



Introduction

INTRODUCTION :

The Alismatidae (Halobiae) have been considered to be the most archiac group of Liliopsida because of polymery of the flowers, which have little or no fusion. Alismataceae is further considered to be the most primitive family of monocotyledons (Takhtajan, 1980; Dahlgren, 1980; Cronquist, 1981). Current taxonomic treatment lists 13 genera and about 70 species. The genera of Alismataceae are assigned into 7 tribes viz. **Sagittariinae**, **Burantiinae**, **Alismatinae**, **Luroniinae**, **Wiesneriinae**, **Damsoniinae** and **Machaerocarpinae** largely on the basis of gynoecial characters, pollen morphology and basic chromosome number (Pichon, 1946; Argue, 1976).

Wiesneria, the only genus assigned to tribe Wiesneriinae shows specialization in floral characters through the process of reduction. Although there is considerable amount of work on various aspects of Helobiae in general and Alismataceae in particular, there is little work on the genus **Wiesneria**. Only some work on anatomy (Stant, 1964) and palynology (Argue, 1976) of the genus has been carried out. There is now work on other aspects of the genus.

There are three species of **Wiesneria** viz. **Wiesneria filifolia** Hook. f. **W.schweinfurthii** Hook. f. and **W.triandra** (Dalz.) Micheli. All the three species grow in Africa while **W.triandra** is also found in India. It has been recently reported as a rare species from South India (Joseph and Chandra, 1980; Sivadasan, 1986) however, during my search for the species it was found to be common in Konkan area. It grows in almost every ditch on laterite of Konkan area of Maharashtra during monsoon and is no way rare or vulnerable as stated by C.D.K.Cook (1980)

of Zurich Botanical Garden in his monitoring on the status of some Indian endemic plants. Except anatomical work on **W.schweinfurthii** (Stant, 1964) and palynological work on **W.triandra** (Argue, 1974), the genus has received no attention.

Family Aponogetonaceae is represented by the genus **Aponogeton** L. consisting of about 45 species of true aquatic herbs (Bruggen, 1990) mainly found in Africa (17 sp.) Madagascar (11 sp), Asia (12 sp), Papua-New Guinea (2 sp) and Australia (4 sp). The family is especially well developed in Madagascar. Many of the species are very localized. Van Bruggen (1970) in his revision of Asiatic species of **Aponogeton** recorded some five species from India and two more species from Sri Lanka. All the 7 species recorded are characterized by bisexual flowers and one spiked inflorescence. Recently an interesting dioecious species, **A.satirensis** Raghvan, Kulkarni and Yadav with forked inflorescence, and unusual character in Indian species was described from Maharashtra (Raghvan et al.1982). It is interesting to note that it's very closely related species viz. **A.decaryi** grows in Africa. According to Van Bruggen both these species probably had a common ancestor (Raghvan et al.1982). Living bulbs of **A.decaryi** have been procured from Dr.J.Bogner of Germany and the plants are growing well in botanical garden of the Department. To determine the affinities and relationship of these two species, the work on morphology, anatomy, cytology, palynology and hybridization is in progress.

Wiesneria triandra and **Aponogeton satirensis** are two interesting species belonging to Helobiae. Helobiae being a most primitive

group have attracted attention of several workers. **Wiesneria triandra** and **A. satarensis** are interesting not only because they belong to most primitive group but also from plant geography, evolution, rarity and endemism point of view. There is very little work on these two species. Therefore, in present investigation, attempt have made to investigate morphotaxonomical aspects of these two interesting species.

In present thesis, the introductory chapter-I deals with the introduction to the subject and importance of the present work.

The review of literature on Helobiae in general and family Alismataceae and Aponogetonaceae in particular has been summarized in chapter-II.

Materials and Methods are described in chapter-III.

Chapter IV forms a main part of the thesis which incorporates data on detailed field observations, distribution, morphology, cytology, palynology, vegetative and floral anatomy and embryology of **Wiesneria triandra** and **Aponogeton satarensis**.

In chapter V, the results are discussed with reference to relevant and pertaining literature.

Finally summary and conclusions are given at the end of discussion.

References are cited in bibliography at the end of the thesis .