

Ramularia liliicola – a new leaf-spotting hyphomycete from Europe

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Abstract. *Ramularia liliicola* sp. nov. on living leaves of *Lilium candidum* and *L. martagon* from Germany and Slovakia is described, illustrated, discussed, and compared with allied taxa.

Key words: anamorphic fungi, Germany, new species, *Ramularia*, Slovakia

Introduction

Among some plant-inhabiting micromycetes collected in the Tatra Mountains in Slovakia, a leaf-spotting hyphomycete on *Lilium martagon* proved to be a new, undescribed species of the genus *Ramularia* Unger. A specimen on cultivated plants of *Lilium candidum* from Nordrhein-Westfalen in Germany was found to be conspecific with the material on *L. martagon*.

Material and Methods

Sori of the fungus (type collections) were prepared by means of a stereomicroscope and examined by standard light microscopy using an Olympus BX 50 microscope (Hamburg, Germany). Conidiophores and conidia were stained with cotton blue.

Taxonomy and Discussion

Ramularia liliicola Ale-Agha, U. Braun & Feige, **anam. sp. nov.** (Fig. 1)

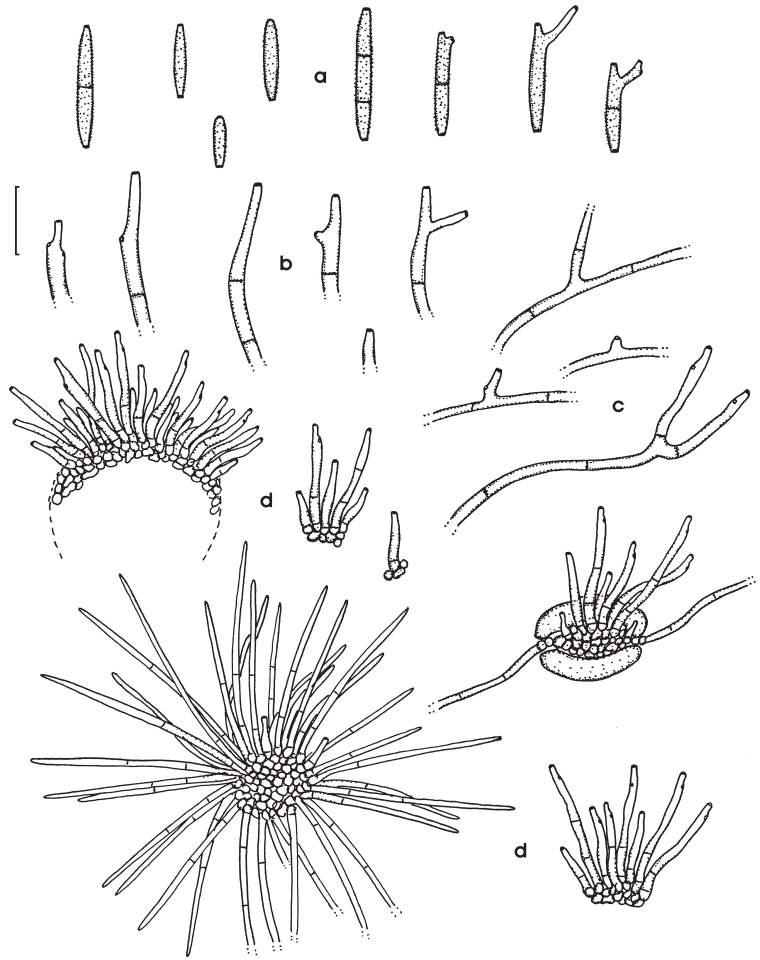
Maculae nullae, inconspicuae, deinde angulares-irregulares, 0.5-3 mm latae, saepe per venas limitatae, pallide viridulae, albidae, flavo-ochraceae vel pallide brunneae, ultimo brunneae. Caespituli amphigeni, punctiformes vel subeffusi, albidii. Stromata nulla vel bene evoluta, substomatata vel intraepidermalia, 20-50 µm diam., griseo-albida. Mycelium immersum et externum; hyphae ramosae, septatae, 1-2 µm latae, tenuitunicatae, leviae.

Conidiophora solitaria, ex hyphis superficialibus lateraliter, interdum terminaliter oriunda vel laxe ad dense fasciculata, pauca vel numerosa, raro solitaria, ex hyphis immersis vel cellulis stromatibus oriunda, per stoma emergentia vel erumpentia, erecta, subcylindrica, filiformes vel geniculata-sinuosa, simplicia vel interdum ramosa, 5-60 × 1.5-4 µm, 0-3-septata, hyalina, tenuitunicata, levia; cellulae conidiogenae integratae, terminales, interdum intercalares, 5-20 µm longae; cicatrices conidiales conspicuae, 0.5-1 µm latae, leviter incrassatae, fuscatae. Conidia catenata vel ramificata, anguste ellipsoidea-ovoidea, fusiformes vel subcylindrica, 6-22 (-25) × 2-4 µm, 0-1 (-2)-septata, hyalina, tenuitunicata, sublevia vel verruculosa, apice obtuso, rotundato vel truncato, basi obconice truncata, hila 0.5-1 µm diam., leviter incrassata, fuscata.

Leaf spots at first lacking, inconspicuous, later angular-irregular, 0.5-3 mm wide, usually vein-limited, pale greenish-whitish, yellowish, ochraceous to brownish, finally brown, necrotic. Caespituli amphigenous, punctiform to subeffuse, white. Stromata lacking to well-developed, substomatal to intraepidermal, 20-50 µm diam, grayish white. Mycelium internal and external, superficial; hyphae sparingly branched, septate, 1-2 µm wide, thin-walled, smooth. Conidiophores solitary, arising from superficial hyphae, lateral, occasionally terminal, or associated in small to large fascicles, loose to dense, large fascicles or almost sporodochial, rarely with solitary conidiophores arising from internal hyphae or stromata, erumpent or emerging through stomata, erect, subcylindrical, filiform to geniculate-sinuuous, unbranched or occasionally branched, 5-60 × 1.5-4 µm, 0-3-septate, hyaline, thin-walled, smooth; conidiogenous cells integrated, terminal,

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Fig. 1. *Ramularia liliicola* sp. nov.: a – conidia, b – conidiophores, c – superficial hyphae with solitary conidiophores, d – conidiophore fascicles (based on holotype material). Bar = 10 µm



occasionally intercalary, 5–20 µm long, conidiogenous loci conspicuous, 0.5–1 µm diam, slightly thickened and darkened. Conidia in simple or branched chains, narrowly ellipsoid-ovoid, fusiform to subcylindrical, 6–22 (–25) × 2–4 µm, 0–1 (–2)-septate, hyaline, thin-walled, almost smooth to usually verruculose, apex obtuse, rounded to truncate, base short obconically truncate, hila 0.5–1 µm diam, slightly thickened and darkened.

Holotype: on *Lilium martagon* L. (Liliaceae), Slovakia, Tatra Mountains, Podhanske, 1166 m alt., 26 Aug 2004, N. Ale-Agha [HAL 1826 (F)]. **Isotype:** ESS. **Paratypes:** on *L. candidum* L., Germany, Nordrhein-Westfalen, Essen, Burgaltendorf, garden, 20 Oct 2004, N. Ale-Agha & B. Feige [ESS; HAL 1827 (F)].

This species is a typical member of the genus *Ramularia* characterised by having colourless conidiophores with sympodially proliferating conidiogenous cells and thickened, darkened conidiogenous loci and holoblastically formed, hyaline conidia. Two *Ramularia* species have been described from hosts belonging to the *Liliaceae* s. lat., viz., *Ramularia allii* Byzova, known on *Allium* species in Georgia (Caucasus) and Kazakhstan (Central Asia), and *R. smilacinae* Davis on *Smilacina* species in North America (Braun 1998). *Ramularia*

allii is quite distinct from *R. liliicola* by having much wider conidia, 21–29.4 × 6.3–8.5 µm, formed singly, and *R. smilacinae* differs in having much longer conidia, 15–40 (–50) × (2–) 2.5–5 (–7) µm, up to 3-septate, and consistently immersed mycelium.

In *Ramularia septata* (Bonord.) Bubák on *Galanthus* and *Pancreatium* species (Amaryllidaceae) in Europe and *R. vallisumbrosae* Cav. on *Leucojum*, *Narcissus*, and *Pancreatium* species in Europe and North America, external mycelium with solitary conidiophores is lacking and the conidia are much longer, up to 50 µm, with up to 3 septa. *Ramularia epipactidis* U. Braun & Rogerson, described from North America on *Epipactis gigantea* (Orchidaceae), is morphologically close to *R. liliicola* by forming solitary conidiophores arising from superficial hyphae. However, the leaf spots of the latter species are quite distinct and the conidia are much longer, up to 35 µm, with up to 3 septa.

References

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