ABSTRACT

Podostemaceae are aquatic angiosperms typically growing on rocks in cascades, waterfalls and river rapids. The ecological and phytochemical aspects of selected members of Podostemaceae in Kerala have been investigated. The investigation includes field studies as well as experiments in the laboratory.

Preliminary surveys were carried out selecting 13 sites from six rivers of Kerala. Morphological variations of 15 species belonging to 10 genera were noted. Habitat and geology of these sites are discussed based on rock analysis. 10 species belonging to six genera have been subjected to detailed vegetation analysis and the parameters such as phenology and association with algae are also discussed. The role of physico-chemical factors such as turbidity, temperature, pH, dissolved oxygen, carbon dioxide, total hardness, alkalinity, chloride, nitrate and phosphate and their impact on the growth of Podostemaceae have been traced by analyzing the water samples collected at regular intervals during the year 2004-2005. Selecting one of the study sites, the response of taxa in relation to the variation in ecological conditions is also dealt with in detail.

*Polypleurum stylosum* and *Indotristicha ramosissima* have been selected to study the phytochemistry, nutritive value and biological activities. The results are found to be relevant.

The present work indicates that taxa investigated have both environmental and phytochemical significance. Continuous monitoring of these taxa can certainly provide an index for biodiversity, local endemism and also for the habitat loss of entire ecosystem.

Key words

Podostemaceae, ecology, rock analysis, vegetation analysis, phytochemistry, nutritive value, biological activities.