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RESEARCH ARTICLE

THE MYXOMYCETES OF SOUTH-EAST 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. In the eighteenth paper of this study five species of myxomycetes are being discussed. *Stemonitis* Roth., are being discussed with four species and *Lamproderma* Rost. are being discussed with one species. All species are being reported for the first time from this region.

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 investigates carried out, it is the eighteenth paper in this series in which, about five species belongs from two genera are being discussed as under.

Material 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'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 indensepensible for final confirmation. Concerned literature in this regards were also studied.

Result and Discussion

1. ***LAMPRODERMA SCINTILLANS*** (Berk. & Br.) Morgan

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

COLLECTION EXAMINED: RRT / 8091, 8606, Sept.-2003, 8094, 8095, Aug.-2003, Panhala, Dist.-Kolhapur; 8092, Sept.-2004, Radhanagari, Dist.-Kolhapur; 8605, Aug.-2005, Atapadi. Dist.- Sangli. On dry and decaying leaves, stem of angiospermic plants and on dung.

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); 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 AXIFERA*** (Bull.) Macbr.

N. Amer. Slime-Mould, 120, 1899.

COLLECTION EXAMINED: RRT/ 8704, 8842, 8848, 8852, July-2006, Nimgaon, Tembhurni; 8884, July-d2006, Lamboti, Mohol; 8956, June-2006, Pandharpur, Dist.-Solapur; 8810, July-2006, Hatkanangale, Dist.-Kolhapur. On dead and decaying wood of angiospermic tree.

DISTRIBUTION: INDIA: H. P. (Thind & Sekhon, 1962); U. P. (Thind & Rehill, 1954); Assam (Agnihothr udu, 1958).

It is marked by blackish to coffee brown or camel-hair brown long sporangia of 9–13 mm total height, occurring in small to large clusters. The spores characteristically small and pale coloured and very faintly verrucose to nearly smooth. This species is closely allied to *S. smithii* Macbr., but differes from it in occurring in larger clusters and possessing taller and darker sporangia and larger spores.

3. ***STEMONITIS CONFLUENS*** Cooke & Ellis in Grev., v. **51**, 1876.

COLLECTION EXAMINED: RRT/ 8837, July, 2006, Kawathemahankal, Dist.-Sangli. On dry sugarcane straw.

DISTRIBUTION: INDIA: Karanataka (Indira, 1968); H. P. (Lakhanpal and Mukerji, 1981).

The species is characterized by sporangia clustered, confluent, often forming colonies; stalk short, indistinct or absent; columella long and slender; surface net incomplete; spores reticulate and brownish purple in colour.

Stemonitis confluens Cooke & Ellis is closely allied to *S. splendens* Rost. However *S. splendens* Rost is differentiated by its densely gregarious, long sporangia, which are flexuous above, columella tapers to a fine, flexuous or tortuous thread above, the capillitium arise only from few branches of the columella have characteristically uniform with medium size, polygonal meshes; the spore are minutely but distinctly verrucose.

4. ***STEMONITIS FARRENSIS*** Lakhanpal & Mukerji

Acta. Bot. Indica, **5**: 60: 1977.

COLLECTION EXAMINED: RRT/ 8733, 8734, 8737, 8739, 8740, 8741, 8743, 8744, Jul7-2006, Mangalvedha, Dist.-Solapur. On dry decaying sugarcane straw.

DISTRIBUTION: INDIA: H. P. (Lakhanpal, 1973).

Stemonitis farrensis Lakhanpal & Mukerji, is chacterised by its sporangia in small clusters; stipe short, stout, shining; prominent columella bifurcate below the tip; capillitium forming surface net of irregular meshes; spores prominently warted, with clusters of warts.

Stemonitis farrensis Lakhanpal & Mukerji is compared with *S. inconspicua* Nann.-Brem. *S. farrensis* Lakhanpal & Mukerji is marked by the sporangia dark brown in small clusters; columella bifurcate below the apex; capillitium dichotomously branched forming surface net; spores prominently warted, warts in clusters. While *S. inconspicua* Nann.-Brem., is chacterised by its sporangia dark brown becoming paler after dehiscence, gregarious in small clusters; columella reaching nearly to the apex of the sporangia; capillitium branched, forming internal net; spores reticulate.

5. ***STEMONITIS FLAVOGENITA*** Jahn

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

COLLECTION EXAMINED: RRT/ 8961, July-2006, Ichalkaranji; 8816, July-2006, Hatkanangale, Dist.-Kolhapur; 8821, 8822, July-2006, Kawathemahankal, Dist.-Sangli; 8959, 8963, June-2006, Pandharpur, Dist.-Solapur. On dry sugarcane straw.

DISTRIBUTION: INDIA: Delhi (Singh & Pushpavathy, 1965); H. P. (Lakhanpal, 1954); M. S. (Rokade, 1989; Chimankar, 1993); 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.

Fig. 1. *Lamproderma scintillans*

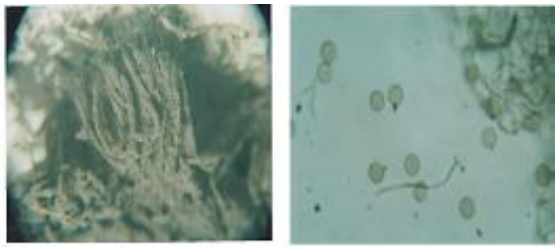

Fig. 2. *Stemonitis axifera*

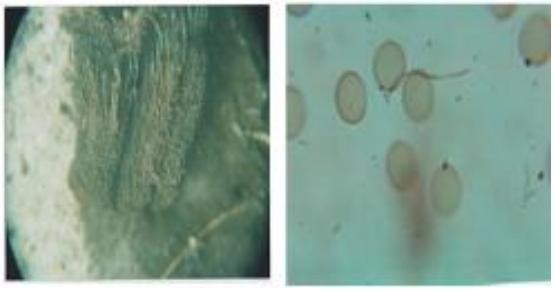

Fig. 3. *Stemonitis confluens*

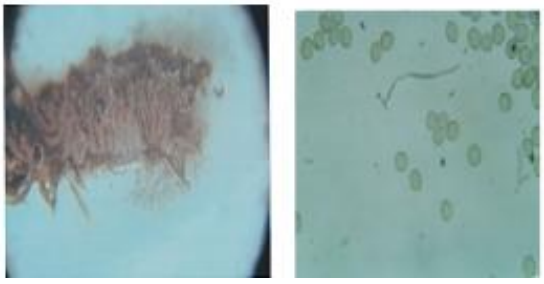

Fig. 4. *Stemonitis farrensis*

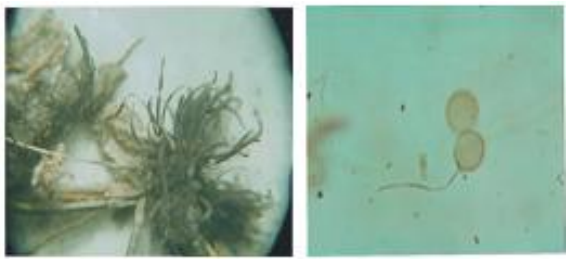

Fig. 5. *Stemonitis flavogenita*

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