

NEW FOUR SPECIES OF THE MYXOMYCETES RECORDED FROM THE SOUTH-EAST REGION OF MAHARASHTRA (INDIA)

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ABSTRACT

During the floristic study of the myxomycetes of this region author come across a number of myxomycetous species. *Lepidoderma* De Bary., are being discussed with four species. The genus *Lepidoderma* de Bary is characterized by sporangiate to plasmodiocarpous fruitings. *Lepidoderma carestianum* Rost. species is characterized by fructification sessile, sporangia discoid, effused; double distinct peridium, *Lepidoderma effusum* Rokade and Nanir, sp.nov is characterized by sporangiate to plasmodiocaps fructification, discoid, effused sporangia., *Lepidoderma nannengae* sp. nov. is characterized by fructification sessile to very short stipitate, sporangia depressed globose to discoid and *Lepidoderma thindii* Nanir and Rokade sp. nov. Species is characterized by small globose or depressed globose stipitate sporangia; short cylindrical stipe. All species were being reported for the first time from this region.

KEY WORDS: Myxomycetes, slime moulds, *Lepidoderma* sporangiate to plasmodiocarpous fruitings.

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. South-West of Maharashtra the region under investigation is very rich in biodiversity-constitute the districts Solapur, Satara, Sangli and Kolhapur. The study of myxomycetes was practically neglected from this region. Hence, it was felt to undertake the study. Out of the investigation carried out, in which, about nine species belongs from five genera are being discussed as under.

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 cegarates 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 DISCUSSION

1. LEPIDODERMA CARESTIANUM. Rost. Mon., 188, 1875

COLLECTION EXAMINED: RRT/ 8299, Aug.-2004, Pachagani, Dist.-Satara. On dry and decaying leaves and stem of angiospermic plant.

DISTRIBUTION : INDIA, M. S.

The species is characterized by fructification sessile, sporangia discoid, effused; double distinct peridium; columella none; scanty capillitium with calciform vesicles, spores black in mass with apiculate, lighter and thin walled on one hemisphere, almost smooth.

L. carestianum (Rost.) can be compared with *L. effusum* Rokade & Nanir, sp. nov. However, *L. effusum* Rokade & Nanir, sp. nov. is characterized by the fructification grayish white with effused plasmodiocyphs and hypothallus inconspicuous; peridium single; dehiscence mostly from upper part, sometimes floccose; more or less stiff and dichotomously branched capillitium; absence of columella with spore minutely and uniformly warted, 10 -14 um in diam. The species is being described for the first time from Indian flora.

2. LEPIDODERMA EFFUSUM Rokade & Nanir, sp. nov

COLLECTION EXAMINED: RRT / 8378, July-2004, Kolegaon, Malsiras, Dist.-Solapur. On dry straw of angiospermic plants.

DISTRIBUTION : INDIA, Gujrat (Salunkhe, 1995); M. P. (Kharat, 2000) ; M. S. (Rokade, 1989; Chimankar, 1993; Jadhav, 1994).

L. effusum Rokade and Nanir, sp. nov. is characterized by sporangiate to plasmodiocyphs

fructification, discoid, effused sporangia; hypothallus inconspicuous; peridium single; dehiscence mostly from upper part, sometimes floccose; more or less stiff capillitium; spore minutely and uniformly warted.

L. effusum Rokade and Nanir, sp. nov. species can be compared with *L. granuliferum* (Phill.) Fr. and *L. carestianum* (Rost.). However *L. granuliferum* (Phill.) Fr., is distinguished by double peridium of which outer layer is cartilaginous to subcartilaginous; capillitium an intricate net, swollen nodes like large vesicle filled with lime nodules, tips funnel like; spores minutely spinulose, 15 – 18 um in diam. *L. carestianum* (Rost.) is differentiated by its fructification sessile, sporangia discoid, effused; double distinct peridium; columella none; scanty capillitium with calciform vesicles, spores black in mass with apiculate, lighter and thin walled on one hemisphere, almost smooth with 10 – 14 um in diam.

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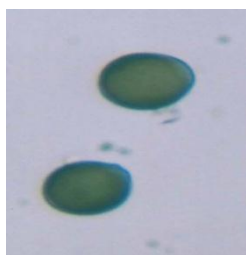
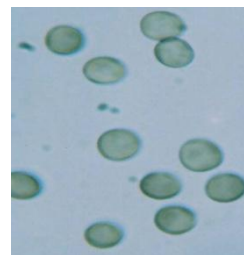
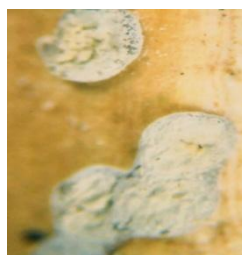
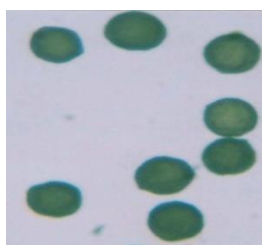
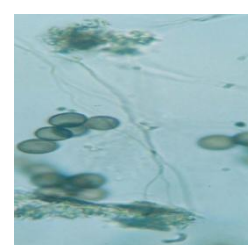
3. LEPIDODERMA NANNENGAE sp. nov.

COLLECTION EXAMINED: RRT/ 8255, July-2004, Mangalvedha, Dist.-Solapur. On dry leaf and stem.

DISTRIBUTION: INDIA, M. P. (Kharat, 2000).

L. nannengae sp. nov. is characterized by fructification sessile to very short stipitate, sporangia depressed globose to discoid; hypothallus inconspicuous; peridium is double, inner layer violaceous brown; dehiscence irregular; columella none; capillitium sparse, stiff; spores distinctly and closely warted, warts may forms lines.

From the known species of the *Lepidoderma*, *L. nannengae* sp. nov. apparently looks like *L. aggregatum* Kowal., in its external texture. But later differs from the former in its buff lime scales; well developed columella occupying one third of the sporangial cavity; spores purple brown, sparsely spinulose, without equatorial ridges. In spore characters it may be compared with *L. indicum* Nanir and Rokade.

1. *Lepidoderma carestianum*2. *Lepidoderma effusum*3. *Lepidoderma nannengae*4. *Lepidoderma thindii*

But later is primarily depressed, discoid, scales are like cane sugar crystals, peridium single, capillitium with nodular thickenings, spores conspicuously warted, longer warts to one hemisphere.

4. *LEPIDODERMA THINDII*, Nanir & Rokade sp.nov.

COLLECTION EXAMINED: RRT/ 8253, Aug.-2004, Pachagani, and Dist. - Satara. On dry leaf of angiospermic plants.

DISTRIBUTION: INDIA, M. S. (Rokade, 1989; Chimankar, 1993).

The species is characterized by small globose or depressed globose stipitate sporangia ; short cylindrical stipe, frosted with lime nodules, dark brown towards the base and paler above; peridium with lime scales, hyaline and tubular capillitium with many calciform swellings; and minutely warted or spinulose spores.

L. thindii is close to *L. marathwadense* Rokade & Nanir, but latter is quite distinct in its bipappillate spores with equatorial line, dichotomously branched capillitium with limeless expansions at the nodal region. Stipitate form of *L. carestianum* (Rab.) Rost. have variable fruitings bearing large lime scales (50-60 μm in diam.) and have bigger spores (13 – 15 μm in diam.). *L. cristaceum* Kowal., have obovate sporangia in loose clusters with double peridium, lacking columella and are spores 11 – 13 μm in diam.

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