi reservoir over the past 10 years, but scientific publications are widely dispersed and often difficult to locate. Due to the importance of aquatic organisms in environmental impact studies and biomonitoring of freshwater habitats, there is an urgent need for comprehensive studies and publications that are locally available.

Key words: aquatic insects, taxonomy, ecology, life history, biomonitoring, inventory,

Key words: Irrigation, Mohari Dam, Reservoir, Parameters.

INTRODUCTION :

Insects represent the most diverse group of organisms, not only in terrestrial but also in aquatic, especially freshwater, habitats. Among the most diverse aquatic insect orders are the Trichoptera, Diptera and Coleoptera; although Ephemeropteracan locally also be very abundant and diverse. In Costa Rica, the taxonomically best known orders of aquatic insects are the caddisflies (Trichoptera), dragonflies (Odonata) and stoneflies (Plecoptera) and within the Dipterans, groups of medical importance have received special attention. The aquatic insects have been constantly growing in Costa Rica over the past 10 years, but scientific publications are widely dispersed and often difficult to locate. Due to the importance of aquatic organisms in environmental impact studies and bio-monitoring of freshwater habitats, there is an urgent need for comprehensive studies that are locally available. In this sense, the present paper tries to give an overview on the state of knowledge and the literature published. The aquatic insects were collected using pond net (0.5 mm) from 14 study sites during December 2005 and January 2006. Seven orders and 23 families were found, with the highest number of aquatic insects from the family Ephemeroptera. The most abundant family were Baetidae and Caenidae respectively, which were very commonly found in almost all sampling sites. Plecopteras found in the upper sampling sites, which showed less polluted. The classification method of cluster analysis (UPGMA) and ordination by PCA were used to classify the sampling site (Monika Springer, 2008)

This study was aimed to study the diversity of aquatic insects and physicochemical factors of water in Mekong River. The aquatic insects were collected using pond net (0.5 mm) from 14 study sites during December 2005 and January 2006. Seven orders and 23 families were found, with the highest number of aquatic insects from the family Ephemeroptera. The most abundant family was Baetidae and Caenidae respectively, which were very commonly found in almost all sampling sites. Plecopterawas found in the upper sampling sites, which showed less polluted. The classification method of cluster analysis (UPGMA) and ordination by PCA were used to classify the sampling site. Physicochemical values, water and air temperature, pH, DO, BOD5 and nutrient were measured, only BOD5 value in some study sites was greater than class 4 standard value of the surface water quality standard of Thailand. (IsaraThani and Chitchol Phalaraksh)

STUDY AREA

The present study was conducted for one year i.e. June 2011 to Dec 2011.through the monthly sampling of

Manikdaundi reservoir. Manikdaundi dam located in western part of (190 9' N, 750 10' E) Pathardi Tahasil, which falls in Arangaon range of Balaghat, District: Ahmednagar. The reservoir is situated in southern part of Tahasil, which is hilly area with drought condition. The Manikdaundi reservoir is Minor irrigation project type of reservoir near Manikdaundi, about 12 km from Pathardi Tahasil. It is constructed during the year 1972 having height of 28.5 meter. The catchment area is 4.5 square miles, which stores 43.00 mcft water and area under submergence is 475 acres.

MATERIALAND METHODS

The analysis was based on 4 sampling sites because 4 sites showed an absence of aquatic insect species. The most abundant family was Baetidae (Ephemeroptera), followed by Chironomidae (Diptera), Corixidae (Hemiptera) and Hydropsychidae (Trichoptera) at 68, 14, 9 and 4 %, respectively. Among the Odonata, the habit of laying eggs in phytotelmata is, with one exception, limited to tropical or sub-tropical species (Corbet 1983), with over half of the 39 species known to develop in these microhabitats occurring in the neotropics. The moderate temperatures and high rainfall of the tropics make treeholes there a predictable and fairly persistent source of fresh water in moist forests where ponds and lakes are less common than they are in temperate regions, and where streams are often seasonal.

RESULT

Odonata: The country's dragon- and damselfly fauna is very well known, especially the adults, but also, to some extent, the immatures. Förster 1999, Ramírez et al. 2000, Hedström and Sahlen4 2001, Montero Moreno 2003), and the Costa Rican dragonfly fauna is considered to be the best known of all Latin-American countries (Ramírez et al. 2000). Despite this, only half of the species have their nymphal stage described and next to nothing is known about their behavior, natural history, ecology and distribution (Ramírez 1996-1997, Ramírez et al5. 2000).

Hemiptera:

The terrestrial order, 14 families occur in Central America and Costa Rica, which are considered aquatic or semi-aquatic. The aquatic hemipterans had been studied in Central America mainly by Polhemus, who published an overview on each family, and reported the presence of 636 species from 84 genera for Mesoamerica (Polhemus 1982). The same author also described and reported several species from Costa Rica (Polhemus & Hogue 1972, Polhemus 1975, 1976, 1985, Polhemus & Cheng 1976).

Lepidoptera:

The order that is primarily terrestrial with very few aquatic species is Lepidoptera, although the aquatic groups are especially well developed in Central America (Munroe 1982). In these area, larvae of the genus Petrophila (Crambidae) can very frequently be encountered in dams and can be locally very abundant. They scrape algae from the surface of stones and rocks, while other aquatic Lepidoptera larvae feed on vascular plants in standing water, some of them living in portable cases like caddisflies. Very little has been studies have focused on taxonomic descriptions of adults.

Coleoptera:

The descriptions of aquatic beetle species from several families, collected from study area. A taxonomic review for 18 aquatic and semiaquatic beetle families from Central America is given by Spangler (1982), including a comprehensive revision of the bibliography up to that date. The most frequently encountered group of beetles in lotic habitats are the riffle beetles (family Elmidae). Neotropical riffle beetles were studied mainly by Spangler, and his publications include several species descriptions and reports from Costa Rica (Spangler 1980, Spangler & Perkins 1989, Spangler & Santiago- Fragoso 1982, 1987, 1992),

Recently Springer & Acosta (2003) described the larval stage for the genus Pharceonus, previously unknown. Spangler also published on other aquatic beetle families that include. Among predaceous water beetles (Dytiscidae), several new Costa Rican species were described by Guignot (1949, 1951, 1952) and Balke (1990), Balke et al. (2002), and additional species reports can be found

Diptera:

The Diptera, more than 15 families have aquatic immature stages, which can be found in a wide variety of aquatic and semi-aquatic habitats. In Costa Rica, groups of medical interest early received special attention, for example the families Simuliidae (e.g. Vargas & Díaz-Nájera 1951, Zeledón & Vieto 1957)

Insects order	Plecoptera	Odonata	Hemiptera	Lepidoptera	Coleoptera	Diptera
Site 1	22	32	37	33	31	30
Site 2	53	56	59	61	62	67
Site 3	69	70	88	92	60	65
Site 4	22	25	20	23	33	29

Table-: Average value of insect per ml in June 2011 to Dec 2011

CONCLUSIONS

Faunal investigation of aquatic insects in the Polar Ural River revealed the presence of 83 species from 3 orders: mayflies (27 species), stoneflies (22 species) and caddisflies (34 species). 21 species are new for the Polar Ural River. Widespread and European species dominated in the fauna, however some Siberian species also occurred. 9 species have northern European populations and widely occur in Siberia.

These are Baetis feles, Cinygma lyriformis (Ephemeroptera), Mesocapnia variabilis (Plecoptera) Arctopsyche ladogensis, Hydropsyche nevae, Dicos moecus palatus, The country's dragon- and damselfly fauna is very well known, especially the adults, but also, to some extent, the immatures. For the 268 species of Odonata existing in Costa Rica, a great amount of taxonomic works have been published (Calvert 1892-1908, 1911a,b).

DISCUSSION

This summer species has a very short flight period, indeed, it is encountered only in mid-August. The

Megachilidae often called leafcutter have a long and slender glossus. The species of this family are easily recognized for their pollen collection device: a brush of hairs on the ventral (scopa). This consists of stiff hair, tilted backwards, but a representative parasite of this family (Coelioxys, Stelis) does not meet this description.

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