CHAPTER - I

INTRODUCTION AND A BRIEF REVIEW OF LITERATURE ON ALGAL TAXONOMY IN INDIA AND GUJARAT IN PARTICULAR

The term 'Algae' has been applied to chlorophyll bearing group of Thallophyta and Protista. This group is of immense importance to ecologists, applied biologist and taxonomists. Many of these field of research are interlocked and overlapping and contribute directly to and aid systematics. Taxonomy is a branch of science, which add the knowledge of new forms and their taxonomic account to the field of science.

The work on Indian algae started in South India at Tranquebar even much earlier in 1768 with the arrival of the Morivian Missionaries among whom the name of Gerard Koeing would stand foremost. Koeing collections of algae as well as his naming of some Indian algae are evidenced from such work those of Turner (1808), C.A. Agardh (1823, 1924), J.G. Agardh (1848), Kuetzing (1849), Retzius (1891), Martens (1866), and Gruenow (1915, 1916). Our knowledge of Indian algae, after European settlement in India is however, to be traced to the later part of the 18th century only. Among the more important reviews made on algology, mention is to be made of the accounts given by Agharkar (1923), Iyengar (1928, 1957), Biswas (1932, 1934, 1949), Ghose (1933), Dixit (1940), Joshi (1949), Randhwa (1960), and

Algal taxonomy of various parts of India have been studied by number of scientists from time to time. Mention is to be made the names of Gupta and Nair (1962) have given his contribution to the algal flora of Garhwal.


Kamat has done very extensive work in the field of

The name of Randhawa also remains foremost on account of his tremendous work in the field of algology. His work is evidenced by series of papers (1938, 1940, 1941, 1942, 1944, 1958, 1963a, 1963b, 1963c) and with Venkataraman (1961, 1962) in the field of algal Taxonomy.


Sharma and Shyam (1973, 1975) described certain aspects of Mitotic division in Eudorina elegans Ehrenberg and Gonium pectorale Muller of volvocales.

Jeejibai (1962) recorded Trentepohlia monila dewildeman from Madras. Sinha and Das (1963-64) has given note on the occurrence of chaetophorales of Chota Nagpur. Prasad and Srivastava (1965) collected Coleochaete nitellarum Jost for the first time from India. Abbas (1966, 1966a) has studied determination of mitotic peak in Drapermaldia plumosa (Vauch) Ag. and Stigeoclonium amoenum Kutz.


The group desmidace has been studied by many workers. Bharati (1965, 1966) has done systematic survey of the desmids of Bombay Kamatak. Suxena and Venkateswarlu (1966, 1968, 1968a) has done extensive work on desmids of Andhra Pradesh. Sinha and Mishra (1967) recorded some desmids from Ranchi. Agarkar (1971) contributed to the desmids of Gwallior (Madhya Pradesh). Bharati and Pai (1972) have dealt with some desmids from Kodaikanal lake, South India. Agarkar and Agarkar (1972-74, 1977), Patel and Satyanarayan (1976) have given detailed account of desmids from Panchmarhi (Madhya Pradesh).

Venkataraman (1958) recorded a new terrestrial species of Oedogonium from Western Bengal. Subba Raju (1968) has
given detailed account of Oedogeniaceae from Andhra Pradesh. Chacko (1970) has given terrestrial Oedogonium from Kerala, South India. Balakrishnan and Kinkar (1974), Prasad, Dutta, and Jain (1973) have given cytological account of Rhizoclonium heiroglyphicum (Ag.) Kuetz.


Diatomaceae is also one of the important group of algae. Mention should be made the name of Gandhi for his extensive work on Diatoms from various parts of India. Gonzalves and

Cyanophyta also carried equal importance as chlorophyta. Bengal algae were studied by Banerji (1936, 1938), Bruehl and Biswas (1922, 1926), Biswas (1927, 1932b). The Uttar Pradesh species were described by Bhardwaja (1935), Rao (1936, 1937, 1938a, 1938b), Vasishta (1962, 1962a, 1963), Prasad (1952, 1962). Bendre and Agarkar (1965), Agarkar (1967) described the Myxophyceae of Bhopal and Gwallior (M.P.). Gupta (1965) has recorded some new blue green algae from West Bengal. Pandey (1965, 1966) studied the algae from the paddy field soils of Ballia and Ghazipur districts of U.P. Nair (1967) described the nostocaceae of Kanpur some blue green algae from central himalayas were described by Srivastava (1967). Gupta and Kumar (1968) have given blue green alga flora of Udaipur (Rajasthan) and neighbourhood. Kumar (1970), Khan (1970) have studied the cyanophyceae of Sardhana and Dehradun (U.P.). Vaidya and Patel (1968) has done preliminary survey of cyanophyceae of Mount abu. Tiwari (1972) gave an account of blue green algae from paddy field soils of India. Subrahmanyan (1972) has described blue green algal flora of Bastar, India. Pal and

Several algal group have the honor to have been monographed. The cyanophyta by Geitler (1925, 1932), Elekin (1936, 1949), and Desikachary (1959), The zygne metales by Gzurda (1937), Kolkwitz and Krieger (1943), Transeau (1951) and Ranghawa (1959). The Oedogoniales by Hirn (1900), Tiffany (1930), and Gemeinhardt (1939); Chlorococcales by Philipose (1967); Vauchariaceae by Venkataraman (1961); Desmidaceae by West and West (1904-1912); Charophyta by Pal, Kundu, Sundarlingam and Venkataraman (1962); Ulotrichales by Ramnathan (1964).

REVIEW ON SYSTEMATICS OF ALGAL FLORA OF GUJARAT:

Gujarat has very rich natural resources as far as algal growth is concerned. Looking to the past literature many workers have contributed to the field of algal taxonomy. Among the contribution the name of Patel is to be mentioned, for his series of papers on algal taxonomy of Gujarat. Chohan
Vaidya has also contributed to the knowledge of algal taxonomy of Gujarat. Vaidya (1966) has recorded *Botridiopsis arhiza* Borzi from Gujarat. Upadhyay and Vaidya (1968) have described some terrestrial algae of Ahmedabad. Shaikh and Vaidya (1972) have given brief account of some algae from Gujarat. Gupte (1964) has described some myxophyceae from the Ajee river near Rajkot (Saurashtra).

Kamat (1961, 1962) has given detailed account of Euglenophyceae and Chlorophyceae of Ahmedabad. Besides the green algae, he (1963-64) has described some Oscillatoriaaceae of Ahmedabad. Lateron Kamat (1967) has added his contribution to the knowledge of Cyanophyceae of Ahmedabad.

As far as the marine algae are concerned, many workers have explored the sea-coast of Gujarat. Thivy and Visalakshmi (1963, 1963a) have recorded *Caulerpa charoides* Herb ex. Bosse from Adatara (near Okha) and *Spongomonopha indica* from Veraval coast. Thivy and Rao (1963) have recorded *Chondria armata* (Kutz) Okamura var. *plumaris* Boergesen from Okha Port. Misra (1965) has given detailed account of Phaeophyceae of Gujarat. Chauhan (1964), Chauhan and Thivy (1964, 1965, 1965a) have dealt with *Sargassum* species and *Caulerpa racemosa* (Forsskal) J. Agardh from Gujarat. Sreenivasa Rao and Krishnamurthy (1965) have given detailed account of genus *Polysiphonia* Greville from Saurashtra coast. Thivy and Sharma (1966) have recorded *Ulya*
*bevtensis* sp. nov. from Gujarat. Kale (1967) has first time recorded *Entromorpha gujaratensis* sp. nov. from Gujarat. Rao and Kale (1969) have also given an account of marine algae of Gopnath (Gujarat). Gopalkrishnan (1969, 1974) has recorded *Turbinaria indica* sp. nov. and marine algae from the Gulf of Kachchh (Kutch).