

Short Communication

The identity of two lichens described by V. P. Savicz from Kamchatka (Russia)

Ochrolechia A. Massal. (*Ochrolechiaceae*, *Pertusariales*) comprises species with crustose thalli and rather large apothecia (sometimes reaching 1 cm diam.), with often wide, rarely pore-like discs, a strongly amyloid hymenium including asci, a hamathecium of thin, branched and anastomosing paraphyses, asci without recognizable apical structures and simple, thin-walled ascospores (e.g., Brodo 1988, 1991; Schmitz *et al.* 1994; Schmitt & Lumbsch 2004; Kukwa 2011). The genus was revised for several regions of the world, and the use of a number of names was clarified (e.g., Brodo 1991; Schmitz *et al.* 1994; Boqueras *et al.* 1999; Messuti & Lumbsch 2000; Kukwa 2011); however, some still remain unsettled.

During a study of the lichen diversity of Kamchatka (Russia), we revised some historical collections, including the type specimens of *Ochrolechia upsaliensis* var. *kamczatica* Savicz [syn. *O. kamczatica* (Savicz) Trass] and *Variolaria kamczatica* Savicz [syn. *Pertusaria kamczatica* (Savicz) Zahlbr.] (Savicz 1914, 1922). Since their descriptions both names were rather rarely in use and remained obscure. In this paper we provide some nomenclatural and taxonomic notes on their identity, and typify both names.

The type specimens studied of *Ochrolechia upsaliensis* var. *kamczatica* and *Variolaria kamczatica* are deposited in LE, with duplicates in H and W. The original labels written in Russian were translated into English. Comparative material was investigated from BP and UPS. Lichen substances were analyzed by thin-layer chromatography in solvent systems A, B, C and G (Orange *et al.* 2001).

The revision of type material of *Variolaria kamczatica* and *Ochrolechia upsaliensis* var. *kamczatica* revealed the former to be con-

specific with *O. mahuensis* and the latter to be synonymous with *O. szatalaensis*.

Ochrolechia mahuensis Räsänen

Ann. Bot. Soc. Zool.-Bot. Fenn. 'Vanamo' 21: 1 (1947).—*Ochrolechia androgyna* var. *mahuensis* (Räsänen) Räsänen, *Lichenoth. Fenn. No.* 175 (1947); type: [Finland] Tb [Tavastia borealis], Saarijärvi (Mahlu), Pappilanniemi, ad basin *Pini silvestri* in ripa, 19 17/X 44, leg. Arvo Koskinen (H!—lectotype, selected by Hanko *et al.* 1986: 174; isolectotypes—H!, BP 19960!, UPS L-99714!). For more synonyms see Kukwa (2011).

Variolaria kamczatica Savicz, *Bot. Mater. Inst. Sporov. Rast. Glavn. Bot. Sada RSFSR* 1(1): 13 (1922).—*Pertusaria kamczatica* (Savicz) Zahlbr., *Cat. Lich. Univers.* 5: 159 (1927 '1928'); type: [Russia, Kamchatka], Mezhenaya mountain near Petropavlovsk-Kamchatsky, on bark of *Betula ermanii*, 1908, V. P. Savicz coll. 301 (LE L-543!—lectotype, selected here; H!, W!—isolectotypes).

Ochrolechia androgyna A *sensu* Tønsberg (1992) (see Kukwa 2011).

Ochrolechia mahuensis is characterized by a corticolous or lignicolous habitat, usually thin thallus which can become thicker and areolate in some specimens, often regular soralia and the production of gyrophoric and lecanoric acids (often together with unidentified pigments) as main secondary metabolites. It is often sterile, but when fertile the apothecia usually have a well-developed excipulum proprium (Kukwa 2011). The lectotype of *Variolaria kamczatica* is a sterile, corticolous lichen with a rather thin thallus developing convex, separated areoles and containing gyrophoric and lecanoric acids. It falls well within the variation range of *O. mahuensis*, and therefore the names are considered synonymous.

Savicz (1922) noted that the species was common in the forests in Kamchatka on bark of birches, willows and alders; however,

he did not specify any exact locality. We found five collections (*Savicz* 301, 345, 366, 2025, 5751) annotated as *V. kamczatica*, all collected in 1908 by V. P. Savicz and deposited in LE (duplicates are also in other herbaria). Four of them represent *O. mahluensis* (*Savicz* 301, 345, 2025, 5751). The largest one, which consists of few pieces, all very similar in morphology and so apparently representing one individual fragmented when collecting, is selected here as lectotype (*Savicz* 301). One collection (*Savicz* 366; LE L-544; W) contains an unknown substance similar to variolaric acid and probably belongs to a different, as yet unidentified, species.

Variolaria kamczatica (*Savicz* 1922) predates *O. mahluensis* (Räsänen 1947). However, a new combination based on *V. kamczatica* is not available for use in the genus *Ochrolechia* because of the existence of *O. kamczatica* (*Savicz*) Trass (Trass 1963). *Ochrolechia mahluensis* must therefore be retained as the valid name for this lichen, with *V. kamczatica* becoming a synonym.

Additional specimens examined (remaining syntypes).

Russia: *Kamchatka:* vicinity of Petropavlovsk-Kamchatsky, Nikol'skaya mountain, 1908, *V. P. Savicz* 348 (LE L-540); 4 km E of Sokotch, Nachika settlement, bank of the Uzdetsa River, 1908, *V. P. Savicz* 5751 (LE L-541); slope of 'Marine Ridge' extended from Tar'ya Bay to the Gulf of Avacha, 1908, *V. P. Savicz* 2025 (LE L-542).

***Ochrolechia szatalaensis* Verseggy**

Ann. Hist.-Nat. Mus. Nat. Hung. **50:** 80 (1958); type: [Bulgaria] Cepelarska planina: in monte 'Karlak dag' pr. Pasmakli, alt. c. 1700–2100 m, supra cort. *Pic. exc.*, 7–8 June 1929, *Dr. Ö. Szatala* (BP 20057!)—lectotype as 'holotype', selected by Verseggy 1964: 77; BP 20058!—isolectotype). For more synonyms see Kukwa (2011).

Ochrolechia upsaliensis var. *kamczatica* *Savicz, Izv. Imp. Bot. Sada Petra Vel.* **14:** 123 (1914).—*Ochrolechia kamczatica* (*Savicz*) Trass, *Investigationes Naturae Orientis Extremis* (Tallin): 186 (1963); type: [Russia, Kamchatka], forest in the Karymshina River valley, vicinity of the confluence of Karymshina and Paratuka rivers, around the trunk of poplar [*Populus suaveolens*], June 1908, *V. P. Savicz coll.* 2142 (LE L-10366!)—lectotype, selected here; LE L-10367!—isolectotype).

Ochrolechia szatalaensis is characterized by a thin to moderately thick thallus, apothecia with strongly pruinose discs, distinctly expanded and glassy, but opaque cortex at the

base of apothecial margin, and the constant production of variolaric acid which is often accompanied by alectoronic acid (but only in European material), unidentified substances 'microstictoides unknowns', fatty acids (murolic acid complex), and rarely xanthenes (Brodo 1991; Messuti & Lumbsch 2000; Kukwa 2011). The type material of *O. upsaliensis* var. *kamczatica*, which contains variolaric and fatty acids, is identical to the samples of *O. szatalaensis* known from other regions.

Savicz (1914) cited four localities in the protologue: "Prope Paratunka, p. Nikolajevskoje, p. Malka et Gonal". However, material originating from only the two first stands was located in LE. All together three envelopes were found, one from Nikolajevskoje (*Savicz* 2322) and two with the same number (*Savicz* 2142) from Paratunka; the larger specimen collected in Paratunka is selected here as the lectotype.

Ochrolechia upsaliensis var. *kamczatica* is the oldest available name for *O. szatalaensis*, but at the species level the latter has priority over *O. kamczatica*, since it is five years older (Verseggy 1958; Trass 1963).

Additional specimen examined (remaining syntype).

Russia: *Kamchatka:* bank of the Bystraya River near the former settlement Nikolajevskoe, 1908, *V. P. Savicz* 2322 (LE L-10368).

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