

SOME NOTES ON MICROMYCETES FROM TURKEY

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Abstract

The paper deals with some rare micromycetes species viz., *Cryptocoryneum condensatum*, *Pestalotia fibricola*, *Pestalotiopsis maculans*, *Cercospora myrti*, *Pseudocercospora ceratoniae*, *Oidium ceratoniae*, *Uncinuliella australiana*, *Microdiplodia buddlejae*. These species are reported for the first time from Turkey.

Introduction

In Turkey higher plants have been studied very well, the mycobiota is not investigated as extensively and most studies deal with macromycetes. Some information about micromycetes growing on higher plants was given by Bremer *et al.*, (1947, 1952). The list of plant diseases occurring in Turkey was given by Karel (1958). Studies on micromycetes were carried out by Göbelez (1963, 1967). Some biotrophic and saprobic micromycetes of forest trees and shrubs were given by Baydar (1982), Selçuk & Hüseyin (2001), Selçuk *et al.* (2003, 2004) and by Hüseyinov, (2000); Hüseyin *et al.*, (2003) and Hüseyin, (2004). This paper describes some interesting and rare micromycete species from Turkey.

Materials and Methods

The materials for the present study was collected from different regions of Turkey during 1998-2004. Host plants were identified using the Flora of Turkey and East Aegean Islands (Davis, 1965-1985). For the identification of fungal species numerous literature sources were employed (Vasil'evskij & Karakulin, 1937, 1950; Deighton, 1976; Merezko, 1980; Ellis & Ellis, 1987; Mel'nik & Popushoj, 1992; Nag Raj, 1993; Braun, 1995). The materials were collected and observations were carried out in February, April, June, July and September. All specimens are deposited in the Herbarium of the Gazi University, Kırşehir Arts and Sciences Faculty in Kırşehir Province.

The Systematic status of species of micromycetes are arranged following Ainsworth and Bisby's Dictionary of The Fungi (Kirk *et al.*, 2001). The authors names of fungi are abbreviated according to authors of fungal names (Kirk & Ansell, 2004).

Result

In the light of the literature (Bremer *et al.*, 1947, 1952; Göbelez, 1963, 1967; Öner *et al.*, 1984; Tamer *et al.*, 1989, 1990; Güven & Tamer, 1993; Altan & Tamer, 1996) on Turkish microfungi, the following species are reported for the first time from Turkey. The species with their brief description based on Turkish samples are given below.

Erysiphales

Uncinuliella australiana (McAlp) R.Y. Zheng & G.Q. Chen, *Acta Bot. Yunnanica*, 4(4): 365, 1982.

Mycelium amphigenous, thin to dense, white, effuse, covering the entire leaf surface, evanescent to persistent, occasionally turning to ochre or grayish. *Conidiophores* erect, foot-cells straight or slightly flexuous at the base. *Conidia* elliptic-cylindrical, (25-) 28-40(-45) x 12-18 µm.

Only the anamorphic state.

Specimen examined: On living leaves of *Lagerstroemia indica* L. (Lythraceae). Istanbul, Laleli, 130 m a.s.l., 05.09.2004. EH. 1254.

Anamorphs of *erysiphales*

Oidium ceratoniae Comes, *Atti R. Ist. Incor. Napoli*, ser. III: 2, 1884.

Mycelium amphigenous, effuse or patchy. *Conidiophores* erect, foot-cells cylindric. *Conidia* cylindrical or angust-ellipsoidal, 26-37 x 12.5-15(-17) µm.

Specimen examined: On living leaves of *Ceratonia siliqua* L. (Fabaceae). Mersin province, Erdemli district, Ayaş, Sea Coast, 20 m a.s.l., 08.06.2003. EH. 1167.

Coelomycetes

Microdiplodia buddlejae Gucevič, *Tr. Nikit. Bot. Sad.*, 29: 192, 1959.

Conidiomata pycnidial, globose, 170-280 µm diam., dark brown, with rounded pore 20-30 µm diam. *Conidia* ellipsoid, ovoid, pale brown, 1-septate, slightly constricted, 8-11 x 4.5-5 µm.

Specimen examined: On dead branches of *Chaenomeles speciosa* (Sweet) Nakai (Rosaceae). Malatya province, Inonu University Campus, 900 m a.s.l., 20.02.2002. EH. 1126.

Pestalotia fibricola Grove, *J.Bot.*, 24: 197, 1886. (Fig. 1).

Conidiomata acervuloid, ellipsoid, rounded, 220-290 µm diam., dark brown. *Conidiophores* unbranched, 3-5 µm long. *Conidia* ellipsoid-fusiform, 15-21 x 5-6 µm, 4-septate, slightly constricted, bearing appendages; 3 median cells doliiform, together 12.5-14 µm, sordid-brown; basal cell triangular, colourless; apical cell conic, colourless, usually 2-3 apical appendage, 12-18 µm long; basal appendage short.

Specimen examined: On bark of *Tilia rubra* DC. subsp. *caucasica* (Rupr.) V. Engler (Tiliaceae). Rize province, Ardeshen district, around the Nursey of General Forest Manager. 670 m a.s.l., 30.07.1998. EH. 1281.

Pestalotiopsis maculans (Corda) Nag Raj, *Mycotaxon* (22): 47, 1985. (Fig. 2).

Conidiomata acervuloid, amphigenous, rounded to oval, 250-550 µm diam., unilocular, dark brown. *Conidiophores* unbranched, up to 30 µm long. *Conidia* fusiform, 4-septate, slightly constricted, versicoloured, 16-20(-25) x 5-6 µm, bearing appendages; 3 median cells subcylindrical or doliiform, together 11-14 µm, brown; apical cell conic, colourless exting into irregular branches usually 2 or 3 apical appendages, 17.5-20(-22.5) µm long; basal appendage absent.

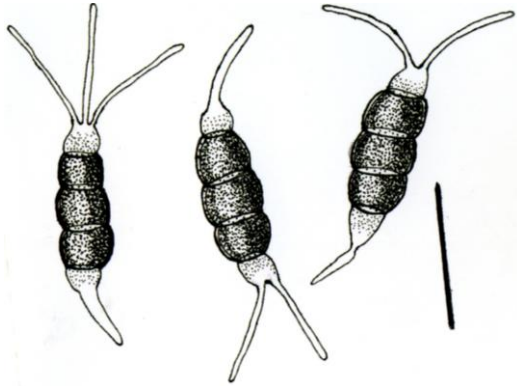


Fig. 1. *Pestalotia fibricola*. Conidia. Scale bar = 15 μ m

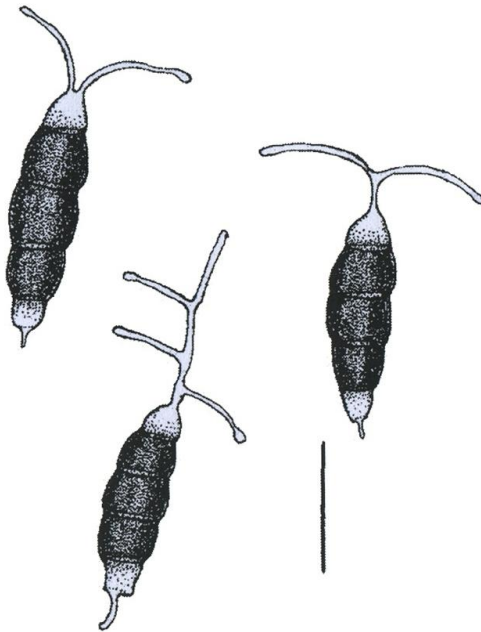


Fig. 2. *Pestalotiopsis maculans*. Conidia. Scale bar = 15 μ m

Specimen examined: On living leaves of *Camellia japonica* L. (Theaceae). Bursa city, 150 m a.s.l., 30.04.2004. EH. 1179.

Hyphomycetes

Cercospora garbiniana C. Massal., Sacc. Syll., 18: 601, 1906. (Fig. 3).

Leaf spots amphigenous, subcircular to rounded, 3-5 mm diam., centre pallided, surrounded by dark violet belt. *Caespituli* epiphyllous, dot-shaped, black. *Conidiophores* reddish-brown, aseptate, 28-50 x 2-3.5 μ m. *Conidia* rod-like, colourless, 2-3 septate, slightly constricted, 32.5-60 x 2.5-3(-5) μ m.

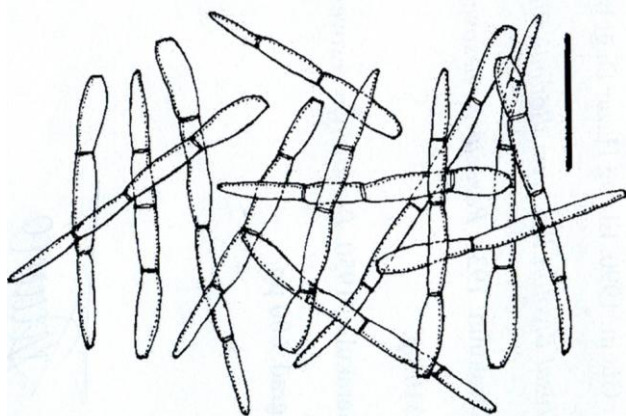


Fig. 3. *Cercospora garbiniana*. Conidia. Scale bar = 20 μ m

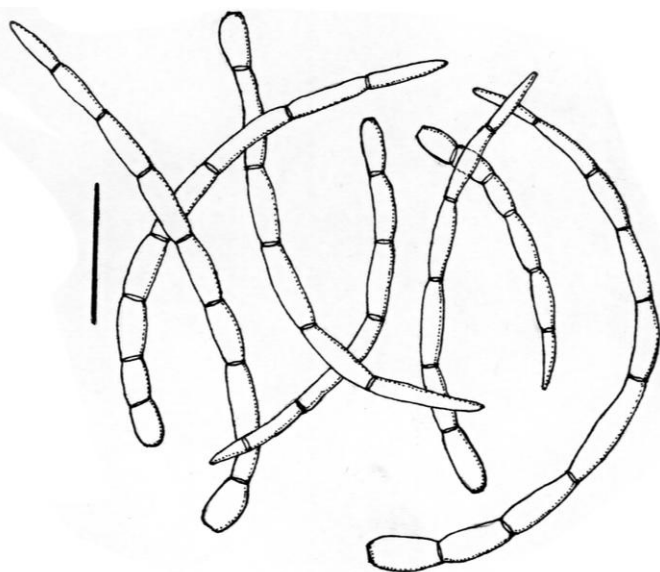


Fig. 4. *Cercospora myrti*. Conidia. Scale bar = 20 μ m

Specimen examined: On living leaves of *Rubus canescens* DC. (Rosaceae). Adana province, Kozan district, Horzun village, 750 m a.s.l., 20.10.2002. EH. 052.

Cercospora myrti Erikss., *Sacc. Syll.*, 4: 462, 1886. (Fig. 4).

Leaf spots amphigenous, rounded, 1-2 mm diam., purplish-brown. *Caespituli* generally hypophyllous, punctiformis, dark brown. *Conidiophores* brown, up to 5 μ m thick. *Conidia* brown, apex tapered, curved, 5-8 septate, slightly constricted, 40-100 x 2.5-3.5 μ m.

Specimen examined: On living leaves of *Myrtus communis* L. (Myrtaceae). Adana province, Kozan district, Salmanly village, 520 m a.s.l., 20.11.1999. EH. 049.

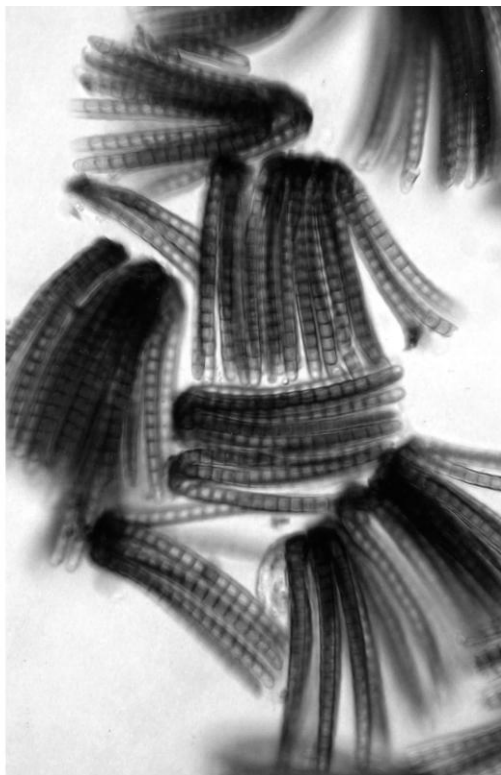


Fig. 5. *Cryptocoryneum condensatum*. Conidia. x 600.

Cryptocoryneum condensatum (Wallr.) E. W. Mason & S. Hughes in Rimington, *Nat. Hist. Scarborough Distr.*, 1: 162, 1953. (Fig. 5).

Conidiomata sporodochial, pulvinate, with flat tip. *Conidiophores* upright, frequently obscured by conidia to down adverse, subhyaline, up to 80 μm long, 1-3 μm thick. *Conidia* solitary, palmate with moderate brown capitulum and pale-brown narrow rays 3-5 μm thick, provided by 13-17 septa, slightly constricted at the septa, (47.5-)75 – 97.5 x (17.5-)20-25(-35) μm

Specimen examined: On bark of dead branches of *Fagus orientalis* Lipsky (Fagaceae). Rize province, Ikizdere district, near Tron, 850 m a.s.l., 27.07.1998. EH. 1278.

Pseudocercospora ceratoniae (Pat. & Trab.) Deighton, *Myc. Pap.*, 140: 30, 1976.

Leaf spots amphigenous, variable, minute, hypophyllous dark, epiphyllous darker, shining. *Caespituli* hypophyllous, punctiform, dark. *Conidiophores* unbranched, slightly curved, aseptate, 18-27 x 2.5-3.5 μm , brownish olivaceous. *Conidia* colourless or pale green, rod-like, 2-3 septate, not constricted, 35-53(-60) x 2-3 μm

Specimen examined: on living leaves of *Ceratonia siliqua* L.(Fabaceae). Adana province, Kozan district, 750 m a.s.l., 25.09.1999. EH. 948.

Discussion

The species *Uncinuliella australiana* was reported on *Lagerstroemia* in Asia, Australia, New Zealand, North America. In Europe (Baltic Republic, Belorussia, England, Moldova, Italy, Portugal, Spain) it was reported on *L. indica* (Braun, 1995). We found it in European part of Turkey in anamorphic state only, belonging to the hyphomycete genus *Oidium*. The *Oidium ceratoniae* is distributed in Mediterranean region, Southern parts of Europe, Africa, Asia Minor and South America (Braun, 1995). *Microdiplodia buddlejae* was found on dead branches of *Opuntia imbricata* DC. (Cactaceae), *Buddleja davidi* Franch. (Loganiaceae) and *Cotoneaster horisontalis* Dcne. (Rosaceae) in Ukraine (Merezhko, 1980). The species *Cercospora garbiniana* and *Pseudocercospora ceratoniae* are known from Italy, but *Cercospora myrti* is known on certain cultivated *Myrtus communis* from Western Europe. *Cryptocoryneum condensatum* is very common on fallen dead wood and bark and on dead branches of *Acer*, *Betula*, *Cornus*, *Corylus*, *Fagus*, *Quercus* and other trees and shrubs in temperate northern hemisphere (Ellis & Ellis, 1987; Mel'nik & Popushoj, 1992). The species with appendage bearing conidia: *Pestalotia fibricola* is known from Great Britain, but *Pestalotiopsis maculans* is known from USA, France, Germany and former Czechoslovakia (Nag Raj, 1993).

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