

Contribution to the study of the cercosporoid fungi in Bulgaria

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Abstract. The genus *Stenella* (*S. lythri*), *Cercospora plumbaginea*, and *Ramularia geranii* var. *erodii* are reported as new to Bulgaria. Also presented are two new records of fungus/host combinations and seven new localities for *Ramularia* spp.

Key words: anamorphic fungi, Bulgaria, fungal diversity

During investigation of herbarium specimens of anamorphic parasitic fungi, collected in different floristic regions of Bulgaria, the genus *Stenella* Syd. (*S. lythri* (Westend.) J.L. Mulder), and two taxa, *Cercospora plumbaginea* Sacc. & D. Sacc., and *Ramularia geranii* Fuckel var. *erodii* Sacc., not previously recorded from this country, were found. Short descriptions and illustrations are provided for these taxa. Two plants, marked with an asterisk, are recorded as new to Bulgaria as hosts of two *Ramularia* spp. New occurrence sites for seven species of *Ramularia* are also added.

This contribution is an addition to the recently published checklist of the Bulgarian cercosporoid fungi (Bakalova 2001).

The fungi were identified with the aid of works by Vassiljevsky & Karakulin (1937), Osipyanyan (1975), Braun & Melnik (1997), and Braun (1998). Voucher specimens for all findings are deposited in the Mycological Collection of the Institute of Botany, Bulgarian Academy of Sciences (SOMF).

New taxa for Bulgaria

Cercospora plumbaginea Sacc. & D. Sacc., Atti Reale Ist. Ven. Sci. Lett. Art. 61: 723, 1902. (Fig. 1)

Leaf spots amphigenous, occasionally confluent, almost circular, greyish black in the centre, margin raised, black, surrounded by a 1–3 mm wide orange area. **Caespituli** amphigenous, dense, in white, stellate tufts. **Conidiophores** in loose fascicles, yellowish brown, apically paler, cylindrical, sinuously-genuiculate, simple, occasionally 3–5-septate, 15–50 × 3.8

µm, with conspicuous, slightly thickened, darkened scars. **Conidia** single, straight or slightly flexuous, ends rounded, 14–90 × 2.5–4 (–5) µm ($n = 100$), 2–10-septate, with conspicuous, slightly thickened, dark hilum.

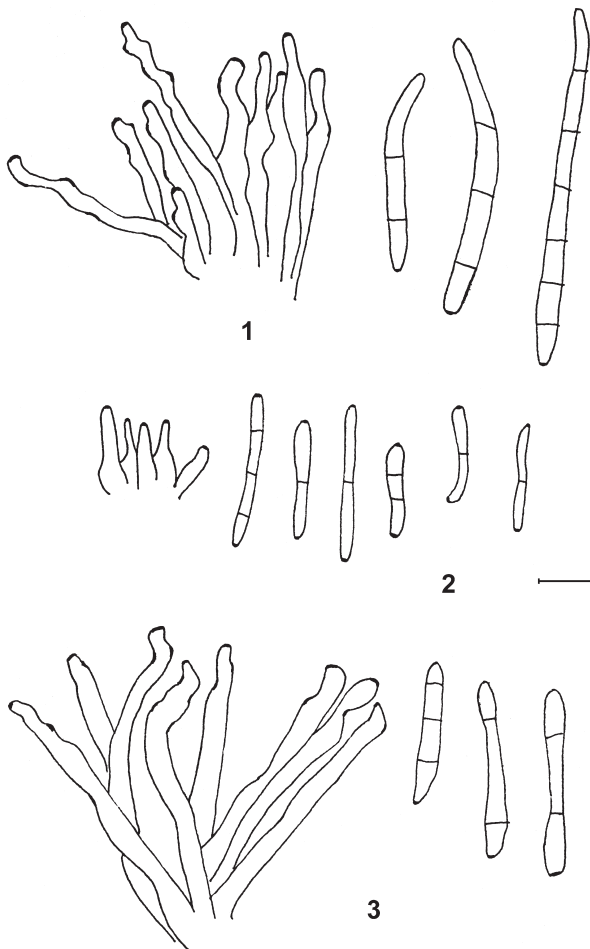
On leaves of *Plumbago europaea* L. Northeast Bulgaria: Rousse, near Basarbovo village, 20 Jul 1983, G. Bakalova (SOMF 25 475).

Ramularia geranii Fuckel var. *erodii* Sacc. in Lambotte, Mém. Soc. Roy. Sci. Liège, 2, Ser. 14: 209, 1888. — *R. erodii* Bres., Hedwigia 37: 382, 1897. (Fig. 2)

Leaf spots amphigenous, usually coalescent, covering the lamina, greenish brown or greyish brown. **Caespituli** amphigenous, dense, in white, stellate tufts. **Conidiophores** fascicular, hyaline, cylindrical, straight, occasionally at the apex slightly curved, simple, one-celled, 10–15 × 2.5–4 µm, conidial scars not thickened, darkened. **Conidia** in chains, hyaline, cylindrical, *Cercospora*-like, rarely fusiform, occasionally slightly curved, with rounded ends, 12.5–35 × 2.5–4 µm ($n = 100$), 1–3-septate, rarely unicellular, with a conspicuous, not thickened, slightly darkened hilum.

On leaves of *Erodium cicutarium* (L.) L'Hér. Vitosha region: Mt Vitosha, around Zheleznitsa village, 17 Oct 2001, E. Sameva (SOMF 25 478).

Note: *R. geranii* has two varieties, var. *geranii* and var. *erodii* (Braun 1998). In Bulgaria only var. *geranii* was reported till now (Bakalova & Borisova 2000). These varieties are distinguished by the shape and size of conidia, and host specialization (Braun op. cit.).



Figs 1-3. Conidiophores and conidia of: 1. *Cercospora plumaginea*; 2. *Ramularia geranii* var. *erodii*; 3. *Stenella lythri*. Scale bar = 10 μ m

Stenella Syd., Ann. Mycol. 28: 205, 1930. — *Biharia* Thirum. & Mishra, Sydowia 7: 79, 1953.

For generic description see Braun (1998).

Stenella lythri (Westend.) J.L. Mulder, Trans. Brit. Mycol. Soc. 65: 517, 1975. (Fig. 3)

Leaf spots amphigenous, usually aggregated in large angular-irregular areas, covering great parts of the lamina, on the upper face orange-brown, on the lower greyish brown. **Caespituli** mostly hypophyllous, dense, dark, punctiform. **Conidiophores** in small to moderately large fascicles, loose to dense, greyish brown, base dark brown, paler upwards, cylindrical, straight or apically slightly curved, simple, 35-60 \times 4-5 μ m, conidial scars slightly thickened and darkened. **Conidia** single, pale yellowish to pale brown, subcylindric, rod-like, straight or slightly curved, ends rounded, 12.5-67.5 \times 2.5-4 μ m ($n = 100$), septate, hila wide, not thickened, darkened.

On leaves of *Lythrum salicaria* L. Sofia region: near Muhovo village, 29 Sep 1976, S. Vanev (SOMF 25 487).

New hosts and localities

Ramularia alnicola Cooke var. *alnicola*, Grevillea 14: 40, 1885.

On leaves of *Alnus glutinosa* (L.) Gaertn. Vitosha region: Mt Vitosha, near Zheleznița, 17 Oct 2001, E. Sameva (SOMF 25 476).

R. beccabungae Fautrey, Rev. Mycol. 14: 10, 1892; in Roum., Fungi Sel. Exs., no. 5991, 1892.

On leaves of *Veronica anagalis-aquatica* L. Mt Strandzha: Silkosiya reserve, 28 Jun 1980, S. Vanev (SOMF 25 477).

R. marrubii C. Massal., Atti Accad. Agric. Art. Comm. Verona, 3, Ser. 45: 114, 1889.

On leaves of *Marrubium peregrinum* L. Tundzha Hilly Country: the town of Topolovgrad, near Sveta Troitsa monastery, 30 Jun 1980, S. Vanev (SOMF 25 479).

On leaves of *M. vulgare* L. Mt Strandzha, near Kosti village, 29 Jun 1980, S. Vanev (SOMF 25 480).

R. rosea (Fuckel) Sacc. var. *rosea*, Fungi Ital. Del., Tab. 1001, 1881; Michelia 2: 550, 1882.

On leaves of *Salix* sp. Vitosha region: Mt Vitosha, above Zheleznița, 17 Oct 2001, E. Sameva (SOMF 25 481).

R. rubella (Bonord.) Nannf. in S. Lundell & Nannf., Fungi Exs. Suec., Fasc. XXXIX-XL, Schedae, p. 33, 1950.

On leaves of *Rumex sanguineum* L. Balkan Range: Arabakonak pass, 27 Jun 1971, S. Vanev (SOMF 25 482).

R. sambucina Sacc., Fungi Ital. Del., Tab. 989, 1881; Michelia 2: 551, 1882.

On leaves of *Sambucus ebulus* L. Mt Strandzha, Silkosiya reserve, 18 Oct 1979, S. Vanev (SOMF 25 483); 30 Jun 1980, S. Vanev (SOMF 25 484).

R. urticae Ces. in Rabenh., Fungi Eur., no. 1680, 1852.

On leaves of *Urtica dioica* L. Rhodopi Mts, Beglika reserve, 21 Aug 1980, S. Vanev (SOMF 25 488).

R. variabilis Fuckel, Jahrb. Nassauischen Vereins Naturk. 23-24: 361, 1869/1870.

On leaves of *Verbascum banaticum* Schrad. West Frontier Mts, Mt Osogovo, above the Sveti Luka monastery, 7 Jul 2001, E. Sameva (SOMF 25 485).

On leaves of *Verbascum* sp. Mt Strandzha, 30 Jun 1980, S. Vanev (SOMF 25 486).

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