TAXONOMIC STUDIES ON SUBFAMILY ANOPHELINAE (CULICIDAE: DIPTERA) AND IMPACT OF ECOLOGICAL CHANGES ON ITS MAJOR VECTOR SPECIES FROM PUNJAB

ABSTRACT

Biodiversity encompasses the variety of all living organisms on our planet, the mother earth. India has rich biological diversity and is the 12th largest megabiodiverse country of the Globe. Mosquitoes are unquestionably the most important vectors of various vector-borne diseases. Mosquitoes belong to family Culicidae and order Diptera. At present, there are more than 3,524 species classified into two subfamilies i.e. Anophelinae and Culicinae and 113 genera (Harbach, 2012; Knight & Stone, 1977) of family Culicidae in the world. As many as, 403 species and subspecies grouped under two subfamilies and 50 genera (Harbach, loc.cit.) of mosquitoes are known from India and that is about 10% of the Global mosquito fauna. Genus Anopheles Meigen has 422 species, out of which 60 species are vectors of malaria in the Globe. Out of the above said 60 species of this genus only, 10 are vectors of malaria in India. Mosquitoes are characterized by an elongated needle like mouth parts (Proboscis), plumose antenna and long slender legs. The narrow wings often covered with minute scales. Fine scales cover mosquito body which varies in coloration from white silver or golden to very dark. The scale coloration and their patterns/arrangements are often useful for identifying different species. A total number of 17 species referable to genus Anopheles Meigen and grouped under two subgenera were recorded and authentically identified during research work period of three years. Out of these 17 species, 12 were already known from Punjab state whereas, five species have been reported for the first time and thus are new records. Scanning Electron Microscopic studies have been conducted on immature stages, cibariumm, male and female genitalia of some species. Besides this, host preference, seasonal prevalence and activity period of some species have also been discussed.

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