A new species of non-lichenized ascomata from India

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\textit{Hysterographium palamalaiense} is characterized by hysterothecium ascomata with sulcus at the centre, cylindrical 8-spored asci with muriform ascospores described here as new to science.

\textbf{Key words} – \textit{Hysterographium} – Hysteriaceae – Palamalai hills

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\textbf{Introduction}
The family Hysteriaceae is characterized by oval to ellipsoid ascomata with a long sulcus, bitunicate 8-spored asci, and apically free paraphyses or, in some cases, pseudoparaphyses (Checa et al. 2007). The family was monographed by Zogg (1962). The genus \textit{Hysterographium} was monographed by Messuti & Lorenzo (2003) in South America. Tilak & Kale (1964) contributed some information regarding the ascomycetes from India, but no comprehensive study has been carried out on this genus from India. During recent field trips to south Indian dry deciduous forests, one of the authors (ARL) collected a large number of interesting specimens, of which a new species of \textit{Hysterographium} is described here.

\textbf{Methods}
Fresh specimens collected from the field were taken to the laboratory and air dried. The specimens were examined morphologically by a Leica S8APO stereozoom microscope and anatomical observations were done by hand-cut sections mounted in water, 5% KOH solution or 1% lugols solution and examined using a DM500 compound microscope. At least 50 asci and ascospores were measured. The type specimen is lodged in the herbarium of National Botanical Research Institute (LWG).

\textbf{The Species}
\textit{Hysterographium palamalaiense} Logesh, Kalaiselvam & Upreti sp. nov. Fig. 1 A–D. Mycobank No. MB 803099

Typus – India, Tamilnadu, Salem District, Palamalai Hills, 1 km towards Kemmampatty village, 700 m, on \textit{Ficus} sp., 24.7.2012, A.R. Logesh, 12-017735 (LWG – holotypus).

Thallus corticolous, smooth on surface, greyish to white; algal layer absent, no photobiont. Ascomata sessile, modified to
**Hysterographium palamalaiensis**

Fig. 1 – Hysterographium palamalaiensis. 

**A** – Thallus with apothecia (holotype). 

**B** – Hysterioid apothecia. 

**C** – asci containing ascospores. 

**D** – Muriform ascospores. 

**Scales** A = 2 mm B = 0.05 C = 20 µm D = 20 µm

Hysterothecium, boat shaped, 1.0–2.0 mm consistently, dark brown to black, sulcus central. Labia entire, excipulum completely carbonized, ascocarp wall in section mostly 15–20 µm thick. Paraphyses numerous, 1–2 µm wide, without septa, with guttules. Asci bitunicate, clavate to cylindrical, numerous, long stacked, 8-spored, 115–160 × 20–30 µm. Ascospores terete, oval to ellipsoid, muriform, consistently with 3–5 transverse septa and 1 vertical septa, straight to inequilateral septum, (20–)22–33(–35) × 8–13 µm.

**Etymology** – The species name refers to the area where the specimen was collected.

**Distribution** – *Hysterographium palamalaiense* is known from only the type locality growing on *Ficus* trees at an altitude of 700 m in dry deciduous forest of south India (Palamalai Hills).

**Notes** – The new species is characterized by boat shaped hysterothecium and muriform ascospores. The septation of the spores is 3–5 transverse and mostly 1 vertical septa. This species is differentiated from *Opegrapha* species with muriform ascopores by the absence of algal cells in the ascomata section. I/KI reactions on the hymenium give a negative reaction whereas in the case of *Opegrapha* sp. it gives a positive reaction (Ertz...
A comparison of this species with the other species of *Hysterographium*, revealed its unique characters with the hymenium, asci and ascospore sizes. The species is present in the particular area in large numbers; most of the ascomata were present on dead bark of *Ficus* sp. Lee & Crous (2003) revised the hysteriaceous ascomycetes and studied their diversity in fynbos, followed by Lorenzo & Messuti (2007) studied the genus *Hysterium* from the Farlow Herbarium.

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**References**


Tilak ST, Kale SB. 1964. Contribution to our knowledge of Ascomycetes of India. Ferdinand Berger & Sohne Ges.m.b.H., Horn. Austria.