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First report of *Rhytidhysteron hysterinum* from Iran

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Rhytidhysteron Speg. 1881 is a small genus of Dothideomycetes (*Patellariales, Patellariaceae*) comprising about 19 species (Wijayawarden et al. 2017). This genus includes saprobic to weakly plant pathogenic fungi that are found on woody plants (Soto-Medina et al. 2017). Members of *Rhytidhysteron* are clearly distinguished by large, elongate and boat-shaped ascomata, produced on branches and fallen wood (Soto-Medina et al. 2017). The genus shows wide distribution throughout the world (Soto-Medina et al. 2017), although there is no record from Iran.

During a study on fungi causing blight disease on boxwood (*Buxus sempervirens* L.), samples of dead twigs and decaying wood with ascoma of an attractive fungus were collected from the city of Fuman (Ghalehroodkhan), in the north of Iran, (49º 9′ 54.74981″S, 37º 18′ 16.58509″W), on June 2017. Isolation and purification of the fungus were done based on conventional methods and single spore cultures were obtained on WA 2%. The specimens were microscopically examined. Microscopic slides were prepared from asci and ascospores in 25% lactic acid. Both morphological and molecular characteristics were used in order to identify the isolate. Morphological study for identification was performed based on Boehm et al. (2009), Soto-Medina (2017) and Thambugala et al. (2016). Genomic DNA was extracted from mycelia produced on PDA using Chelex 5% (Walsh et al. 1991). The DNA amplification was obtained by polymerase chain reaction (PCR). Parts of large subunit (LSU) of rDNA was amplified as described by Khodaparast et al. (2012), using the primers LR5/LROR (Rehner & Samuels 1994, Vilgalys & Hester 1990). The nucleotide sequences of the PCR products were obtained using direct sequencing in an ABI 3730xl sequencer (Applied Biosystems, USA). The obtained sequences were initially inspected manually and visually using MEGA7.0 (Kumar et al. 2016). Sequences were compared with the sequences available in the NCBI GenBank nucleotide database using a BLASTN search method.

Based on a BLAST search using partial LSU-sequences, the sequence of examined isolate showed 100% similarity to *Eutryblidiella* (*Rhytidhysteron*) *hysterina* strain CBS 316.71 (MH871912) and *Rhytidhysteron hysterinum* (Dufour) Samuels & E. Müll. strain EB 0351 (GU397350) from GenBank. This result was in concordance with morphological characters of *R. hysterinum*. Examined specimens in this study had hysteriform, gregarious ascomata, closed at first, later opening to become apothecioid with incurved, striate laterally margins, with KOH extractable pigment, 1.7–3 × 0.8-1.4 mm wide, 0.7–1.2 mm high. Asci were bitunicate, cylindrical, 8-spored, 108–136.8 × 12–16.8 µm. Ascospores were ellipsoid with a rounded end, smooth, 1-septate, slightly constricted at the septa, thick-walled, 19.2–28.8 × 7.2–12 µm (Fig. 1). To our knowledge, *Rhytidhysteron hysterinum* is reported for the first time from Iran.

Specimens of *R. hysterinum* are deposited at the Fungarium of the Department of Plant Protection, Faculty of Agricultural Science, University of Guilan, Guilan, Iran (GUM 1546).

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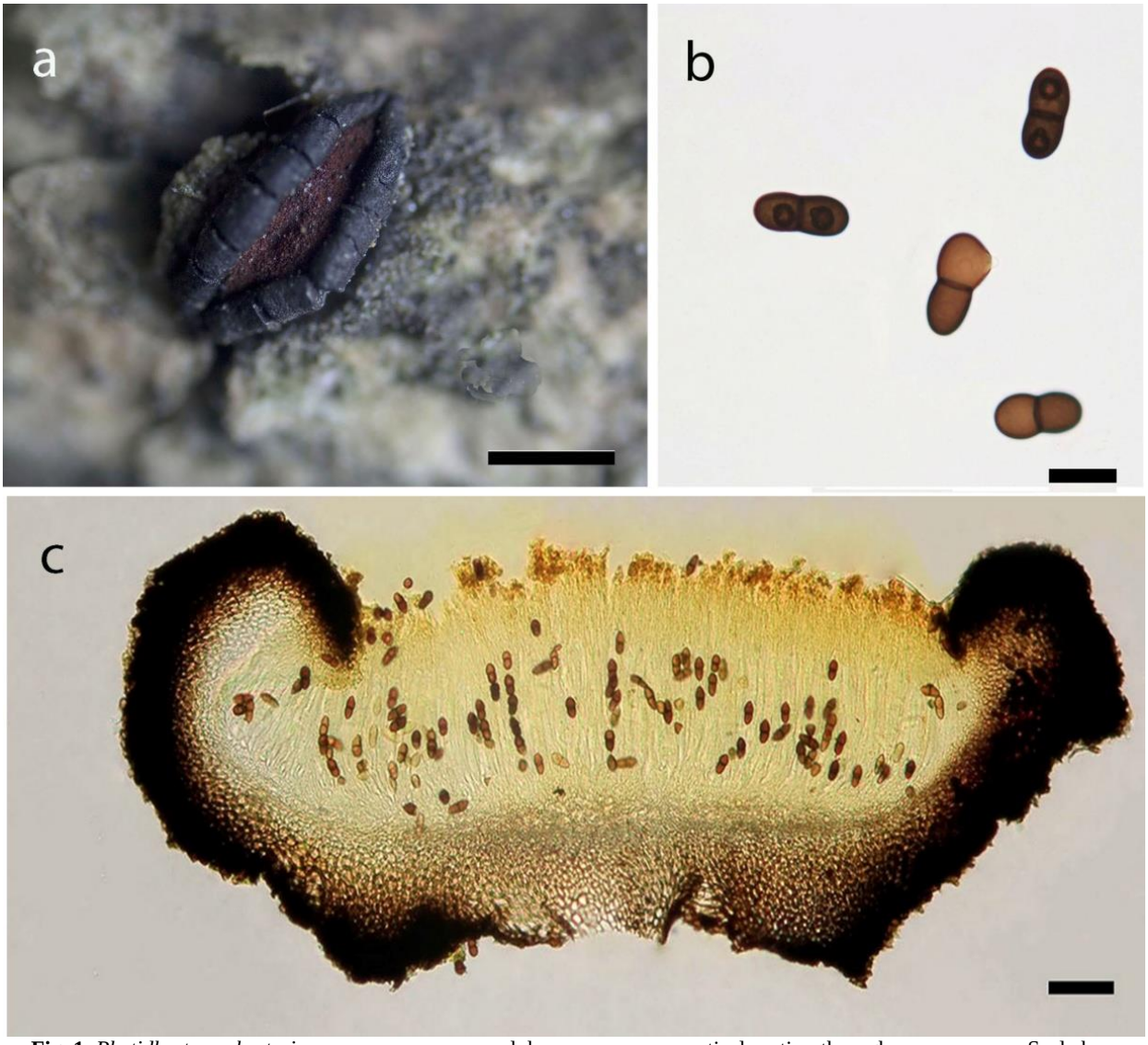

Fig. 1. *Rhytidhysteron hysterinum*. a. ascoma on wood; b. ascospores; c. vertical section through an ascoma, — Scale bars a = 1000 µm, b = 20 µm, c = 100 µm.

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