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Phylogeography and Evolution of *Gentiana verna* s.l. (Gentianaceae)

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The Spring Gentian *(Gentiana verna)* is a perennial herb frequently occurring in montane and alpine grasslands throughout the European mountain ranges. Geographically disjunct are populations located in Ireland, Scotland and in the Northern Ural region. From Turkey eastwards *G. verna* is replaced by *Gentiana angulosa* in the Caucausus and by *Gentiana uniflora* from the Tienshan over the Altai to the Baikal region.

The present study aims to elucidate the evolutionary history and phylogeographical patterns of *Gentiana verna* by applying AFLP fingerprinting (amplified fragment length polymorphism). Of special interest is the biogeographical origin of the isolated British and Ural populations and the degree of their genetic divergence from populations of the Central Europe. The sampling covers the entire distributional range of the species group (including Asian populations of *G. angulosa* and *G. uniflora).* A number of 380 samples originating from 54 populations are examined.

As hybridization and introgression might blur phylogeographic patterns, further investigations are addressing potential gene flow between *G. verna* and the closely related and sympatrically distributed taxa *G. brachyphylla* and *G. orbicularis*. Being morphologically similar these species differ regarding their edaphic requirements. *G. orbicularis* requires calcareous substrate whereas *G. brachyphylla* is confined to siliceous soils.

At three mixed stands within the Austrian Alps (Hohe Tauern, Stubaier Alpen) leaf material of 10 individuals per species was collected. First AFLP analyses proved the presence of hybrid individuals *(G. verna* x *G. brachyphylla, G. verna* x *G. orbicularis)* evidencing the potential of gene flow among these species.

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ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Sauteria-Schriftenreihe f. systematische Botanik, Floristik u. Geobotanik

Jahr/Year: 2008

Band/Volume: 16

Autor(en)/Author(s): Tribsch Andreas, Comes Hans-Peter, Moosbrugger Karin

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