

Studies in discomycetes: genus *Leotia persoon*

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ABSTRACT

Present paper describes three species of the genus *Leotia* Pers. viz. *L. albiceps* (Peck) Mains, *L. viscosa* Fr. and *L. sahyadriensis* sp. nov., new record to the fungi of India.

Key words: Mycotaxonomy, Discomycetes, *Leotia*

INTRODUCTION

The genus *Leotia* was established by Persoon (1797) with *L. lubrica* Fr. as the type species (Mains, 1956). *Leotia* has multiguttulate and hyaline ascospores, similar to those found in *Microglossum* (Geoglossaceae). But the colour of ascocarps and structure differ from all other genera of family Geoglossaceae. Hence, its systematic position and status has been changed numerous times (Corda, 1842; Korf, 1973; Eriksson and Winka, 1997, Lumbsch *et al.*, 2007; Carpenter, 1988). Molecular studies based on ITS and RPB₂ sequences failed to establish the phylogenetic relations (Zhihong, *et al.*, 2004). Erikson and Hawksworth (1987) accepted 108 genera under family Leotiaceae while Lumbusch, *et al.* conservatively accepts only 06 genera. Mains (1956) has given elaborate key to the families, genera and species. Hence limitations within genera, families and orders are not well defined. Number of *Leotia* Pers. Species are not definite, though four species are accepted and the type species is widely distributed.

MATERIAL AND METHODS

Specimens were collected during field visits during rainy season, detail observations of habitat and habit were recorded, morphological characters were studied under research microscope by preparing hand cut sections in lacto phenol-cotton blue. Microphotography and measurements were taken using C-MOS digital camera. Herbarium specimens have been deposited. Up-to-date literature has been sighted.

RESULTS AND DISCUSSION

Key to the species studied

- 1 Ascospores 5.5 x 13(-15) µm; ascocarp hymenium watery-white to ochraceous brown
..... *L. albiceps*
- 1' Ascospores larger; colour of ascocarps variable 2
- 2 Hymenium of the ascocarp dark green and ascospores 11-13 x 18-25 µm *L. viscosa*
- 2' Hymenium and stalk of ascocarps amber brown coloured; ascospores 5 x 60 (-65) µm
L. sahyadriensis sp.nov.

1. *Leotia albiceps* (Peck) Mains, *Mycologia* 48:700, 1956.

= *Ombrophila albiceps* Peck, *Ann. Rep. N.Y. State Mus.* 42: 34, 1889.

Habit - on decaying wood, Radhanagari, Dist. Kolhapur (M.S.), India, 3/9/1985, leg. D. N. Ghadge, deposited under Fungi of Western India, Department of Botany, Shivaji University, Kolhapur (M.S.) as W.I.F. no. 77.

Remarks: Ascocarps are gelatinous, watery white to ochraceous brown coloured, with broad, flattened stipe. Ascospores are slightly longer than *L. albiceps* (Peck) Mains. However, most of the characteristics such as gelatinous ascocarps; watery-white to ochraceous- brown hymenium; hyaline, non-septate, guttulate ascospores are similar thus, referred to it. Mains (1956) has reported the species from Michigan (USA) on decaying wood. It makes a new record to the fungi of India.

2. *L. viscosa* Fr., *Syst. Mycol.* 2: 30, 1822.

= *L. stipitata* Schroeter, *Engl. Prantl. Nat. Pfl.* 1: 166, 1894.

Habit: on damp soil, Kulu Valley (H.P.), 18/7/1979, collected by Shri. Gaikwad, identified by M. S. Patil, W.I.F. No. 76.

Remarks: Ascocarps fleshy, with green pileus, yellow-orange, terete, cylindrical stipe. Asci 12(-13) x 165 (-198) µm. It has been reported from N.America (Mains, 1956) as *L. viscosa*. The same species has been reported from N. E. Himachal Pradesh as *L. stipitata* Schroeter (Bilgrami, K.S., *et al.*, 1991), described by Sharma, M. P. (1983) as *L. viscosa* Fries. The present collection matches well with *L. viscosa* Fries. hence referred to it.

3. *L. sahyadriensis* sp. nov.

Habit: on damp soil, Amba, Anjali Patil, August 2015, 2016.

Ascocarps cespitose gregarious, scattered, 2-4 cm long, gelatinous-viscid, throughout brown- amber coloured, pilei convex, somewhat furrowed or lobed above smooth, 1.2-1.4 cm thick or in diameter when globose, stipe stout, thick, round, viscid, enlarging above to hymenium as a continuation 5-10 mm thick and 1.2-3 cm long and made of three layers, central gelatinous layer, middle non gelatinous and outer is of gelatinous hyphal layers (in V.S. & T.S. of the stipe), asci clavate, unitunicate, 8- spored, J negative (pore not blue by iodine solution – Melzers reagent), inoperculate, 12.5 X 150-175 µm, ascospores arranged in one group i.e. fasciculate, or biseriolate, ends overlapping, clavate-cylindrical, multiguttulate, hyaline, smooth, ends rounded, straight or curved, 5 X 62.5 µm, paraphyses numerous, filiform, somewhat enlarged at the apices and agglutinated with gelatinous amorphous matter.

Table 1: Comparison of present material with type specimen

Species type	Ascocarps	Asci	Ascospores	Remarks
<i>L. lubrica</i> Fr.	0.5-1 X 2-7 cm, buff ochraceous; Cinnamon/olivaceous, stalk squamulose	7-10 X 115-150 µm	4-6 X 16-23 µm, fusoid, ellipsoid, guttulate	Pilei distinct from stipe, wide geographical distribution
Present Collection	2-4 cm long stipe: 1-3 cm long and 0.5 – 01 cm thick, amber brown throughout	12.5 X 150-175µm	5 X 62.5 µm	No such distinction stipe enlarged as clavate, globose lobed hymenium, limited to a locality Amba, district Kolhapur, Maharashtra, India

Remarks:

Overall morphology (size, shape, colour, texture) of the ascocarps along with larger asci and ascospores, which are very distinct keeps the present material or collection as a new and thus a new species viz. *Leotia sahyadriensis* sp. nov. has been proposed based on the Sahyadri Ghats from where the material has been collected.

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