

Gyalideopsis helvetica, a new lichen species from Central Europe

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Abstract: *Gyalideopsis helvetica*, a corticolous and lignicolous lichen species, resembling the corticolous, lignicolous and saxicolous *Gyalideopsis anastomosans*, is described from southern Switzerland. The new species is also known from Germany. It is the first *Gomphillaceae* with soralia.

Zusammenfassung: Die rinden- und holzbewohnende Flechtenart *Gyalideopsis helvetica*, die der rinden-, holz- und gesteinsbewohnenden *Gyalideopsis anastomosans* ähnlich ist, wird von der Südschweiz beschrieben. Die neue Art ist auch aus Deutschland bekannt. Sie ist die erste *Gomphillaceae* mit Soralien.

During the summer field meeting of the Dutch Bryological and Lichenological working group in Switzerland in 1990 (BOOM & al. 1993), a gyalectoid, sorediate lichen specimen with several apothecia was collected. Unfortunately no ascospores were found. On the way home, one of the members of the society, MAARTEN BRAND, collected more material of the same species in Germany. In this sample the thallus (with soralia) was in poor condition but it contained apothecia with mature spores. In summer 1996 the first author collected a well-developed specimen in the same area as the first Swiss collection.

Many new species of *Gyalideopsis* were described recently, mainly from outside Europe (KALB & VĚZDA 1994). Only one European species, *G. calabrica* PUNTILLO & VĚZDA, was described recently from southern Italy (PUNTILLO & VĚZDA 1991). The genus *Gyalideopsis* was introduced with four species by VĚZDA (1972). Now, a synopsis of *Gyalideopsis*, containing 65 species (incl. 10 new species) is in preparation by the second author. Usually *Gyalideopsis* spp. are found with hyphophores, except *G. piceicola* (NYL.) LETT. ex VĚZDA, a species from Central Europe, of which vegetative propagules are unknown. The new *G. helvetica* is the first representative of the *Gomphillaceae* with soralia.

***Gyalideopsis helvetica* VAN DEN BOOM & VĚZDA, spec. nova (Fig. 1)**

Thallus crustaceus, lignum putridum incolens, tenuis, inaequalis, cinereo-viridis; madefactus subgelatinosus, soraliis cinereo-albidis, crateriformibus, 0,15 mm crassis instructus, alge ad *Chlorococcaceae* pertinentibus.

Apothecia orbicularia, dispersa, adnata, biatorina, 0,3-0,4 mm lata, 0,1 mm alta, basim versus arcte constricta, discis planis, pro parte dilute gibbosis, atrofusis, marginibus primum elevatis, integris, pallide fuscis vel discis concoloribus, ad latera haud thallo tecta, simplicia vulgo autem per 2-6 confluentia. Excipulum ex hyphis paraphysoidibus consimilibus contextum, pallide fuscum. Hymenium 60-65 μm altum, hyalinum. Paraphysoides bene ramosae anastomosantesque, tubulis 1,5 μm crassis. Asci copiosi, cylindro-clavati, 4(-8)-spori. Ascospores fusiformi-ellipsoideae, pauci murali-divisae (septis transversalibus 5, longitudinalibus 0-2), ad septa arcte constrictae, 18-22 x 4,5-7 μm , halonatae, nonnumquam male evolutae.

Typus: Switzerland: Valais, ENE of Sierre, N of Leuk near Albinen, along strong sloping stream, on rotting wood of shaded fallen trunk, 1260 m s. m., 2. 8. 1996, leg. P. VAN DEN BOOM 17752, associate *Absoconditella lignicola* VĚZDA & PISÚT (herb. VAN DEN BOOM, holotypus; G, herb. VĚZDA, isotypes).

Characters:

Thallus: crustose, thin, membranaceous, smooth, greyish green, slightly glossy, subgelatinous. Soralia excavate, c. 0.15 mm in diam. Algal cells globose, 8-10 μm wide, chlorococcoid.

Apothecia: roundish, 0.3-0.4 mm in diam., 0.1 mm tall, biatorine, mostly adnate, but sometimes sessile and constricted at base, scattered or clustered, discs plane to convex, reddish brown, paler at margin, epruinose.

Hymenium: 60-65 μm high, hyaline, K/I+ yellowish brown. Paraphysoids anastomosing, 1.5 μm wide, not widened towards the apices, in a gelatinous matrix, K/I-. Asci abundantly present, cylindrical to clavate, 4(-8)-spored, in K/I+ yellowish brown.

Ascospores: submuriform, with 5 transverse and 0-2 longitudinal septa, constricted at septum, ellipsoid to fusiform, 18-22 x 4.5-7 μm , often not well-developed.

Conidiomata: not observed.

Chemistry: thallus C-, K-, KC-, I-, PD-; not tested by TLC.

Distribution and ecology: Up to now, *Gyalideopsis helvetica* is only known from three localities in Central Europe and was found at 1200-1800 m s. m. At the type locality it grew together with *Absoconditella lignicola*, *Biatora helvola* KÖRB. ex HELLB., *Catinarina atropurpurea* (SCHAEERER) VĚZDA & POELT, *Mycobilimbia sabuletorum* (SCHREBER) HAF., *Peltigera neckeri* HEPP ex MÜLL. ARG. and *Rinodina exigua* (ACH.) S. GRAY. There it occurred in a sheltered and shaded situation on a decorticated mature fallen trunk, alongside a strongly sloping stream. At the other Swiss locality, *G. helvetica* grew close to *Micarea denigrata* (FR.) HEDL. and *Placynthiella icmalea* (ACH.) COPPINS & P. JAMES. The only epiphytic collection was found in the Schwarzwald (Germany) on *Acer*, without associated species.

Specimens examined (besides type): **Switzerland:** Valais, val d'Hérens, 1.3 km S of Evolène, NE sloping wood, on rotting trunk of *Picea*, 6. 8. 1990, leg. A. M. BRAND 24828 (herb. BRAND).

Germany: Schwarzwald, Feldberg, Felsenweg, 0.5 km ENE of Seebuck, on *Acer* on steep rocky N-slope, 1350 m s. m., 15. 8. 1990, leg. A. M. BRAND 25098 (herb. BRAND).

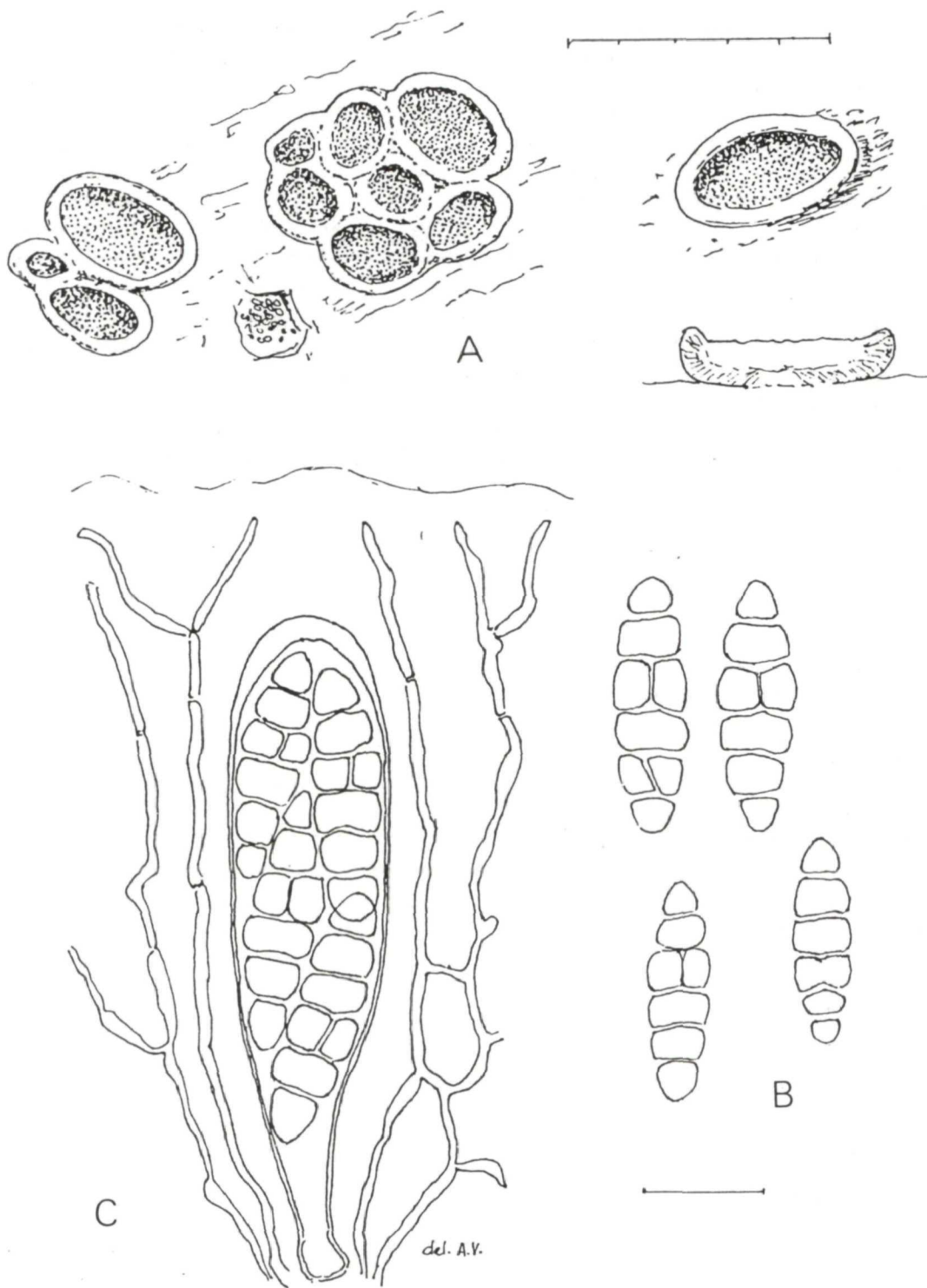


Fig. 1. *Gyalideopsis helvetica*, holotype. A habitus, B ascospores, C ascus with paraphysoids. Bars: A 0.5 mm; B, C 10 μ m.

This new species is referred to *Gyalideopsis* on account of the biatorine ascomata, the hymenium with anastomosing hyphae, c. 1.5 μm wide, bound with the asci in a gelatinous matrix, and the pauciseptate ascospores. It may be confused with *Gyalecta hyalinescens* (NYL.) VĚZDA var. *pauciseptata* v. D. BOOM, an epilithic species, recently described from The Netherlands (BOOM & VĚZDA 1995). In the latter species soralia are absent and the ascospores are smaller. The sorediate crustose thallus with \pm excavate soralia of *Gyalideopsis helvetica* superficially resembles *Caloplaca obscurella* (LAHM ex KÖRBER) TH. FR. and, therefore, *G. helvetica* may easily be mistaken for it, even if the red-brown apothecia are present. However, *C. obscurella* has a rather different thallus, which is areolate and not glossy or subgelatinous. The new species also resembles *Gyalideopsis* spp. like *G. anastomosans* P. JAMES & VĚZDA also known from Central Europe (TÜRK & POELT 1993), because of the smooth thallus and the brown apothecia (see Table 1), but the latter species has translucent hyphophores and the (sub)muriform ascospores are larger. Another Central European species of the genus *Gyalideopsis* without hyphophores and lacking any other form of vegetative propagules, *G. piceicola*, has submuriform ascospores which are slightly smaller than those of *G. helvetica*. Moreover, *G. piceicola* has a different ecology and is known from branches of conifers.

Table 1. Differences between the related taxa *Gyalideopsis helvetica* and *G. anastomosans*.

<i>G. anastomosans</i>	<i>G. helvetica</i>
Thallus thin, smooth or \pm verrucose	thallus thin and \pm poorly developed
Hyphophores thin, 0.1 mm long, translucent, inconspicuous	soralia 0.15 mm in diam., excavate, inconspicuous
Apothecia biatorine, disk orange-red to black-brown, margins dark brown	apothecia biatorine, disk pale brown, margins pale or concolorous with the disk
Ascospores 20-30 x 6-13 μm	ascospores 18-22 x 4.5-7 μm
Asci with 6(-8) spores	asci with 4(-8) spores
Corticolous, lignicolous or saxicolous	corticolous or lignicolous

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