



**SPECIES OF THE MYXOMYCETES RECORDED FROM MANUDEV
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.)

Corresponding Author- Chimankar N.V.

Email id: 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 i.e. *Lepidoderma* de Bary with single species i.e., *Lepidoderma effusum* Rokhade & Nanir and *Lepidodermopsis* Hohnel with their two specie i.e.1.*Lepidodermopsis leonina* (Berk. & Br.) Hohnel and 2. *Lepidodermopsis martinii* Lakhanpal are being described for the first time from this region

KEY WORDS: Myxomycetes, slime moulds

INTRODUCTION .

The Myxomycetes or 'true KEY WORDS: Myxomycetes, slime moulds he 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 indispensable for final confirmation. Concerned literature in this regards were also studied.

RESULTS AND DISCUSSION

1. *LEPIDODERMA EFFUSUM* Rokade & Nanir, sp.nov

(FIG. 1)

Fructification sessile, sporangiate to plasmodiocarpous, grayish white, scattered. Sporangia discoid, flat, pulvinate, effused, 0.46 – 0.97 µm in diam. Plasmodiocarps simple, short, small, flat pulvinate, effused, depressed, 0.93 – 4.7 mm long, 0.42 – 0.80 mm wide and 0.17 – 0.21 mm tall. Hypothallus inconspicuous. Peridium single, layer thick, membranous, yellowish, brownish to violaceous brown ; covered by limy scales of stellate crystals compactly forming uniform crust, firmly adhered to peridium ; lime scales strong, pearly white. dehiscence irregular, sometimes floccose, mostly from upper part, lower part persist as shallow tray or bowl. columella none. Capillitium abundant, radiating from the base, attached to capillitium, more or less stiff, dichotomy branched and anastomosed, filaments, broader and rough, slender above with occasional dark, globose or fusiform swellings, some filaments show multiple branching with calciform expanded bases. Spore-mass black, brown to violaceous brown under transmitted light, globose to oval, 10 – 14 µm in diam., minutely and uniformly warted.

COLLECTION EXAMINED: NVC / 291,292, 293 Aug. 2016 Patna Devi Dist. Jalgaon. On dry straw of angiospermic plants.

DISTRIBUTION : INDIA : Gujrat (Salunkhe, 1995) ; M. P. (Kharat, 2000) ; M. S. (Rokade, 1989 ; Chimankar, 1993 ; Jadhav, 1994; Tembhurne, 2011). *L. effusum* Rokade & Nanir, sp.nov. is characterized by sporangiate to plasmodiocaps fructification,

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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. effusu Rokade & 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 µm 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 µm in diam.

1. *LEPIDODERMOPSIS LEONINA* (Berk. & Br.) Hohnel

Sitz. -ber. Akad. Wein. 118, 439, 1909.

Lakhanpal & Mukerji, **Indian Myxomycetes**, p. 299-300, 1981.

(FIG. 2)

Fructification sporangiate, stipitate, rarely sessile, scattered to gregarious, pearly white to ochraceous white, sometimes two sporangia fused, 0.72 – 1.6 mm tall. Sporangia globose, umbilicate below, 0.35 – 1.1 mm in diam. Stipe thick, stout, cylindrical, broader at the base, vertically rugose, deep orange to reddish brown, spongy, opaque, merged in the hypothallus in the form of thick veins, sprinkled with white to yellowish orange stellate lime crystals, 0.35 – 0.95 mm long. Hypothallus prominent, more or less rotate, venulose, orange brown, spongy, densely covered with yellowish or ochor white, stellate lime crystals. Peridium thick, single, cartilaginous, dark brown, shining, aeriolate, marked with raised pale brown ridges of dehiscence forming

reticulum, heavily covered with white, yellowish or pearly white, large, stellate, shining lime crystals compactly arranged forming a layer which crumbles down easily and remain more or less intact at the base of sporangium ; dehiscence irregular along the ridges, upper part floccose, lower part remains persistent as a small shallow cup. Columella globose, dome shaped, clavate, pedicellate reaching upto half of the sporangial cavity, filled with rhomboidal lime crystals. Capillitium radiating from columella and attached to peridium, profuse, filamentous, stiff, wavy, dichotomously branched and anastomosed with few membranous expansion at point of branching along with cup shaped and dark spherical swellings, violaceous brown, paler at the both ends, tips pointed. Spores black in mass, violaceous brown under transmitted light, globose, 8.5 – 10 µm in diam., uniformly warted or spinulose, warts arranged in small curved lines.

COLLECTION EXAMINED: NVC/ 294,295,296,297 Aug.2016; 298, 299, Sept.-2016, Botany Garden Bhadgaon College, Dist, Jalgaon. On dry leaves and decaying wood of angiospermic plants.

DISTRIBUTION : INDIA : Gujrat (Salunkhe, 1995) ; H. P. (Lakhanpal and Mukerji, 1978) ; M. P. (Kharat, 2000) ; M. S. (Rokade, 1989 ; Chimankar, 1993 ; Jadhav, 1994; Tembhrne, 2011) ; U. P. (Thind and Rehill, 1958).

Lepidodermopsis martinii Lakhanpal is close to *L. leoninea* (Berk. & Br.) Hohnel. However former is differentiated in its larger, limeless and fluted stipe; nonlimy hypothallus; peridium and capillitium ochraceous brown; larger and strongly warted spores, which are papillate with thinner and paler on one side. Earlier worker (Hagelstein, 1944; Martin & Alexopoulos, 1969; Farr, 1976; Thind, 1977) treated *L. leonina* under *Didymium* as a *D. leoninum*. The species is distinguished by its robust fruiting, cartilaginous shining peridium with, large spiny crystals breaks

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into more or less uniform polygonal platelets; columella stipitate and shining.

2. *LEPIDODERMOPSIS MARTINII*

Lakhanpal

Norw. J. Bot., **25**, 196, 1978.

Lakhanpal & Mukerji, **Indian myxomycetes**, p.300-301, 1981

(FIG. 3)

Fructification sporangiate, stipitate, scattered to gregarious, snow white to white, 0.63 – 1.7 mm tall. Sporangia globose, 0.38 – 1.0 mm x 0.34 – 0.97 mm in diam. Hypothallus distinct, rotate, brown, thin, membranous, nonlimy. Stipe cylindrical, stout, broader at the base, vertically rugose, dark reddish brown, nonlimy, shining, 0.29 – 1.1 mm long. Peridium single, thick, cartilaginous, areolate, iridescent, showing reticulation of thin paler ridges, covered with stellate lime crystals, falling readily as a clump ; dehiscence along the ridges, breaking into platelates, basal part persistent. Columella globose, hemispheric, orange brown, rough, contains stellate lime crystals. Capillitium profuse, radiating from columella and attached to the peridium, filamentous ; filament thick, stiff, faint brown to orange brown, dichotomously branched and anastomosed. Spore-mass black, violaceous brown under transmitted light, globose, 10 – 11.1 µm in diam., warted, warts arranged in lines forming subreticulation, apiculate with compression ridges, paler and with thinner wall on one hemispheric.

COLLECTION EXAMINED : NVC / 299, 300, 301,302, Aug.-2017,Patna Devi Dist.Jalgaon On dry leaves of angiospermic plants.

DISTRIBUTION : INDIA : Gujrat (Salunkhe, 1995) ; H. P. (Lakhanpal, 1978) ; M. S. (Rokade, 1989 ; Chimankar, 1993, Jadhav, 1994; Tembhrne, 2011) ; M. P. (Kharat, 2000).

L. martinii Lakhanpal species is characterized by scattered nature of fruiting ; presence of cartilaginous peridium marked by yellow lines of dehiscence together with

white lime crystals on the peridium ; ochraceous brown hemispheric columella ; larger apiculate spores with compression ridges, however spore wall on one side and warts in subreticulate arrangements.

Population described in the present work differs from type description in its more or less cylindrical stipe; stiff capillitium, with many calcified vesicles.

L. martinii Lakhanpal can be compared with *L. leonina* Lakhanpal. However, later is marked by the sporangiate fruiting, the peridium and capillitium are ochraceous brown, though the latter bears numerous black swellings at places ; the stipe is long, non-calcarious, fluted and deep reddish brown, the hypothallus is membranous and non-calcarious, the spores are larger and more prominently warted.

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LITERATURE CITED

Dhillon SS and NE Nannanga-Bremekamp, 1978. Notes on some Myxomycetes from North-west part of the Himalaya. *K .Ned. Akad. Wet. Proc. C*, **81**: 141-149.



1. *Lepidoderma effusum* Rokade & Nanir

a. Habit

Farr ML, 1976. Flora Neotropics, Mon . 16. Myxomycetes. *The New York Bot . Gard . N . Y .*

Hagelstein R, 1944. *The Mycetozoa of N. America* , Publ. by Autor Mineola. New York.

Kowalski DT, 1970. A new Folicolous species of *Licea* .*Mycologia*, **62**: 1057.

Lakhanpal TN and KG Mukerji, 1981. Indian Myxomycetes . *J . Cramer* . pp . 530 .

Lister A and G, 1925. A Monograph of Mycetozoa. By A. Lister, 1984 (ed . **2** .,1911; ed . **3**, 1925, revised by G , Lister) *British Museum* (Natural History) London.

Martin GW and CJ Alexopoulos, 1969. The Myxomycetes , *Iowa City press*.

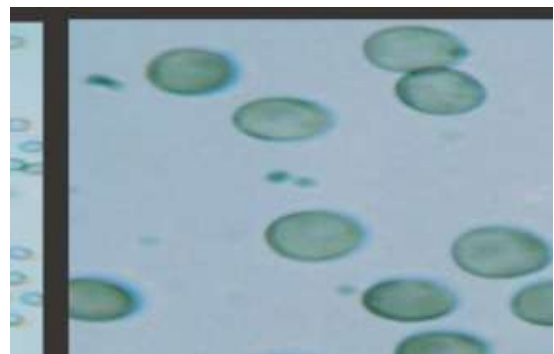
Martin GW., CJ Alexopoulos and ML Farr, 1983. The Genera of Myxomycetes. *Univ. Iowa Press*. Iowa City

Nanir SP, 1985. Contribution to the knowledge of Myxomycetes from India-III B. *Indian bot. Repr.*, **4(1)**:42- 45.

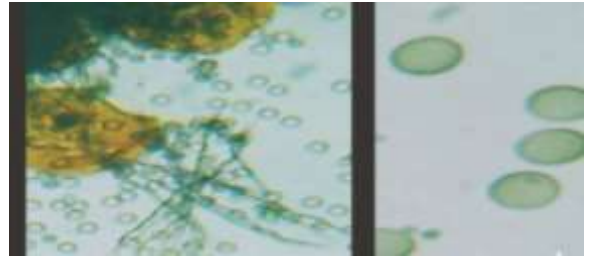
Nanir SP and BG Rokade, 1987. Myxomycetes of Marathwada-I (Ceratiomyxomyxales, Liceales and Trichiales) *Mar. Univ. Jour. Sci.* p. **12**.

Nanir SP and BG Rokade, 1993. Myxomycetes of Jalgaon and Dhule District (Khandesh): India. *Abst. N. C. R.A. P.* Pp. **14**. Abs .

Thind KS, 1977. The Myxomycetes in India pp. 452, *I. C. A . R .* , New



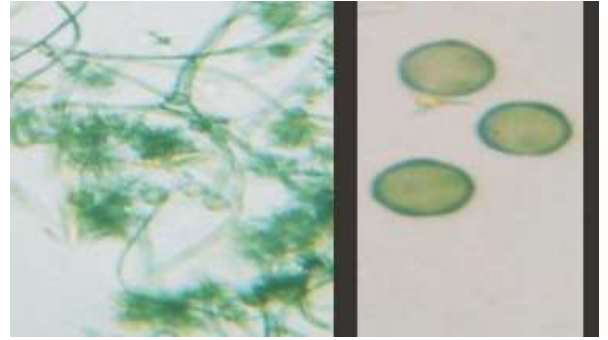
b. Spores



2. *Lepidodermopsis leonina* (Berk. & Br.) Hohnel

a. Habit

b. Capillitium c. Spores



3. *Lepidodermopsis martini* Lakhanpal

a. Habit

b. Capillitium c. pores