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Taxonomy & diversity of lopharia from Kinwat (Nanded) District Marathwada, Maharashtra

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Abstract
Lopharia is the genus form order Aphyllophorales with more than 13 species. Fruit bodies of Lopharia are crust like to effused reflaxed. Only a valid sp. Have been reported from India. But the present study reports 03 sp. The sp. are each described and the fruit bodies, spores, cutis are illustrated.

Keywords: aphyllophorales, polyporaceae, Marathwada, Kinwat and Nanded districts

Introduction
The genus Loharia S.S., Typified by L. Lirellosa Kalchbr and Macown (Raduium mirable berk and broome), is characterized by a dimitic hyphal system with clamped generative hyphae, Large basidia and Basidiospores and large, encrusted, hyaline, thick walled cystidia (Hjortstamana Ryvarden 1990, Boidin and Gilles 2002, Bernicchia and Garjon 2010). Hjortstum and Ryvarden (1990) accepted only L. Cinerascens (Schwein) G cunn. and L. mirabills (Bark and broome). Pat and Boidin and Gilles (2002) additionally accepted L. Pseudocinerascens Boidin and Gilles. Waden (1975, 2010) adopted a broad interpretation of Loharia that included species of porostereum pilat. A few phylogenetic studies that have included Lopharia S.S. and porostereum spadiceum (pors.) It Jortstem and Ryvarden (generic type) showed that they are distincty related (Ko et al. 2001, Yoon et al. 2003, Wu et al. 2007, Jang et al. (2010). Both geriora are inggded in the polyporales with Lopharia in the polyporacear and porosteraum in the phanerochaetae (Justo et al. 2017).

Materials and Method
Colectiion of the samples was done from various locations from Parbhani and Nanded district. For the morphological details, thin, hand sections were taken from cutis, contexts from the tube layer of each sample respectivally spores were isolated from a block and tube layer, Technique described by steyaert (1972). To loosen the hyphae, the sections materials was treated with 10% KOH, washed with water and stained with 1% phloxine. These section were again washed with water and finaly stained with cotton blue. All the preparations were semi-permanent. The slides were observed under Bausch & Lomb compound microscope having a combination of 10x eyepiece is 10x, 45x and oil immersion (i.e. 100x) objectives.
The spores were observed under olympus Bx-40 at 100x objective with phase contrast and the dermis sections at 40x objective of the same photographs were taken using Olympus Bx-40 attached with photomicrography unit.

Results
An antificial key was prepare to differentiate the collected sp for the segregations and assignment of correct taxonomic identy to the samples keys of different authors viz, Bakshi (1971), Steyert (1972, 1980), Ryvarden and Johnsen (1980), Gilbortson and Ryvarden (1986), Aottlich and Wrignt (1999) and Ryvarden (1995, 2000) were used.

Key to species
1. Hyphal system monomitic --- 2
2. Hyphal system dimitic with skeletal hyphal --- 4
3. Spores longer then 10 cm, cystidia, thick – walled, skletocystidia absent – C. Cinerascens.
4. Spores upto 8cm long; thick walled cystidia present or absent, skletocystidia always present – 3
5. Thick – walled cystidia present; spores broadly ellipsoid to avoid, upto 6 cm wide, cuticle on abhymenial side – L. Papyracea.
6. Thick walled cyastidia absent; spores ellipsoid, upto 4 cm broad; cutical on the abhymenial side absent l. Fulva.

Species description
Lopheria cinerascens (schw) cunn. trans. Roy. Soc. N.Z. 83:622, 1956; Thelephora cinerascons schin.Trans. polyporoial Fungi Amer. Phil soc. 4: 1832.

Basidiocorps: coriaceous, often resupinate and effused up to 120 x 30 mm, some times refluxed, refluxed portion 2-10 mm; Upper surface: strigose hairy; brownish grey to greyish black, concentrically sulcate, often lateraly confluent. Margin: thin loosly adnate, paler entire; hymenial surface: Cinmamon to vioilaceous, brown smooth to som what rough with cystidia; context upto 50 cm thick, excluding the hairy covering, sub-hyalins to pale ferruginous, cutical bearing tomentumon the abhymenial side, hyphal congitudinally interwoven, thick-walled, developing, zone with numerous cystidia.
Hyphal system: Diminic; generative hypher: upto 4 cm wide, septate, clamps absent, thin walled such-hyaline; skeletal hyphae: upto 5cm wide thick walled, unbranched brown, tomentum hyphar unbranched, dark brown, thick walled; Cystidia: Large subconical to subfusiform, thick walled 100-150 (200) x 12-20 cm emerging up to 70 cm beyonel hymenial layer, heavily, encrusted, often brownish at the base; Basidia 12-20 x 4-6 cm, 4 sprow; spores 10-12 (13) 6-7 cm, white, broadly ellipsoid, smooth, thin walled nonamyloid.
Habitat: at on confiferous branch unknown rot. Specimans examined: on dead woods of nelonix regia (mu – 436).

Remarks
Asia, East Africa, Thailand, Indonesia, Japan, Pakistan, Brazil, India. Lopharia papyracea (Jungh): Reid kew bull. P. 131, 1957; thelepho pgpyrara Jungh Fl crydt. Javoa Ins. 36: 1838; stereum percome Bork and Br. J. Cinn Soc. Land 14: 65, 1873. Basidio carp: Coriaceous, resupinate to effused – reflexed, widely effused upto 150 x 50 mm 300-600 cm thick; upper surface: yellowish to cinnamon, brown, smooth, occasionally, cracking irregularly on drying; margin; thick, loosly adnate to after refexed, concolorous; context: brown, composed of compactly arranged parallel hyphae, forming a dark brown cutical on the adhymenial surface. Hyphal system: dimitic; generative hyphae; upto 4 cm wide, branches septate thin walled hyaling, skeletal hypal upto 4 cm wide; cystidia 4-90 (10) x 10-15 cm, sup-fusiform projecting 45 cm out of the hymonium, thick-walled, heavily encrusted; selecto cystidia; present as the elongation of the skeletal hyphae which curve into hymenium; light brown – thick – walled; Basidia: not sean; spores: 7-8-5 x 4-6 cm, avoid to broadly ellipsoid, thin – walled smooth non amyloid.

Habitat: On rotting hard wood stump: unknown rot specimens examined: on rooting hard wood stump of lagers troetmia reginae (MU-12)

Remarks: Japan, New Zealand, Austrilia, Indonesia, south east Asia, Europe, America, Mexico, India, USA, Brazil, Asia, Kenya, Polland.
Lopnaria Fulva (Lev.) Boidin Bull. Soc. Linn. Lyon 28: 2013, 1959; thelephora fulva lev. Ann. Soc. Nat. Bot 5: 149, 1846; steryum schomburghii Bark. J. Linm. Soc. Bot. 13: 168, 1873.

Badsidiocarps: annuual, resupinate, effused reflexed to pileate, membranous, adnate resupinate patches, often arising as small orbicular colonies which may coaleasce later and become widely effused, upto 1mm, thick reflexed portion, upto20 mm long and broad, flabelliform to umbonate; uppar surface: camel brown to medium brown, tomentose azonate to concentrically zonate; hymonial surface: greyish brown, smooth to some what rough; context: pale brownish, composed of compactly arranged hyphae, not forming cuticle on the abhymential side.

Hyphal System: dimitic: generative hyphae; upto 4.5 cm wide branched septate, thin walled, hyphae; skeletal hyphar; 5-6 cm wide unbranched, walls brownish, thick – walled, cystidia: absent, skelecto cysitidia present as the prolongations of skeletal hyphae curving into the hymenium, uncrasted or minutely incrusted especially near the apices only: Basidia; 30-40 x 6-7 cm, clavate, 4-spored; spores: 7-7.5 (8) x 3-4 cm, ellipsioid thin walled smooth, non amyloid.

Habitat: On rootting hard wood stump: unkown rot.

Specimans examined: On roltins, hard wood stamp of layers troemia reginae.

Remarks
Indonesia, Japan, America, Austria, Europe, Brazil, Mexico, U.S.A., India, Pakistan, South Africa.

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