Preslia, Praha, 59 : 173—177, 1987

Moerckia blyttii, Rhabdoweisia crenulata, and *Dicranodontium uncinatum* (*Bryophyta*) new for the Czechoslovak part of the Šumava Mountains

***Moerckia blyttii, Rhabdoweisia crenulata* a *Dicranodontium uncinatum* (*Bryophyta*), nové druhy pro československou stranu Šumavy**

Tomáš Herben

Herben T. (1987): *Moerckia blyttii, Rhabdoweisia crenulata,* and *Dicranodontium uncinatum (Bryophyta)* new for the Czechoslovak part of the Šumava Mountains. — Preslia, Praha, 59 : 173—177.

Three species found in the Šumava Mountains (Böhmerwald) are reported as new for the Czechoslovak part of Šumava *(Dicranodontium uncinatum, Moerckia blyttii, Rhabdoweisia crenulata)* and one of them as new for the territory of Czechoslovakia *(Rhabdoweisia crenulata)*. Further, *Dicranodontium uncinatum* is reported for the first time from Western Carpathians and its distribution in Czechoslovakia is mapped. The phytogeographic significance of these localities is discussed.

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According to a survey made by Pospíšil (1978), the Šumava Mountains (Böhmerwald, SW Czechoslovakia) have been moderately investigated by bryologists in the past. However, most of the research concentrated on a few localities, mainly glacial cirques and their lakes, and the rest of the area is still very poorly known. Nevertheless, even the research in the glacial cirques is by no means complete. During an excursion made in 1983 into a glacial cirque of Černé jezero lake, three bryophytes new for the Czechoslovak part of the Šumava Mountains were discovered: *Moerckia blyttii*, *Dicranodontium uncinatum* and *Rhabdoweisia crenulata* (new for Czechoslovakia).

Moerckia blyttii (Moerch) Brockm.

This arctic alpine species has been mapped in Czechoslovakia by Váňa (in Duda et Váňa 1968). It is known to occur at several localities in Krkonoše (Riesengebirge, Giant Mountains) an in the Tatras (Belianské Tatry, Vysoké Tatry). Further, Velenovský collected this species in Šumava, but outside of the territory of Czechoslovakia in Mt. Gr. Arber (Velenovský 1903b, Pilous et Duda 1960, Duda et Váňa 1968), but it has not been reported yet from the Czechoslovak part of the Šumava range.

At the present locality (see Appendix), this species occurs rather infrequently in open habitats of permanently wet schistose rocks in the lower part of the glacial cirque.

Rhabdoweisia crenulata (Mitt.) Jameson

This suboceanic species, distributed in the British Isles, Belgium, the Pyrenees, Alps and western Norway (Hegewald 1972, Smith 1978, Crum

et ANDERSON 1981), has not been reported previously from the territory of Czechoslovakia. However, it was reported in the Bavarian part of Šumava (from Mt. Gr. Arber) by KOPPE et KOPPE (1931); see PILOUS et DUDA (1960).

I collected this species in the glacial cirque above Černé jezero (see Appendix). It is rather common in the whole rocky part of the valley of the lake between the altitudes of approx. 1050 m and 1300 m above sea level. It grows mostly in crevices of shaded schistose rocks and fruits freely. In view of its rather common occurrence there, it is surprising that this species has never been reported earlier from this locality. However, when I examined the material of other *Rhabdoweisia* species in the Velenovský's herbarium, it turned out that he did collect this species there, but he misidentified it as *R. denticulata* (BRID.) B.S.G. (= *R. crispata* (WITH.) LINDB.). There are even two collections under this name, which contain very typical plants of *R. crenulata*. Curiously enough, VELENOVSKÝ apparently considered these plants to represent typical *R. denticulata*. He even indicated this in a note when listing localities of *R. denticulata* in Bohemia (VELENOVSKÝ 1897). He wrote: „V Šumavě v skulinách kořenů a žul na vlhké a studené straně Jezerní stěny nad Čertovým jezerem v množství a plodný (tato rostlina jest pravá, typická); i.e. In the Šumava Mts. in root and granite crevices at the moist and cold side of Jezerní stěna above Čertovo jezero lake in a great amount and fertile (this plant is genuine, typical)". Therefore he used these plants as a basis for his description of *R. denticulata*, which indeed contains several very distinguishing features of *R. crenulata*. It reads: „Podobný *R. fugax*, ale ve všem 2× větší, ..., listy mnohem širší, tupé nebo skoro zaoblené, na okraji ploché a ke špičce hrubě hustě nestejně pilovité a kolem až k dolejšku zoubkaté. Žebro mizí vždy daleko před špičkou" (Similar to *R. fugax*, but twice as great in size, leaves much wider, obtuse or almost with rounded apex, with flat margins; in the apical part roughly densely irregularly serrate and crenulate almost to the base. Costa disappears always far from the apex). This may serve as an another example of his thorough style of work, which lead him to produce his own description of the species instead of simply adapting the already published ones. Apparently his specimens have never been checked.

Dicranodontium uncinatum (HARV.) JAEG.

The European distribution of this species is rather similar to that of *R. crenulata*, though it is much more common in central Europe. It is distributed in the British Isles, Western Norway and the Alps (NYHOLM 1954, PODPĚRA 1954, SMITH 1978) as well as in scattered central European localities. Though standard floras (LIMPRICHT 1890, VELENOVSKÝ 1897, PILOUS et DUDA 1960) report this species from the Krkonoše Mts., the actual locality lies outside the territory of Czechoslovakia, being at the Silesian (Polish) part of the range. Further, it has been reported from Hrubý Jeseník (Hohes Gesenke) by LIMPRICHT (1890) and by VELENOVSKÝ (1903a) from Mt. Gr. Arber in Šumava outside Czechoslovakia, though the summarizing work on bryophytes of the Bavarian part of Šumava (KOPPE et KOPPE 1931) does not mention it. Further locality is in Góry Sowie (Eulengebirge) in Poland (LIMPRICHT 1890).

Revision of herbarium material of this species yielded another Czechoslovak

Fig. 1. Distribution of *Dicranodontium uncinatum* (HARV.) JACG. in Czechoslovakia and adjacent regions; closed circle — specimen seen, open circle — literature record.

locality in the Vysoké Tatry Mountains, which, incidentally, is to my knowledge the only locality of this species in the Carpathians (see Appendix).

The present report is the first one from the Bohemian part of Šumava. The species occurs here at damp shaded schistose rocks in a spruce forest in a deep valley.

DISCUSSION

Interestingly enough, all the above species are known to occur in the Bavarian part of the Šumava Mountains at Mt. Gr. Arber (Javor), which lies only about 6 km from both visited localities. The present findings are thus significant only because of the political border which divides the mountain range into two parts. Nevertheless, the occurrence of these species in the Šumava Mountains in general emphasizes some specific features of this mountain range:

1. Though Šumava rarely rises above the timberline, it provides habitats suitable for the survival of alpine species bound to treeless localities; apart from *Moerckia blyttii*, there are several other species of this group occurring here, e.g. *Gymnomitrion concinnatum*, *Andreaea rothii*, *Blindia acuta*, *Grimmia elongata*, *G. funalis*, *G. incurva*, *Kiaeria blyttii* (Velenovský 1897, Koppe et Koppe 1931). These species may occur either on the rocky summits of the highest peaks (especially Mt. Gr. Arber) or in several glacial cirques, which, though generally covered by forest, still support treeless habitats. (see Sofron et Štěpán 1971).

2. The common occurrence of *Dicranodontium uncinatum* and *Rhabdoweisia crenulata* at both localities (Gr. Arber and present localities) is striking, especially with respect to their pronounced suboceanic distributions and their rarity in Central Europe. Probably some other suboceanic species occurring in Šumava could be added to the list (e.g. *Kurzia trichoclados*, see Duda et Váňa 1971). As a rule, these species grow in shaded, mainly rocky habitats, and are by no means limited to treeless areas. Their common occurrence thus cannot be explained in terms of alpine habitats; and it is difficult to indicate whether their presence is due to migration possibilities or climatic differences.

Acknowledgements

My thanks are due to prof. Dr Jiří Váňa, DrSc. for helpful discussions of the problem of Rhabdoweisia crenulata and for critical comments on the first draft of this paper, to Dr Vladimír Skalický, CSc. for making my literature references conform to the standard of this journal, and to Dr Trevor Curnow for correcting my English.

SOUHRN

Při bryofloristickém průzkumu Šumavy byly nalezeny dva druhy nové pro českou část Šumavy (*Dicranodontium uncinatum* a *Moerckia blyttii*) a jeden druh nový pro Československo (*Rhabdoweisia crenulata*). Studium Velenovského herbáře ukázalo, že tento druh byl sbírán v karu Černého a Čertova jezera již Velenovským; ten jej ale určil mylně jako *R. denticulata* (= *R. crispata*). Shodou okolností považoval šumavské rostliny za typické exempláře tohoto druhu (což označil i v poznámce u seznamu lokalit tohoto druhu) a zpracoval podle nich popis druhu *R. denticulata* ve své knize „Mechy české", který dobře vystihuje *R. crenulata*.

Všechny tři nalezené druhy se vyskytují také na Velkém Javoru; přesto je (s výjimkou arkticko-alpínské *Moerckia blyttii*) nelze považovat za druhy vázané na bezlesá stanoviště. Zbývající dva druhy mají oba podobné suboceánické rozšíření a Šumava představuje velmi izolovanou lokalitu ve střední Evropě.

APPENDIX

Localities of *Dicranodontium uncinatum* in Czechoslovakia and adjacent areas (only checked specimens reported)

Mts. Šumava, granit rocks at the summit of Javor (Gr. Arber), 9. 1901 leg. J. Velenovský (Velenovský 1903a) — PRC.

Mts. Šumava, damp shaded rocks in a spruce forest on the right side of the brook in the nature reserve Bílá Strž (ca. 1.5 km SW of Hamry near Železná Ruda), ca. 800 m a.s.l., 6. 9. 1983 leg. T. Herben — PRC, Herb. T. Herben.

Mts. Karkonosze (Krkonoše), on humose soil in crevices of granit rocks in Maíy Sniežny Kociol, 1240 m, 10. 7. 1956 leg. J. Lisowski — BM, KRA.

Mts. Hrubý Jeseník, slate rocks in snow holes at Brünnelheide, ca. 1300 m, 10. 7. 1884 leg. F. Kern (Limpricht 1890) — BP (rev. J. Váňa).

Mts. Vysoké Tatry, in a moist forest in the valley Česká dolina, 7. 9. 1974 leg. J. Dvořák, det. R. Vaněk — BRA.

Localities of *Rhabdoweisia crenulata* in Czechoslovakia

Mts. Šumava, in rock crevices in Jezerní stěna above Čertovo jezero lake, 1894 leg. J. Velenovský (sub *R. denticulata*, vide Velenovský 1897). — PRC.

Mts. Šumava, in rock crevices in Stěna above Černé jezero lake, 9. 1901 leg. J. Velenovský (sub *R. denticulata*, vide Velenovský 1903a), 6. 9. 1983 leg. T. Herben — PRC, Herb. T. Herben.

Locality of *Moerckia blyttii* in the Bohemian part of the Šumava Mountains

Mts. Šumava, Špičák, on wet rocks in Jezerní stěna above Černé jezero lake, ca. 1200 m a.s.l., 6. 9. 1983 leg. T. Herben — PRC, Herb. T. Herben.

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Received 1 April, 1986