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Status and Distribution of Four Endemic Vascular Plants in the Gobi Altai

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Abstract

The paper presents distributional data on the four vascular plants *Papaver saichanense*, *Saussurea saichanensis*, *Potentilla ikonnikovii* and *Galitzkya macrocarpa*, all of which are restricted to Mongolian mountains. Updated biogeographical data demonstrate that all four are Mongolian endemics. In terms of their taxonomic relationships, *S. saichanensis* and *P. saichanense* belong to a group of species occurring mainly on continental Asian mountains. *Potentilla ikonnikovii* has relatives with a mainly East-Asian distribution, and the genus *Galitzkya* is a predominantly Mid-Asian element.

New maps of the local distribution in the Gobi Altai and adjacent mountains indicate that all species are highly fragmented and are so far only known to occur in less than a dozen localities. We have since discovered new sites and subsequently have little reason to regard the species as threatened, although the overall rarity suggests that some form of rough monitoring is advisable.

Key words: biogeography, distribution, endemism, flora, Gobi-Altai, Mongolia

Introduction

Endemism is a central issue in nature conservation and governments are often held responsible for the protection of those species that have the entire or at least major parts of their geographical range on the country's territory (Bonn *et al.*, 2002). Knowledge on the overall distribution of any given species is of straightforward importance in this respect (Jäger & Hoffmann, 1997). Responsibility measures have been implemented in schemes for setting priorities in species' conservation; prominent examples are the designation of so-called biodiversity hotspots (Myers *et al.*, 2000), or the Flora and Fauna Habitat Directive of the European Union, which assigns high priority to the conservation of European endemics and subendemics. However, numbers of restricted-range species are relatively low for most European countries (e.g. Germany; Welk, 2002) apart from the Mediterranean region.

The situation in Mongolia is comparable in this respect. Although the country covers a vast territory, the majority of the occurring species have even larger distributional ranges and are shared with neighbouring countries. The flora of Mongolia is divided along two principal gradients. The most obvious differences are between the northern parts - which belong to the central Siberian-Daurian floristic region, and the dry Gobi - which is part of the Central Asian floristic region (Meusel & Jäger, 1992). A somewhat less obvious, but equally important, distinction occurs between the western and eastern parts of Mongolia. The latter are characterized by predominant summer rains, lack of snow cover in winter, and relatively fast temperature changes in spring and autumn. The division line runs along a longitudinal line of 100°E (Hilbig *et al.*, 2004); east of this limit species mainly have eastern and Central Asian distributions, whereas west of this line many species comprise Mid-Asian or even Mediterranean elements.

Most of Mongolia's endemic and subendemic species are Central Asian elements (Grubov, 1989). Numbers of endemics listed differ between sources: a conservative estimate indicates 4% truly endemic, i.e. exclusively Mongolian vascular plants; if subendemics are included the number increases to some 10% of the flora (Grubov, 1989). Here, "subendemic" refers to Mongolian species with restricted ranges but which are also found in the neighbouring countries. A survey by Ulziikhutag