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Arthonia tavaresii Grube & Hafellner, a lichenicolous species on *Pyrenula* from India

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ABSTRACT

The present paper deals with a new record of lichenicolous fungus *Arthonia tavaresii* Grube & Hafellner inhabiting the lichen *Pyrenula* sp. from India. A brief description, distribution, and ecology of species are provided.

Key words: Lichen parasite; Ascomycota; Taxonomy; India

1) INTRODUCTION

Lichenicolous fungi represent a highly specialized and successful group of organisms that live exclusively on lichens, most commonly as host-specific parasites, but also as broad-spectrum pathogens, saprotrophs, or commensals. The majority of these fungi cause local infection or live together for nutrition, they acquire organic carbon from lichen thallus and negatively affect the growth and reproduction. sometimes they show gall formation, discoloration, and wounds on lichen thalli [1]. In India lichenicolous mycota studied by Joseph and Sinha [2], Mùller [3], Joshi [4], Egea & Torrente [5]. From pyrenocarpous lichens Joseph and Sinha [2] described *Melaspilea amarkantakensis* new to science species. A total of nine lichenicolous mycota species such as *Cresponea lichenicola* Aptroot & M. Cáceres, *Llimoniella pyrenulae* Diederich & Etayo., *Melanographa tribuloides* (Tuck.) Müll. Arg., *Melaspilea amarkantakensis* S. Joseph & G.P. Sinha., *Opegrapha encephalographoidea* Diederich & Aptroot, *Taeniolella pyrenulae* Heuchert & Diederich, *Tremella pyrenulae* Diederich, Millanes, Wedin & Common, reported from *Pyrenula* lichens [6, 7, 2, 8, 9, 10], Grube et al. [7], Joseph & Sinha [2], Ertz et al. [8], Diederich and Etayo [1], Cáceres et al. [10]. Earlier this species was reported from Austria [7]. This is the first records for India.

2) MATERIALS AND METHODS

The specimens examined were housed at LWG herbarium situated at CSIR-National Botanical Research Institute, Lucknow. The external morphology and anatomy-based characters were studied by the stereo zoom microscope (Leica Journal Pre-proof S8APO). Hand-cut sections of the fruiting body were examined by a compound microscope (Leica DM500) and images were captured by the associated camera. All measurements were taken from water mounts, and 10 % KOH (K). Lactophenol cotton blue (LCB) was used to preserve slides. All measurements were made on material mounted in distilled water. The taxonomic keys provided by Ihlen & Wedin [11] and Hawksworth et al. [12] were followed for the identification of the lichenicolous fungi. The identified specimen preserved in LWG.

3) THE TAXONOMY

***Arthonia tavaresii* Grube & Hafellner**

Ascomata are not aggregated, scattered on thallus; lirellate, branched to unbranched, lifted surrounding bark tissue like a starlet, densely red pruinose, 1-2-5 mm diam. Excipulum brownish, conglutinate hyphae, that pierce into the bark tissue. Epithecium orange red, with crystals, 20–30 µm tall, K&I not known. Hymenium hyaline to pale brownish, 60–70 µm high, K, I, KI not known. Paraphysoids anastomosed, sometimes or rarely branched, slightly knotted sometimes. Hypothecium hyaline to pale brownish, 80–100 µm high, K&I not known. Asci *Arthonia*-type, 8–spored, 50–60 × 16–20 µm; ascospores macrocephalic, 3–septate, hyaline, become brownish at maturity17–23 × 5–8 µm.

Host: *Arthonia tavaresii* Grube & Hafellner, causes the local damage around the *Ascomata* of lichen genus *Pyrenula*.

Remarks: *Arthonia tavaresii* is characterized by scattered *Ascomata*, as brownish patches, clavate *Asci*, 50–60 × 16–20 µm, 8-spored, obovate *Ascospores*, a gelatinous sheath around young spore. The species is found growing on bark at elevation of 2200 m in Western Himalayan state Uttarakhand.

Material examined: India: Uttarakhand, Pithoragarh

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district, near Munsiyari Ginny band, on bark, alt. 2200 m, 09/01/2105, D.K. Upreti, G.K. Mishra and party 09-012105 (LWG).

Notes: The species is found growing on the lichen genus *Pyrenula* and single species of lichenicolous mycota genus *Arthonia* is also known from the world.

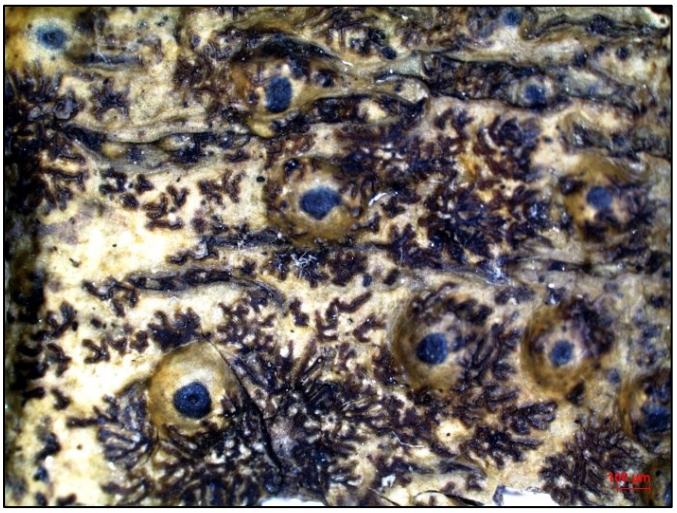


Fig. 1 (A) Habitat of *Arthonia tavaresii*

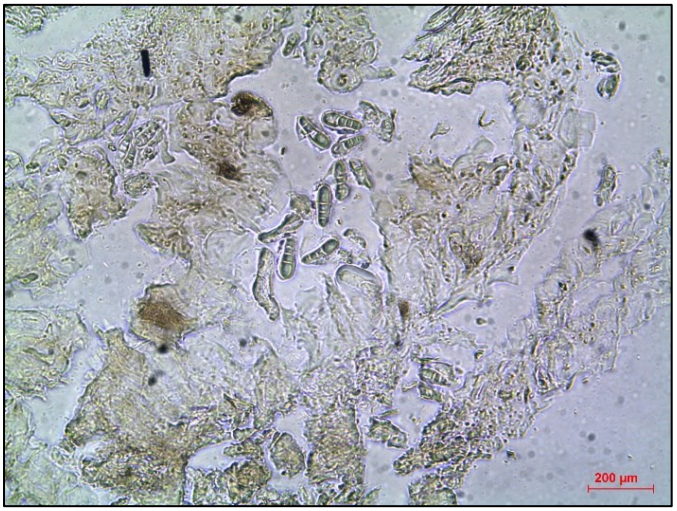


Fig. 1 (B) Ascopore

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