

## CHAPTER - II

### REVIEW OF LITERATURE

<sup>A</sup>  
In comprehensive review of literature on the Endogonaceae upto 1912, reflects that Bucholtz (1912) who had carried out classic studies of sexual reproduction in the family Endogonaceae, indicated that family belongs to the Mucorales of Zygomycetes. However, many early<sup>icy</sup> investigators assumed that the large globose zygosporangia, chlamydospores or sporangia were asci and placed the family in the Ascomycetes. Thaxter (1922) monographed this family and carefully delimited all 19 species known at that times. However, Thaxter (1922) who had not realized the mycorrhizal involvement of the family. Beniamino Peyronel (1923) was the first to recognize that Vesicular-Arbuscular Mycorrhizal (VAM) fungi were the members of the Endogonales. Then the ensuing <sup>th</sup> free or four decades witnessed little activity in taxonomic study of these fungi, because they were so rarely encountered. But after development of techniques for extraction of spores from soil by Gardemann and Nicolson (1963) has led to realization that Endogonaceous members are the most common of all soil borne fungi and described large number of species by their techniques. Mosse and Bowen (1968) first time published a key to recognition of some Endogone spores types and also reported that these spores may form VAM and had developed the techniques of inoculation of Endogone spores for various plants to form VAM.

Gardemann and Trappe (1974) produced their much needed ? revision of the Endogonaceae with segragation of the genus Endogone into seven genera and described nearly 43 species. Since then several new taxa have been formally or informally described (Ames and Lindermann, 1976; Ames and Schneider, 1979; Becker and Hall, 1976; Becker and Gardemann, 1977; Daniels and Trappe, 1979; Gardemann and Bakshi, 1976; Hall, 1977; Hayman, 1978; Nicolson and Schenck, 1979; Redhead, 1977; Rose, Daniels and Trappe, 1978; Sward, Hallam and Holland, 1978; Tandy, 1975; Trappe, 1977; Bhattacharjee and Mukerji, 1980; Mukerji et al., 1980; Iqbal and Perveen, 1980; Rose and Trappe, 1980; Grand and Randall, 1981; Walker, 1982; Trappe, 1982; Schenck and Smith, 1982; Trappe and Schenck, 1982). Presently two more genera have been added to the list viz. Enterophospora and Complexipes (Ames and Schneider, 1979 and Walker, 1979) and nearly 80 or more species (Trappe, 1982).

A few Synchytrium species were collected in the early part of the nineteenth Century, but they were classified as Ascomycetes (DeCandolle, 1815), Fungi imperfecti (Fries, 1821; 1832), Smuts, rusts, unknown asteridia, astrosphere (Thwaites, 1846; Shadbolt, 1851).

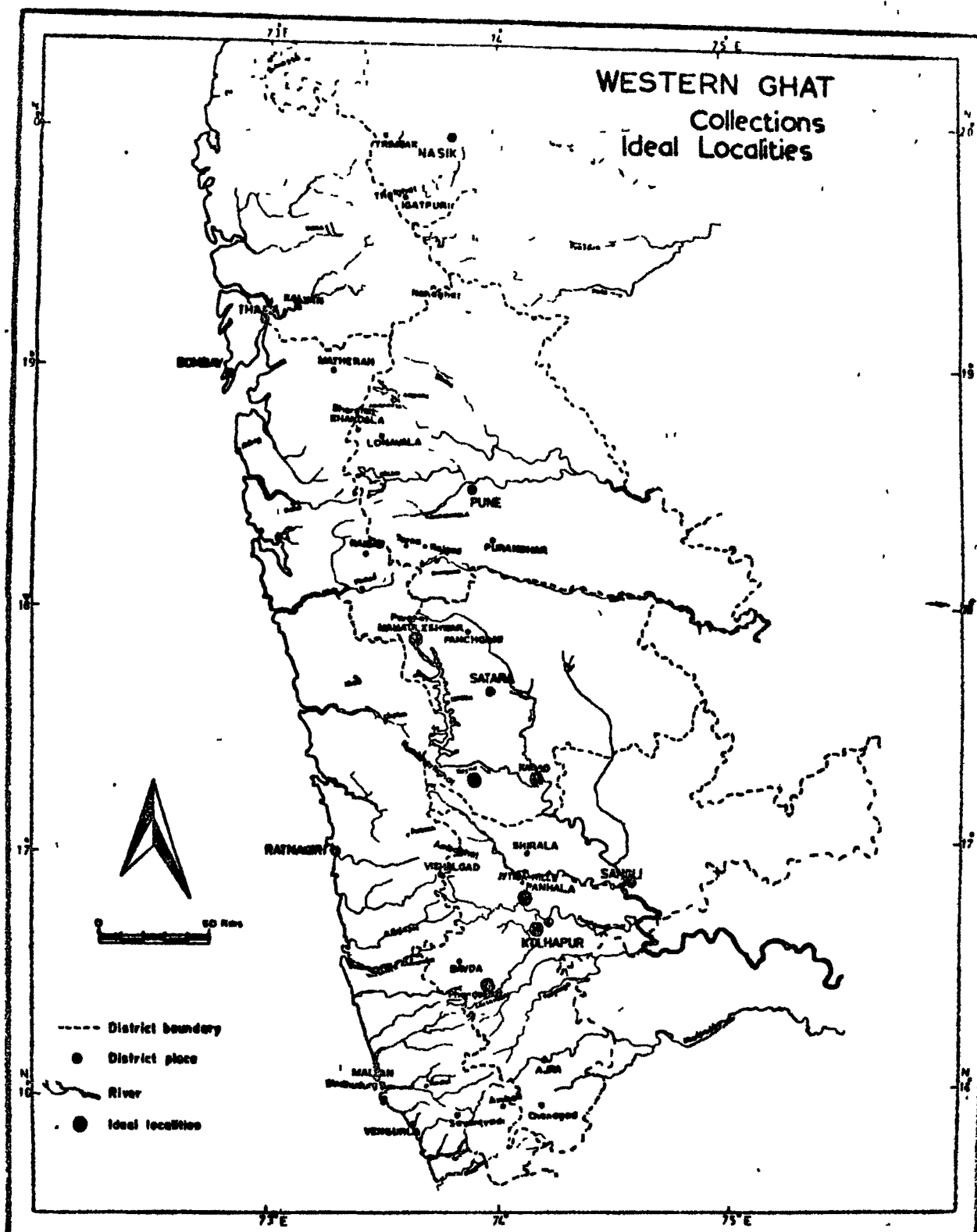
A century has elapsed since DeBary and Woronin established the genus Synchytrium (1863) and a half century since the genus was monographed for the first time by Tobler (1912). In this interval of a century the genus has been expanded a hundredfold. Additional species were subsequently added to the genus by various workers. Then Karling (1964) second time monographed this genus

and included almost 200 species. Upto the present time, they have been reported more than 1350 different host species of 773 genera belonging to 168 families. Although Synchytrium is world-wide in distribution, many of its species have been reported from only a limited number of countries and localities.

In India, the first record of Synchytrium was made by Sydow (1901) who described a species on Anisomeles ovata Br. as Synchytrium rytzii Syd. from Dehra Dun. Since then almost 80 species have been reported from India by various workers (Bilgramii, et al., 19~~69~~<sup>79</sup>).

The genus Chlorochytrium was established by Cohn in 1872. Since then almost 15 species have been described from different parts of the world by various workers.

Cunningham (1888) was the first who recorded Chlorochytrium in the leaves of Limnanthemum indicum Thw. (F. Gentianaceae) from Calcutta. Biswas (1958) has reported the occurrence of Chlorochytrium paradoxa (Klebs) West and C. inclusum Kjellmann, from brackish water from Varanasi, while Wilkinson and Tittley (1979) have reported C. willei Printz in pollutant sea water at Elic-Scotland.



TEXT FIGURE 1

