Campylopus atrovirens De Not. var. cucullatifolius J.-P. Frahm new to Europe

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Abstract: Campylopus atrovirens De Not. var. cucullatifolius J.-P. Frahm is reported for the first time in Europe from Hordaland in Norway. It was so far only known from one locality in Alaska, two in China and one in Japan.

Campylopus atrovirens De Not. var. cucullatifolius J.-P. Frahm was described by Frahm (1980) in a revision of the North American species of Campylopus from a single locality in Alaska. The variety differs by epilose, cucullate leaf apices from the typical variety with hyaline hairpoints. Later, this variety was also reported from Yunnan and Japan (Frahm 1992).
During a fieldtrip to Hordaland, SW-Norway, this variety has been collected three times:
Road from Odda to Kvinnherad, on wet rocks along the roadside ca. 15 m alt., Frahm 25.8.2011 no. 2011671
Fusa, Skar, rocky outcrops ca. 50 m alt, Frahm 29.8.2011 no. 2011634
Fusa, Femanger, cliffs in Birch forest, Frahm 30.8.2011 no. 2011 no. 2011642
(All specimens in the herbarium of the author).
The variety was also observed in more localities and therefore seems not to be rare in this region.
Hordaland is quite moist and harbours a rich atlantic flora. Accompanying species were always Breutelia chrysocoma, in Fusa parish also Dicranodontium denudatum, Lejeunea patens, Radula aquilegia, Dicranodontium uncinatum, Bryhnia novae angliae, Scapania ornithopodioides and others.
The var. cucullatifolius has perhaps not yet been recognized in Europe. The cucullate leaf apices are not so obvious as compared with other cucullate expressions of species of Campylopus, since the leaves are extremely long and narrow and the impression might be that the leaf tips are broken. A closer examination under the handlens or microscope reveals that this is not the fact. It can be expected also from Scotland or comparably humid regions. According to personal observations in the field, it grows in damper habitats than the type variety, for instance on seeping rocks, and in shade, for instance in forests. Important is that both varieties were observed growing together and also in mixed tufts, demonstrating that var. cucullatifolius is not only a modification but a genotype.

Species of Campylopus with cucullate leaf apices are present in species such as C. exasperatus Brid. from Oceania and C. cucullatifolius Herz. from Bolivia. Some species show both expressions, with cucullate leaf apices and hyaline hairpoints, which are usually distinguished at the varietal level. These species usually were described independently and later combined to one.

Examples are Campylopus cuspidatus (Hornsch.) Mitt. var. cuspidatus and var. dicnemioides (C. Müll.) J.-P. Frahm, from Brazil, and C. acuminatus Mitt var. acuminatus and var. kirkii (Mitt.) J.-P. Frahm. In this case, var. kirkii has so far been found only in Australia and New Zealand, where it is more common than var. acuminatus, which is found besides also in Tasmania and Chile. Another example is C. bicolor (C. Müll.) Wils. in Hook. var. bicolor and var. ericeticola (C. Müll.) Dix. from South Africa, Australia and New Zealand. A cucullate expression is also known from the African C. flaccidus Ren. & Card. (Frahm 1985) but this was not described on a taxonomic level, since plants of C. bicolor were discovered which had leaves with hyaline hairpoints and cucullate apices. This effect suggested a saisonal production of different expressions (perhaps during a rainy and a dry season) and thus no genotypical difference. The observation of mixed tufts of both expression corroborate this argument, also cultivation experiments of C. bicolor var. ericeticola in a humid chamber, which did not change from piliferous to muticous leaf tips. (Frahm 1992). It could, however, also be that the leaves with hairpoints are perichaetial leaves as observed in Chinese material of C. atrovirens (Frahm 1992). Thus the status of the piliferous/muticous taxa of Campylopus is not fully clear. In some species the piliferous expression is more common (as in C. atrovirens), in others the cucullate expression (as in C. bicolor) and in some species, there exist only the cucullate expression.

Frahm, J.-P. 1980. Synopsis of the Genus Campylopus in North America North of Mexico. The Bryologist 83: 570-588.

Frahm, J.-P. 1985. Afrikanische Xampylopus-Arten (Dicranaceae, Musci). Bryophytorum Bibliotheca Bd. 31, 216 pp.

Frahm, J.-P. 1992. A revision of the east-asian species of Campylopus. J. Hattori Bot. Lab. 71: 133-164.

ISSN 0945-3466

Fig. 1: Campylopus atrovirens var. cucullatifolius from Hordaland, Norway.

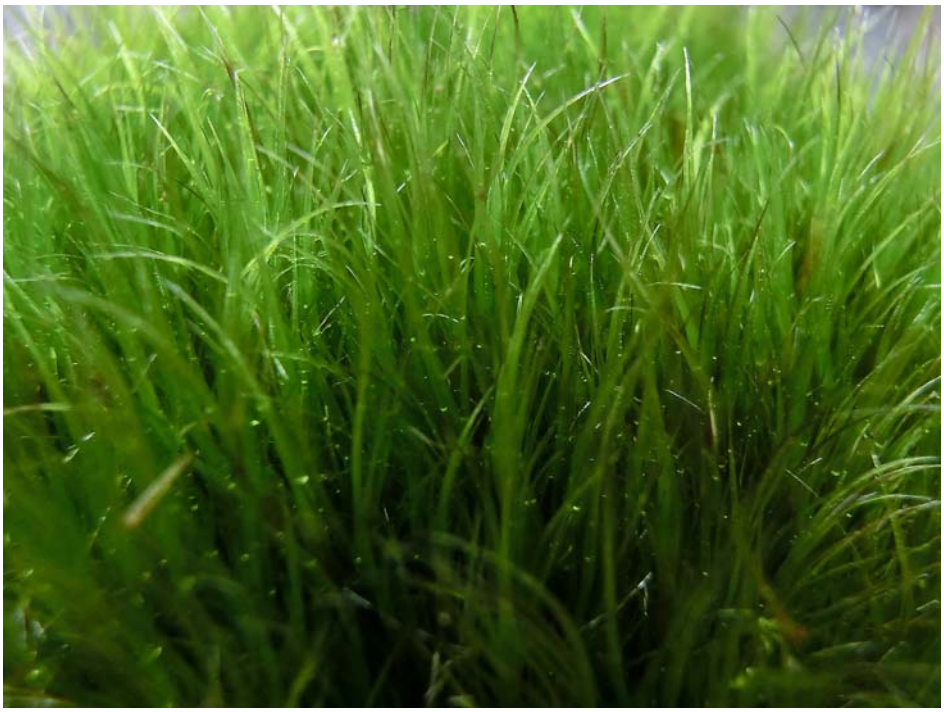

Fig. 2: Campylopus atrovirens var. atrovirens from the same locality

Fig. 3: Habitat of Campylopus atrovirens var. cucullatifolius at the cliff in the background.

ISSN 0945-3466