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ARTHROCLADIELLA - A GENUS OF POWDERY MILDEW AGENTS NEW FOR SERBIA AND MONTENEGRO

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Abstract – *Arthrocladiella* Vassilkov, a fungal genus new for Serbia and Montenegro, is described and illustrated as the agent of powdery mildew on plants of the species *Lycium halimifolium* Mill. (common matrimony vine). In view of the fact that the genus *Arthrocladiella* is monotypic, taxonomic characteristics of the species *Arthrocladiella mougeotii* (Lev.) Vassilkov in the anamorphic and teleomorphic stages of development are given in the present paper, together with symptoms of the disease.

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INTRODUCTION

It is known from published sources that the agent of powdery mildew on plants of the genus *Lycium* Bock. has different designations. G o l o v i n (1956) refers to it as the genus *Arthrocladia*, B l u m e r (1967) calls it *Microsphaera* sect. *Arthrocladia*, and U. B r a u n (1978) uses the designation Microsphaera sect. Arthrocladiella. More recent sources (S a l a t a 1985; B r a u n 1987, 1995, 1999; C o o k *et al.* 1997, *etc.*) confirm earlier results (V a s s i l k o v 1960, 1963) indicating that the agent of powdery mildew on plants of the genus *Lycium* represents an extremely isolated species, one which the authors include in the separate monotypic genus *Arthrocladiella* Vassilkov with the species *Arthrocladiella mougeotii* (Lev.) Vassilkov.

This fungus parasitizes plants of the genus *Lycium*, most often the species *Lycium halimifolium* Mill. (B r a u n 1995). The indicated species is a shrubby plant 1-3 *m* high with numerous light-gray slender branches that bend arcwise and are with or without thorns. Although the species is frequently cultivated as a hedge, powdery mildew has not been recorded on it in our country till present.

In the opinion of some mycologists (G o r l e n k o 1983), the fungal agents of powdery mildew at the present time are in a period of expansion owing to the appearance of new ecological niches and new hosts. For this reason, data on the development of this group of fungi on wild, as well as cultivated plants are of considerable interest. The purpose of the present work was to study an agent of powdery mildew new for Serbia and Montenegro.

MATERIAL AND METHODS

Powdery mildew agents were searched for during several vegetation periods in Serbia and Montenegro. Samples of diseased plants *Lycium halimifolium* Mill. were collected during the period 1998–2002. The following taxonomic characteristics of the *Arthrocladiella mugeotii* (Lv.) Vassilkov were recorded: mycelium and distribution on the surface of the infected host plant; appearance and type of conidiophores; disposition, form, and size of conidia; mode of their germination; disposition, number, and appearance of germ tubes and appresoria on them; form and diameter of fruit bodies; form and size of wall cells; number, size and structure of appendages; number of asci in cleistothecia and dimensions; number, form and size of ascospores. The values of the above characters, based on microscopic analysis were measured on 200 samples for each character. The data was statistically processed and shown in Table 1. and compared with data published by B r a u n (1995), S a l a t a (1985) and others.

Material of the collections examined has been deposited at the Mycological Herbarium of the Institute of Biology, Kragujevac, Serbia.

RESULTS AND DISCUSSION

Arthrocladiella mugeotii (Lv.) Vassilkov, Bot. Mat. Otd. Spor. Rast. 16, p.112 (1963)

Studied material: on *Lycium halimifolium* Mill. in Kragujevac and Gornji Milanovac in September of 1998 and 2002 and Podgorica in September of 2002.

Throughout macroscopic and microscopic examinations, the agent powdery mildew on the plant species *L. halimifolium* was identified as the fungus *A. mugeotii.*

The fungus forms copiously developed mycelium on leaves and flower clusters of the host plant. The mycelium is dispersed or in the form of spots, hyaline, and white or in the form of a starchy mass. Hyphae of the mycelium are bent in the form of a knee and 5 - 8.5 *μm* wide. The conidial stage is copiously developed and