Ramularia gratiolae sp. nov. (Hyphomycetes)

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Ramularia gratiolae sp. nov. is described, illustrated and discussed. This inconspicuous species was found on necrotic leaves of *Gratiola officinalis* in the Botanical Garden of the Karl-Franzens-University in Graz (Styria, Austria).

Ramularia gratiolae sp. nov. wird beschrieben, abgebildet und diskutiert. Diese unauffällige Art wurde auf nekrotischen Blättern von *Gratiola officinalis* im Botanischen Garten der Karl-Franzens-Universität Graz (Steiermark, Österreich) entdeckt.

Key words: *Ramularia*, *Mycosphaerella* anamorph, new species.

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1. Introduction

A hyphomycete recently found on *Gratiola officinalis* in the Botanical Garden of the Karl-Franzens-University in Graz proved to be an undescribed species of the genus *Ramularia* Unger. The lesions caused by this fungus are rather unspecific. Genuine leaf spots are lacking. Inconspicuous hypophyllous caespituli are formed on necrotic leaves. Furthermore, long, cylindrical, aseptate conidia are formed in unbranched chains. In this respect, there are only few comparable species on hosts of the family Scrophulariaceae.

2. Material and methods

Caespituli of the hyphomycete on *Gratiola* leaves have been removed by means of a razor blade and mounted in a drop of distilled water, pure lactic acid and lactic acid stained with analine for microscopic examination using standard light microscopy (Olympus BX50).

3. Results

A detailed examination of the *Ramularia* on *Gratiola officinalis* and a comparison with other *Ramularia* spp. on hosts of the family Scrophulariaceae revealed obvious differences that warrant the introduction of a new species:

Ramularia gratiolae U.Braun & Scheuer, **sp. nov.** (MB 512677)
Fig. 1

Diagnosis: *Ramulariae obducenti* affinis, a qua imprimis differt conidiophoris brevioribus, 5–25 × 1.5–3.5 µm, conidiis angustioribus, 2–3 µm latis, et hyphis interdum superficialibus.

Holotype: On leaves of *Gratiola officinalis* L. (Scrophulariaceae), Austria, Styria (Steiermark), Graz, distr. Geidorf, Botanical Garden of the Karl-Franzens-University, 47°04'54''N, 15°27'26''E, *c.* 380 m alt., 12 September 2008, leg. C. Scheuer 5450 (HAL 2294 F).

Lesions on living leaves, at first forming small yellowish to brown discolorations, often lateral or terminal, later entire leaves turning brown, necrotic. Caespituli hypophyllous, inconspicuous. Mycelium internal, partly with some superficial hyphae emerging through stomata; superficial hyphae branched, (1–)1.5–3(–3.5) µm wide, septate, hyaline, thin-walled, smooth to faintly rough-walled. Stromata lacking or small, stromatic hyphal aggregations substomatal to intraepidermal, 10–25(–30) µm diam., at first hyaline, later olivaceous to olivaceous-brown. Conidiophores in small to moderately large fascicles, loose to moderately dense, arising from internal hyphae or stromata, emerging through stomata or erumpent, erect, usually geniculate-sinuous, simple or often with short lateral or terminal branchlets, 5–25 × 1.5–3.5 µm, 0–1(–2)-septate, hyaline or subhyaline, thin-walled, smooth; conidiogenous cells integrated, terminal, or conidiophores aseptate, i.e. reduced to conidiogenous cells; conidiogenous loci solitary or several, conspicuous, ca. 1 µm diam., slightly thickened and darkened-refractive. Conidia in unbranched chains, cylindrical to subcylindrical-fusiform, (3–)10–30(–40) × 2–3 µm, aseptate, hyaline, thin-walled, almost smooth to faintly verruculose, ends somewhat attenuated, hila *c.* 1 µm diam., slightly thickened and darkened-refractive.

4. Discussion

There are only few comparable *Ramularia* species on hosts of the family Scrophulariaceae. *Ramularia obducens* Thüm. on *Pedicularis* spp. in Asia, Europe and North America (Braun 1998) is similar to the fungus on *Gratiola*. Leaf spots are lacking and the conidia are one-celled as well, but the conidiophores are much longer, 15–60 × 2–4.5 µm (50–100 µm long in var. *filiformis* (Lindr.) U.Braun), and the conidia are more ellipsoid-fusiform and broader, 3–6(–7) µm (Braun 1998). *R. chamaedryos* (Lindr.) Gunnerb. on *Veronica chamaedrys* in Europe differs from the *Ramularia* on *Gratiola* in having much longer conidiophores, up to 70 µm, and smaller, ellipsoid-ovoid conidia, 8–18 × 2–7 µm (Braun 1998). *R. bartsiae* Johanson on *Bartsia alpina* in Europe, Iceland and North America is quite distinct by its broadly obovoid-ellipsoid conidia, (6–)10–20(–24) × (4–)5–8(–9) µm (Braun 1998). Furthermore, the mycelium of the *Ramularia* on *Gratiola* is internal as well as superficial. Due to these obvious differences, the *Ramularia* on *Gratiola* has to be considered a new species.

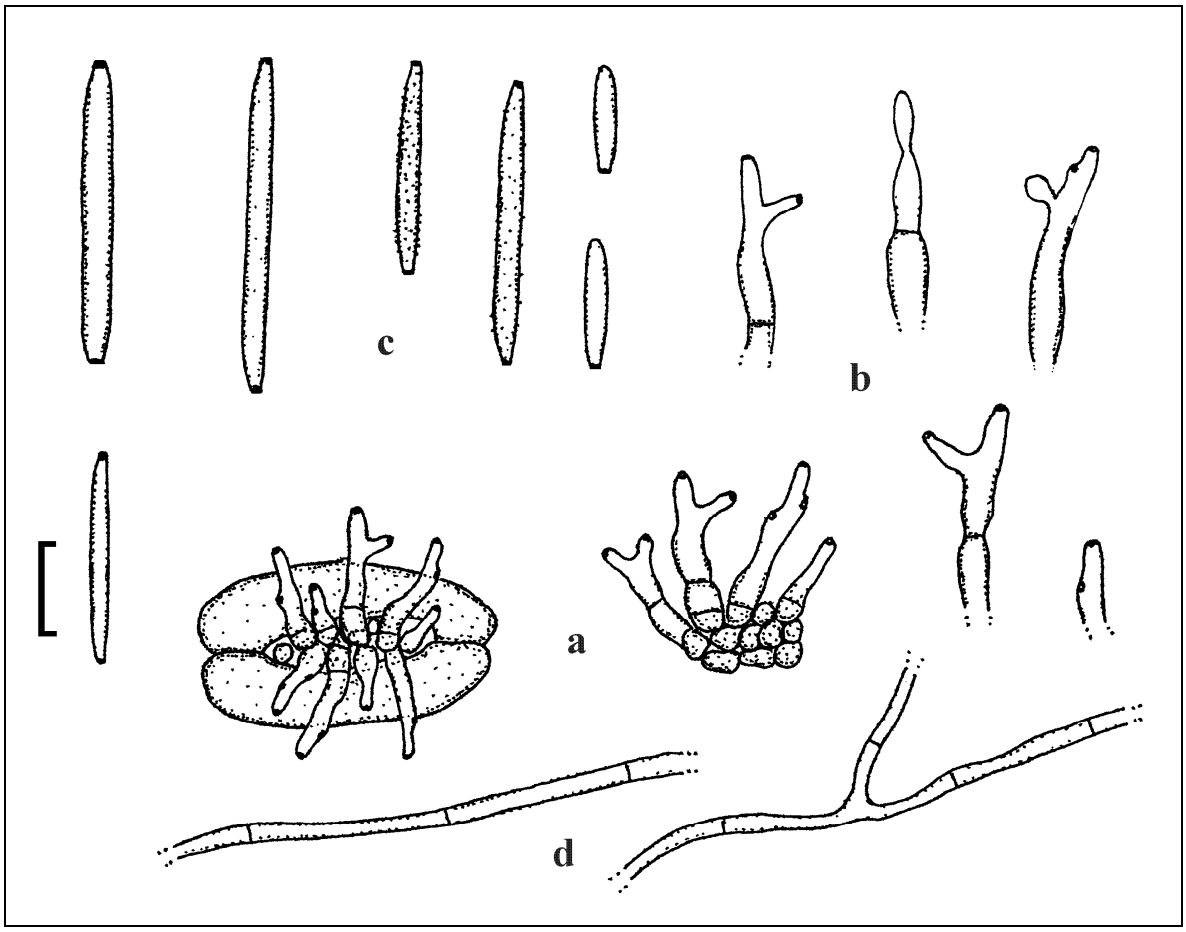

Fig. 1. *Ramularia gratiolae* on *Gratiola officinalis*: (a) fascicle of conidiophores, (b) conidiophores, (c) conidia, (d) superfical hyphae (bar = 10 µm, U. BRAUN del.).

5. Reference

BRAUN U. 1998: A monograph of *Cercosporella*, *Ramularia* and allied genera (phytopathogenic hyphomycetes). Vol. 2. - Eching: IHW-Verlag.