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# Taxa of the genus *Ramularia* Unger new to Lithuania

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For the first time in Lithuania, five *Ramularia* (*Hyphomycetes*, *Moniliaceae*) taxa on five species of host plants for the first were registered: *R. alnicola* Cooke var. *alni* was found on the leaves of *Alnus glutinosa* L., *R. concomitans* Ellis and Holw. on *Bidens tripartita* L., *R. libanotidis* Bubák on *Aegopodium podagraria* L., *R. origanicola* Chevassut on *Origanum vulgare* L., *R. saximontanensis* Solheim on *Clematis vitalba* L.

**Key words:** *Ramularia*, conidiophores, conidia, Lithuania, taxa, *Hyphomycetes*, *Moniliaceae*

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## INTRODUCTION

Fungi of the genus *Ramularia* (*Hyphomycetes*, *Moniliaceae*) mostly parasitise on leaves, occasionally being saprophytic or hyperparasitic [1]. Causing leaf spots or chlorosis, in some years fungi of this genus damage 40–70% of the leaf surface of plants [2].

According to our data, at present 68 species and varieties of *Ramularia* parasitizing host plants belonging to 26 families, 77 genera and 117 taxa of cultivated and spontaneous flora are known in Lithuania. *Ramularia* fungi most frequently damage the representatives of *Asteraceae* (13.7%), *Polygonaceae* (10.3%) and *Fabaceae* (7.7%) families.

The aim of our work was to investigate taxa diversity, distribution and aggressiveness of the genus *Ramularia* fungi parasitising plants in natural and anthropogenized biotops of Lithuania and to prepare material for the multivolumil edition “Mycota Lithuaniae” (volume XI, book 2).

## MATERIALS AND METHODS

Herbarium specimens of injured plants were collected in the field collection of Medical and Aromatic Plants of the Institute of Botany (MAP), in the collection of plants of the Botanical Garden of Vilnius University (VBG), and in natural habitats. The *Ramularia* taxa were identified according to [1]. The measurements of conidiophores and conidia were compared to data published by [1, 3]. The herba-

rium specimens are disposed in the Herbarium of the Institute of Botany (BILAS).

## RESULTS

*Ramularia alnicola* Cooke, Grevillea 14:40. 1885 var. *alni* (Fig. 1 A)

Leaf spots amphigenous, 0.5–8 mm diam., indistinct at first, subcircular to irregular, dull green, pale brown, dark brown and confluent later with dull thin coating. Thin coating of conidiophores and conidia on the upper and lower surfaces. Conidiophores in small fascicles, not septate in most cases, short at first, of long and branched later, tooth-headed, 14–53.2 × 2.8 μm. According to U. Braun [1], conidiophores 5–40 × 1.5–4 μm, according to E. Vimba [3] – 24–72 × 3 μm. Conidia egg-shaped, ellipsoid, cylindrical, catenate, straight to slightly curved, with rounded ends, 8.4–16.8 × 2.8–4.2 μm. According to U. Braun [1], conidia (6–)8–15(–22) × 2–4 μm, according to E. Vimba [3] – 9–15 × 2–4.5 μm.

Distribution: on *Alnus glutinosa* L. Alytus district, Daugai, September 29, 1999 (leg. S. Stakvilevičienė) (Fig. 2).

*Ramularia concomitans* Ellis&Holw., Journ. Mycol. 4 : 2. 1888 (Fig. 1B) leaf spots amphigenous, 0.5–3 mm diam., small at first, angular to irregular later, pale greyish to dark brown on the upper surface, border indefinite, round the spots with halo, dull brown with dark border on the lower surface. Thin coating of conidiophores and conidia amphigenous. Conidiophores

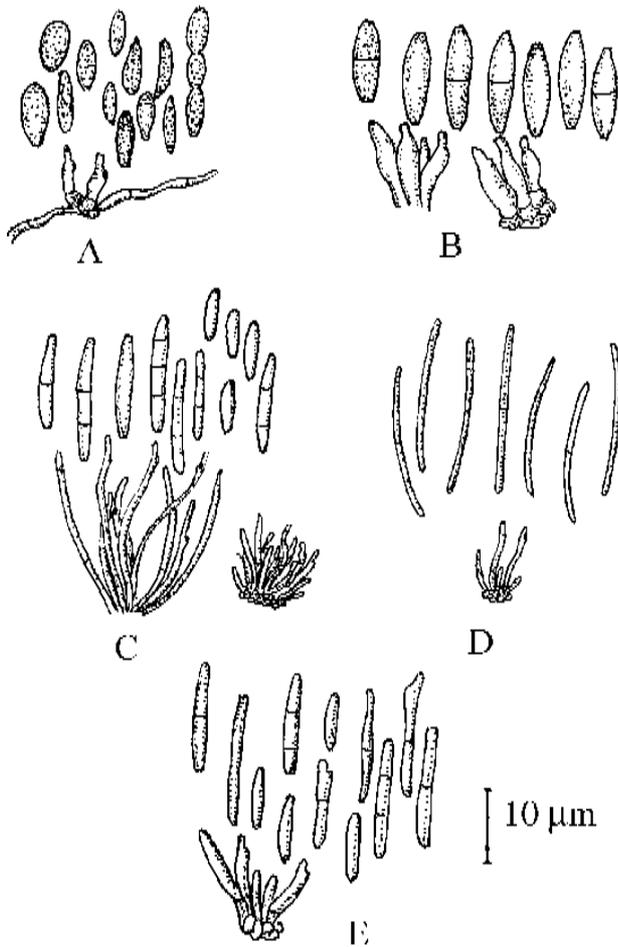


Fig.1. A – *Ramularia alnicola* var. *alni*, B – *R. concomitans*, C – *R. libanotidis*, D – *R. origanicola*, E – *R. saximontanensis*

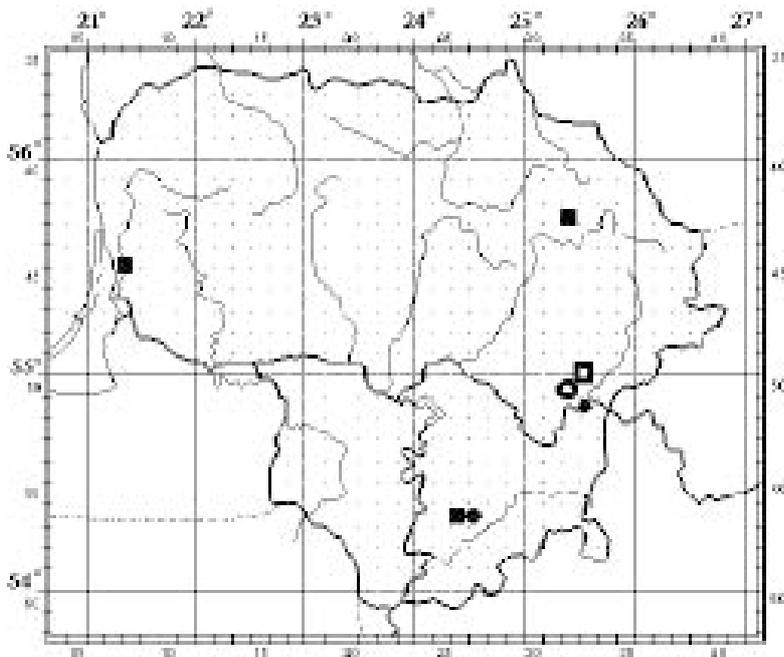


Fig. 2. Localities of *Ramularia alnicola* var. *alni* (●), *R. concomitans* (□), *R. libanotidis* (■), *R. origanicola* (○), *R. saximontanensis* (◆)

in small fascicles, somewhat curved, not branched, not septate, tooth-headed,  $8.4\text{--}18.2 \times 2.8\text{--}5.6 \mu\text{m}$ . According to [1], conidiophores  $5\text{--}20 \times 2\text{--}6 \mu\text{m}$ , according to [3] –  $21 \times 2\text{--}6 \mu\text{m}$ . Conidia ellipsoid or cylindric, catenate, straight to slightly curved, not or one-septate, rounded ends,  $14\text{--}28 \times 2.8\text{--}4.2 \mu\text{m}$ . According to [1], conidia  $(10\text{--})12\text{--}30(32) \times 3\text{--}5.5 \mu\text{m}$ , according to [3] –  $13.5\text{--}22.5 \times 3\text{--}4.5 \mu\text{m}$ .

Distribution: on *Bidens tripartita* L. Vilnius, the field collection the MAP, August 20, 1998 (Fig. 2).

***Ramularia libanotidis*** Bubák, Növ. Közlem., 4:41. 1907 (Fig. 1 C)

Leaf spots amphigenous, 1–3 mm diam., subcircular, angular to irregular, larger and confluent, yellowish, finally dull greyish brown to greyish white, pale spots with brown border. Conidiophores in fascicles, straight or somewhat curved, not or two-septate, tooth-headed,  $11.2\text{--}44.8 \times 2.8\text{--}4.2 \mu\text{m}$ . According to [1], conidiophores  $10\text{--}60(90) \times (1.5\text{--})2\text{--}4(5) \mu\text{m}$ . Conidia catenate, subcylindric, spindle-shaped, narrowly ellipsoid, not to three-septate,  $14\text{--}36.4 \times 2.8\text{--}4.2 \mu\text{m}$ . According to [1], conidia  $10\text{--}45(50) \times 2\text{--}5 \mu\text{m}$ .

Distribution: on *Aegopodium podagraria* L. Alytus district, Daugai, August 29, 1999, (leg. S. Stakvilevičienė); Rokiškis district, August 10, 1995; Šilutės district, August 14, 1998. (Fig. 2).

***Ramularia origanicola*** Chevassut, Bull. Soc. Mycol. Fr. 108: 104. 1992 (Fig. 1D)

Leaf spots amphigenous, 4–15 mm diam., not scattered, irregular, dark brown, border indefinite. Conidiophores in small fascicles, straight to slightly curved, not septate, tooth-headed,  $8.4\text{--}28 \times 1.4\text{--}2.8 \mu\text{m}$ . According to [1], conidiophores  $5\text{--}30 \times 1\text{--}2.5 \mu\text{m}$ . Conidia one- to three-septate (mostly one-septate), filiform, slightly acute ends,  $11.2\text{--}33.6 \times 1.4 \mu\text{m}$ . According to [1], conidia  $(10\text{--})15\text{--}30(40) \times 1\text{--}2 \mu\text{m}$ .

Distribution: on *Origanum vulgare* L. Vilnius, the field collection the MAP, August 29, 2000 (Fig. 2).

***Ramularia saximontanensis*** Solheim, Univ. Wyom. Publ. 10:45. 1943 (Fig. 1 E)

Leaf spots amphigenous, 1–8 mm diam., subcircular, angular to irregular, dull greenish, pale brown, pale greyish with dark border. Conidiophores in small rich fascicles, straight to slightly curved, not septate, tooth-headed,  $7\text{--}44.8 \times 2.8\text{--}4.2 \mu\text{m}$ . According to [1], conidiophores  $5\text{--}50 \times 2\text{--}5 \mu\text{m}$ . Conidia solitary, occasio-

nally catenate, cylindric, ellipsoid, not or one-septate, subacute ends,  $12.6\text{--}39.2 \times 2.8\text{--}4.2 \mu\text{m}$ . According to [1], conidia  $15\text{--}45 \times 2.5\text{--}5 \mu\text{m}$ .

Distribution: on *Clematis vitalba* L. The collection at the VBG, September 17, 1997 (leg. B. Gri-galiūnaitė) (Fig. 2).

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#### D. Radaitienė

#### NAUJI RAMULARIA UNGER GENTIES TAKSONAI LIETUVOJE

#### S a n t r a u k a

Tiriant augalus su būdingais *Ramularia* Unger genčiai lapų dėmėtingės požymiais buvo identifikuoti penki nauji *Ramularia* genties grybų taksonai ir penkios augalų šeiminių rūšys Lietuvoje: *R. alnicola* Cooke var. *alni* ant *Alnus glutinosa* L., *R. concomitans* Ellis & Holw. ant *Bidens tripartita* L., *R. libanotidis* Bubák ant *Aegopodium podagraria* L., *R. origanicola* Chevassut ant *Origanum vulgare* L., *R. saximontanensis* Solheim ant *Clematis vitalba* L. Straipsnyje pateikti minėtų taksonų grybų aprašymai, konidijakočių ir konidijų originalūs matmenys, iliustracijos. Radimvietės nurodytos žemėlapyje.