



## Some new records of conidial fungi for India

**Rashmi Dubey and Neelima A. Moonambeth**

*Botanical Survey of India, Western Regional Centre, Pune – 411001, Maharashtra, India*

(Received on: 18 September, 2014; accepted on: 16 October, 2014)

### ABSTRACT

A routine survey to enumerate the diversity of microfungi of Western Ghats of Maharashtra revealed some of the fascinating microfungi. This paper gives an account of six species of fungi (viz. *Catenularia cubensis*; *Hemibeltrania nectandrae*; *Idriella lunata*; *Mycovellosiella solani-torvi*, *Parapericoniella asterinae* and *Periconiella telopeae*) found in Western Ghats are new records to India.

**Key words:** Hyphomycetes, India, New Records, Western Ghats.

### INTRODUCTION

The Western Ghats are internationally recognized as a region of immense global importance for the conservation of high level of biological diversity and endemism. This mountain chain is recognized as one of the world's eight 'hottest hotspots' of biological diversity. Studies on microfungi and fungal biodiversity from different microhabitats in the Western Ghats are usually conducted by the Botanical Survey of India (Dubey and Moonambeth 2013a, b, c). During January, 2013 expedition to explore micro fungal diversity in the Western Ghats region of Maharashtra was carried out, which resulted in the collection of some fascinating fungi (Ellis 1971 & 1976; Carmichael et al 1980) In the present publication 6 species of conidial fungi are cited which are reported for the first time for India (Anonymous 2014, Bilgrami et al 1991, Jamaluddin et al 2004 & Maheshwari et al 2012).

### MATERIALS AND METHOD

The fungal samples were brought to the laboratory in Aluminium foil bags. Tease mounts were made in distilled water. Measurements of the conidiophores and conidia were made of the material mounted in lactic acid and cotton blue solution. Photomicrographs were made using a digital colour CCD Camera (Nikon DS Fi1) attached to a Nikon eclipse 50i microscope with interference optics. The identified specimens are

deposited at Botanical Survey of India Herbarium (BSI), Pune, Maharashtra, India.

### RESULTS

**1. *Catenularia cubensis*** Hol.-Jech., *Mycotaxon* 15: 278. 1982. (Fig.1A & B)

Colonies on natural substrate effuse; conidiophores macronematous, mononematous, straight or flexuous, simple, septate, smooth, pale brown, 85-143 × 3-4µm. Conidiogenous cells, terminal, integrated percurrent, smooth, with an apical collarette. Endogenous spores, usually in chains, 0-septate, dry, smooth, light brown, obconical, 6-7 × 4 µm, truncated base with 2-3 µm in width.

**Material examined** – Coll. No. BSI (WC) 194109, 17.8.2013; On leaf sheath of *Cocos nucifera* L. (Arecaceae), BSI Garden, Pune (MS), India, Coll. R. Dubey.

**2. *Hemibeltrania nectandrae*** (Batista & Maia) Pirozynski, 1963, *Mycol. Pap.*, 90:33- 34.(Fig. 1C)

Colonies effuse, parasitic, olivaceous, velvety. Mycelium partly superficial partly immersed. stroma none. Setae and hyphopodia absent. Conidiophores macronematous, mononematous, unbranched measuring upto 240 µm long and 4-6µm thick with 1 or few branches near the apex, straight or flexuous, rather pale olivaceous brown,

**Corresponding author:** rashmidubey@gmail.com

smooth arising from radially lobed basal cells. Conidiogenous cells polyblastic, integrated, terminal becoming intercalary, sympodial, cylindrical, denticulate, denticles conical to cylindrical. Conidia solitary, acropleurogenous, simple, broadly ellipsoidal, limoniform or ovoid, pale olivaceous, smooth, 0 septate, 15-23 x 10-13µm.

**Material examined** – Coll. No. BSI (WC) 199659, 20.9.2011, on living leaves of *Litsea stocksii* (Meisner) J.Hk (Lauraceae), Lonavala, Maharashtra, India, Coll. R. Dubey.

**3. *Idriella lunata*** P. E. Nelson, & S. Wilhelm, 1956, Mycologia, 48: 547-551.(Fig. 1D)

*Chloridiella leucopoda* (Bon.) G. Arnaud, 1953, Bull. Soc. Mycol. Fr., 69: 265-306. (nomen *gereis nudum*)

*Idriella (Chloridiella) leucopoda* (Bon.) G. Arnaud, 1971, Bull. Soc. mycol. Fr., 87: 421-424 & 1 pl.

Colonies effuse, grey to blackish brown. Stroma none. Setae hyphopodia absent. Conidiophores, mononematous, unbranched, flexuous, subulate, usually swollen at the base, geniculate towards the apex, pale brown, smooth upto 35 µm long, 3-4µm thick at the base, tapering to 1µm at the apex. Conidia solitary dry, acropleurogenous, simple, falcate or lunate, hyaline, smooth, aseptate measuring 7-13µm long and 2-2.5µm wide. Chlamydo spores not observed.

**Material examined** – Coll. No. BSI (WC) 196511, 17.11.2013, on living leaves of *Allophylus cobbe* (L.) Raeusch, Koyna, Satara, Maharashtra, India, Coll. R. Dubey.

**4. *Mycovellosiella solani-torvi*** (Frag. & Cif.) Deighton, 1974, Mycol. Pap. 137. 14-17.(Fig 1 E & F)

*Cercospora solani-torvi* Frag. & Cif, 1927.

*Chaetotrichum solani-torvi* (Frag. & Cif.) Petrak, 1951

Colonies hypophyllous, olivaceous. Hyphae climbing leaf hairs, Conidiophores in small fascicles. above stomata and also on climbing hyphae' simple or branched, up to 70 x 4-5 µm Conidia catenate, straight or digirtly curved, subcylindrical, very pale olivaceous, smooth, 0-8 (often 3), mostly 30-95 x 5-6 µm.

**Material examined** – Coll. No. BSI (WC) 200239,

23.1.2012, living leaves of *Vitex trifolia* L.f. (Verbenaceae), Vengurla, Sawantwadi, Maharashtra, India, Coll.R.Dubey.

**5. *Parapericoniella asterinae*** (Deighton) U. Braun, Heuchert & K. Schub. Schlechtendalia 13: 59 (2006). (Fig 1G)

*Cladosporium asterinae* Deighton, 1969, M.ycol. Pap. 11E: 30-32.

Colonies effuse velvety, dark olivaceous. Conidiophores solitary, straight, thick-walled, dark brown, paler near the apex and bears a number of short branches which are sometimes themselves branched, up to 250 µm long, 6-8 µm thick; branches usually with 2 or more prominent scars. Conidia catenate, ellipsoidal or fusiform, smooth or verruculose, Pale olivaceous, mostly 1-2 septate rarely 0 or 3 septate, 7-15 µm.

**Material examined** – Coll. No. BSI (WC) 200277, 24.1.2012, on living leaves of *Memecylon talbotianum* Brandis (Melastomaceae), Radhanagari, Kolhapur, Maharashtra, India, Coll. R. Dubey.

**6. *Periconiella telopeae*** (Hansf.) M. B. Ellis (Fig. 1H)

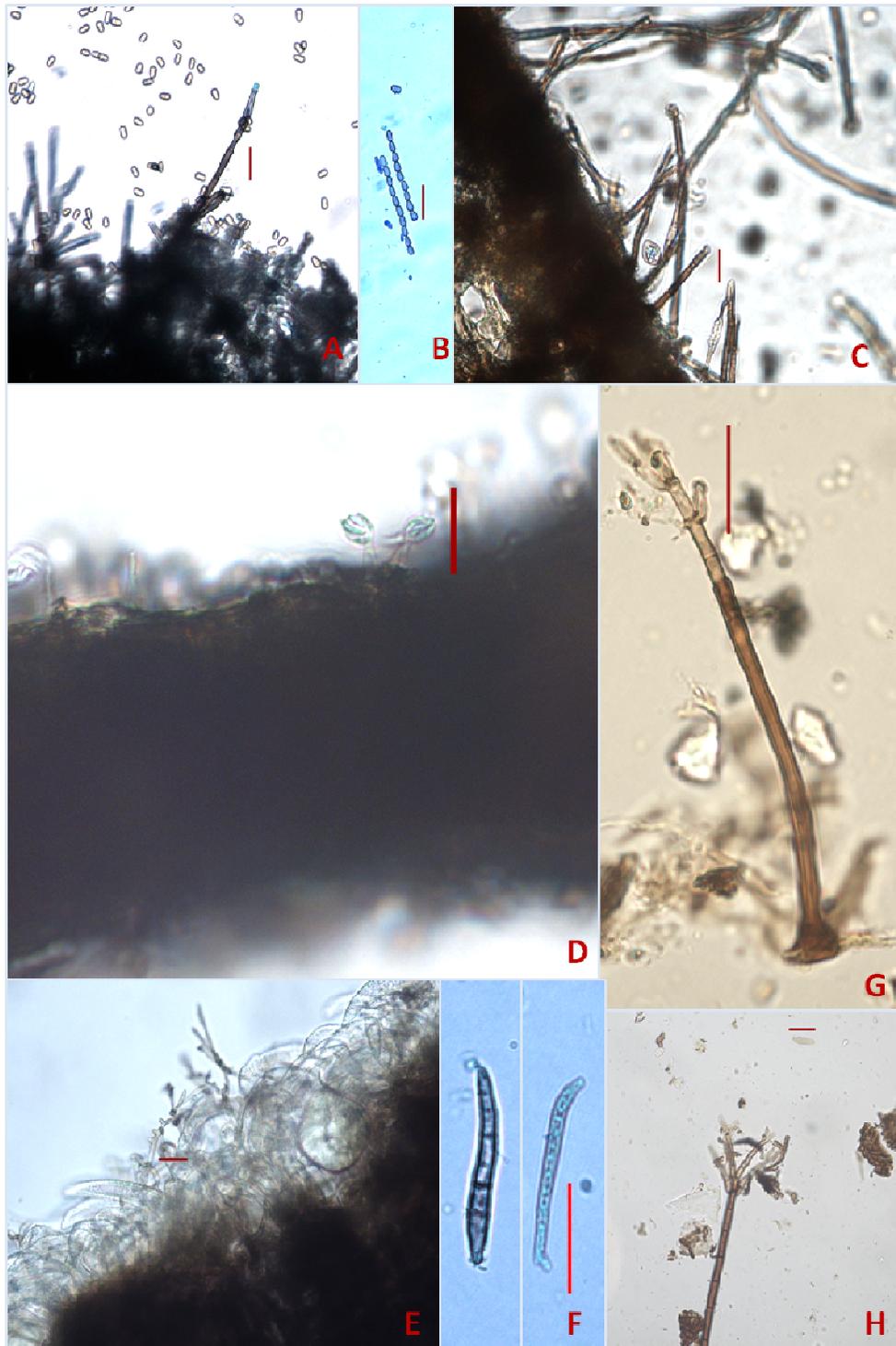
**7.**

Colonies hypophyllous, effuse, thin, hairy. Mycelium mostly superficial, conidiophores solitary, each composed of a mononematous stipe and a complex head of branches bearing conidia. stipes cylindrical or subulate, thick walled, dark or very dark olivaceous brown, paler near the apex, up to 600 µm long, 8-11µm thick. Primary branches sometimes bearing branch lets, up to 40µm long 5-7 µm thick, each bearing often unilateral dark scars. Conidia solitary, curved, obclavate, rounded at the base, 3-5 septate, Conidia 7-19 µm.

**Material examined** – Coll. No. BSI (WC) 200157, 22.1.2012, Unidentified Living leaves, Sawantwadi, Maharashtra, India, Coll. R. Dubey.

## ACKNOWLEDGEMENTS

Authors are thankful to the Director, Botanical survey of India, for providing all facilities. They are also grateful to the Head of the office, Botanical Survey of India, Western Regional Centre, Pune, for his kind support and encouragement. Ministry of Environment and Forest, New Delhi, is thankfully acknowledged for financial assistance.



**Fig. 1. Conidiophores and conidia of:** (A&B) *Catenularia cubensis* (C) *Hemibeltrania nectandrae* (D) *Idriella lunata* (E & F) *Mycovellosiella solani-torvi* (G) *Parapericoniella asterinae* (H) *Periconiella telopeae*

## REFERENCES

- Anonymous. 1989. 2014. Fungal Database Nomenclature and species identification. MycoBank. <http://www.mycobank.org/> (Accessed on 2014).
- Bilgrami KS, Jamaluddin and Rizwi MA. 1991. The Fungi of India. Part III (List and References). Today and Tomorrow's Printer and Publishers, New Delhi. 798 pp.
- Dubey R and Moonambeth NA. 2013a. *Kamalomyces mahabaleshwariensis* sp. nov. ( Tubeufiaceae) from the Western Ghats, India. Mycosphere 4: 760–764.
- Dubey R and Moonambeth NA. 2013b. Sawantomyces– A New hyphomycetes genus from Western Ghats, India. Journal on New Biological Reports 2, 234-237.
- Dubey R and, Moonambeth NA. 2013c. *Custingophora ratnagiriensis* sp. nov. 2013c – A novel species of *Custingophora* from Konkan, India. NeBIO - An International Journal of Environment and Biodiversity. 4, 31–32.
- Carmichael JW, Kendrick WB, Conners IL and Sigler L. 1980. Genera of Hyphomycetes. Edmonton. The University of Alberta Pr. Alberta, Canada. 386 pp.
- Ellis MB. 1971. Dematiaceous Hyphomycetes. Commonwealth Mycological Institute, Kew Surrey, England. 608 pp.
- Ellis MB. 1976 – More Dematiaceous Hyphomycetes. Commonwealth Mycological Institute, Kew, Surrey, England. 507 pp.
- Jamaluddin NG, Goswami MG and Ojha BM. 2004. Fungi of India 1989-2001, Jodhpur, Scientific publishers- VII. 326pp.
- Maheswari UC, Sharma RK, Kamil D. and Prameela DT. 2012. Herbarium Cryptogamae Indiae Orientalis (HCIO): Catalogue of fungal specimens, Vol. 1, Indian Agricultural Research Institute, New Delhi, India pp.102.