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ABSTRACT

During the floristic study of the myxomycetes of this region author come across a number of myxomycetous species. In the study five species of myxomycetes are being discussed. *Arcyria* Pers., are being discussed with two species. *Arcyria denudata* (L.) Wett., marked by its colour, short stipe, calyculus reticulate within and capillitium with prominent notched cogs; *Arcyria gulielmae* Nann.-Brem. is characterized by rosy pink to brown, short cylindrical sporangia in loose clusters; *Badhamia* Berk, are being discussed with single species, *Badhamia viridescens* Meylan. characterized by stipitate sporangia and *Physarum* Pers. are being discussed with two species, *Physarum leucophaeum* Fries is distinguished by fructification stipitate; sporangia depressed and *Physarum ovisporum* Lister Marked by fructification primarily sessile sporangiate, tending to be plasmodiocarpous, scattered to gregarious, white to grayish white. All species are being reported for the first time from this region.

KEY WORDS: Myxomycetes, *Physarum spp.*, slime moulds,

INTRODUCTION

The Myxomycetes or ' the true slime – moulds ' are the fungi like organisms, possess an assimilative phase of free living, multinucleate, mobile mass of protoplasm called as the plasmodium, and a sporulating phase consisting of a mass of spores typically borne in a simple or complex membranous or tough, non-cellular spore case. In addition to spores, often there is a system of free or netted threads forming a capillitium or pseudocapillitium . Sangola taluka Maharashtra –the region under investigation is very rich in biodiversity-constitute the districts Solapur. The study of myxomycetes was practically neglected from this region. Hence, it was felt to undertake the study.

MATERIALS AND METHODS

The present work is based on myxomycetous floristic exploration from the region. An extensive and intensive field work was undertaken to collect the maximum number of specimens of myxomycetes. Visits to different localities were made frequently. Localities for visit were selected so as to cover the maximum representation of the area under investigation. Repeated visits were made to some of the localities for the collection of the specimens. Specimens were collected along with their natural substrates. For the preservation of specimens, empty cigarettes boxes found to be very suitable, convenient, easily available, easy to handle and economical. Paper trays of the proper size were prepared so as to get it fit inside the box tray.

As per the spreading of the specimen, its natural substrate was cut into suitable size and glued with the fevicol adhesive in the centre of the paper tray. Each box was provided with field notes of respective specimen. The accession number was written on the specimen box and on the paper tray also, and entered in accession register. After observation; specimen boxes were stored and placed in 'Generic ' boxes provided with naphthalene ball to prevent insect entry. Generally specimen boxes were carried to the field to preserve the specimen intact. Sometimes because of heavy collection, specimens were brought to the laboratory on their natural substrate, in a special handling basket, so as not to disturb them. Then they were preserved. In rainy season, the collected specimens were dried in the incubator or and oven at 40° c. But sun drying was found to be most suitable for maintaining natural characters. Artificial drying sometimes leads to the shrinkage of weak and flaccid stalk, hardening of wet sporangia and cracking of peridium. All the specimens were identified and confirmed with the help of Martin and Alexopoulos (1969), sometimes, Lister (1925), Hagedorn (1944), Farr (1976), were followed. Monographs on Indian Myxomycetes of Thind (1977), Lakhanpal and Mukerji (1981), were of almost indispensable for final confirmation. Concerned literature in this regards were also studied.

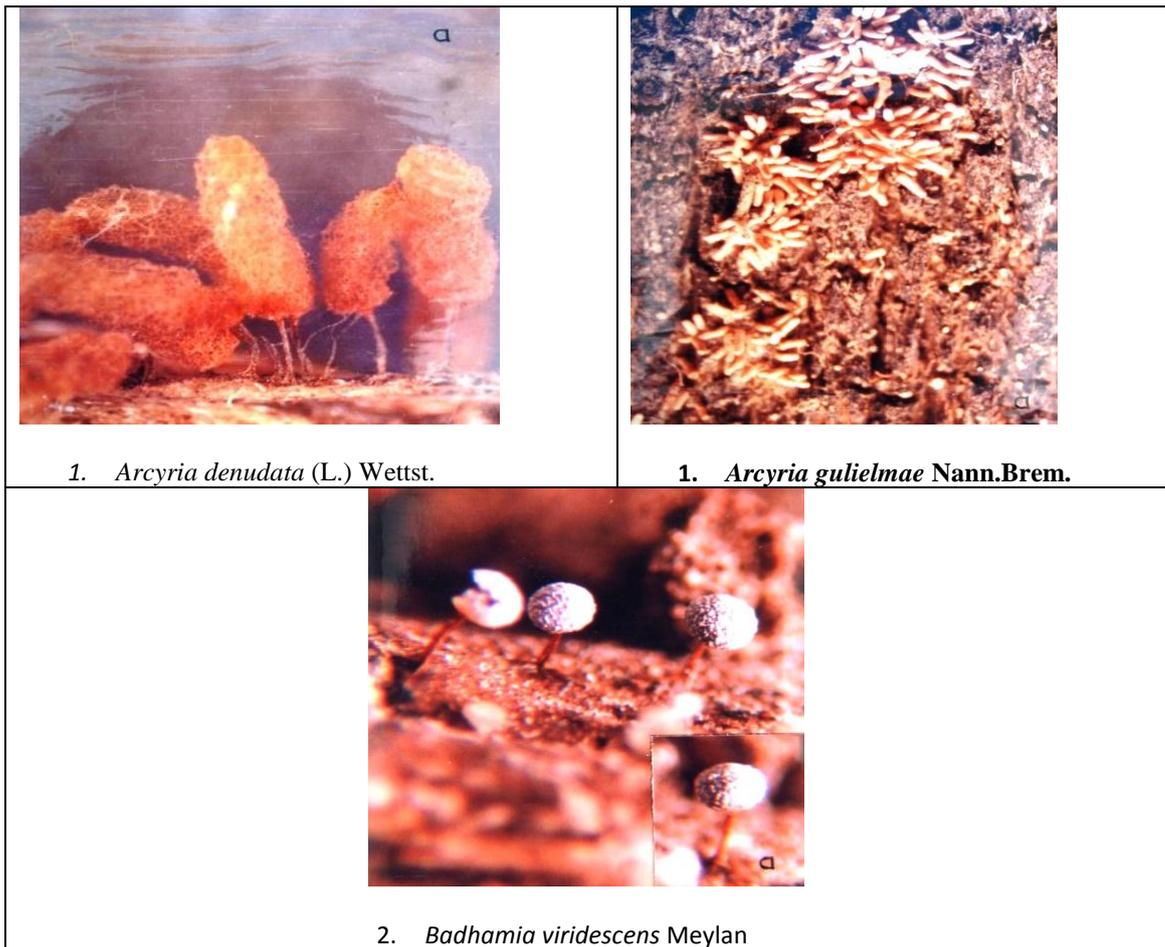
RESULTS AND DISCUSSIONS

1. *ARCYRIA DENUDATA* (L.) Wettst.

Verh. Zoo.-bot. Ges. Wein. **35**, Abh. 535, 1886.

COLLECTION EXAMINED: RRT/ 8192, June-2004, Sangola, Dist.-Solapur. On dead wood, stem, bark of angiospermic plants, dry straw of sugarcane and dung.

DISTRIBUTION : INDIA : Assam (Agnihotrudu, 1959) ; Delhi (Lakhanpal and Mukerji, 1981) ; H. P. (Lakhanpal, 1973; Thind, 1977) ; Karnataka (Indira, 1968) ; M. S. (Nanir and Rokade, 1992) ; Orissa (Ghosh and Dutta, 1962); T. N. (Agnihotrudu, 1956) ; U. P. (Thind and Sohi, 1956) ; W. B. (Bruhl and Gupta, 1927); M. P. (Nanir et al, 2000) .



1. *Arcyria denudata* (L.) Wettst.

1. *Arcyria gulielmae* Nann.Brem.

2. *Badhamia viridescens* Meylan

A. denudata characterized by the colour of the fruiting bodies, sculpture of capillitial threads, and length of the stipe are highly variable. However, markings on the calyculus are distinct and this character, along with the colour of fresh fruiting bodies can be reliably used to distinguish these two taxa. The weathered specimens of both however, look alike. It is one of the common species often fruiting extensively. Colour fading is frequent on aging. Otherwise it is confused with *A. incarnata* (Pers.) Pers. The latter is less common, brighter red and retains its colour, capillitium loosely attached to shallow calyculus.

2. ARCYRIA GULIELMAE Nann.Brem.

K. Ned. Akad. Wet. Porc. C, 74, 352-365. 1971.

COLLECTION EXAMINED: RRT/ 8193, 8194, June-2004, Sangola, Dist.-Solapur. On cow dung.

DISTRIBUTION : INDIA : H. P. (Lakhanpal and Mukerji, 1976); Delhi and U. P. (Lakhanpal and Mukerji, 1981); M. P. (Nanir *et al.*, 2000).

A. gulielmae Nann.-Brem. is characterized by rosy pink to brown, short cylindrical sporangia in loose clusters; stipe short, weak, translucent; calyculus reticulate within; capillitium moniliform, covered with half rings, incomplete spirals, notched cogs; spores 7.5 – 9.5 µm in diam.

It is distinguished from *A. denudata* (L.) Wett. by its colour, short stipe, calyculus reticulate within and capillitium with prominent notched cogs. It is closely related to *A. insignis* but distinguished from it by capillitium sculpturing of same diameter, while it is moniliform in *A. gulielmae*.

3. BADHAMIA VIRIDESCENS Meylan.

In Bull. Soc. Vaud. Sci. Nat. 53 : 452, 1921.

COLLECTION EXAMINED : RRT / 8107, 8227, 8228, 8229, 8230, 8231, 8232, 8233, June-2004, Watambare; 8234, June-2004, Kolekar wasti, Sangola, Dist- Solapur. On bark of tree, leaf, straw of angiospermic plants and dung.

DISTRIBUTION: INDIA: M. P. (Kharat, 2000); Assam (Agnihotrudu, 1957).

Apparently the species looks like globose sporangiate form of *Craterium aureum*. It is being reported for the second time from Indian flora. This species is from which it differs in the character of capillitium and the larger paler spores. *B. viridescens* Meylan. characterized by stipitate sporangia; stipe erect, cylindrical, pale brown to pale blackish brown; hypothallus concolorous; peridium single, veined, fugacious above; capillitium well-developed of limy tubules. Spore pale brown, minutely warted, 8.5 to 12.5 µm in diam.

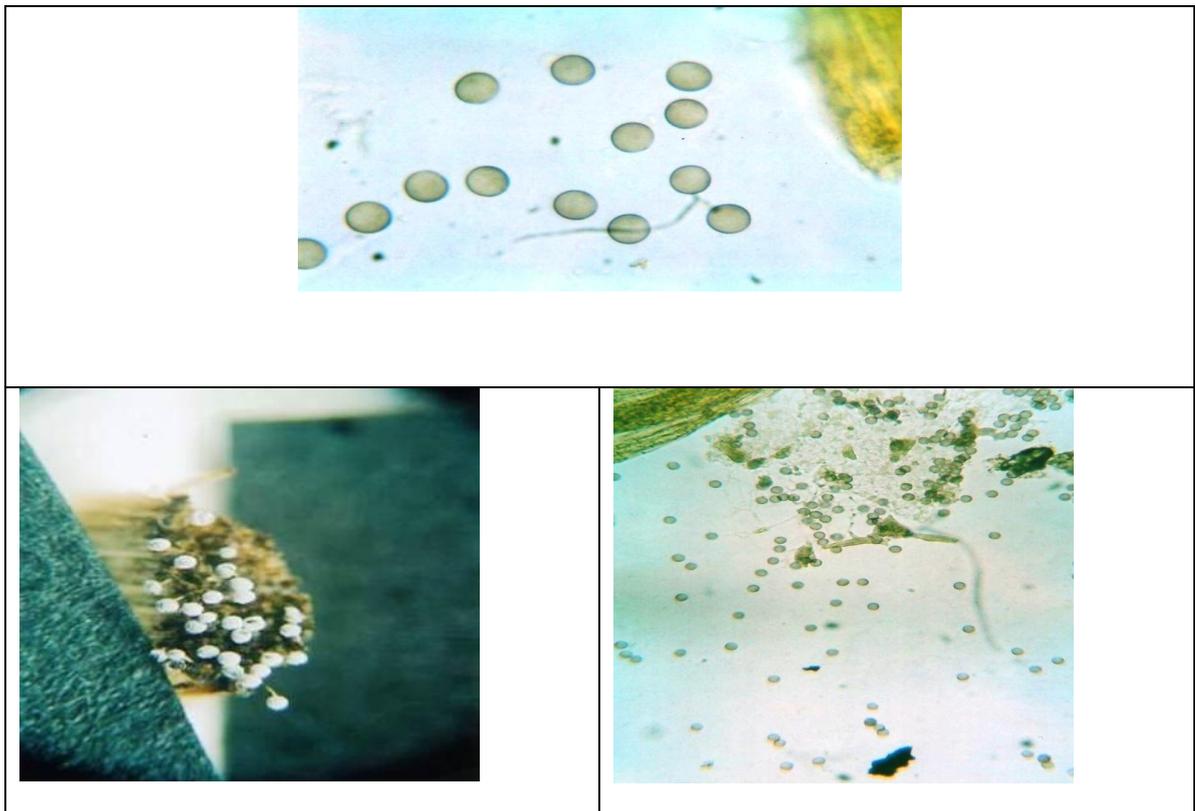
4. *PHYSARUM LEUCOPHAEUM* Fries

Symb. Gast., 24, 1818.

COLLECTION EXAMINED: RRT / 8320, 8350, 8352, 8406, 8414, 8422, June-2004, Kolegaon; 8432, 8369, June-2004, Kolekar vasti; 8327, 8409, 8423, June-2004, Kadlas, Sangola. On dry leaves, stem of angiospermic plants, sugarcane straw and dung.

DISTRIBUTION: INDIA: Assam (Agnihothrudu, 1959); Gujrat (Salunkhe, 1994); M. S. (Nanir, 1978; Rokade, 1989; Jadhav, 1994); U. P. (Thind and Rehill, 1958).

P. leucopheum Fries is distinguished by fructification stipitate; sporangia depressed above with shallow umbilicus below; stipe vertically rugose, rarely frosted with lime granules; hypothallus blackish brown; peridium single impregnated with white lime granules; capillitium abundant, nodes white to pinkish white; spores minutely warted, warts in few curved lines. Indian populations are typically stipitate. Lister (1925), Hagelstein (1944), listed the species as a variety of *P. nutans* Pers. However *P. nutans* Pers. is characterised by its lenticulate and nodding sporangia, long and slender stipe, larger fusiform or elongated limy nodes and dichotomously branched internodes.



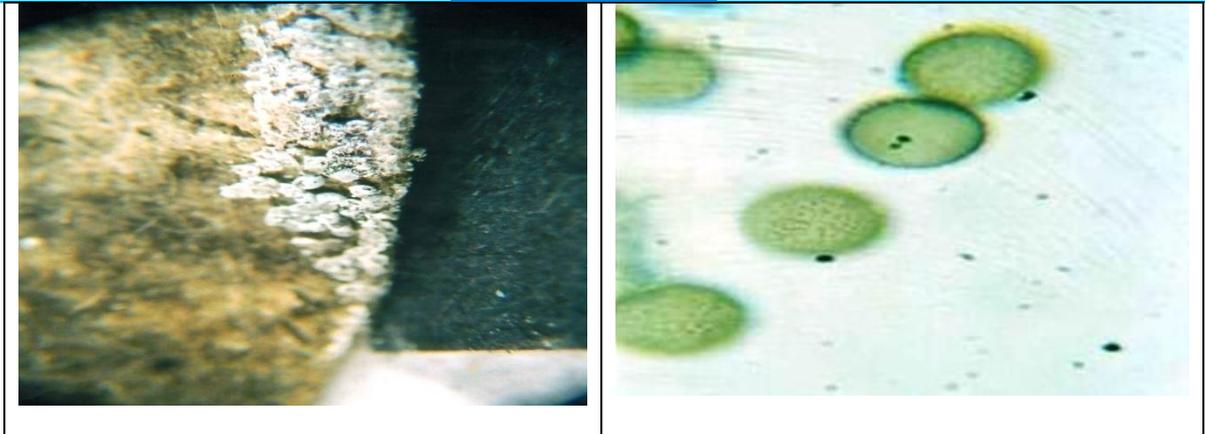
4. *Physarum leucophaeum* Fries

5. *PHYSARUM OVISPORUM* Lister

Jour. Bot. 59, 90, 1921.

COLLECTION EXAMINED: RRT / 8372, July-2004, Mahud, Sangola, Dist. Solapur. On dry leaves, legumes, stem and fruit of angiospermic plants.

DISTRIBUTION : INDIA : Delhi (Lakhanpal and Mukerji, 1978) M. P., (Kharat, 2000); M. S. (Nanir, 1978; Rokade, 1989; Chimankar, 1993); Gujrat, Salunkhe, 1995).



5. *Physarum ovisporum* Lister

The species is very close to *P. cinereum* (Bastch.) Pers. and *P. vernum* Sommerf. ex. Fr. These three species are difficult to differentiate from each other. Farr (1976), merged the species with *P. vernum* Lister (1925). Hagelstein (1944), mentioned ovoid spores with pale line of dehiscence. Oval spores had not been observed by Thind (1972), Martin and Alexopoulos (1969), Lakhanpal and Mukerji (1981). However the species is differentiated from both the allied species in its very dark spores encircled by a pale line, peridium with heavy lime and nodes smaller. These features or characteristics have not been found in the other species. Moreover spores are larger. Until further investigation, populations are placed in *P. ovisporum*.

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