

# CHAPTER I

## INTRODUCTION

## I n t r o d u c t i o n :

Pteridophytes, including ferns and fern allies, form a vast group of vascular cryptogams and are mostly confined to tropical forests. These plants represent relics of ancient past and once constituted the dominant vegetation on the earth's surface. In Indian flora, they constitute a fair composition and atleast 600 well defined species are recorded out of which 100 species belong to fern allies and 500 species to the ferns. In their distribution and diversity of form, they are considered next to angiosperms. They characterise the vegetation of tropical, sub-tropical and warm temperate forests throughout the country. Majority of them are low-growing terrestrial forms with creeping to up-right stems. Epiphytism is illustrated mostly by the members of Polypodiaceae, Hymenophyllaceae, some Davalliaceae and Aspleniaceae. In addition a few are 'tree ferns' belonging to Marattiaceae, Cyatheaceae and a few members of Blechnaceae and Athyriaceae which attain a tree like habit.

The ferns are predominantly plants of evergreen forests. However, a few representatives thrive well on saline soils by the side of sea shores. The typical representatives of these are Acrostichum aureum L. and

Pteridium aquilinum (L.) Kunh. Over four-fifths of the surface of our planet is covered with a salt solution containing, among many other constituents, approximately 0.5 M NaCl. Still, only very few groups of higher plants can withstand such conditions. These plants are called as 'halophytes' (Pallas) Shrader 1809. Mangrove is a West Indian name given to a formation of trees and shrubs inhabiting the coasts of tropical or subtropical seas. This formation is comprised of a heterogenous group of plants which are mostly limited in their distribution to the tidal zone. Succession of the various formations differs in various types of habitats. Avicennia, Rhizophora, Bruguiera, Ceriops, Sonnerattia, Lumnitzera, Agiceros are the plants forming the pioneer communities in the succession of mangrove formation. Acrostichum aureum grows as undergrowth in such mangroove forests. It grows well in brackish water region, but not as a member of the mangroves which grow in deep saline waters.

The mangroves have selected various adaptive mechanisms in the course of evolution. These adaptations are very well marked in higher plants. In order to study any type of such adaptation in Acrostichum aureum which is a common member of mangrove vegetation along west-coast of India, the morphological and anatomical studies of

the same were undertaken. The present dissertation includes the detail morphological and anatomical studies of Acrostichum aureum in relation with its halophytic habitat.

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