

Do aquatic insect studies pay attention in India?

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Abstract

Scientists debate whether global warming and anthropogenic impact will lead to migration and extinction of insect species or increase in abundance of vector species. Hence there is a need to study the taxonomy, ecology and molecular biology of insects at a global level. In India, about 61,000 species of insects are recorded and it accounts 7% of the world species. Of these, more than 3,500 species of aquatic insects are associated with freshwater environments during some part of their life. Aquatic insects play an important role to energy transfer in freshwater ecosystem and used for monitoring the health of aquatic environments. A total of 13 orders are found in aquatic insect community namely, Coleoptera, Collembola, Diptera, Ephemeroptera, Hemiptera, Hymenoptera, Lepidoptera, Mecoptera, Megaloptera, Neuroptera, Odonata, Plecoptera and Trichoptera. Among them, species from trichopterans, dipterans and odonates are greatly known in this region. Less than 300 species are described in Coleoptera, Hemiptera, Plecoptera, Ephemeroptera and Collembola and few species has been recorded in the other aquatic insect orders. Recently, some studies on taxonomy and ecology of aquatic insects have been conducted in India due to threatening of deforestation, land reclamation, industrialization, overgrazing and anthropogenic impacts. Although descriptions of community structure and water quality assessment using aquatic insects with molecular approaches are widely used in the world, little attention has been received in India except Culicidae (mosquitoes). The intact information of morphology, life cycle, distributional pattern and molecular description is available for two or three groups of aquatic insects, while the other groups are ambiguous in India. The adjacent regions of India in Asia, i.e. China, Hong Kong, Japan and Vietnam, received considerable studies on aquatic insects. However, aquatic insects of India remains poorly studied.