REVIEW OF LITERATURE AND CLASSIFICATION

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The term discomycetae was coined in earlier days of mycology. The meaning of the discomycetae changes with advances in the knowledge of fungi. Generally it is ascomycetes which posses an apothecium. In apothecium the asci are arranged in tufts or between paraphyses and the apothecium is an open structure,exposing the hymenium at various stages of development. The apothecium may be having different shapes, typically it is saucer or cup shaped,giving this to common name for fungi as 'Cup Fungi.'

A Roman naturalist and scholar,Pliny (23-79 A.D.) mentioned Discomcetes in his writtings as "Beloging to mushroom kind, also there is a species known to the Greeks by the name 'Pezica'which grows without root or stalk".Dillienius (1719) has little doubt in his description that Peziza applied to the cup shaped group of Fungi.Linnaeus (1753) adopted same pattern as that of Dillienius He treated all the genera, two of which Elvela and Peziza,comprised the Discomycetes recorded at that date Persoon (1801) tried to classify the Discomycetes systematically, Further step in systematic classification of Discomycetes is taken up by Fries (1822) He has recognised four broad classes of fungi.He has kept all the discomyceteous fungi in the Hymenomycetes. Fries (1822) divided Peziza into three series, and these are divided into twelve tribes. Many of these tribes were elevated to generic rank by later workers This system of classification remained inuse for almost sixty year. Fries (1849) modified his previous system with establishment a family Discomycetes with six order.He used the characters of

apothecia and acknowledged the difficulties in using microscopic characters to base natural genera.

Friesian system was followed by number of mycologists(Nylander 1869,Fuckel, 1869,Karsten,1871 and Cooke, 1879) eventhough in the middle of 19th centuary a number of significant changes occured. D.Notaris (1864) recorded twenty six genera of Discomycetes without following systematic classification.But the microscopic characters such as form and colour of paraphyses, spores,cellular nature of the excipulam were used,Nylander (1869) was the first person who stressed the iodine reaction in asci.By considering microscopic and microchemical data Karstan (1869) divided the big group Peziza is divided into 25 sub-genera. The illustrative and descriptive work of Tulasne and Tulasane (1865) was very important at that period. Karsten (1871) recognised the order Discomycetes and it within three families, Helvellaceae, Pezizaceae and Phacidiaceae.He was the first to divide the families to subfamilies by considering the cellular nature of sterile elements of apothecium. Crouan and Crouan (1857) described an operculate dehiscence of asci. Cooke (1879) published plates and descriptions of 406 species of primarily operculate discomycetes. His illustrations and measurments to identify the specimens were based upon herbarium collection. Saccardo (1884) arranged discomycetes according to their size,shape colour and septation of ascospores . This system is modi--fide by Phillips (1857) by adding the 'Gymnoascaceae in Discomycetes. Bodier's (1885) published the new natural classification of discomycetes on presence and absence of an operculum. The microscopic characters such as amyloidity of ascus, number of oil

drops of spores etc. are considered. He divided the fungi into operculate and inoperculate discomycetes. Seven operculate families were incorporated and the inoperculate were divided into three tribes. Most of the mycologists agree with this.

The volume of Sacardo Sylloge Fungorum treating the discomycetes appeared in 1889, he used his previous system of classification but including 213 genera and 3,500 species. This system is greately influenced the classification used by the Cooke (1892) Clements and Shear (1931) . Most of the German Scientists like Rehm's (1887-1890) studied and classified the discomycetes into two divisions Pezizaceae and Helvellaceae. Schroeter (1893) followed Rehm for the part of classification of discomycetes for Engler and Prantle. Durand (1900) presented the classification of Pezizaceae. He proposed four families Peziz aceae, Ascobolaceae, Helotiaceae and Mollisiaceae. More fundamental work was done by Von Hohnel (1903-1918). Boudier (1907) revised the classification including the subdivision and 7 operculate families and 12 inoperculate families. Gaumann (1926); Seaver (1928); Clements Shear(1931) Bessy (1950) kept the fleshy cup fungi in Pezizaceae but Clements and Bessy recognised significance of ascus characters for classifiction. Seaver(1928) adopted operculate and inoperculate discomycetes and developed his own practical systems consisting two families Pezizaceae and Elvelaceae from operculate and three families Geoglossa ceae, Helotiaceae and Cenangiaceae from inoperculate. He considered ascospores, external features and substrats to distinguish eight tribes of the Pezizaceae. Nannfeldt's (1932) laid the basis for critical reevalution of many genera together with -

revision of their nomenclatures during 1950's and 1960's.

Most important studies on Discomycetes during late 1940's to early 1950's are, on the ascus structure by Chadefaud 1940-a,1940-b, 1942,1943,1949, there on ascospores,ascus and apothecial anatomy by Le Gal (1942-1963) and the nomenclatures by Korf (1953-67),Gal (1947) gave valuable information from taxonomic and phylogenic evolutions in her study of the formation of spore wall and ornaments in operculate discomycetes. She belived the spore characters should be considered during classification with the other characters. This familial arrangement has been followed by most of the current mycologists (Dennis;1960;Moser,1963;-Gaumann,1964; Rifai,1968;Dennis,1968 and Eckblad,1968).

Berthet (1961-1964-b) studied the taxonomy and phylogeny of discomycetes by considering the number of nuclei in various apothecial structures,presence or absence of imperfect stages, developmental aspects and other cytological aspects. Dennis (1960) published a book on British cup fungi and their allies, which was considered as complete synthesis of modern thought on ascomycetes.

Some important regional studies on discomycetes or groups of discomycetes are those of Grelet (1942-1959) on the discomycetes of France,Dennis (1949), the British Hyaloscyphaceae;Dennis (1954-a,1954-b), Operculate and inoperculate discomycetes of South America; Le Gal (1953-b,1961), discomycetes in the Grouan Herbarium, Mains (1954-1956),North American Geoglossaceae;Dennis (1956,1962-a) British Helotiaceae,Le Gal (1959);discomycetes of Belgium cango, Korf (1958,1959),discomycetes of Japan,Batra

and Batra (1963); Indian discomycetes flora; Gamundi (1956-1964); discomycetes of Argentina,Eckblad(1963), Geoglossaceae of Norway. Korf (1963),status and scope of discomycetes flora of Asia; Maas Geesteranus (1965), Geoglossaceae of India and adjacent countries. Thind et.al (1959-1967),on operculate & inoperculate discomycetes of India.Patil and Patil (1967) on operculate and inoperculate Discomycetes of South Western Maharashtra,India,Korf (1972)published synoptic key to the genera of Pezizales.

Recently P.F.Cannon and D.W. Minter (1986)worked on Genus Lophodermium,they recorded about three new species from Himachal Pradesh and Assam.M.Caillet (1987) worked out the species of Octospora from Swedon and France. Ghadge and Patil(1987) reported new species of Ascodesmis in the world .In 1988 they have screened out eight species of Ascobolus from India, out of which six species are new to science of India . Benkert (1987,1993)recorded about fifteen species from Swedon and France. P.R. Johnsten (1989) reported about seventeen species of Lophodermium on dead leaves of different types of plants.T. Schumacher (1990) recorded about ten species of Scutellinia, Yeiz. Wang (1992) prepared monograph of North American species of Octospora previously described to Lamprospora.M.P. Sharma (1991) reported about twenty two species of Hymenoscyphus from Uttar Pradesh and Himachal Pradesh.