

Type material of *Ramularia* species described by P. A. Karsten and J. I. Lindroth – additions and corrections

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Abstract: Braun, U. & Salo, P. 2019: Type material of *Ramularia* species described by P. A. Karsten and J. I. Lindroth – additions and corrections. *Schlechtendalia* **36**: 91–95.

Type collections of *Ramularia* species described by P. A. Karsten and J. I. Lindroth have been re-examined. They are deposited in the Herbarium of the Finnish Museum of Natural History, University of Helsinki, Finland (H). Most type specimens were collected in Finland. Numerous rediscovered types were previously not available and deemed to be lost, which led to several superfluous neotypifications. The re-examined type collections are summarised in an annotated list, including lectotypifications of six taxa.

Zusammenfassung: Braun, U. & Salo P. 2019: Typusmaterial von *Ramularia*-Arten beschrieben von P. A. Karsten und J. I. Lindroth – Ergänzungen und Korrekturen. *Schlechtendalia* **36**: 91–95.

Typuskollektionen von *Ramularia*-Arten, beschrieben von P. A. Karsten und J. I. Lindroth, sind untersucht worden. Sie werden im Herbarium des Finnischen Museums für Naturkunde der Universität Helsinki, Finnland (H) ausbewahrt. Die meisten Kollektionen wurden in Finnland gesammelt. Viele der wiedergefunden Typen waren früher nicht zugänglich und galten als verloren gegangen, was zu mehreren überflüssigen Neotypisierungen führte. Die neu untersuchten Typuskollektionen werden in einer annotierten Liste zusammengefasst, einschließlich der Lectotypisierungen von sechs Taxa.

Key words: *Ascomycota*, *Mycosphaerellaceae*, holotypes, lectotypifications, herbarium, Helsinki.

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Introduction

Braun (1998) published a monographic treatment of the genus *Ramularia* Unger (= *Mycosphaerella* Johanson), including an emendation of the generic circumscription. Several genera were reduced to synonymy with *Ramularia*, e.g. *Didymaria* Corda, *Septocylindrium* Bonord., and *Ovularia* Sacc. First comprehensive phylogenetic analyses of *Ramularia* spp. were performed by Videira et al. (2017). The younger teleomorph-typified genus name *Mycosphaerella* has been reduced to synonymy with *Ramularia* since sequences from its type species, *M. punctiformis* (Pers.) Starbäck, cluster within the *Ramularia* clade (Verkley et al. 2004, Videira et al. 2017). The anamorph-typified genus *Ramularia* is now the preferred, recognised name for this taxon (Rossman et al. 2015). During the course of monographic studies of *Ramularia* spp., numerous type collections preserved in various herbaria worldwide had been examined, including types of species described by P. A. Karsten and J. I. Lindroth kept in the herbarium of Finnish Museum of Natural History, University of Helsinki, Finland (H). Some types were available in that time, other types could not be traced. Some of them were previously housed in the Herbarium of the Department of Plant Pathology, Helsinki University (HPP). The specimens concerned were later transferred to herb. H. Types of *Ramularia* spp. preserved at H have recently been re-examined, and the status of the particular types has been proven and specified. The results are listed below.

Types of *Ramularia* species deposited at H (Herbarium, Finnish Museum of Natural History, University of Helsinki)

Ovularia chamaedryos Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 7, 1902, as '*chamaedryis*'.

≡ *Ramularia chamaedryos* (Lindr.) Gunnerb., Sv. Bot. Tidskr. 61: 135, 1967.

Lectotype (designated here, MycoBank, MBT388623): Finland, Nylandia, Helsingfors, on *Veronica chamaedryos*, 13 Jul. 1902, J. I. Lindroth (H 6038100).

Notes: Braun (1998: 258) was not able to trace any syntype collections and designated a neotype for this species, which was, however, superfluous. The neotypification is superseded by the present lectotypification in accordance with Art. 9.19. One of the three syntypes cited in Lindroth (1902) was found at H and designated as lectotype.

Ramularia acris Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 14, 1902.

Holotype: Russia, Karelia olonetsensis, Suoju [= Shuya], on *Ranunculus acris*, 18 Aug. 1898, J. I. Lindroth (H 6020363).

Notes: Type material of this species was not available to Braun (1998: 234) [“type ... (not seen)”]. Lindroth (1902) cited a single collection in the protologue of *R. acris*, which can be classified as holotype according to Art. 9.1, Note 1.

Ramularia anagallidis Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 33, 1902.

Lectotype (designated here, MycoBank, MBT388625: Finland, Alandia, Eckerö, near Storby, on *Veronica anagallis-aquatica*, Jul. 1884, W. Granberg, part ex H 214080 (H 6074923).

Notes: Type material of this species was not available to Braun (1998: 267) [“type ... (not seen)”]. Lindroth (1902) cited a single collection in the protologue of *R. anagallidis*, which can be used as lectotype (lectotype, because there is more than one sheet in the phanerogam collection in herb. H: H 521704, H 521705, H 521706, H 521720, H 521724). The lectotype was part of a specimen deposited in the phanerogam collection (H 214080). Infected leaves were separated and deposited as H 6074923.

Ramularia archangelicae Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 22, 1902.

Holotype: Sweden, Lule Lappmark, Kvikkjokk, Njunnats, on *Angelica officinalis* [= *Angelica archangelica*], 1864, A. Fredriksson (H 7034969).

Notes: Braun (1998: 55) designated a neotype for this species since the holotype could not be traced in the 1990ies, but this neotypification was superfluous and is superseded by the rediscovered holotype (according to Art. 9.19). Lindroth (1902) cited a single collection in the protologue of *R. archangelicae*, which can be classified as holotype according to Art. 9.1, Note 1.

Ramularia calthae Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 25, 1902.

Lectotype (designated here, MycoBank, MBT388627): Sweden, Stockholm, Sjöstugan, Experimentalfältet, on *Caltha palustris*, Jul. 1883, J. Eriksson [Fungi Paras. Scand. Exs. 299] (H 7034970).

Notes: Braun (1998: 239) emphasized that he was not able to trace type material of this species [“type ... (not seen)”]. However, Erikss., Fungi Paras. Scand. Exs. 299 was cited in the protologue and represents syntype material. The Russian syntype (Karelia, Lososinnoje, on *Caltha palustris*, 22 Jun. 1898, J. I. Lindroth) was not found at H.

Ramularia campanulae-rotundifoliae Lindr., Acta Soc. Fauna Fl. Fenn. 23(5): 16, 1904.

Lectotype (designated here, MycoBank, MBT388628): Finland, Pornainen, Laha, on *Campanula rotundifolia*, 3 Jul. 1903, J. I. Lindroth (H 6060169). Isolectotype: H 6060168.

Notes: Type material of this species was not available to Braun (1998: 125) [“type ... (not seen)”]. The existence of two duplicates of the original material makes it necessary to designate a lectotype.

Ramularia cardui P. Karst., Meddel. Soc. Fauna Fl. Fenn. 14: 109, [4 Feb.–3 Mar.] 1888, nom. inval. (Art. 36.1, Ex. 6, a).

≡ ***Ramularia cardui*** P. Karst. ex Sacc., Syll. fung. 10: 557, 1892.

Holotype: Finland, ‘Vasa, Kapelbacken’ [= Ostrobothnia australis, Vaasa, Kappelinmäki], on *Carduus crispus*, Aug. 1867, herb. P. A. Karsten (H 6038088).

Notes: Braun (1998: 101) was not able to trace type material of this species and designated a neotype. This typification is, however, superfluous and superseded by the rediscovered holotype (Art. 9.19). However, the name was published as “ad interim” and is, therefore, invalid according to Art. 36.1. It was later validated by Saccardo (1892).

Ramularia cicutae P. Karst., Hedwigia 23: 7, 1884.

Holotype: Finland, Tavastia australis, Tammela, Mustiala, on *Cicuta virosa*, 20 Aug. 1872, P. A. Karsten (H 6038123).

Notes: Braun (1998: 58) was not able to trace type material of this species and designated a neotype. This typification is, however, superfluous and superseded by the rediscovered holotype (Art. 9.19).

Ramularia epilobii-parviflori Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 24, 1902.

Holotype: Finland, Eckerö, on *Epilobium parviflorum*, 14 Jul. 1897, J. I. Lindroth (H 6060167).

Notes: Type material of this species was not available to Braun (1998: 385) [“type ... (not seen)”]. Lindroth (1902) cited a single collection in the protologue of *R. epilobii-parviflori*, which can be classified as holotype according to Art. 9.1, Note 1. Braun (l.c.) reduced this species to synonymy with *Phaeoramularia punctiformis* (Schltdl.) U. Braun (now *Passalora montana* (Speg.) U. Braun & Crous). However, the generic affinity of this species is quite unclear and requires results of phylogenetic analyses (Videira et al. 2017).

Ramularia hornemanii Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 28, 1902.

Holotype: Russia, Lapponia ponojensis, Pjalitsa [= Murmansk Region, Pyalitsa], on *Epilobium horemannii*, 16 Aug. 1898, A. O. Kihlman (H 6061036).

Notes: Lindroth (1902) cited a single collection in the protologue of *R. archangelicae*, which can be classified as holotype according to Art. 9.1, Note 1. Braun (l.c.) reduced this species to synonymy with *Phaeoramularia punctiformis* (Schltdl.) U. Braun (now *Passalora montana* (Speg.) U. Braun & Crous). However, the generic affinity of this species is quite unclear and requires results of phylogenetic analyses (Videira et al. 2017).

Ramularia lysimachiarum Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 28, 1902.

Lectotype (designated here, MycoBank, MBT388629): ‘Finland, Karelia ladogensis. Kexholm, Pärnä’ [= Russia, Leningrad Region, Priozersk District, Brigadnoe], on *Lysimachia nummularia*, 19 Jul. 1866, A. J. Malmberg (H 6037814).

Notes: The second syntype (Sweden, Stockholm, Karlsberg, on *L. nummularia*, Oct. 1900, J. Lindroth) is not preserved at H. Type material of this species was not available to Braun (1998: 226) [“type ... (not seen)”].

Ramularia moehringiae Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 13, 1902.

Holotype: Finland, Alandia, Hammarlund, Mörby, on *Moehringia trinervia*, 6 Jul. 1897, J. I. Lindroth (H 6060166).

Notes: Type material of this species was not available to Braun (1998: 132) [“type ... (not seen)”]. Lindroth (1902) cited a single collection in the protologue of *R. moehringiae*, which can be classified as holotype according to Art. 9.1, Note 1.

Ramularia macrospora var. *major* Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 37, 1902.

≡ ***Ramularia rapunculoides*** Nannf., in Lundell & Nannf., Fungi Exs. Suec., Fasc. XXXIX–XL, Sched.: 32 [no. XX], 1950.

Lectotype (designated here, MycoBank, MBT388631): Russia, Leningrad Region, Gakrutsi [= Gakruchey], vid Svir [= Svir Rins], on *Campanula rapunculoides*, 26 Jul. 1898, J. I. Lindroth (H 6020357).

Notes: Type material of this species was not available to Braun (1998: 125) [“type ... (not seen)”]. Lindroth (1902) cited two syntypes in the protologue of this species. Hence, the present lectotypification is necessary.

Ramularia picridicola Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 39, 1902.

Lectotype (designated by Braun, 1998: 68): Finland, Nylandia, Thusby [= Tuusula], Järvenpää, on *Picris hieracioides*, 1902, J. I. Lindroth [Vestergr., Micromyc. Rar. Sel. Praec. Scand. 622] (B, s.n.). Isolectotypes: H 6038174, 6038185, 6038186, 6038197. Syntype: Finland, Tavastia australis. Hattula, Pelkola, on *Picris hieracioides*, 16 Jul 1897, O. Collin (H 6061330).

Ramularia (Ovularia) primulana P. Karst., Hedwigia 23: 7, 1884.

Holotype: Finland, Regio aboënsis, Åbo [Turku], Runsala [= Ruissalo], on *Primula veris*, Sep. 1878, herb. P. A. Karsten (H 6052622).

Notes: Braun (1998: 225) erroneously cited another collection as ‘holotype’ (Finland, Tavastia australis, Tammela, Mustiala, on *Primula veris*, Sep. 1878, P. A. Karsten, H 6052633). The true type is the only collection cited by Karsten (1884) in the protologue of *R. primulana*, so that this specimen can be classified as holotype according to Art. 9.1, Note 1.

Ramularia pygmaea Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 33, 1902.

≡ *Entylomella pygmaea* (Lindr.) U. Braun, Nova Hedwigia 58: 217, 1994.

Lectotype (designated by Braun 1994: 218): Finland, Satakunta, [Sastamala] Mouhijärvi, on *Veronica serpyllifolia*, 6 Jun. 1859, A. J. Malmgren (H 6061014). Syntype: Finland, Tavastia australis, Sysmä [= Asikkala], Urajärvi, on *Veronica serpyllifolia*, 26 Jun. 1897, K. J. W. Unonius (H 6061013).

Ramularia sparganii Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 12, 1902, nom. illeg. (Art. 53.1), non Rostr., 1883.

= *Ramularia sparganii* Rostr., Öfvers. Kongl. Vetensk-Akad. Förh. 4: 45, 1883.

Lectotype of *R. sparganii* Lindr. (designated by Braun 1998: 270): Russia, Karelia pomorica occidentalis, Kem’, on *Sparganium glomeratum*, 27 Aug. 1894, I. O. Bergroth (H 6015496).

Ramularia taraxaci P. Karst., Hedwigia 23: 7, 1884.

Holotype: Finland, Ostrobotnia australis, Vasa [= Vaasa], on *Taraxacum officinale*, 12 Aug. 1867, P. A. Karsten (H 6038301).

Notes: Braun (1998: 68) designated a neotype for this species since the holotype could not be traced in the 1990ies, but this neotypification was superfluous and is superseded by the rediscovered holotype (according to Art. 9.19). Karsten (1884) cited a single collection in the protologue of *R. taraxaci*, which can be classified as holotype according to Art. 9.1, Note 1.

Ramularia tricherae Lindr., Acta Soc. Fauna Fl. Fenn. 23(3): 38, 1902.

Lectotype (designated here, MycoBank, MBT388632): Finland, Alandia, Jomala, Vargsunda, on *Knautia arvensis*, 23 Jul. 1897, J. I. Lindroth (H 6038187). Syntypes: Finland, Savonia borealis, Leppävirta, on *Knautia arvensis*, Sep. 1880, J. V. Johansson (H 6074962). Finland, Satakunta, Raumo, Sorkkala, on *Knautia arvensis*, 17 Aug. 1862, Kl. Wahlman (H 6074925). Russia, Karelia olonetsensis Iiwina [Leningrad Region, Ivina], on *Trichera arvensis* [= *Knautia arvensis*], 6 Jul. 1898, J. I. Lindroth (H 6008869).

Notes: Type material of this species was not available to Braun (1998: 144) [“type ... (not seen)”].

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