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THREE SPECIES OF THE MYXOMYCETES RECORDED FROM MANUDEVI FOREST DIST .JALGAON, MAHARASHTRA (INDIA)

Chimankar N.V.
Department of Botany, S.R.N.D.Arts, Commerce and Science Collage Bhadgaon Dist. - Jalgaon (M.S.) 413307
***Corresponding Author*- Chimankar N.V.**
Email-Chimankar.narayan@yahoo.in
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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 present paper two genera ie. Lamproderma Rost. and Stemonitis Roth.with their single species ie. .Lamproderma scintillans (Berk, & Br,) Morgan and . Stemonitis Roth. with two species . Stemonitis flavoginata Jahn and Stemonitis smithi Macber respectively are being described for the first time from this region.

Key Words: *Myxomycetes, 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. Manudevi forest the region under investigation is very rich in biodiversity-constitute the districts Jalgaon. 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 preserving.

In rainy season, the collected specimens were dried in the incubator or

and oven at 40'o 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),Hagelstein (1944), Farr (1976), were followed. Monographs on Indian Myxomycetes of Thind (1977), Lakhanpal and Mukerji (1981), were of almost indespensible for final confirmation. Concerned literature in this regards were also studied.

Results And Discussion

1. ***Lamproderma Scintillans*** (Berk. & Br.) Morgan

J. Cinc. Soc. Nat. Hist., **16**, 131, 1894.

Martin G. W. & C. J. Alexopoulos, **The Myxomycetes**, p. 120-121, 1969.

(FIG. 1)

Fructification sporangiate, stipitate, scattered to gregarious, brown or coffee brown, 0.76 – 1.1 mm tall. Sporangia globose, silvery metallic shining, 0.2 – 0.35 mm in diam. Stipe long, erect, slender, cylindric, smooth, black, shining, opaque, 0.6 – 0.90 mm long. Hypothallus well developed, brown to dark brown, rotate, smooth. Peridium thin, iridescent, delicate, aeriolate, membranous, transparent ; dehiscence irregular, persistent at the base of columella as a 173vane. Columella a continuation of stipe and concolorous to stipe, cylindric with obtuse apex, reaching upto the centre of sporangial cavity. Capillitium abundant, arising from the columella, stiff, filamentous, dichotomously branched and with many cross bars towords periphery, rarely with dark swelling, dark or violaceous brown, paler at both the ends, ends pointed and free. Spores black or coffee brown in mass, violaceous brown under transmitted light, globose, 7.0 – 9.5 um in diam., minutely and uniformely warted or verrucose.

Collection Examined: NVC/303, 304 305, 306 Aug.-2017, Manudevi; Dist. Jalgaon. On dry and decaying leaves, stem of angiospermic plants.

Distribution : India : Assam (Agninhothrudu, 1959) ; Delhi (Lakhanpal & Mukerji, 1981) ; H. P. (Lakhanpal, 1973 ; Lakhanpal and Mukerji, 1981 ; Thind, 1977) ; Karnataka (Indira, 1968) ; M. S. (Nanir, 1983; Chimankar, 1993; Tembhurne, 2011) ; Punjab (Thind, 1977) ; T. N. (Agnihothrudu, 1956) ; U. P. (Thind and Sohi, 1956) ; W. B. (Bruhl and Gupta, 1927 ; Lodhi, 1934). The species is characterized by its long-stipitate, globose, iridescent sporangia ; the capillitium is paler at the base ; rod-like columella and distinctly verrucose spore. It is differentiated from *L. colombianum* (Pers.) Rost., by the smaller spores and the characteristically paler base of its capillitium. The collections described in the present work are similar to Indian populations described earlier by Thind (1977) and Lakhanpal & Mukerji (1981).

2. ***Stemonitis FlavogenitA*** Jahn

Verch. Bot. Ver. Brand **45,** 165, 1904.

Martin G. W. & C. J. Alexopoulos, **The Myxomycetes** p. 193, 1969.

(FIG. 2)

Fructification sporangiate, stipitate, clustered in the form of campact patch or colony, 8.5 – 11.5 mm tall. Sporangia free, violaceous brown ro coffee brown, elongated, cylindrical, falcate, broader at the apex, 4.8 – 7.1 mm long. Stipe slender, slightly broad at the base, straight or bent, cylindric hollow, smooth, black, shining 1.9 – 2.3 mm long, less than sporangial length. Hypothallus common to patch, reddish brown with silvery shining, thin, membranous, transparent. Peridium thin, delicate, early evancent, sometime remain persistent, dehisces irregularly. Columella is a continuation of stipe and concolorous to stipe, attenuating upwords with blunt ending or terminate into branches. Capillitium arising from the entire length of columella, main branches thick, flattened towards the base, branched and anastomosed with few membranous expansions at the junction, violet brown, peridial net paler, with irregular meshes, meshes upto 30 µm in diam. Spore brown in mass, pale violaceous brown under transmitted light, globose, 7.0 – 10 µm in

diam., warted or verrucose, warts scattered or in small lines.

Collection Examined: NVC/ 299, 307, 308, 309, Sept. 2017, Manudevi Dist.Jalgaon. On dry and decaying wood.

Distribution : India : Delhi (Singh & Pushpavathy, 1965) ; H. P. (Lakhanpal, 1954) ; M. S. (Rokade, 1989 ; Chimankar, 1993; Tembhurne, 2011) ; Orissa (Ghosh & Dutta, 1962) ; W. B. (Thind & Sehgal, 1963).

S. flavogenita Jahn is characterized by somewhat longer stipe ; the surface net is usually fugacious at the top as the sporangia mature ; surface net and the membranous expansions in the capillitium are often present and columella is usually expanded at the top. Martin and Alexopoulos (1969), suggested that the many, spine-like free ends represent capillitial tips to which the surface net was at first attached. The species is closed to *S. herbatica* Peck, the differentiating characters of this species short stipe, cylindrical violaceous brown sporangia and do not have reticulate spores, but mostly the warts are in lines., but possesses somewhat longer stipe ; the surface net of capillitium is usually fugacious at the top in mature sporangia, and columella is usually expanded at the top. The present population show somewhat smaller spores.

3. ***Stemonitis Smithi*** Macbr.

Bull. Nat. Hist. Univ. Iowa **2**, 381, 1893.

Martin G. W. & C. J. Alexopoulos, **The Myxomycetes**,p. 198-199, 1969.

(FIG. 3)

Fructification sporangiate, stipitate, clustered, erect, pinkish brown, 4.2 – 5.1 mm in total height. Sporangia cylindric, apex obtuse, straight or curved, 2.9 – 3.2 mm long. Stipe slender, somewhat tapering towards the apex, metallic black, shining, smooth, hollow, 1.1 – 2.0 mm long. Hypothallus common to a clusters, reddish brown, smooth, thin, membranous, transperant. Peridium evanescent, sometimes remain persistent towards the base ; dehiscence irregular. Columella is a continuation of stipe, tapering, reaching up to the apex, merged into branches. Capillitium arising from columella, stiff, primary branches flattened at the base, branched and anastomosed forming a network of irregular meshes of 10 – 34 µm in diam., pinkish or violaceous brown, paler towards the end. Spore-mass brown or dark violaceous brown, pale violaceous brown under transmitted light, globose, 4.1 – 5.5 µm in diam., minutely and uniformly verrucose appearing to be smooth.

Collection Examined: NVC/ 310, 311, 312, 313, 314 Aug.2017, Manudevi Dist.-Jalgaon. On dry decaying wood.

Distribution : India : H. P. (Thind, 1977 ; Lakhanpal & Mukerji, 1981) ; Karnataka (Indira, 1968) ; Orissa (Ghosh & Dutta, 1962) ; U. P. (Lakhanpal & Mukerji, 1981) ; W.B. (Thind & Sehgal, 1963) ; M. P. (Kharat, 2000) ; M. S. (Chimankar, 1993; Tembhurne, 2011) ; Gujrat (Salunkhe, 1995). The species is distinguished by short, metallic black stipe, close-meshed surface net persistent above, verrucose spores, often growing on living herbaceous plants. *S. smithi* Macbr is close to *S. axifera* (Bull.) Macbr and differs from the latter in possessing smaller and paler fruiting and smaller and less prominently marked spores, its capillitium possesses small meshes and the columella gradually dissolves into the capillitium before reaching the apex. The populations reported in the present work are be fitting to Inidian collections described earlier by Thind, (1977) and Lakhanpal & Mukerji (1981).

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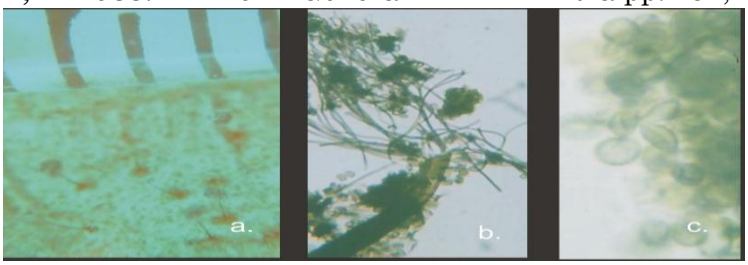
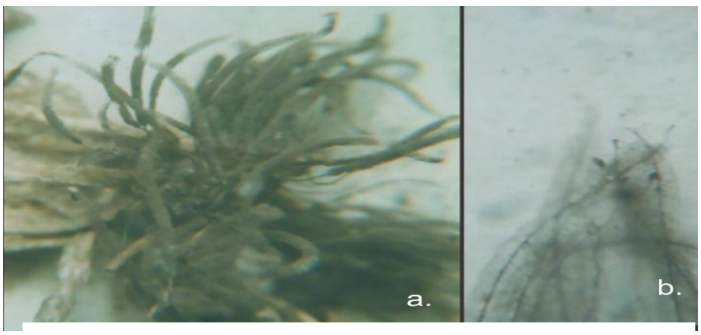


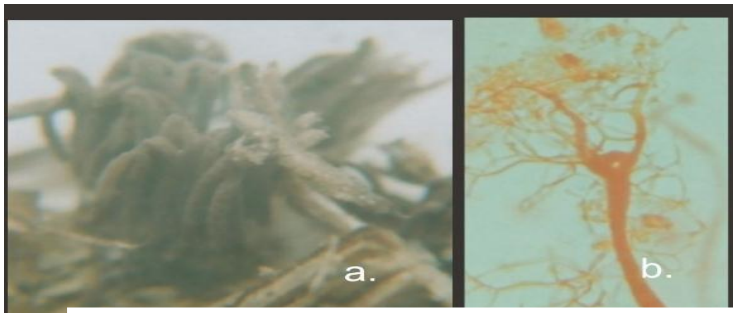
1.*Lamproderma scintilans* (Berk, & Br,) Morgan

a. Habit b. Capillitium c. Spores



2. *Stemonitis flavogenita Jahn*

a. Habit b. Capillitium & Spores



3. *Stemonitis smithi* Macber

a. Habit b. Capillitium & Spores