
MYCOTAXON

<http://dx.doi.org/10.5248/119.369>

Volume 119, pp. 369–372

January–March 2012

Second record of *Ramularia hypericicola* — collected in Turkey on a new host

FARUK SELÇUK¹, ELŞAD HÜSEYİN^{1*} & ALI S. BULBUL²

¹Department of Biology, Arts and Sciences Faculty, Ahi Evran University,
Kırşehir, 40100, Turkey

²Department of Biology, Sciences Faculty, Gazi University,
Teknik okullar, Ankara, 06500, Turkey

*CORRESPONDENCE TO: elsadhuseyin@hotmail.com

ABSTRACT – *Ramularia hypericicola*, a rare anamorphic *Mycosphaerella* species, is reported and illustrated from Turkey on *Hypericum calycinum*. The Turkish collection represents the second report of this fungus, known hitherto only from the type locality.

KEY WORDS — symptoms, *Clusiaceae*, morphology

Introduction

Most species of *Ramularia* are phytopathogenic, causing leaf spots, sometimes chlorosis, or without visible symptoms, occasionally saprobic or hyperparasitic (Braun 1998). Bremer & Petrak (1947) published the first records of *Ramularia* species from Turkey, *R. anatolica* Bremer & Petr. and *R. helminthiae* Bremer & Petr. Subsequent papers about Turkish microfungi, including *Ramularia* species, were published by Bremer et al. (1948, 1952a, 1952b) and Petrak (1953, 1957). Additional Turkish records, of *Ramularia cynarae* Sacc., *R. onobrychidis* Allesch., and *R. sambucina* Sacc., were published by Karel (1958). The relatively small number (nearly 30 species) of *Ramularia* species recorded in subsequent papers (Göbelez 1964) reflects a rather poor degree of research on microfungi on plants in Turkey. However, during the past two decades research on micromycetes (including hyphomycetes) in the country has intensified (Altan & Tamer 1996, Hüseyinov & Selçuk 1999, Braun et al. 2000, Hüseyin & Selçuk 2001, Hüseyinov et al. 2002, Hüseyin et al. 2003, 2005, Melnik et al. 2004, Erdoğan & Hüseyin 2007, Selçuk et al. 2009, 2010). We describe here one recent collection from Turkey of a *Ramularia* species previously recorded only from Russia.

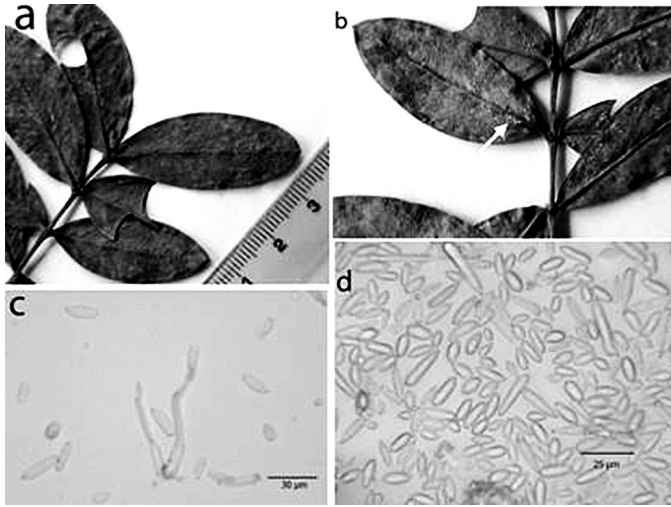


FIGURE 1. *Ramularia hypericicola* on *Hypericum calycinum*; a, spots on infected host leaves; b, punctiform grayish white caespituli; c, small fascicle of conidiophores; d, conidia.

Material & methods

The plant material was gathered from Gemlik (Bursa Province). The host plant was identified by reference to Davis (1967). Sections of the fungus were hand cut using a razor blade and microscopically examined using a Leica DM LB research microscope. The fungus was identified following Braun (1998). Author abbreviations follow Index Fungorum (2011). All examined specimens are deposited in the herbarium of Ahi Evran University, Arts and Sciences Faculty, Department of Biology, Kırşehir Province, Turkey.

Results

After careful comparison with *Ramularia* spp. described on hosts of *Hypericaceae* based on Braun (1998) the recently collected material on *Hypericum calycinum* from Turkey proved to be clearly identical with *R. hypericicola*. The following description and illustration are based on the Turkish material.

Ramularia hypericicola U.Braun, Monogr. *Cercospora*, *Ramularia* 2: 170, 1998.

FIG. 1

On both surfaces of leaves causing subcircular to irregular, occasionally angular and vein-limited, scattered sometimes confluent spots, covers more than 50% of the surface of some leaflet, firstly 0.5–1 mm across, then up to 10 mm diam. Spots on upper surface dirty brownish, dull, lower surface clearly

brown, without distinct margin. Caespituli hypophyllous, punctiform, grayish white. Mycelium internal, colourless, hyphae septate, branched, formed stromatic, colourless to yellowish-ochraceous, subglobose or slightly lengthened hyphal aggregations in leaflet tissues, 15–70(–75) μm diam. Conidiophores in small to moderately large fascicles, loose to usually dense, emerging through stomata or erumpent through the cuticle, erect, simple, straight, subcylindrical to geniculate-sinuuous, continuous to sparingly septate, hyaline or subhyaline, smooth, 6–65(–70) \times 2.5–5 μm . Conidiogenous cells terminal, colourless, enteroblastic. Conidiogenous scars thickened, darkened. Conidia colourless, catenate, chains occasionally branched, produced enteroblastically, single conidia smooth to faintly rough, ellipsoid-ovoid, subcylindrical, fusiform, 10–30(–35) \times 4–5(–6) μm , unicellular or with a single median septa, not narrower at the septa, ends rounded or somewhat attenuated.

SPECIMEN EXAMINED – TURKEY, BURSA PROVINCE, GEMLIK DISTRICT, Haydariye village, near Şelale, alt. 700 m, on living leaves of *Hypericum calycinum* L. (*Clusiaceae*), in hornbeam–beech (*Carpinetum*-*Fagetum*) forests, 18 Nov 2010, coll. E. Hüseyin G-06.

Discussion

In 1956, the Russian mycologist M.K. Khokhryakov collected a *Hypericum* sp. with *Ramularia*-type sporulation in the Russian Far East, which he deposited in LEP as *Ramularia* sp. Braun (1998: 170) described *R. hypericicola* as a new species based on this material. *Ramularia hypericicola* is undoubtedly a rare anamorph of *Mycosphaerella*. The present record from Turkey represents the second collection of this species and the first on a known host, *Hypericum calycinum*.

Acknowledgments

The authors would like to extend a sincere gratitude to Uwe Braun (Martin-Luther-Universität, Halle/Saale, Germany) for linguistic help and confirmation of our identification. We also thank Dr. Olga Vinnere Pettersson (Uppsala, Sweden) and Dr. Tatiana Andrianova (Kiev, Ukraine) for critically reading the manuscript and serving as presubmission reviewers. Especially we grateful to Dr. Shaun Pennycook (Auckland, New Zealand) for detailed linguistic help and nomenclatural review of the manuscript.

Literature cited

- Altan Y, Tamer AÜ. 1996. The parasitic fungi occurring on some endemic plants in Turkey and their damaging effects. 398–401, in: Plant life in South-West and Central Asia. Ege University Pres, İzmir, Turkey.
- Braun U. 1998. A monograph of *Cercospora*, *Ramularia* and allied genera (phytopathogenic hyphomycetes). Vol. 2. IHW-Verlag. 493 p.
- Braun U, Melnik V, Hüseyinov E, Selçuk F. 2000. *Mycopappus alni* on species of *Betula* and *Pyrus* from Turkey. Mikologia i Fitopatologia 34(6): 1–2.
- Bremer H, Petrak F. 1947. Neue Kleinpilze aus der Türkei. Sydowia, 1(1 – 3): 248 – 263.

- Bremer H, İsmen H, Karel G, Özkan M. 1948. Beiträge zur Kenntnis der parasitischen Pilze der Türkei. III. Revue de la Faculté des Sciences de l'Université d'İstanbul, Ser. B, 13(1): 1–53.
- Bremer H, Karel G, Bıyıkoğlu K, Göksel N, Petrak F. 1952a. Beiträge zur Kenntnis der parasitischen Pilze der Türkei. VI. Revue de la Faculté des Sciences de l'Université d' İstanbul, Ser. B, 17(3): 259–276.
- Bremer H, Karel G, Bıyıkoğlu K, Göksel N, Petrak F. 1952b. Beiträge zur Kenntnis der parasitischen Pilze der Türkei. VII. Revue de la Faculté des Sciences de l'Université d' İstanbul, Ser. B, 17(4): 277–288.
- Davis PH. (ed.). 1967. Flora of Turkey and East Aegean Islands. Vol. 2. Edinburgh University Press.
- Erdoğan M, Hüseyin E. 2007. The world's second record of *Hyalodictyum colchicum* reported from Turkey. Mycotaxon 99: 245–250.
- Göbelez M. 1964. La mycoflore de Turquie. II. Mycopathologia et Mycologia Applicata 23(1): 47–67.
- Hüseyin E, Selçuk F. 2001. New and poorly known genera of microfungi for Turkey. Turkish Journal of Botany 25(6): 437–438.
- Hüseyin E, Selçuk F, Gaffaroglu M. 2003. Some materials on mitosporic fungi from Turkey. I. *Hyphomycetes*. [Kai kurie duomenys apie Turkijos mitosporinius grybus. I. *Hyphomycetes*]. Botanica Lithuanica 9(2): 151–160.
- Hüseyin E, Selçuk F, Şahin A. 2005. The world's second record of *Neoheteroceras flageolotii* reported from Turkey. Mycotaxon 94: 241–244.
- Hüseyinov E., Melnik V., Selçuk F. 2002. *Ceratophorum helicosporum* – a new for mycoflora of Turkey genus and species of *Hyphomycetes* (*Dematiaceae*). Mikologia i Fitopatologia 36(3): 11–13.
- Hüseyinov E., Selçuk F. 1999. New records of phytopathogenic microfungi for Turkey. Plant Disease Research 14(2): 175–176.
- Karel GA. 1958. A preliminary list of plant diseases in Turkey. Ayyıldız Matbaası. Ankara.
- Melnik V, Hüseyin E, Selçuk F. 2004. Contribution to the studying of micromycetes in several Black Sea provinces of Turkey. Novitates Systematicae Plantarum non Vascularum. Nauka. Petropolis 37: 133–148.
- Petrak F. 1953. Neue Beiträge zur Pilzflora der Türkei. Sydowia 7: 14–44.
- Petrak F. 1957. Beiträge zur Türkischen Pilzflora. Sydowia 10: 101–111.
- Selçuk F, Erdoğan M, Akgül H, Hüseyin E. 2009. The genus *Septoria* Sacc. in Turkey. Mycopath 7(1): 21–28.
- Selçuk F, Erdoğan M, Hüseyin E, Göçmen E. 2010. Türkiye'den Rapor Edilmiş Piktoidal, Aservular ve Stomatyal Yapılarla Eşsiz Üreyen Mikrofunguslar (The microfungi which growth pycnidial, acervular and stomata structures, reported from Turkey). Ekoloji 2010 Sempozyumu. Aksaray Üniversitesi Fen – Edebiyat Fakültesi Biyoloji Bölümü ve Türkiye Tabiatını Koruma Derneği. Özetler. 5–7 Mayıs 2010, Aksaray. S. 186.