

C H A P T E R I I

REVIEW OF LITERATURE

- 1) Historical Review
- 2) Historical Review of Indian work

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i) Historical Review :

The coprophilous fungi, one of dung inhabitants, comprise a special group made up of members of several classes ranging through myxomycetes, to Basidiomycetes. In pioneering studies of Masee and Salmon emphasized that 187 genera and 757 species from coprophilous occurrence had been listed in Saccardo's Sylloge Fungarum in the early of the present century (1882-1922). The main contributors of coprophilous fungi from different countries are Hanson, Cronon, Winter, Cain (1934) Bouclier, Karstern, Webster, (1970). Spegazzins, Minza, Richardson, Moreau, Euraya, Udagawa (1972), Kouhei Ahmed, Parker, Cailleux Linard, etc.

Richardson and Watting (1968, 1969) published key to dung fungi for their identification. An account of the nomenclatural status of the genus Podospora was published by Donk (1964).

Japanese workers have also contributed much to the knowledge of coprophilous fungi and extensive work carried out by number of workers viz. Furaya and Udagawa. Fifteen species were reported of the genus Podospora from Japan (Udagawa et al., 1972).

Mirza and Cain (1969) provided Key for the 64 recognised species of Podospora. Illustration are given for 56 species and

9 new combination were proposed.

Ahmed S. Iftikhar and Fatima (1972) studied coprophilous fungi of West Pakistan. Sixteen species have been recorded for the first time from Karachi on dung including Podospora ostlingospora Cain.

Parkar (1974) has done a preliminary taxonomic survey of the coprophilous ascomycetes of East Central Illionis (U.S.A), which has yield 29 species of seven genera including Podospora.

Cailleux Ruger (1973) studied specimens of coprophilous Ascomycetes and were found seven species to Israeli Flora including P.arseriana (Ces.) Niessl, and P.decipiens (Winter) Niessl.

Parker Alan (1973), a preliminary taxonomic survey of the coprophilous ascomycetes of east central Illinosis (USA) has yielded 27 species of seven genera including Podospora.

Garcia et al. (1977) described four species of Podospora from Uruguay. Lucqin-Linard (1978) described P.minicauda from Paris which was new record to index^{*} of fungi.

Liou et al. (1979) made preliminary studies of coprophilous pyrenomycetes from Taiwan and were reported 16

species including three species of Podospora. All their species were new records to Taiwan fungal flora.

ii) Historical Review of Indian work :

In India little work has been done on coprophilous fungi. Coprophilous fungi were studied in India by Ajrekar and Dharmarajuji (1931), Mahji (1933), Ginai (1935), Lodha (1962), Sorbhoy (1967, 1978), Kelker (1972) and Narendra (1973).

Ajrekar and Dharmarajuji (1931) were the pioneer worker in this field. They described the coprophilous species of Mucor from Bombay state. This initial work was followed by workers like Mahju (1933) who screened the dung of few herbivorous animals and reported fungi from all four major groups of fungi. From Ascomycetes he reported the genera like Myxotrichum, Ascobolus, Lasiobolus and Chaetomium.

Next important contribution made by Ginai (1936) who added substantially to the list of Mahju by reporting the genera like Peziza, Bombardia, Humaria, Dactylaria, Coremiella and Syncephalis etc. After 20 years of gap Hukmini (1956) reported some Mucorales. Shrinivasan, Rahalkar and Thirumalachar (1961) reported two species of Cephalophora, Lodha (1963) reported Chaetomium species on dung of different herbivorous animals. Subramanian and Lodha (1964) reported four genera of coprophilous hyphomycetes; Mehrotra and Baijal (1964) described two species

of Piptocephalis on dung of rabbit and Squirrel. Mahrotra and Krishna-Nand (1967) reported species of Absidia on Cow dung. Kar and Pal (1968) reported species of Ascophanus and Cheilymenia on Cow dung. Mahrotra, Sing and Krishna-Nand (1967) described species of Pilobolus on dung of herbivorous animals. Mukerji (1968) described species of Piptocephalis from rabbit dung. Subramanian and Lodha (1968) established two new genera of Coprophilous fungi one belongs to Hyphomycetes. Pal (1970) reported Idophanus and Thecotheus species from Cow dung. Sexena and Mukerji (1970) reported Kernia on Kangaroo dung.

Thind and Sing (1971) reported Ascobolus denulatus on buffalo dung. Lodha (1971) described eleven members of Ascomycetes on dung of different herbivorous animals. Kelkar (1974) studied the genus Pilobolus from different dung samples collected from Pune (M.S.).

Nusrath (1980) studied ecological distribution of coprophilous fungi. A remarkable seasonal variations in the fungal population in dungs of some herbivorous was observed. A total of 41 species, representing 23 genera were isolated by direct observations by dilution plate and root burial techniques. These includes 9-Mucorales, 9-Ascomycetes, 23 Deuteromycetes,

Manohara Chary, C. (1981) recorded coprophilous fungi from Andhra-Pradesh by collecting different dung samples from eight different localities.

~~and~~ and surveyed their Mycoflora. Altogether 24 fungi appeared in succession during 3-40 days of incubation period. Initially phycomycetes fungi appeared followed by Ascomycetes, Fungi-Imperfecti and Basidiomycetes. Some fungi were reported for the first time on dungs from Andhra Pradesh.

By taking review of the Indian work, it is clear that though the genus Podospora occurs so abundantly, a few workers like Mukerji, (1974) and Sharma, Meera (1977) had worked out the genus Podospora. It is indeed an urgent need to investigate the genus Podospora. Sexena A.S. and K.G.Mukerji (1974) reported three coprophilous Ascomycetes Xerina geniculotricha, Microascus magini and Podospora tetraspora isolated for the first time from India.

Narendra, D.V. (1976) reported two species viz. Saccobolus glaber Lamb. and Sordaria Coprophila (Fr.) Sacc. from Cow and Sheep dung from Maharashtra. Sharma, Meera (1977) reported four species developed on the dungs of herbivorous animals viz. Podospora papilliformis, P. alloides and P. pleiospora and P. communis from N. India. Patil (1977) reported Pilobolus romosus Mc.Vicker on dung of buffalo from Kolhapur. Which is a unique and branched (sporangiophore) species of the genus.

Nannenga-Bremekomb, N.E.G., Mukerji and N. Singh (1979) reported two new species viz. Macbrideola Coprophila and Didymum quitense (Bat.) Torrenal from dung.

Therefore, a review of the work on coprophilous fungi is very poor and scattered as far as Indian work is considered. It also appeared that no systematic work has been planned and investigated the mycoflora of dung. Except a few workers, who worked on specific group of fungi, otherwise the workers randomly studied and isolated the fungi. Therefore, it is indeed an argent need to investigate coprophilous fungi in systematic way, keeping this view, the present work has been planned and investigated the different coprophilous fungi from different dung samples. During the investigation the genus Podospora found to be very dominant and show variety of forms. The work on the genus Podospora is also very poor in India and thus, main attention has been given to investigate only the genus Podospora Cesati and obtained good results.