www.biodicon.com Biological Diversity and Conservation

ISSN 1308-8084 Online; ISSN 1308-5301 Print 8/1 (2015) 143-146

Research article/Araştırma makalesi

Three *Phragmites* Adans. inhabiting fungi taxa, new for Turkey

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Abstract

Three *Phragmites* Adans. inhabiting fungi, *Mollisia hydrophila* (P. Karst.) Sacc., *Trichobelonium kneiffii* (Wallr.) J. Schröt. (*Dermataceae*) and *Lasiobelonium horridulum var. capitatum* Dougoud (*Hyaloscyphaceae*) are recorded for the first time from Turkey. Short descriptions of the taxa are given together with their photographs related to macro and micromorphologies.

Key words: new records, *Mollisia, Trichobelonium, Lasiobelonium*, Turkey

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Phragmites Adans. üzerinde yetişen Türkiye için yeni üç mantar taksonu

Özet

Phragmites Adans. üzerinde yetişen üç mantar taksonu, *Mollisia hydrophila* (P. Karst.) Sacc., *Trichobelonium kneiffii* (Wallr.) J. Schröt. (*Dermataceae*) ve *Lasiobelonium horridulum* var. *capitatum* Dougoud (*Hyaloscyphaceae*) Türkiye'den ilk kez kaydedilmiştir. Makro ve mikro morfolojilerine ilişkin fotoğrafları ile birlikte türlerin kısa betimlemeleri verilmiştir.

Anahtar kelimeler: yeni kayıtlar, *Mollisia, Trichobelonium, Lasiobelonium*, Türkiye

1. Introduction

Fungi are saprophytic or biotrophic organisms. Biothrophic or saprotrophic fungi grow on different substrates, and many of them can be grouped according to the substrates they grow on. Together with bacteria they are assumed to be the main contributers to the macrophyte decomposition. As well as other habitats, there is an increased awareness of the importance of fungi in nutrient cycling in reed dominated wetlands and a high fungal diversity is known from *Phragmites australis* (Cav) Trin. ex Steud. from both tropical and temperate regions (Van Ryckegem and Verbeken, 2005; Van Ryckegem et al., 2007).

Though more then 600 species of fungi have been recorded from the litter of *Phragmites* (Gessner & Van Ryckegem, 2003), only four taxa (*Puccinia magnusiana* Korn., *Puccinia phragmitis* (Schumach.) Korn., *Puccinia tepperi* F. Ludw., *Puccinia trabutii* Roum.) have so far been recorded from Turkey, inhabiting the *Phragmites* (Bahçecioğlu and Kabaktepe, 2012).

During routine field studies in Gaziantep province, some ascomyceteous fungi samples were collected on *Phragmites* Adans. sp., and determined as *Mollisia hydrophila* (P. Karst.) Sacc., *Trichobelonium kneiffii* (Wallr.) J. Schröt. and *Lasiobelonium horridulum* var. *capitatum* Dougoud. On the basis of the current checklists (Solak et al., 2007; Sesli and Denchev, 2008), and latest records (Kaya et al., 2013; Akata et al., 2014; Güngör et al., 2014; Keleş et al., 2014; Sesli, 2014; Sesli et al., 2014; Uzun et al., 2014), all the three taxa are new records for the mycobiota of Turkey.

The current study aims to make a contribution to the macrofungi of Turkey by adding new records.

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 BioDiCon. 442-0215

2. Materials and methods

Fungi samples were collected from Fırat River basin within the boundaires of Karkamış district of Gaziantep province in 2014. Morphological and ecological properties of the samples were noted and they were photographed in their natural habitats. Then they were taken to the laboratory for necessary macroscopic and microscopic investigations. Microscopic structures were obtained and photographed under Nikon eclipse Ci trinocular light microscope by DS-Fi2 digital camera. Identification was performed with the help of Breitenbach and Kränzlin (1984), Ellis and Ellis (1997) and Dougoud (2012). Specimens are kept at Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Biology, Karaman, Turkey.

3. Results

Ascomycota Whittaker
Leotiomycetes O.E. Erikss. & Winka
Helotiales Nannf. ex Korf & Lizoň
Dermateaceae Fr.
Mollisia hydrophila (P. Karst.) Sacc.
Synonym: *Belonopsis hydrophila* (P. Karst.) Nannf., *Peziza hydrophila* P. Karst., *Tapesia hydrophila* (P. Karst.) Rehm,

Macroscopic and microscopic features: Apothecia 0.5-1.5 mm across, flat or saucer-shaped to disk-shaped with slightly concave hymenium, sessile or with very short stipe, white when young, pale yellow-ochre when dry (Figure 1a), outer surface darker, brown at base, seated on small, brown hyphal mats which remain behind after the apothecia have dropped off. Asci 60-85 × 5-7 µm, cylindrical to somewhat spathulate, biseriate and eight spored (Figure 1b). Paraphyses filiform, septate, sometimes longer than asci. Spores 9.5-11.5 × 1.5-2.5 µm, elliptical, somewhat tapering to fusiform, smooth, hyaline (Figure 1c), aseptate, usually with a small guttule at both ends.

Ecology: On dead bases of reed stems. Most often during spring and summer (Ryckegem, 2005).

Specimen examined: TURKEY—Gaziantep: Karkamış, Yurtbağı village, Fırat River bank, on dead *Phragmites* sp. stem, 36°50'N-38°00'E, 334 m, 05.04.2014, K. 8778.

Figure 1. *Mollisia hydrophila*: a. ascocarps, b. asci and paraphyses, c. ascospores

Trichobelonium kneiffii (Wallr.) J. Schröt.

Synonym: *Belonidium rhenopalaticum* Rehm, *Belonium retincola* (Rabenh.) Sacc., *Belonium rhenopalaticum* (Rehm) Boud., *Belonopsis retincola* (Rabenh.) Le Gal & F. Mangenot, *Belonopsis rhenopalatica* (Rehm) Dennis, *Helotium retincola* (Rabenh.) Rabenh., *Mollisia cyanites* W. Phillips, *Mollisia retincola* (Rabenh.) P. Karst., *Niptera rhenopalatica* (Rehm) Dennis, *Peziza kneiffii* Wallr.,*Peziza retincola* Rabenh., *Pyrenopeziza cyanites* (W. Phillips) Boud., *Tapesia kneiffii* (Wallr.) J. Kunze, *Tapesia retincola* (Rabenh.) P. Karst., *Trichobelonium retincola* (Rabenh.) Rehm.

Macroscopic and microscopic features: Apothecia 0.5-2 mm across, bud-like when young, later spreading open, sessile, greyish yellow or ochre yellow, margin more greyish (Figure 2a). Asci 94-115 × 8 µm, cylindrical, 8-

spored (Figure 2b). Paraphyses about 100 µm long, 3-4 µm wide, usually with one large guttule, 1-2 septate near the base. Spores 15-25 × 2.5-3 µm, cylindrical, straight to slightly curved, mostly aseptate, some 1-septate, with many small guttules near the ends (Figure 2c).

Ecology: It is a common colonizer on basal parts of standing dead *Phragmites australis* (Cav) Trin. ex Steud. stems during spring (Breitenbach and Kränzlin, 1984).

Specimen examined: TURKEY—Gaziantep: Karkamış, Yurtbağı village, Fırat River bank, on dead *Phragmites* sp. stem, 36°50'N-38°00'E, 334 m, 08.03.2014, K. 8548.

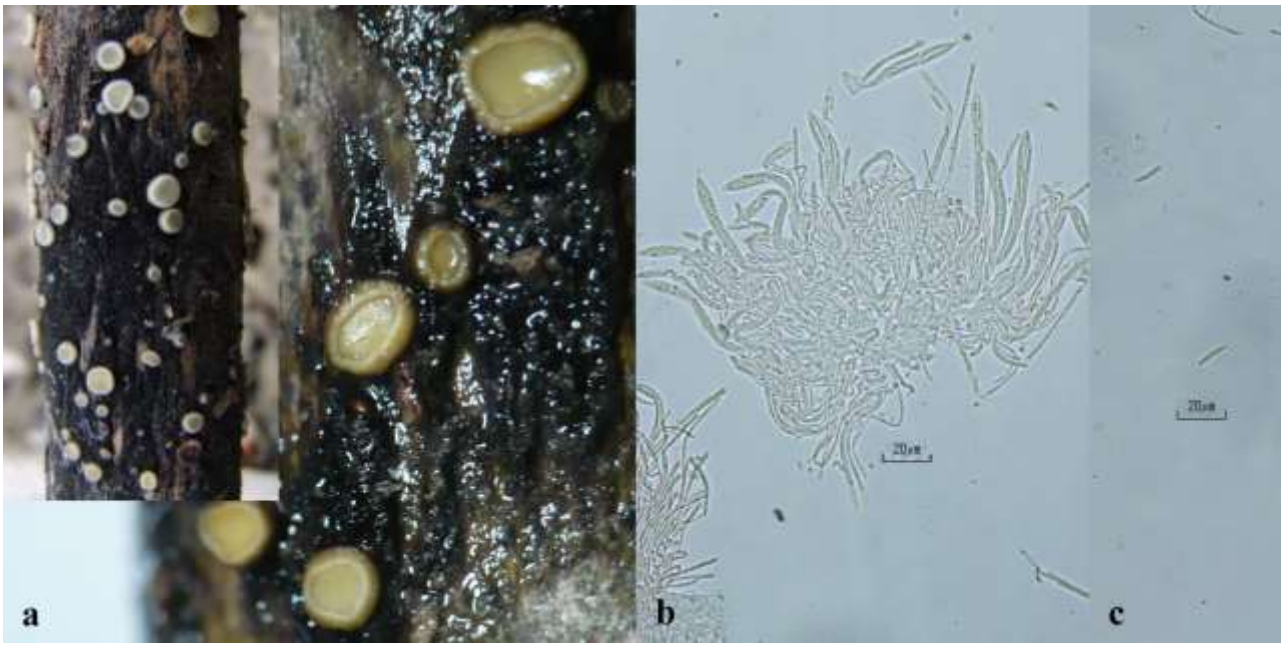

Figure 2. *Trichobelonium kneiffii*: a. ascocarps, b. asci and paraphyses, c. ascospores

Hyaloscyphaceae Nannf.

Lasiobelonium horridulum var. *capitatum* Dougoud

Macroscopic and microscopic features: Apothecia 0.3-0.5 mm in diameter, sessile, based on a narrow receptacle. Cup light brown, decorated with subconcolorous paler hairs (Figure 3a). Hymenium beige, smooth. Asci 65-80 × 5.5-7 µm, cylindrical (Figure 3b). Paraphyses lanceolate, septate. Ascospores 10-15 × 1.7-2.3 µm, cylindrical fusiform, straight or slightly curved (Figure 3c), sometimes with small droplets at the poles. Hairs 120-160 × 4-6 µm, cylindrical, multiseptate, thick walled, brown except 1-3 discolored, hyaline cells at the top.

Figure 3. *Lasiobelonium horridulum* var. *capitatum*: a. ascocarps, b. asci and paraphyses, c. ascospores

Ecology: On dead stems of *Phragmites australis* (Cav.) Steud. (Dougoud, 2012).

Specimen examined: TURKEY— Gaziantep: Karkamış, Yurtbağı village, Fırat River bank, on dead *Phragmites* sp. stem, 36°50'N-38°00'E, 334 m, 05.04.2014, K. 8780..

4. Conclusions and discussion

With this study, *Mollisia hydrophila, Trichobelonium kneiffii* and *Lasiobelonium horridulum* var. *capitatum* were added as new records for the mycobiota of Turkey. *Trichobelonium kneiffii* is the first member of the genus *Trichobelonium* in Turkey while *L. horridulum* var. *capitatum* is the second and *M. hydrophila* is the fourth members of the genera *Lasiobelonium* and *Mollisia* respectively (Solak et al., 2007; Sesli and Denchev, 2008).

Both *M. hydrophila* and *T. kneiffii* could be confused with each other due to the same substrate they inhabit. The two taxa differ from each other by the subiculum and fruit body colors, and the microscopic features (Breitenbach and Kränzlin, 1984). The former one differ with smaller and spathulate asci and smaller spores from the latter.

Acknowledgements

The authors would like to thank TUBİTAK (KBAG 212T112) for its financial support.

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(Received for publication 11 February 2015; The date of publication 15 April 2015)