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Botanical notes

NOMENCLATURAL ADJUSTMENTS IN *JUNCETEA TRIFIDI* SYNTAXA FROM THE GREAT CAUCASUS

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In our previous papers (Korotkov & Belonovskaya 2001a, b) there are several syntaxonomical points requiring adjustments and corrections.

In the first paper (Korotkov & Belonovskaya 2001a) on page 325 in the 'Syntaxonomic scheme' the name stays *Anemono speciosae-Campanuletum tridentatae* Korotkov & Belonovskaya 2001, but more precisely it should be *Anemono speciosae-Campanuletum tridentatae ass. nov.* (Korotkov & Belonovskaya 2001a: 333), since it was first validly published only in this paper. This small correction can help to avoid any ambiguity regarding the valid publication of the new association's name.

Nardo stricti-Geranietum gymnocauli festucetosum variae, *Nardo stricti-Geranietum gymnocauli cerastietosum purpurascentis* and *Potentilletum crantzii vaccinietosum myrtilli*, *Potentilletum crantzii kobresietosum simpliciusculae* were published (Korotkov & Belonovskaya 2001a; 'Syntaxonomic scheme' on page 325), but not yet validated, so they should be validated in the following form:

Nardo stricti-Geranietum gymnocauli festucetosum variae *subass. nov. hoc loco*

TYPE: Rel. 2 in Table 1, auct. rel. 121 (Korotkov & Belonovskaya 2001a) or rel. 8 in Table 3, auct. rel. 121 (Korotkov & Belonovskaya, 2001b).

Nardo stricti-Geranietum gymnocauli cerastietosum purpurascentis *subass. nov. hoc loco*

TYPE: Rel. 1 in Table 1, auct. rel. 53 (Korotkov & Belonovskaya, 2001a) or rel. 6 in Table 3, auct. rel. 53 (Korotkov & Belonovskaya 2001b).

Potentilletum crantzii vaccinietosum myrtilli *subass. nov. hoc loco*

TYPE: Rel. 5 in Table 2, auct. rel. 21 (Korotkov & Belonovskaya 2001a) or rel. 10 in Table 5, auct. rel. 21 (Korotkov & Belonovskaya 2001b).

Potentilletum crantzii kobresietosum simpliciusculae *subass. nov. hoc loco*

TYPE: rel. 3 in Table 2, auct. rel. 8 (Korotkov & Belonovskaya 2001a) and rel. 3 in Table 5, auct. rel. 8 (Korotkov & Belonovskaya 2001b).

The following orthographic mistakes in the names of syntaxa should be corrected according to art. 41 of the Code (Weber *et al*. 2000): *Anemono speciosae-Campanuletum tridentatae cetrarietosum cuculatae* (Korotkov & Belonovskaya 2001a: 325) should be written as *Anemono speciosae-Campanuletum tridentatae cetrarietosum cucullatae*; the subassociation name *Anemono speciosae-Campanuletum tridentatae eritrichietosum nanum* (Korotkov & Belonovskaya 2001a: 325 & 338) should be replaced by *Anemono speciosae-Campanuletum tridentatae eritrichietosum nani*. In

Table 3 from Korotkov & Belonovskaya 2001a: 339, the name of the association *Anemono speciosae-Campanuletum tridentatae* is incorrectly transliterated as *Anemone speciosae-Campanuletum tridentatae*. Similarly, the name of the alliance *Anemone speciosae-Campanulion tridentatae* (Korotkov & Belonovskaya 2001a – Table 1: 329, Table 2: 335, Table 3: 339; Korotkov & Belonovskaya 2001b – Table 1: 19, Table 2: 21, Table 3: 23, Table 4: 26, Table 5: 29, Table 6: 32, Table 7: 34) should be replaced by *Alchemillo caucasicae-Campanulion tridentatae*.

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ANABAENA ECHINOSPORA (CYANOPROKARYOTA, NOSTOCALES), A SPECIES NEW TO POLISH FLORA

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In material collected during investigations of benthic microalgae from shallow sandy sediments in Dobrogoszcz lobelia lake (Pomeranian Lakeland, NW Poland; Fig. 1) in 1984–1986 (see Picińska-Fałtynowicz 1998), the cyanoprokaryotic species *Anabaena echinospora* Skuja (Fig. 2) was identified, not reported from Poland before.

Dobrogoszcz is a shallow (max. depth 6.6 m), polymictic, subeutrophic lake (Szmal & Szmal 1965; Szmeja 1996). During the period of research its water was neutral to slightly alkaline (pH 6.9–7.3), with good oxygenation from the surface to the bottom, good transparency (3.8 m) and medium conductivity (114–120 $\mu S\ cm^{-1}$). The water contained little calcium (6.8 mg Ca dm^{-3}) and carbonate (4.4 mg CaO dm^{-3}) (Szmeja 1985). The littoral is overgrown by submerged water plants, mainly *Lobelia dortmanna* L., *Littorella uniflora* (L.) Aschers. and *Isoëtes lacustris* L. (Szmeja 1996).

Specimens of *Anabaena echinospora* were found in sandy sediment at the southern shore, in the vicinity of a peat bog, in epipelic (on the sand surface) and endopsammic (within the top 2 cm of the sand) communities, as well as at depths of 10–20 cm. The interstitial water of the sediment at the

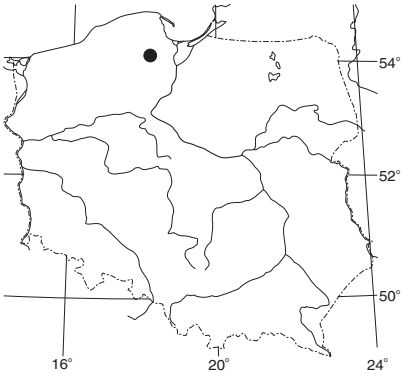

Fig. 1. Locality of *Anabaena echinospora* Skuja in Poland.

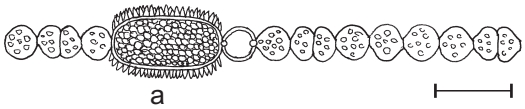

Fig. 2. *Anabaena echinospora* Skuja. Part of trichome with an akinete (a). Scale bar = 10 μm.

sampling site had slightly lower pH values (6.1–7.3) than the lake water (pH 7.5) (Picińska-Fałtynowicz 1995). Specimens were noted from June to November in each year of the study, but never in large quantities.

The characteristics of the *A. echinospora* specimens found in Dobrogoszcz lake are consistent with the original description of the species given by Skuja (1926).

The trichomes of *Anabaena echinospora* found in Dobrogoszcz lake are bright blue-green, straight, 44.5–98.0 μm long and 7–9 μm wide, sometimes with visible transparent sheaths. Cells spherical or semispherical, with granulated contents. Heterocytes spherical, 7–9 μm in diameter. Akinetes cylindrical with rounded apices, developed singly next to heterocytes, possessing a specific outer layer of walls covered by colorless conical papillae 2.0–2.5 μm long (Fig. 2). Spores without papillae, 26.0–27.5 μm long and 12.6–14.0 μm wide.

Anabaena echinospora seems to be a rare species, previously known from only a few localities in Europe and Asia. Originally it was described by Skuja in 1926 from a littoral zone of Sidrabezers and Siekšezers lakes near Riga in Latvia. Later the species was reported from some localities scattered in former Soviet Union (Elenkin 1938; Kosinskaja 1935; Komarenko & Vasileva 1975; Muzafarov *et al*. 1988) and from France (Bourrelly 1961; Le Cohu 1977).

ACKNOWLEDGEMENTS. I thank the anonymous reviewer for valuable comments on the manuscript. I am grateful for data on the world distribution of *Anabaena echinospora* obtained from the Iconotheca of Algae of the Department of Phycology of the W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków.

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ABSCONDITELLA CELATA (STICTIDACEAE) – A LICHEN SPECIES NEW TO POLAND

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The genus *Absconditella* Vězda is represented in Europe by nine species known only from scarce localities (e.g. Poelt & Vězda 1977; Rossman 1980; Vězda & Pišút 1984). As all of them form very fine, membraneous, ephemeral thalli and very minute apothecia, their distribution is poorly documented.

Three species of the genus: *Absconditella lignicola* Vězda & Pišút, *A. sphagnorum* Vězda & Poelt and *A. delutula* (Nyl.) Coppins & H. Kilias have recently been reported from Poland (Bielczyk & Kiszka 2001). The complete map of their distribution in the country is presented in Fig. 1. During the investigations in the Carpathians one locality of another member of the genus – *Absconditella celata* Döbbeler & Poelt – was discovered which appeared to be a lichen species new to Poland. The specimen corresponds perfectly with the description given by Döbbeler and Poelt (1977). It forms very thin, crustose, green thallus adhering to the substratum. Scarce, small (0.04–0.09 mm diameter), orange-red to red-brown apothecia scattered on the thallus are first immersed in the thallus and substratum in a way resembling perithecia. Later, the discs sitting on the thallus become urceolate and more or less concave. Four-celled, fusiform spores (11–16 × 4–6 μm) are monoseriate, 8 in each ascus.

Absconditella celata was described from Sweden (Döbbeler & Poelt 1977) and reported from single localities in SE Scotland and NW England (Coppins 1992), the Czech Republic, Slovakia and Finnish North Karelia (Palice 1999). It grows on acidic substrata such as decaying *Sphagnum*, wood, compact soil surface, usually in humid places, e.g. near streams, accompanied by other lichens, e.g. *Placynthiella icmalea* (Ach.) Coppins or *Thelocarpon intermediellum* Nyl. The locality discovered in Poland is typical of the species and confirms its attachment to such habitat conditions. *Absconditella celata* was found on the high peat-bog Tarnawa at the San valley in the Bieszczady National Park, on decayed turfs of *Sphagnum*.

Absconditella celata is most closely related to *A. fossarum* Vězda & Pišút, known from Slovakia (Vězda & Pišút 1984), France (Diederich *et al*. 1988) and the Netherlands (van den Boom 1988),

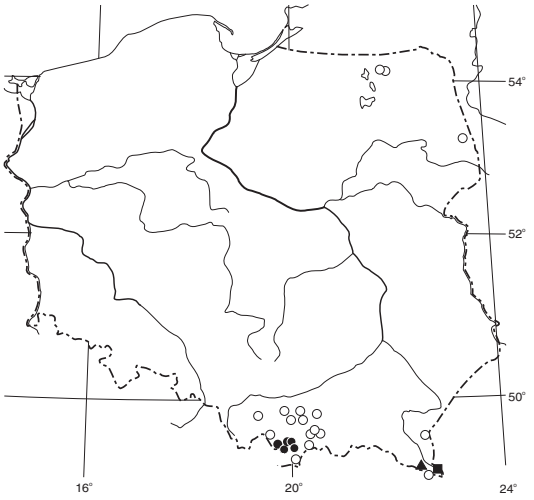

Fig. 1. Distribution of species of *Absconditella* Vězda in Poland. ○ – *A. lignicola* Vězda & Pišút, ● – *A. sphagnorum* Vězda & Poelt, ▲ – *A. delutula* (Nyl.) Coppins & H. Kilias, ■ – *A. celata* Döbbeler & Poelt.

but differs among others, in size of apothecia and spores. Also, it can be easily distinguished from other species of the genus known from Poland by size and colour of apothecia. Additionally, it differs from *A. sphagnorum* and *A. delutula* in having four-celled spores.

SPECIMEN EXAMINED. POLAND. EASTERN CARPATHIANS, Bieszczady Mts; Bieszczady National Park, peat-bog Tarnawa, at San river, on turfs of decaying *Sphagnum*, alt. 650 m, 13 July 2001, *leg. J. Kiszka* (KRAM-L).

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GASTROSPORIUM SIMPLEX (FUNGI, HYMENOGASTRALES), NEW LOCALITIES IN POMERANIA (NW POLAND)

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Gastrosporium simplex Mattir. (Gastrosporiaceae, Hymenogastrales, according to Hawksworth *et al*. 1995) is a hypogeous fungus connected with xerothermic areas of Europe especially associated with Poaceae (Hawksworth *et al*. 1995). In Poland the literature records it from only six localities (Šmarda 1957; Flisińska & Sałata 1991; Łuszczyński & Łuszczyńska 1992; Bujakiewicz 1997). Recently the species was found in two new localities in Pomerania. Its distribution map (Fig. 1) is shown using the grid square system of the *Atlas of the geographical distribution of fungi in Poland* (Wojewoda 2000).

In Poland *Gastrosporium simplex* appears on

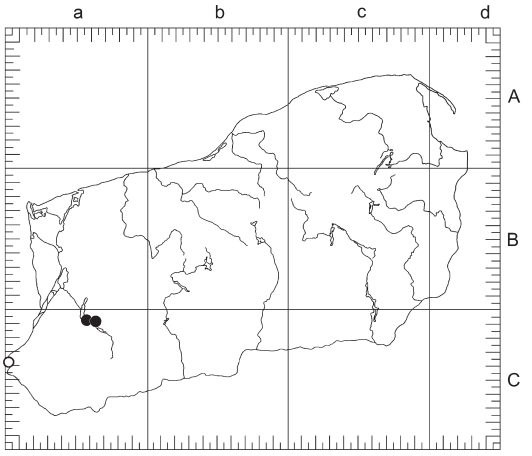

Fig. 1. Distribution of *Gastrosporium simplex* Mattir. in Pomerania (NW Poland). ● – new locality, ❍ – previously known locality.

the 'red list' of Polish threatened macrofungi, where it has been placed in the endangered (E) category (Wojewoda & Ławrynowicz 1992).

Gastrosporium simplex Mattir. (Fig. 2)

Mem. Reale Accad. Sci. Torino ser. 2, **53**: 361. 1903.

Gastrosporium beccarianum Lloyd, Mycol. Not. **71**: 1265. 1924. – *Leucorrhizon nidificum* Velen., Mycol. **2**: 49. 1925.

Basidiocarps hypogeous, 5–20(–25) mm across, globose (subglobose), white, with white rhizomorphs (50–200 mm long), solitary, rarely gregarious. Exoperidium white as chalk, flocculent, hyphae covered by oxalate crystals. Endoperidium membranous, pale ocher grey, cracking at maturity. Gleba homogeneous, ochraceous, olivaceous when fresh, powdery, without capillitium, paracapillitium present but then vanishes. Basidia 8-spored, absent in mature basidiocarps. Basidiospores light ocher to nearly hyaline, globose to broadly ellipsoid, finely verrucose, 3.5–5.0(–5.2) × 3.5–4.2(–4.5) µm.

SPECIMENS EXAMINED. POLAND. POMERANIA. Szczecin Lowland: 1 – N of Brodogóry Reserve, near Grędziec village, *ca* 8 km N of Pyrzyce, xerothermic swards (*Potentillo-Stipetum capillatae* Libb. 1933 *em.* Krausch 1960); grid square Ca05; 22 Oct. 1995, 11 Oct. 1996, *leg. M. Stasińska* (SZUB); 2 – Stary Przylep Reserve, *ca* 1 km S of Stary Przylep village, *ca* 8 km NE of Pyrzyce, xerothermic swards (*Potentillo-Stipetum capillatae* Libb. 1933 *em.* Krausch 1960); grid square Ca06; 22 Oct. 1995, 11 Oct. 1996, 27 June 1998, *leg. M. Stasińska* (SZUB).

Gastrosporium simplex occurs in open, dry places with strong insolation where temperature in summer may reach even 45°C at ground level, on soils developed from gypsums and limestones as well as on loam and sandy-loam soils more or less abundant in calcium. It develops its basidiocarps underground at 1–5 cm depth (occasionally deeper) between roots of grasses of the genus *Stipa* L., *Festuca* L., *Bromus* L. and *Sesleria* Scop. among others, and sedges *Carex* L. (Pilát 1934, 1958; Monthoux & Röllin 1976; Kreisel 1987). Its hyphae frequently cover the bases of leaf sheaths in grasses, causing them to enlarge as well as increasing the number of small roots, influencing the growth of their root system in this way

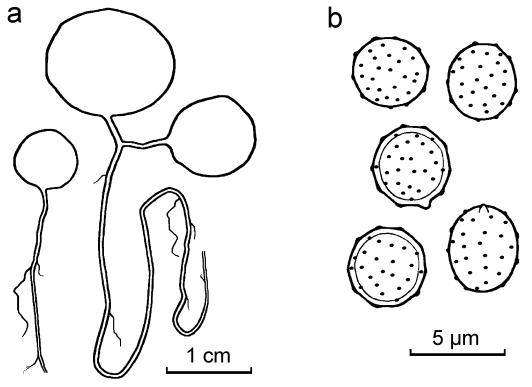

Fig. 2. *Gastrosporium simplex* Mattir. a – basidiocarps, b – basidiospores.

(Monthoux & Röllin 1976). The affected plants may wither with time, probably indicating that *Gastrosporium simplex* is a parasite species (Kreisel 1987).

In Europe it exists in Subcontinental and Sub-Mediterranean xerothermic swards of the orders

Festucetalia valesiaceae Br.-Bl. & R. Tx. 1943 and *Brometalia erecti* Br.-Bl. 1936 (Pilát 1934, 1958, 1969; Monthoux & Röllin 1976; Kreisel 1987). In Poland it has been found in phytocoenoses *Sisymbrio-Stipetum capillatae* (Dziub. 1925) Medw.-Korn. 1959 (Šmarda 1957; Flisińska & Sałata 1991; Łuszczyński & Łuszczyńska 1992) and *Linosyridi-Stipetum pulcherrimae* (Libb. 1932/1933) Filipek 1974 (Bujakiewicz 1997).

Gastrosporium simplex is a rare species in the whole area of its occurrence. It is known mostly from Europe, though also from North America and Asia (India, Pakistan) (Ahmad 1950; Hawksworth *et al*. 1995). On the European continent it has been noted in Austria, Bulgaria, the Czech Republic, France, Germany, Great Britain, Italy, Poland, Slovakia, Spain, Sweden and Switzerland (Mattirolo 1903; Pilát 1934, 1958, 1969; Šmarda 1957; Calonge & Demoulin 1975; Monthoux & Röllin 1976; Jülich 1984; Krieglsteiner 1991; Pegler *et al*. 1993; Kreisel 2001).

In Poland *Gastrosporium simplex* was first found in 1956 by Šmarda (1957). In Pomerania it has been noted hitherto only in the Bielinek Reserve on the Odra River (Šmarda 1957; Bujakiewicz 1997). Two new localities of that species were discovered in 1995 in the Szczecin Lowland (Fig. 1), the first of them in the immediate vicinity of the Brodogóry Reserve, the other in the Stary Przylep Reserve. At both localities *Gastrosporium simplex* grows within patches of *Potentillo-Stipetum capillatae* Libb. 1933 *em.* Krausch 1960 developed on sandy-loam subsoil, in which the calcium carbonate content is about 10%. The species was found at the first locality as early as 1996, whereas at the Stary Przylep Reserve it existed in 1995–2001.

No doubt the distribution of *Gastrosporium simplex* in Pomerania is not yet fully known. Further studies focused on xerothermic grass swards will yield new localities of this species in that and other parts of Poland.

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