

Taxonomy in Relation to Ecology



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Introduction

- ❑ Modern taxonomists consider that the gross morphological characters are not always sufficient to provide means of differentiation in determining the genetically and evolutionary relationship between taxa.
- ❑ To achieve this the taxonomical evidences from anatomy, embryology, palynology, cytology, palaeobotany, ecology, biochemistry etc. are discussed.
- ❑ Dr. V. Puri has said “One of the most significant modern trends in plant taxonomy is towards a synthesis between the older methods, outlook and more recent developments in our knowledge of plants”.

Plant Taxonomy : Ecology

- ❑ The relatively new science of ecology depends upon a much older one taxonomy.
- ❑ Ecological investigations are of doubtful value if they refer to plants or animals which have not been accurately identified.
- ❑ Inadequate taxonomy undermines the usefulness of ecological studies mainly because it deprives other scientists of the opportunity to conduct independent tests of published results.
- ❑ Although taxonomy and ecology are closely linked it is necessary to recognize that the two activities have very different objectives.

Plant Taxonomy : Ecology

- Taxonomy attaches particular importance to genetic and evolutionary relationships whereas ecology seeks to recognize affinities between organisms that perform similar functions or exhibit parallel responses in contemporary ecosystems.
- But may have quite different evolutionary origins. Over recent years there has been growing recognition (Southwood, 1977; Pugh, 1980; Grime, 1988; Smith, Shughart and Woodward, 1997) that, for ecological purposes

Plant Taxonomy : Ecology

- We require an alternative system to complement that already provided by classical taxonomy. In this new system organisms will be classified according to their functional characteristics and strong emphasis will be placed upon those features which are most consistently correlated with success in particular types of habitat and failure in others.
- Already, various schemes have been put forward and functional classifications have been applied to organisms as disparate as seaweeds, phytoplankton, butterflies and fungi.