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# Plant invasions as a challenge for science and practice: a view from the perspective of studies undertaken in Poland

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It is worthwhile emphasizing that biological invasion is currently one of the greatest global threats to nature. These circumstances have contributed to a significant increase in the interest of nature protection theoreticians and activists in this problem. Already in 1950s, Kornaś drew attention in the Polish scientific literature to the need for research on present-day migrations of plants which accompany humans (the so-called synanthropic species), also regarding the practical aspects of the necessity for controlling troublesome weeds. In the following decade, Faliński introduced the term: ‘neophytism’ into Polish literature and characterised stages in this process and a consideration of the influence of alien plant species on existing components of the native plant community. As a consequence, dynamic change in floras and vegetation and its scale and rate became the main motive for undertaking numerous investigations beginning with a series of papers under the title “Studies of the distribution ranges of synanthropic plants”.

In the present talk, the main areas in the context of the research undertaken on alien plants in Poland (distribution, ecology and biology of the species), the most common thematic studies (new species, new localities, and lists of alien species), and the most often investigated species, as well as tendencies over

time are outlined against the background of wider literature. However, apart from the analysis of the directions and scope of the research undertaken in our country devoted to plants of alien origin, the main aim of the presentation is to draw up recommendations for essential new surveys which would create scientific bases for practical actions and, at the same time, incorporate Polish research into our understanding of contemporary world trends.

To succeed in this, it is necessary to develop and achieve acceptance of a robust system based on solid science, with a clear invasion terminology and transparent risk assessments which are also understood by a wider public. In reality, because of a range of limitations, mainly financial, we need: *(i)* a requirement for periodic “changed-category review” of alien plant species; *(ii)* development of rules for monitoring invasive plant species at different scales and *(iii)* concentration of efforts on the species which can potentially cause the biggest losses.

Various aspects of the possible wider implications of plant invasions are now being more often and more widely discussed and examined, particularly in increasing number of interdisciplinary studies. Although much has been done in Poland concerning invasive alien plant species, we still need more effort in prevention, education and monitoring.