

## Preslia: hundred years of exploring central-European flora and vegetation

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### Introduction

One hundred years ago, in 1914, the first issue of *Preslia* (Fig. 1) was published as a bulletin of the Czech Botanical Society, which was founded two years earlier (Novák 1962, Holub 1982, Hrouda 2012). The issue of 48 pages, alongside reports and news from the botanical community, contained four papers: two focused on mycology (Šimek 1914, Velenovský 1914), one on phytogeography (Kavina 1914) and one on the symbiosis of bacteria with plant leaves (Ambrož 1914). With World War I looming and the political changes to follow, volume 2 only appeared eight years later in 1922 and, like its predecessor, it consisted of a single issue. Between 1922 and 1951, 22 volumes were published but *Preslia* was appearing irregularly, and volumes usually had a single issue. Some issues contained several papers, while others were monothematic with only one study. Volume 7 (1928) was remarkable in including three thorough vegetation studies published under the title “Publié a l’honneur de Cinquième excursion phytogéographique internationale” on the occasion of the 5th International Phytogeographical Excursion (Domin 1928, Podpěra 1928, Zlatník 1928). During this period, *Preslia* also published an extensive bibliography series, *Bibliographia botanica Českoslovaca I–VIII*, which started to appear since volume 3 (1925). The publishing of *Preslia* was effectively discontinued between 1942 and 1952, when only one double issue, representing volumes 22–23, appeared in 1948; it did not, however, contain any scientific papers but instead listed the botanical workplaces in the post-war Czechoslovakia, and the last part of the *Bibliographia botanica Českoslovaca IX*).

The period up to the early 1940s saw the publication of some works in *Preslia* of eminent importance not only for the Czechoslovak botany, such as the complete checklist of the national flora (Domin 1935) or key ecological studies at that time (e.g. Novák 1928, Zlatník 1928), but also for other regions of Europe, the latter referring namely to a five-hundred-pages *Conspectus* of the flora of Montenegro, published during the World War II (Rohlena 1942). Since 1952, *Preslia* has been published quarterly, with assigned journal editors. Up to now, there were four Editors-in-Chief: Bohuslav Fott (1952–1962), Zdeněk Černohorský (1963–1989), Josef Holub (1990–1999), and Petr Pyšek (since 1999).

On the occasion of centenary of Preslia, we review in this essay its current state with an emphasis on the last decade, publication focus and core topics, and outline its editorial rationale. For a wider context of the history of national botanical research see Krahulec (2012).

### **Recent status of Preslia**

Until 1991, Preslia was published by Academia, the publishing house of the Czechoslovak Academy of Sciences and served as a platform for publications of the members of the Czechoslovak Botanical Society. With the opening of the research environment in the country that followed the political change at the end of 1980s, it became open to all authors regardless of the Society membership. In 1992 the publisher was the Czechoslovak Botanical Society and since 1993 when Czechoslovakia split, the journal has been published by the Czech Botanical Society. Preslia was traditionally a multilingual journal with papers published in Czech, Slovak, German, English and French, but the 1990s saw a gradual change in its language profile, with English papers acquiring increasingly more space.

A major change in the journal's profile and international status came in 2003 when Preslia was accepted by Thomson-Reuters ISI for listing on the Web of Science, and with the first impact factor of 1.545 received for 2005. The impact factor gradually increased and since 2009 it keeps over 2.5. The most recent 2012 figure of 2.833 ranked Preslia as 37th among 197 journals in the Plant Sciences category. This places Preslia among leading European journals focused on field botany.

The listing on WoS was associated with other changes in the journal's profile. Preslia continues to publish original research papers on plant systematics, phytogeography, ecology and vegetation science of vascular and non-vascular plants, but since 2004 its geographical profile has been delimited to papers dealing with a wider area of central Europe (with the exception of special issues that are composed for a specific topic). The geographical scope roughly corresponds to that of The World Factbook (2009), Encyclopaedia Britannica and Brockhaus Enzyklopädie (see [http://en.wikipedia.org/wiki/Central\\_Europe](http://en.wikipedia.org/wiki/Central_Europe)), including the Czech Republic, Austria, Germany, Hungary, Liechtenstein, Poland, Slovakia, Slovenia and Switzerland, and occasionally also neighbouring countries or their parts, such as non-Mediterranean Croatia, Romanian Transylvania, Serbia and the Carpathian part of Ukraine. Pan-European studies and papers of global importance are also published.

In 2008, papers started to be published exclusively in English, and since 2010 (volume 82), authors are offered an opportunity to have their papers released on the journal's web page ([www.preslia.cz](http://www.preslia.cz)) as open access. Free pdfs of papers published in 2003–2009 (volumes 75–81) are available for download.

### **Datasets of national significance: mapping the state of flora and vegetation of the Czech Republic**

One role the journal has always played in the past (e.g. Domin 1935, Holub et al. 1979, Moravec et al. 1983, Váňa 1993, 1995) but that became more pronounced in the 2000s, is the focus on nationally important datasets. These have traditionally included Red Lists of vascular plants (Holub 2000, Holub & Procházka 2000, Grulich 2012), bryophytes

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Ročník I.



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Praha 1914.

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Fig. 1. – Cover of the first issue of Preslia, published in 1914 as a bulletin of the Czech Botanical Society.

(Kučera & Váňa 2003, Kučera et al. 2012), and lichens (Liška et al. 2008), but major achievements have been made recently by publishing the complete checklist of vascular plant species of the Czech Republic (Daníhelka et al. 2012), catalogues of alien plants not only for the Czech Republic (Pyšek et al. 2002, 2012b), but also for Slovakia (Medvecká et al. 2012), comprehensive accounts on the flora and phytogeography of the Czech Republic (Kaplan 2012), and its vegetation (Chytrý 2012), habitat species pools (Sádlo et al. 2007) and clonal growth diversity (Klimešová & Klimeš 2008).

### **Core topics in current research**

In the last decade, *Preslia* continued publishing a wide range of topics from various disciplines of the field of botany but several lines of research that have been profiled as core topics need to be highlighted, because these brought the journal international recognition.

#### *Vegetation science*

Vegetation studies have traditionally found *Preslia* to be a suitable publication venue since the 1920s (e.g. Domin 1928, Zlatník 1928). Over the last two decades, the mainstream of vegetation survey research shifted from descriptive studies based on local datasets to systematic analyses of large databases of vegetation plots (Chytrý & Rafajová 2003, Schaminée et al. 2009) and exploration of large-scale vegetation patterns, both at the national scale of the Czech Republic (e.g. Kočí 2001, Knollová & Chytrý 2004, Kropáč 2006, Douda 2008) or other countries (Roleček 2005, Šilc & Čarni 2007, Illyés et al. 2009) and across broader geographical ranges including several countries (e.g. Botta-Dukát et al. 2005, Dúbravková et al. 2010, Rozbrojová et al. 2010, Purger et al. 2014). Some of the recent vegetation studies also used or discussed novel methodological approaches (e.g. Chytrý 2000, Lososová 2004, Botta-Dukát et al. 2005, Roleček 2007).

#### *Invasion ecology*

Research in plant invasions has had a strong tradition in the Czech botany for a long time due to the interest in plants of human-made habitats (see Pyšek & Prach 2003, Pyšek et al. 2002 for overviews). In the last decades, *Preslia* became an important vehicle for pursuing this kind of research. Besides publishing reports on individual alien species new for the country (e.g. Kaplan & Řehořek 1998, Dančák 2002) or the whole of Europe (e.g. Řepka et al. 1997, Petřík 2003), the systematic research yielded publication of the first complete catalogue of alien species in the Czech Republic (Pyšek et al. 2002), which was recently updated (Pyšek et al. 2012b) using the standard classification criteria of alien plants (Blackburn et al. 2011) and followed by a comprehensive assessment of the state of the art of plant invasions in the country (Pyšek et al. 2012a). Emphasis on occurrence of alien species in habitats yielded a detailed knowledge of the level of invasion of Czech habitats (Chytrý et al. 2005) and the national map of plant invasion risk (Chytrý et al. 2009). Concerning wider geographic regions, *Preslia* published a checklist of alien plants in Slovakia (Medvecká et al. 2012) and an account of alien flora of Europe (Lambdon et al. 2008).

Other topics of plant invasions recently addressed in *Preslia* include the role of species traits in invasiveness (e.g. Kubešová et al. 2010, Moravcová et al. 2010, Gioria et al. 2012),

habitat invasibility (Kowarik et al. 2013), testing of invasion theories (Palmer et al. 2006, Stohlgren et al. 2006), case studies of major European invasive species (e.g. Perglová et al. 2006) and their invasion dynamics (Follak et al. 2013). A specific line of plant invasion research represents the exploration of the role of native central-European species as aliens in other parts of the world (Phillips et al. 2010).

### *Plant ecology*

Besides numerous studies on various aspects of the ecology of individual species and on traditional topics of plant community ecology such as competition (Janeček et al. 2007, Koutecká & Lepš 2011), *Preslia* provides space for publishing papers on general ecological issues. These are represented by studies on diversity maintenance, functional aspects of diversity and mechanisms of community assembly (e.g. Rejmánek et al. 2004, Lepš et al. 2006, Ricotta & Burrascano 2008, Schamp et al. 2011, Klaus et al. 2013), including papers focusing on determinants of plant diversity of habitats important from both ecological and nature conservation point of view (Hájková et al. 2011, Merunková et al. 2012). Studies on changes in plant species diversity over time (e.g. Erschbamer et al. 2011) and vegetation succession and community dynamics (e.g. Prach & Řehouňková 2006, Török et al. 2008, Konvalinková & Prach 2010, Trnková et al. 2010) represent another systematically explored area of plant ecology in *Preslia*.

### *Taxonomy and phytogeography*

Over the last decades *Preslia* became a major publication venue for modern taxonomic research on apomictic plants such as *Pilosella* (e.g. Krahulec et al. 2004, 2008, 2011, Šingliarová & Mráz 2009, Křišťálová et al. 2010), *Rubus* (e.g. Trávníček & Zázvorka 2005, Lepší & Lepší 2009, Trávníček & Žíla 2011, Király et al. 2013), *Sorbus* (Lepší et al. 2009, 2013a, b, Velebil 2012, Vít et al. 2012) and *Taraxacum* (e.g. Trávníček et al. 2008, Kirschner & Štěpánek 2011, Štěpánek et al. 2011). These studies usually represent modern taxonomic revisions and often yield descriptions of new species, some of them endemic to the Czech Republic and neighbouring areas, with implications for their ecology (Lepší & Lepší 2009). They often address, by using molecular and cytogenetic methods (Krahulcová & Rotreklová 2010), hybridization mechanisms, reproduction modes and their evolutionary implications (e.g. Krahulec et al. 2011).

Application of modern approaches such as molecular analyses, flow cytometry or geometric morphometrics helped to refine taxonomy also in sexually reproducing plants. These are particularly important in biosystematic studies of critical and taxonomically difficult groups (e.g. Ekrť et al. 2009, Kaplan & Fehrer 2009, Kaplan 2010, Olšavská et al. 2011, Dančák et al. 2012, Koutecký et al. 2012), including rare, often endemic, species of concern for nature conservation (e.g. Krahulec 2006, Štěpánková 2008, Hoták et al. 2013). Some of these studies shed light on traditional myths of central-European botany (Rooks et al. 2011, Letz et al. 2012, Kučera et al. 2013, Lepší et al. 2013b).

Karyology is another topic for which *Preslia* has become long recognized. Traditionally represented are studies providing overviews of chromosome numbers (e.g. Krahulcová 2003, Rotreklová et al. 2011, Krahulcová et al. 2013), in some cases used for taxonomic and evolutionary implications (Kaplan et al. 2013). This field became recently accompanied by modern karyological research using flow cytometry (Suda et al. 2010) that

allowed to address general questions on the role of genome size not only in vascular plants (Šmarda & Bureš 2010) but also in other groups such as bryophytes (Temsch et al. 2010).

### *Other fields*

Finally, research in some other fields traditionally makes important contribution to the *Preslia*'s profile. This concerns namely algology (e.g. Neustupa & Šťastný 2006, Pouličková 2008, Hašler et al. 2011, Kováčik et al. 2011) and palaeobotany (e.g. Pokorný 2005, Jankovská & Pokorný 2008, Kuneš et al. 2009), where natural-history insights are often being combined with application of modern methods.

### **Special issues**

Since 2000, eight special issues appeared in *Preslia*; until mid-2000s these were assembled papers dedicated to the memory of distinguished personalities of Czech botany, Josef Holub (Pyšek et al. 2000), Slavomil Hejný (Pyšek & Kaplan 2002), Emil Hadač (Pyšek & Kaplan 2004) and Leoš Klimeš (Klimešová & Pyšek 2011). More recently, special issues addressed specific topics, such as plant invasions (Pyšek et al. 2006), the use of flow cytometry in botanical research (Suda et al. 2010), clonal plants (Klimešová & Pyšek 2011), and history, ecology and restoration of oligotrophic wetlands (Hájek & Pyšek 2013). In 2012, there was a special issue published on the occasion of the centenary of the Czech Botanical Society, which summarized the state of the art of botanical research in the Czech Republic (Chytrý et al. 2012). A specific feature of the special issues, waiving the geographical restriction to central Europe, allows for comprehensive exploration of the specific topics and achieving a higher level of generalization (e.g. Palmer 2006, Richardson 2006, de Bello et al. 2011, Jónsdóttir 2011).

### **Editorial outlook**

While *Preslia* continues to publish any important contribution on plant systematics, phytogeography, ecology and vegetation science from central Europe, the topics highlighted above have been raising systematic attention of botanists working in this region and became a kind of the journal's flagship. In terms of editorial policy, *Preslia* will continue to put emphasis on insightful elaboration of the topics addressed, such as thorough taxonomic and phytogeographic treatments, supported by the knowledge of mechanisms generating variation patterns and their evolutionary implications, or, in ecology and vegetation science, robust analyses of solid data sets allowing for generalizations over time and space.

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