PRESS RELEASE

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Alien species invade higher altitudes

Montane regions of the Czech Republic are becoming increasingly invaded by alien plants; many species that were introduced by humans colonized high altitudes over the last two centuries. This process is a consequence of regions located in higher altitudes becoming increasingly more suitable for invasions by alien plants.

These results were presented by a group of scientists from the Institute of Botany, Academy of Sciences of the Czech Republic, and Faculty of Science, Charles University in Prague, in a study published this week in the Proceedings of the National Academy of Sciences of the United States of America (PNAS); the paper was written on invitation of the Editorial Board.

That mountain regions are increasingly more invaded by non-native species, however, is not only a consequence of the stochastic spread in space and time of plant species once introduced. Over the last two centuries, invasions of higher altitudes by alien plants were facilitated due to intensified human pressure from colonization and touristic exploration of mountain regions, and due to changing climate. The authors analysed altitudinal patterns of over 30,000 records of alien plants since the beginning of the nineteenth century and showed that the average altitude of localities in which alien species were recorded has been consistently increasing. The time since introduction of alien species into the Czech Republic was a less important determinant of the observed patterns that it should have been in case the patterns were the result of a stochastic spread only.

"The phenomenon we detected can have important consequences because montane region, in which vegetation is still less affected by humans and that harbour a number of nature reserves and protected areas, suffered less from plant invasions than regions at lower altitudes. With climate warming, invasions into these areas are likely to be facilitated in the future," says Petr Pyšek, the leading author of the study.

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Pyšek P., Jarošík V., Pergl J. & Wild J. (2010) Colonization of high altitudes by alien plants over the last two centuries. – Proceedings of the National Academy of Sciences of the United States of America /doi/10.1073/pnas.1017682108 (published online early in the week of 20 December, 2010)

Fig. *Telekia speciosa*, native to Balcan and Carpathians, is one of the species alien to the Czech flora that invade higher altitudes, and is often found along mountain streams. Photo J. Pergl.