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Control of Mosquitoes with the help of Aquatic instect

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Aquatic insects
By

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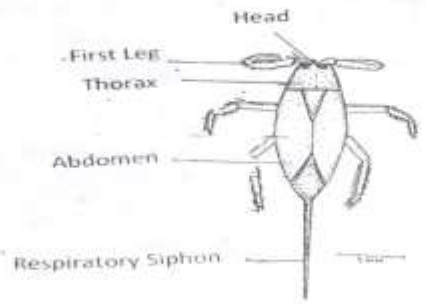
Control of the mosquitoes is a major problem. Many attempts have been made on this subject realising it`s importance a survey was made at Rewa (M.P.) India about the population, habit and habitat of these insects, after which studies were carried out on the use of aquatic insects on the control of the mosquitoes.

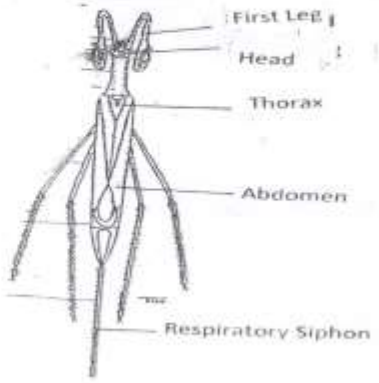
Population of the mosquitoes in Rewa (Ashok Mishra 1980 phd thesis A.P.S. University Rewa)Consists of 21 Species this includes 7 anopheles, 11 culex and 3 aedes variety's . These lay their eggs in drains, ditches and ponds containing stagnant water. Eggs develop into larval and pupal stages, In pupal forms meta morphosis occurs and these change into adults, in developing stages it is easier to destroy them with the help of aquatic insects much common in algal flora of Behar and Bechia rivers and Lalpa, Bahaurian, Ram sagara, Chaurhalian, Lakhoribag ponds of Rewa.

Aquatic insects belong to class-insecta, order-homoptera, Family-Nepidae which includes genus-Laccotrephus and Ranatra (distant 1906). These have been tabulated and are as shown bolow

S. No	Genus Laccotrephus	Body Length from tip of the head to he and of respiratory siphon
1.	Laccotrephus maculates (Fabr.)	49 to 60 m.m.
2.	Laccotrephus ruber (Linn.)	27 to 39 m.m.
3.	Laccotrephus griscus (Guer.)	17 to 19 m.m.
	Genus Ranatra	
1.	Ranatra elongata (Fabr.)	50 to 120 m.m.
2.	Ranatra digitata (Hafiz and Pradhan.)	54 to 58 m.m.
3.	Ranatra Sordidula (Dohrn.)	46 to 48 m.m.
4.	Ranatra titiaensis (Hafiz and Pradhan.)	35 to 36 m.m.



Laccotrephus



Ranatra

Body of the insects consists of head, thorx, and abdomen.head bears proboscis this is used for sucking jusces from the body of the prey. Thorax bears three pair of legs and two pair of wings. First pair of leg iis conspicuous and raptorial, coxae are short, the tibia and tarsus working against grooved femur efficiently used for catching the pray, after which the prey is brought near the proboscis for sucking its juisces. Tip of the abdomen bears long tubular structure, the respiratory siphon this is timely brought above the surface of water and is used for sucking the air for respiration.

Colour of insects resembles with algal flora it help these insects to remain hidden from the enemies. Surface of the body bears chitinous covering, this makes them to resist against unfavorable condition.

Breeding season extends from july to December months, in these months insects lay their eggs on the stems of sunken vegetation, eggs develop in t o nymphs which are similar to adults these start feeding soon on larval and pupal stges of the mosquitoes.

Aquatic insects when kept along with the larve and pupae of the mosquitoes of different species there was no preference on any one species. In bigger species Ranatra elongate and laccotrephus maculatus feeding rate was higher then any other species, feeding rate depends much on the presence of food and number of insects in a particular place.

Drain, ditches of cities, towns and villages contain wastes of calcium carbonate, salt (calcium chloride) and residues of urea and faeces. Attempt was made for seeing t : viability of these insetcs in these wastes and it was noticed that insects survived even in 40 to 60% solutions of these substances.

These insects are able to travel small distances out of water in search of food and water. This gives them more advantageous position over Gambusia (larvae vorous fish Hora, 1927) which survives only in water.

Use of insecticides in control of the mosquitoes pollutes the water while use of aquatic insects gives a pollution free control.

Destruction of larval and pupal stages effects the production of new generations of mosquitoes by applying this method in larger areas total control on the population of mosquitoes is easly achieved

Summary

The population of the mosquitoes at Rewa is dominated by culex mosquitoes. Larval and pupal stages of mosquitoes are lavishly used as food by insects of the family nepidae (chandan nishra 1989) adaptations as chitnous covering, aerial mood of respiration (saini 1983) keeps them in a advantageous position than other types of control measures. By using this method control on the larval and pupal stages is achived this would adversary effect the population of the mosquitoes and would be help full in the total control of the these insects.

Thanks

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