Pak. J. Bot., 37(4): 1009-1013, 2005.

RUST FUNGUS *PUCCINIA SMILACIS* ON *SMILAX EXCELSA* IN ANATOLIA

ELŞAD HÜSEYIN* AND MAKBULE KARAHAN

Department of Biology, Kırşehir Arts and Sciences Faculty,
Gazi University, 40100 Kırşehir, Turkey

Abstract

Puccinia smilacis Schwein., member of the family Pucciniaceae (Uredinales, Basidiomycota) is reported for the first time on *Smilax excelsa* L., from Turkey. The morphological and microscopical features of this fungus are described and illustrated based on Turkish samples.

Introduction

The data on the rust fungi in Turkey are contained in the reports of Bremer *et al.* (1947, 1952), Karel (1958), Henderson (1957, 1959, 1961, 1964), Göbelez (1963), Tamer *et al*., (1998), Kırbağ *et al.*, (2001), Hüseyin & Kırbağ, (2003), Bahçecioğlu & Gjaerum, (2003), Hüseyin & Selçuk, (2004), Hüseyin *et al*., (2004), Hüseyin (2004a, 2004b, 2004c) where about 310 species of rust fungi have been recorded. The present report describes *Puccinia smilacis* on *Smilax excelsa* L.

Materials and Methods

The plant material of *Smilax excelsa* L., showing symptoms of rust disease was collected from the forests of different localities of Samsun province, Middle Black Sea Region of Turkey in May and November 2004. Dried herbarium material was examined under light microscopy and identified after reference to Ulijanishchev (1978) and Ulijanishchev *et al*., (1985).

All specimens are deposited in the Mycological Collection of the Kırşehir Arts and Sciences Faculty, Gazi University, Kırşehir, Turkey.

Results

Smilax excelsa L., growing in the forests of Samsun province, Middle Black Sea Region of Turkey showed symptoms of rust disease caused by *Puccinia smilacis* Schwein. (Schr. Nat. Gez. Leipzig, 1: 72, 1822). This species is reported for the first time from Turkey.

Leaf spots bilateral, roundly-angular, up to 2 mm broad (Fig. 1A), on the upper surface chestnut-brown, on the lower surface yellowish-brown. *Spermogonia* and *aecia* not found. *Uredinia* hypophyllous, numerous, sometimes in small groups, oblong, oval, 0.2–2 mm broad, faintly pulverulent, yellowish-brown (Fig. 1B); *urediniospores* elipsoid, or ovoid, (20–)22,5–30(–32,5) x 17,5–20 µm, wall light-yellowish, 2–2.5 µm thick, slender-spined, with 2–3 equatorial pores (Fig. 1C). *Telia* hypophyllous, brown, faintly pulverulent (Fig. 1B); *teliaspores* broad-clavate, obovoid, elipsoidal, at apex rounded, tapered towards the base, slightly constricted or non constricted, 27.5–37.5(–42.5) x 17.5–22.5(–25) µm, wall brown with unnoticeable germ pores, 1–1.5 µm thick, thickened at the apex up to 5 µm, smooth (Fig. 1D); pedicels light -yellowish, thick, as long as the spores or less.

*Corresponding Author: elsadhuseyin@hotmail.com

Fig. 1A. Leaves of *Smilax excelsa* L., infected with *Puccinia smilacis* Schwein.

Fig. 1B. Uredinia and Telia on leaves

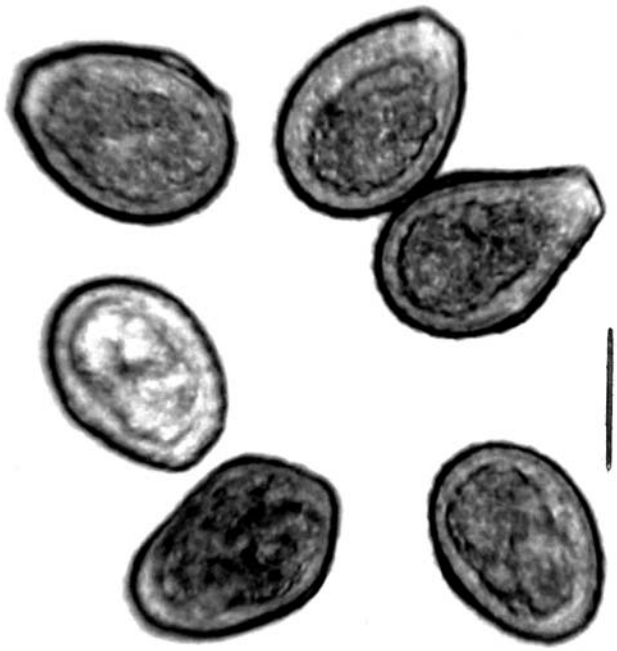

Fig. 1C. Urediniaspores, scale bar = 20µm.

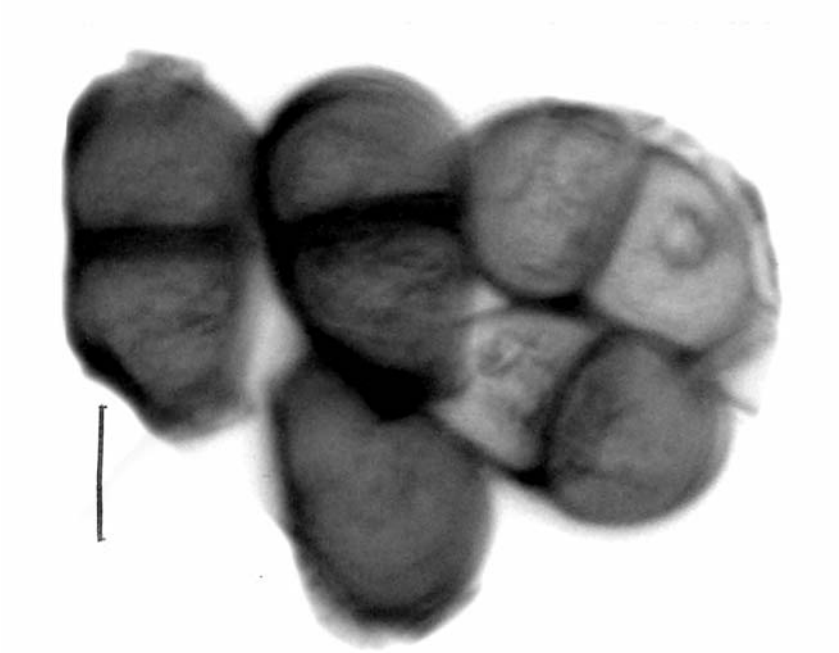

Fig. 1D. Teliaspores, scale bar = 15µm

Eu-hetero-species.

Specimens examined: On leaves of *Smilax excelsa* L. (Smilacaceae), Samsun province, Carshamba district, Otluk village, 41º13'50''N, 36º40'55''E, 10 m a. s .l., 19.05.2004 and 07.11. 2004. EH 0284.

Discussion

Puccinia smilacis Schwein. was described by Schweinitz (1822). Arthur (1917) described the rust fungi on *Smilax* spp. under the same name *P. smilacis* Arthur. So the name *P. smilacis* Schwein. takes priority over *P. smilacis* Arthur. Aecial spore state of *P. smilacis* Schwein., is described as *Aecidium apocyni* Schwein., on *Apocynum* spp. This state is not found untill now in Turkey.

The species *P. smilacis* Schwein., has been recorded on *Smilax* spp., in Asia and North America (Ulijanishchev, 1978) and in our neighboring country Georgia on *Smilax excelsa* L., (Ulijanishchev *et al*., 1985).

Acknowledgements

The autors thank Dr. Zinaida Azbukina (Vladivostok, Russia) and Dr. Yuri Tikhonenko (Kiev, Ukraine) for their advices.

References

Bahçecioğlu, Z. and B. Gjaerum Halvor. 2003. New and rare rust fungi (Uredinales) from Anatolia (Turkey). *Mycotaxon*, 85: 165-173.

Bremer, H., H. Ismen, G. Karel and M. Özkan. 1947. Beiträge zur Kenntnis der parasitischen Pilze der Türkei. I. *Revue de la Faculté des Sciences de I'Université d'İstanbul*. *Ser*. B. 12(2): 307-334.

Bremer, H., G. Karel, K. Bıyıkoğlu, N. Göksel and F. Petrak. 1952. Beiträge zur Kenntnis der parasitischen Pilze der Türkei. VI. *Revue de la Faculté des Sciences de I'Université d'İstanbul. Ser*. B. 17, 3: 259-275.

Göbelez, M. 1963. La Mycoflore de Turque. I. *Mycopathologia Applicata*, 19 (4): 296-314.

Henderson, D.M. 1957. Uredinales from Asia Minor. *Notes Roy. Bot. Gard. Edinburgh*. 22: 195-200.

Henderson, D.M. 1959. Uredinales from S.W. Asia. I. *Notes Roy. Bot. Gard. Edinburgh*, 23: 71-83.

Henderson, D.M. 1961. Uredinales from S.W. Asia. II. *Notes Roy. Bot. Gard. Edinburgh*, 25: 503-506.

Henderson, D.M. 1964. Uredinales from S.W. Asia. III. *Notes Roy. Bot. Gard. Edinburgh*, 27: 197-277.

Hüseyin, E. 2004a. *Zaghouania phillyreae* Pat. (Uredinales) a new report from Turkey. *Pak. J. Bot.,* 36(4): 901-904.

Hüseyin, E. 2004b. *Cumminsiella mirabilissima* on *Mahonia aquifolium* in Turkey. *Mycotaxon*, 90(1): 125-127.

Hüseyin, E. 2004c. *Kuehneola uredinis* (Uredinales) on species of *Rubus* in Turkey. *Mycotaxon*, 91(1): 149-151.

Hüseyin, E. and Kırbağ, S. 2003. A new *Puccinia* on endemic *Phryna*. *Pak. J. Bot*., 35 (1): 477-478.

Hüseyin, E. and F. Selçuk. 2004. Observations on the genera *Cerotelium, Melampsoridium* and *Pileolaria* (Uredinales) in Turkey. *Pak J. Bot*., 36(1): 203-207.

Hüseyin, E., F. Selçuk and M. Karahan. 2004. Occurrence of *Gymnoconia peckiana* in Turkey. *Pak J. Bot*., 36(4): 897-899.

Karel, G.A. 1958. Preliminary List of Plant Disease in Turkey. *Ayyıldız Matbaası*. *Ankara.* 44.

Kırbağ, S., S. Civelek and E. Hüseyinov. 2001. A new *Puccinia* on *Centaurea* from Turkey. *Mikologia i Fitopatologia. Nauka. St.-Petersburg*, 35(6): 20-21.

Kırk, P.M. and A.E. Ansell. 1992. *Authors of Fungal Names. Wallingford: CAB International*. 95 p.

Tamer, A.Ü., N. Şahin and E. Uğurlu. 1998. Türkiye'de belirlenen pas mantarları. In: XIV. *Ulusal Biyoloji Kongresi. Bitki ekolojisi-Bitki sistematiği seksiyonu. Samsun*, 1: 395-408.

Ulijanishchev, V.I. 1978. *Opredelitel' rzhavchinnykh gribov SSSR. "Nauka"*. *Leningrad*. 384 p.

Ulijanishchev, V.I., D.N. Babajan and M.S. Melia. 1985. *Opredelitel' rzhavchinnykh gribov zakavkazja. "Elm"*. *Baku*. 574 p.

Schweinitz, L.D. 1822. von. *Synopsis fungorum Carolinae superioris*. Schriften der Naturforschenden Gezelschaft zu Leipzig, 1: 72L 1822.

Arthur, J.C. 1917. Uredinales of Porto Rico based on collections by H.H. Wetzel and E.W. Olive. Mycologia 9: 75.

Schweinitz, L.D. 1822. von. Synopsis fungorum carolinae superioris. Schriften der Naturforschenden Gezelschaft zu Leipzig, 1: 58.

(Received for publication 12 Feburary 2005)