

DESCRIPTION

Genus-Scutellinia , Cooke

Mycographia, 260, 1879.

In past nearly all, small operculate discomycetes with conspicuous hairs was treated as members of a single large genus Lachnea (Gillet, Saccardo, 1889; Phillips, 1887, Mässe, 1895; Rehm, 1896; Svrcek, 1948) or Patella (Morgan 1902; Seaver, 1928). More recently some authors (Le Gal, 1953 and Kanouse, 1958) feel need to recognise the diversity that exists within the group, have turned to the re-examination of the generic concepts suggested by the work of Boudier (1885).

The name Scutellinia was first employed by Cooke (1879) as a sub-genus of Peziza and raised to generic rank by Lambotte (1887) . The lecto type species of the genus is S. ^lscutellata (L. ex Fr.) Lambotte. The morphology of the ascocarp of all species of Scutellinia was remarkably similar. Two types of hairs are found, rooting and superficial hairs. Rooting hairs are present in all species of Scutellinia but no other genus except Cheilymenia, while superficial myceloid hairs are found in Scutellinia as well as in large number of other genera. Therefore, on the basis of hair characters in genera of the operculate discomycetes which have been confused with Scutellinia. These members are Malastiza, Cheilymenia, Coprobia, Anthracoboia, Lamprospora, Trichophaea, Humaria, Tricharia , Jafnia and Leucoscypha

etc. Boudier (1885) characterised the genus on the basis of the following characters. Possession of rooting or superficial hairs , orange or red carotinoid pigment localised in the paraphyses, Pseudoparenchymatous ectal excipulum, ellipsoid to glob^ose, guttulate, sculptured (rarely smooth) ascospores. It has superficial resemblance to Cheilymenia Boud. and Trichophaea Boud, but Cheilymenia differs from Scutellinia by having eguttulate ascospores and Trichophaea by absence of rooting hairs and carotinoid pigment in the hymenium. All the species of Scutellinia are terricolous or lignocolous. The genus is much larger but is poorly known as form and its taxonomy is concerned . Many workers studied the species of the Scutellinia especially of their own regions and also tried to key out. The re-examination and detailed monographic study of the genus is indeed essential, which would def^enitely reduced, ~~The~~ total number of the species which has ~~been~~ created a complex situation due to incomplete morphology, poor availability of the material and overlapping characters described.

About 90 species of Scutellinia have been reported from the different parts of the World. Only eleven species and two varieties have been reported from India (Bilgrami etal., 1979,81).

Recently, J. Moravec (1989) synonymed ^{4 iA} Cheilymenia alleghenensis to Scutellinia alleghenensis. T. Schumacher (1990) recorded about ten species of Scutellinia. Haffner (1993) worked out single species from Germany.

Present Collection :

Scutellinia.

Fig. No. 1, text Plate No. 1.

Apothecia 3-5 mm diameter, saucer shaped, ^oorange to brown coloured, sessile, hairy, hairs only one type i.e. rooting, 14.5 - 39.9 x 2-3 μm with forked bases, 2-5 septate, dark brown, thick walled, attenuated toward the apex, smooth; basal rooting hairs short, straight or slightly curved, brown, 2-3 septate, medullary excipulum continuous with the hypothecium of small cells with their long axes horizontal and ectal excipulum larger, more loosely aggregated cells with their long axes oriented radially from the centre of the cup, not bounded by an external epidermis like membrane; asci cylindrical, 8 - spored, operculate, unitunicate, J-ve, sub-sessile, 14.6 - 15.8 x 1-2.5 μm ; ascospores ovoid, hyaline, sculptured with freely isolated warts, biguttulate, one celled, 1.32 x 1.98 μm ; paraphyses sub-cylindrical, clavate, simple, longer than asci and measured 14.5-19.9x1-1.5 μm .

Hab: Half decomposed unknown wood, Koyananagar (Dist. Satara), 14th August 1995, Leg. S.G. Jadhav and deposited in M.H.B.D., Y.C. College of Science, Karad, W.I.F.NO. 1 .

TABLE NO.1 : Comparison between the species of Scutellinia,
Cooke and present collection.

Name of species.	Habit and colour of apothecia.	Dia.of Apothecia.	Dimensions of Ascus.	Dimension of Ascospore.	Ornamentation on ascospore.	Length of setae.	No.of septa on the setae.
<u>Scutellinia armatospora.</u>	On soil Spectrum red.	2-5 mm.	231-264 (-300)x 20-30 μ m.	20-23 μ m	Spherical, Sculptured red Spine like warts upto 1.5-2 μ m high uniguttulate	125-150 (-300) μ m.	2-3 septate
<u>S.deci-pience.</u>	On soil Orange red.	3-4 mm.	231-250x 17 μ m.	21.5-2x 11.5-13 μ m.	Elliptical moderately sculptured with warts guttulated.	750-1000 x 25 μ m. (long) dark	10-12 septate dark brown
<u>S.erina-ceous.</u>	On rotten wood. Orange red, gregarious	3-4 mm.	248-264x 18.5 μ m.	20x11.5 μ m.	Ellipsoidal, smooth, 2-3 guttulate.	225-250x 18 μ m.	Inconspequently septate
<u>S.lustatiae.</u>	On soil. Scarlet red/ orange.	2-4 mm.	231-248x 13-17 μ m	20-23x 10-13 μ m	Ovoid, sculptured anastomosing warts 1-2 guttulates.	750-950 x 31.5 μ m. forked.	2-9 septate.
<u>S.hirta.</u>	On soil Scarlet red.	2-3mm.	248-264x 20 μ m.1-4 spores well developed and matured.	20x13 μ m.	Elliptical sculptured rounded warts, 1-2 guttulates	125-12 μ m. tuberculate.	1-3 septate.

1	2	3	4	5	6	7	8
<u>S. ampullacea</u>	On damp soil Yellow Orange.	2-3 mm.	198-254x 13 μ m.	17x10 μ m	Ellip- soidal fine warts, 1-2 gutt- lates.	300-500 x23-30 μ m.	3-5 septate
<u>S. trechispora.</u>	On soil Spectrum red.	3-10 mm.	20-25x 250-300 μ m.	20-24 (-25) μ m.	Spheri- cal sculpt- ured round warted unigu- ttulate.	75-250 (-300) μ m.	Septate
<u>S. asperum.</u>	On rotton wood. Orange red/ spectrum red.	10 mm.	250-300 x 15-20 μ m.	10-13 x 19-23 (-25) μ m.	Ellipsoidal, warted. 0.5 to 1 μ . high gutt- late.	250- 1500 (-2000) 35 μ . broad.	Septate.
<u>S. pennsylvanica.</u>	Rotton wood, Scarlet red.	5-25 mm.	15-17 x 200-250 μ .	(8-)10-13 (-14) x (17-) 16 (-21) μ . Width 1.5- 1.6	Ellipso- dial, strongly sculptu- red, anas- tomeous warts.	200- 1700 (-2300) μ .	Septate.
<u>S. umbrarum.</u>	On soil frequently on wood. Orange to red.	8-20 mm.	15-20 x 240-300 μ	(12-) 14-16 (-18)x (19-)20-24 (-25) μ .	Ovoide, ornamen- ted 1-2- guttulate.	(75-) 150-700 (-900) μ .	2-8 septate dark brown.
<u>S. heimii.</u>	On wood/ soil.	4-6 mm.	280-320x 20-25 (-28) μ .	20, 50-26, 50x14-19 μ .	Ellip- soide guttu- lated, spinous.	470-1150 x30-47 μ .	Septate.
<u>S. pseudomargaritaceae.</u>	On wood.	7-12 mm.	270-350 x 21-33 μ .	25-40 x 14-20, 50 μ .	Ellip- soide, guttulate.	500-700 (800) 22-36 μ .	Septate.

1	2	3	4	5	6	7	8
<u>S. setosa.</u>	On wood. Orange.	1.5-2 mm.	-	18-25 x 10.5-16 μ.	Elliptic, 1-2 guttula- tes.	300- 1000μ.	Septate.
<u>S. hirt- ella.</u>	Soil, fruit, Yellowish red.	2.5-3mm.	198-215-x 13 μm.	20-23x 10-13μm.	ovoid, sculpt- ured freely warts anasto- mising.	750-1125 x18-28 μm. forked.	2-6 septate
<u>S. verru- cipolaris.</u>	On soil, occasion- ally on wood. Scarlet red.	2-8 mm.	240-300 μ.	(7.5)9-11x (17-)19-22 (-24)width 0.15 μ.	Ellip- soide, sculpt- ured bigutt- ulate, conspi- quous warts.	100-400 (-500) μ.	2-3 septate
<u>S. scute- llata.</u>	On soil/ wood, Orange red.	3-6 mm.	198-231x 13-14 μm.	23-13μm.	Elliptic guttu- late sculpt- ured in- conspe- quous.	812-875 x20-25 μm	0-2 septate
Present colle- ction.	On stem/ wood. Brown colour.	3-5mm.	14.63- 15.84x 1-2 μm.	1.32- 1.98μm.	Elliptic ornamen- ted.	14.53- 39.9 x 2-3 μm.	2-5 septate

To identify the present material of Scutellinia, the usual research techniques are used. From 101 species of Scutellinia about 16 available species and the references of remaining 85 species of Scutellinia have been referred with the present material, but the present material does not matches with the previously recorded available references of Scutellinia. Thus we may proposed a new species of Scutellinia but the further research study is necessary to raise a new species of Scutellinia. So we have treated this material as Scutellinia, Species.

Holotype : Scutellinia species.
Jadhav and Ghadge.

*How can you call this as a
holotype when you have
not made a new species?*

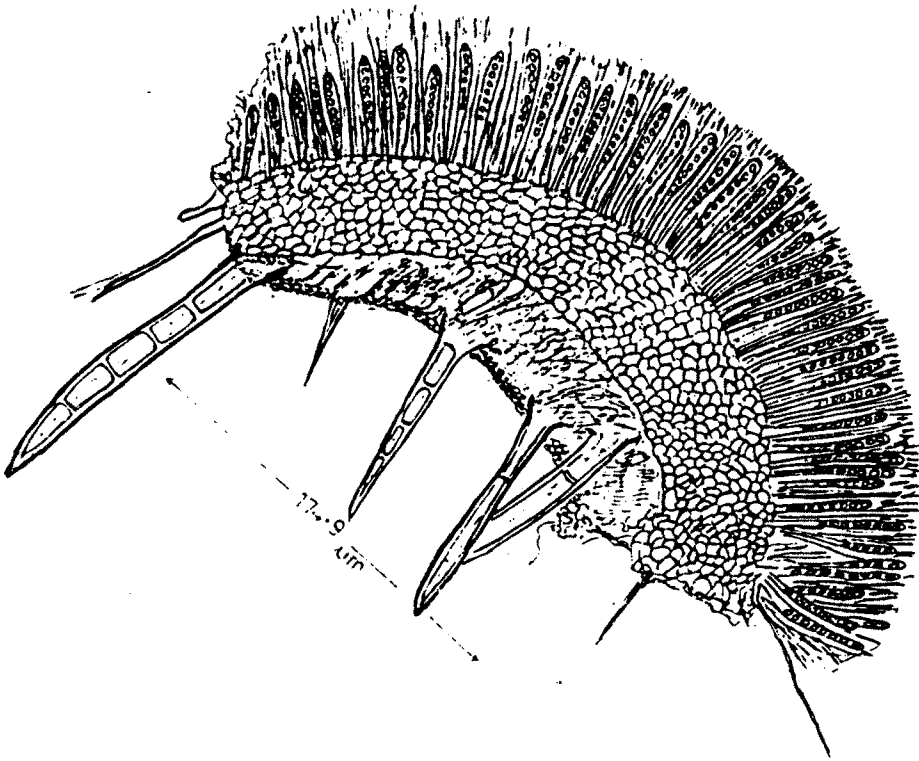
Etymology: Species, minute apothecia, asci, ascospore as compared to available record of Scutellinia.

Type Locality: Koyananagar (Dist. Satara)

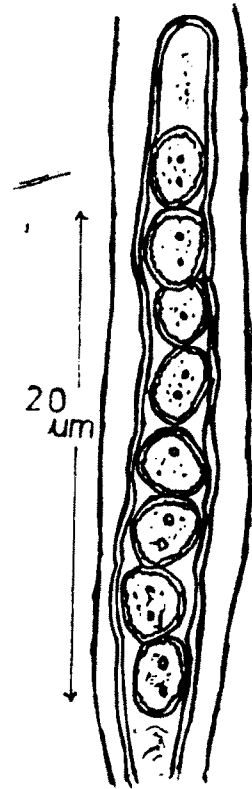
Type specimen: M.H.B.D., Y.C.College of Science,
Karad, W.I.F.NO.1

TEXT PLATE NO. 1

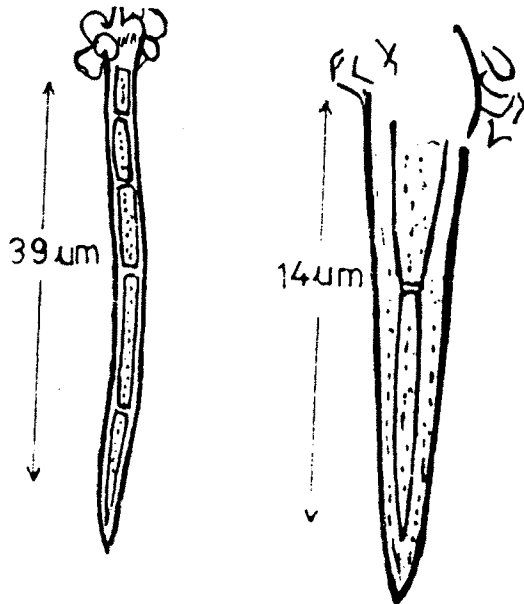
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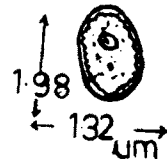
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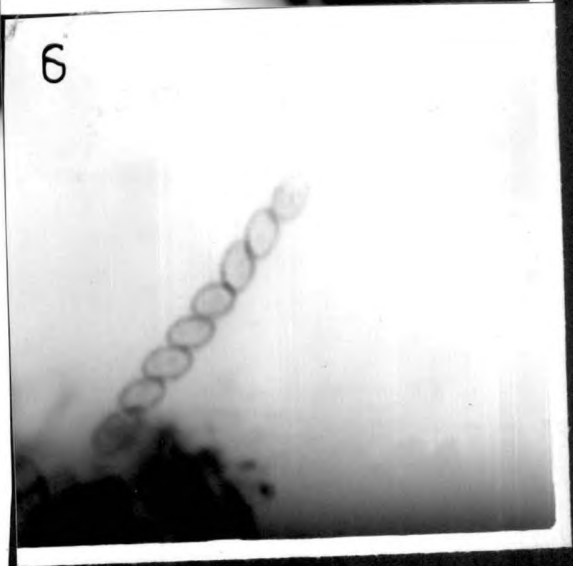
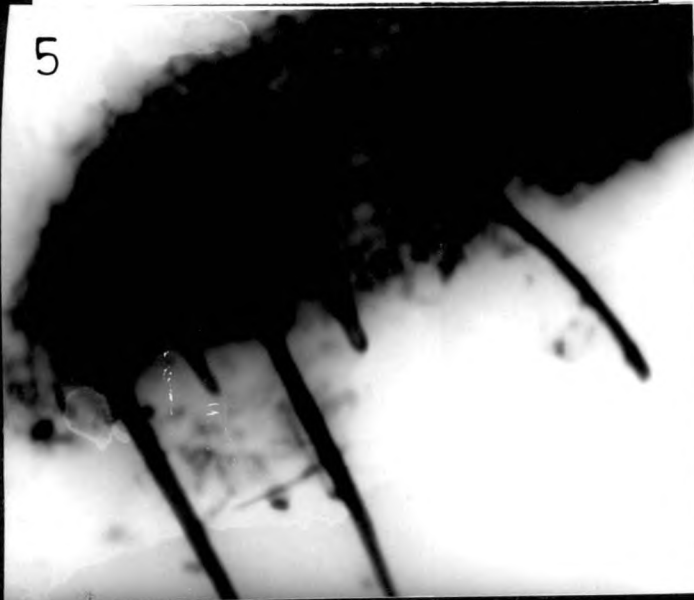
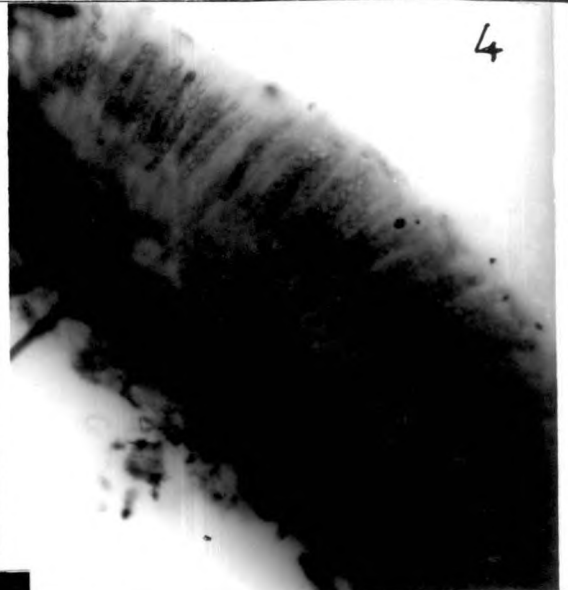
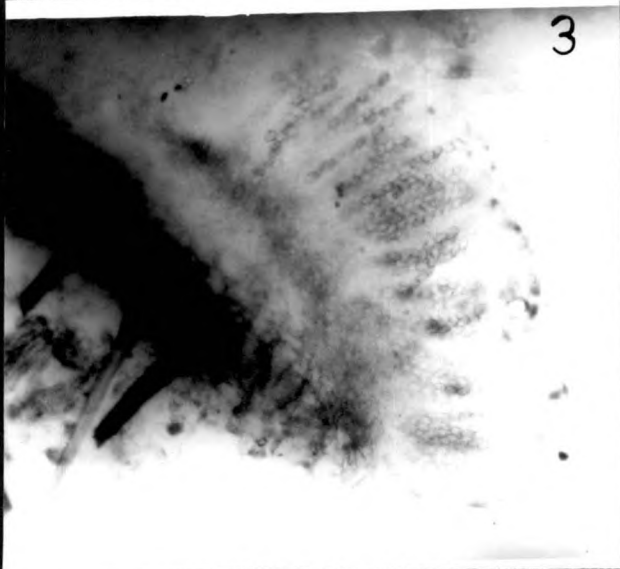
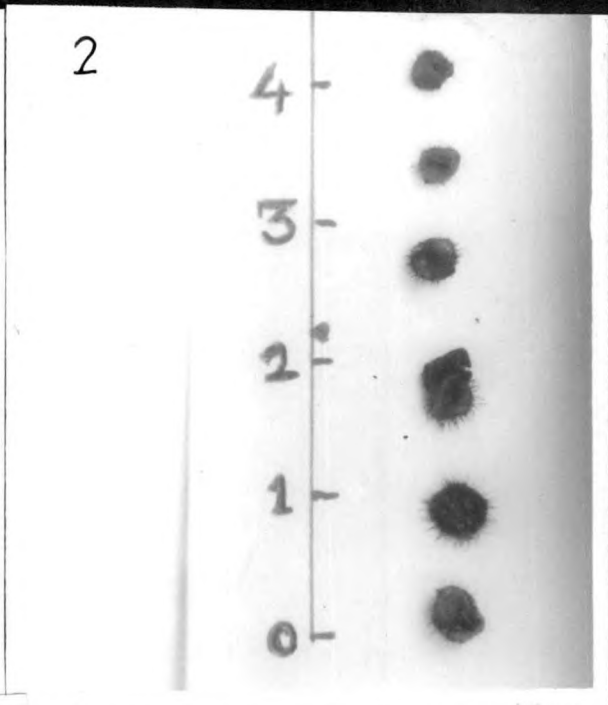
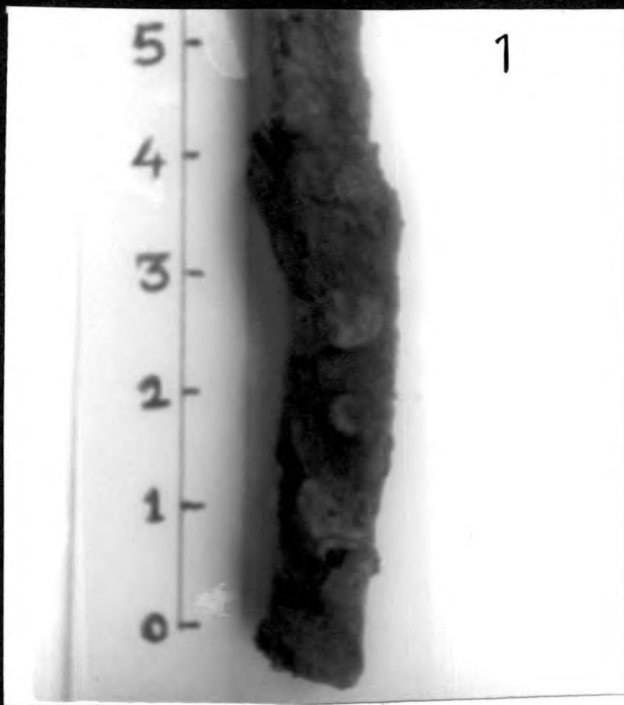
Photoplate No1

Explanation of Photoplate of Scutellinia Cooke Species

Figures - 1 to 6

- Fig No.1 Habit on wood.
Fig No.2 Entire Apothecia.
Fig No.3 V.S. of apothecia .
Fig No.4 Part of aprothecia magnified.
Fig No.5 Setae.
Fig No.6 Single ascus with ascospores.

PLATE NO. 1



Genus : Lamprospora De Notaris

Comm. Critt. Ital. 1:388, 1864.

The genus Lamprospora was erected by De Notaris in 1864; There has been controversy regarding typification of Lamprospora, but Rifai and Eckblad (1968) in their own way have effectively concluded that L. miniata De Not. is to be regarded as the type species of the genus. The genus Lamprospora belongs to the family Pezizaceae of the order ^g ~~P~~ezizales and tribe Aleurieae. It is characterised by sessile, saucer or shallow cupulate apothecia with whitish hyphal elements, asci without forked bases, ascospores globose to subglobose, with one or more large oil drops, mostly ornamented with tubercles^e, warts, spines, and reticulation of different types. Excipulum with textura angularis and textura intricata or textura globulosa and angularis.

About 30 species of the genus have been known and out of these, six species have been reported from India which have been also key^d out (Thind et al, 1957 ; Bilgrami et al, 1979 1981) .

Recently about 17 species are added in the list of recorded species. Benkert (1987, 1993) recorded about 15 species from te Sweden and France. T. Schumach[?] (1993) recorded two new species.

Present collection :

Fig. No. 2, Text Plate No. 2.

Apothecia upto 2.5 cm. in diameter, snow white, sessile, saucer shaped or shallow capulate to scutellate to lenticular ; externally smooth but often with loose whitish hyphal elements, which usually extend beyond the hymenial level to form a fimbriate margin; hymenium yellowish white; asci 8-spored ; operculate, cylindrical to long , clavate-cylindrical, unitunicate, 11.5-13.2x0.6-1.3 μ m, bases usually not forked, J-ve, ascospores globose to subglobose, uniseriate, 0.66-1.32 μ m in diameter, with one or more large oil globules, hyaline, smooth, paraphyses straight, simple, sometimes branched at the base, 12-15 x 0.6 μ m.

Hab.: On damp soil, Koyananagar (Dist. Satara), 14th August 1995, Leg. S.G. Jadhav and deposited in M.H.B.D. Y.C. College of Science, Karad, with W.I.F.2.

TABLE NO.2: Comparison between the Species of Lamprospora De Not.
and present collection

Species.	Habit	Apothecia dia.	Dimensions of Asci	Diamen- sions of Ascospores	Paraphyses
<u>Lamprospora</u> <u>leptodictya</u>	On damp soil	1-1.5 mm Orange	200-250 x 19-21 μ m	15-17.2 x 13-15.2 μ m tuberculate	230-250- x 3-3.5 μ m
<u>L.gigantea</u> sp.nov.	On damp soil	2-3 cm. super white	240-264 x 13-15 μ m	17-18.5 μ m tuberculate, spathulate	250-260 x 2-3.2 μ m
<u>L.Crec'</u> <u>hgueraultii</u>	Wet clay soil	4.5 mm Yellowish orange.	250-310 x 19-24 μ m	17.5 - 20 μ m with spine.	215 x 21 μ m
<u>L.lobata</u>	On damp soil	2.5 cm white	198-230 x 11-13 μ m	11-13 μ m tuberculate	200-225 x 2-2.5 μ m
Present collection	On damp soil	2- 5 cm Snow white	11.5-13.2 x 0.6-1.3 μ m	0.66 - 1.32 μ m Smooth.	16-18x0.5-1 μ m.

The present collection of Lamprospora is compared with other previously reported species of Lamprospora. The present material does not match with other species except L. lobata. The present material shows variations with respect to larger sized apothecia, smaller asci and smooth ascospores than L. lobata. Thus we have created a new variety as Lamprospora lobata var. Koyananagar^eansis var. nova.

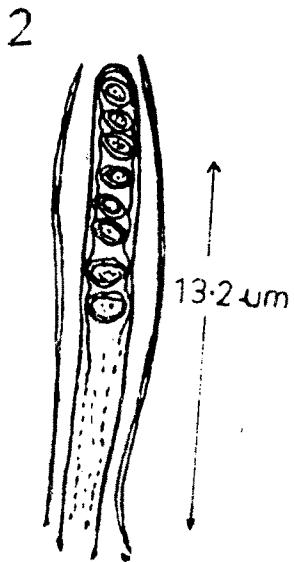
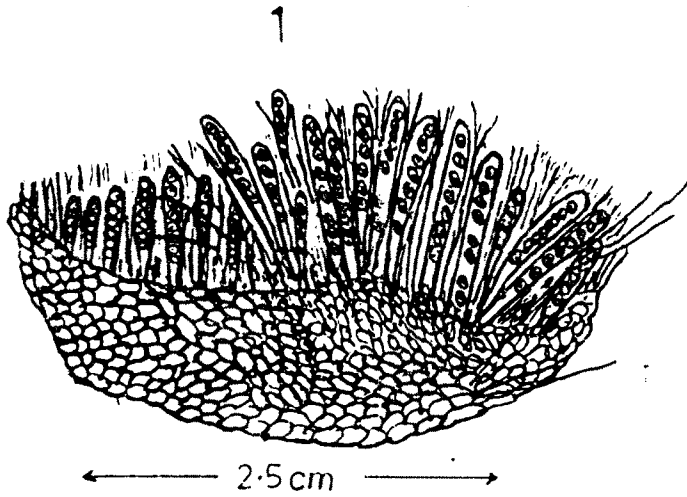
Holotype : Lamprospora lobata.
var. Koyananagar^eansis, Jadhav and Ghadge.
7

Etymology : Koyananagar^eansis - the variety is named for its locality ~~and smaller asci and ascospores.~~

Type locality: Koyananagar (Dist. Satara).

~~Type Specimen:~~ ^{on damp soil} In M.H.B.D., Y.C.College of Science,
Karad, W.I.F. NO.2.

TEXT PLATE NO.2



Photoplate No.2

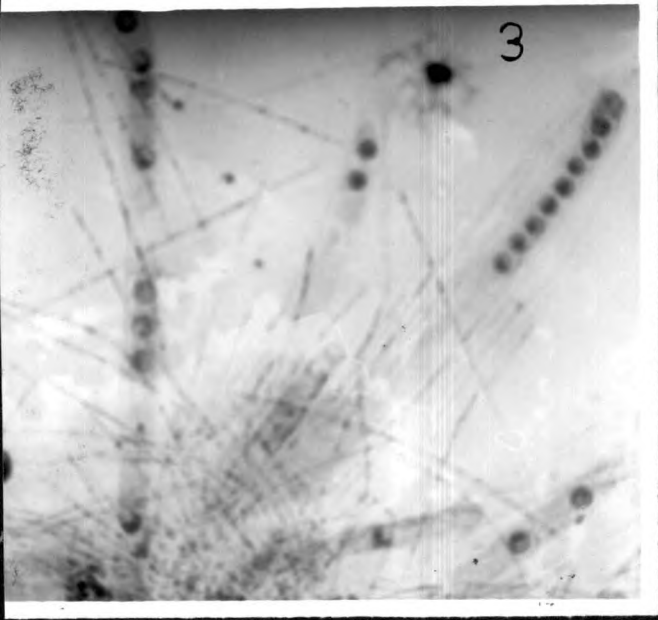
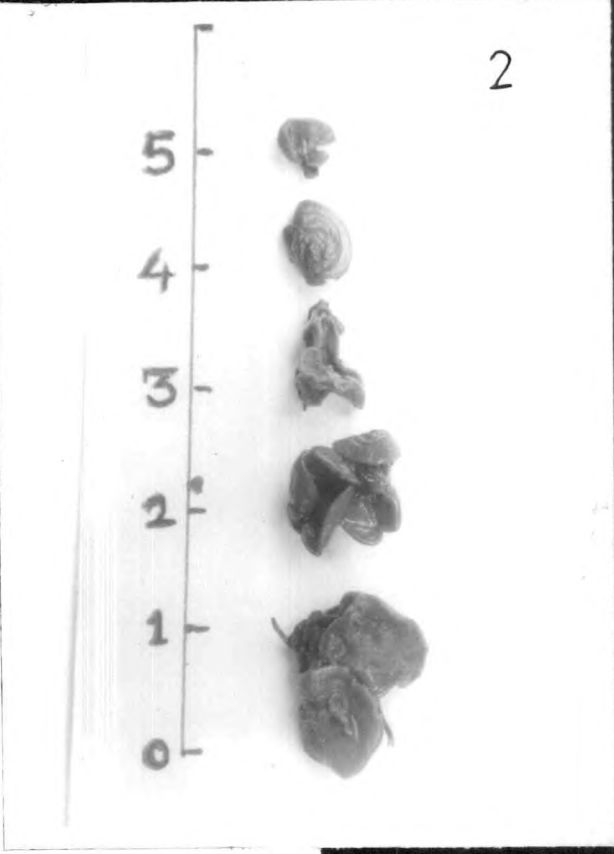
Explanation of Photoplate of Lamprospora ¹/Lobata (Berk.
and Curt.) ^{Seo^{vert.} var. Kyriana Przewalski} Figures - 1 to 3

Fig No.1 Habit.

Fig No.2 Entire Apothecia

Fig No.3 Asci showing ascospores.

PLATE NO. 2



Genus-Octospora Hedwig Ex.S.F.Gray.

Natural arrangement of British Plants 1 : 666, 1821.

The genus Octospora was established by Hedwig in 1821 with Octospora lecoloma Hedwig Ex. S.F. Gray as a type species. The genus belongs to the family Pyronemataceae, tribe Aleurieae of the order Pezizales.
~~Pyronemataceae~~
 The genus and its species are characterised by small brightly coloured, creamy white to yellow, orange red, fleshy, sessile or sessile glabrous apothecia without hairs. Ascospores are smooth, hyaline or brown in colour, guttulate or eguttulate. Protruding asci above hymenial level at maturity are absent. Asci 8 spored, operculate, cylindrical to subclavate, j+ve; paraphyses simple or branched and with or without swollen apices and septate.

The genus Octospora Hedwig Ex. S.F. Gray was considered to be more or less a homogenous taxon, until Rifai (1968) made Octospora fusispora (Berk.) Brumm. the type of his new Genus - Inermisia. Subsequently Svrcek (1969) created another genus Kotlabaea to accommodate Octospora deformis (Karst.) Gamundi → Kotlabaea Svrcek is so far monotypic whereas two species viz. Inermisia buchsi (Henn.) Morone and I. aggregata Berk. and Br. Svrcek were added to the genus Inermisia. Khare and Tewari (1978) studied large number of collections of

Octospora and the genera Inermisia Rifai and Kotlabaea Svrcek and suggested that the differences among the three genera are not so greater than those present in the various species of Octospora. Khare and Tewari recognised Octospora Hedwig ex. S.F. Gray as a large genus and proposed ^{two} ~~three~~ sub-genera viz. (~~Octospora~~ Hedwig and S.F. ~~Gray~~). Byssonectria (Karat.) Khare and Tewari and Kotlabaea (Svrcek) Khare and Tewari.

Khare and Tewari (1978) recorded and key^d out about 46 species of genus Octospora. All the species are saprophytic and growing on humus rich soil, rotten wood and leaves. About 13 species are known from India.

Recently M. Caillet (1987) ^{y 18} synn^onamed about eight species from the France. T Schumach (1992) recorded species from Norway. Yeiz Z. Wang, and Kimbrough gave monographic studies of Nort American species of Octospora previously described to Lamprospora.

TABLE NO.3 : Comparison between the species of Octospora Hedwig ex.
Gray and present collection.

Species.	Habit	Dimensions of Apothecia.	Diamensions of Asci.	Dimension of Ascospores.	Paraphyses
<u>Octospora leucoloma.</u>	Dead angiospermic leaves/soil.	2-2.5 mm. Pink to red.	2-2.5 mm (-300) x 10-15 μ m	18-21 x 10-13 μ m Smooth, elliptical guttulates.	Simple, straight.
<u>O.kanousae.</u>	Bare soil	2-3 mm. Dull Yellow orange.	240-258 x 20-22.5 μ	Oval. 14.2-22.5 x 10-13.7 μ	Filiform, bifurcate swollen apices 245-270 x 5-6.2 μ
<u>O.insignispora.</u>	Soil	2-3 mm. Yellow to orange.	175-206.7 x 11.7 - 19.5 μ ..	Oval, small 23.4 - 27.3 x 11.7 - 15.6 μ	Simple once/ twice branched filiform 175-214 x 2 μ ..
<u>O.Phyllomena.</u>	Dead branch of Casurina sp.	1-2 mm. Pinkish Yellow	231-248 x 13-15 μ m	20 x 13 μ m Smooth, elliptical guttulate.	Simple, unbranched septate.
Present collections					
3(a)	On leaf.	1-2 mm white	28.05 x 0.33-1.65 μ m	1.65 μ m	Simple, unbranched
3(b)	Dead wood	2 mm-3 mm white small stalk.	17.16 x 1.65 μ m	1.65 μ m	Simple,
3(c)	Leaf stalk	2 mm-2.5 mm white	7.92 to 16.50 x 1-2 μ m.	1.32 μ m Biguttulate Oval, smooth.	Simple unbranched

Present collection :

Fig. No. 3 , Fig. Plate No. 3.

Apothecia 2-2.5 mm. in diameter, saucer or cup shaped, sessile, sessile, glabrous, disc white or colourless; medullary excipulum consists of textura intricata and ^eactal excipulum consists of textura globulosa to textura angularis; asci 8-spored, operculate, J-ve, cylindrical, unitunicate, tapering below, 7.9-16.5x1-2 μ m; ascospores uniseriate, one celled, hyaline, smooth, oval, guttulate, 1.32 μ m; paraphyses simple, septate and straight.

Hab: On dead angiospermic leaves, stalk and decomposed wood; Koyananagar (Dist. Satara) , 14th August, 1995, and 30th November, 1995; Leg. S.G. Jadhav and deposited in M.H.B.D.; Y.C.College of Science, Karad, with W.I.F.No. 3 (a).

The present collection of Octospora is compared with other previously reported species. the present material does not matches with other species except Octospora phylllogena. The present material show variations with respect to white or colourless apothecia,

smaller asci, and ascospores than the Octospora phyllogena. Thus we have created a new variety as Octospora phyllogena Var. leucaena Var. nova.

Holotype: Octospora phyllogena var. leucaena.
Jadhav and Ghadge.

Etymology: leucaena - white or colourless apothecia, ~~smaller asci and ascospores.~~

Type Locality: Koyananagar (Dist. Satara).

Type specimen : In M.H.B.D., Y.C.College of
Science, Karad, W.I.F.No. 3 (a).

In addition to this, two additional materials 3b and 3 c are also collected from the same locality. To identify the species of them, further research studies are necessary. Thus the collected materials are reported as Octospora species 3b and Octospora species 3c.

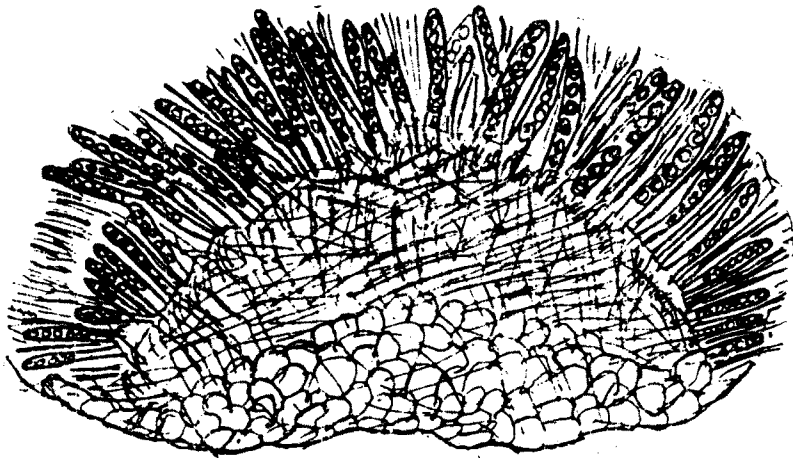
Text Plate No. 3 (a)

Explanation of Figures : 1 to 3

Fig. Nos. 1 to 3 Octospora phyllogena (Seaver)
Khare and Tewari var. leucaena.

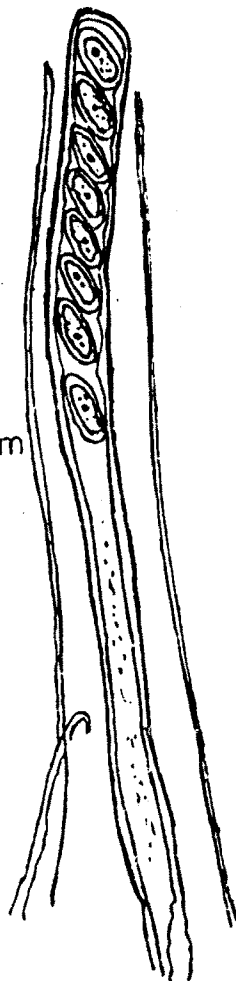
- Fig. No. 1 : V.S. of apothecium,
Fig. No. 2 : Ascus with ascospores and
Paraphyses,
Fig. No. 3 : Ascospore.

1



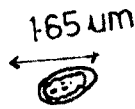
53.20 μm

2



28 μm

3



165 μm

Text Plate No. 3 (b)

Explanation of figures : 1 to 3

Fig, Nos. 1 to 3 Octospora Species,
Hedwing ex. S.F. Gray.

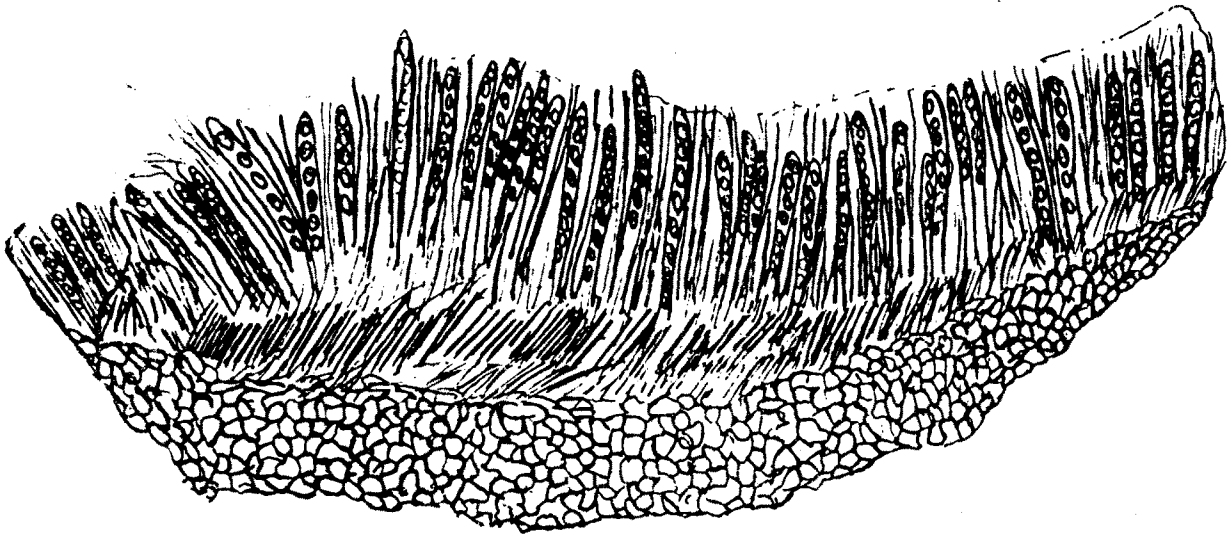
Fig, No.: 1 V.S. of apothecium;

Fig, No.: 2 Ascus with ascospores.
and paraphyses.

Fig, No. 3. : Ascospore.

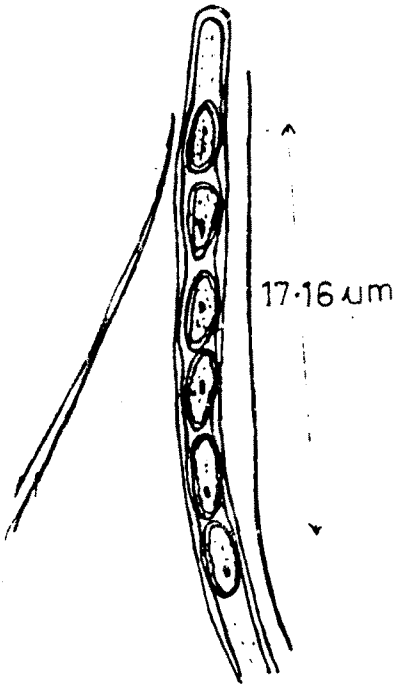
TEXT PLATE NO. 3b.

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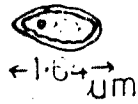
← 106.4 μm →

2



17.16 μm

3



← 1.6 μm →

Text Plate No. 3 (c)

Explanation of Figures : 1 to 3

Fig. Nos. 1 to 3 : Octospora Species,
Hedwig ex. S.F. Gray.

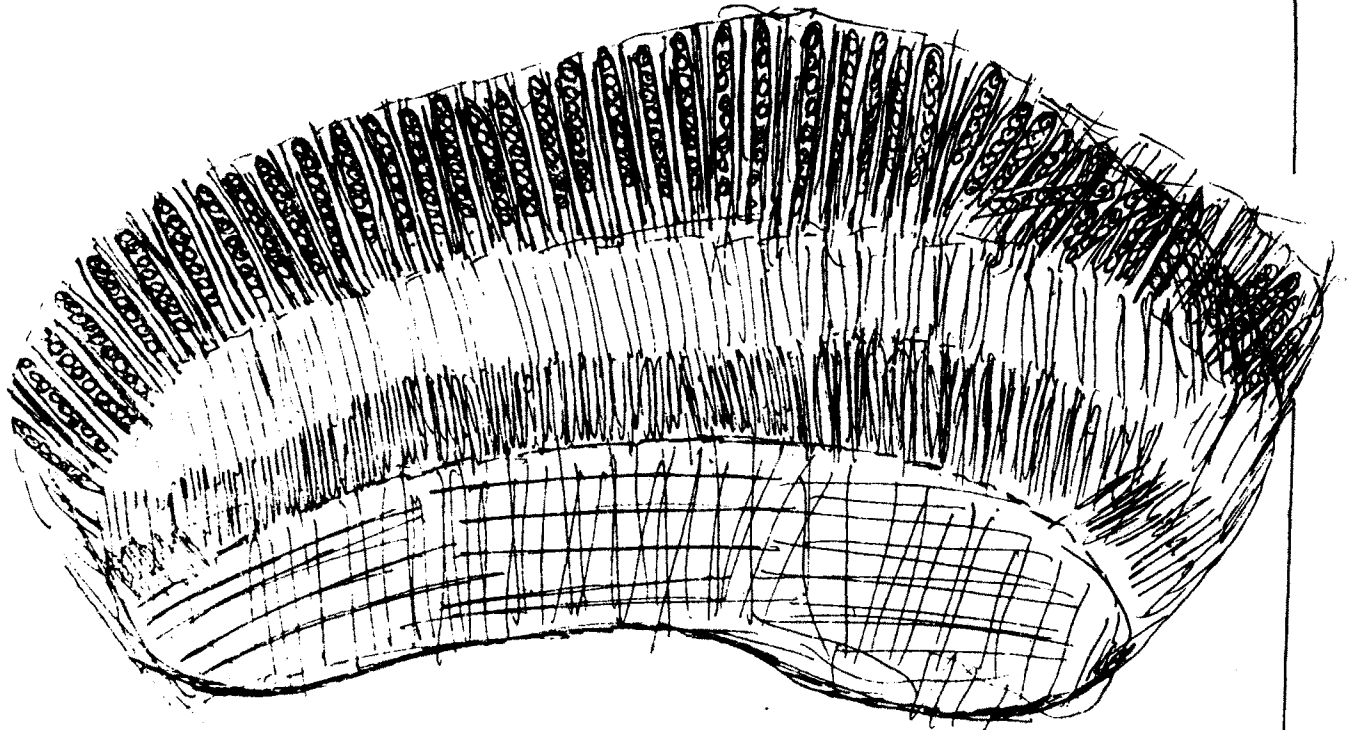
Fig. No. 1 : V.S. of apothecium.

Fig. No. 2 : Ascus with ascospores and
paraphyses;

Fig. No. 3 : Ascospore.

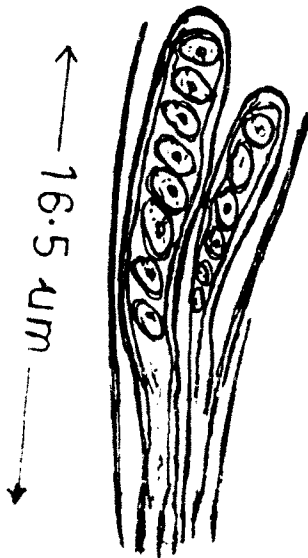
TEXT PLATE NO. 3, c.

1

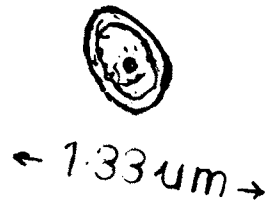


← 0.2 cm →

2



3



Photoplate No3 a)

Explanation of Photoplate of Octospora phyllogena(Seaver)

Khare and Tewari Var. leucaena.

Fig No.1 V.S.. of apothecium.

Fig No.2 Single ascus showing ascospores.

Photoplate No. 3 b)

Explanation of Photoplate of Octospora Species
Hedwig ex S.F. Gray.

Fig No.1 Habit.

Fig No.2 V.S. of apothecium.

Fig No.3 Part of apothecium magnified.

Photoplate No.3 c)

Explanation of Photoplate of Octospora Species
Hedwug ex S.F.Gray.

Fig No.1 Habit.

Fig No.2 V.S. of apothecium.

Fig No.3 V.S. of apothecium magnified.

Fig No.4 Asci Showing ascospores.

Fig No.5 Single ascus with ascospores.

PLATE NO. 30

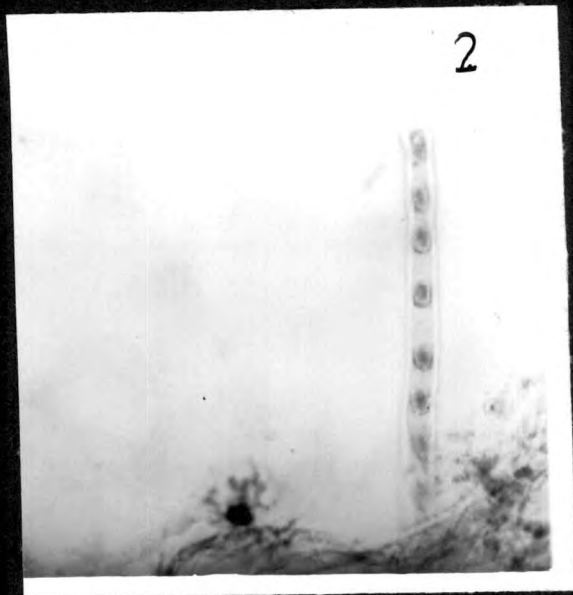
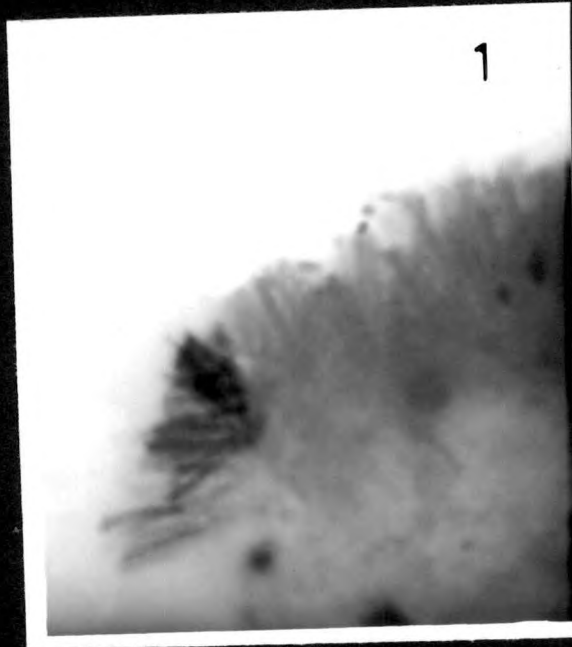


PLATE NO 3b

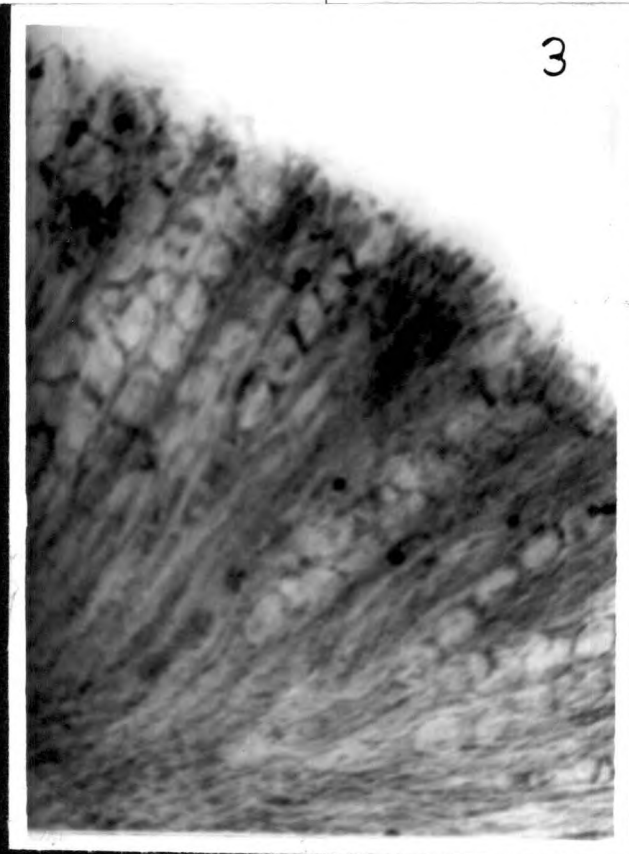
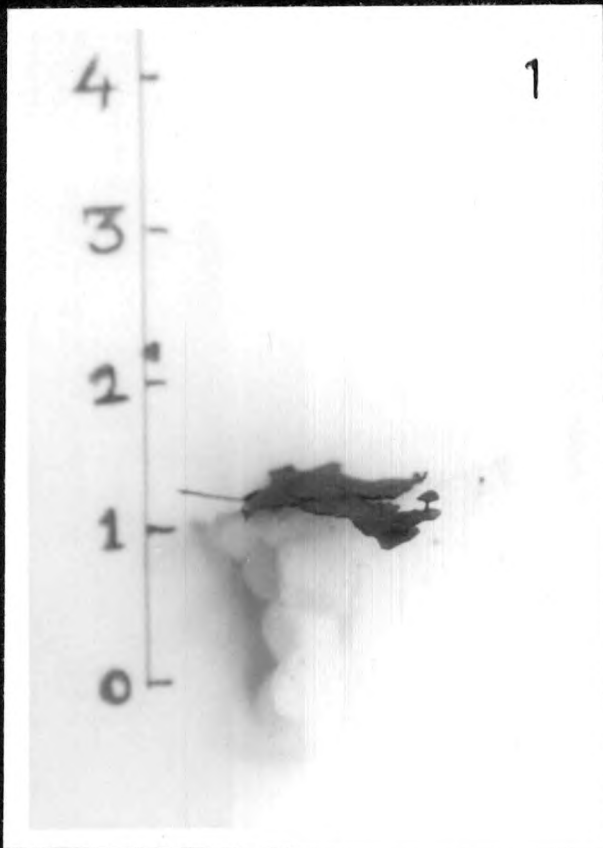
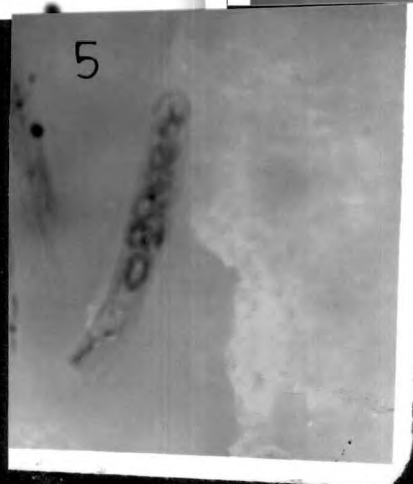
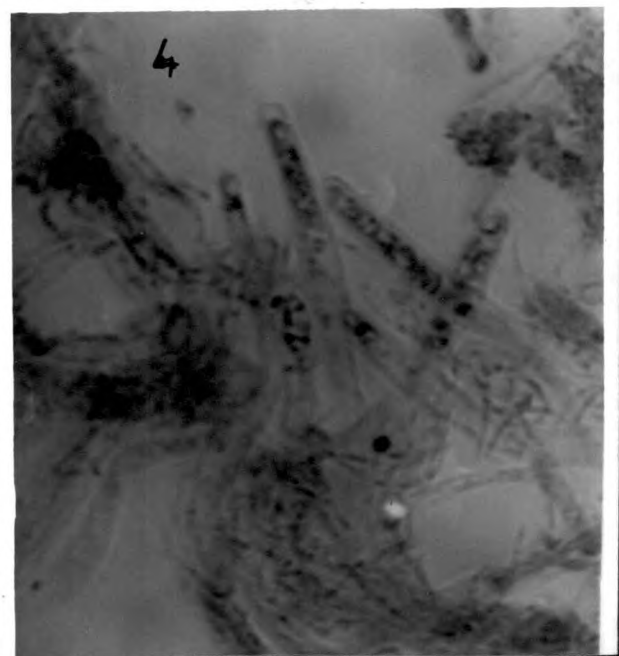
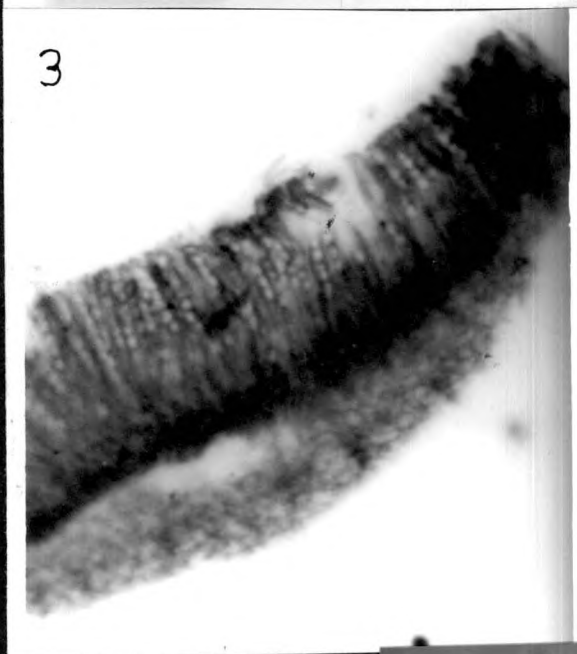
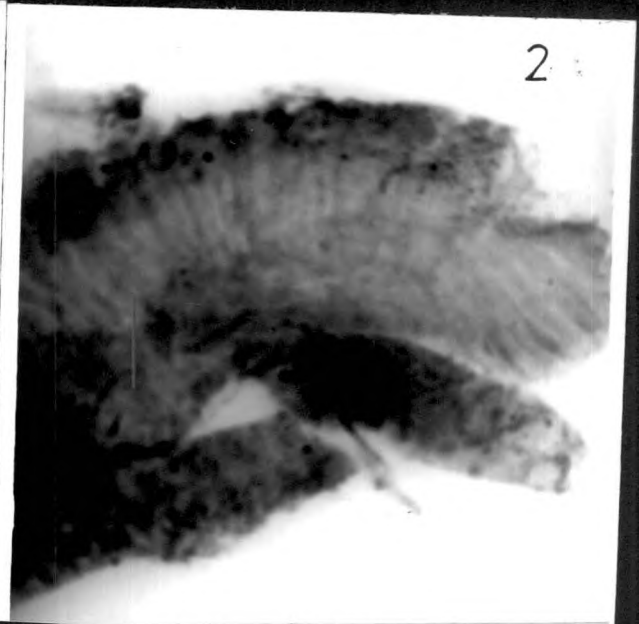
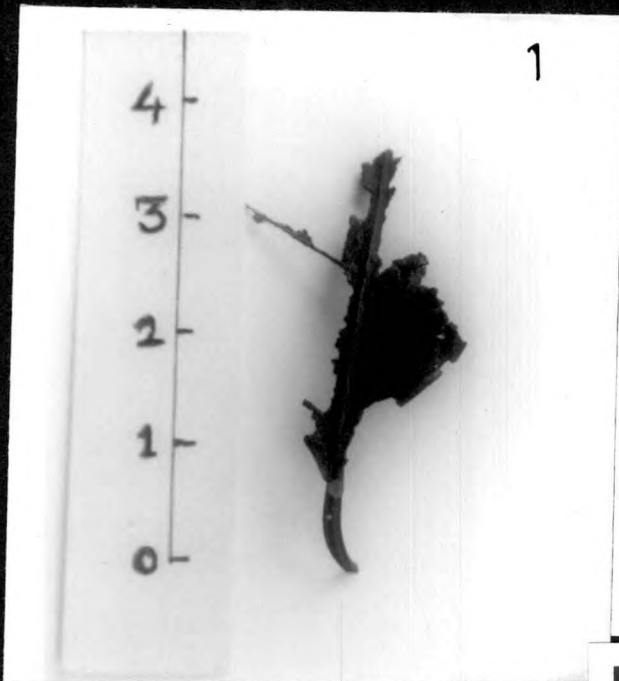


PLATE NO.3C



Genus - Lophodermium Chevalier

Flo.Gen. - Paris 1 : 435 (1826) emend de Notaris
in Giorn. bot. ital. 2(2) : 41, 1847.

The genus was established by Chevalier in (1826) with type species L.arundinacus (Schrad.) Cher. It belongs to family Rhytismataceae, tribe Hypodermateae and order Phacidiales. The genus and its species are characterised by the development of black elliptical to elongate ~~+~~ linear apothecia in stroma and is immersed wholly or partly in the host tissues and opening by a single longitudinal slit. The asci are thickened apically and the plug or surrounding pore blues in iodine. Ascospores are filiform, nonseptate, hyaline or rarely brown, enveloped in mucous sheath.

The genus is known by about 25 species Darker (1967) Minter et al., (1981-83). Out of 25 species, 10 species of the genus have been recorded from India, (Bilgrami et al., 1979, 1981).

Recently P.F. Cannan and D.W. Minter (1986) recorded three species from H.P. and Assam.

P.R. Johnsten (1989) recorded about 17 species on dead leaves of different plants. Y.R. Lin in Lin, Liu and Tang (1992) recorded species from Hefei.

Lophodermium sieglingiae Hilitzer

Ved. Spizy vyd. Ceskoslovenskou Akad. Zemel 3 : 92
(1929).

Text Figs. 4 Plate Figs. 4

Apothecia linear, with somewhat pointed ends, 1-4 mm long, black, erumpent, opening by a longitudinal slit, asci cylindrical, clavate, tapering at base, pointed at the apex, J-ve, 76-86(-100) x 6-7 μ m, inoperculate; ascospores fasciculate, filiform, straight, tapered below, 23-50 x 1-1.5 μ m, hyaline, multiguttulate but non-septate, enveloped in a mucous sheath; paraphyses cylindrical, hyaline 100-150 x 1-1.5 μ m; septate, unbranched, tips often slightly swollen and strongly hooked, enveloped in a mucous sheath.

Hab. : Collected on dead leaves of Cymbopogon fle?
Mahableshwar March 96, Leg. S. G. Jadhav and D. N. Ghadge and deposited in M.H.B.D.Y.C. College of Science Karad with W.I.F. No.4 (a).

R.W.G. Dennis (1979) reported this species on Sieglingia decumbens from Finuary forest Lochaline, Morvern. Graniti (1952) confirmed this species on Festuca in Italy. Present collection agrees well in respect of morphology and dimensions of asci except apothecia and ascospores, which are larger, and, therefore, referred to it. It makes a new records to the fungi of India.

Lophodermium gramineum (Fries) Chevalier

Op.Cit : 435, 1826.

Text Figs. 4 Plate Figs. 4

Apothecia arising beneath the cuticle usually on the outer surface of leaves, 1125-1250(-2000) x 250-750 μm , opening by a single longitudinal slit, externally black, linear, begins as a stroma and immersed wholly in host tissues, differentiates to form one or several hymenial areas consisting of asci and paraphyses, margin composed of aliform mycelium, disc soft, blackish. Asci unitunicate, 8-spored, J+ve, maturing sequentially, cylindrical, 99-102(-120) x 5-7 μm ; ascospores hyaline, aseptate, filiform, smooth, 50-65 x 1.5 μm , enveloped in a mucous sheath; paraphyses hyaline, filiform, smooth, nonseptate, branched, grow above the asci, enveloped in a mucous sheath.

Hab. : collected on Themeda triandra forssk, Koyananagar Dist. Satara, March 1995 Leg. D. N. Ghadge and S. G. Jadhav and deposited in M.H.B. D. Y.C. College of Science, Karad with W.I.F. No. 4(b).

Cheyalier(1826) reported this species on ^Ppoa. Graniti (1952) confirmed this species on Festuca in Italy. Present collection found to ~~be~~ matched well in respect of morphology and dimensions of apothecia, asci and ascospores, and therefore, referred to it. It makes a new records to the fungi of Maharashtra State.

Text Plate No. 4

Explanation of figures; 1 to 6

Fig, Nos. 1 to 3 : Lophodermium gramineum (Fries)
Chevalier.

Fig, No. 1 : V.S. of apothecium;

Fig, No. 2 : Ascus with ascospores
and paraphyses;

Fig, No. 3 : Ascospores (with gelatinous
Sheath).

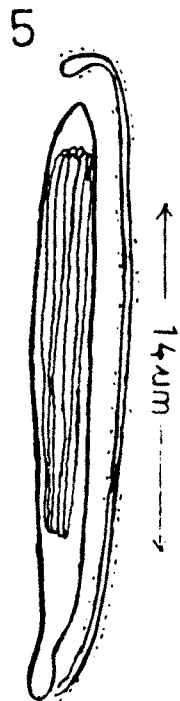
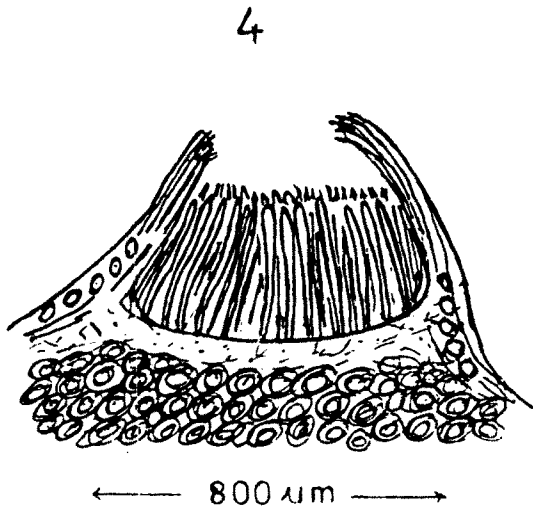
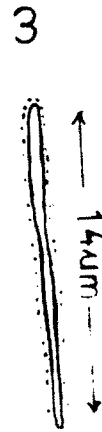
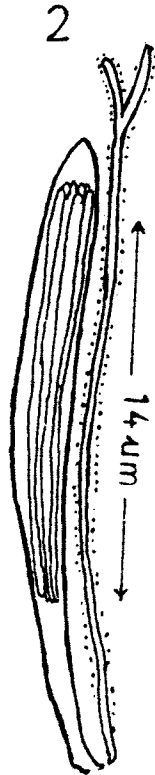
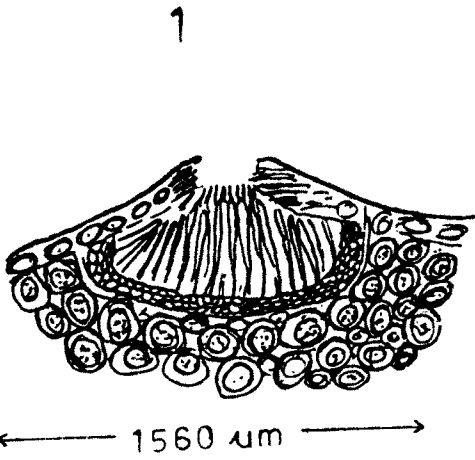
Fig, Nos. 4 to 6 : L. sieglingiae Hilitzer

Fig, No. 4 : V.S. of apothecium;

Fig, No. 5 : Ascus with ascospores and
paraphyses;

Fig, No. 6 : Ascospores (with gelatinous Sheah).

TEXT PLATE NO. 4



Photoplate No.4 a)

Explanation of Photoplate of Lophodermium gramineum
(Fries) Chevalier.

Fig No.1 Habit.

Fig No.2 V.S. of apothecium.

Fig No.3 Asci and ascospores.

Photoplate No.4b)

Explanation of Photoplate of L. Sieglingiae Hilitzer

Fig No 1 Habit.

Fig No.2 V.S of apothecium.

Fig No.3 Asci and ascospores.

PLATE NO. 40

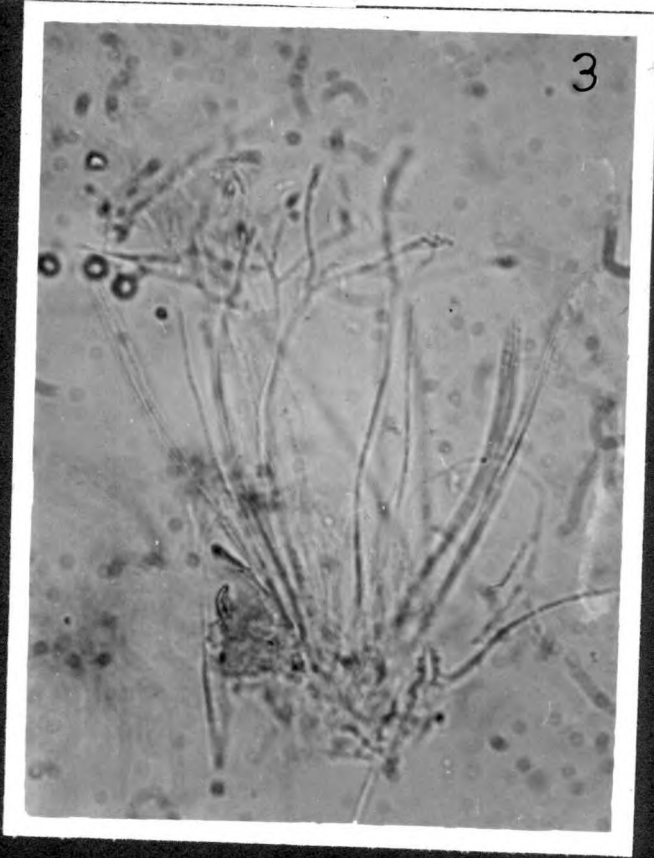
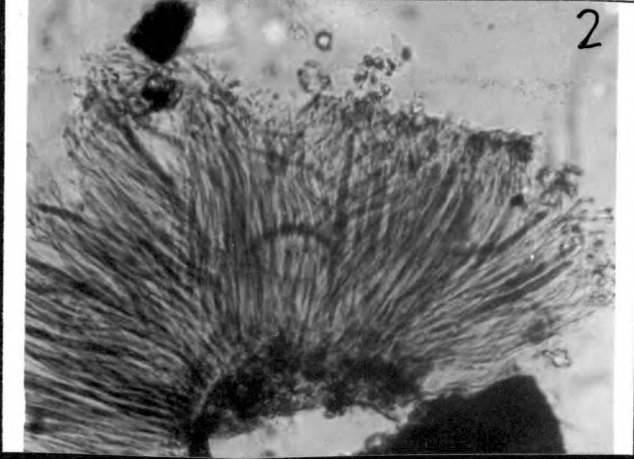
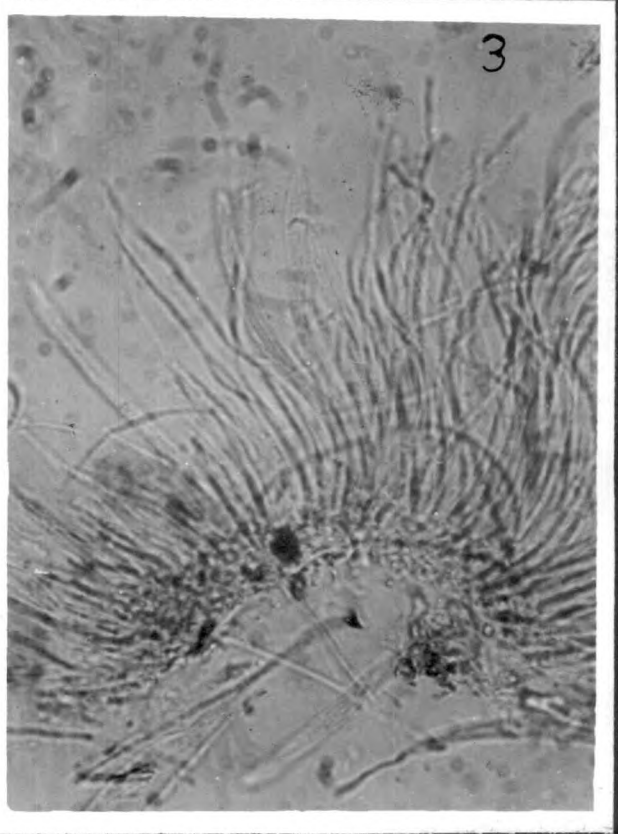
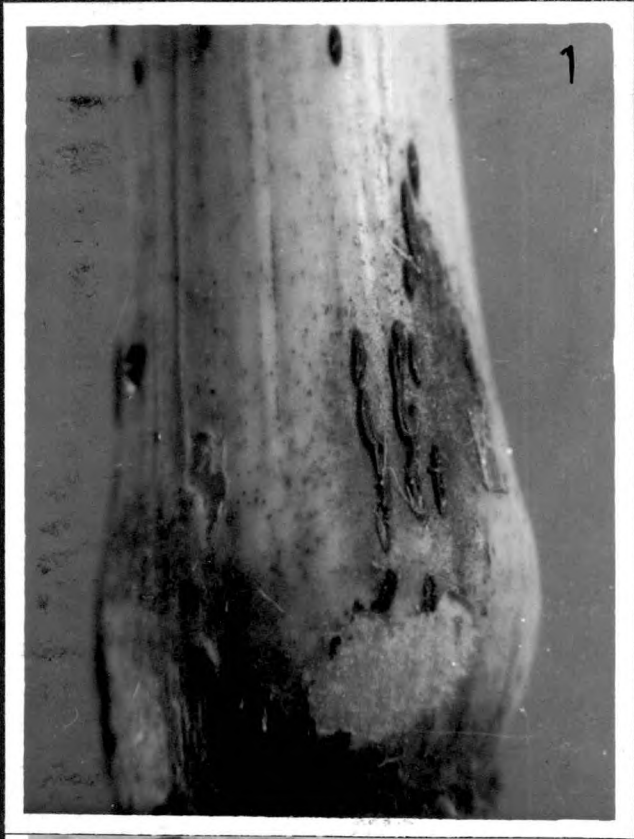


PLATE NO.4b



Genus Hymenoscyphus, S.F. Gray.

Nat. Arrange. Brit. Pl. 1 : 663, 1821.

The genus Hymenoscyphus was erected by S.F. Gray in 1821 with the type species Peziza fructigena (Buli ex. Mer.) S.F. Gray. It belongs to sub-family Hymenoscyphoideae of the family Hyaloscyphaceae belonging to the order Helotiales. The genus and its species are characterised by its hyaline to brightly coloured, sessile to stipitate apothecia, excipulum with long-celled hyphae, more of textura prismatica to textura angularis , hymenium concave or plane; ascus pore almost always blued in iodine; ascospores hyaline, fusiform or narrowly elliptical, septate or non-septate. Eighty-four species referred to the genera of Helotiaceae by Saccardo and others discussed in the light of the type of other authentic material. All 102 accepted species are distributed in Cudoniella (3) ; Hymenoscyphus (77) arranged in 7 series, Ciboriella (3), Phaeohelotium (2), Sphagnicola (5) , Discinella (4) and Ciboriopsis (8). The genus is represented by 72 species and Kent P. Dumont (1981) distributed all over the World. The genus is represented by nine species in India. Tewari and Khare (1969) reported the genus for the first time in India. Patil (1979) reported the genus from the Maharashtra State. All species show saprophytic mode of occurrence on dead wood, twigs, branches and leaves.

Recently B.M. Spooner (1985 , 1987) recorded two new species from U.K. M. Svrcek (1986 , 1990 , 1992) described about ten species. some are synonamed. M.P. Sharma (1991) recorded about 22 new species on dead leaves, pods, stems from various parts of Himachal pradesh and Uttar Pradesh.

TABLE NO.5 - Comparison between the species of hymenoscyphus,
S.F. Gray and Present collection.

Name of Species	Habit	Colour of apothecium	Dia. of apothecia.	Length of ascus.	Dim. of Asco-peres	Paraphyses
<u>Hymenoscyphus montan-iesis.</u>	Dead petiole & mid-rib of Tectona grandis.	Flesh, Yellow brown	1-3 mm	76-83 x 7 μ m.	(-7)8-9 x 3.4-4 μ m.	Non-septate 2-3 μ m. thick
<u>H. Subserotinus.</u>	Leaf lamina, & petiole of unknown leaf.	Orange	0.5-1mm 1-2 mm high.	106-109 x 7 μ m.	25-35x3.5 -4 μ m.	110-115 x 3.5 μ m. Longer than asciseptate.
<u>H. epiphyllus.</u>	Dead leaves of Terminalia species.	Yellow, Orange	1-2mm x 1-1.5 high	(-90) 99-122 x (-9)10-11 μ m.	18-29 x 3-6 μ m.	Septate Yellow granular
<u>H. rapan- dus.</u>	Midrib of dead dicot leaves and stem.	Pale yellow	3-4.5 mm	(-60)73-83 x 5-6 μ m.	10-13 x 3-3.5 μ m.	Filiform, septate 2-3 μ m thick.
<u>H. vernus</u>	Dead leaves of Memocylon umbrillatum.	Brown	5-7 mm	(-90)92-95 x 3.5 μ m.	7-8.5 x 2-3 μ m.	Non septate, brownish granules present.
<u>H. javan- icus.</u>	On dead angiospermic wood.	Yellow	2.5x2 mm height	85-120 x 5.2-6.4 μ	5.7x2.2 -2.8 μ	Filiform, non-septate
<u>H. mini- atus.</u>	On dead bark of angiospermic wood	Orange	3 mm.	130-160x 10-12.5 μ	27.35 x 4.5-5 μ	1.4 wide, fili- form light yellow.
<u>H. obscu- ratus.</u> sp. nov.	- which leaf-stem? μ m.	Dark brown pnkish tinge.	2.4 x 6.5 mm	100-130x 7-9.5 μ m	16-20x 3.2-4.2 μ m	Filiform, septate 2 μ m wide.

2						
1	2	3	4	5	6	7
<u>H. croca-</u> <u>tus</u> (Mont)	Dead leaves of <u>Quercus</u> <u>lamellosa</u> .	Bright Yellow	1.5 x 2.8 mm.	100-120x 7-8.5 μm	20-25x 3-4.5 μm .	1.6 wide non- septate.
<u>H. musci-</u> <u>cola</u> .	On <u>Musa</u> <u>sepientum</u> .	flesh, light, raddish brown.	1.5mm & same height	(-90) 100-110x 9-11 μm	(17-)18-22 (-24) x 4-5(-6) μm	Septate, 2-3 wide.
<u>H. leuco-</u> <u>psis</u> .	on decor- ticated wood.	Yellowish on dry- ing flesh colour	4-7mmx 2-4mm. high.	38-52 x 4-5 μm	(4-)5-7 (-9)x 1.5-2 (-2.5) μm	Septate, fili- form 1-2 wide.
<u>Hymeno-</u> <u>scyphus-</u> <u>flavo-</u> <u>fusces-</u> <u>cense</u> .	Dead dicot leaves.	Flesh solitary or cluster.	4-5 mm.	50-90 (-100) x 7 μm	7-13(-15) x1.5-3 μm	1-5-2 thick.
Present collec- tion.	On dead leaf.	flesh, red	5 to 7 mm.	4.9-5x 1.5x2 μm	0.33 μm	Simple, un- branched.

Present Collection :

Fig. No. 5.

Text Plate No. 5.

Apothecia solitary or in clusters, superficial, disc concave upto 5-7 mm. in diameter, flesh coloured, short stalked, receptacle cupulate, smooth, concolourous, flesh soft, composed of closely packed, delicate, thin walled, hyaline hyphae 3-4 μm . wide; excipulum about 20 μm . thick, formed of short celled hyphae, almost parallel to the surface, 4-7 μm . broad, with very thin walls, stained reddish-brown by Melzer's reagent; asci cylindric-clavate, 8-spored, tapering at base, inoperculate, the small pore stained blue by Melzer's reagent, 4.9 - 5 x 1.5 - 2 μm ., ascospores biseriate, sometimes irregular or uniseriate, elliptical or slightly clavate, straight or slightly curved, 0.33x0.33 μm . rarely one septate, paraphyses cylindrical, obtuse less than 0.33 μm . thick.

Hab : On unknown dead dicotyledonous leaves, Koyana nagar (Dist. Satara) , 3rd November 1995. Leg. S.G. Jadhav and deposited in M.H.B.D., Y.C. College of Science, Karad, with W.I.F.No. 5.

The present collection is compared with other previously reported species of Hymenoscyphus, but it does not

match with other species except Hymenoscyphus flavo-fuscescens. The present material show variations with respect to measurements of asci and ascospores. The measurement of asci and ascospores are very less as compared to H.flavo-fuscescens . Thus we have created a new variety as Hymenoscyphus flavo-fuscescens Var. microscopica. Var. nova.

Holotype : Hymenoscyphus flavo-fuscescens var. microscopica. Jadhav and Ghadge.

Etymology: Microscopica-Small size of asci and ascospores.

Type location : Konnyamagar (Dist.Satara).

Type Specimen: in M.H.B.D., Y.C.College of Science, Karad, W.I.F.No. 5.

Text Plate No. 5

Explanation of Figures : 1 to 3

Fig, Nos. 1 to 3 : Hymenoscyphus flavofuscescens
(Bres) Dennis var microscopica.

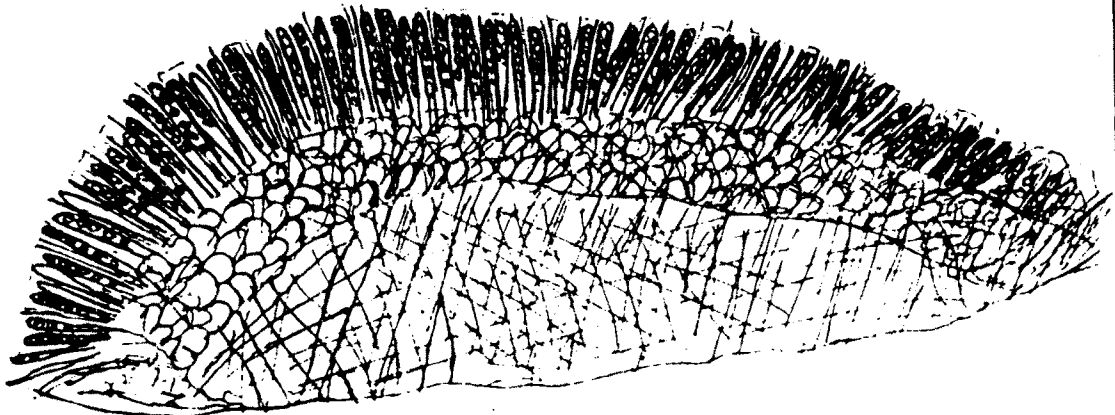
Fig, No. 1 : V.S. of apothecium.

Fig, No. 2 : Ascus with ascospores and
paraphyses.

Fig, No. 3 : Ascospore.

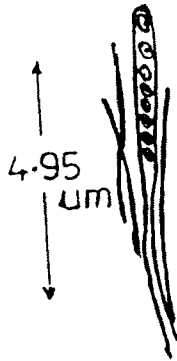
TEXT PLATE NO. 5

1



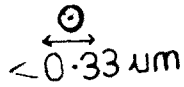
119.7 μm

2



4.95 μm

3



0.33 μm

Photoplate No.5

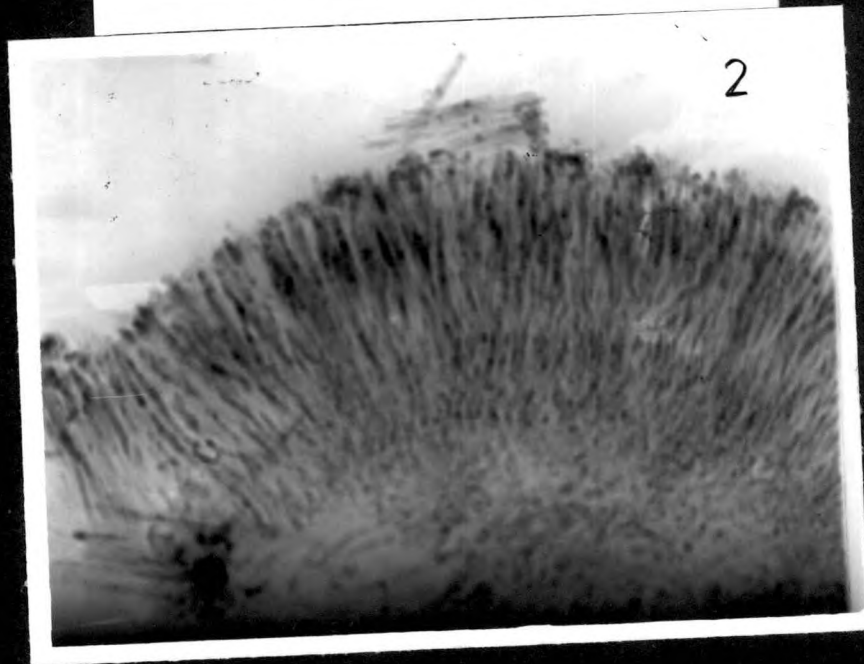
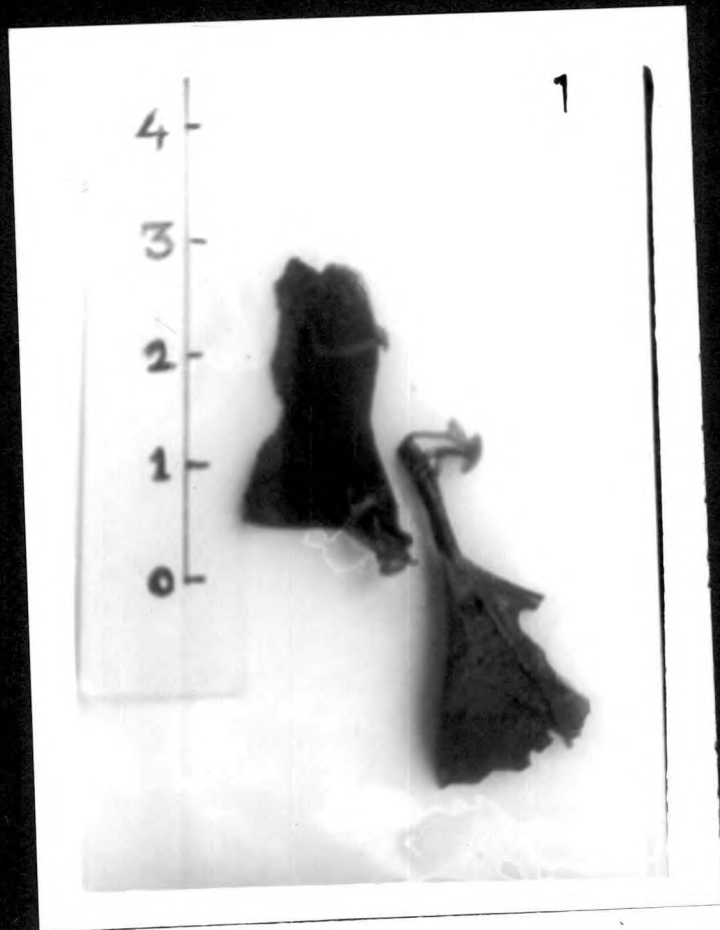
Explanation of Photoplate of Hymenoscyphus flavofuscens

(Bres) Dennis var. microscopica.

Fig No.1 Habit.

Fog No.2 V.S. of apothecium.

PLATE NO.5



SUMMARY AND CONCLUSION

The present investigation " Studies in discomycetous Fungi " is mainly confined to the South Western Maharashtra (Koyananagar, Dist- Satara) and based on three orders viz. Pezizales, Phacidiales and Helotiales. The present work comprises the floristic and taxonomical study of the class Discomycetes.

All the collected fungi are brought in the laboratory for their study. Most of them are saprophytic except few which grow very luxuriently on the variety of substrates like stem, barks , wood, leaves, fruits of the phanerogams and also on humus rich soils under the canopy of the trees in the forest, mostly during late ^omonsoon to winter seasons. The work is based on the collections collected and studied during a year (1995-1996) . The important features of this work are summerised as follows :-

1. The collections were quite fruitful and most of them are brightly coloured, soft, and fleshy especially of the order pezizal es
2. Most of the collections studied are lignicolus, folicolous, humicolous and coprophilous and show wide range of substrate preference.

3. Most of the forms belonging to the order Pezizales developed abundently and very luxuriently in the ^omansoon season and shortlived (ephemeral) while late ^omansoon and winter^oseason found to be quite good for late emerging forms especially belonging to the order Helotiales.

4. Eight species belonging to five genera of three families of three oders viz. Pezizales, Phacidiales and Helotiales have been ^vinvestigated.
^

5. Five species belonging to three genera of Pezizaceae [^]and pyrenomycetes ? families of the order Pezizales have been investigated.

6. The genus Hymenoscyphus S.F.Gray (Family ~~Hyaloscyphaceae~~) is dominant. All species are lignicolous long lived, and late emerging.

7. One new species have been proposed from the order Pezizales.

8. Three varieties have been proposed on the basis of Purely morphological ground. Most of these varieties belonged to the genera viz. Lamprospora, Octospora and Hymenoscyphus These genera show much morphological variations and thus creates problem of their identification.

Scutellinia and Hymenoscyphus are very rich in their occurrence and also show a wide range of distribution.

9. Proposed one species and three varieties are recorded first time in India and Maharashtra State.

10. The genus Lophodermium Chevalier belonging to the family = Rhytismataceae of order Phacidiale are stromatic and growing parasitically on the culms and stems of flowering plants.

From this study, it is quite clear that ecological factors play key role in distribution and morphology of fungi. The area under study is found to be very rich as far as general fungi are concerned and provides variety of fungal forms which grow abundantly or luxuriantly on variety of substrata along with the other vegetations. During our visits we get plenty of collection but due to low rainfall, climatic and environmental conditions we got very less varieties of Discomycetes forms.

The topic " Studies in Discomycetous Fungi " has been well justified by investigating the number of fungal forms belonging to the class Discomycetes which were so far neglected by the mycologists from this region by variety of reason. The fungi studied are summarised statistically in tabular form.