Catalogue of alien plants of the Czech Republic (2nd edition): checklist update, taxonomic diversity and invasion patterns

Nepůvodní flóra České republiky: aktualizace seznamu druhů, taxonomická diverzita a průběh invazí

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A complete list of all alien taxa ever recorded in the flora of the Czech Republic is presented as an update of the original checklist published in 2002. New data accumulated in the last decade are incorporated and the listing and status of some taxa are reassessed based on improved knowledge. Alien flora of the Czech Republic consists of 1454 taxa listed with information on their taxonomic position, life history, geographic origin (or mode of origin, distinguishing anecophyte and hybrid), invasive status (casual; naturalized but not invasive; invasive), residence time status (archaeophyte vs neophyte), mode of introduction into the country (accidental, deliberate), and date of the first record. Additional information on species performance that was not part of the previous catalogue, i.e. on the width of species' habitat niches, their dominance in invaded communities, and impact, is provided. The Czech alien flora consists of 350 (24.1%) archaeophytes and 1104 (75.9%) neophytes. The increase in the total number of taxa compared to the previous catalogue (1378) is due to addition of 151 taxa and removal of 75 (39 archaeophytes and 36 neophytes), important part of the latter being the reclassification of 41 taxa as native, mostly based on archaeobotanical evidence. The additions represent taxa newly recorded since 2002 and reported in the national literature; taxa resulting from investigation of sources omitted while preparing the previous catalogue; redetermination of previously reported taxa; reassessment of some taxa traditionally considered native for which the evidence suggests the opposite; and inclusion of intraspecific taxa previously not recognized in the flora. There are 44 taxa on the list that are reported in the present study for the first time as aliens introduced to the Czech Republic or escaped from cultivation: *Abies concolor*, *A. grandis*, *A. nordmanniana*, *Avena sterilis* subsp. *ludoviciana*, *A.* ×*vilis*, *Berberis julianae*, *B. thunbergii*, *Bidens ferulifolius*, *Buddleja alternifolia*, *Buglossoides incrassata* subsp. *splitgerberi*, *Buxus sempervirens*, *Corispermum declinatum*, *Cotoneaster dielsianus*, *C. divaricatus*, *Euphorbia myrsinites*, *Gleditsia triacanthos*, *Helleborus orientalis*, *Hieracium heldreichii*, *Koelreuteria paniculata*, *Lonicera periclymenum*, *Lotus ornithopodioides*, *Malus baccata*, *M. pumila*, *Miscanthus sacchariflorus*, *Morus alba*, *Muscari armeniacum*, *Paeonia lactiflora*, *Pennisetum alopecuroides*, *Pinguicula crystallina* subsp. *hirtiflora*, *P. grandiflora* subsp. *rosea*, *Podophyllum hexandrum*, *Pyracantha coccinea*, *Rhodotypos scandens*, *Rumex patientia* × *R. tianschanicus* 'Uteuša', *Salix cordata*, *Sarracenia purpurea*, *Sasa palmata* 'Nebulosa', *Scolymus maculatus*, *Spiraea japonica*,

Tagetes tenuifolia, *Thuja occidentalis*, *Trifolium badium*, *Vaccinium corymbosum* and *Viburnum rhytidophyllum*. All added and deleted taxa are commented on. Of the total number of taxa, 985 are classified as casuals, 408 as naturalized but not invasive, and 61 as invasive. The reduction in the number of invasive taxa compared to the previous catalogue is due to a more conservative approach adopted here; only taxa that currently spread are considered invasive. Casual taxa are strongly over-represented among neophytes compared to archaeophytes (76.7% vs 39.4%), while naturalized but non-invasive taxa follow the reversed pattern (18.8% vs 57.4). However, these two groups do not significantly differ in the proportion of invasive taxa. Of introduced neophytes, 250 taxa (22.6%) are considered vanished, i.e. no longer present in the flora, while 23.3% became naturalized, and 4.5% invasive. In addition to the traditional classification based on introduction–naturalization–invasion continuum, taxa were classified into 18 population groups based on their long-term trends in metapopulation dynamics in the country, current state of their populations, and link to the propagule pressure from cultivation. Mapping these population groups onto the unified framework for biological invasions introduced by Blackburn et al. in 2011 made it possible to quantify invasion failures, and boom-and-busts, in the Czech alien flora. Depending on inclusion criteria (whether or not extinct/vanished taxa and hybrids are considered), alien taxa ever recorded in the Czech Republic contribute 29.7–33.1% to the total country's plant diversity; taking into account only naturalized taxa, a permanent element of the country's flora, the figure is 14.4–17.5%. Analysis of the dates of the first record, known for 771 neophytes, indicates that alien taxa in the flora have been increasing at a steady pace without any distinct deceleration trend; by extrapolating this data to all 1104 neophytes recorded it is predicted that the projected number would reach 1264 in 2050. Deliberate introduction was involved in 747 cases (51.4%), the remaining 48.6% of taxa are assumed to have arrived by unintentional pathways. Archaeophytes are more abundant in landscapes, occupy on average a wider range of habitat types than neophytes, but reach a lower cover in plant communities. The alien flora is further analysed with respect to representation of genera and families, origin and life history.

K e y w o r d s: abundance, alien flora, checklist, casual, cover in plant communities, Czech Republic, exotic species, geographic origin, habitat niche, hybridization, impact, introduction–naturalization–invasion continuum, invasive plants, life history, naturalized, non-native species, residence time, taxonomy

Introduction

The last decade was a period of intensive research on biological invasions in Europe (see Pyšek & Hulme 2011 for review), an important part of which represented the collation of regional data on alien plant species. With the exception of the UK (Clement & Foster 1994, Ryves et al. 1996, Preston et al. 2002), complete checklists of alien floras for European countries only started to appear at the beginning of the 2000s (Essl & Rabitsch 2002, Klotz et al. 2002, Reynolds 2002). The first comprehensive checklist of alien plants in the Czech Republic was published 10 years ago as a part of the Catalogue of alien plants of the Czech Republic (Pyšek et al. 2002). It provided information on 1378 alien taxa and stimulated development of the associated database CzechFlor, held at the Institute of Botany AS CR in Průhonice. These data, together with other datasets resulting from recent research, have been used for a number of analyses of plant invasions in the country that addressed issues such as species invasiveness (Kubešová et al. 2010, Moravcová et al. 2010), associations with pollinators (Pyšek et al. 2011a), habitat invasibility (Chytrý et al. 2005, 2008a, 2009b, Sádlo et al. 2007), rates of spread and range filling (Williamson et al. 2005, 2009, Pyšek et al. 2011c), interaction of traits, propagule pressure and residence time in affecting invasion success (Pyšek et al. 2009b), pathway efficiency (Pyšek et al. 2011b), and risk assessment (Křivánek & Pyšek 2006, Chytrý et al. 2009b). In addition, data on native

species that are also part of the CzechFlor database provided basis for analyses of the performance of central-European species as aliens in other parts of the world (Pyšek et al. 2009a, Phillips et al. 2010, Stohlgren et al. 2011). Within the DAISIE and ALARM (Settele et al. 2005) projects, the data from the 2002 catalogue were part of the pan-European dataset that was used to analyse invasion patterns at the continental level, including cross-taxonomic evaluation of the role of macroeconomic and demographic factors in determining regional levels of invasion (Pyšek et al. 2010b, Essl et al. 2011), distribution of alien species in habitats (Pyšek et al. 2010a), assessment of ecological and economic impacts of alien species in Europe (Winter et al. 2009, Vilà et al. 2010) and risk-assessment for plants based on habitat mapping (Chytrý et al. 2008b, 2009a, 2012).

These studies clearly indicate the value of complete national or regional checklists for understanding invasions. This started to be fully recognized in the 2000s and resulted in a call for pan-European inventory of invasive species within the European framework programmes; until then there was some information on alien floras available for European countries (Weber 1997), but the quality of data was highly variable (Pyšek 2003). The DAISIE project (2004–2008) made it possible to organize and develop this line of research based on extensive international cooperation in Europe (DAISIE 2009). The project assembled available data on alien plants for 48 European countries and regions, which until then were scattered in a variety of published and unpublished accounts and databases. For some countries DAISIE collected the first comprehensive checklists of alien species based on primary data (Lambdon et al. 2008), and established an online database, the European Invasive Alien Species Gateway (DAISIE 2008). At the same time it stimulated elaboration of comprehensive alien species checklists in individual countries, a process that still continues, and yielded new plant data for e.g. Belgium (Verloove 2006), Estonia (Ööpik et al. 2008), Italy (Celesti-Grapow et al. 2009), Greece (Arianoutsou et al. 2010), and most recently Slovakia (Medvecká et al. 2012).

The Czech Republic, a central-European country with an area 78,864 km^2, 10.3 million inhabitants, and a human population density of 131 inhabitants per km^2, is prone to plant invasions due to historical and geographical factors: location on the crossroads of the continent, many natural or human-created migration routes opening possibilities for colonization, and long-lasting human influence that further diversified the naturally diverse and heterogeneous landscape mosaic (see Pyšek et al. 2002 for details). These features, together with a strong botanical tradition and in-depth knowledge of plant communities (Chytrý 2007, 2009, 2011) make the country a suitable model for studying regional patterns of plant invasions. In the last decade since the publication of the previous catalogue a wealth of information on alien species has been accumulated, which created a need for a revision of the original checklist.

The aim of the present paper is to update and improve the original checklist of alien plant taxa in the Czech Republic (Pyšek et al. 2002) by incorporating new data accumulated in the last decade, reassessing the status of taxa resulting from improved taxonomic knowledge, and wherever needed, correcting errors which can hardly be avoided in such a comprehensive work. We also provide additional information that was not part of the previous catalogue, including the width of species' habitat niches, their dominance in invaded communities and their impacts. Changes from the 2002 version are documented so that the reasoning behind them can be followed.

Methods

Data sources

The basis for the present checklist was the Catalogue of alien plants of the Czech Republic published a decade ago (Pyšek et al. 2002). For historical data, the compilation of both the previous and current checklist relied on an outstanding tradition of the floristic research in the Czech Republic dating back to the second half of the 18th century (reviewed in detail in Pyšek et al. 2002). Already in the 19th century, a series of floras and species lists were published, covering the present territory of the Czech Republic (see Krahulec 2012 for a review of the history of botanical research), and recognizing plants by geographic origin; these provide valuable information about the occurrence of plants at those times and residence times of neophytes (Pohl 1809–1814, Presl & Presl 1819, Opiz 1823, 1852, Rohrer & Mayer 1835, Makowsky 1863, Oborny 1886, Formánek 1887–1897). The wealth of information on alien plants can be found especially in the remarkable works by Čelakovský (1868–1883, 1882–1894), who recognized the alien status and origin of some plants present in the Czech flora and commented in considerable detail on their distribution. The recognition of alien plants continued in floras and specialized studies in the 20th century (e.g. Polívka 1900–1904, Laus 1908, Domin 1917, 1918, 1919, Dostál et al. 1948–1950, 1954, 1958, 1989). Since the 1960s, systematic attention started to be paid to plants, including aliens, in specific human-made habitats (ports, railways, oilseed or wool processing factories, grain silos, mills, rubbish tips, arable land, etc.) thanks to a specialized research section established at the Institute of Botany, Průhonice, in the 1960s. This work yielded several focused compendia (e.g. Hejný et al. 1973) and provided a basis for systematic recording of alien plants (e.g. Jehlík 1986, 1998a).

The Flora of the Czech Republic, with eight of nine planned volumes published up to now (Hejný & Slavík 1988–1992, Slavík 1995, 1997a, 2000, Slavík & Štěpánková 2004, Štěpánková 2010) and the Key to the flora of the Czech Republic (Kubát et al. 2002), served as a fundamental information source for this checklist. Other recent sources included national floristic literature, namely that published in the journals of the Czech Botanical Society (see References). During the last decade, new records for the flora of the Czech Republic have been systematically reported in an annually published series, Additamenta ad floram Reipublicae Bohemicae, which has thus far yielded 10 summarizing accounts (Hadinec et al. 2002, 2003, 2004, 2005, Hadinec & Lustyk 2006, 2007, 2008, 2009, 2011, 2012). The series, initiated and edited by J. Hadinec, in cooperation with František Procházka and Pavel Lustyk, proved a valuable source because it not only reports new finds but also critically re-evaluates status of particular species and provides additional data on their distribution.

For archaeophytes, a strong tradition of Czech archaeobotanical research provided a solid basis for evaluation of species origin and immigration status. Main sources include the works of E. Opravil and V. Čulíková (see References), the results of which are now available in the Archaeobotanical database of the Czech Republic (CZAD; Archaeological Institute AS CR 2011).

Other data sources included unpublished information provided by many colleagues (see Acknowledgments), herbarium collections to verify some literature reports (namely PR, PRC, BRNU and PRA; codes follow Thiers 2012) and our own floristic field records from 2002–2012.

The data presented here and in the previous catalogue (Pyšek et al. 2002) are organized in the working database CzechFlor held at the Institute of Botany AS CR, Průhonice.

Classification of taxa: invasion status

This work focuses on **alien species** (synonyms: adventive, exotic, introduced, non-indigenous, non-native) in the Czech Republic which we define as species present in the region because human actions enabled them to overcome fundamental biogeographical barriers (i.e. human-mediated extra-range dispersal); they occur in the area as a result of intentional or accidental introduction by humans, or of a spontaneous spread from other regions where they were introduced by humans. Crosses resulting from hybridization with one or both alien species involved are considered alien (Pyšek et al. 2004a). We define **native species** (synonym: indigenous species) as those that have evolved in a given area or that arrived there by natural means (through range expansion) without any intentional or accidental intervention of humans from an area where they are native (Pyšek et al. 2004a).

We classified species according to the stage they reached along the introduction–naturalization–invasion continuum (INIC) that describes how species proceed in the invasion process by overcoming geographical, environmental and biotic barriers (Richardson et al. 2000, 2011, Richardson & Pyšek 2006, Blackburn et al. 2011). Based on this concept we use the following terms to describe the invasion status:

(i) **Casual species** are those alien species that do not form self-sustaining populations in the invaded region; they may flourish and reproduce occasionally in an area but their persistence depends on repeated introductions of propagules.

(ii) **Naturalized species** (synonym: established species) form self-sustaining populations for several life cycles without direct intervention by people, or despite human intervention; they often recruit offspring freely, usually close to adult plants and their persistence does not depend on ongoing input of propagules.

(iii) **Invasive species** are a subset of naturalized species; they form self-replacing populations over many life cycles, produce reproductive offspring, often in very large numbers at considerable distances from the parent and/or site of introduction, and have the potential to spread over long distances. In addition to this definition, we introduce the metapopulation criterion to separate invasive species from naturalized, to account for the historical population dynamics of the treated taxa (see the next section).

We included in the list all taxa that were reported to occur at least once in the wild, while those kept exclusively in cultivation are not considered. For escapees from cultivation, a plant was included in the list if it reproduced on its own outside the space where it was sown or planted (Pyšek et al. 2002). In plants reproducing by seed, germination outside such space was considered as an escape from cultivation. A plant reproducing clonally was considered as an escape from cultivation only if it survived winter and persisted in a given site until the following growing season.

Compared to the previous catalogue (Pyšek et al. 2002), we adopted a more conservative approach; if there were doubts about a species' origin status and no strong evidence to consider it alien, it was not included in the list; this conservative approach resulted in removing some species that were listed in the previous catalogue (see Appendix 1).

The classification of casual vs naturalized status is especially difficult for woody plants reproducing in the parks or gardens where they are planted; in some cases this happens

over a large area and for decades (e.g. many trees and shrubs in the Průhonice Park near Prague where there is a long-term systematic recording of regeneration). Here we aimed at adopting the criterion of reproduction over several generations (Richardson et al. 2000) which puts the time criterion in a different perspective than that applied for non-woody taxa. Such taxa are therefore mostly classified as casual. Also, the majority of hybrids are considered casual, with the exception of stabilized hybrids that include some naturalized (e.g. *Medicago* ×*varia*, *Helianthus* ×*laetiflorus*, *Mentha* ×*rotundifolia* and *Oenothera* spp.) or invasive taxa (e.g. *Reynoutria* ×*bohemica*, *Populus* ×*canadensis* and *Symphyotrichum* ×*versicolor*).

Unlike the previous catalogue (see Pyšek et al. 2002 and their Appendix 1), we do not explicitly label taxa as locally naturalized. In the present paper this can be inferred from the combination of invasion status and regional abundance category in Appendix 2. In the same vein, taxa are not labelled as post-invasive since this status is included in the classification using the population groups (see below).

Classification of taxa into categories based on long-term population dynamics and historical link with cultivation: incorporating the unified framework for biological invasions

In addition to traditional classification scheme dividing species into three basic categories along the INIC (Richardson et al. 2000, Richardson & Pyšek 2006, Pyšek & Richardson 2010) here we attempt for an even finer classification based on the population approach emphasized by Blackburn et al. (2011). The basis for this classification are the criteria of reproduction and survival applied against the background of the metapopulation approach. This makes it possible to separate species that survive in a single or few populations in a spatially restricted area from those that spread and form metapopulations over large areas.

Another important point to emphasize is that we refer to the population history viewed from the **current perspective**, i.e. the state in which the populations of a given species exist at present. Therefore, invasions that proved unsuccessful in proceeding along the various stages of the INIC (see Blackburn et al. 2011 and their Fig. 1) are reflected in the current classification, and in changes of invasion status compared to the previous treatment (Pyšek et al. 2002). From this it follows that some taxa that were previously classified as naturalized are moved to the casual category (reflecting 'invasion failure'), and some taxa previously considered invasive are now classified as naturalized (reflecting 'boom and bust phenomenon'; sensu Blackburn et al. 2011). These shifts among the INIC categories reflect not only changes in species' behaviour in the past decade but also the more conservative approach adopted for the current classification. Another principle we follow is that of the **highest stage achieved** at the population level; individual populations of an alien species may occur in a region in different stages of the INIC; early in the process, some can be naturalized while others are still casual (e.g. Essl et al. 2009), whereas later on, some can be invasive while others not (e.g. Meyerson et al. 2010a, b, Saltonstall et al. 2010). Therefore, if some of the populations of a species reached the naturalized or invasion stage, the species is classified as such in Appendix 2.

Therefore, the rationale of classification of alien species into finer groups (termed 'population groups') is based on the following criteria (Table 1):

(A) **Sustainability of populations** of the species in the target region of the Czech Republic; here we distinguish between (i) species existing as non-self-sustaining populations or occasionally recorded individuals, corresponding to Blackburn et al.'s (2011) categories B3+C2, and the casual stage of Richardson et al.'s (2000) framework; the reason for lumping the categories B3 (defined as individuals transported beyond limits of native range, and directly released into novel environment) and C2 (individuals surviving in the wild in location where introduced, reproduction occurring, but population not self-sustaining) is that from records in floristic literature it is impossible to infer whether the presence of the plant is due to a direct introduction of a propagule into the region or a result of a temporary reproductive event within the region; (ii) species occurring in self-sustaining populations; these populations can be numerous and widespread but remain isolated (C3+D1+D2, naturalized species – lumping due to insufficient knowledge about whether the populations recruit from the original point of introduction and whether those spread far from it reproduce in new locations); and (iii) species that currently form numerous and persistent metapopulations widespread over large areas (Blackburn et al.'s 2011 category E).

(B) **Historical population dynamics** is used to classify species according to the highest stage they reached in the invasion process combined with the current state. We distinguish whether or not the most successful populations of unsuccessful species have established and were surviving in the region before decline to the current levels of occurrence; successful species are classified based on the tendency for spread, with respect to whether this trend occurred in the past or is still valid (Table 1). Employing this criterion, i.e. focus on the current status of species' populations and processes that resulted in the present state, is the reason why the correspondence with the categories of Blackburn et al. (2011) is, however, not automatically translated into those of the introduction–naturalization–invasion continuum. This concerns those species classified as D1, D2 and considered invasive in Blackburn et al.'s (2011) scheme (self-sustaining population in the wild, with individuals surviving, or also reproducing, a significant distance from the original point of introduction), populations of which no longer exhibit dynamic spread and are currently stabilized (Groups 7, 9, 11 in Table 1), or even decline in the Czech Republic (Group 6). We also do not consider as invasive those species that only start to exhibit symptoms of the beginning spread (Groups 8, 10, 12). Adhering to a conservative approach, these species are still considered as naturalized. Nevertheless, they merit particular attention in terms of monitoring as they are likely to become invasive in the near future. Only those species that are currently spreading are classified as invasive (Groups 14, 16, 18; Table 1).

(C) **Link to populations in cultivation**. The above criteria are employed against the background of species' planting histories in the region. Here we separate species into (i) those that have never been cultivated (corresponding to contaminant and stowaway pathways of introduction according to Hulme et al. 2008; Appendix 2), hence unsupported by the propagule pressure from planted populations; (ii) those in which the peak of planting intensity was in the past and at present the planting ceased or is only of marginal importance; and (iii) those that are still commonly kept in cultivation, be it for horticultural or agricultural purposes. For the cultivated species this criterion refers to the degree of continuity of propagule pressure. The time frame over which this criterion applies is the last ca 200 years for which period the information on the frequency of planting can be inferred.

Table 1. – Classification of the alien flora of the Czech Republic into population groups (PG) based on the current population state and their connectivity, trends in their long-term dynamics, and link to cultivated populations as a source of propagule pressure in the past and present. See text for details. The population groups are referred by numbers presented in Appendix 2, with the INIC (introduction–naturalization–invasion continuum) status indicated and number of species shown in parentheses. The link to the unified invasion framework (Blackburn et al. 2011) is indicated by their categories that are relevant to the given population state shown in parentheses; note that some of their categories referring to the invasion stage such as D1, D2, E (Blackburn et al. 2011; their Fig. 1) are classified as naturalized because the focus here is on the present state and approach adopted is conservative. Taxa in these categories may have reached the invasion stage in the past but their populations are stabilized and no longer spread. Link to standard classification of the INIC categories (Richardson et al. 2000) is indicated by coloured shading. The scheme also separates groups of taxa introduced by unintentional pathways (contaminant, stowaway), marked "none" in the Cultivation column, from those introduced deliberately (release, escape; Hulme et al. 2008, Pyšek et al. 2011b).

Populations	Cultivation	Introduction & Failure	Establishment & Failure	Establishment & No trend	Starting spread	Ongoing spread
(a) Not self-sustaining (B3, C2)	(a1) None	PG1: casual (395)	PG2: casual (45)			
	(a2) Past		PG3: casual (17)			
	(a3) Ongoing	PG4 & 5: casual (501 & 28)				
(b) Self-sustaining (C3, D1, D2)	(b1) None		PG6: naturalized (54)	PG7: naturalized (40)	PG8: naturalized (43)	
	(b2) Past			PG9: naturalized (36)	PG10: naturalized (11)	
	(b3) Ongoing			PG11: naturalized (65)	PG12: naturalized (31)	
(c) Metapopulations (E)	(c1) None			PG13: naturalized (100)		PG14: invasive (28)
	(c2) Past			PG15: naturalized (8)		PG16: Invasive (9)
	(c3) Ongoing			Group 17: naturalized (19)		PG18: invasive (24)
Total taxa		924	116	268	85	61

Residence time status

Based on the residence time, i.e. the time since the arrival of a species to the territory of the present Czech Republic, we distinguish archaeophytes (taxa introduced before the discovery of America, approx. 1500 A. D.) and neophytes (taxa introduced after that date), following the concept traditionally used in European studies on plant invasions (e.g. Holub & Jirásek 1967, Pyšek et al. 2002, 2004a). When evaluating residence time status of hybrids, we followed that of the alien parent; therefore, crosses of archaeophytes with native are considered archaeophytes, and hybridization with neophytes involved are classified as neophytes regardless of the status of the second parent.

For neophytes, we determined the year of the first record in the Czech Republic that is used to infer the minimum residence time, i.e. the time for which the species is known to be present (Rejmánek 2000, Pyšek & Jarošík 2005, Richardson & Pyšek 2006); this characteristic is important in evaluation of invasion status since it indicates how much time the species had to colonize suitable habitats (Williamson et al. 2009, Gassó et al. 2010), go through a lag phase (Kowarik 1995, Crooks 2005) or build relationship with native biota (Pyšek et al. 2011a). As pointed out above, the reliability of the years of first records crucially depends on the intensity of floristic research in the past (see Pyšek et al. 2002 for discussion).

Species traits: taxonomic affiliation and life history

Taxonomic affiliation of taxa to families follows the approach of the Angiosperm Phylogeny Group Classification: APG III (Stevens 2001 onwards, Angiosperm Phylogeny Group 2009), and Smith et al. (2006) for ferns. This classification system incorporates data from molecular, chemical and morphological phylogenies in an attempt to represent the latest thinking on angiosperm evolution, and in a few lineages (e.g. *Scrophulariales*) it differs markedly from the traditional system.

The following life histories were assigned to the species: annual, biennial, perennial, semishrub, shrub, tree, fern, aquatic and parasitic (see Appendix 2).

Geographic origin

Taxa were classified according to their geographic origin (native range) at the level of continents (parts of Europe other than the Czech Republic, Africa, Asia, North America including Mexico, Central America, South America, and Australia). Unlike the previous catalogue (Pyšek et al. 2002), we distinguished the Mediterranean region as a separate region of origin, covering respective parts of southern Europe, northern Africa and western Asia from Turkey and Israel to Afghanistan. This broad definition of the Mediterranean region corresponds to the Mediterranean, Submediterranean and Oriental Floristic Subregions according to Meusel et al. (1965). The region delimited in this way is very convenient for plant invasion studies as it includes the areas of origin of Neolithic agriculture. Indications of Europe, Asia and Africa in Appendix 2 refer to their parts other than the Mediterranean region in this delimitation.

Hybrids and species that originated through recent hybridization are listed as a special origin category and we employed classification based on how species originated in terms of their evolutionary history. This approach acknowledges that some did not evolve naturally, but under human influence, do not have a natural home range, and their original hab-

itat is unknown (Kühn & Klotz 2003). Especially for many archaeophytes, native ranges are not known or are highly uncertain, and some archaeophytes are regarded as alien throughout their known global range. These taxa, termed anecophytes (homeless plants; Zohary 1962) could be cultivated plants that escaped to the wild or plants that co-evolved with human land uses such as agriculture (Kühn & Klotz 2002, 2003, Kühn et al. 2004). In our treatment, we follow the more conservative approach and label as anecophytes mostly those species that evolved in cultivation, or species occurring in the wild but with their region of origin being unknown.

Regional abundance

Type of regional abundance in the landscape was estimated for each taxon using the following scale: single locality, rare, scattered, locally abundant, and common across the whole Czech Republic. A special category termed 'vanished' relates to the taxa for which no records have been known for a long period, and where it is highly improbable that they would appear again (Pyšek et al. 2002).

Occurrence in habitats

The previous catalogue provided information on the occurrence of alien species in phytosociological alliances, different types of landscapes and with respect to landuse (Pyšek et al. 2002). Here we use extensively revised data from the database of species occurrences in 88 major habitat types of the Czech Republic as defined by Sádlo et al. (2007), which correspond to phytosociological alliances or groups of alliances. All four levels of species affinity to the habitats as defined by Sádlo et al. (2007: 305) are taken into account, i.e. a species is considered as occurring in a habitat even if the habitat is outside its ecological optimum, but the species is occasionally found there.

Cover in plant communities

To obtain the data on the cover of alien species in plant communities, we used vegetation plot observations (phytosociological relevés) stored in the Czech National Phytosociological Database held at the Department of Botany and Zoology, Masaryk University, Brno (Chytrý & Rafajová 2003, EU-CZ-001 according to Dengler et al. 2011). At the time of data extraction (April 2012) the database contained 88,215 relevés from plots smaller than 1000 m^2 with an indication of plot size and geographical coordinates. Of these, 41,582 relevés contained at least one alien species. To reduce oversampling of some areas or some vegetation types, we selected only one relevé from a group or relevés assigned to the same phytosociological alliance within the same grid cell of 1.25 longitudinal × 0.75 latitudinal minutes, i.e. approximately 1.5 × 1.4 km. This stratified resampling yielded 16,033 relevés containing 437 alien species, which were used to quantify species cover. Only species occurring in at least 25 relevés were evaluated to avoid inaccuracies resulting from small sample size. For these species, mean percentage cover across all relevés in which the species was present was calculated.

Impact

To provide the first insights into the impacts of alien plant species in the Czech Republic, we used the data gathered by the DAISIE project (DAISIE 2008, 2009) and indicated

those species on our list for which an ecological and/or economic impact is reported in the literature (Vilà et al. 2010). With a few exceptions indicated in Appendix 2, this classification has not been done specifically for the Czech Republic but refers to any region in Europe, meaning that species labelled as exerting impact may not do so in this country.

Statistical analysis

To test whether there are differences between species numbers according to their invasion status, life histories, abundances and origins, their counts were analysed by row × column contingency tables, using generalized linear models with log-link function and Poisson distribution of errors (e.g. Crawley 1993: 231–237). To ascertain for which species the counts are lower or higher than would be expected by chance, adjusted standardized residuals of G-tests were compared with critical values of normal distribution (Řehák & Řeháková 1986). The estimates of yearly accumulations of neophytes, including projected total numbers in 2050, were assessed from linear regressions of cumulative numbers that started in the year 1800.

Results and discussion

Diversity of alien flora

The alien flora of the Czech Republic consists of 1454 taxa, made up by 350 archaeophytes (24.1%) and 1104 neophytes (75.9%; Table 2, Appendix 2), which represent addition to ca 2945 native taxa known from the country (using a preliminary estimate from Danihelka et al. 2012) and form 33.1% of the total plant diversity ever recorded there. Although similar figures for individual countries are subject to variation resulting not only from composition of floras but also from the variable depth of their knowledge, intensity of research into alien species, or whether apomictic species are included in comparisons (see Williamson 2002, Pyšek et al. 2002 and discussion therein), the proportion given here seems to reasonably reflect situation in countries with detailed knowledge of their floras. Subtracting species that are assumed to be vanished among alien (277 taxa, Appendix 2) and extinct from native flora (153 taxa in the Red List categories A1 and A2; Danihelka et al. 2012) yields a figure of 29.7% of aliens contributing to the plant diversity currently occurring in the Czech Republic.

Table 2. – Numbers of all alien taxa in the Czech Republic, including hybrids, cross-tabulated across invasion status and immigration time. Note that invasive taxa are subgroup of naturalized. Overall, the observed counts of alien taxa (in bold) highly significantly ($\chi^2 = 193.56$; df = 2; $P < 0.0001$) differ from counts expected by chance (values in parentheses). Statistically highly significant deviations of individual counts from counts that can be expected by chance are expressed by asterisks (*** $P < 0.001$); numbers in parentheses not followed by any symbol do not differ from randomly expected values.

		Naturalized		
	Casual	Naturalized non-invasive	Invasive	Total
Archaeophytes	**138** (235.5)***	**201** (97.6)***	**11** (14.8)	350
Neophytes	**847** (748.5)***	**207** (310.3)***	**50** (47.2)	1104
All aliens	985	408	61	1454

If we further exclude 94 hybrids recorded from the total number of alien taxa, and compare this figure with the current native species diversity without 575 hybrids (Danihelka et al. 2002), the proportion of alien taxa 32.8%. The hybrids between neophytes and native taxa, and between two neophytes, are more frequent than hybrids involving archaeophytes. Overall, neophytes are involved in 58 hybrid combinations, archaeophytes in 42 and native species in 56 (Table 3).

Finally, considering only permanently present taxa, i.e. 469 naturalized aliens (including both non-invasive and invasive) and the native flora without extinct representatives, yields 14.4% contribution of alien flora to the current plant diversity, or 17.5% if hybrids are excluded from native flora. This proportion is probably a more realistic measure of the level of invasion of the country's species pool than is usually given in overall figures based on all species ever recorded, including casuals, because it better reflects the threat from alien species' impacts and potential for invasion debt to operate (Essl et al. 2011).

Table 3. – Numbers of hybrids in the alien flora classified according to the origin and residence time status of their parental species. Note that the total number of hybrids across the three groups (n = 94) does not correspond to the sum of numbers within the groups involved because all combinations are displayed row-wise. Anecophytes are listed as species of unknown origin, the majority of which originated by hybridization in cultivation. Hybrids of native species are not relevant (n.r.) for this comparison.

	× Archaeophyte	× Neophyte	× Native	Total within group
Archaeophyte	13	6	23	42
Neophyte	6	19	33	58
Native	23	33	n.r.	56
Hybrids total				94
Anecophytes				105
Hybrids and anecophytes total				199

Changes to the 2002 checklist

Compared to the first checklist (Pyšek et al. 2002), 75 taxa were removed (39 archaeophytes and 36 neophytes). The majority of these changes resulted from reclassifying some taxa as native (41 taxa) where evidence for their alien origin was not convincing enough under the conservative approach adopted in the present paper; they were mostly archaeophytes but there are also six neophytes with alien status which appeared doubtful based on recently published evidence: *Agropyron pectinatum*, *Crocus heuffelianus*, *Epilobium dodonaei*, *Senecio rupestris*, *Teucrium scorodonia* and *Viola tricolor* subsp. *curtisii*. For nine taxa previously classified as deliberately introduced casuals, the evidence for escaping from cultivation was ambiguous. Other deletions relate to 10 taxonomically unjustified taxa now omitted from the Czech flora, and 16 cases are doubtful records previously only reported in the literature that cannot be considered as proven without herbarium evidence, or taxa that were erroneously determined by the collector. All deleted species are dealt with in detail in Appendix 1.

In total, 151 taxa not listed in Pyšek et al. (2002) are included, representing additions to the alien flora of the Czech Republic. This includes taxa newly recorded since 2002 and (i) reported in the literature (e.g. *Convallaria majalis* var. *transcaucasica*, *Darmera peltata*,

Dittrichia graveolens, *Euphorbia agraria*, *Galium murale*, *Geranium purpureum*, *Gratiola neglecta*, *Hypericum annulatum*, *Legousia pentagonia*, *Pimpinella peregrina* and *Stachys setifera*), including two volumes of the Flora of the Czech Republic published in this period (Slavík & Štěpánková 2004, Štěpánková 2010) that report taxa missing from previous catalogue (e.g. *Cichorium endivia*, *Egeria densa* and *Filago pyramidata*); (ii) additions resulting from investigation of sources omitted from the previous catalogue (e.g. *Euphrasia salisburgensis*, *Herniaria incana*, *Rumex longifolius* subsp. *sourekii*, *Trifolium badium* and *Xerochrysum bracteatum*), including some herbarium materials (e.g. *Centaurea carniolica*, *C. transalpina* and *Corispermum declinatum*); (iii) redetermination of previously reported taxa (e.g. *Eriochloa punctata*, *Gilia achilleifolia*, *Hieracium* sp. ex *H. heldreichii* agg., *Rodgersia pinnata* and *Spiraea hypericifolia* subsp. *obovata*); (iv) reassessment of some taxa traditionally considered native for which the evidence suggests the opposite (e.g. *Eragrostis pilosa*, *Lathyrus hirsutus*, *Lilium bulbiferum*, *Matricaria chamomilla* and *Sorbus austriaca*); (v) intraspecific taxa previously not recognized in the flora (e.g. *Avena sterilis* subsp. *ludoviciana*). Accounts on the newly added alien species in the Czech flora are given in Appendix 1, with respective references.

In total, 44 taxa are reported in the present study for the first time as aliens introduced to the Czech Republic or escaping from cultivation (Appendix 1): *Abies concolor*, *A. grandis*, *A. nordmanniana*, *Avena sterilis* subsp. *ludoviciana*, *A.* ×*vilis*, *Berberis julianae*, *B. thunbergii*, *Bidens ferulifolius*, *Buddleja alternifolia*, *Buglossoides incrassata* subsp. *splitgerberi*, *Buxus sempervirens*, *Corispermum declinatum*, *Cotoneaster dielsianus*, *C. divaricatus*, *Euphorbia myrsinites*, *Gleditsia triacanthos*, *Helleborus orientalis*, *Hieracium heldreichii* agg., *Koelreuteria paniculata*, *Lonicera periclymenum*, *Lotus ornithopodioides*, *Malus baccata*, *M. pumila*, *Miscanthus sacchariflorus*, *Morus alba*, *Muscari armeniacum*, *Paeonia lactiflora*, *Pennisetum alopecuroides*, *Pinguicula crystallina* subsp. *hirtiflora*, *P. grandiflora* subsp. *rosea*, *Podophyllum hexandrum*, *Pyracantha coccinea*, *Rhodotypos scandens*, *Rumex patientia* × *R. tianschanicus* 'Uteuša', *Salix cordata*, *Sarracenia purpurea*, *Sasa palmata* 'Nebulosa', *Scolymus maculatus*, *Spiraea japonica*, *Tagetes tenuifolia*, *Thuja occidentalis*, *Trifolium badium*, *Vaccinium corymbosum* and *Viburnum rhytidophyllum*.

Finally, compared to the previous version of the catalogue (Pyšek et al. 2002), 134 names were changed due to nomenclatural reasons or development in taxonomic opinion; these changes are summarized in Electronic Appendix 1.

Transitions along the introduction–naturalization–invasion continuum

Among the 1454 taxa, 985 (67.7%) are classified as casual, 408 (28.1%) as naturalized but non-invasive, and 61 (4.2%) as invasive (Fig. 1, Table 2). Among casual taxa, 86.0% are neophytes and 14.0% archaeophytes, the corresponding figures being 50.7 and 49.3%, respectively, for naturalized, and 82.0 and 18.0% for invasive taxa. From this it follows that casual taxa are strongly over-represented among neophytes, and naturalized among archaeophytes (Table 2, Fig. 1), a pattern previously illustrated for the Czech flora by Pyšek et al. (2002) and also valid for neighbouring Slovakia (Medvecká et al. 2012). Interestingly, the observed numbers of neither archaeophytes nor neophytes differ from those expected by chance, indicating that there is no difference between the two groups in the proportion of species that reach the invasion stage (Table 2, Fig. 1).

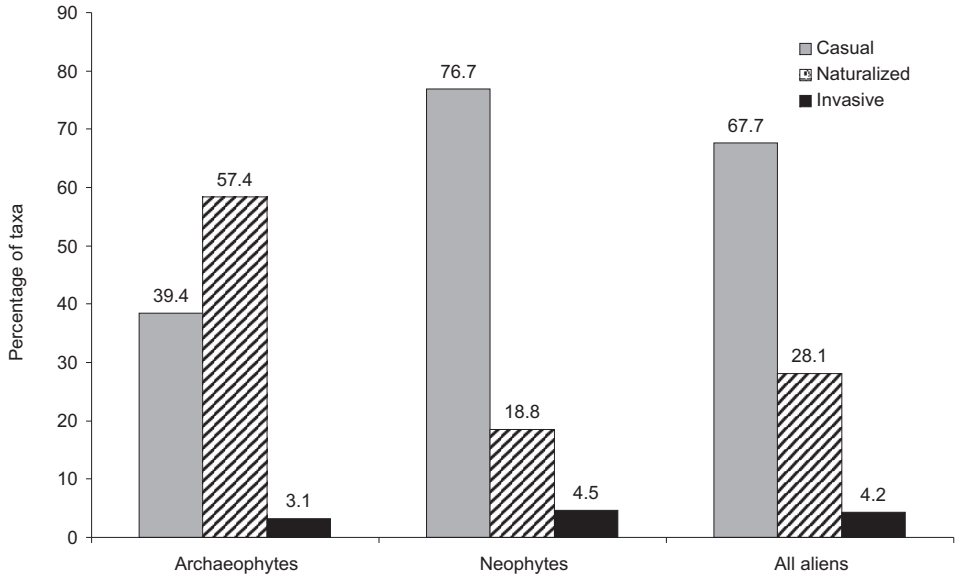

Fig. 1. – Representation of taxa according to invasion status (casual, including vanished taxa; naturalized but non-invasive; invasive) among archaeophytes, neophytes and all aliens in the flora of the Czech Republic. See Table 2 for the numbers of taxa and statistics.

Data on neophytes provide insights into the transition rates along INIC, i.e. how large a proportion of species reach the subsequent stages of the invasion process (Fig. 2); this proportion cannot be calculated for archaeophytes because information on casual species from the initial periods of introduction is missing (Pyšek et al. 2002). Of the total number of 847 recorded casual neophytes, 250 (29.5%) have not been recorded for a long period of time and are therefore considered vanished (96 of them were only known from a single locality), and 597 (70.5%) are currently present as casuals. Of the 1104 neophytes, 257 (23.3%) became naturalized, and 50 (19.5%) of the naturalized are considered invasive (Fig. 2).

The approach we adopt takes into account invasion failures, represented by dotted arrows in Fig. 2 that indicate reversed directions in the invasion process. This makes it possible, by using finer classification based on the assessment of long-term population dynamics and its comparison with the current stage (Table 1), to map the number of taxa onto the unified framework of biological invasions (Blackburn et al. 2011). Four types of unsuccessful invasions can be recognized, depicted in Fig. 3 and based on population groups described below: (i) casual taxa that failed to establish, never forming self-sustaining populations (PG 1+4+5); (ii) taxa that formed self-sustaining populations in the past but declined so that this is no longer the case (PG 2+3); (iii) taxa present for a long time with populations surviving in the landscape; although they are still considered naturalized, their invasion obviously failed because they are rare and their decline is likely to continue (PG6); (iv) naturalized species that form stabilized metapopulations in the wild, some of them reached the invasion stage in the past but their current occurrence indicates that they declined; therefore they are considered as representatives of the boom and bust phenomenon (PG 13+15+17; Fig. 3).

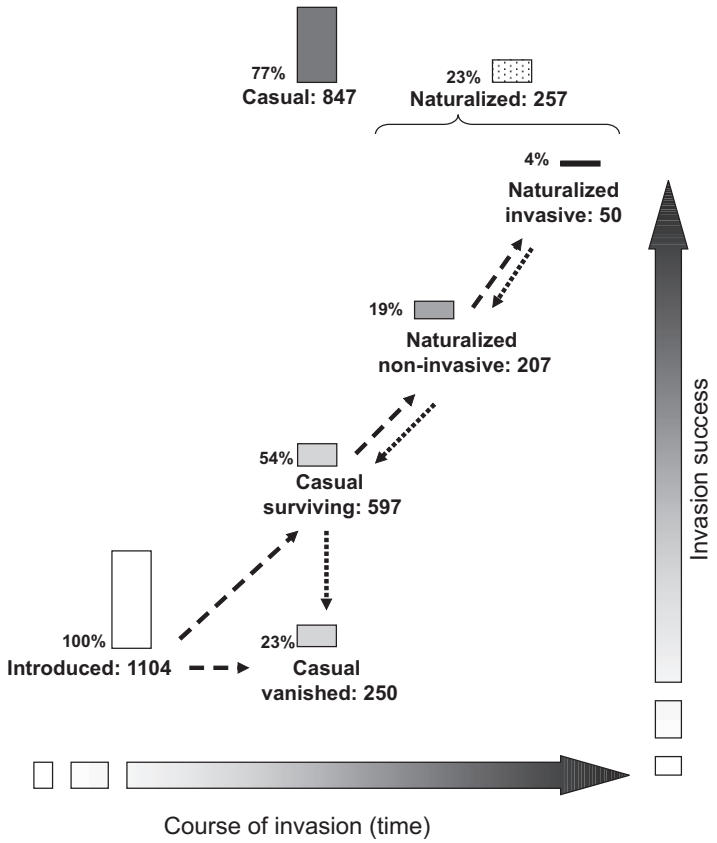

Fig. 2. – Transition rates in alien flora of the Czech Republic, shown for neophytes, along the introduction–naturalization–invasion continuum (INIC). For each category, the number of taxa is given and the height of the bar with the associated number indicates the percentage of the total number of 1104 neophytes recorded that reached that stage. Casuals are divided into those that survive (70.5% of the total number of casuals) and that are considered vanished (29.5%), naturalized into non-invasive (80.5%) and invasive (19.5%). Invasion failures at different stages of the INIC are represented by dotted arrows and quantified in Fig. 3.

Overview of population groups

(a) Not self-sustaining populations or individuals
(a1) No link to cultivation

Group 1. Introduction and failure. Unintentionally introduced taxa that were only recorded as individuals or in small populations, mostly occasionally, and are reported from a single or few locations; they are classified as casuals and a significant proportion (186 of 395 in total) are considered vanished, i.e. recorded in the past and not observed for a long time since the last record. The vast majority of taxa in this group (364) are neophytes, and many occasionally recorded hybrids (75) also fall here. Typical examples include *Alhagi maurorum*, *Chloris virgata*, *Cakile maritima*, *Conyza triloba* and *Scleroblitum atriplicinum*.

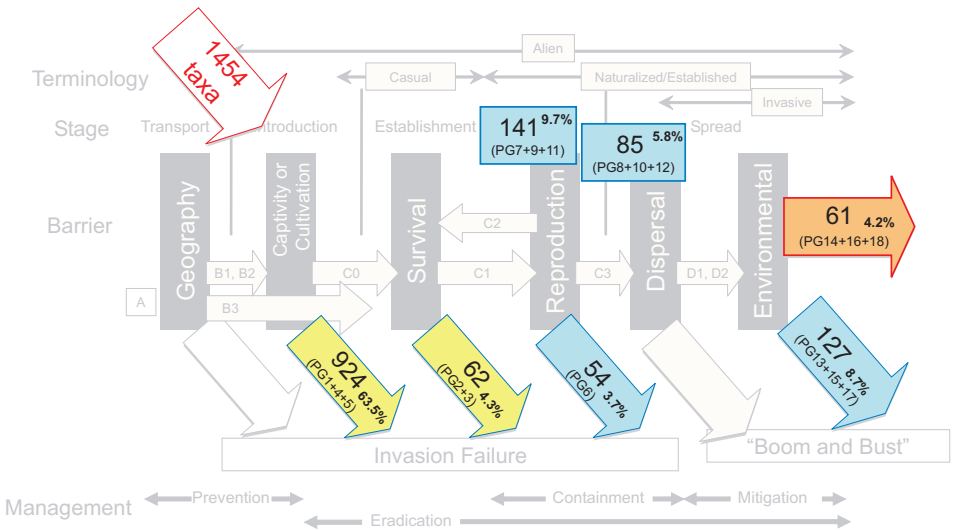

Fig. 3. – Population groups (PG) of alien taxa in the Czech flora (see text for details and Table 1 for overview) mapped onto the unified framework for biological invasions (Blackburn et al. 2011; the background figure reprinted with permission from Elsevier Limited). Population groups corresponding to casual ▭, naturalized but not invasive ▭, and invasive ▭ taxa are distinguished by different colours. Number of taxa and percentages of the total of 1454 are indicated for each stage. Note that the groups do not match precisely the casual–naturalized–invasive areas at the top of the scheme due to distinguishing taxa that correspond to invasion boom and bust (taxa that spread in the past, formed metapopulations but their spread ceased, therefore are at present considered naturalized rather than invasive; PG13+15+17).

Group 2. Establishment and failure. This group includes almost exclusively archaeophytes (37 of 45 in total) that were surviving in the landscape for centuries or millennia, formed self-sustained populations in the past, some of them might have been even invasive at some stage, but now they have declined or are even considered vanished (22 taxa). In the previous catalogue, they were mostly classified as naturalized, often post-invasive (Pyšek et al. 2002); the change in classification of these taxa resulted from the focus on the current state adopted in the present treatment and the fact that they no longer occur in populations that can be considered self-sustaining. The group includes some red-listed archaeophytes (e.g. *Agrostemma githago*, *Atriplex rosea*, *Heliotropium europaeum*, *Lolium remotum* and *Scandix pecten-veneris*; Holub & Procházka 2000), but also neophytes (e.g. *Cnidium silaifolium* and *Xanthium spinosum*), and refers to the invasion failure in the sense of Blackburn et al. (2011).

(a2) Past link to cultivation

Group 3. Establishment and failure. A group of 17 taxa that are either archaeophytes or neophytes introduced long ago, mostly in the 19th century, were surviving due to weak but continued propagule pressure from cultivated populations in the past but never formed self-sustaining population in the wild. Since the planting has ceased or its intensity strongly decreased, they are currently declining or have already vanished (13 taxa). Examples include *Camelina sativa*, *Chenopodium foliosum*, *Dracocephalum moldavica*, *Madia sativa*, *Pyrus nivalis*, *Stachys affinis* or *Trigonella foenum-graecum.*

(a3) Ongoing link to cultivation

Group 4 & 5. Introduction and failure. An escape from cultivation analogous to Group 1. Group 4 includes 501 casual taxa, mostly neophytes (458), that rely on continued input of propagules from planted populations. Usually they are planted as garden ornamentals and the link between planted populations and those in the wild is very close. In terms of abundance, these taxa are at best scattered (339 are rare, 109 reported from a single site) and 56 are vanished. Examples include *Convolvulus tricolor*, *Dahlia pinnata*, *Dasiphora fruticosa* and *Ficus carica*. Some woody plants that escaped from cultivation have close link with planted populations, but have not formed (yet) long-sustaining populations due to long generation time (e.g. *Celtis occidentalis*, *Crataegus persimilis* and *Paulownia tomentosa*) or limited ability to establish permanently (e.g. *Abies grandis* and *Platanus ×hispanica*) are included in this group. Some taxa previously classified as naturalized by Pyšek et al. (2002) were reassigned to this group (e.g. *Allium tuberosum*, *Helleborus viridis*, *Othocallis siberica*, *Polygonatum latifolium* and *Sedum rupestre* subsp. *erectum*), including some shrubs surviving in single or a few locations (e.g. *Alnus rugosa*, *Ribes odoratum* and *Rubus canadensis*).

Group 5 is defined based on the same principles, the difference being current rather massive propagule pressure from large-scale planting for agricultural or horticultural purposes. It includes 28 taxa, with archaeophytes prevailing (21) but neophytes also represented, and examples include *Allium cepa*, *Anethum graveolens*, *Helianthus annuus*, *Triticum aestivum* or *Zea mays*. There are 18 anecophytes in this group.

(b) Self-sustaining isolated populations

(b1) No link to cultivation

Group 6. Establishment and failure. This group includes 54 archaeophytes that were introduced independently of cultivation, survived in the landscape for centuries or even millennia and although their populations are declining, they still survive in the wild as rare or scattered. The majority of them occur in warm regions and it is assumed that many of them were invasive at some stage in their invasion history (classified as naturalized post-invasive in Pyšek et al. 2002), often as weeds of arable land. Examples include *Ajuga chamaepitys* subsp. *chamaepitys*, *Anagallis foemina*, *Bifora radians* and *Ranunculus arvensis*. A subset in this group are taxa confined to habitats associated with breeding domestic animals in villages, e.g. *Chenopodium vulvaria*, *Lepidium coronopus*, *Marrubium peregrinum* and *Sclerochloa dura*.

Group 7. Establishment and no trend. The group consists of 40 taxa, most of them archaeophytes (21) but also old neophytes are represented (19), most of them introduced in the 19th century. The taxa from this group occur mostly as scattered or rare but without a significant trend for decline or spread. Examples include: *Brachypodium rupestre*, *Genista sagittalis*, *Crepis capillaris*, *Geranium molle*, *Papaver dubium*, *Pastinaca sativa* subsp. *urens* and *Potentilla intermedia*.

Group 8. Starting spread. A group comprising almost exclusively neophytes (40 of 43 in total), mostly introduced in the 20th century, that have formed self-sustaining populations and exhibited signs of starting spread in the last decades. The majority of them were classified as naturalized in the previous catalogue (Pyšek et al. 2002), but there are also 11 taxa that were in the casual stage at the beginning of the 2000s and their dynamics in the last decade justifies reassessment, e.g. *Abutilon theophrasti* and *Senecio inaequidens*. The

group includes also taxa that formed a small but abundant and persisting population that is currently prevented from further spread by the barrier of unsuitable habitats (*Corispermum pallasii*) or those that were introduced fairly recently and had not time yet to fully manifest their invasion potential (*Agrostis scabra*, *Dittrichia graveolens* and *Panicum miliaceum* subsp. *agricola*).

(b2) Past link to cultivation.

Group 9. Establishment and no trend. An escape from cultivation analogous to Group 7. This group includes 36 taxa, mostly neophytes (27), that form stabilized self-sustaining populations in the wild as a result of past planting, ranging from rare to common in abundance (e.g. *Calystegia pulchra*, *Hesperis matronalis* subsp. *matronalis*, *Saxifraga hostii* subsp. *hostii* and *Viola suavis*), but also archaeophytes with the same characteristics (*Glycyrrhiza glabra*, *Lilium bulbiferum* and *Myrrhis odorata*).

Group 10. Starting spread. This group includes 11 taxa, nine of them being naturalized neophytes that exhibit signs of starting spread and are likely to become invasive in the future, e.g. *Dipsacus strigosus* and *Duchesnea indica.* Compared to previous catalogue (Pyšek et al. 2002), *Azolla filiculoides* and *Bromus carinatus* that were assessed as casual, appear in this category. The group also includes two archaeophytes, *Bryonia dioica* and *Galega officinalis*.

(b3) Ongoing link to cultivation

Group 11. Establishment and no trend. A group of 65 taxa with early introduced neophytes prevailing (57 taxa, for the majority of them the first record is available from the 19th century), that occur as rare or scattered but have formed self-sustaining populations with ongoing support of propagule pressure from cultivated populations. Examples include *Alcea rosea*, *Lychnis coronaria* and *Matteuccia struthiopteris*. Compared to previous classification (Pyšek et al. 2002), 25 taxa considered as casual then are now considered to form self-sustaining populations, e.g. *Arabis procurrens*, *Eranthis hyemalis* and *Erysimum cheiri*. Populations of some taxa are likely to start spread in the future, being currently still constrained by a short residence time (e.g. *Elaeagnus commutata*).

Group 12. Starting spread. This group includes 31 taxa, all but one neophytes, that are still more or less widely planted and exhibit the signs of beginning spread, e.g. *Colutea arborescens*, *Fallopia aubertii*, *Hordeum jubatum* and *Pinus nigra*. Based on the marked dynamics in the last decade, some of them were reclassified from the casual category in Pyšek et al. (2002) to naturalized, e.g. *Buddleja davidii* (first reported to escape from cultivation in 2000), *Aesculus hippocastanum*, *Symphyotrichium laeve* or *Sagittaria latifolia*. The group also includes several taxa formerly classified as invasive for which this classification is not (yet) justified using the conservative approach adopted here: they are *Amorpha fruticosa*, *Cytisus scoparius* subsp. *scoparius*, *Galeobdolon argentatum*, *Mahonia aquifolium*, *Physocarpus opulifolius*, *Rhus typhina* or *Sedum hispanicum*.

(c) Invasive metapopulations

(c1) No link to cultivation

Group 13. Establishment and no trend. A group of 100 unintentionally introduced taxa with occurrence stabilized during centuries or millennia of presence in the target region, consisting mostly of archaeophytes (87 taxa). The examples include many common weeds

of agricultural land and ruderal taxa such as *Anagallis arvensis*, *Anthemis arvensis*, *Chenopodium strictum*, *Convolvulus arvensis*, *Euphorbia peplus*, *Lamium purpureum*, *Lapsana communis* subsp. *communis*, *Malva neglecta* and *Thlaspi arvense*. Majority of taxa (68) were assumed to be post-invasive in Pyšek et al. (2002). Sixteen species previously classified as invasive were reassigned into this naturalized category, e.g. *Apera spica-venti*, *Atriplex oblongifolia*, *Bryonia alba*, *Epilobium adenocaulon*, *Matricaria discoidea*, *Rumex thyrsiflorus*, *Tripleurospermum inodorum* and *Veronica persica*.

Group 14. Spread. This group includes 28 taxa that became invasive following unintentional introduction. Most of them are neophytes (20), e.g. *Amaranthus powelii*, *Ambrosia artemisiifolia*, *Bidens frondosus*, *Conyza canadensis*, *Cuscuta campestris*, *Rumex alpinus*, but invasive archaeophytes are also represented, e.g. *Atriplex sagittata*, *Cirsium arvense*, *Echinochloa crus-galli* and *Portulaca oleracea* subsp. *oleracea*. Apparently, annual weeds prevail with some exceptions such as *Bunias orientalis*, whereas both other invasive groups (16 and 18) consist mainly of robust perennials and woody taxa, the differences reflecting life histories associated with unintentional vs deliberate pathways of introduction (Pyšek et al. 2011b).

(c2) Past link to cultivation

Group 15. Establishment and no trend. Group of eight taxa, both archaeophytes (e.g. *Cymbalaria muralis* and *Spergula arvensis* subsp. *sativa*) and neophytes (e.g. *Acorus calamus* and *Elodea canadensis*), with the same features as Group 13 but supported in their naturalization by past cultivation, and no longer spreading. *Elodea canadensis*, *Mimulus guttatus*, *Tanacetum vulgare* and *Veronica filiformis* have been reclassified from invasive status (Pyšek et al. 2002) to naturalized.

Group 16. Spread. Nine taxa that still spread and the naturalization and invasion of which has been supported by planting that was most intensive in the past; they are all early introduced neophytes classified as invasive already in the previous catalogue (Pyšek et al. 2002): *Ailanthus altissima*, *Angelica archangelica* subsp. *archangelica*, *Echinops sphaerocephalus*, *Heracleum mantegazzianum*, *Impatiens glandulifera*, *I. parviflora*, *Lycium barbarum* and *Telekia speciosa*. The only exception is *Asclepias syriaca*, previously classified as naturalized; this species started to spread in the last decade, especially in southern Moravia.

(c3) Ongoing link to cultivation

Group 17. Establishment and no trend. A group of 19 taxa, consisting of 12 archaeophytes and 7 neophytes that are still commonly planted at present and form stabilized metapopulations in the wild. Examples include *Armoracia rusticana*, *Lolium multiflorum*, *Prunus cerasus* and *Trifolium hybridum*. Twelve taxa were classified as post-invasive by Pyšek et al. (2002) and four considered as invasive in this source were reassessed (*Digitalis purpurea*, *Melilotus albus*, *M. officinalis* and *Viola odorata*) and included in this group of naturalized taxa.

Group 18. Spread. A group of 24 invasive taxa that are currently spreading were supported by planting throughout their invasion history, including the present time. There are only two archaeophytes, *Arrhenatherum elatius* and *Prunus cerasifera*, while the vast majority of species in this group are neophytes that started to appear in the wild in the 19th century. The examples include many major plant invaders in the Czech Republic such as

Acer negundo, *Helianthus tuberosus*, *Lupinus polyphyllus*, *Pinus strobus*, *Prunus serotina*, *Quercus rubra*, *Reynoutria* ×*bohemica*, *R. japonica* var. *japonica*, *Robinia pseudacacia*, *Solidago canadensis* and *S. gigantea*. All taxa in this group but *Prunus cerasifera* were classified as invasive already in Pyšek et al. (2002). Although taxa confined to eutrophic ruderal habitats generally prevail in this group, those preferring nutrient-poor soils (such as *Pinus strobus*, *Prunus serotina*, and *Quercus rubra*) are also present.

Taxonomic composition

Alien taxa in the Czech flora are representatives of 586 genera and 107 families (Appendix 2). The genera richest in taxa (including hybrids and anecophytes) among all aliens are *Amaranthus* (24 taxa), *Oenothera* (23) and *Trifolium* (19) but there are marked differences between neophytes and archaeophytes in this respect: *Oenothera*, *Amaranthus*, *Trifolium*, *Rumex*, *Solanum*, *Rubus* and *Centaurea* are most represented genera among neophytes, whereas *Vicia*, *Prunus*, *Veronica*, *Atriplex*, *Bromus*, *Viola* and *Chenopodium* among archaeophytes (Table 4).

Overall, neophytes belong to 508 and archaeophytes to 184 genera; exclusively 'archaeophytic genera' (with only archaeophytes among their alien taxa) that include at least three alien representatives are *Arctium* (7 taxa), *Spergula* (4), *Anthriscus*, *Marrubium*, *Myosotis*, *Polycnemum*, *Pyrus*, *Sonchus* and *Valerianella* (3).

Families most represented in alien flora (Table 5) are *Asteraceae* (198 taxa; 13.6% of the alien flora), *Poaceae* (152; 10.5%) and *Brassicaceae* (101; 6.3%); apart from minor changes in the numbers of taxa resulting from the above described additions and deletions, the pattern of richness at the level of most represented families is the same as reported in detail in Pyšek et al. (2002). Some major changes in the richness of families in the current treatment, compared to Pyšek et al. (2012; e.g. *Amaranthaceae* 76 vs 25 taxa, *Scrophulariaceae* 5 vs 39), are attributed to the different classification system used here (Stevens 2001 onwards, The Angiosperm Phylogeny Group 2009). All but one (*Linaceae*) of the total number of 107 families included contain at least one neophyte representative, while archaeophytes originate from only 42 families. The families richest in neophytes are *Asteraceae*, *Poaceae*, *Rosaceae*, *Fabaceae* and *Brassicaceae* (Table 5), which together contain 485 taxa and account for 43.9% of all neophytes. *Asteraceae*, *Poaceae* and *Brassicaceae* also rank high among archaeophytes, but there are also other families that are rich in archaeophytes (e.g. *Apiaceae*, *Caryophyllaceae*, *Plantaginaceae* and *Boraginaceae*; Table 5).

Temporal trends and pathways of introduction

The data on the first record in the studied region, known for 771 neophytes, allow to reconstruct the increase in the number of taxa introduced into the Czech Republic over the last three centuries, although it is clear that the reliability of data on residence times decreases towards the past (Lambdon et al. 2008). The numbers of new taxa recorded in particular years reflect peaks associated with specific events such as the increased interest in plants of human-made habitats in the 1970s, linked to the establishment of a working group at the Institute of Botany (Hejný et al. 1973, Pyšek 2001, Pyšek et al. 2003, 2011b), or the publication of the first catalogue of Czech alien plants (Pyšek et al. 2002). However, when the cumulative number of the first species records is plotted against time, the trend suggests a rather steady increase of four alien arrivals per year since the beginning of the 19th century

Table 4. – Genera with the highest diversity of alien taxa in the Czech flora, cross-tabulated according to immigration time and invasion status. The 23 genera represented by at least 10 alien taxa are shown. Other taxon-rich genera include *Avena*, *Cirsium*, *Hordeum*, *Malva*, *Papaver*, *Setaria*, *Silene*, *Sisymbrium*, *Symphyotrichum* (8 alien taxa), *Brassica*, *Camelina* and *Fumaria* (7 alien taxa). Hybrids are included. Cas – casual; natur – naturalized non-invasive; inv – invasive.

	Archaeophytes			Neophytes			Total		
Genus	cas	natur	inv	cas	natur	inv	archaeophytes	neophytes	all aliens
Amaranthus	1	1		16	4	2	2	22	24
Oenothera				16	7		0	23	23
Trifolium				16	3		0	19	19
Chenopodium	1	5		9	2		6	11	17
Rumex				11	3	3	0	17	17
Viola	4	3		8	2		7	10	17
Bromus	2	5		8	1		7	9	16
Solanum		1		14	1		1	15	16
Centaurea	1	1		11	2		2	13	15
Vicia	2	6		6	1		8	7	15
Rubus				9	5		0	14	14
Allium	3	1		8	1		4	9	13
Artemisia	1	2		7	3		3	10	13
Euphorbia		4		9			4	9	13
Epilobium				11	1		0	12	12
Geranium		4		5	3		4	8	12
Lepidium		4		6	2		4	8	12
Veronica		7		3	2		7	5	12
Atriplex	3	3	1	4			7	4	11
Prunus	2	5	1	2		1	8	3	11
Eragrostis			1	8	1		1	9	10
Lathyrus	1	1		6	2		2	8	10
Sedum				6	4		0	10	10

without any distinct decelerating trend and a projected total number of 1264 taxa in the year 2050. Fifty per cent of the present known taxa were recorded up to 1935, 60% up to 1957, 70% up to 1963, 80% up to 1973, and 90% up to 1997 (Fig. 4). This indicates that the number of alien taxa recorded in the Czech Republic will be increasing at a similar rate in the near future, corresponding to a trend reported for Europe (Hulme et al. 2009) and creating an invasion debt (Essl et al. 2011).

As to the pathways of introduction into the country, deliberate introduction was involved in 747 of the 1454 taxa (51.4%). Most deliberate introductions resulted from ornamental or horticultural plantings (see Pyšek et al. 2002 for detailed analyses of planting purposes). The remaining 48.6% of taxa are assumed to have arrived by unintentional pathways, i.e. mostly as contaminants of commodities or stowaways (Hulme et al. 2008, Pyšek et al. 2011b). The ratio of deliberate and unintentional introduction is reversed in archaeophytes and neophytes, with 30.7% of the total number of taxa deliberately introduced among the former and 57.9% among the latter.

Table 5.– Families with the highest diversity of alien taxa in the Czech flora, cross-tabulated according to immigration time and invasion status. The 29 families represented by at least 10 alien taxa are shown. Hybrids are included. Cas – casual; natur – naturalized but non-invasive; inv – invasive. The classification of families follows that of Angiosperm Phylogeny Group: APG III (Stevens 2001 onwards, Angiosperm Phylogeny Group 2009).

	Archaeophytes			Neophytes			Total		
Family	cas	natur	inv	cas	natur	inv	archaeophytes	neophytes	all aliens
Asteraceae	18	26	1	114	22	17	45	153	198
Poaceae	14	20	4	99	15		38	114	152
Brassicaceae	10	22		50	17	2	32	69	101
Rosaceae	7	10	1	54	19	1	18	74	92
Fabaceae	5	11		58	15	2	16	75	91
Amaranthaceae	9	11	1	42	8	5	21	55	76
Lamiaceae	12	9		30	9		21	39	60
Apiaceae	14	6	2	18	2	1	22	21	43
Onagraceae				29	8		0	37	37
Solanaceae		3		30	3	1	3	34	37
Caryophyllaceae	6	7	1	14	5		14	19	33
Plantaginaceae	2	12		12	6		14	18	32
Polygonaceae	2	1		18	5	6	3	29	32
Boraginaceae	4	7		17	2		11	19	30
Papaveraceae	3	11		10	2		14	12	26
Ranunculaceae	2	3		15	4		5	19	24
Malvaceae	3	4		13	2		7	15	22
Geraniaceae		5		9	3		5	12	17
Violaceae	4	3		8	2		7	10	17
Amaryllidaceae	3	1		9	2		4	11	15
Asparagaceae		1		12	2		1	14	15
Euphorbiaceae		5		10			5	10	15
Crassulaceae				9	5		0	14	14
Cucurbitaceae	3	2		4	1	1	5	6	11
Orobanchaceae	1	2		7	1		3	8	11
Saxifragaceae				10	1		0	11	11
Campanulaceae				9	1		0	10	10
Iridaceae		2		7	1		2	8	10
Rubiaceae	1	3		6			4	6	10

Life histories and regions of origin

Among all aliens, 43.3% are annuals, 33.1% perennials, 10.8% biennials, 8.5% shrubs or semishrubs, and 4.3% trees. Archaeophytes and neophytes demonstrate a highly significant difference in the distribution of life histories: the former are more often annuals (56.4% vs 38.8% among neophytes) or biennials (17.0% vs 8.6%) and less often perennials (18.2% vs 38.3%) or shrubs and trees (8.5% vs 14.3%; Fig. 5).

The main donors of alien plants to the Czech Republic are the Mediterranean region (34.6%), other parts of Europe (19.4%), other parts of Asia (13.1%) and North America (12.6%). The contribution of other regions (Central America, South America, Africa, Australia) does not exceed 4%. The region of origin could not be assigned for 199 taxa, a group consisting of 105 anecophytes and 94 taxa of hybrid origin (Fig. 6). The data on origins confirm the well-known difference between archaeophytes and neophytes in terms

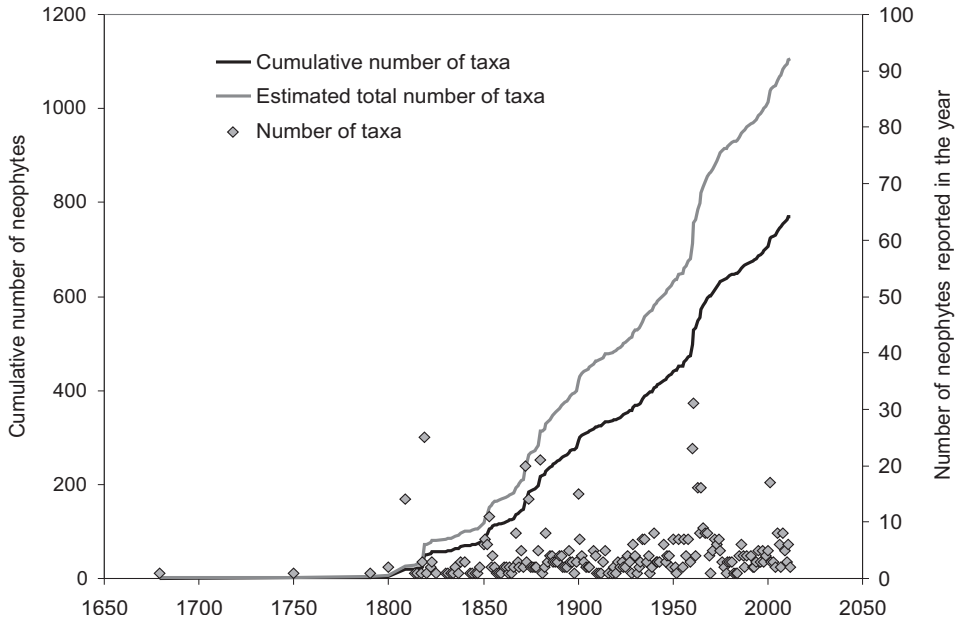

Fig. 4. Temporal trends in the alien flora of the Czech Republic in the last 200 years based on neophytes with known year of the first report (n = 771). Also shown is extrapolated trend for the total number of taxa (n = 1104), and numbers of taxa reported in particular years (right axis).

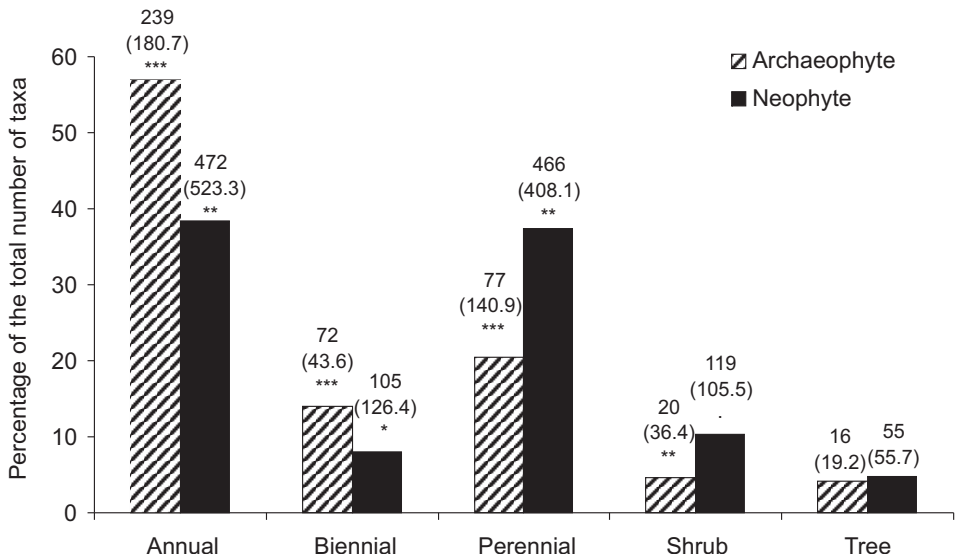

Fig. 5. – Representation of life histories among alien taxa in the Czech Republic. Taxa with multiple life histories were considered in each category so the sum of the numbers of taxa (shown on top of the bars) does not match the total numbers of archaeophytes and neophytes. Overall, the observed counts of alien taxa highly significantly ($\chi^2 = 94.25$; df = 4; $P < 0.0001$) differ from counts expected by chance (values in parentheses). Statistically significant deviations of individual counts from counts that can be expected by chance are expressed by the number of asterisks (*** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$) and marginal significance by a dot (. $P < 0.1$); numbers in parentheses not followed by any symbol do not differ from randomly expected values. Semishrubs are included within shrubs. Excluded from these statistics are 4 ferns (all neophytes), 11 aquatic species (all neophytes) and 11 parasitic species (3 archaeophytes, 8 neophytes).

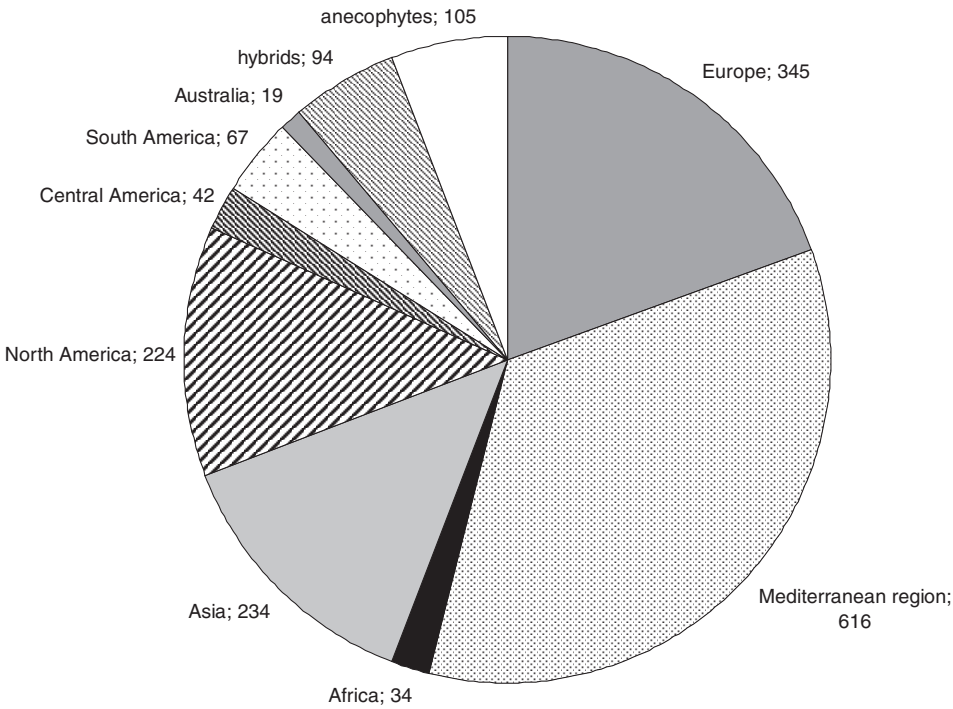

Fig. 6. – Proportional contribution of the world regions to the alien flora of the Czech Republic. Region names are followed by numbers of taxa native to that region. Note that native distribution regions extend over more than one area, therefore the sum of taxon numbers exceeds the total of 1454 recorded in the present study. Europe, Asia and Africa refer to parts of these continents outside the Mediterranean region. Taxa originated through hybridization and anecophytes are shown separately.

of source regions (e.g. Pyšek et al. 2002, 2004b, 2005, Chytrý et al. 2005, 2008a, b): more than a half (52.7%) of archaeophytes originate from the Mediterranean region (the figure increases to 64.5% if anecophytes and hybrids are excluded), which is, however, also the most frequent donor of neophytes (28.7%). The contribution of other parts of Europe and Asia to the total number of taxa is slightly higher for neophytes than for archaeophytes, 19.9% vs 17.8% and 14.2% vs 10.1%, respectively (Fig. 7).

Since archaeophytes, by definition, have not arrived from overseas, it is plausible to compare their regions of origins with those of neophytes if Americas and Australia are excluded. The difference between archaeophytes and neophytes in such a comparison is still statistically highly significant ($\chi^2 = 45.057$; df = 3; $P < 0.0001$). Highly significantly ($P < 0.001$) more archaeophytes originated in the Mediterranean region (231 vs 180.5 expected counts), but highly significantly less ($P < 0.01$) in the other parts of Asia (44 vs 67.9), significantly ($P < 0.05$) less in the other parts of Europe (78 vs 100.1) and marginally significantly less ($P < 0.1$) in Africa (5 vs 9.6). Conversely, neophytes originated in the Mediterranean region were significantly less represented (385 vs 436.5) and those from the other parts of Asia marginally significantly more represented (190 vs 164.1).

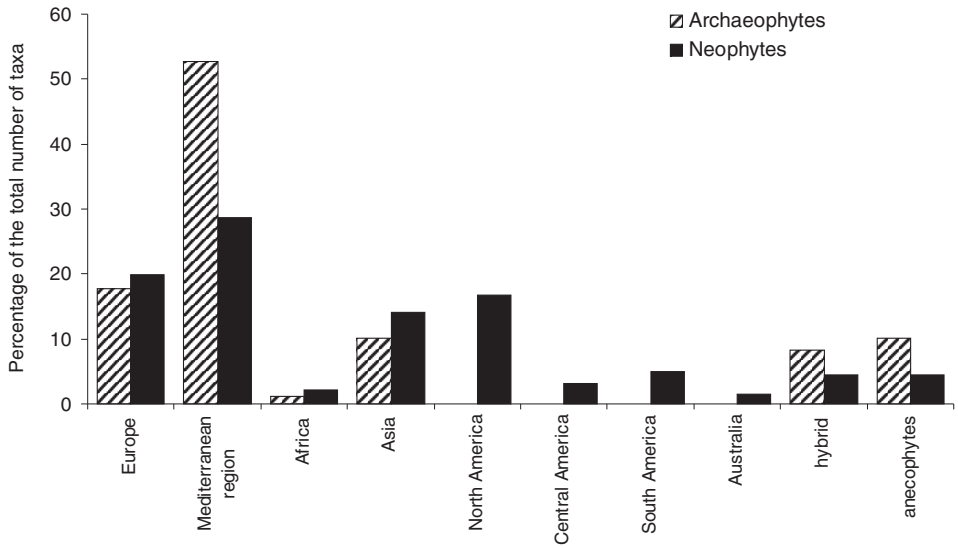

Fig. 7. – Distribution of archaeophytes and neophytes in the Czech Republic according to their origin. Taxa originating from multiple regions as designated here are included in each region. See text for the results of statistical analysis.

Regional abundance, habitats and cover in plant communities

Archaeophytes are generally more abundant in the field, which reflects that they were provided with more time in the target region (Pyšek et al. 2002, 2004b, 2011a). Of the total number of archaeophytes, 22.0% are considered common (highly significantly more than expected by chance), 2.9% locally abundant and 28.5% scattered (highly significantly more than expected by chance). This pattern strikingly contrasts with that found for neophytes. Only 2.9% of neophytes (35 taxa) are classified as common (highly significantly less than expected by chance) and 3.0% locally abundant, 8.1% scattered (highly significantly less than expected) while as many as 86.0% occur in low-abundance categories (rare, single locality or vanished; with the last two categories occurring highly significantly or significantly, respectively, more often than expected by chance); the corresponding figure for archaeophytes being 46.6%, with these categories significantly or highly significantly underrepresented. Two hundred and twelve neophytes (17.7%) are only known from a single locality (compared to only five archaeophyte hybrids; Appendix 2) and 250 (22.6%) are labelled as vanished (compared to only 27 archaeophytes, i.e. 7.7%) (Fig. 8).

The contrasting patterns in the occurrence of both immigration status groups, archaeophytes and neophytes, translate into those of the breadth of their habitat niches, expressed as the number of habitats of the total of 88, occupied by 497 taxa that could be classified according to their habitat affinities (Sádlo et al. 2007). Archaeophytes occupy on average more habitats (9.5±9.0, mean±S.D., n = 244) than neophytes (6.4±6.1, n = 253), and 31.6% of them occur in more than 10 habitats (compared to only 17.8% of

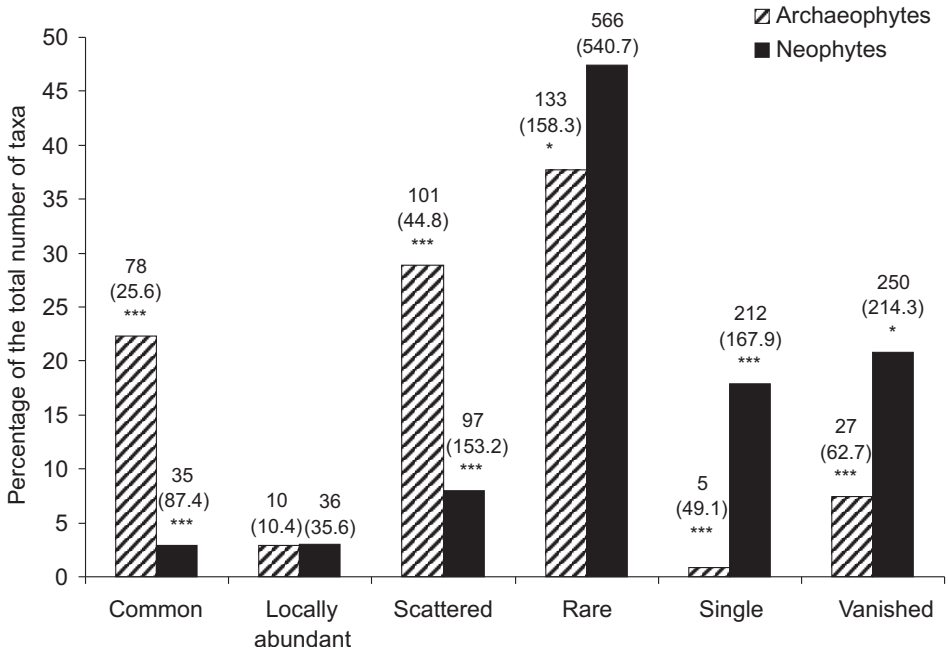

Fig. 8. – Distribution of alien taxa in the Czech Republic in abundance categories. The sum of the numbers of taxa, shown on top of the bars, exceeds the total numbers of archaeophytes and neophytes as some taxa occurred in a single location and disappeared; they are included in both 'single' and 'vanished' categories. Overall, the observed counts of alien taxa highly significantly ($\chi^2 = 312.392$; df = 5; $P < 0.0001$) differ from counts expected by chance (values in parentheses). Statistically significant deviations of individual counts from counts that can be expected by chance are expressed by the number of asterisks (*** $P < 0.001$; * $P < 0.05$); numbers in parentheses not followed by any symbol do not differ from randomly expected values.

neophytes; Fig. 9). Ten archaeophytes and only three neophytes (*Conyza canadensis*, *Epilobium adenocaulon* and *Impatiens parviflora*) grow in a wide range of habitats exceeding 30 (see Sádlo et al. 2007: their Table 2). The species with the broadest habitat niche of all alien taxa in the Czech Republic is an archaeophyte, *Arrhenatherum elatius*, occurring in 62 of 88 habitats (see Appendix 1 for comments on its classification).

The covers that alien taxa reach in plant communities in the Czech Republic yield a completely opposite picture of neophyte vs archaeophyte comparison (Fig. 10). Neophytes are shifted towards high-cover categories, reaching on average 8.5% cover (n = 48), markedly more than archaeophytes (4.7%, n = 131). The first five taxa with highest average covers are all neophytes: *Acorus calamus* 39% (recorded in n = 293 vegetation plots), *Elodea canadensis* 35% (n = 412), *Helianthus tuberosus* 26% (n = 62), *Heracleum mantegazzianum* 26% (n = 27) and *Reynoutria japonica* var. *japonica* lumped with *R.* ×*bohemica* 26% (n = 51). Other neophytes with a high cover are *Impatiens glandulifera* (18%, n = 302), *Solidago gigantea* (17%, n = 99), *Echinocystis lobata* (14%, n = 33) and *Pinus nigra* (13%, n = 33).

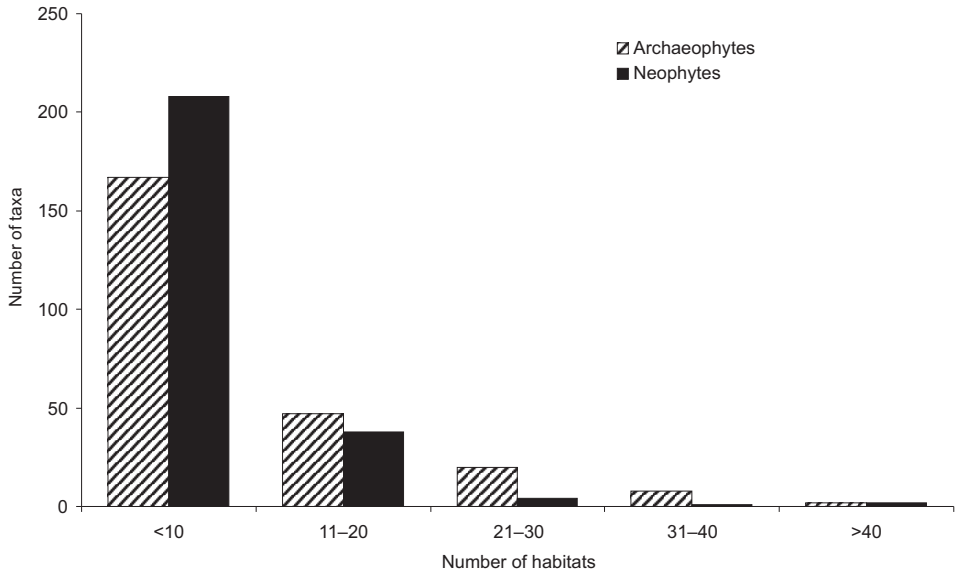

Fig. 9. – Frequency distribution of the numbers of habitats (n = 88) in which alien taxa are recorded, shown separately for archaeophytes (n = 244) and neophytes (n = 253).

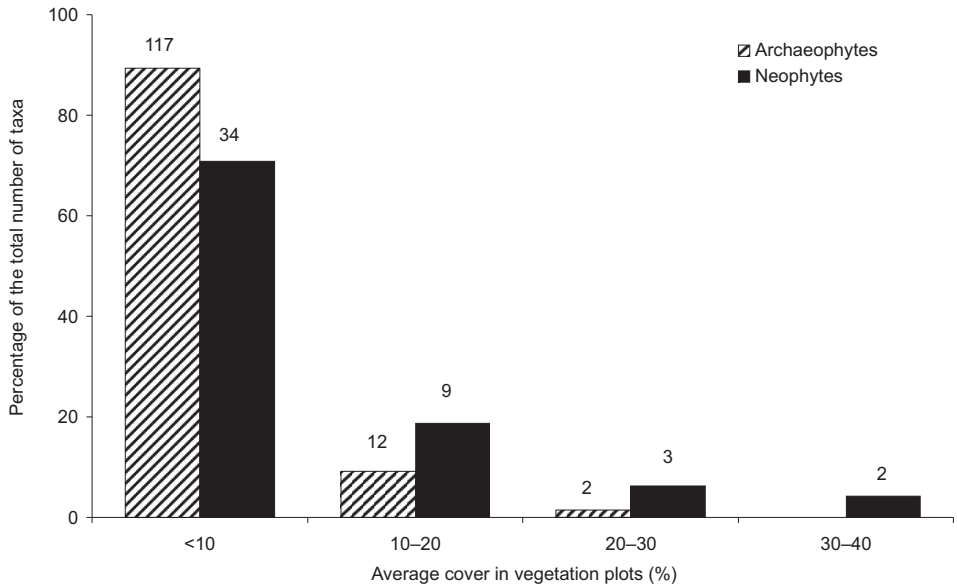

Fig. 10. – Frequency distribution of covers of alien taxa in plant communities in the Czech Republic. Only taxa for which data from at least 25 plots are available were included. Numbers of taxa in each cover class are shown on top of the bars.

Although this comparison must be taken with caution because the vegetation plots were sampled in a subjective, preferential way, average plot sizes for individual taxa differ and there is also great variation in the number of plots from which the data are derived, the differences between the two groups of aliens are robust enough to indicate that neophytes are on average more successful in colonizing plant communities and often forming monodominant stands (see also Chytrý et al. 2008a).

Impact

A thorough assessment of impacts of plant invasions in the Czech Republic is still missing which reflects the fact that studies summarizing information on impacts across alien floras of large regions are still rare despite intensive research in the last few years (Parker 1999, Gaertner et al. 2009, Pyšek & Richardson 2010, Vilà et al. 2010, 2011, Winter et al. 2009, Pyšek et al. 2012). Based on data on impacts of alien plants in Europe summarized by the DAISIE project (DAISIE 2009, www.europe-aliens.org), there are 133 taxa on the list of Czech alien plants that were documented in the literature to exert ecological impacts and/or economic impacts in some parts of Europe (Appendix 2), some of them also in the Czech Republic (Hejda et al. 2009). These data make it possible to highlight taxa that already impose ecological impacts but also those that can become threat in the future.

The group of taxa with documented ecological impacts covers 33 taxa that are classified as invasive in the present study, and includes most of the major invaders in the Czech Republic, some of them threatening seminatural habitats (e.g. *Acer negundo*, *Ailanthus altissima*, *Helianthus tuberosus*, *Heracleum mantegazzianum*, *Impatiens glandulifera*, *Impatiens parviflora*, *Lupinus polyphyllus*, *Lycium barbarum*, *Pinus strobus*, *Prunus serotina*, *Reynoutria japonica* var. *japonica*, *R. sachalinensis*, *R.*×*bohemica*, *Robinia pseudoacacia*, *Rudbeckia laciniata*, *Solidago canadensis* and *S. gigantea*) but also noxious weeds of arable land (e.g. *Amaranthus retroflexus* and *Galinsoga parviflora*) or species affecting human health (*Ambrosia artemisiifolia*). Besides these taxa, already exerting impacts in the Czech Republic, the 113 taxa with ecological impacts in Europe include 45 that we currently classify as naturalized; some of them belong to population groups that exhibit symptoms of starting spread and their impact in the near future is likely (e.g. *Abutilon theophrasti*, *Lepidium virginicum* and *Senecio inaequidens*). Finally, for 35 taxa that occur as casual in the Czech Republic ecological or economic impact is documented from elsewhere in Europe; this group includes some noxious invaders (e.g. *Elodea nuttalii*, *Rosa rugosa* and *Solidago graminifolia*) that should be monitored to enable early action should their population dynamics change (Appendix 2).

Notes on the classification of taxa

The present update of the 10 years old data yielded a number of changes to the taxa listed, and their invasion and residence time statuses. These changes are due to several reasons. First, they reflect the real changes in species' behaviour and their invasion dynamics over the last decade. Second, the interest in and knowledge of alien plants has improved considerably as a result of intensive research in biological invasions in the Czech Republic during this period. Third, the more conservative approach towards what should be considered native or alien also brought about changes in the species list, and finally, introducing the

population-based approach to the classification of taxa adopted here (Blackburn et al. 2011) resulted in shifts in invasion status.

The main change in approach relative to the previously used scheme concerns a strict focus on the current state of a taxon's populations in a region. This allowed us to take into account and quantify categories that refer to unsuccessful invasions – the 'invasion failure' and 'boom and bust' phenomena as defined by Blackburn et al. (2011). This is reflected namely in classifying taxa that formed self-sustained populations in the past, some assumed to have been invasive (and labelled post-invasive in Pyšek et al. 2002), as casual, suggesting the reversed trajectory along the INIC (Fig. 2). Although they would not be classified as casuals, should the criterion of relying on repeated introduction of propagules, which is part of the traditionally accepted definition, be strictly followed (Richardson et al. 2000, 2011), we believe that the criterion of population self-sustainability is a more important one, reflecting closely the population dynamics in both directions along the INIC. This approach is further supported by the fact that many of these taxa are red-listed or missing for a long time, which strongly argues against self-sustainability of their populations. This group includes also many archaeophytes that have never been planted indicating that their occasional occurrence is due to long-term survival in and occasional germination from seed banks.

Consequently, the number of invasive taxa is substantially smaller than in the previous catalogue (50 neophytes and 11 archaeophytes in the present study compared to 69 neophytes and 21 archaeophytes, respectively, in Pyšek et al. 2002). A decrease this dramatic is due to the newly adopted conservative approach; unlike in the previous account, the emphasis here was on ongoing spread as a major criterion. The lower numbers do not mean that the problems with invasive plants in the Czech Republic are diminishing; rather the opposite is true as indicated by species that started to spread recently. In conclusion, we believe that the more rigorous approach to separating invasive species from naturalized makes the current assessment of species status more comparable with other parts of the world, especially those that experience serious problems with invasions, and forms a sounder basis for managing plant invasions at the national scale.

See http://www.preslia.cz for Electronic Appendices 1,2

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Souhrn

Práce přináší úplný seznam nepůvodních taxonů zaznamenaných na území České republiky; je aktualizací a doplněním předchozího seznamu publikovaného v roce 2002. Zahrnuje nové údaje shromážděné za poslední desetiletí a přehodnocuje zařazení a status některých druhů, vyplývající z rozvoje taxonomického poznání. Nepůvodní flóra České republiky zahrnuje 1454 taxonů, které jsou uvedeny v Apendixu 2 s informacemi o taxonomické příslušnosti, životní formě, oblasti původu, invazním statusu (zda jde o druh přechodně zavlečený, naturalizovaný avšak neinvazní, nebo invazní), charakteru výskytu v krajině, době zavlečení (archeofyt nebo neofyt), způsobu introdukce do země a u neofytů o datu prvního nálezu. Oproti původnímu katalogu je uveden počet typů biotopů, ve kterých se druh vyskytuje, pokryvnost v rostlinných společenstvech a impakt. Podíl zavlečených druhů v české flóře je značný: tvoří jej 350 (24,1%) archeofytů a 1104 (75.9%) neofytů. Nárůst počtu taxonů oproti původnímu katalogu, který uváděl 1378 taxonů, vyplývá z toho, že bylo přidáno 151 taxonů. Celkem 75 (39 archeofytů a 36 neofytů) bylo naproti tomu vypuštěno; značná část tohoto počtu jde na vrub přeřazení 41 taxonů mezi původní druhy, a to vesměs na základě archeobotanických dokladů. Přírůstky na seznamu představují taxony nově objevené a uvedené v botanické literatuře od roku 2002, taxony zařazené na základě excerpce dříve opominutých zdrojů či revize zdrojů použitých, nebo přehodnocení statusu některých taxonů tradičně považovaných za původní. V některých případech jde o infraspecifické taxony, které nebyly dříve v české flóře rozeznávány. Seznam obsahuje 44 taxonů, které jsou uváděny pro Českou republiku poprvé jako zavlečené, nebo pro něž je podán první důkaz o jejich zplaňování: *Abies concolor*, *A. grandis*, *A. nordmanniana*, *Avena sterilis* subsp. *ludoviciana*, *A.* ×*vilis*, *Berberis julianae*, *B. thunbergii*, *Bidens ferulifolius*, *Buddleja alternifolia*, *Buglossoides incrassata* subsp. *splitgerberi*, *Buxus sempervirens*, *Corispermum declinatum*, *Cotoneaster dielsianus*, *C. divaricatus*, *Euphorbia myrsinites*, *Gleditsia triacanthos*, *Helleborus orientalis*, *Hieracium heldreichii*, *Koelreuteria paniculata*, *Lonicera periclymenum*, *Lotus ornithopodioides*, *Malus baccata*, *M. pumila*, *Miscanthus sacchariflorus*, *Morus alba*, *Muscari armeniacum*, *Paeonia lactiflora*, *Pennisetum alopecuroides*, *Pinguicula crystallina* subsp. *hirtiflora*, *P. grandiflora* subsp. *rosea*, *Podophyllum hexandrum*, *Pyracantha coccinea*, *Rhodotypos scandens*, *Rumex patientia* × *R. tianschanicus* 'Uteuša', *Salix cordata*, *Sarracenia purpurea*, *Sasa palmata* 'Nebulosa', *Scolymus maculatus*, *Spiraea japonica*, *Tagetes tenuifolia*, *Thuja occidentalis*, *Vaccinium corymbosum* a *Viburnum rhytidophyllum*. Komentáře ke všem přidaným nebo vypuštěným taxonům jsou uvedeny v Appendixu 1. Z celkového počtu 1454 taxonů je jich 985 klasifikováno jako přechodně zavlečené, 408 jako naturalizované a 61 jako invazní. Úbytek invazních taxonů oproti původnímu katalogu je důsledkem konzervativnějšího přístupu: za invazní jsou považovány pouze ty taxony, které se v současnosti šíří. Mezi neofyty převládají přechodně zavlečené taxony (76,7 % ze všech neofytů, ale jen 39,4 % archeofytů), mezi archeofyty naturalizované (57,4 % versus 18,8 % neofytů). Pokud jde o podíl invazních druhů, není mezi oběma skupinami statisticky průkazný rozdíl. Z celkového počtu 1104 neofytů jich 250 vymizelo (byly pozorovány pouze jednou nebo několikrát a z lokalit vymizely nebo nebyly zaznamenány po dlouhou dobu); 23,3 % jich zdomácnělo a 4,5 % se stalo invazními. Vedle tradiční klasifikace postavení druhu v invazním procesu byly taxony klasifikovány do 18 populačních skupin, definovaných na základě dlouhodobých trendů v metapopulační dynamice, současného stavu populace na území ČR a přísunu diaspor z kultury. Tato podrobná klasifikace umožnila kvantifikovat, v jaké fázi invazního procesu dochází ke „ztrátám" a jak jsou tyto ztráty velké. Podle toho, zda zahrneme do srovnání zavlečené a původní flóry specifické kategorie taxonů (vymizelé a vyhynulé, kříženec), tvoří nepůvodní taxony 29,7–33,1 % z celkové flóry. Pokud vyčíslíme podíl pouze pro zdomácnělé, tedy trvale přítomné složky zavlečené flóry, dospějeme k 14,4–17,5 %. Analýza roků prvního nálezu, který je k dispozici pro 771 neofytů, ukazuje, že nepůvodní druhy přibývají v květeně České republiky stálým tempem; extrapolujeme-li tato data na všechy neofyty, lze předpovědět, že do roku 2050 by jejich počet měl vzrůst na 1264. Přes polovinu taxonů (747, tj. 51,4 %) bylo zavlečeno alespoň zčásti prostřednictvím kultury, zbývajících 48,6 % neúmyslně. Archeofyty jsou obecně v krajině hojnější a obsazují širší spektrum stanovišť než neofyty; ty naopak dosahují v průměru větší pokryvnosti v invadovaných společenstvech. Práce dále analyzuje složení nepůvodní flóry z hlediska příslušnosti k rodům a čeledím, oblasti původu a životní formy.

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Appendix 1. – Comments on taxa that represent changes against the previous Catalogue of alien plants of the Czech Republic (Pyšek et al. 2002).

Changes of names, difficult cases and corrections of earlier misidentifications

Compared to the previous version of the catalogue (Pyšek et al. 2002), 124 names were changed due to nomenclatural reasons or development in taxonomic opinion (Electronic Appendix 1). Additional seven taxa are listed under a different name due to the reidentification; their names refer to the same taxa which were erroneously determined in 2002 or their taxonomic classification has changed. These taxa are commented below and represent additions to the alien flora of the country.

Azolla filiculoides was listed as *A. caroliniana* in Pyšek et al. (2002), based on treatment in the Flora of the Czech Republic (Křísa in Hejný & Slavík 1988). The taxonomy of the New World *Azolla* has been controversial for a long time. The number of distinguished species varied and different characters were used for their identification. However, Evrard & Van Hove (2004) in their recent thorough investigation based on morphological, molecular and physiological data concluded that only two species can be distinguished taxonomically in America. They revealed that the type specimen of *A. caroliniana* belongs to the species described earlier as *A. filiculoides*, and the fern usually identified as *A. caroliniana* by many authors should be correctly named *A. cristata*. Although both species were recorded as introduced in Europe, only *A. filiculoides* is widespread, whereas *A. cristata* was apparently documented only from the Netherlands. Plants recently collected in the Czech Republic are identical with *A. filiculoides* (coll. and det. Z. Kaplan, PRA, rev. C. Van Hove). The other species, *A. cristata* (*A. caroliniana* auct.), has apparently never occurred in the country as introduced or escaped.

Corispermum pallasii was listed in Pyšek et al. (2002) as *C. leptopterum*. However, recent taxonomic studies revealed that the European plants are conspecific with the Siberian ones, described much earlier as *C. pallasii* (Mosyakin 2003). Vymyslický & Grulich (2004), reporting on their find of *Corispermum* from Ivančice, distr. Brno, suggested that southern Moravian plants correspond to *C. canescens*, which is native to Hungary. However, based on a careful re-examination of specimens from BRNU and PR (J. Danihelka), we believe that all *Corispermum* specimens so far collected in the Czech Republic, with the only exception of *C. declinatum* (see below), most likely belong to *C. pallasii*. The earliest documented record of this species is from 1933 (ex herb. F. Hrobař, PR). At present, *C. pallasii* occurs in two populations consisting of thousands of plants in sand pits near Bzenec, southern Moravia, from where it is spread with traded sand to other places.

Eriochloa punctata. Three *Eriochloa* species were reported in the literature from the Czech Republic: *E. ramosa* from a wool-processing factory Mosilana in Brno (Dvořák & Kühn 1966, Grüll 1979) and *E. punctata* from railway station in Brno (Grüll 1979); these two species are given in the Flora of Dostál (1989), who in addition lists *E. procera*, all as casual wool aliens introduced to Brno. Actually, the names *E. procera* and *E. ramosa* refer to the same taxon, with the former accepted as its correct name (Zuloaga & Morrone 2003, Shouliang & Phillips 2006). The plant reported as *E. ramosa* by Dvořák & Kühn (1966), collected by F. Kühn in 1960, was deposited in BRNU in 1972 under the name *E. punctata*; obviously, J. Dvořák re-determined the plant before depositing it in the herbarium. Comparison of the specimen collected by F. Kühn in 1960 and another specimen collected by F. Grüll in 1965 (reported by Grüll 1979) has shown that both of them very likely represent the same species, most probably *E. punctata*, as already suggested by J. Dvořák (rev. J. Danihelka). Consequently, the species listed as *E. procera* in Pyšek et al. (2002) is in fact *E. punctata*, the same as found by Grüll (1979).

Gilia achilleifolia. Another species of the genus, *G. multicaulis*, is listed in Pyšek et al. (2002), based on a note in the Flora of the Czech Republic (Křísa in Slavík 2000) that it is planted and rarely escapes from cultivation, without further details. In 2005, two flowering plants of *G. achilleifolia* were reported growing in the Stárkovský les forest near Lanžhot, southern Moravia, on a forest clearing along a road, together with *Legousia pentagonia*. They were probably introduced to the site with forestry vehicles (Řehořek & Lososová in Hadinec & Lustyk 2009). Since *G. multicaulis* is sometimes classified as *G. achilleifolia* var. *multicaulis*, we included only *G. achilleifolia* as it is possible that the above reports refer to this taxon.

Hieracium heldreichii agg. Listed in Pyšek et al. (2002) as *H. pannosum*, a cultivation relict. In the 1930s it was introduced at Kunětická hora hill near Pardubice (eastern Bohemia) and is still persisting there. The species, originally determined as *H. pannosum* by J. Holub, has been now re-identified by Z. Szeląg as *Hieracium* sp. ex *H. heldreichii* agg. The species is native to the Balkan Peninsula.

Rodgersia pinnata. The species reported in Pyšek et al. (2002: Fig. 1b) as *R. aesculifolia* was misidentified. The mistake was corrected by Král et al. (2004c).

Spiraea hypericifolia subsp. *obovata* was listed as *S. crenata* in Pyšek et al. (2002), based on the escape from cultivation reported from ruins of the Skalka castle near Vlastislav, northern Bohemia, at the end of the 19th cen-

tury (Koblížek in Hejný & Slavík 1992). This report was based on erroneous determination of a herbarium specimen that belongs to *S. hypericifolia* subsp. *obovata* (Businský & Businská 2002).

New taxa: additions to the alien flora of the Czech Republic

The following 151 taxa, not listed in Pyšek et al. (2002), represent additions to the alien flora of the Czech Republic:

Abies concolor, *A. grandis* and *A. nordmanniana*. Natural regeneration from seed produced by planted trees occurs in the Průhonice Park near Prague (J. Burda, pers. comm.).

Acanthus hungaricus. A rarely planted species in the Czech Republic, first recorded as escaped from cultivation in Praha (Prague)-Lipence in 1999. The population of ca 150 flowering plants, reproducing by seed and surviving winter, probably resulted from planting along the wall of a baroque farmstead in the early 1990s (Hadinec in Hadinec & Lustyk 2009).

Acer tataricum was part of the Czech flora in the Subatlantic period but became extinct (Opravil 1967). Its modern presence is due to escapes from cultivation and subsequent naturalization, with the first record of planting in 1835 (Koblížek in Slavík 1997a). In 2004, it was recorded regenerating in the Hevlínské jezero Nature Reserve, distr. Znojmo, southern Moravia (Čáp & Koblížek in Hadinec et al. 2005 as var. *torminaloides*). Self-sown plants established from seed were further observed in the vicinity of planted individuals in numerous locations in Prague (Suchdol, Černý Most and Libeň; recorded by J. Sádlo in 2011–2012).

Actinidia deliciosa was first recorded in the wild at the channelled stream of Botič in Prague in 2008, forming a population of seven sterile plants, originated from seed of the kiwi fruit (Hadinec et al. in Hadinec & Lustyk 2008). The first report in Europe of its occurrence outside cultivation is from Germany in 1998 (Kasperek 2003), followed by records in other countries and natural habitats. Seeds germinate well, plants spread vegetatively and survive mild winters. Populations in suitable climatic conditions can be therefore considered as likely candidates for naturalization and spread (Hadinec et al. in Hadinec & Lustyk 2008).

Ageratina altissima occasionally escapes from cultivation, with so far the single documented record from the vicinity of the Ostravice railway station in northeastern Moravia in 1979 (Slavík in Slavík & Štěpánková 2004).

Allium cristophii. A commonly planted species, found in a scrub near Kostomlaty, central Bohemia, in 1994. Occasional escapes from gardens can be expected also in other places, but since the bulbs are consumed by rodents, its naturalization is unlikely (Krahulec & Lepší in Hadinec & Lustyk 2009).

Allium roseum. In 2005 a population of 18 plants was recorded in Hojná Voda, southern Bohemia, at a site that is probably a long abandoned garden, and it was still present there in 2009; further spread cannot be excluded as the species is a prolific bulbil producer (Krahulec & Lepší in Hadinec & Lustyk 2009).

Allium stipitatum. A frequently planted species, found once escaped from cultivation along a road in Hradčany, central Bohemia, in 2008. Occasional escapes from gardens can be expected due to frequent planting but naturalization is unlikely because bulbs are consumed by rodents (Krahulec & Lepší in Hadinec & Lustyk 2009).

Allium zebdanense. First documented from abandoned garden allotments in Praha-Střížkov in 2006, but the species is known to grow spontaneously for several decades in the Botanical Garden of Charles University in Prague. It has not been reported escaped from cultivation from other central European countries as yet, but further records from the wild are likely to appear in the future because plants produce a number of small bulbils providing the species with potential to spread (Krahulec & Marek in Hadinec & Lustyk 2006).

Amelanchier alnifolia was first recorded outside cultivation in Český Krumlov, southern Bohemia, in 2008 (Lepší & Lepší 2008), but it was uncertain if the plants were escapees from cultivation or remnants from planting. Since then it has been repeatedly observed as escaping from cultivation (M. Lepší, pers. comm.).

Amelanchier spicata. First documented from the wild by a herbarium specimen collected near Havlíčkův Brod in 1880, the species was recently reported from 32 localities scattered over the country, growing naturalized in scrub, oak and pine forests, their margins and in river valleys. A recent review revealed that it is the most frequently planted and escaping species of the genus in the Czech Republic (Lepší & Lepší 2008).

Ammobium alatum is planted as an ornamental plant and rarely escapes from cultivation (Slavíková in Slavík & Štěpánková 2004). Outside cultivation it is reported from several sites in the Železné hory Mts, with the first record from 1942 (Hadač et al. 1994), and from a ruderal site in Bruntál, northern Moravia (Hradílek et al. 1999).

Amsinckia lycopsoides was found once growing in a lawn in Brno-Bohunice in 2000, probably introduced with soil or as a seed admixture. The population was destroyed by planting of shrubs in the following year (Rotreklová & Řehořek in Hadinec & Lustyk 2009). It was also growing on rocks adjacent to a private garden in Vimperk, southwestern Bohemia, following an unintentional introduction. It survived there for several years in the 1990s (F. Krahulec, pers. obs.).

Anthemis cotula × *Cota tinctoria* (syn. *Anthemis* ×*bollei*). This hybrid was found once in Břeclav-Poštorná, southern Moravia (1994, BRNU; Dvořáková in Slavík & Štěpánková 2004).

Anthemis cretica subsp. *columnae*. Status of this taxon in the Czech botanical literature is unclear. It was reported from three localities since 1871, last observed in the 1920s (Dvořáková in Slavík & Štěpánková 2004). Given the scattered distribution in the mountains of southwestern Europe and northern Africa, and the fact that Czech localities are rather isolated occurrences north of the Alps, we follow the treatment in Euro+Med Plantbase (Greuter 2006–2009), which considers the species as alien to the Czech Republic and assigns Czech populations to *A. cretica* subsp. *cretica*.

×*Anthematricaria dominii* (= *Anthemis cotula* × *Matricaria chamomilla*). A single plant was found at the Vltava river bank in Praha-Zlíchov in 1929 (Rohlena, PRC; Dvořáková in Slavík & Štěpánková 2004).

Artemisia alpina. One population was observed in Újezd near Brno outside a garden in a partly mown lawn. Two young plants were found growing at a railway bank 80–100 m from the source population, suggesting that the species reproduced by seed at the locality, and died later due to summer drought (Čáp in Hadinec & Lustyk 2011).

Asparagus officinalis subsp. *officinalis*. This old cultural vegetable and medicinal plant has been widely cultivated in central Europe since the 16th century, and at the territory of the Czech Republic since the 18th century. It is naturalized in warm parts of the country. Some localities are remnants of cultivation in gardens or fields (Bělohlávková & Slavíková in Štěpánková 2010).

Avena sterilis. Two subspecies of the species given in Pyšek et al. (2002) are newly recognized in the country. *Avena sterilis* subsp. *sterilis* was planted in botanical gardens and nurseries in the 19th and the first half of the 20th century, with the first record of planting in the Kačina castle in 1836, from where it occasionally and temporarily escaped. The oldest records are from ruderal sites in Praha-Zlíchov (1922) and from a railway station Praha-Michle (1923). However, these records are not supported by herbarium specimens. The second subspecies, *A. sterilis* subsp. *ludoviciana*, was also formerly planted in botanical gardens, and occasionally found in waste places in Semily (1966 V. Jehlík, PRA), Prague (1968 Z. Kropáč, PRA) and Malý Budíkov near Humpolec (1965 A. Čábera, CB). Čábera (1967) published his find under the name *A. strigosa* (J. Zázvorka in Štěpánková in prep.).

Avena ×*vilis* (= *A. fatua* × *A. sativa*). Individual plants of this hybrid are occasionally found in the fields of *A. sativa* within the distribution range of *A. fatua* (J. Zázvorka in Štěpánková in prep.).

Berberis julianae. Self-sown young shrubs originated from a source population nearby were observed in a park plantation in Praha-Klánovice (50°05'42.2"N, 14°40'10.2"E) in 2010 (J. Sádlo).

Berberis thunbergii. A young shrub originated most probably from seed was found nearby a planting site in Stará Červená Voda, northern Moravia (50°19'44.9"N, 17°12'05.2"E) in 2011 (J. Sádlo).

Beta vulgaris Altissima Group. The annual weedy types that started to spread in the 1980s have been introduced with beet seed from southwestern Europe (Skalický & Pulkrábek 2006), where they originated through the pollination of cultivated sugar beet (*Beta vulgaris* Altissima Group) with the pollen of the wild *B. vulgaris* subsp. *maritima* or of weedy annual plants derived from some cultivars of the Altissima Group. For this reason, the assignment to the Altissima Group is a pragmatic solution, not fully reflecting the genetic nature of the plants concerned. A survey from 2006 revealed that "weed beet" occurred on 70% of farms over the Czech Republic growing sugar beet and on 4% of those its density exceeded 1000 plants/ha (Landová et al. 2010). The issue requires further study; the populations of weedy plants are now classified as invasive neophyte.

Bidens ferulifolius. Planted in flowerpots in towns and escaping from cultivation, growing in paving interstices and surviving temporarily, but not over winter (Mladá Boleslav and Náchod, P. Petřík; Bechyně and Prague, J. Sádlo). A vigorous population that was later destroyed by remodelling of the pavement was observed at the railway station in Jablonec nad Nisou, northern Bohemia, in 2006 (P. Petřík, pers. comm.).

Buddleja alternifolia. Several young shrubs up to 1.5 m tall, growing from seed, were recorded in ruderalized shrubland at abandonded factory yard in the Mostecká street, Chomutov, northern Bohemia (50°27'51.8"N, 13°25'12.7"E) in 2008 (K. Štajerová). The plants were present at this locality still in 2011 (J. Sádlo).

Buglossoides incrassata subsp. *incrassata*. A population of about 15 plants was observed at a railway station in Strážnice (distr. Hodonín, southern Moravia) in 2005 and first reported as *Lithospermum arvense* subsp. *sibthorpianum* (Jongepier et al. in Hadinec & Lustyk 2006), but the revision of herbarium specimens (BRNU) revealed that the identification was erroneous (rev. J. Danihelka, conf. E. Zippel, Berlin). The population still occurred in the locality in spring 2012 when about 11 m long strip with 10–15% cover of flowering plants was recorded between the rails (J. Jongepier, pers. comm.).

Buglossoides incrassata subsp. *splitgerberi*. This subspecies was first reported from the Czech Republic as *B. arvensis* subsp. *sibthorpiana* by Clermont et al. (2003), based on the specimens issued as no. 1654 of Fl. Exs. Reipubl. Social. Čechoslov. However, Jongepier et al. (in Hadinec & Lustyk 2006) considered this record erroneous and assigned duplicates of that gathering to *B. arvensis*. The presence of this subspecies is now confirmed by

numerous herbarium specimens (rev. J. Danihelka, conf. E. Zippel) from both Bohemia and Moravia, collected mostly from ruderal sites and dry graslands.

Bupleurum pachnospermum. The only find from the Czech Republic (1885 A. Oborny, PR) originates from the Dyje river valley near Znojmo, southern Moravia, and was reported by Snogerup & Snogerup (2001). It is considered here as a neophyte in accordance with the treatment for Austria (Fischer 2008) and in the Euro+Med Plantbase (Hand 2011).

Buxus sempervirens. Ongoing regeneration from seed is observed in the surroundings of planted shrubs in the Průhonice Park near Prague (J. Burda, pers. comm.). Several young shrubs were found in a natural ravine forest at Medník hill south of Prague, probably from self-seeding of shrubs planted near a cottage (2010 J. Sádlo).

Calystegia hederacea. The species has been observed since ca 25 years ago growing on settling fields of a sugar refinery in Kojetín, central Moravia (Trávníček & Dančák 2011).

Campanula lactiflora is documented from one locality at Kladská (distr. Cheb, western Bohemia), where it occurs at the margin of a peat meadow (first collected in 1973, F. Grüll, BRNU as *C. latifolia*), probably as a consequence of plantings in the area of a hunting lodge built in 1877–1878 (Řehořek in Hadinec & Lustyk 2009). Previously reported naturalized occurrence of this species in the former Czechoslovakia by Fedorov (1976) is doubtful and it is unclear on what data it was based (Řehořek in Hadinec & Lustyk 2009).

Caragana arborescens. Reported as escaping from windbreaks in southern Moravia, where it is extensively planted (Tichá 2004).

Capsella rubella. A population consisting of tens of plants was found in 2006 in a camping site Babí hora near Hluk, distr. Uherské Hradiště, SE Moravia, probably introduced by foreign tourists. The species is native to southern Europe and reported from several countries north of its native distribution, e.g. Austria, Switzerland, Germany, Belgium and the UK (Jongepier in Hadinec & Lustyk 2007).

Carex grayi. A species occasionally planted in botanical and private gardens; three plants were found on a ruderal site at the railway station Zastávka u Brna, southern Moravia, in 2010. The plants did not persist until next year due to construction works at this site (Hrbáč in Hadinec & Lustyk 2012).

Centaurea carniolica. A herbarium specimen collected in Hradec Králové was found in PRC (1914 K. Prokeš; Koutecký 2008).

Centaurea ×javorkae (= *C. nigrescens* × *C. oxylepis*). A hybrid involving the casual neophyte *C. nigrescens* was collected in 1933 near Litovel, distr. Olomouc (Novák, PRC; Koutecký & Štěpánek in Slavík & Štěpánková 2004).

Centaurea ×extranea (= *C. jacea* × *C. nigrescens*). Another hybrid involving *C. nigrescens*, listed under the name *C. ×thaiszii* in the Flora of the Czech Republic, is documented with certainty from two localities but its occurrence is probable in other localities where mixed populations of both parents occur (Koutecký & Štěpánek in Slavík & Štěpánková 2004).

Centaurea transalpina. Collected in Orlík nad Vltavou, southern Bohemia, around 1900 (K. Domin, PRC; Koutecký 2008).

Cichorium endivia. Escape from cultivation of about 40 plants in Brno-Lesná close to a bus stop was recorded in 1968 (Dvořáková in Slavík & Štěpánková 2004). In 2009, several tens of plants were recorded in an old field in the military training area of Boletice, distr. Český Krumlov, southern Bohemia (Grulich in Hadinec & Lustyk 2011). The species was most likely introduced to the country as a vegetable in the 16th century (Petráčková et al. 1982).

Cirsium ×moravicum (= *C. arvense* × *C. rivulare*). This hybrid between an archaeophyte and a native species is known from one locality between the villages Ústí and Skalička, distr. Přerov, central Moravia (Bureš in Slavík & Štěpánková 2004).

Convallaria majalis var. *transcaucasica*. Planted in a hospital in Klatovy, western Bohemia, from where it spread into a nearby park and formed a viable population, which is still present. The introduction was by a local botanist M. Král in the 1970s (Čížek & Král 2009, Slavík & Zázvorka in Štěpánková 2010).

Coreopsis lanceolata was found in 1962 at Kunětická hora hill near Pardubice, eastern Bohemia, where it was surviving for several years, with most plants remainig sterile (Bělohlávková in Slavík & Štěpánková 2004).

Corispermum declinatum was collected in Praha-Stodůlky in 1960 (S. Hejný, PRC, det. J. Danihelka). The specimens come from the same locality as that of *C. pallasii*, treated in the Flora of the Czech Republic under the name *C. leptospermum* (Tomšovic in Hejný & Slavík 1990). This source notes that the collection included another species that remained unidentified, probably *C. squarrosum* (= *Agriophyllum squarrosum*) or *C. orientale*.

Cotoneaster dielsianus. Ongoing regeneration from seed is observed in the Průhonice Park near Prague (J. Burda, pers. comm.).

Cotoneaster divaricatus. A frequently planted species of the genus escaping from cultivation by seed dispersed by birds. It was recorded, for example, in Mikulov and Brno (J. Danihelka) or Praha-Klánovice (a fruiting

shrub in a woodland near railway station; J. Sádlo 2010 BRNU, det. J. Danihelka and V. Řehořek, rev. J. Koblížek).

Cotoneaster zabelii. First reported from Černvír, distr. Žďár nad Sázavou, where several older shrubs and saplings grow on a rock above the Svratka river ca 100–150 m from the maternal shrub planted at a nearby house (Čáp in Hadinec & Lustyk 2007).

Crocus tommasinianus. The species was deliberately planted in the wild at Velká hora hill near Srbsko, Bohemian Karst, central Bohemia, before WWI, where it survived for several years, last observed in 1931 (Chrtek in Štěpánková 2010).

Crocosmia ×crocosmiiflora. Frequently planted hybrid, originated in cultivation, sometimes planted also in the wild or rarely escaping from cultivation (Chrtek in Štěpánková 2010).

Cyperus glomeratus. Rarely found escaped from cultivation (Kubát et al. 2002), first recorded in the Brdy Mts, central Bohemia, in 1895, later collected near Protivín, southern Bohemia, in 1947 and in Brno in 1965 (K. Kubát in Štěpánková in prep.).

Darmera peltata. The species was first found growing along a wet road ditch near Lukavice, western Bohemia, in 1960. The locality was later destroyed and the species was found again at the periphery of Klatovy town, western Bohemia, in 2004. The latter population consisted of a group of fruiting plants growing close to private gardens, and plants that grew from seed, scattered along a nearby stream (Král et al. 2004c). A herbarium specimen is deposited in PR (O. Šída, pers. comm.).

Digitaria ciliaris. The occurrence of this species in the Czech Republic was first reported by Wilhalm (2009) who refers to a herbarium specimen from Podhůří, distr. Trutnov, collected on a decayed waste from cotton processing in 1908 (V. Cypers, BC). Another specimen from the same locality, collected one day later, is deposited at BRNU (no 5272, leg. V. Cypers). It needs to be noted that the name *Panicum ciliare* Retz., a basionym of the name *D. ciliaris*, repeatedly appears in herbaria and floristic literature from the Czech Republic since the first half of the 19th century, but based on morphological descriptions and numerous gatherings, the plants actually represent *D. sanguinalis* var. *pectiniformis*, which we consider a naturalized archaeophyte. The reference in Wilhalm (2009) to plants collected by V. Cypers is therefore the first record of this casual neophyte in the country (see Danihelka in Hadinec & Lustyk 2011 for details and references therein).

Dittrichia graveolens. Thirteen localities from 2008–2009 are listed from the Czech Republic in a recent paper reporting it as a new species of the Czech flora (Raabe in Hadinec & Lustyk 2009). This Mediterranean species has been spreading rapidly in Central Europe, following the first reports at the beginning of the 1980s and 2000s in Germany and Austria, respectively, where it forms extensive stands in highway medians. In the Czech Republic, it was very abundant along the D1 highway Prague – Brno already in 2008, forming large stands close to Brno and Velké Meziříčí (Raabe in Hadinec & Lustyk 2009). In 2011, it was seen at other 10 sites between km 27 and km 106 (U. Raabe, pers. comm.). At present it spreads further southeastwards to Bratislava, and it is also recorded from the D11 highway (J. Rydlo, pers. comm.) and the Nymburk district, central Bohemia (F. Krahulec, pers. observ.). The species is thus classified as naturalized even though the first documented record from the Czech Republic is very recent.

Egeria densa, planted in aquaria, was observed two times in the wild: in a pond in the Kinského sady park in Prague in 1991, and in a village pond in Borek near České Budějovice, southern Bohemia. The finds are most likely due to deliberate release; the plants do not survive winter in local conditions (Kaplan in Štěpánková 2010).

Elaeagnus commutata was planted on a spoil heap Antonín in the Sokolov coal mining area, northwestern Bohemia, during rehabilitation activities in the first half of the 1970s (Dimitrovský 2001) and spread over an area of several hectares, first along roads but gradually also elsewhere, forming dense stands in places (P. Krása & V. Grulich, pers. comm.).

Eragrostis pectinacea. The species was first collected in a botanical garden in Olomouc (1937 O. Leneček, PRC) and one tussock was observed in Pardubice, eastern Bohemia, in 2000–2001 (P. Špryňar, PRC). It was reported as a new alien species in the Czech flora based on a thorough revision of herbarium collections of the genus (Špryňar & Kubát 2004).

Eragrostis pilosa was traditionally considered as native based on a near-natural character of the locality from which it has been known since the beginning of the 20th century, but this view was recently reconsidered based on a revision of the genus in the country (Špryňar & Kubát 2004). The species was first collected at Znojmo-Hradiště, southern Moravia, in 1902 (A. Wildt, BRNM) where it still grows, and reported from several other localities in warm regions, including slaughter house in Praha-Holešovice where it was surviving for 30 years. It is still included among Red List species as a critically endangered (Holub & Procházka 2000), based on the Hradiště locality. We follow the opinion of Špryňar & Kubát (2004) and consider it as a naturalized neophyte.

Euphorbia agraria. A single plant was found growing on abandoned valley terraces close to Komořany, distr. Vyškov, in 2005, and disappeared by 2008 when the grassland was mown. The find represents the first report not only for the Czech Republic but the whole of Central Europe (Čáp 2008, Čáp in Hadinec & Lustyk 2009).

Euphorbia myrsinites was found in 1998 growing on garden waste at an abandoned quarry on Svatý kopeček hill near Mikulov, southern Moravia (J. Danihelka). In 2009, several tens of plants were found in a sand pit in Tasovice near Znojmo, southern Moravia. Most likely, deliberate planting of the species in the wild was followed by its proliferation by seed (J. Sádlo).

Euphrasia salisburgensis and *Gentianella obtusifolia* subsp. *norica*. These two species were most likely deliberately introduced to the Rýchory range, Krkonoše Mts, at the end of the 19th century (Štursa et al. 2009), and repeatedly collected during the first half of the 20th century mostly around the Rýchorská studánka spring. The idea of deliberate introduction into the wild is supported by the species being not reported as a part of local flora by botanists working in the area in the 19th century (A. F. Pax, R. Traxler).

Fallopia ×*convolvuloides*. A hybrid between an archaeophyte *F. convolvulus* and a native species *F. dumetorum*, occasionally found where both species grow together (Chrtek in Hejný & Slavík 1990).

Ferulago confusa was collected at two localities: in an oak forest in the Koda Nature Reserve near Tetín, distr. Beroun, central Bohemia, in 1998 (one plant), and in a dry grassland in the Kamenný vrch Nature Reserve in Brno-Starý Lískovec in 2002. The species still occurs at the latter site, with 2–3 flowering plants observed every year (O. Rotreklová, pers. comm.). It is not cultivated in the Czech Republic, except perhaps in some botanical gardens, and it is not reported as escaped from cultivation in the neighbouring countries. The way of introduction is therefore unclear, and given that both localities were discovered at about the same time, deliberate sowing cannot be excluded (Rotreklová & Řehořek in Hadinec & Lustyk 2009).

Filago pyramidata was collected at two localities, Olomouc and Olomouc-Černovír in 1833 and 1860, respectively (both specimens at W), and not observed since then (Wagenitz 1965). This corresponds to the fact that the species' native distribution was more extensive until the 19th century, allowing for introductions to the Czech Republic, but it has been retreating since then (M. Štech in Slavík & Štěpánková 2004).

Gaillardia ×*grandiflora* is a commonly cultivated ornamental hybrid, occasionally found escaping (Bělohlávková in Slavík & Štěpánková 2004). It was recorded in Mikulov, southern Moravia, where the plants seeded for two years in 2003–2004 at the foot of a wall, and in Břeclav-Poštorná, southern Moravia (2003 J. Danihelka, MMI).

Galium murale. Five fruiting plants were recorded at the Albertov university canteen entrance in Prague in 2009, eight plants in 2010 and two plants in 2011. In Europe the species was up to now only reported as an alien from the UK and Belgium (Prančl in Hadinec & Lustyk 2012).

Geranium purpureum was first recorded at a railway station Hrušovany u Brna in 2005. Three years later it was found at all stations between Hrušovany and Brno (Růžička & Koblížek 2009). Further spread is likely in the near future.

Gleditsia triacanthos. The species occasionaly occurs in near-natural vegetation. While it is not clear whether older trees are cultivation remnants or established spontaneously, a massive occurrence of seedlings was documented from an exposed bottom of the Prostřední rybník fishpond near Lednice, southern Moravia (2008 J. Danihelka, BRNU).

Gratiola neglecta was recorded at two sites near Lázně Bohdaneč, eastern Bohemia, in 2002, and at one site in the surroundings of Blatná, southern Bohemia, in 2008 (Šumberová & Ducháček 2009).

Helianthemum nummularium subsp. *nummularium*. Occasionally planted as a garden ornamental, reported to escape in Olomučany near Brno (Hrouda in Hejný & Slavík 1990).

Helichrysum thianschanicum. Plants usually assigned to this species are known to have occurred on Kunětická hora hill near Pardubice (Štech in Slavík & Štěpánková 2004), together with several other species associated with intentional introductions of many species that were planted at the locality in the 1930s by a nature history society from Pardubice (Pyšek et al. 2002). The record is based on a herbarium specimen collected in 1941 (V. Horák, MP; M. Štech, pers. comm.).

Helleborus orientalis. A hybrid population involving this species (see Jäger et al. 2008) persists outside cultivation in the Průhonice Park near Prague (P. Sekerka, pers. comm.).

Herniaria incana. The species was recorded in a mown dry grassland near Hříměždice, central Bohemia, in 1986 (Hlaváček 1989). It reproduced by seed and persisted in the locality until the beginning of the 1990s (Hlaváček & Pyšek 1992). Later it started to retreat due to changes in the management of the site (R. Hlaváček, pers. comm.).

Hieracium mixtum. A population of a flowering maternal plant and several juveniles was found growing on a stony slope along a hiking trail to Mt Praděd, Hrubý Jeseník Mts, at 1355 m a.s.l., in 2006. By 2010, the population increased and one of the juveniles was also flowering. The species is a triploid apomict not requiring pollination

for seed production, and is rarely planted as an alpine plant in rockeries, and traded by garden centres. Its occurrence most likely results from deliberate planting or sowing in the wild (Kocián & Chrtek in Hadinec & Lustyk 2011).

Hordeum brevisubulatum. A herbarium specimen collected in 1974 (M. Dvořáková?, BRNU 605154) on a waste place in a textile factory Brunka in Humpolec, distr. Pelhřimov, was identified as the first record of this species in the country. It was almost certainly introduced with wool of Soviet origin, most likely from southern Siberia or central Asia (Danihelka in Hadinec & Lustyk 2009).

Hyacinthoides hispanica was recorded escaped from cultivation near a fishpond in Prague and in a forest near Mašov, eastern Bohemia, in 2007 and 2008, respectively (Trávníček 2010, Hadinec & Lustyk 2012). Another plant was found in the Herštýn Nature Reserve near Kdyně, western Bohemia, in 2009 (P. Petřík, pers. comm).

Hypericum annulatum. A population of about 20 plants was recorded on a power plant fly ash heap near railway station at Oslavany, distr. Brno, in 2008 (Sutorý 2010a, b, Hadinec & Lustyk 2012).

Koelreuteria paniculata. Copious regeneration from seed was observed in park plantations in Brno and Lednice, both in 2009 (J. Sádlo).

Lamium ×*holsaticum*. A hybrid of the archaeophyte *L. album* with the native *L. maculatum*, assumed to occur rather frequently near the populations of its native parent (Dvořáková in Slavík 2000).

Lathyrus hirsutus. The species was considered native in the Flora of the Czech Republic (Chrtková & Bělohlávková in Slavík 1995), but its native distribution range in southern Europe, character of habitats and namely the absence from old floras (e.g. Čelakovský 1868–1883) are arguments against its native status; we suggest it be classified as a neophyte but its status requires further study (see also Hadinec & Lustyk 2011).

Legousia pentagonia. Recorded in the Czech Republic for the first time in 2005, when several flowering plants were found on a forest clearing along a road near Lanžhot, southern Moravia, together with two plants of another casual neophyte, *Gilia achilleifolia*. The species was probably introduced to the site with forestry vehicles (Řehořek & Lososová in Hadinec & Lustyk 2009).

Lilium bulbiferum. Although some authors consider its localities in southern Bohemia as a margin of its native distribution, we classify the species as an archaeophyte, following the recent treatment in Flora of the Czech Republic (Hrouda in Štěpánková 2010).

Lilium candidum. A frequently planted species, occasionally surviving as a cultivation relic, or growing in places with deposited garden waste (Hrouda in Štěpánková 2010).

Lolium ×*hybridum.* A hybrid between a neophyte *L. multiflorum* and the native *L. perenne* is reported to occur by Kubát et al. (2002).

Lonicera periclymenum is occasionally reported in the literature, but without the character of occurrence specified. Therefore it is in most cases difficult to decide whether the reports relate to surviving, originally planted shrubs, cultivation relics or escape. Extensive clonally spreading stands were recorded in ruins of the Ronov castle near Česká Lípa (50°37'13.3"N, 14°24'52.1"E) in 1994 (J. Sádlo) and in a wet forest margin near Doksy (50°34'20.7"N, 14°39'12.2"E) in 2010 (J. Sádlo), both northern Bohemia.

Lotus ornithopodioides is occasionally found on fodder plots in game preserves in southern Moravia, growing from seed most likely originating from Fodder Research Institute in Troubsko near Brno. It is documented by herbarium specimens from two sites: (i) Mikulov: Bulharská obora game reserve, fodder plot between a water hole and path along the fence, ca 4.1 km ENE–E of the town church (1997 J. Danihelka, MMI, det. T. Vymyslický); (ii) Lanžhot: a small forest meadow south of the bend of the Iklínská cesta forest road, 3.7 km SSE–S of the church (1996 J. Danihelka, MMI).

Malus baccata. Ongoing regeneration from seed is observed in the whole area of the Průhonice Park near Prague (J. Burda, pers. comm.).

Malus fusca. A young flowering shrub grown from seed was found in 2004 near Telnice, distr. Brno. The species was not observed in cultivation in the wider surroundings of the locality, suggesting probable dispersal by birds. Seeds collected at the locality germinated easily (Řehořek in Hadinec & Lustyk 2009).

Malus pumila. A species of unclear origin, introduced to Europe from the Southern Caucasus where it does not, however, occur in the wild (Dostálek in Hejný & Slavík 1992). It is known from the territory of the present Czech Republic since 1852. At present it is mostly planted as a rootstock for *M. domestica* and occasionally reported as escaped in the floristic literature from various parts of the country (Křivánek 2008).

Malva sylvestris var. *mauritiana*. The taxon was listed in Pyšek et al. (2002) at the species level, now both varieties occurring in the country are included (Appendix 2). This old variety of unclear origin is occasionally planted as a medicinal or ornamental herb and temporarily escapes from cultivation (Slavík in Hejný & Slavík 1992).

Matricaria chamomilla. The species is considered as an archaeophyte in Central Europe, following the treatment in the Flora of the Czech Republic. It is planted as a medicinal herb and is common throughout the country as a weed on arable land or at ruderal sites (Kubát in Slavík & Štěpánková 2004).

Matricaria chamomilla × *Tripleurospermum inodorum*. An intergeneric hybrid between two archaeophytes, so far only reported from Germany and the Czech Republic. Several plants were collected at two localities in Prague in 1929 (Rohlena 1930, Kubát in Slavík & Štěpánková 2004).

Meconopsis cambrica. A frequently planted ornamental species, reported to escape easily from cultivation. It was recorded spreading in an abandoned garden in Zahrady, distr. Děčín, northern Bohemia, in 2000 (Kubát in Härtel et al. 2002, Hadinec et al. 2003).

Miscanthus sacchariflorus. Several tussocks grown from seed were observed in a garden allotment in Ostrá, distr. Nymburk, central Bohemia, in 2003, and one young plant on a garden waste in a quarry near Velká Vápenná, Jeseníky Mts in 2010 (J. Sádlo).

Morus alba is reported in literature (Křivánek 2008), but in most cases it is difficult to decide whether the reports relate to surviving, originally planted trees, cultivation relics or escapes. Regeneration by seed is, however, reported from Slovakia, where the species is classified as naturalized (Medvecká et al. 2012).

Muscari armeniacum was reported as likely to escape from cultivation but not observed as such in the Flora of the Czech Republic (Hrouda in Štěpánková 2010). However, it was recorded in many localities in Prague and Mělník, central Bohemia (both J. Sádlo), and Brno and Mikulov, southern Moravia (both J. Danihelka).

Muscari botryoides is an archaeophyte with scattered distribution in the past, but not observed since the last record in 1995 (Hrouda in Štěpánková 2010).

Opuntia polyacantha is a taxonomically complex species, also reported under other names in the horticultural literature, e.g. *O. erinacea* var. *utahensis* (Bíba 2007). Here these two names are synonymized following a flora from the species' native range (Pinkava 2003). It is recorded from several localities in warmer regions, e.g. Lovoš hill near Litoměřice, northern Bohemia, Prague and Brno and their surroundings. Populations range from those of seedlings (Průhonice Park near Prague) to those of polycormons with estimated age of 20 years in the Skalky u přehrady Nature Reserve near Brno-Bystrc (L. Tichý, pers. observ.). It is assumed to have been deliberately planted in these localities (Hadinec & Kubát in Hadinec et al. 2004). The first observation of such plants comes from the Dalejský profil Nature Reserve in Prague in 1997 (Špryňar et al. 1998). The other species of the genus, *O. phaeacantha*, listed in Pyšek et al. (2002) is reported from Slánská hora hill in the town of Slaný, central Bohemia, surroundings of Prague, the České středohoří hills, northern Bohemia, and the Pavlovské vrchy hills, southern Moravia, assumed to persist following deliberate planting (Kubát et al. 2002, Pyšek et al. 2002).

Paeonia lactiflora escapes from cultivation in gardens, persists in abandoned nurseries and garden allotments, and on rubbish tips from garden waste; it regenerates vegetatively from rhizome segments. It was recorded as escaped e.g. in Praha-Kbely in 2011 (J. Sádlo).

Pennisetum alopecuroides. One flowering plant was found in Praha-Satalice, on stairs of a house, in 2002 (J. Sádlo).

Physalis pubescens. A single plant was recorded on a soil heap in Zlatá Koruna, distr. Český Krumlov, southern Bohemia, in 2001, but no longer found when the locality was revisited in 2002 (Lepší 2005).

Pimpinella peregrina. A population of this species scattered along about 300 m long strip on a ruderal site was recorded in Ústí nad Labem in 2011 (Nepraš et al. 2011). Its introduction was probably linked with recent remodelling of a railway corridor. Its spread in the neighbouring Saxony, observed since the 1990s, is attributed to grass seed used for revegetation following building activities (Nepraš in Hadinec & Lustyk 2012). Further spread in the Czech Republic thus cannot be excluded.

Pinguicula crystallina subsp. *hirtiflora* and *P. grandiflora* subsp. *rosea*. Both taxa were recorded on a tufa cascade in a forest near Tichá in the Beskydy Mts, distr. Nový Jičín, northern Moravia, in 2006, where it was probably deliberately planted. The population of the former taxon has considerably spread in the locality since then (A. Veleba, M. Chytrý).

Podophyllum hexandrum. Found at a forest margin by the Nový Herštejn castle near Kdyně (49°24'45.8"N , 13°04'00.2"E), western Bohemia, in 2009 by P. Slovák, close to an abandoned garden (P. Petřík, pers. comm.).

Pontederia cordata is occasionally planted as an aquatic ornamental in garden ponds, and recorded from several localities outside cultivation in 2004–2007. These occurrences are mostly due to deliberate planting in the wild, with plants surviving as cultivation relics. Plants found in the Labe river near Chvalovice (river km 62.91), central Bohemia, were obviously dispersed to the site by water and observed in two subsequent years, 2006 and 2007 (Kaplan in Hadinec & Lustyk 2009).

Potentilla adscharica. The species was first collected escaped in the Botanical garden of Charles University in Prague in 1947, then repeatedly at the then unfinished Prague – Brno highway in 1950–1956; both finds were

probably related to plants spreading from the botanical garden, and they are only two records of this species in Europe (Soják 2007).

Potentilla radiata. Repeatedly collected in the Průhonice Park near Prague in 1920–1926; the occurrence has not been confirmed since then (Soják 2007).

Primula rosea. A Himalayan species recorded for the first time in the Czech Republic at two sites in the Praděd Nature Reserve, Hrubý Jeseník Mts, in 2005. It is likely that this popular garden ornamental was deliberately planted in a spring fen where it occurs (Kočí in Hadinec & Lustyk 2007).

Ptelea trifoliata is reported growing along roads in Bruntál, northern Moravia (Opravil 1961). A fruiting shrub was also seen at the fence of the Michelská plynárna gasworks in Prague in 1964 (Skalická & Svoboda 1971).

Pteris multifida. One plant was found growing in a wall crevice in Prague in 1998, but it was destroyed next year during the facade renewal (Ekrt in Hadinec & Lustyk 2011).

Pulmonaria rubra. Several populations were found scattered in different habitat types along ca 2 km of the Všenorský potok stream near Všenory, distr. Praha, in a woodland valley. The species was first collected in 2001, then again in 2002 but at the time of the first collection it was already growing at that site for some time (V. Větvička, pers. comm.). The species is very rarely planted in the Czech Republic as a garden ornamental. It is very likely that the escape from cultivation is related to a former experimental gardening centre, used as an acclimation garden of the Institute of Botany AS CR, which is located up the stream (Hadinec & Rydlo in Hadinec et al. 2004).

Pyracantha coccinea. A popular ornamental shrub, recently found escaping from cultivation with increasing frequency in urban shrubland and grassland, ruderal sites, usually spread by seed to a short distance (up to 100 m) from cultivated plants. Numerous localities were recorded in Prague in 2002–2012 (J. Sádlo). One shrub 4–5 m tall was also found in a shaded forest near the Koněpruské jeskyně caves, distr. Beroun, central Bohemia, in 2008 (R. Hlaváček, pers. comm.).

Rhaponticum carthamoides. The species started to be planted as a medicinal plant in the 1980s. It was first recorded escaped from cultivation in 1991 in a road ditch near Vlkava, central Bohemia, not far from a field where it was planted. The second record, from 2003, refers to individual plants surviving on an abandoned field in Velký Osek, central Bohemia, after the cultivation has ceased (Řehořek in Hadinec et al. 2004).

Rheum officinale. Five localities are reported in the Novohradské hory Mts, southern Bohemia, one of them has been surviving since the 1980s (Lepší et al. 2006). Other localities found recently in mountainous areas of northern Bohemia (Šída in Hadinec & Lustyk 2008) make further spread of the species likely.

Rhodanthe manglesii. Reported as escaped from cultivation in Chudenice, distr. Klatovy, western Bohemia (Dostál et al. 1948–1950, Štech in Slavík & Štěpánková 2004).

Rhodotypos scandens. A locally naturalized population has been observed since the early 1990s in the Boří les forest between Valtice and Břeclav, southern Moravia, where the species has spread and formed a vital population. The species was introduced to cultivation in the region probably in the 1920s, when former pastures south of the Prostřední rybník fishpond were afforested mainly with introduced species (J. Uher, pers. comm.). This is the first case when the species became locally established in Europe; so far it is only reported as casual from Belgium and Hungary (DAISIE 2009), as well as from Vienna in Austria (Fischer 2008).

Ribes sanguineum. Several tens of flowering shrubs were found along a tourist path in a spruce and larch plantation close to a chalet settlement near Dolany, distr. Olomouc, central Moravia. As the species increasingly appears on sale in garden centres, its spread by birds is likely. Plants growing in the locality probably belong to some of the numerous garden cultivars (Hadinec & Prach in Hadinec & Lustyk 2008).

Rodgersia podophylla survives as cultivation relic in parks for many decades, e.g. in Průhonice or Vrchotovy Janovice. Seeds do not germinate and plants spread only vegetatively (Sekerka 2009).

Rosa multiflora is reported as escaping from windbreaks in southern Moravia (Tichá 2004). Shrubs most likely established from seed were repeatedly observed at urban sites in Prague (J. Sádlo, pers. obs. 2009 and 2012).

Rudbeckia fulgida is a garden ornamental once documented as temporarily escaped from cultivation on a ruderal site at the Pustý rybník fishpond near Blatná, southern Bohemia (Deyl & Skočdopolová-Deylová 1989).

Rumex patientia × *R. tianschanicus* is a hybrid originated in cultivation in the Ukraine and planted as a biofuel crop in the Czech Republic since the 2000s, usually referred to as *Rumex* 'Uteuša'. Probably the first record outside cultivation was a single sterile plant at the western shore of the Rozkoš water reservoir, eastern Bohemia, in 2005, ca 3 km from the nearest planting plot (F. Krahulec). Since then it has been repeatedly reported as escaping from cultivation in other places elsewhere.

Rumex longifolius subsp. *sourekii.* Pyšek et al. (2002) listed only the species *R. longifolius* without indication of subspecies. Now both subspecies occurring in the country (subsp. *longifolius* and subsp. *sourekii*) are included.

This subspecies occurs in disturbed habitats at higher altitutes. In the 1990s it was locally common (Krkonoše Mts, Jizerské hory Mts) and spreading (K. Kubát in Hejný & Slavík 1990).

Salix melanopsis is locally naturalized at the Nové Mlýny water reservoirs, southern Moravia, where it was planted to prevent bank erosion in 1984–1992. It spreads by vigorous root suckers, but rooting of branches dispersed by water was also observed. The species was recorded on 10 out of 16 islands investigated and on the upper dam of the middle reservoir of Nové Mlýny. Plants cultivated in the Czech Republic are a single clone (Úradníček 2004).

Salix cordata. Originally reported as a find of a rooted branch at the Rovenský rybník fishpond under the name *Salix* 'Americana' (Krahulec 1975). A clone of this species (det. J. Koblížek) persists at one site in Česká Skalice, eastern Bohemia, since the 1960s, most probably as a cultivation relict; the population is maintained by rooting.

Santolina chamaecyparissus is occasionally planted in gardens and reported to escape rarely and temporarily, e.g. near Ledeč nad Sázavou, eastern Bohemia (Bělohlávková in Slavík & Štěpánková 2004).

Sarracenia purpurea. About 10 plants were recorded at the Řásník fishpond near Křižánky in the Žďárské vrchy Mts, eastern Bohemia, in 2011, having survived winter from the previous year. The plants were assumed to have been deliberately planted in the wild and since the locality is in a protected area, nature conservation authorities planned their eradication when the species was found. As the information appeared on the internet (http://www.novinky.cz/domaci/229243-na-vysocine-se-objevila-americka-masozrava-rostlina.html), the identification based on a photograph was possible. The species was also observed to survive winter and produce seedlings in a peaty site in a private garden in Liberec (L. Sekerka, pers. comm.). In the Borkovická blata peatbog near Soběslav, southern Bohemia, a single plant was planted in the wild, survived winter for several years and produced numerous seedlings before it was eradicated (M. Štech, pers. comm.).

Sasa palmata 'Nebulosa'. Two dense stands, the larger one of about 150 m^2, were found in Praha-Podhoří (50°07'25.1"N, 14°24'06.4"E) in 2012, probably resulting from former cultivation and subsequent vigorous clonal spread (J. Sádlo).

Scilla forbesii. The species is often planted and known to escape from cultivation in some botanical gardens and parks, first reported in the Podzámecká zahrada garden in Kroměříž in 1934 (H. Zavřel, BRNM, PR). Two confirmed records in the wild come from the surroundings of Prague, near Lhota in 1998 and in the Milíčovský les wood in 2000. It is likely that several herbarium specimens from the second half of the 20th century, determination of which was not possible due to collections late in the season, also relate to the species (Trávníček 2010, Trávníček in Štěpánková 2010).

Scilla sardensis is occasionally planted and recorded as escaped in two localities. A population of ca 100 plants was first observed in the castle park in Otín, western Bohemia, in 1965; by 2004 it has increased to 500–600 plants spontaneously occurring in the park (Král et al. 2004a). It was reportedly planted in the wild in the Průhonice Park near Prague (Blažek 1972), and recorded spontaneously growing in several other localities such as Ludéřov, central Moravia, and the university botanical garden in Olomouc (Trávníček 2010, Trávníček in Štěpánková 2010).

Senecio ×helwingii. A hybrid between the neophyte *S. vernalis* and the archaeophyte *S. vulgaris* is rarely found in populations of parental species (Grulich in Slavík & Štěpánková 2004).

Scolymus maculatus. Collected in 1969 at a rubbish tip in the former loam pit ("Kohnova cihelna") below Červený kopec hill in Brno, southern Moravia (F. Grüll, BRNU, det. J. Danihelka). It was erroneously determined as *Carthamus lanatus* and published under this name by Grüll (1979).

Sorbus austriaca was formerly considered native but the plants actually represent another species. A taxonomic revision revealed that *S. austriaca*, with the native distribution range from the Pyrenees to the Alps, has been planted in the Czech Republic since at least 1966 as a garden ornamental and alley tree, and rarely escapes from cultivation. So far it has been documented from two localities in central Bohemia: Průhonice and Benešov. A population of tens of young individuals up to 2–3 m tall was found growing along a tourist path in a woodland on Žďár hill near Rokycany, western Bohemia, in 1999 (Lepší et al. 2011).

Sorbus latifolia is occasionally planted in the Czech Republic and rarely escapes from cultivation (Lepší et al. 2011).

Spiraea japonica. Ongoing regeneration from seed is observed in the Průhonice Park near Prague where the species forms small stands (J. Burda, pers. comm.). Several occurrences outside cultivation were also reported in the floristic literature from the 1990s (Křivánek 2008).

Stachys setifera. A single clone with three flowering ramets was found on a sand heap in Brno-Stránice, southern Moravia, in 2007, and disappeared by the next year. The plant probably belonged to the subsp. *iranica*. It is unlikely that the species was planted nearby as it is not used as a garden ornamental or medicinal plant in the Czech Republic (Řehořek et al. in Hadinec & Lustyk 2009).

Symphyotrichum laeve × *S. lanceolatum* is a stabilized hybrid similar to taxa known from the native range in North America. Plants were so far only collected in Moravia: around Brno, Vyškov, Frýdek, and in the Moravian karst (Kovanda & Kubát in Slavík & Štěpánková 2004).

Tagetes tenuifolia is reported as not known to escape from cultivation in the Flora of the Czech Republic (Bělohlávková in Slavík & Štěpánková 2004), however, it was recorded in Nová Ves u Bakova in 2009 (J. Sádlo).

Thuja occidentalis. Young trees were recorded in Praha-Satalice, planted trees also occasionally regenerate on cemeteries and in villages (2012 J. Sádlo). It was also observed to regenerate, mostly from seed, near planted individuals in the Průhonice Park near Prague (J. Burda, pers. comm.).

Trachyspermum ammi was recently reported as a new alien species for the Czech Republic based on a herbarium specimen collected in Ústí nad Labem-Svádov on a sandy bank of the Labe river in 1903, and recently identified by M. Marek. The species probably originated in cultivation (Hadinec & Lustyk 2012).

Trifolium alpinum and *T. badium.* The species were most likely deliberately introduced to the Rýchory Range, Krkonoše Mts, at the turn of the 19th century (Štursa et al. 2009). *Trifolium alpinum* was collected once in 1919 (Kubát in Slavík 1995), *T. badium* repeatedly during the first half of the 20th century mostly around Rýchorská studánka spring, where it still survived at the end of the 2000s (F. Krahulec). The hypothesis of a deliberate introduction into the wild is supported by these species being not reported by the 19th century botanists working in the area (A. F. Pax, R. Traxler).

Trifolium vesiculosum was collected in 1989 in a field near Troubsko, distr. Brno, where it was previously planted as a genetic resource for fodder production (R. Řepka, BRNU), and escaped in Louky, distr. Zlín, northern Moravia, in 2009 (Řehořek in Hadinec & Lustyk 2012).

Typha laxmannii. Although previously considered native and even red-listed (Procházka 2001), the species is a naturalized neophyte first recorded in 1968 near Kroměříž (H. Zavřel, OLM). In 2010, there were about ten localities reported in the literature, and in recent years the species tends to spread at waterholes at reclaimed coal mining heaps, in sand pits and similar habitats. The spread is supported by frequent planting in garden ponds (Kubát in Hadinec & Lustyk 2012).

Vaccinium corymbosum. Hundreds of plants originated from seed were recorded in a peaty forest in the Borkovická blata peat bog near Mažice, southern Bohemia, in an abandoned planting site (2011 J. Sádlo).

Viburnum rhytidophyllum. Several young shrubs were found growing in a hedgerow in Brno-Řečkovice in 2011, resulting from natural regeneration of two large shrubs grown nearby (J. Danihelka), and in an abandoned garden in Průhonice (J. Sádlo).

Viola septemloba. An abundant self-sustaining population of the species was found at the Central Cemetery in Brno-Bohunice, in the part with soldiers' graves from the 1920s. It was first collected by K. Sutorý (BRNM) in 2003. This author suggests that since the species is not known as planted in Europe, it might have been introduced by legionnaires returning from Russia via North America to the former Czechoslovakia after WWI (Sutorý in Hadinec & Lustyk 2008).

Xanthium orientale. A North American species naturalized in southern Europe but only occasionally introduced to more northerly parts of the continent. In the Czech Republic it was collected only once at a ruderal site in Brno-Královo Pole in 1965 (F. Grüll, BRNU; Havlíček in Slavík & Štěpánková 2004).

Xanthium ×*kostalii*. A rare hybrid between the neophyte *X. albinum* and the archaeophyte *X. strumarium*, collected only from the surroundings of Děčín (1854 Malinský, PRC), northern Bohemia, and repeatedly from Kralupy nad Vltavou (1896, 1897, PRC), central Bohemia (Havlíček in Slavík & Štěpánková 2004). Recently, it was collected in the surroundings of Znojmo (R. Němec, MZ, rev. J. Danihelka).

Xerochrysum bracteatum. Flora of the Czech Republic stated that the species may very rarely escape from gardens where it is occasionally planted, but the authors were not aware of any report (Štech in Slavík & Štěpánková 2004). However, there is a report on its escape at a rubbish tip in Přímělkov near Jihlava, western Moravia, where the species was observed in 1991–1992 and 1994–1995 (Růžička & Zlámalík 1997).

Changes of immigration status

Residence time: neophytes reclassified as archaeophytes

Most changes to the residence time status are based on the sources that the authors of the original catalogue were not aware of, or that appeared since the publication of the original catalogue (Pyšek et al. 2002). This concerns namely extensive archaeobotanical research focusing on thorough analysis of archaeological sites in several parts of the Czech Republic, carried out by V. Čulíková (Most, Prague, Česká Lípa, Libice nad Cidlinou, Čáslav, Opava; summarized in Čulíková 1986, 1994, and reported in numerous papers referred to below) and E. Opravil (e.g. Opravil 1980, 1986, 1993, 1994). This research provided evidence of the medieval presence of a number of

taxa previously considered as neophytes at the territory of the Czech Republic: these taxa need to be reclassified as archaeophytes.

Allium cepa was part of medieval diet and is sporadically documented by archaeobotanical finds so far. A find from 1438 at Kozí Hrádek (distr. Tábor) is documented, and sporadic onion seed from the High Medieval come from Opava and Jihlava (Čulíková 2000; see also Čížek 1994).

Anthriscus cerefolium var. *cerefolium* was cultivated as a vegetable since the Medieval (Slavík in Slavík 1997a) at it was escaping in the past (Koutecký in Hadinec et al. 2004).

Arrhenatherum elatius was already reclassified as an archaeophyte due to the lack of clear evidence for its introduction only in the Modern Period (Chytrý et al. 2005, Sádlo et al. 2007). This reclassification is supported by archaeobotanical evidence from the work of Čulíková (1999) who found five caryopses in Libice nad Cidlinou in the material from the mid 10th century. Other archaeobotanical finds of *A. elatius* come from the 16th century (Čulíková 1995b, 2002). Recently Poschlod et al. (2009) argued that the neophyte status is more appropriate for *A. elatius* var. *elatius* because the medieval archaeobotanical records refer to *A. elatius* var. *bulbosum*, native to southern and southwestern part of Central Europe (Conert 1998: 231–232). There are a few records of the latter from the Czech Republic (Dostál 1989: 1381). However, as M. Dvořáková (in Štěpánková in prep.), who treated the species for the Flora of the Czech Republic, could not find any herbarium specimens of var. *bulbosum* collected in the country, we include *A. elatius* only at the species level and consider it as an archaeophyte. The issue, however, requires further study.

Atriplex hortensis was used as a vegetable and medicinal plant in the Medieval, and its achenes were found from archaeobotanical sites in the town of Most, northern Bohemia, dated to the 13th and 14th centuries (Čulíková 1981, 1995b).

Camelina microcarpa was repeatedly documented by archaeobotanical studies to be regularly present at several archaeological sites (Prague, Most, Libice nad Cidlinou, Opava) since the 10th century (Čulíková 1998a, b, 1999, 2001a, b, 2002, 2005, 2006, 2009, 2010).

Camelina sativa. There are rare archaeobotanical finds of the seed of this species in medieval diet. Čulíková (2000) points out that while they do not provide unequivocal proof of its cultivation, the species is considered a traditional oil plant (Čulíková 2000).

Chenopodium foliosum was recorded in a fill of a waste pit from the 14th century in Most, northern Bohemia (Čulíková 1981).

Citrullus lanatus. Three localities (in Prague and Opava) are reported in the CZAD (Archaeological Institute ASCR 2011).

Coriandrum sativum is an ancient spice that was spreading with Roman colonization. On the Czech territory it has been documented since the 13th century (Čulíková 2000; see also Čížek 1994). It was recorded in several parts the country, i.e. Prague, Most, Česká Lípa and Opava (Čulíková 1981, 1987, 1995b, 1997a, 2002, 2009, 2011a).

Cucumis melo was reported to occur in sporadic finds from Bohemia and Moravia dating back to the late Middle Ages (Čulíková 2000).

Cucumis sativus. The earliest record of this species comes from the 9th–10th century Prague (Čulíková 2001a); it was further documented in a number of archaeobotanical studies in northern Bohemia and Prague (Čulíková 1981, 1995b, 1997a, 2000, 2001a, 2002, 2005, 2010).

Daucus carota subsp. *sativus*. Historical evidence suggests that it has been planted in Central Europe since the High Medieval; the region of carrot planting in Europe extended during that period from the southwest to the north and east, with reports from neighbouring Poland in the 14th century (Stolarczyk & Janick 2011).

Dipsacus sativus is reported from the Medieval (Opravil 2000). It is also recorded from that period in Germany (Knörzer 1984) and Great Britain (Ryder 1994).

Elsholtzia ciliata was recorded in a fill of a waste pit from the 14th century in Most, northern Bohemia (Čulíková 1981, 1995b).

Galega officinalis. Pollen of this species was recorded in an archeobotanical profile from Libice nad Cidlinou, central Bohemia, from the Early medieval (R. Kozáková, unpublished).

Fagopyrum esculentum was first documented from the turn of the 9th century in Prague (Čulíková 1998a, 2000) as well as from several later medieval sites (Čulíková 1987, 1995b, 2002).

Ficus carica. Its fuits are considered to be imported already in the Medieval, although it may have been occasionally cultivated in warmer regions of the country (Čulíková 2000; see also Čížek 1994). The oldest documented record comes from Prague already from the 9th century (Čulíková 1998b, 2001a). Achenes were usually found in abundance at each locality subject to archaeobotanical research (Čulíková 2000) throughout the Medieval (Čulíková 1981, 1987, 1995b, 1997a, b, 1998a, b, 2001a, 2002, 2003, 2005, 2009, 2010).

Glaucium flavum was recorded, as a seed, in samples from Prague dated to the 9th–10th centuries (Čulíková 2001a).

Iris ×*germanica* and *Iris* ×*sambucina.* Planted in central Europe since the Medieval (Jäger et al. 2008).

Lathyrus sativus. Palaeobotanical evidence suggests that the species was planted in the Bronze Age, recorded from Dobšice, southwestern Moravia (Kočár & Dreslerová 2010).

Lens culinaris was recorded from the medieval period in the Prague Castle (Čulíková 2001b). Two seeds were also recorded in a 13th century sample from a well in the Prague Castle. Although the species has been planted in the region since prehistoric times it is rarely recorded in medieval archaeobotanical samples (Čulíková 2012).

Levisticum officinale was present in several archaeobotanical samples from Most and Prague from 13th– 15th centuries (Čulíková 1981, 1987, 1995b, 2002). It is supposed that it has been more widespread in the Medieval than indicated by the frequency of its finds (Čulíková 2000).

Myrrhis odorata was present in the Medieval from Prague (Opravil 1986) and was well known from Central Europe in that period (Harvey 1984).

Prunus cerasifera was reported by Čulíková (1995b) from Most, which is not unambiguous evidence as the dating of this site extends until the 16th century, but there are several records from the High Medieval in the CZAD (Archaeological Institute ASCR 2011).

Rapistrum rugosum. The species was recorded from the medieval period at Mikulčice, southern Moravia (P. Kočár, pers. comm.). There are two subspecies distinguished in the Czech Republic, subsp. *rugosum* and subsp. *orientale*, both up to now considered as neophytes first recorded in the Czech Republic in 1850 and 1940, respectively (Smejkal in Hejný & Slavík 1992). As they cannot be separated based on archaeobotanical evidence, we use this find as the reason for classifying subsp. *rugosum* as an archaeophyte.

Salvia officinalis was recorded in a fill of a waste pit from the 13th–14th centuries in Most, northern Bohemia (Čulíková 1981, 1995b; see also Čížek 1994).

Satureja hortensis was recently confirmed with certainty from a 13th century sample in Čáslav (Čulíková 2011b). Until now it was missing from the largest medieval sampling site in Most (Čulíková 1994) and previous records did not allow unambiguous identification, with the exception of a fill of a waste pit in Opava from the 15th century (Čulíková 2011a) and records from the early post-medieval period (Čulíková 2007, 2008).

Silene dichotoma was reported from medieval archaeobotanical samples in Uherský Brod (Opravil 1993).

Silybum marianum was used as a medicinal plant in the High Medieval (CZAD, Archaeological Institute ASCR 2011).

Sorbus domestica. Recorded from the Medieval repeatedly by Opravil (1994) and in the CZAD (Archaeological Institute ASCR 2011).

Vicia ervilia. Paleobotanical evidence suggests that the species was planted in the region in the Iron Age (Opravil 2000).

Another valuable source proved to be the summary of medieval sources on the use of medicinal plants in Bohemia (Čížek 1994). This author extracted information from the writings of Křišťan z Prachatic (Cristannus de Prachaticz, probably 1366–1431), a dean of the faculty of medicine and rector of Charles University in Prague, who wrote his works at the beginning of the 15th century, and they are probably the first scientific popularization in Czech. His Medicinal books and herbal, together with other then sources analysed by Čížek (1994), became, after careful interpretation of the original plant names, a basis for reclassifying the following species from neophytes to archaeophytes: *Allium fistulosum*, *A. porrum*, *Angelica archangelica* subsp. *archangelica*, *Borago officinalis* (see also Jankovská 2011, who gives archaeobotanical evidence from Prague and Opava in the High Medieval), *Cnicus benedictus*, *Glycyrrhiza glabra*, *Hyssopus officinalis*, *Lactuca sativa*, *Lavandula angustifolia*, *Majorana hortensis*, *Ocimum basilicum*, *Paeonia officinalis*, *Pimpinella anisum*, *Ruta graveolens* and *Vicia faba*.

Archaeophytes reclassified as neophytes

Lathyrus aphaca is considered alien without residence time specified in the national literature (Chrtková et al. 1977, Bělohlávková & Chrtková in Slavík 1995), and was classified as an archaeophyte in Pyšek et al. (2002). However, its status is reassessed here because the species is absent from old floras. Its earliest record for the country, based on a find in the vicinity of Uherské Hradiště, was published in 1856 (Sapetza 1856) and remained neglected, for instance, by Oborny (1886). The species only started to be occasionally recorded at the beginning of the 20th century (Chrtková et al. 1977).

Fumaria parviflora was reclassified based on reinterpretation of the account in the Flora of the Czech Republic (Smejkal in Hejný & Slavík 1988) and classification for Germany (Jäger 2011).

Species included in 2002 version and omitted from here

Seventy-five taxa listed in the previous version of the catalogue (Pyšek et al. 2002) were removed. They can be divided into several groups:

(i) Reclassified as native (41). For several taxa more or less convincing arguments were given recently suggesting their native status: *Agropyron pectinatum* (Řepka & Chytrý in Hadinec et al. 2003), *Crocus heuffelianus* (Chrtek in Štěpánková 2010), *Epilobium dodonaei* (Kaplan in Hadinec & Lustyk 2007), *Senecio rupestris* (Lustyk & Šída in Hadinec & Lustyk 2008), *Teucrium scorodonia* (Hadinec in Hadinec & Lustyk 2012) and *Viola tricolor* subsp. *curtisii* (V. Grulich, pers. comm.). This concerns mostly rare species occurring in a single or a few localities; the status of these species in the literature has been long debated without clear evidence in one direction or another. Following a conservative approach, we classify these species as native. Such a conservative approach also resulted in removing from the list some species originally classified as archaeophytes (Pyšek et al. 2002) yet without sufficient support for the hypothesis of their alien origin; they are thus considered native here: *Aethusa cynapium*, *Androsace maxima*, *Arctium minus* and its hybrid, *A.* ×*maassii*, *Arnoseris minima*, *Carduus crispus* (including its hybrids *C.* ×*stangii* and *C.* ×*sepincola*), *Cerinthe minor*, *Chenopodium ficifolium*, *C. glaucum*, *C. opulifolium*, *C. polyspermum*, *Cirsium vulgare* (including its hybrids *C.* ×*bipontinum*, *C.* ×*gerhardtii*, *C.* ×*sabaudum* and *C.* ×*subspinuligerum*), *Crepis biennis*, *Echium vulgare*, *Galeopsis ladanum*, *Medicago lupulina*, *Mentha arvensis* (including its hybrids *M.* ×*dalmatica* and *M.* ×*verticillata*; see also Štěpánek 1998a, b), *Pastinaca sativa* subsp. *sativa*, *Plantago major* subsp. *major* (including its hybrids *P.* ×*mixta* and *P.* ×*moravica*), *Polygonum aviculare*, *Sagina apetala* subsp. *apetala*, *S. apetala* subsp. *erecta*, *Scleranthus annuus* and *Vicia hirsuta*.

In the case of *Brachypodium rupestre,* a possibility of its native status was discussed recently (Dančák & Hadinec in Hadinec & Lustyk 2011), but we consider it as a neophyte. This species has been reported as occurring in the territory of the current Czech Republic since the mid 19th century (Opiz 1852) albeit without unambiguous herbarium evidence; recently it has been discovered in several localities in eastern Moravia and near Veltěže in Louny district, northern Bohemia (Dančák & Hadinec in Hadinec & Lustyk 2011), and near Bělá pod Bezdězem in northern Bohemia (50°30'11.6"N, 14°46'6.2"E) where a clone covering ca 100 m^2 was found in a dry grassland with prevailing *Bromus erectus* (2009 J. Sádlo). Although it occurs together with several native species of putative relict status, the species is known to spread along roads in Germany (Hemm et al. 2007).

In the same vein, *Artemisia alba* was first recorded in 1965 in one locality in the České středohoří hills, northern Bohemia, as a clone growing on an area of approximately 7 m^2. The locality was destroyed in 1977 but the species was found again in 2004 close to the original site, probably as a remnant of the original population (Hadinec & Lustyk 2012). Although its native status is considered unlikely in the flora of the Czech Republic (Grulich in Slavík & Štěpánková 2004) and the species was listed as alien in Pyšek et al. (2002), the recent treatment suggests that its alien status be reconsidered (Hadinec & Lustyk 2012). We do not follow this opinion as the species is absent from historical floristic literature from this botanically very intensively studied area, and its native distribution is in southern Europe with the northernmost occurrences in Hungary, 400 km from the site in the Czech Republic (Grulich in Slavík & Štěpánková 2004).

(ii) Not escaping from cultivation (9). Several taxa are not planted in the Czech Republic, or if they are, there is so far no evidence for them escaping from cultivation: *Amelanchier ovalis* (only rarely planted and not escaping; Lepší & Lepší 2008), *Avena nuda* (probably never cultivated, reports on its occurrence are confusing and relate to *Avena sativa* Chinensis Group; J. Zázvorka in Štěpánková in prep.), *Campanula speciosa* (previous reports on escapes assigned to this species, native to the Pyrenees, most likely refer to *C. glomerata*), *Catananche caerulea* (listed previously based on a note about escape from cultivation in Dostál 1989 but herbarium evidence is lacking; Skalická in Slavík & Štěpánková 2004), *Cerastium biebersteinii* (this species, endemic to the Crimea, is most likely not planted in the Czech Republic, being confused with *C. tometosum*), *Cichorium intybus* subsp. *foliosum*, *Grindelia squarrosa*, *Ellisia nyctelea* and *Teucrium marum* (no reliable records of escape from cultivation exist).

(iii) Taxonomically not justified taxa (10). This concerns some subspecies recognition of which is not justified based on the material from the Czech Republic; they are now included within the species level: *Arrhenatherum elatius* subsp. *bulbosum*, *Bromus hordeaceus* subsp. *pseudothominii* (included in *B. hordeaceus* subsp. *hordeaceus*; plants roughly corresponding to this taxon cannot be separated from other morphotypes of this highly variable species) and *B. secalinus* subsp. *decipiens* (included in *B. commutatus*). Further, this category includes some taxa with doubtful taxonomic status: *Chenopodium integrifolium* (included in *Dysphania*

ambrosioides), *Hesperis matronalis* subsp. *oblongipetala* (included in *H. matronalis* subsp. *matronalis*), *Lathyrus articulatus* (included in *L. clymenum*), *Urtica dodartii* (included in *U. pilulifera*), *Vicia cordata* (included in *V. sativa*). Also excluded are some formerly listed hybrids: *Spergula arvensis* subsp. *arvensis* × *S. arvensis* subsp. *sativa*, and *Cannabis* ×*intersita* (a hybrid between two varieties, not distinguished in the current list).

(iv) Doubtful records (16). This category includes taxa that were recently suggested to have never occurred in the country, mistaken with other species, or bearing names that are difficult to interpret.

Aster parviflorus (syn. *Symphyotrichum parviflorum*). Reportedly an almost sterile taxon that originated in Europe but its possible occurrence and distribution in the Czech Republic is unclear (Kovanda & Kubát in Slavík & Štěpánková 2004).

Bromus inermis × *B. pumpellianus*. The reexamination of plants growing at the locality reported in Krahulec & Jiřiště (1997) suggests that they fall within the range of individual variability of the native species *B. inermis* (B. Trávníček, pers. comm). Still, the issue may require further study.

Bromus riparius. A doubtful record without any details (Kubát et al. 2002) and unclear source.

Bromus grossus, recorded as *B. secalinus* subsp. *multiflorus* in Pyšek et al. (2002), is a weed of spelt wheat (*Triticum aestivum* Spelta Group) fields. It appears that this species was never documented from the Czech Republic as no specimens was found in Czech herbaria (J. Danihelka & J. Chrtek, unpubl.); the name was misapplied to plants of *B. secalinus* with spikelets consisting of many florets (see Dostál 1989).

Centaurea nigra × *C. phrygia* was listed based on the determination by the collector (V. Jehlík, PRA) but this hybrid combination has not been reported elsewhere and its occurrence is unlikely (P. Koutecký, pers. comm.).

Cirsium ×*preiseri*. Listed in previous version of this catalogue based on Dostál (1989) but not documented from the Czech Republic (Bureš in Slavík & Štěpánková 2004).

×*Conygeron huelsenii*. This hybrid is reported in the literature since the 19th century (Čelakovský 1888b) but the herbarium specimens either represent different taxa, or are not available for some records. Although it is documented from neighbouring countries and its occurrence in the Czech Republic is possible, we omit it from the list due to the lack of evidence.

Filago gallica. Reported in Kubát et al. (2002) but the more recent treatment concluded that the occurrence of the species in the Czech Republic is doubtful and never reliably documented. One herbarium specimen available refers to *F. minima* (Štech in Slavík & Štěpánková 2004).

Filipendula rubra. Reports on the occurrence of this species refer to *F. kamtschatica* (Slavík 2002).

Hyacinthella rumelica was reported by Šuk (2001) but not included in the recent treatment in the Flora of the Czech Republic, where Velká hora hill near Karlštejn, central Bohemia, is mentioned as locality of *H.* cf. *leucophaea* (Bělohlávková in Štěpánková 2010). In fact, recent sources (Tutin et al. 1980, Delipavlov et al. 2003) recognize only *H. leucophaea*, even without mentioning *H. rumelica* in its synonymy. In our treatment, the plants reported by Šuk (2001) as *H. rumelica* are therefore included within *H. leucophaea*.

Kickxia elatine subsp. *crinita*. Chrtek (1984), analysing the variation of the populations of *K. elatine* subsp. *elatine* in southern Moravia, considered some of the morphotypes transitory towards this Mediterranean subspecies. He even identified one specimen as *K. elatine* subsp. *crinita* (see also Slavík in Slavík 2000). However, based on phytogeographic information, we consider its occurrence in the Czech Republic quite unlikely and include all records of *K. elatine* in the type subspecies.

Lithospermum arvense subsp. *caerulescens* is reported to have occurred near Všetaty, central Bohemia (Slavík in Slavík 2000). Given that both *Buglossoides arvensis* and *B. incrassata* have blue-flowered forms, it is impossible to interpret the above report with certainty.

Mantisalca salmantica. Rather vague literature reports about occasional occurrence of this species in the Czech Republic (Dostál 1989, Kubát et al. 2002) lack details and are not supported by herbarium specimens (Štěpánek in Slavík & Štěpánková 2004).

Parapholis strigosa. The species was reported by Dostál (1989: 1357) as "once introduced to Brno with cotton". We believe that this is a misinterpretation based on the record of *Pholiurus incurvus* (= *Parapholis incurva*), introduced to Brno with wool and reported earlier by Dvořák & Kühn (1966). No speciments documenting the occurrence of *P. strigosa* in the Czech Republic were found in herbaria.

Veronica acinifolia. The only herbarium speciment from the Czech Republic, on which the reported occurrence is based (Smejkal 1970, Hrouda in Slavík 2000), belongs to *V. triphyllos* (Danihelka 2011).

Vicia ×*poechhackeri*. Omitted due to the lack of evidence.

Pending issues: species with uncertain status, doubtful records and taxa requiring further study or monitoring

In the Průhonice Park near Prague there is a good long-term record of regeneration of planted woody taxa. The following were observed to regenerate, mostly from seed, in the vicinity of planted individuals: *Acer saccharum*, *Carya ovata*, *C. tomentosa*, *Crataegus intricata*, *Fraxinus rhynchophylla*, *Chamaecyparis nootkatensis*, *C. pisifera*, *Juglans ailanthifolia*, *Liriodendron tulipifera*, ×*Malosorbus florentina*, *Mahonia repens*, *Padus maackii*, *Picea sitchensis*, *Pterocarya stenoptera*, *Quercus palustris*, *Rhododendron luteum*, *Symplocos paniculata*, *Taxus baccata* × *T. cuspidata*, *T. cuspidata*, *Thuja plicata*, *Torreya nucifera* and *Tsuga canadensis* (J. Burda, pers. comm.). These taxa are not included in the list but a note is given here for comparison with other regions of the world where they may appear as aliens.

Some species are not included in the list even though they are reported in national sources such as floras and field guides. This concerns, for example, several taxa of the genus *Symphyotrichum* (*Aster* s. l.), possible occurrence and distribution of which in the Czech Republic is unclear and requires further study. These species are either reported as being confused with other species in older sources (*S. tradescantii*), or are reported as (likely) to occur but not documented by any herbarium specimens (*S. praealtum*, *S. ericoides*). This is also the case of *Galatella sedifolia* subsp. *sedifolia* (syn. *Aster punctatus*). Two records exist from the Czech Republic, both assuming either accidental introduction or garden escape (Makowsky in Oborny 1885, see also Danihelka 2008, Dostál et al. 1948–1950) but no herbarium specimens were found.

The same conservative approach was adopted towards hybrids with alien species involved in taxonomically difficult genera that are reported from the Czech Republic but not confirmed with certainty, e.g. *Chenopodium album* × *C. strictum*, *C.* ×*tridentium* (= *C. opulifolium* × *C. strictum*), C. ×*variabile* (= *C. album* × *C. berlandieri* subsp. *zschackei*; Dostálek et al. in Hejný & Slavík 1990, Kubát et al. 2002), or *Atriplex hortensis* × *A. sagittata* (Kubát et al. 2002).

We did not include species that are known to have been planted in the wild and survive as the originally planted individuals such as *Rhododendron hirsutum* and *R. ferrugineum* (Kubát et al. 2002). One shrub of the latter species was planted in the Králický Sněžník Mts and still survives since at least 1825 when it was first recorded (F. Krahulec, pers. obs.). Neither were included cases such as *Cyclamen coum*, of which one plant was found in the Radotínské údolí valley, Prague, where it was most likely deliberately planted and reported to survive since 2008 (Prančl in Hadinec & Lustyk 2012).

Appendix 2. – List of alien taxa of the Czech flora. Taxa are arranged alphabetically. **Family** codes (Fam) are formed by initial letters of the family name. The following information is given for each taxon, if available: **Life history** (LH): a – annual, b – biennial, pe – perennial, ss – semishrub, s – shrub, t – tree, f – fern, aq – aquatic, p – parasitic (life histories in which the taxon does not occur in the Czech Republic are given in parentheses). **Residence time status** (Res): ar = archaeophyte , neo = neophyte. **Invasion status** (Inv): cas = casual, nat = naturalized, inv = invasive. **Population group** (PG): 1–18, reflecting the dynamics of populations of the species in the region, with link to cultivation (see text for details). **First record** (1st): date of the first reported occurrence in the wild in the Czech Republic; in some cases approximate date (century or decade) is given inferred from the sources (e.g. 17th, 1990s). **Abundance type** (Abund) in the wild in the country: s – single locality, r – rare, sc – scattered, la – locally abundant, c – common, v – vanished (if no records have been known for a long period), s+ev – single locality, now vanished. **Pathway of introduction** (Path) of the species into the country: d – deliberate planting involved; a – accidental (unintentional) pathway only. **Region of origin**: M – Mediterranean region, E – Europe, As – Asia, Af – Africa, AmN – North America, AmC – Central America, AmS – South America, Au – Australia, hybrid – hybrid origin, anec – anecophyte (see text for details). Hybrid formulas for hybrids (nothospecies) and most anecophytes of hybrid origin listed here under their binomials are given in Electronic Appendix 2. **Cover** refers to average % cover in plant communities in the Czech Republic; upper index refers to the number of vegetation plots from which the value was calculated (note that the same values are given for *Chenopodium striatiforme* and *C. strictum*, and *Prunus domestica* and *P. insititia*, respectively, as the vegetation plots with these species could not been distinguished with certainty, and were merged). **Number of habitats** (Hab), classified according to Sádlo et al. (2007), in which the species grows (n = 88). **Impact** (IEc – **ecological**, IEn – **economic**): yes indicates that the species is reported to exert an impact in Europe; yes+, documented from the Czech Republic. **Source:** It primarily refers to the treatment in the Flora of the Czech Republic if the species is reported there as an alien; otherwise the sources refer to papers first reporting the species, or explicitly dealing with the given taxon. Also included are selected comprehensive accounts and specialized case studies, or updates of recent situation. Detailed information on taxa that represent additions to the Czech flora is given in Appendix 1. References to the eight volumes of the Flora of the Czech Republic (F1 – Hejný & Slavík 1988, F2 – Hejný & Slavík 1990, F3 – Hejný & Slavík 1992, F4 – Slavík 1995, F5 – Slavík 1997a, F6 – Slavík 2000, F7 – Slavík & Štěpánková 2004, F8 – Štěpánková 2010) and to the Additamenta ad floram Reipublicae Bohemicae series (A1 – Hadinec et al. 2002, A2 – Hadinec et al. 2003, A3 – Hadinec et al. 2004, A4 – Hadinec et al. 2005, A5 – Hadinec & Lustyk 2006, A6 – Hadinec & Lustyk 2007, A7 – Hadinec & Lustyk 2008, A8 – Hadinec & Lustyk 2009, A9 – Hadinec & Lustyk 2011) are indicated using codes. Taxa reported for the first time here are designated as 'this study'. See Appendix 1 for comments on newly added and/or taxonomically difficult taxa, and for changes in residence time status.

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Abies concolor (Gordon et Glend.) Hildebr.	Pina	t	neo	cas	4		r	del	AmN					this study
Abies grandis (D. Don) Lindl.	Pina	t	neo	cas	4		r	del	AmN					this study
Abies nordmanniana (Steven) Spach	Pina	t	neo	cas	4		r	del	E					this study
Abutilon theophrasti Medik.	Malv	a	neo	nat	8	1894	r	acc	M As		3	yes	yes	Hejný et al. 1973, Slavík in F3, Jehlík 1998a
Acanthus hungaricus (Borbás) Baen.	Acan	pe	neo	cas	4	1999	s	del	E					Hadinec in A8
Acer ginnala Maxim.	Sapi	s t	neo	cas	4	2001	s	del	As					Pyšek et al. 2002
Acer monspessulanum L.	Sapi	t	neo	cas	4	2001	r	del	M					Pyšek et al. 2002
Acer negundo L.	Sapi	t	neo	inv	18	1875	c	del	AmN	5^{51}	8	yes	yes	Koblížek in F5
Acer saccharinum L.	Sapi	t	neo	cas	4		s	del	AmN					Koblížek in F5
Acer tataricum L.	Sapi	s t	neo	cas	4		r	del	E					Koblížek in F5, Čáp & Koblížek in A4
Achillea crithmifolia Waldst. et Kit.	Aster	pe	neo	cas	1	1886	r	acc	E M					Danihelka in F7
Achillea filipendulina Lam.	Aster	pe	neo	cas	4	1945	r	del	E M					Sutorý 1993, Danihelka in F7
Aconitum ×*cammarum* L.	Ranu	pe	neo	nat	9	1819	sc	del	anec		8			Skalický in F1
Acorus calamus L.	Acor	pe aq	neo	nat	15	1679	sc	del	As	39^{293}	9	yes	yes	Pyšek & Mandák 1998a, Hendrych 2003, Záveská Drábková in F8
Actinidia deliciosa (A. Chev.) C. F. Liang et A. L. Ferguson	Acti	s	neo	cas	4	2008	s	del	As					Hadinec et al. in A7
Adonis aestivalis L. subsp. *aestivalis*	Ranu	a	ar	nat	6		sc	acc	M	5^{128}	3			Křísa in F1

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Adonis annua L. subsp. *annua*	Ranu	a	neo	cas	4	1874	r	del	M		1			Křísa in F1
Adonis flammea Jacq.	Ranu	a	ar	cas	2		r	acc	M		1			Křísa in F1, Fajmon in A4, Štefánek in A4
Aegilops cylindrica Host	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002, Dostál 1989
Aegilops geniculata Roth	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002, Dostál 1989
Aesculus ×carnea Hayne	Sapi	t	neo	cas	4	1963	r	del	anec					Pyšek et al. 2002
Aesculus hippocastanum L.	Sapi	t	neo	nat	12		la	del	M		6			Skalická in F5
Ageratina altissima (L.) R. M. King et H. Rob.	Aster	pe	neo	cas	4	1979	s	del	AmN					Slavík in F7
Ageratum houstonianum Mill.	Aster	a (pe)	neo	cas	4		r	del	AmC AmS					Bělohlávková in F7
Agrostemma githago L.	Cary	a	ar	cas	2		r	acc	anec		2			Šourková in F2, Otýpková 2003
Agrostis gigantea Roth	Poac	pe	neo	nat	13		sc	acc	M	4^{157}	21			Kubát et al. 2002
Agrostis scabra Willd.	Poac	pe	neo	nat	8	2001	s	acc	AmN					Pyšek et al. 2002
Ailanthus altissima (Mill.) Swingle	Sima	t	neo	inv	16	1874	sc	del	As		10	yes	yes+	Koblížek in F5
Ajuga chamaepitys (L.) Schreb. subsp. *chamaepitys*	Lami	a b	ar	nat	6		r	acc	M		5			Slavíková in F6
Ajuga chamaepitys subsp. *chia* (Schreb.) Arcang.	Lami	a b pe	ar	cas	2		v	acc	E M					Slavíková in F6
Alcea rosea L.	Malv	b pe	neo	nat	11	1880	r	del	anec		3	yes		Slavík in F3
Alchemilla conjuncta Bab.	Rosa	ss	neo	cas	4		s	del	E					Plocek in F4, Havlíček 1999
Alchemilla mollis (Buser) Rothm.	Rosa	pe	neo	cas	4	1985	r	del	E M					Plocek in F4
Alchemilla sericata Rchb.	Rosa	ss	neo	cas	4		s	del	E M					Plocek in F4
Alchemilla speciosa Buser	Rosa	pe	neo	cas	4		s	del	E					Plocek in F4
Alchemilla tytthantha Juz.	Rosa	pe	neo	cas	4		r	del	E					Plocek in F4
Alhagi maurorum Medik.	Faba	pe	neo	cas	1	1963	s+v	acc	E M As					Pyšek et al. 2002
Allium atropurpureum Waldst. et Kit.	Amary	pe	neo	cas	4	1946	s	del	E					Pyšek et al. 2002, Krahulec & Duchoslav in F8
Allium atroviolaceum Boiss.	Amary	pe	neo	cas	1	1922	s+v	acc	E M					Pyšek et al. 2002, Krahulec & Duchoslav in F8
Allium cepa L.	Amary	pe	ar	cas	5		sc	del	M					Krahulec & Duchoslav in F8
Allium cristophii Trautv.	Amary	pe	neo	cas	4	1994	s	del	M As					Krahulec in A8, Krahulec & Duchoslav in F8
Allium fistulosum L.	Amary	pe	ar	cas	4		r	del	As			yes		Krahulec & Duchoslav in F8
Allium moly L.	Amary	pe	neo	cas	4		r	del	M					Krahulec & Duchoslav in F8
Allium paradoxum (M. Bieb.) G. Don	Amary	pe	neo	nat	12	1867	r	del	E		6			Hejný 1971, Hejný et al. 1984, Hadinec in A2, Krahulec & Duchoslav in F8
Allium porrum L.	Amary	pe	ar	cas	4		r	del	anec					Krahulec & Duchoslav in F8
Allium roseum L.	Amary	pe	neo	cas	4	2005	s	del	M					Krahulec & Lepší in A8, Krahulec & Duchoslav in F8
Allium sativum L.	Amary	pe	ar	nat	11		sc	del	anec		4			Krahulec & Duchoslav in F8
Allium stipitatum Regel	Amary	pe	neo	cas	4	2008	s	del	As					Krahulec in A8, Krahulec & Duchoslav in F8
Allium tuberosum Spreng.	Amary	pe	neo	cas	4	1866	s+v	del	M					Krahulec & Duchoslav in F8
Allium zebdanense Boiss. et Noë	Amary	pe	neo	cas	4	2006	r	del	M					Krahulec & Marek in A5, Krahulec & Duchoslav in F8
Alnus rugosa (Du Roi) Spreng.	Betu	s t	neo	cas	4	1872	r	del	AmN					Kovanda in F2
Alopecurus myosuroides Huds.	Poac	a	ar	nat	8		r	acc	M		3			Jehlík 1998a, Kubát et al. 2002
Althaea armeniaca Ten.	Malv	pe	neo	cas	1	1966	v	acc	M					Smejkal 1966, Slavík in F3
Althaea hirsuta L.	Malv	a	neo	cas	1	1870	v	acc	M					Slavík in F3
Alyssum murale Waldst. et Kit.	Bras	pe	neo	nat	11		r	del	M					Smejkal in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Alyssum rostratum Steven	Bras	a	neo	cas	1	1897	v	acc	E					Smejkal in F3
Amaranthus acutilobus Uline et W. L. Bray	Amara	a	neo	cas	4	1909	v	del	AmN					Jehlík in F2
Amaranthus albus L.	Amara	a	neo	nat	8	1893	sc	acc	AmN		4		yes	Hejný et al. 1973, Jehlík in F2, Jehlík 1998a
Amaranthus ×*alleizettei* Aellen	Amara	a	neo	cas	1	1945	r	acc	hybrid					Jehlík in F2
Amaranthus blitoides S. Watson	Amara	a	neo	nat	7	1931	sc	acc	AmN		5		yes	Hejný et al. 1973, Jehlík in F2, Jehlík 1998a
Amaranthus blitum L. subsp. *blitum*	Amara	a	ar	nat	13		sc	acc	M		6			Jehlík in F2
Amaranthus bouchonii Thell.	Amara	a	neo	cas	1	1948	v	acc	AmN					Jehlík in F2
Amaranthus caudatus subsp. *saueri* V. Jehlík	Amara	a	neo	cas	4	1838	sc	del	AmS					Jehlík in F2
Amaranthus crispus (Lesp. et Thévenau) N. Terracc.	Amara	a	neo	nat	8	1926	r	acc	AmS				yes	Jehlík in F2
Amaranthus cruentus L.	Amara	a	neo	cas	4	1834	r	del	AmC AmS					Jehlík in F2
Amaranthus deflexus L.	Amara	a pe	neo	nat	8	1905	r	acc	AmS				yes	Jehlík in F2, Grüll 1999, Fajmon et al. in A7
Amaranthus graecizans L. subsp. *graecizans*	Amara	a	neo	cas	1	1912	v	acc	M Af					Jehlík in F2
Amaranthus graecizans subsp. *sylvestris* (Vill.) Brenan	Amara	a	ar	cas	2		v	acc	M					Jehlík in F2
Amaranthus graecizans subsp. *thellungianus* (Nevski) Gusev	Amara	a	neo	cas	1	1965	v	acc	M As					Jehlík in F2
Amaranthus hybridus L.	Amara	a	neo	cas	1	1961	r	acc	AmN AmC AmS				yes	Grüll & Priszter 1969, Jehlík in F2
Amaranthus hypochondriacus L.	Amara	a	neo	cas	4	1853	r	del	anec					Jehlík in F2
Amaranthus ×*ozanonii* Thell.	Amara	a	neo	cas	1	1943	sc	acc	hybrid					Jehlík in F2
Amaranthus palmeri S. Watson	Amara	a	neo	cas	1	1908	r	acc	AmN					Jehlík in F2
Amaranthus powellii S. Watson	Amara	a	neo	inv	14	1853	c	acc	AmC AmS	3^{114}	8			Hejný et al. 1973, Jehlík in F2, Jehlík 1998a
Amaranthus quitensis Kunth	Amara	a	neo	cas	1	1910	v	acc	AmS					Jehlík in F2
Amaranthus retroflexus L.	Amara	a	neo	inv	14	1818	c	acc	AmN AmC	6^{443}	10	yes	yes	Jehlík in F2
Amaranthus rudis J. D. Sauer	Amara	a	neo	cas	1	1967	r	acc	AmN					Jehlík in F2
Amaranthus spinosus L.	Amara	a	neo	cas	1	1909	r	acc	AmC AmS					Jehlík in F2
Amaranthus ×*turicensis* Thell.	Amara	a	neo	cas	1	1909	r	acc	hybrid					Jehlík in F2
Amaranthus viridis L.	Amara	a	neo	cas	1	1964	r	acc	AmS				yes	Hejný et al. 1973, Jehlík in F2, Jehlík 1998a
Ambrosia artemisiifolia L.	Aster	a	neo	inv	14	1883	la	acc	AmN		5	yes	yes+	Hejný et al. 1973, Jehlík 1998a, Slavík in F7
Ambrosia psilostachya DC.	Aster	pe	neo	cas	1	1999	s	acc	AmN		2			Červinka & Sádlo 2000, Slavík in F7
Ambrosia trifida L.	Aster	a	neo	cas	1	1960	sc	acc	AmN AmC		3		yes+	Hejný et al. 1973, Jehlík 1998a, Slavík in F7
Amelanchier alnifolia (Nutt.) M. Roem.	Rosa	s t	neo	cas	4	2008	r	del	AmN					Lepší & Lepší 2008
Amelanchier lamarckii F. G. Schroed.	Rosa	s t	neo	cas	4	1867	r	del	AmN					Lepší & Lepší 2008
Amelanchier spicata (Lam.) K. Koch	Rosa	s	neo	nat	10	1880	sc	del	AmN		5			Lepší & Lepší 2008
Ammi majus L.	Apia	a	neo	cas	1	1898	r	acc	M					Tomšovic in F5
Ammi visnaga (L.) Lam.	Apia	a	neo	cas	1	1987	v	acc	M					Tomšovic in F5
Ammobium alatum R. Br.	Aster	a	neo	cas	4	1942	r	del	Au					Hadač et al. 1994, Hradílek et al. 1999, Slavíková in F7
Amorpha fruticosa L.	Faba	s	neo	nat	12	1932	la	del	AmN		2	yes		Chrtková in F4
Amsinckia lycopsoides (Lehm.) Lehm.	Bora	a	neo	cas	1	2000	s+v	acc	AmN					Rotreklová & Řehořek in A8
Anacyclus clavatus (Desf.) Pers.	Aster	a	neo	cas	4		v	del	M					Skalická in F7
Anagallis arvensis L.	Prim	a	ar	nat	13		c	acc	M	2^{949}	9			Kovanda in F3
Anagallis ×*doerfleri* Ronn.	Prim	a	ar	cas	1		r	acc	hybrid					Kovanda in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Anagallis foemina Mill.	Prim	a	ar	nat	6		sc	acc	E M	2^{97}	4			Kovanda in F3
Anagallis monelli L.	Prim	a	neo	cas	1	1953	v	acc	M					Kovanda in F3
Anaphalis margaritacea (L.) Benth.	Aster	pe	neo	cas	4	1887	r	del	As AmN		3			Kubát in F7
Anchusa azurea Mill.	Bora	pe	neo	cas	1		r	acc	M					Křísa in F6
Anchusa officinalis L.	Bora	b pe	ar	nat	6		sc	acc	E M		4	yes		Křísa in F6
Androsace elongata L.	Prim	a	ar	nat	6		r	acc	E		5			Kovanda in F3
Anethum graveolens L.	Apia	a	ar	cas	5		sc	del	M		2			Tomšovic in F5
Angelica archangelica L. subsp. *archangelica*	Apia	b pe	ar	inv	16		la	del	E As		11			Jehlík & Rostański 1975, Slavík in F5
Anoda cristata (L.) Schltdl.	Malv	a pe	neo	cas	1	1973	r	acc	AmN& C & S					Slavík in F3
×*Anthematricaria dominii* Rohlena	Aster	a	ar	cas	1	1929	s+v	acc	hybrid					Dvořáková in F7
Anthemis arvensis L.	Aster	a	ar	nat	13		c	acc	M	5^{387}	8	yes		Dvořáková in F7
Anthemis cotula L.	Aster	a	ar	nat	6		sc	acc	M	6^{69}	5			Dvořáková in F7
Anthemis cretica subsp. *columnae* (Ten.) Franzén	Aster	pe	neo	cas	4	1871	s+v	del	E					Dvořáková in F7
Anthemis cotula × *Cota tinctoria*	Aster	a	ar	cas	1		s+v	acc	hybrid					Dvořáková in F7
Anthoxanthum aristatum Boiss.	Poac	a	neo	cas	1	1883	r	acc	M					Dostál 1989, Kubát et al. 2002
Anthriscus caucalis M. Bieb.	Apia	a	ar	cas	2		r	acc	E M		7			Slavík in F5, Ondráček in A3
Anthriscus cerefolium L. var. *cerefolium*	Apia	a	ar	cas	4		r	del	anec		6			Slavík in F5, Koutecký in A3
Anthriscus cerefolium var. *trichocarpus* Neilr.	Apia	a	ar	nat	9		la	del	M		9			Slavík in F5, Hadinec in A2
Antirrhinum majus L.	Plant	pe a	neo	nat	11	1819	r	del	M		3			Grulich in F6
Apera spica-venti (L.) P. Beauv.	Poac	a	ar	nat	13		c	acc	E M	5^{572}	15			Kubát et al. 2002
Apium graveolens L.	Apia	b	ar	cas	4		r	del	anec			yes		Tomšovic in F5
Aquilegia atrata W. D. J. Koch	Ranu	pe	neo	cas	4		r	del	E					Chrtková in F1
Arabis alpina L.	Bras	pe	neo	nat	11		r	del	E Af		1			Štěpánek in F3
Arabis caucasica Willd.	Bras	pe	neo	nat	11	1957	r	del	E		1			Štěpánek in F3
Arabis procurrens Waldst. et Kit.	Bras	pe	neo	nat	11		r	del	E					Štěpánek in F3
Arctium ×*ambiguum* (Čelak.) Nyman	Aster	b	ar	cas	1		sc	acc	hybrid					Štěpánek in F7
Arctium ×*cimbricum* (E. H. L. Krause) Hayek	Aster	b	ar	cas	1		r	acc	hybrid					Štěpánek in F7
Arctium lappa L.	Aster	b	ar	nat	13		c	acc	E	3^{270}	24			Štěpánek in F7
Arctium ×*mixtum* (Simonk.) Nyman	Aster	b	ar	cas	1		sc	acc	hybrid					Štěpánek in F7
Arctium ×*neumannii* P. Fourn.	Aster	b	ar	cas	1		sc	acc	hybrid					Štěpánek in F7
Arctium ×*nothum* (Ruhmer) J. Weiss	Aster	b	ar	cas	1		sc	acc	hybrid					Štěpánek in F7
Arctium tomentosum Mill.	Aster	b	ar	nat	13		c	acc	E	6^{382}	24			Štěpánek in F7
Arctotheca calendula (L.) Levyns	Aster	b	neo	cas	1		r	acc	Af				yes	Bělohlávková in F7
Argemone mexicana L.	Papa	a	neo	cas	1	1965	v	acc	AmC					Kubát in F1
Armeria maritima (Mill.) Willd.	Plum	pe	neo	cas	4	1890	v	del	E					Kovanda in F2
Armoracia rusticana G. Gaertn. et al.	Bras	pe	ar	nat	17		c	del	E	2^{127}	13	yes		Tomšovic in F3
Arrhenatherum elatius (L.) J. Presl et C. Presl	Poac	pe	ar	inv	18		c	del	E	9^{3128}	62			Kubát et al. 2002
Artemisia abrotanum L.	Aster	ss	ar	cas	4		r	del	anec					Grulich in F7
Artemisia absinthium L.	Aster	pe	ar	nat	13		sc	acc	M	6^{134}	22			Grulich in F7
Artemisia alba Turra	Aster	pe	neo	cas	1	1965	s	acc	M					Grulich in F7, Hadinec & Lustyk 2012
Artemisia alpina Willd.	Aster	pe	neo	cas	4	2008	s	del	E M					Čáp in A9
Artemisia annua L.	Aster	a	neo	nat	8	1874	r	acc	M As		3			Hejný et al. 1973, Jehlík 1998a, Grulich in F7

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Artemisia biennis Willd.	Aster	pe	neo	cas	1	1960	r	acc	AmN		2			Jehlík 1984, Grulich in F7
Artemisia dracunculus L.	Aster	pe	neo	cas	4		r	del	E As					Grulich in F7
Artemisia ludoviciana Nutt. subsp. *ludoviciana*	Aster	pe	neo	cas	1	1971	s+v	acc	AmN					Grüll 1974, Grulich in F7
Artemisia repens Willd.	Aster	pe	neo	cas	1	1872	r	acc	E M As					Grulich in F7
Artemisia scoparia Waldst. et Kit.	Aster	a b	ar	nat	6		r	acc	E M As		4			Grulich in F7
Artemisia siversiana Willd.	Aster	a b	neo	cas	1	1953	r	acc	E As					Hejný 1964, Hejný et al. 1973, Grulich in F7
Artemisia tournefortiana Rchb.	Aster	pe	neo	nat	8	1964	sc	acc	M As		4			Grüll 1972, Grulich in F7
Artemisia verlotiorum Lamotte	Aster	pe	neo	nat	10	1947	r	del	As		6	yes		Gutte & Pyšek 1972, Jehlík 1998a, Grulich in F7
Asclepias syriaca L.	Apoc	pe	neo	inv	16	1901	r	del	AmN		8			Slavík in F6
Asparagus officinalis L. subsp. *officinalis*	Aspa	pe	neo	nat	11	ca 1800	sc	del	As	1^{55}	13			Bělohlávková & Slavíková in F8
Asperugo procumbens L.	Bora	a	ar	nat	6		r	acc	M		6			Křísa in F6
Asperula arvensis L.	Rubi	a	ar	cas	2		v	acc	M					Kubát in F6
Asperula orientalis Boiss. et Hohen.	Rubi	a	neo	cas	4	1905	v	del	M					Kubát in F6
Astilbe Arendsii Group	Saxi	pe	neo	cas	4	1999	s	del	anec					Pyšek et al. 2002
Astragalus alopecuroides L.	Faba	pe	neo	cas	1	1872	v	acc	M					Chrtková in F4
Astragalus glycyphylloides DC.	Faba	pe	neo	cas	1		v	acc	E M					Chrtková & Kubát in F4
Astrodaucus orientalis (L.) Drude	Apia	b	neo	cas	2	1847	v	acc	E M					Tomšovic in F5
Atocion armeria (L.) Raf.	Cary	a	neo	cas	4	1850	r	del	E M					Šourková in F2, Grulich in A5
Atriplex hortensis L.	Amara	a	ar	cas	4		r	del	E		1			Kirschner & Tomšovic in F2
Atriplex littoralis L.	Amara	a	neo	cas	1	1977	s+v	acc	E M AmN					Kirschner & Tomšovic in F2
Atriplex micrantha Ledeb.	Amara	a	neo	cas	1	1967	r	acc	E As					Kirschner & Tomšovic in F2, Jehlík 1998b
Atriplex ×northusiana K. Wein	Amara	a	ar	cas	1		r	acc	hybrid					Kirschner & Tomšovic in F2
Atriplex oblongifolia Waldst. et Kit.	Amara	a	ar	nat	13		c	acc	E M As	16^{59}	9			Kirschner & Tomšovic in F2
Atriplex patula L.	Amara	a	ar	nat	13		c	acc	E M As	3^{790}	14			Kirschner & Tomšovic in F2
Atriplex rosea L.	Amara	a	ar	cas	2		r	acc	E M		2			Kirschner & Tomšovic in F2
Atriplex sagittata Borkh.	Amara	a	ar	inv	14		c	acc	E M As	23^{257}	12			Kirschner & Tomšovic in F2
Atriplex semilunaris Aellen	Amara	a	neo	cas	1	1963	v	acc	Au					Kirschner & Tomšovic in F2
Atriplex sibirica L.	Amara	a	neo	cas	1	1939	v	acc	As					Kirschner, Tomšovic in F2
Atriplex tatarica L.	Amara	a	ar	nat	13		la	acc	M As	13^{66}	7			Kirschner & Tomšovic in F2
Aubrieta deltoidea (L.) DC.	Bras	pe	neo	cas	4		r	del	M					Dvořák in F3
Avena barbata Link	Poac	a	neo	cas	1		s+v	acc	M					Dostál 1989
Avena fatua L.	Poac	a	ar	nat	13		c	acc	M	4^{422}	6			Dostál 1989, Kubát et al. 2002
Avena sativa Chinensis Group	Poac	a	neo	cas	1		r	acc	anec					Kubát et al. 2002
Avena sativa Praegravis Group	Poac	a	neo	cas	1		r	acc	anec					Kubát et al. 2002
Avena sativa Sativa Group	Poac	a	ar	cas	5		c	del	anec		4			Dostál 1989, Kubát et al. 2002
Avena sterilis L. subsp. *sterilis*	Poac	a	neo	cas	4	1922	v	del	M					Dostál 1989, Kubát et al. 2002
Avena sterilis subsp. *ludoviciana* (Durieu) Gillet et Magne	Poac	a	neo	cas	1	1965	v	acc	M					this study
Avena strigosa Schreb.	Poac	a	ar	nat	9		r	del	E		2		yes	Dostál 1989, Kubát et al. 2002
Avena ×vilis Wallr.	Poac	a	ar	cas	1		r	acc	hybrid					this study
Axyris amaranthoides L.	Amara	a	neo	cas	1	1953	s+v	acc	As					Tomšovic in F2

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Azolla filiculoides Lam.	Salv	a pe f aq	neo	nat	10	1895	r	del	AmN		3	yes	yes	Křísa in F1
Ballota nigra L. subsp. *nigra*	Lami	pe	ar	nat	13		c	acc	E M	8^{563}	25			Štěpánková in F6
Ballota nigra subsp. *meridionalis* (Bég.) Bég.	Lami	pe	neo	cas	1	1932	r	acc	E M					Štěpánková in F6
Basella rubra L.	Base	a (pe)	neo	cas	4	1901	v	del	As					Tomšovic in F2
Bassia scoparia (L.) Voss subsp. *scoparia*	Amara	a	neo	inv	14	1819	sc	acc	E M As		2			Tomšovic in F2, Jehlík 1998a
Bassia scoparia (L.) Voss subsp. *scoparia* 'Trichophylla'	Amara	a	neo	cas	4	1819	sc	del	E M As					Tomšovic in F2
Bassia scoparia subsp. *densiflora* (B. D. Jacks.) Ciruja et Velayos	Amara	a	neo	inv	14	1901	sc	acc	E M As					Tomšovic in F2, Jehlík 1998a
Beckmannia eruciformis (L.) Host subsp. *eruciformis*	Poac	pe	neo	cas	1		r	acc	E As					Vicherek et al. 2000, Kubát et al. 2002
Beckmannia syzigachne (Steud.) Fernald	Poac	a	neo	cas	1	1995	r	acc	As AmN		2			Kubát et al. 2002, Jelínková in A9
Bellidiastrum michelii Cass.	Aster	pe	neo	cas	4		r	del	E					Bělohlávková in F7
Berberis julianae C. K. Scheid.	Berb	s	neo	cas	4	2010	s	del	As					this study
Berberis thunbergii DC.	Berb	s	neo	cas	4	2011	s	del	As					this study
Bergenia crassifolia (L.) Fritsch	Saxi	pe	neo	cas	4		r	del	As					Hrouda & Šourková in F3
Berteroa incana (L.) DC. subsp. *incana*	Bras	a b pe	ar	nat	13		c	acc	E M As	4^{177}	18			Smejkal in F3
Berteroa incana subsp. *stricta* (Boiss. et Heldr.) Stoj. et Stef.	Bras	a b pe	neo	cas	1	1960	v	acc	M					Smejkal in F3, Smejkal 1994
Beta trigyna Waldst. et Kit.	Amara	pe	neo	cas	4	1935	r	del	E M					Tomšovic in F2
Beta vulgaris Altissima Group	Amara	b a	neo	inv	14	1980s	la	acc	hybrid					Skalický & Pulkrabek 2006, Landová et al. 2010
Beta vulgaris Cicla Group	Amara	b a	ar	cas	4		r	del	anec					Pyšek et al. 2002
Beta vulgaris Vulgaris Group	Amara	ba	ar	cas	4		r	del	anec					Pyšek et al. 2002
Bidens connatus Willd.	Aster	a	neo	cas	1	1940s	r	acc	AmN					Lhotská 1968a, Štěpánková in F7
Bidens ferulifolius (Jacq.) Sweet	Aster	a	neo	cas	4	2006	r	del	AmN					this study
Bidens frondosus L.	Aster	a	neo	inv	14	1894	c	acc	AmN	6^{845}	22	yes	yes	Hejný 1948, Lhotská 1968a, Hejný et al. 1973, Štěpánková in F7
Bidens pilosus L.	Aster	a	neo	cas	1	1981	r	acc	AmN AmC AmS					Štěpánková in F7
Bifora radians M. Bieb.	Apia	a	ar	nat	6		r	acc	M		3			Křísa in F5
Bistorta amplexicaulis (D. Don) Greene	Poly	pe	neo	cas	4	1966	r	del	As					Chrtek in F2
Bolboschoenus glaucus (Lam.) S. G. Sm.	Cype	pe	neo	nat	7	1925	s	acc	E M Af					Hroudová et al. 1999, Kubát et al. 2002
Borago officinalis L.	Bora	a	ar	cas	4		r	del	M		1			Křísa in F6
Brachypodium rupestre (Host) Roem. et Schult.	Poac	pe	neo	nat	7	1891	r	acc	E M					Opiz 1852, Dostál 1989, Dančák & Hadinec in A10
Brassica elongata Ehrh. subsp. *elongata*	Bras	b pe	neo	cas	1	1873	r	acc	E		4			Zelený in F3
Brassica elongata subsp. *integrifolia* (Boiss.) Breistr.	Bras	b pe	neo	cas	1	1960	v	acc	E As			yes		Zelený in F3
Brassica juncea (L.) Czern.	Bras	a	neo	cas	4	1963	r	del	As		3			Zelený in F3
Brassica napus Napus Group	Bras	a	ar	cas	5		sc	del	anec		8			Zelený in F3
Brassica nigra (L.) W. D. J. Koch	Bras	a	ar	nat	9		r	del	M		7			Zelený in F3
Brassica oleracea L.	Bras	a b pe	ar	cas	5		r	acc	M		5			Zelený in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Brassica rapa L. var. *rapa*	Bras	a	ar	cas	5		sc	del	M		7			Zelený in F3
Brassica rapa var. *sylvestris* (Lam.) Briggs	Bras	a b	neo	cas	1	1964	r	acc	M					Kühn 1968, Zelený in F3
Briza maxima L.	Poac	a	neo	cas	4		r	del	M					Dostál 1989, Kubát et al. 2002
Briza minor L.	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002
Bromus arvensis L.	Poac	a	ar	cas	2		r	acc	M		3			Kubát et al. 2002
Bromus briziformis Fisch. et C. A. Mey.	Poac	a	neo	cas	4		r	del	M					Dostál 1989, Kubát et al. 2002
Bromus carinatus Hook. et Arn.	Poac	a pe	neo	nat	10	1934	sc	del	AmN					Dostál 1989, Svobodová & Řehořek 1996, Kubát et al. 2002, Řehořek in A1
Bromus catharticus Vahl	Poac	a	neo	cas	1	1853	r	acc	AmS			yes		Dostál 1989, Kubát et al. 2002, Řehořek in A1
Bromus commutatus Schrad.	Poac	a	ar	nat	6		r	acc	M		4			Kubát et al. 2002
Bromus hordeaceus L. subsp. *hordeaceus*	Poac	a	ar	nat	13		c	acc	M	2^{330}	24			Kubát et al. 2002
Bromus japonicus Thunb.	Poac	a	ar	nat	6		sc	acc	M	1^{36}	5			Kubát et al. 2002
Bromus lanceolatus Roth	Poac	a	neo	cas	1	1848	r	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Bromus lepidus Holmb.	Poac	a	neo	cas	1	1883	r	acc	E					Kubát et al. 2002
Bromus madritensis L.	Poac	a	neo	cas	1	1926	r	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Bromus rigidus Roth	Poac	a	neo	cas	1	1929	r	acc	M					Kubát et al. 2002
Bromus rubens L.	Poac	a	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Bromus scoparius L.	Poac	a	neo	cas	1	1920s	s+v	acc	M As					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Bromus secalinus L.	Poac	a	ar	cas	2		r	acc	M		3			Kubát et al. 2002, Lososová & Šumberová in A4
Bromus sterilis L.	Poac	a	ar	nat	13		c	acc	M	7^{253}	16			Kubát et al. 2002
Bromus tectorum L.	Poac	a	ar	nat	13		c	acc	M	5^{226}	20			Kubát et al. 2002
Brunnera macrophylla (Adam) I. M. Johnst.	Bora	pe	neo	cas	4	1965	r	del	E M				yes	Holub 1970, Křísa in F6, Kaplan in A8
Bryonia alba L.	Cucu	pe	ar	nat	13		c	acc	M		10			Chrtková in F2
Bryonia dioica Jacq.	Cucu	pe	ar	nat	10		sc	del	E M		4			Chrtková in F2
Buddleja alternifolia Maxim.	Scro	s	neo	cas	4	2011	s	del	As					this study
Buddleja davidii Franch.	Scro	s	neo	nat	12	2000	r	del	As		2	yes		Pyšek et al. 2002
Buglossoides arvensis (L.) I. M. Johnst. subsp. *arvensis*	Bora	a	ar	nat	13		sc	acc	M	3^{189}	9			Slavík in F6
Buglossoides incrassata (Guss.) I. M. Johnst. subsp. *incrassata*	Bora	a	neo	cas	2	2005	s	acc	E M					Jongepier in A5, this study
Buglossoides incrassata subsp. *splitgerberi* (Guss.) E. Zippel et Selvi	Bora	a	ar	nat	6		sc	acc	E M					this study, Clermont et al. 2003
Bunias erucago L.	Bras	b pe	neo	cas	1		r	acc	M					Smejkal in F3
Bunias orientalis L.	Bras	b pe	neo	inv	14	1856	la	acc	E		9	yes		Jehlík & Slavík 1968, Hejný et al. 1973, Smejkal in F3, Jehlík 1998a, Křivánek 2004
Bunium bulbocastanum L.	Apia	pe	neo	cas	1	1879	v	acc	E As			yes		Tomšovic in F5
Bupleurum croceum Fenzl	Apia	a	neo	cas	1	1943	s+v	acc	M					Snogerup & Snogerup 2001, Hadinec in A1
Bupleurum pachnospermum Pančić	Apia	a	neo	cas	4	1885	s+v	del	E					Snogerup & Snogerup 2001
Bupleurum rotundifolium L.	Apia	a	ar	cas	2		r	acc	M		2			Šourková & Hrouda in F5, Štefánek in A4

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Buxus sempervirens L.	Buxa	s (t)	neo	cas	4		r	del	E M					this study
Cakile maritima subsp. *baltica* (Rouy et Fouc.) P. W. Ball	Bras	a	neo	cas	1	1929	v	acc	E					Dvořák in F3
Cakile maritima subsp. *euxina* (Pobed.) Nyár.	Bras	a	neo	cas	1	1960	v	acc	E					Dvořák in F3
Calandrinia compressa DC.	Port	a	neo	cas	4	1853	r	del	AmS					Sekera 1854, Skalický & Sutorý in F2
Calendula arvensis L.	Aster	a	neo	cas	1	1901	r	acc	M					Slavíková in F7
Calendula officinalis L.	Aster	a	neo	cas	4	1872	sc	del	anec		2			Dostál 1989, Slavíková in F7
Callistephus chinensis (L.) Nees	Aster	a	neo	cas	4	1872	r	del	As					Bělohlávková in F7
Calystegia hederacea Wall.	Conv	pe	neo	cas	4	ca 1986	s	del	As					Trávníček & Dančák 2011
Calystegia pulchra Brummit et Heywood	Conv	pe	neo	nat	9	1857	r	del	As		4			Holub 1971, Křísa in F6
Camelina alyssum (Mill.) Thell. subsp. *alyssum*	Bras	a	ar	cas	2		v	acc	anec					Smejkal in F3
Camelina alyssum subsp. *integerrima* (Čelak.) Smejkal	Bras	a	ar	cas	2		v	acc	E M As					Smejkal in F3
Camelina laxa C. A. Mey.	Bras	a	neo	cas	1	1958	v	acc	M					Chrtek & Žertová 1958, Smejkal in F3
Camelina microcarpa DC. subsp. *microcarpa*	Bras	a	ar	nat	7		sc	acc	E As		7			Smejkal in F3
Camelina microcarpa subsp. *pilosa* (DC.) Hiitonen	Bras	a	ar	nat	7		sc	acc	E M As	1^{70}				Smejkal in F3
Camelina rumelica Velen.	Bras	b	neo	cas	1	1963	r	acc	M					Smejkal in F3
Camelina sativa (L.) Crantz var. *sativa*	Bras	a	ar	cas	3		v	del	anec					Smejkal in F3
Camelina sativa var. *zingeri* Mirek	Bras	a	neo	cas	1		v	acc	M					Smejkal in F3
Campanula alliariifolia Willd.	Camp	pe	neo	cas	4		r	del	E					Kovanda in F6
Campanula ×iserana Kovanda	Camp	pe	neo	cas	1	1974	s	acc	hybrid					Kovanda 1999, Kovanda in F6
Campanula lactiflora M. Bieb.	Camp	pe	neo	cas	4	1973	s	del	M					Řehořek in A8
Campanula medium L.	Camp	b	neo	cas	4	1968	r	del	M					Kovanda in F6
Campanula rapunculus L.	Camp	b	neo	cas	1	1892	r	acc	E M					Kovanda in F6
Campanula rhomboidalis L.	Camp	pe	neo	nat	11	1880	r	del	M					Kovanda & Husová 1976, Kovanda 1996, Kovanda in F6
Cannabis sativa L. var. *sativa*	Cann	a	ar	cas	4		r	del	E M		3			Chrtek in F1
Cannabis sativa var. *spontanea* Vavilov	Cann	a	neo	inv	14	1868	la	acc	E M As		2			Soják 1962, Chrtek in F1, Jehlík 1998a
Capsella bursa-pastoris (L.) Medik.	Bras	a b	ar	nat	13		c	acc	M	2^{2182}	24			Dvořáková in F3
Capsella rubella Reut.	Bras	a	neo	cas	1	2006	s	acc	M					Jongepier in A6
Caragana arborescens Lam.	Faba	s t	neo	cas	4		r	del	As					Tichá 2004
Cardamine chelidonia L.	Bras	a pe	neo	nat	8	1930	r	acc	M		7			Kučera 1991, Hrouda in F3, Paulič in A6, A7
Cardamine hirsuta L.	Bras	a b	ar	nat	7		r	acc	E M Af As		8			Marhold in F3
Carduus acanthoides L.	Aster	b	ar	nat	13		c	acc	M	2^{389}	24			Štěpánková in F7
Carduus ×leptocephalus Peterm.	Aster	b	ar	cas	1		r	acc	hybrid					Štěpánková in F7
Carduus ×orthocephalus Wallr.	Aster	b	ar	cas	1		r	acc	hybrid					Štěpánková in F7
Carduus tenuiflorus Curtis	Aster	a b	neo	cas	1	1967	s+v	acc	E					Pyšek et al. 2002
Carex grayi J. Carey	Cype	pe	neo	cas	4	2010	s+v	del	AmN					Hrbáč in A10
Carex muskingumensis Schwein.	Cype	pe	neo	cas	1	1947	s+v	acc	AmN					Jedlička 1949, Grüll 1952, Pyšek et al. 2002
Carthamus lanatus L.	Aster	a b	neo	cas	1	1958	v	acc	M					Dvořák & Kühn 1966, Zelený in F7
Carthamus tinctorius L.	Aster	a b	neo	cas	4	1876	r	del	M					Zelený in F7
Castanea sativa Mill.	Faga	t	neo	cas	4		r	del	E M		4			Pyšek et al. 2002
Catalpa bignonioides Walter	Bign	t	neo	cas	4		r	del	AmN					Skalická in F6
Catapodium rigidum (L.) C. E. Hubb.	Poac	a	neo	cas	1		r	acc	E M					Dostál 1989

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Caucalis platycarpos L. subsp. *platycarpos*	Apia	a	ar	nat	6		r	acc	M	4^{79}	6			Hrouda in F5
Caucalis platycarpos subsp. *muricata* (Čelak.) Holub	Apia	a	ar	cas	2		r	acc	M					Hrouda in F5
Celastrus orbiculatus Thunb.	Cela	s	neo	cas	4		s	del	As		2			Skalická in F5, Červinka & Sádlo 2000
Celosia argentea Cristata Group	Amara	a	neo	cas	4	1902	r	del	anec					Jehlík in F2
Celtis occidentalis L.	Cann	t	neo	cas	4	2001	r	del	AmN					Pyšek et al. 2002
Cenchrus echinatus L.	Poac	a	neo	cas	1		r	acc	AmN					Kubát et al. 2002
Centaurea benedicta (L.) L.	Aster	a	ar	cas	4		r	del	M					Bělohlávková in F7
Centaurea calcitrapa L.	Aster	a	neo	cas	1	1872	r	acc	M					Štěpánek & Koutecký in F7
Centaurea carniolica Host	Aster	pe	neo	cas	1	1914	s	acc	E					Koutecký 2008
Centaurea cyanus L.	Aster	a	ar	nat	13		sc	acc	anec	4^{429}	7			Štěpánek & Koutecký in F7
Centaurea diffusa Lam.	Aster	b	neo	nat	8		r	acc	M		3			Štěpánek & Koutecký in F7
Centaurea ×*extranea* Beck	Aster	pe	neo	cas	1		r	acc	hybrid					Štěpánek & Koutecký in F7
Centaurea ×*gerstlaueri* Erdner	Aster	pe	neo	cas	1		r	acc	hybrid					Pyšek et al. 2002, Štěpánek & Koutecký in F7
Centaurea ×*javorkae* Budai et J. Wagner	Aster	pe	neo	cas	1	1933	s	acc	hybrid					Štěpánek & Koutecký in F7
Centaurea macrocephala Willd.	Aster	pe	neo	cas	4		r	del	E					Štěpánek & Koutecký in F7
Centaurea melitensis L.	Aster	a	neo	cas	1	1901	v	acc	M					Štěpánek & Koutecký in F7
Centaurea nigra L.	Aster	pe	neo	nat	7	1872	r	acc	E		5			Štěpánek & Koutecký in F7
Centaurea nigrescens Willd.	Aster	pe	neo	cas	1	1823	r	acc	M		4			Štěpánek & Koutecký in F7
Centaurea ×*psammogena* Gáyer	Aster	b	neo	cas	1		s	acc	hybrid					Štěpánek & Koutecký in F7
Centaurea solstitialis L. subsp. *solstitialis*	Aster	a	neo	cas	1	1823	r	acc	M		3			Štěpánek & Koutecký in F7
Centaurea transalpina DC.	Aster	pe	neo	cas	1	ca 1900	s	acc	E					Koutecký 2008
Centranthus ruber (L.) DC.	Vale	pe	neo	cas	4	1880	r	del	M		1			Holub & Kirschner in F5
Cephalaria gigantea (Ledeb.) Bobrov	Dips	pe	neo	cas	4	1951	r	del	E					Smejkal 1952, Štěpánek & Holub in F5
Cephalaria syriaca (L.) Roem. et Schult.	Dips	a	neo	cas	1	1948	s+v	acc	M					Štěpánek & Holub in F5
Cerastium arvense subsp. *arvense* × *C. tomentosum*	Cary	pe	neo	nat	11		sc	del	hybrid		4			Pyšek et al. 2002
Cerastium tomentosum L.	Cary	pe	neo	nat	11		sc	del	M		3			Smejkal in F2
Chaenomeles japonica (Thunb.) Spach	Rosa	s	neo	cas	4	1986	s	del	As					Pyšek et al. 2002
Chaerophyllum nodosum (L.) Crantz	Apia	a	neo	cas	1	1997	s	acc	E M					Filippov 1999
Chamaecyparis lawsoniana (A. Murray) Parl.	Cupr	t	neo	cas	4		r	del	AmN					Pyšek et al. 2002
Chamaecytisus elongatus (Waldst. et Kit.) Link	Faba	s	neo	nat	9		r	del	E					Skalická in F4
Chelidonium majus L.	Papa	pe	ar	nat	13		c	acc	E M As	4^{680}	26			Kubát in F1
Chenopodium acuminatum Willd.	Amara	a	neo	cas	1	1953	v	acc	As					Dostálek et al. in F2
Chenopodium album subsp. *pedunculare* (Bertol.) Arcang.	Amara	a	ar	nat	13		c	acc	E		7			Dostálek et al. in F2
Chenopodium berlandieri subsp. *zschackei* (Murr) Zobel	Amara	a	neo	cas	1		r	acc	AmN					Dostálek et al. in F2
Chenopodium bonus-henricus L.	Amara	pe	ar	nat	13		c	acc	E	9^{85}	9			Dostálek et al. in F2
Chenopodium capitatum (L.) Asch.	Amara	a	neo	cas	3	1809	r	del	AmN					Dostálek et al. in F2
Chenopodium foliosum Asch.	Amara	a b	ar	cas	3		r	del	E M As					Dostálek et al. in F2
Chenopodium hircinum Schrad.	Amara	a	neo	cas	1	1957	r	acc	AmS					Dostálek et al. in F2
Chenopodium karoi (Murr) Aellen	Amara	a	neo	cas	1		v	acc	As					Dostálek et al. in F2
Chenopodium missouriense Aellen	Amara	a	neo	cas	1	1963	r	acc	AmN		3			Hejný et al. 1973, Dostálek et al. in F2

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Chenopodium murale L.	Amara	a	ar	nat	6		sc	acc	M					Dostálek et al. in F2
Chenopodium nitrariaceum (F. Muell.) Benth.	Amara	a (s)	neo	cas	1	1963	v	acc	Au					Dostálek et al. in F2
Chenopodium probstii Aellen	Amara	a	neo	cas	1		r	acc	AmN		2			Dostálek et al. in F2
Chenopodium quinoa Willd.	Amara	a	neo	cas	4	1966	v	del	AmS					Dostálek et al. in F2
Chenopodium striatiforme J. Murr	Amara	a	neo	nat	8		r	acc	E M	10^{63}	4			Dostálek et al. in F2
Chenopodium strictum Roth	Amara	a	neo	nat	13		sc	acc	M	10^{63}	5			Dostálek 1983, Dostálek et al. in F2
Chenopodium urbicum L.	Amara	a	ar	nat	6		sc	acc	E M As		1			Dostálek et al. in F2
Chenopodium vulvaria L.	Amara	a	ar	nat	6		sc	acc	E M As		4			Dostálek 1983, Dostálek et al. in F2
Chloris radiata (L.) Sw.	Poac	a	neo	cas	1	1961	s+v	acc	AmC AmS					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Chloris truncata R. Br.	Poac	a	neo	cas	1	1956	v	acc	As Au					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Chloris virgata Sw.	Poac	a	neo	cas	1	1961	s+v	acc	AmC AmS					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Chorispora tenella (Pall.) DC.	Bras	a	neo	cas	1	1960	r	acc	E As					Tomšovic in F3
Chrysanthemum ×morifolium Hemsl.	Aster	a (pe)	neo	cas	4		r	del	anec					Pyšek et al. 2002, Zelený in F7
Cicer arietinum L.	Faba	a	neo	cas	4		r	del	M					Chrtková in F4
Cicerbita macrophylla subsp. *uralensis* (Rouy) P. D. Sell	Aster	pe	neo	nat	11		r	del	E					Kovanda in F7
Cichorium endivia L.	Aster	a b	neo	cas	4	1968	r	del	M					Dvořáková in F7, Grulich in A9
Cichorium intybus L.	Aster	pe	ar	nat	13		c	acc	M	2^{249}	13			Dvořáková in F7
Cirsium arvense (L.) Scop.	Aster	pe	ar	inv	14		c	acc	E As	3^{3084}	44			Bureš in F7
Cirsium ×aschersonii Čelak.	Aster	pe	neo	cas	1		s+v	acc	hybrid					Bureš in F7
Cirsium ×celakovskyanum Knaf	Aster	pe	ar	cas	1		r	acc	hybrid					Bureš in F7
Cirsium echinus (M. Bieb.) Hand.-Mazz.	Aster	b	neo	cas	1	1937	v	acc	M					Bureš in F7
Cirsium ×moravicum Petr.	Aster	pe	ar	cas	1		s	acc	hybrid					Bureš in F7
Cirsium ×polivkae Podp.	Aster	pe	ar	cas	1		r	acc	hybrid					Bureš in F7
Cirsium ×sessile Peterm.	Aster	pe	ar	cas	1		r	acc	hybrid					Bureš in F7
Cirsium ×sextenum Huter	Aster	pe	ar	cas	1		r	acc	hybrid					Bureš in F7
Cirsium tuberosum (L.) All.	Aster	pe	neo	cas	1	1869	s+v	acc	E					Bureš in F7
Citrullus lanatus (Thunb.) Matsum. et Nakai	Cucu	a	ar	cas	5		r	del	Af As		1			Chrtková in F2
Clarkia pulchella Pursh	Onag	a	neo	cas	4		r	del	AmN					Smejkal in F5
Clarkia unguiculata Lindl.	Onag	a	neo	cas	4		r	del	AmN					Smejkal in F5
Claytonia perfoliata Willd.	Mont	a pe	neo	cas	3		r	del	AmN AmC					Skalický & Sutorý in F2
Claytonia sibirica L.	Mont	a	neo	nat	9	1951	r	del	AmN					Holub 1975, Skalický & Sutorý in F2, Paulič in A6
Clematis flammula L.	Ranu	s	neo	cas	4		r	del	M					Křísa in F1
Clematis tangutica (Maxim.) Korsh.	Ranu	s	neo	cas	4	1953	r	del	As					Pilát 1953, Procházka 1998, Hrouda in Kubát et al. 2002
Clematis viticella L.	Ranu	s	neo	cas	4		r	del	M					Křísa in F1
Clinopodium grandiflorum (L.) Kuntze	Lami	pe	neo	cas	4	1945	s	del	E M					Štěpánková in F6
Clinopodium menthifolium (Host) Stace	Lami	pe	neo	cas	1	1989	s+v	acc	E M					Štěpánková in F6
Clinopodium nepeta (L.) Kuntze subsp. *nepeta*	Lami	pe	neo	cas	4	1996	s	del	E M					Štěpánková in F6

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Clinopodium nepeta subsp. *glandulosum* (Req.) Govaerts	Lami	pe	neo	cas	4	1948	s	del	E M					Štěpánková in F6
Cnidium silaifolium (Jacq.) Simonk.	Apia	pe	neo	cas	2	1868	v	acc	E M					Grulich in F5
Cochlearia officinalis L.	Bras	b pe	neo	cas	4	1819	r	del	E					Smejkal in F3
Coleostephus myconis (L.) Rchb. f.	Aster	a	neo	cas	4		s+v	del	M					Zelený in F7
Collomia grandiflora Lindl.	Pole	a	neo	nat	9	1880	r	del	AmN					Křísa in F6
Colutea arborescens L.	Faba	s	neo	nat	12	1819	r	del	E M		5			Chrtková in F4
Commelina communis L.	Comm	a	neo	cas	4	1940	sc	del	As		2			Hejný et al. 1973, Jehlík 1998a, Kubát et al. 2002
Conium maculatum L.	Apia	a b	ar	inv	14		sc	acc	M As	19^{49}	8			Křísa in F5
Conringia orientalis (L.) C. Presl	Bras	a	ar	nat	6		r	acc	M	4^{39}	6			Smejkal in F3
Consolida ajacis (L.) Schur	Ranu	a	neo	cas	4	1880	sc	del	M		3			Chrtková in F1
Consolida hispanica (Costa) Greuter et Burdet	Ranu	a	neo	nat	8	1913	r	acc	E M As		3			Chrtková in F1, Jehlík 1998a
Consolida regalis Gray subsp. *regalis*	Ranu	a	ar	nat	13		sc	acc	M	5^{430}	7			Chrtková in F1
Convallaria majalis var. *transcaucasica* (Grossh.) Knorring	Aspa	pe	neo	cas	4	1970s	s	del	E					Čížek & Král 2009, Slavík & Zázvorka in Slavíková 2010
Convolvulus arvensis L.	Conv	pe	ar	nat	13		c	acc	M	3^{2021}	37			Křísa in F6
Convolvulus tricolor L.	Conv	a (pe)	neo	cas	4		r	del	M					Křísa in F6
Conyza bonariensis (L.) Cronquist	Aster	a	neo	cas	1	1964	s	acc	AmS				yes	Šída 2003, Šída in F7
Conyza canadensis (L.) Cronquist	Aster	a	neo	inv	14	1750	c	acc	AmN	2^{754}	34	yes	yes	Šída in F7
Conyza triloba Decne.	Aster	a	neo	cas	1	1971	s+v	acc	Af As					Šída 2003, Šída in F7
Coreopsis lanceolata L.	Aster	pe	neo	cas	4	1962	s+v	del	AmN			yes		Bělohlávková in F7
Coreopsis tinctoria Nutt.	Aster	a	neo	cas	4	1883	r	del	AmN					Bělohlávková in F7
Coriandrum sativum L.	Apia	a	ar	cas	4		r	del	M		2			Tomšovic in F5
Corispermum declinatum Steven	Amara	a	neo	cas	1	1960	s+v	acc	As					this study
Corispermum pallasii Steven	Amara	a	neo	nat	8	1933	la	acc	E			yes		Tomšovic in F2, this study
Cornus sericea L.	Corn	s	neo	nat	12	1900	r	del	AmN			yes		Holub in F5
Coronilla scorpioides (L.) W. D. J. Koch	Faba	a	neo	cas	1		v	acc	M					Chrtková in F4
Corylus colurna L.	Betu	t	neo	cas	4	2001	s	del	M					Pyšek et al. 2002
Corylus maxima Mill.	Betu	s	neo	cas	4	1902	r	del	M					Kovanda in F2
Cosmos bipinnatus Cav.	Aster	a	neo	cas	4		r	del	AmN					Slavíková in F7
Cota austriaca (Jacq.) Sch. Bip.	Aster	a	ar	nat	6		sc	acc	M	8^{107}	4			Dvořáková in F7
Cotinus coggygria Scop.	Anac	s	neo	cas	4	1884	r	del	E M					Skalická in F5
Cotoneaster bullatus Bois	Rosa	s	neo	cas	4		s	del	As					Pyšek et al. 2002
Cotoneaster dielsianus Diels	Rosa	s	neo	cas	4	2011	s	del	As					this study
Cotoneaster divaricatus Rehder et E. H. Wilson	Rosa	s	neo	cas	4	2012	r	del	As					this study
Cotoneaster horizontalis Decne.	Rosa	s	neo	cas	4	1986	r	del	As		6			Pyšek et al. 2002, Joza 2009
Cotoneaster lucidus Schltdl.	Rosa	s	neo	cas	4		s	del	As					Pyšek et al. 2002
Cotoneaster zabelii C. K. Schneid.	Rosa	s	neo	cas	4	2005	s	del	As					Čáp in A6
Cotula australis (Spreng.) Hook. f.	Aster	a	neo	cas	1	1958	s+v	acc	Au					Dvořák & Kühn 1966, Bělohlávková in F7
Crambe abyssinica R. E. Fr.	Bras	a	neo	cas	4	1965	v	del	Af As					Smejkal 1989a, Smejkal in F3
Crambe maritima L.	Bras	pe	neo	nat	7		r	acc	E					Smejkal in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Crataegus coccinea L.	Rosa	t s	neo	cas	4		sc	del	AmN					Holub in F3
Crataegus crus-galli L.	Rosa	t s	neo	cas	4	1900	s+v	del	AmN					Holub in F3
Crataegus flabellata (Spach) K. Koch	Rosa	s t	neo	cas	4	1993	r	del	AmN					Pyšek et al. 2002
Crataegus mollis (Torr. et A. Gray) Scheele	Rosa	t s	neo	cas	4		r	del	AmN					Holub in F3
Crataegus persimilis Sarg.	Rosa	s t	neo	cas	4		s	del	AmN					Pyšek et al. 2002
Crepis capillaris (L.) Wallr.	Aster	a pe	ar	nat	7		la	acc	E	1[32]	9			Kaplan & Kirschner in F7
Crepis foetida L. subsp. *foetida*	Aster	b a	neo	cas	2	1872	v	acc	E M					Kaplan & Kirschner in F7
Crepis foetida subsp. *rhoeadifolia* (M. Bieb.) Čelak.	Aster	b a	ar	nat	7		la	acc	E M		4			Kaplan & Kirschner in F7
Crepis nicaeensis Balb.	Aster	a pe	neo	cas	1	1872	r	acc	M			yes		Kaplan & Kirschner in F7
Crepis setosa Haller f.	Aster	a	ar	nat	7		r	acc	E		4			Kaplan & Kirschner in F7
Crepis tectorum L. subsp. *tectorum*	Aster	a pe	ar	nat	6		r	acc	M		6			Kaplan & Kirschner in F7
Crepis vesicaria subsp. *taraxacifolia* (Thuill.) Thell.	Aster	b	neo	cas	1	1900	s+v	acc	M					Kaplan & Kirschner in F7
Crocosmia ×crocosmiiflora (Lemoine) N. E. Br.	Irid	pe	neo	cas	4		r	del	anec					Chrtek in F8
Crocus chrysanthus (Herb.) Herb.	Irid	pe	neo	cas	4	1925	r	del	M					Šuk 2001, Chrtek in F8
Crocus flavus Weston	Irid	pe	neo	cas	3	1910s	v	del	anec					Pyšek et al. 2002, Chrtek in F8
Crocus sativus L.	Irid	pe	neo	cas	4		s+v	del	anec					Chrtek in F8
Crocus tommasinianus Herb.	Irid	pe	neo	cas	4	1910s	s+v	del	E					Chrtek in F8
Crocus vernus (L.) Hill	Irid	pe	neo	cas	4		r	del	M					Chrtek in F8
Cucumis melo L.	Cucu	a	ar	cas	4		r	del	Af As		2			Chrtková in F2
Cucumis sativus L.	Cucu	a	ar	cas	4		r	del	As		2			Chrtková in F2
Cucurbita maxima Duchesne	Cucu	a	neo	cas	4		r	del	AmS		1			Chrtková in F2
Cucurbita pepo L.	Cucu	a	neo	cas	4	1969	r	del	AmN & C & S		1			Chrtková in F2
Cuscuta campestris Yunck.	Conv	a	neo	inv	14	1883	sc	acc	AmN		4			Jehlík 1998a, Chrtek in F6
Cuscuta epilinum Weihe	Conv	a	ar	cas	2		v	acc	anec					Chrtek in F6
Cydonia oblonga Mill.	Rosa	t s	ar	cas	4		r	del	M					Kovanda in F3
Cymbalaria muralis G. Gaertn. et al. subsp. *muralis*	Plant	pe	ar	nat	15		sc	del	M	17[37]	5			Slavík in F6
Cymbalaria pallida (Ten.) Wettst.	Plant	pe	neo	nat	11		r	del	M		3			Slavík in F6, Láníková in A9
Cynodon dactylon (L.) Pers.	Poac	pe	ar	nat	13		sc	acc	Af As	19[45]	10			Kubát et al. 2002
Cynosurus echinatus L.	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002
Cyperus eragrostis Lam.	Cype	pe	neo	cas	1	1999	s	acc	AmN & C & S			yes	yes	Kubát et al. 2002, Petřík 2003
Cyperus glomeratus L.	Cype	pe	neo	cas	4	1895	s+v	del	E As					Kubát et al. 2002, Kubát in Štěpánková 2012
Cyperus rotundus L.	Cype	pe	neo	cas	1		v	acc	M					Dostál 1989, Kubát et al. 2002
Cypripedium reginae Walter	Orch	pe	neo	cas	4	1935	v	del	AmN					Dostál et al. 1948–1950, Šuk 2001
Cystopteris bulbifera (L.) Bernh.	Wood	pe f	neo	cas	4		s	del	AmN					Marek et al. in A1
Cytisus scoparius (L.) Link subsp. *scoparius*	Faba	s	neo	nat	12	1819	sc	del	E	5[67]	17			Skalická in F4
Dactyloctenium aegyptium (L.) Willd.	Poac	a	neo	cas	1		r	acc	Af As					Kubát et al. 2002
Dahlia pinnata Cav.	Aster	a (pe)	neo	cas	4		r	del	AmN					Bělohlávková in F7
Darmera peltata (Benth.) Voss	Saxi	pe	neo	cas	4	1960	r	del	AmN					Král et al. 2004c
Dasiphora fruticosa (L.) Rydb.	Rosa	s	neo	cas	4	1977	s	del	E As					Pyšek et al. 2002
Dasypyrum villosum (L.) P. Candargy	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002
Datura ferox L.	Sola	a	neo	cas	1	1987	v	acc	As					Štěpánek in F6
Datura inoxia Mill.	Sola	a	neo	cas	4	1934	s+v	del	AmN & C & S					Štěpánek in F6

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Datura stramonium L. var. *stramonium*	Sola	a	neo	nat	13	1809	sc	acc	AmN		3			Štěpánek in F6
Datura stramonium var. *tatula* (L.) Torr.	Sola	a	neo	cas	4	1935	r	del	AmN					Štěpánek in F6
Daucus carota subsp. *sativus* (Hoffm.) Schübl. et G. Martens	Apia	b	ar	cas	4		r	del	anec					Tomšovic in F5
Descurainia sophia (L.) Prantl	Bras	a	ar	nat	13		c	acc	M As	3^{494}	18			Dvořák in F3
Deutzia scabra Thunb.	Hydra	s	neo	cas	4	2001	s	del	As					Pyšek et al. 2002
Dianthus barbatus L. subsp. *barbatus*	Cary	pe	neo	nat	11	1874	r	del	E					Kovanda in F2
Dianthus caryophyllus L.	Cary	pe	neo	cas	4		r	del	M					Kovanda in F2
Dianthus chinensis L.	Cary	a b	neo	cas	4		r	del	As					Kovanda in F2
Dichanthelium oligosanthes (Schult.) Gould	Poac	pe	neo	cas	1		r	acc	AmC AmS					Kubát et al. 2002
Dichanthium sericeum (R. Br.) A. Camus	Poac	pe	neo	cas	1	1961	s+v	acc	Au					Dvořák & Kühn 1966, Kubát et al. 2002
Diervilla lonicera Mill.	Dier	s	neo	cas	4		r	del	AmN					Chrtek in F5
Digitalis lanata Ehrh.	Plant	b	neo	cas	4	1881	r	del	E					Kubát in F6
Digitalis lutea L.	Plant	pe	neo	cas	4	1872	r	del	E					Kubát in F6
Digitalis purpurea L.	Plant	b pe	neo	nat	17	1790	la	del	E M	10^{58}	8			Kubát in F6
Digitaria ciliaris (Retz.) Koeler	Poac	a	neo	cas	1	1908	s	acc	Af As					Wilhalm 2009, Danihelka in A9
Digitaria ischaemum (Schreb.) Muhl.	Poac	a	ar	inv	14		sc	acc	M	10^{73}	10			Kubát et al. 2002
Digitaria sanguinalis (L.) Scop. var. *sanguinalis*	Poac	a	ar	nat	15		c	del	M	15^{78}	10			Kubát et al. 2002
Digitaria sanguinalis var. *pectiniformis* (Henrard) Tuyama	Poac	a	ar	nat	6		r	acc	M					Kubát et al. 2002
Dinebra retroflexa (Vahl) Panz.	Poac	a	neo	cas	1	1972	r	acc	Af As					Dvořák & Frank 1975, Kubát et al. 2002
Diplotaxis muralis (L.) DC.	Bras	a b	ar	nat	6		sc	acc	M	3^{25}	8	yes	yes	Smejkal in F3
Diplotaxis tenuifolia (L.) DC.	Bras	pe	ar	nat	6		sc	acc	M		4	yes		Smejkal in F3
Dipsacus sativus (L.) Honck.	Dips	b	ar	cas	4		r	del	anec					Štěpánek & Holub in F5
Dipsacus strigosus Roem. et Schult.	Dips	b	neo	nat	10	1864	la	del	E M		7			Lhotská 1968b, Štěpánek & Holub in F5
Dittrichia graveolens (L.) Greuter	Aster	a	neo	nat	8	2008	la	acc	M					Raabe in A8
Doronicum columnae Ten.	Aster	pe	neo	nat	11		r	del	E					Pyšek et al. 2002, Štech in F7
Doronicum orientale Hoffm.	Aster	pe	neo	cas	4	1819	r	del	E M					Čelakovský 1885, Pyšek et al. 2002, Štech in F7
Doronicum pardalianches L.	Aster	pe	neo	cas	4	1897	s	del	E					Štech in F7
Draba sibirica (Pall.) Thell.	Bras	pe	neo	cas	4	1963	r	del	As					Chrtek in F3
Dracocephalum moldavica L.	Lami	a	neo	cas	3	1854	v	del	As					Hrouda in F6
Dracocephalum thymiflorum L.	Lami	a	neo	cas	1	1958	v	acc	E As					Hejný et al. 1973, Hrouda in F6
Duchesnea indica (Jacks.) Focke	Rosa	pe	neo	nat	10	1960	r	del	As		4	yes		Smejkal 1975b, Křísa in F4
Dysphania ambrosioides (L.) Mosyakin et Clemants	Amara	a b	neo	cas	4	1835	r	del	AmS		3		yes	Dostálek et al. in F2
Dysphania botrys (L.) Mosyakin et Clemants	Amara	a	ar	nat	7		sc	acc	M As		3			Dostálek et al. in F2
Dysphania melanocarpa (J. M. Black) Mosyakin et Clemants	Amara	a	neo	cas	1		v	acc	Au					Dostálek et al. in F2
Dysphania pumilio (R. Br.) Mosyakin et Clemants	Amara	a	neo	nat	8	1890	sc	acc	Au		3			Hejný & Schwarzová 1978, Lhotská & Hejný 1979, Dostálek et al. in F2, Jehlík 1998a
Dysphania schraderiana (Schult.) Mosyakin et Clemants	Amara	a	neo	cas	4	1864	r	del	Af					Dostálek et al. in F2
Ecballium elaterium (L.) A. Rich.	Cucu	a	neo	cas	4	1880	r	del	M					Chrtková in F2

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Echinochloa colona (L.) Link	Poac	a	neo	cas	1		v	acc	M			yes		Dostál 1989, Kubát et al. 2002
Echinochloa crus-galli (L.) P. Beauv.	Poac	a	ar	inv	14		c	acc	anec	4^{833}	19			Dostál 1989, Kubát et al. 2002
Echinochloa frumentacea Link	Poac	a	neo	cas	1		v	acc	As					Dostál 1989, Kubát et al. 2002
Echinochloa muricata (P. Beauv.) Fernald	Poac	a	neo	cas	1		r	acc	AmN					Kubát et al. 2002
Echinochloa oryzoides (Ard.) Fritsch	Poac	a	neo	cas	1	1950	v	acc	M			yes		Hejný 1950-1951, Hejný et al. 1973, Kubát et al. 2002
Echinochloa utilis (A. Braun) H. Scholz	Poac	a	neo	cas	1		r	acc	As					Kubát et al. 2002
Echinocystis lobata (Michx.) Torr. et A. Gray	Cucu	a	neo	inv	18	1911	la	del	AmN	14^{33}	7	yes		Slavík & Lhotská 1967, Chrtková in F2, Rydlo 2000, Sutorý 2000
Echinops exaltatus Schrad.	Aster	pe	neo	nat	12		r	del	E		5			Slavík in F7
Echinops sphaerocephalus L. subsp. *sphaerocephalus*	Aster	pe	neo	inv	16	1871	c	del	E M	6^{59}	9			Hendrych 1987, Slavík in F7
Echium plantagineum L.	Bora	b	neo	cas	1	1960	s+v	acc	M					Smejkal 1980, Křísa in F6
Egeria densa Planch.	Hydro	pe aq	neo	cas	4	1991	r	del	AmS					Kaplan in F8
Ehrharta longiflora Sm.	Poac	a	neo	cas	1	1963	s+v	acc	Af					Dvořák & Kühn 1966
Eichhornia crassipes (Mart.) Solms	Pont	a (pe) aq	neo	cas	4	1991	r	del	AmS			yes	yes	Rydlo 1992, 2001, Pyšek et al. 2002, Kaplan in A8
Elaeagnus angustifolia L.	Elae	t	neo	cas	4		r	del	E M As					Koblížek in F5
Elaeagnus commutata Rydb.	Elae	s	neo	nat	11	1974	r	del	AmN					P. Krása, V. Grulich pers. com.
Eleusine indica (L.) Gaertn.	Poac	a	neo	cas	1	1963	r	acc	Af As					Dvořák & Kühn 1966, Jehlík 1998a, Kubát et al. 2002, Kubát in A7
Elodea canadensis Michx.	Hydro	pe aq	neo	nat	15	1879	c	del	AmN	35^{412}	8	yes	yes	Pyšek & Mandák 1998b, Husák et al. in F8
Elodea nuttallii (Planch.) H. St. John	Hydro	pe aq	neo	cas	4	1988	r	del	AmN			yes	yes	Husák et al. in F8
Elsholtzia ciliata (Thunb.) Hyl.	Lami	a	ar	cas	4		r	del	As		5			Cejp 1948b, Slavíková in F6
Elymus canadensis L.	Poac	pe	neo	cas	1		v	acc	AmN					Kubát et al. 2002
Epilobium adenocaulon Hausskn.	Onag	pe	neo	nat	13	1926	c	acc	AmN AmC	1^{684}	45	yes	yes	Holub 1966, Smejkal 1986, Smejkal in F5
Epilobium ×*floridulum* Smejkal	Onag	pe	neo	cas	1	1980	r	acc	hybrid					Smejkal 1995, Smejkal in F5
Epilobium ×*fossicola* Smejkal	Onag	pe	neo	cas	1		r	acc	hybrid					Smejkal 1995, Smejkal in F5
Epilobium ×*iglaviense* Smejkal	Onag	pe	neo	cas	1	1979	s	acc	hybrid					Smejkal 1995, Smejkal in F5
Epilobium ×*interjectum* Smejkal	Onag	pe	neo	cas	1	1987	r	acc	hybrid					Smejkal 1995, Smejkal in F5
Epilobium ×*josefi-holubii* Krahulec	Onag	pe	neo	cas	1	1997	s	acc	hybrid					Krahulec 1999
Epilobium komarovianum H. Lév.	Onag	pe	neo	cas	4	1964	r	del	Au		2			Řehořek 1974, Holub 1978a, Smejkal in F5
Epilobium ×*mentiens* Smejkal	Onag	pe	neo	cas	1	1987	r	acc	hybrid					Smejkal 1995, Smejkal in F5
Epilobium ×*novae-civitatis* Smejkal	Onag	pe	neo	cas	1	1972	r	acc	hybrid					Smejkal 1974, Smejkal in F5
Epilobium ×*nutantiflorum* Smejkal	Onag	pe	neo	cas	1	1976	r	acc	hybrid					Smejkal 1995, Smejkal in F5
Epilobium ×*prochazkae* Krahulec	Onag	pe	neo	cas	1	1997	r	acc	hybrid					Krahulec 1999
Epilobium ×*vicinum* Smejkal	Onag	pe	neo	cas	1	1971	r	acc	hybrid					Smejkal 1995, Smejkal in F5
Epimedium alpinum L.	Berb	pe	neo	cas	4	1874	r	del	E					Zelený in F1
Eragrostis albensis H. Scholz	Poac	a	neo	cas	1	1968	s	acc	anec		3			Kubát et al. 2002, Špryňar & Kubát 2004
Eragrostis cilianensis (All.) Janch.	Poac	a	neo	cas	1		r	acc	M As					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Eragrostis gracilis Schrad.	Poac	a	neo	cas	1		v	acc	AmS					Dostál 1989, Kubát et al. 2002
Eragrostis mexicana (Hornem.) Link	Poac	a	neo	cas	1	1966	r	acc	AmN					Dostál 1989, Kubát et al. 2002

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Eragrostis minor Host	Poac	a	ar	inv	14		sc	acc	M	12^{81}	7			Kubát et al. 2002
Eragrostis multicaulis Steud.	Poac	a	neo	cas	1	1961	v	acc	As					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Eragrostis pectinacea (Michx.) Nees	Poac	a	neo	cas	1	1968	s	acc	AmN AmC					Špryňar & Kubát 2004
Eragrostis pilosa (L.) P. Beauv.	Poac	a	neo	nat	8	1902	r	acc	As					Špryňar & Kubát 2004
Eragrostis suaveolens Claus	Poac	a	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966
Eragrostis tef (Zuccagni) Trotter	Poac	a	neo	cas	1	1965	v	acc	M					Kubát 1979, Dostál 1989, Kubát et al. 2002
Eranthis hyemalis (L.) Salisb.	Ranu	pe	neo	nat	11		r	del	M		4			Chrtková in F1
Erechtites hieraciifolius (L.) DC.	Aster	pe	neo	nat	8	1895	sc	acc	AmN		10			Dvořáková in F7, Hadinec in A9
Erigeron annuus (L.) Desf. subsp. *annuus*	Aster	a	neo	inv	14	1884	sc	acc	AmN	3^{109}	13			Jehlík 1998a, Šída in F7
Erigeron annuus subsp. *septentrionalis* (Fernald et Wiegand) Wagenitz	Aster	a b	neo	inv	14		c	acc	AmN					Šída in F7
Erigeron speciosus (Lindl.) DC.	Aster	pe	neo	cas	4	1888	s+v	del	AmN					Dostál 1989, Šída in F7
Erigeron strigosus Willd.	Aster	a pe	neo	nat	8		r	acc	AmN		2			Šída in F7
Eriochloa punctata (L.) Ham.	Poac	a	neo	cas	1	1960	s+v	acc	AmC AmS					Dvořák & Kühn 1966
Erodium botrys (Cav.) Bertol.	Gera	a b	neo	cas	1	1956	v	acc	M					Slavík 1996a, Slavík in F5
Erodium cicutarium (L.) L'Hér.	Gera	a b	ar	nat	13		c	acc	E M As	3^{430}	16			Slavík in F5
Erodium gruinum (L.) L'Hér.	Gera	a b	neo	cas	1	1897	v	acc	M					Slavík in F5
Erodium moschatum (L.) L'Hér.	Gera	a b	neo	cas	1	1855	r	acc	M					Slavík in F5
Erodium neuradifolium Godr.	Gera	a b	neo	cas	1	1986	v	acc	M					Slavík 1996b, Slavík in F5
Eruca sativa Mill.	Bras	a	neo	cas	4	1900	r	del	M					Zelený in F3
Erucastrum gallicum (Willd.) O. E. Schulz	Bras	a b	neo	nat	8	1867	sc	acc	E		3			Štěpánek 1983, Štěpánek in F3
Erucastrum nasturtiifolium (Poir.) O. E. Schulz	Bras	b pe	neo	nat	8	1870	la	acc	E M		4			Štěpánek 1983, Štěpánek in F3
Eryngium amethystinum L.	Apia	pe	neo	cas	4	1966	s+v	del	M					Tomšovic in F5
Eryngium giganteum M. Bieb.	Apia	pe	neo	cas	4	1995	s+v	del	E M					Tomšovic in F5
Erysimum capitatum var. *purshii* (Durand) Rollins	Bras	b pe	neo	cas	4	1942	v	del	AmN					Kirschner & Štěpánek 1984, Štěpánek in F3
Erysimum cheiranthoides L. subsp. *cheiranthoides*	Bras	a	ar	nat	13		c	acc	E M As	1^{239}	13			Štěpánek in F3
Erysimum cheiri (L.) Crantz	Bras	pe	neo	nat	11	1819	r	del	M		2			Dvořák in F3
Erysimum repandum L.	Bras	a	ar	cas	2		r	acc	E		5		yes	Štěpánek in F3
Erythronium dens-canis L.	Lili	pe	neo	nat	9	1819	r	del	E		3			Kaplan in A4, Sádlo 2009, Bělohlávková in F8
Eschscholzia californica Cham.	Papa	a	neo	cas	4		r	del	AmN		1			Kubát in F1
Euclidium syriacum (L.) W. T. Aiton	Bras	a	ar	cas	2		v	acc	M					Kirschner & Sutorý in F3
Euphorbia agraria M. Bieb.	Euph	pe	neo	cas	1	2005	s+v	acc	E					Čáp 2008, Čáp in A4
Euphorbia chamaesyce L.	Euph	a	neo	cas	1		v	acc	AmN			yes		Chrtek & Křísa in F3
Euphorbia exigua L.	Euph	a	ar	nat	13		sc	acc	M	5^{251}	8			Chrtek & Křísa in F3
Euphorbia falcata L.	Euph	a	ar	nat	6		sc	acc	M	4^{52}	2			Chrtek & Křísa in F3
Euphorbia helioscopia L.	Euph	a	ar	nat	13		c	acc	M	2^{773}	7			Chrtek & Křísa in F3
Euphorbia humifusa Willd.	Euph	a	neo	cas	1		v	acc	As					Chrtek & Křísa in F3
Euphorbia lagascae Spreng.	Euph	a	neo	cas	1	1974	v	acc	M					Unar 1978, Chrtek & Křísa in F3
Euphorbia lathyris L.	Euph	a b	neo	cas	4	1872	r	del	M		3			Chrtek & Křísa in F3
Euphorbia maculata L.	Euph	a	neo	cas	1		r	acc	AmN					Chrtek & Křísa in F3, Simonová in A7
Euphorbia marginata Pursh	Euph	a	neo	cas	4		r	del	AmN					Chrtek & Křísa in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Euphorbia myrsinites L.	Euph	pe	neo	cas	4	1998	r	del	E As					this study
Euphorbia peplus L.	Euph	a	ar	nat	13		c	acc	M	1^{85}	7			Chrtek & Křísa in F3
Euphorbia taurinensis All.	Euph	a	neo	cas	1	1930	r	acc	M		3			Chrtek & Křísa 1970, Chrtek & Křísa in F3, Jongepier in A3
Euphrasia salisburgensis Funck	Orob	a p	neo	cas	4	ca 1900	s+v	del	E					Štursa et al. 2009, this study
Eurybia divaricata (L.) G. L. Nesom	Aster	pe	neo	cas	4	ca 1920	r	del	AmN					Pyšek & Vobořil 2002, Kovanda & Kubát in F7
Eurybia macrophylla (L.) Cass.	Aster	pe	neo	cas	4		r	del	AmN					Kovanda & Kubát in F7
Fagopyrum esculentum Moench	Poly	a	ar	cas	4		r	del	anec		4			Chrtek in F2
Fagopyrum tataricum (L.) Gaertn.	Poly	a	neo	cas	4	1880	r	del	As		2			Chrtek in F2
Fallopia aubertii (L. Henry) Holub	Poly	s	neo	nat	12		sc	del	As		4	yes		Chrtek in F2
Fallopia ×*convolvuloides* (Brügger) Holub	Poly	a	ar	cas	1		r	acc	hybrid					Chrtek in F2
Fallopia convolvulus (L.) Á. Löve	Poly	a	ar	nat	13		c	acc	M	3^{1860}	38			Chrtek in F2
Ferulago confusa Velen.	Apia	pe	neo	cas	4	1998	r	del	M			yes	yes	Rotreklová & Řehořek in A8
Ficus carica L.	Mora	t s	ar	cas	4		r	del	M					Eitel 1982, Zelený in F1
Filago pyramidata L.	Aster	a	neo	cas	1	1833	s+v	acc	E M					Wagenitz 1965, Štech in F7
Filipendula kamtschatica (Pall.) Maxim.	Rosa	pe	neo	cas	4	1940	v	del	As					Smrček & Malina 1984, Smejkal in F4
Foeniculum vulgare Mill.	Apia	b pe	ar	cas	4		r	del	M					Tomšovic in F5
Forsythia suspensa (Thunb.) Vahl	Olea	s	neo	cas	4		r	del	As					Pyšek et al. 2002
Fragaria ×*ananassa* (Weston) Rozier	Rosa	pe	neo	nat	11		sc	del	anec					Křísa in F4
Fraxinus ornus L.	Olea	t	neo	cas	4	1950	r	del	E M		5			Pyšek et al. 2002
Fraxinus pennsylvanica Marshall	Olea	t	neo	inv	18		la	del	AmN		5	yes		Koblížek in F5
Fritillaria meleagris L.	Lili	pe	neo	cas	4	1819	r	del	E					Bělohlávková in F8
Fumaria capreolata L.	Papa	a	neo	cas	4		r	del	M					Smejkal in F1
Fumaria officinalis L. subsp. *officinalis*	Papa	a	ar	nat	13		sc	acc	M	2^{346}	9			Smejkal in F1
Fumaria officinalis subsp. *wirtgenii* (W. D. J. Koch) Arcang.	Papa	a	ar	nat	13		c	acc	M					Smejkal in F1
Fumaria parviflora Lam.	Papa	a	neo	cas	2	1860s	v	acc	M					Smejkal in F1
Fumaria rostellata Knaf	Papa	a	ar	nat	13		sc	acc	M	3^{42}	2			Smejkal in F1
Fumaria schleicheri Soy.-Will.	Papa	a	ar	nat	13		sc	acc	M		15			Smejkal in F1
Fumaria vaillantii Loisel. subsp. *vaillantii*	Papa	a	ar	nat	13		sc	acc	M	3^{80}	16			Smejkal in F1
Fumaria vaillantii subsp. *schrammii* (Asch.) Nyman	Papa	a	ar	nat	6		r	acc	M					Smejkal in F1
Gagea villosa (M. Bieb.) Sweet	Lili	pe	ar	nat	6		sc	acc	M		9			Hrouda in F8
Gaillardia ×*grandiflora* Van Houtte	Aster	pe	neo	cas	4	2003	r	del	anec					Bělohlávková in F7
Gaillardia pulchella Foug.	Aster	a	neo	cas	4		r	del	AmN					Bělohlávková in F7
Galega officinalis L.	Faba	pe	ar	nat	10		r	del	E M		11			Chrtková in F4
Galeobdolon argentatum Smejkal	Lami	pe	neo	nat	12		sc	del	anec		11			Smejkal 1975a, Dvořáková in F6
Galeopsis segetum Neck.	Lami	a	neo	cas	4	1852	r	del	E					Slavíková in F6
Galinsoga parviflora Cav.	Aster	a	neo	inv	14	1880	c	acc	AmS	7^{439}	13	yes	yes	Slavík in F7
Galinsoga quadriradiata Ruiz et Pav.	Aster	a	neo	inv	14	1901	c	acc	AmC AmS	10^{375}	13			Slavík in F7
Galium murale (L.) All.	Rubi	a	neo	cas	1	2009	s	acc	E					Prančl in A10
Galium parisiense L.	Rubi	a	neo	cas	1	1835	v	acc	E M					Kaplan & Řehořek 1998, Kaplan in F6,
Galium rubioides L.	Rubi	pe	neo	cas	1	1852	v	acc	E					Štěpánková in F6

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Galium spurium L. subsp. *spurium*	Rubi	a	ar	nat	6		sc	acc	E M	2^{189}	5			Kaplan in F6
Galium tricornutum Dandy	Rubi	a	ar	cas	2		r	acc	M		3			Kaplan in F6, Štefánek in A4
Galium verrucosum Huds.	Rubi	a	neo	cas	1	1822	v	acc	M					Kaplan in F6
Gastridium ventricosum (Gouan) Schinz et Thell.	Poac	a	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966, Kubát et al. 2002
Gaudinia fragilis (L.) P. Beauv.	Poac	a	neo	cas	1		r	acc	M					Dostál 1989, Kubát et al. 2002
Genista sagittalis L.	Faba	ss	neo	nat	7	1928	r	acc	E		6			Skalická 1993, Skalická in F4
Gentiana lutea L. subsp. *lutea*	Gent	pe	neo	nat	9		r	del	E					Kirschner & Kirschnerová in F6
Gentianella obtusifolia subsp. *norica* (A. Kern. et Jos. Kern.) Holub	Gent	b	neo	cas	4	ca 1900	s	del	E					Štursa et al. 2009
Geranium columbinum L.	Gera	a b	ar	nat	13		sc	acc	M	2^{67}	23			Slavík 1997ab, Slavík in F5
Geranium dissectum L.	Gera	a	ar	nat	13		sc	acc	M	2^{273}	2			Slavík in F5
Geranium ibericum Cav.	Gera	pe	neo	cas	4	1965	r	del	M					Slavík 1997ab, Slavík in F5
Geranium macrorrhizum L.	Gera	pe	neo	nat	11		r	del	E M		3			Slavík 1997ab, Slavík in F5
Geranium molle L. subsp. *molle*	Gera	a b	ar	nat	7		r	acc	M		8			Slavík 1997ac, Slavík in F5
Geranium purpureum Vill.	Gera	a	neo	cas	1	2005	r	acc	M					Růžička & Koblížek 2009
Geranium pusillum Burm. f.	Gera	a b	ar	nat	13		c	acc	E M	2^{703}	18			Slavík 1997ac, Slavík in F5
Geranium pyrenaicum Burm. f.	Gera	b pe	neo	nat	13	1819	c	acc	M		7			Slavík 1997ac, Slavík in F5
Geranium reflexum L.	Gera	pe	neo	cas	4	1992	r	del	M					Slavík in F5
Geranium rotundifolium L.	Gera	a	neo	cas	1	1851	r	acc	E M		1			Slavík 1997ab, Slavík in F5
Geranium sibiricum L.	Gera	pe	neo	nat	10	1850	r	del	E As					Slavík 1997ab, Slavík in F5, Fajmon et al. in A7
Geranium versicolor L.	Gera	pe	neo	cas	4	1986	v	del	M					Chrtek 1989, Slavík in F5
Geum aleppicum Jacq.	Rosa	pe	neo	cas	1	1923	r	acc	E As		4			Domin 1923, Smejkal 1988, 1989b, Smejkal in F4
Geum ×gajewskii Smejkal	Rosa	pe	neo	cas	1	1956	v	acc	hybrid					Smejkal in F4
Geum macrophyllum Willd.	Rosa	pe	neo	cas	4	1956	r	del	As AmN					Smejkal in F4
Geum ×spurium Fisch. et C. A. Mey.	Rosa	pe	neo	cas	1		v	acc	hybrid					Smejkal in F4
Gilia achilleifolia Benth.	Pole	a	neo	cas	4		r	del	AmN					Křísa in F6
Gilia capitata Sims	Pole	pe	neo	cas	4	1982	s	del	AmN					Pyšek et al. 2002
Gilia tricolor Benth.	Pole	a b	neo	cas	4		r	del	AmN					Křísa in F6
Glaucium corniculatum (L.) Rudolph	Papa	a b	ar	cas	2		r	acc	M		4			Kubát in F1
Glaucium flavum Crantz	Papa	b pe	ar	cas	3		v	del	M					Kubát in F1
Glebionis coronaria (L.) Spach	Aster	a b	neo	cas	4	1879	r	del	M					Zelený in F7
Glebionis segetum (L.) Fourr.	Aster	a	neo	cas	4	1872	r	del	M		3			Zelený in F7
Gleditsia triacanthos L.	Faba	t	neo	cas	4	2008	r	del	AmN			yes		this study
Glyceria striata (Lam.) Hitchc.	Poac	pe	neo	nat	8		r	acc	AmN					Dančák 2002, Kubát et al. 2002
Glycine max (L.) Merr.	Faba	a	neo	cas	4	1958	r	del	anec		2			Chrtková in F4
Glycyrrhiza glabra L.	Faba	pe	ar	nat	9		r	del	M		5			Chrtková in F4
Gratiola neglecta Torr.	Plant	a	neo	cas	1	2002	r	acc	AmN					Šumberová & Ducháček 2009
Guizotia abyssinica (L. f.) Cass.	Aster	a	neo	cas	4	1937	r	del	Af					Smejkal 1989a, Zelený in F7
Gypsophila elegans M. Bieb.	Cary	a	neo	cas	4	1968	r	del	E M					Šourková in F2
Gypsophila scorzonerifolia Ser.	Cary	pe	neo	nat	7	1900	r	acc	M					Grüll & Smejkal 1966, Šourková in F2

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Helianthemum nummularium (L.) Mill. subsp. *nummularium*	Cist	ss	neo	cas	4		s	del	E M					Hrouda in Hejný & Slavik 1990
Helianthus annuus L.	Aster	a	neo	cas	5	1872	sc	del	AmN		4			Jehlík 1998a, Kirschner & Šída in F7
Helianthus ×*laetiflorus* Pers.	Aster	pe	neo	nat	12		sc	del	anec		5			Kirschner & Šída in F7
Helianthus pauciflorus Nutt.	Aster	pe	neo	nat	12		r	del	AmN					Kirschner & Šída in F7
Helianthus petiolaris Nutt.	Aster	a	neo	cas	1	1974	s+v	acc	AmN					Kirschner & Šída in F7
Helianthus salicifolius A. Dietr.	Aster	pe	neo	cas	4	1973	s+v	del	AmN					Kirschner & Šída in F7
Helianthus strumosus L.	Aster	pe	neo	cas	4		s+v	del	AmN					Pyšek et al. 2002, Kirschner & Šída in F7
Helianthus tuberosus L.	Aster	pe	neo	inv	18	1885	c	del	AmN	26[62]	5	yes		Kirschner & Šída in F7
Helichrysum thianschanicum Regel	Aster	pe	neo	cas	4	1941	s+v	del	As					Štech in F7
Heliopsis helianthoides (L.) Sweet	Aster	pe	neo	cas	4	1970s	r	del	AmN					Bělohlávková in F7
Heliotropium europaeum L.	Bora	a	ar	cas	2		v	acc	M					Slavík in F6, Žáková in A6
Helleborus foetidus L.	Ranu	pe	neo	cas	4		r	del	E M					Chrtková in F1
Helleborus niger L.	Ranu	pe	neo	cas	4	1874	r	del	E M					Chrtková in F1
Helleborus odorus Willd.	Ranu	pe	neo	cas	4		r	del	E M					Chrtková in F1
Helleborus orientalis Lam.	Ranu	pe	neo	cas	4		r	del	E					this study
Helleborus viridis L.	Ranu	pe	neo	cas	4	1819	sc	del	E					Chrtková in F1
Helminthotheca echioides (L.) Holub	Aster	pe	neo	cas	1	1861	r	acc	M					Štěpánek in F7
Hemerocallis fulva (L.) L.	Xant	pe	neo	cas	4	1883	sc	del	As		5			Bělohlávková in F8
Hemerocallis liliоasphodelus L.	Xant	pe	neo	cas	4	1883	r	del	As					Bělohlávková in F8
Heracleum mantegazzianum Sommier et Levier	Apia	b pe	neo	inv	16	1862	la	del	E	26[27]	14	yes+	yes+	Holub in F5, Pyšek 1991, Pyšek & Pyšek 1994. Pyšek et al. 2008
Heracleum persicum Fisch.	Apia	b pe	neo	cas	4	1960	s	del	M					Holub in F5
Herniaria cinerea DC.	Cary	a	neo	cas	1	1960	r	acc	M					Sutorý in F2
Herniaria hirsuta L.	Cary	a pe	ar	nat	6		r	acc	M		3			Sutorý in F2
Herniaria incana Lam.	Cary	pe	neo	cas	1	1986	s	acc	E As					Hlaváček 1989, 1991, Hlaváček & Pyšek 1992
Hesperis matronalis L. subsp. *matronalis*	Bras	pe	neo	nat	9	1817	sc	del	E M		8			Dvořák 1968, Dvořák in F3
Hesperis matronalis subsp. *candida* (Schulzer et al.) Thell.	Bras	pe	neo	nat	9	1909	r	del	E					Dvořák 1968, Dvořák in F3
Hesperis matronalis subsp. *schurii* Soó	Bras	pe	neo	cas	4	1933	r	del	E					Dvořák 1968, Dvořák in F3
Hesperis pycnotricha Borbás et Degen	Bras	b pe	neo	cas	4	1950	s	del	E					Dvořák in F3
Hibiscus trionum L.	Malv	a	ar	nat	6		r	acc	M		3			Slavík in F3
Hieracium heldreichii agg.	Aster	pe	neo	cas	4	1978	s	del	E M					this study
Hieracium mixtum Froel.	Aster	pe	neo	cas	4	2006	s	del	E					Kocián & Chrtek in A9
Hippocrepis emerus (L.) Lassen	Faba	s	neo	cas	4	1891	v	del	E M					Chrtková in F4
Hippophaë rhamnoides L.	Elae	s	neo	cas	4	1902	r	del	E M As				yes	Pyšek et al. 2002
Hirschfeldia incana (L.) Lagr.-Foss.	Bras	a b	neo	cas	1	1956	r	acc	M		3			Krčan & Kopecký 1960, Štěpánek in F3, Jehlík 1998a
Hopia obtusa (Kunth) Zuloaga et Morrone	Poac	pe	neo	cas	1	1961	s+v	acc	AmC AmS					Dvořák & Kühn 1966, Kubát et al. 2002
Hordeum brevisubulatum (Trin.) Link	Poac	pe	neo	cas	1	1974	s+v	acc	As					Danihelka in A8
Hordeum geniculatum All.	Poac	a	neo	cas	1	1961	r	acc	E M					Dvořák & Kühn 1966, Kubát et al. 2002
Hordeum jubatum L.	Poac	a	neo	nat	12		sc	del	AmN		6			Kubát et al. 2002

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Hordeum marinum Huds.	Poac	a	neo	cas	1		r	acc	E M					Kubát et al. 2002
Hordeum murinum L. subsp. *murinum*	Poac	a	ar	nat	13		c	acc	M		8			Kubát et al. 2002
Hordeum murinum subsp. *leporinum* (Link) Arcang.	Poac	a	neo	cas	1	1967	s+v	acc	M					Pyšek et al. 2002
Hordeum secalinum Schreb.	Poac	pe	neo	cas	1	1959	r	acc	M					Kubát et al. 2002, Danihelka in A8
Hordeum vulgare Distichon Group	Poac	a	ar	cas	5		r	del	anec					Kubát et al. 2002
Hordeum vulgare Vulgare Group	Poac	a	ar	cas	5		sc	del	anec		4			Kubát et al. 2002
Hosta plantaginea (Lam.) Asch.	Aspa	pe	neo	cas	4		r	del	As					Pyšek et al. 2002
Humulus scandens (Lour.) Merr.	Cann	a	neo	cas	4		r	del	As					Chrtek in F1
Hyacinthella leucophaea (K. Koch) Schur	Aspa	pe	neo	cas	4	1960	s	del	E					Šuk 2001
Hyacinthoides hispanica (Mill.) Rothm.	Aspa	pe	neo	cas	4	2007	r	del	M					Trávníček 2010
Hylotelephium anacampseros (L.) H. Ohba	Cras	pe	neo	cas	4		r	del	E					Grulich in F3
Hylotelephium ewersii (Ledeb.) H. Ohba	Cras	ss	neo	cas	4		r	del	As					Grulich in F3
Hylotelephium spectabile (Boreau) H. Ohba	Cras	pe	neo	cas	4		r	del	anec					Grulich in F3
Hyoscyamus albus L.	Sola	b a pe	neo	cas	1	1890	v	acc	M					Slavík in F6
Hyoscyamus niger L.	Sola	b a	ar	nat	13		sc	acc	M As	2^{25}	3			Slavík in F6
Hyparrhenia hirta (L.) Stapf	Poac	pe	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966, Kubát et al. 2002
Hypericum annulatum Moris	Hype	pe	neo	cas	1	2008	s	acc	E					Sutorý 2010a, b
Hyssopus officinalis L.	Lami	ss	ar	cas	4		sc	del	M		3			Tomšovic in F6
Iberis amara L.	Bras	a	neo	cas	4	1888	r	del	M					Dvořáková in F3
Iberis sempervirens L.	Bras	ss	neo	cas	4		r	del	M					Dvořáková in F3
Iberis umbellata L.	Bras	a	neo	cas	4	1880	r	del	M					Dvořáková in F3
Impatiens balfourii Hook. f.	Balsa	a	neo	cas	4		r	del	As			yes		Slavík in F5
Impatiens balsamina L.	Balsa	a	neo	cas	4		r	del	As					Slavík in F5
Impatiens glandulifera Royle	Balsa	a	neo	inv	16	1896	la	del	As	18^{302}	16	yes+	yes	Daumann 1967, Slavík in F5
Impatiens parviflora DC.	Balsa	a	neo	inv	16	1870	c	del	As	6^{1591}	45	yes		Vraštil 1952, Daumann 1967, Slavík in F5
Impatiens scabrida DC.	Balsa	a	neo	cas	4	1986	v	del	As					Slavík in F5
Inula helenium L.	Aster	pe	neo	nat	9	1819	sc	del	E M As		3			Hrouda in F7
Ipomoea hederacea (L.) Jacq.	Conv	a	neo	cas	4	1972	r	del	AmN & C & S					Kubát et al. 2002
Ipomoea purpurea (L.) Roth	Conv	a	neo	cas	4	1969	r	del	AmC AmS		3			Křísa in F6
Iris ×*germanica* L.	Irid	pe	ar	nat	11		sc	del	E As		8			Hrouda & Grulich in F8
Iris pallida Lam.	Irid	pe	neo	cas	4		s	del	M					Pyšek et al. 2002, Hrouda & Grulich in F8
Iris ×*sambucina* L.	Irid	pe	ar	nat	11		r	del	As					Hrouda & Grulich in F8
Isatis tinctoria L. subsp. *tinctoria*	Bras	b pe	ar	nat	9		la	del	M		6			Kirschner & Sutorý in F3
Isatis tinctoria subsp. *praecox* (Tratt.) Domin et Podp.	Bras	b pe	neo	cas	1	1921	s	acc	M					Kirschner & Sutorý in F3, Kubát et al. 2002
Ismelia carinata (Schousb.) Sch. Bip.	Aster	a	neo	cas	4		r	del	Af					Zelený in F7
Iva xanthiifolia Nutt.	Aster	a	neo	nat	8	1947	sc	acc	AmN		3			Lhotská & Slavík 1969, Hejný et al. 1973, Jehlík 1998a, Slavík in F7
Juglans nigra L.	Jugl	t	neo	cas	4		r	del	AmN		3			Vicherek et al. 2000, Pyšek et al. 2002
Juglans regia L.	Jugl	t	ar	nat	12		la	del	M	1^{45}	7			Pyšek et al. 2002
Juncus tenuis Willd.	Junc	pe	neo	nat	13	1851	c	acc	AmN	8^{128}	17			Kubát et al. 2002
Kickxia elatine (L.) Dumort. subsp. *elatine*	Plant	a	ar	nat	6		r	acc	M		3			Slavík in F6, Kaplan in A6
Kickxia spuria (L.) Dumort. subsp. *spuria*	Plant	a	ar	nat	6		r	acc	M	3^{54}	3			Slavík in F6

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Koelreuteria paniculata Laxm.	Sapi	t	neo	cas	4	2009	r	del	As					this study
Laburnum anagyroides Medik.	Faba	s t	neo	nat	12	1900	la	del	E M		11			Skalická in F4
Lactuca sativa L.	Aster	a b	ar	cas	4		r	del	anec					Grulich in F7
Lactuca serriola L.	Aster	a b	ar	nat	13		c	acc	M	3^{631}	31			Grulich in F7
Lactuca tatarica (L.) C. A. Mey.	Aster	pe	neo	cas	1	1957	r	acc	M		1			Hejný et al. 1973, Jehlík 1980, Jehlík 1998a, Grulich in F7
Lactuca virosa L.	Aster	a b	neo	cas	3	1872	v	del	M					Grulich in F7
Lagurus ovatus L.	Poac	a	neo	cas	4		r	del	M					Dostál 1989, Kubát et al. 2002
Lamium album L.	Lami	pe	ar	nat	13		c	acc	E M	4^{509}	33			Dvořáková in F6
Lamium amplexicaule L.	Lami	a	ar	nat	13		sc	acc	M	2^{602}	11			Dvořáková in F6
Lamium ×holsaticum E. H. L. Krause	Lami	pe	ar	cas	1		r	acc	hybrid					Dvořáková in F6
Lamium hybridum Vill.	Lami	a	neo	cas	1	1901	v	acc	E M					Otruba 1946, Dvořáková 1965
Lamium confertum Fr.	Lami	a	neo	cas	1	1862	v	acc	E					Dvořáková 1965
Lamium orvala L.	Lami	pe	neo	cas	4		r	del	E					Dvořáková in F6
Lamium purpureum L.	Lami	a b	ar	nat	13		c	acc	M	2^{1054}	18			Dvořáková in F6
Lappula patula (Lehm.) Menyh.	Bora	a	neo	cas	1	1960	v	acc	E M As					Holub 1974, Kubát in F6
Lappula squarrosa (Retz.) Dumort.	Bora	a b	ar	nat	6		sc	acc	M As		9			Kubát in F6
Lapsana communis L. subsp. *communis*	Aster	a	ar	nat	13		c	acc	M	2^{1180}	40			Křísa in F7
Lathyrus annuus L.	Faba	a	neo	cas	1		v	acc	M		15			Chrtková & Bělohlávková in F4
Lathyrus aphaca L.	Faba	a	neo	nat	8		r	acc	M		4			Chrtková et al. 1977, Chrtková & Bělohlávková in F4
Lathyrus cicera L.	Faba	a	neo	nat	7		r	acc	M					Chrtková & Bělohlávková in F4
Lathyrus clymenum L.	Faba	a	neo	cas	1		v	acc	M					Chrtková & Bělohlávková in F4
Lathyrus hirsutus L.	Faba	a	neo	nat	8		r	acc	E M		6			Hadinec & Lustyk 2011, this study
Lathyrus odoratus L.	Faba	a	neo	cas	4		r	del	M					Chrtková & Bělohlávková in F4
Lathyrus ochrus (L.) DC.	Faba	a	neo	cas	1		v	acc	M					Chrtková & Bělohlávková in F4
Lathyrus sativus L.	Faba	a	ar	cas	3		r	del	anec					Chrtková & Bělohlávková in F4
Lathyrus tingitanus L.	Faba	a	neo	cas	4		r	del	M					Chrtková & Bělohlávková in F4
Lathyrus tuberosus L.	Faba	pe	ar	nat	13		sc	acc	M	3^{341}	11			Chrtková & Bělohlávková in F4
Lavandula angustifolia Mill.	Lami	ss	ar	cas	4		r	del	M					Tomšovic in F6
Lavatera trimestris L.	Malv	a	neo	cas	4		r	del	M					Slavík in F3
Lawrencia glomerata Hook.	Malv	pe	neo	cas	1	1961	s+v	acc	Au					Dvořák & Kühn 1966, Slavík in F3
Legousia hybrida (L.) Delarbre	Camp	a	neo	cas	4	1809	r	del	E					Kovanda in F6
Legousia pentagonia (L.) Druce	Camp	a	neo	cas	4	2005	s	del	M					Řehořek & Lososová in A8
Legousia speculum-veneris (L.) Chaix	Camp	a	neo	cas	4	1809	r	del	M					Kovanda in F6
Lemna turionifera Landolt	Arac	a pe aq	neo	nat	8	1992	r	acc	AmN		1			Kaplan 2000, Kaplan in F8
Lens culinaris Medik.	Faba	a	ar	cas	4		r	del	anec					Chrtková in F4
Leontopodium alpinum Cass.	Aster	pe	neo	cas	4	1888	r	del	E					Bělohlávková in F7
Leonurus cardiaca L. subsp. *cardiaca*	Lami	pe	ar	nat	7		sc	acc	anec					Holub 1993, Tomšovic in F6
Leonurus cardiaca nothosubsp. *intermedius* Tzvelev	Lami	pe	neo	nat	7	1887	sc	acc	hybrid					Holub 1993
Leonurus cardiaca subsp. *villosus* (D'Urv.) Hyl.	Lami	pe	neo	nat	7	1899	r	acc	E M					Holub 1993
Leonurus japonicus Houtt.	Lami	pe	neo	cas	4	1934	v	del	As					Tomšovic in F6, Kubát et al. 2002

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Lepidium africanum (Burm. f.) DC.	Bras	a	neo	cas	1	1964	s+v	acc	Af					Dvořáková in F3
Lepidium campestre (L.) W. T. Aiton	Bras	a b	ar	nat	13		sc	acc	E M	1^{60}	13			Dvořáková in F3
Lepidium coronopus (L.) Al-Shehbaz	Bras	a b	ar	nat	6		r	acc	M	22^{31}	3			Smejkal in F3
Lepidium densiflorum Schrad.	Bras	a b	neo	nat	8	1904	la	acc	AmN		2	yes		Hejný et al. 1973, Dvořáková in F3
Lepidium didymus L.	Bras	a b	neo	cas	1	1903	r	acc	AmS		2	yes	yes	Smejkal in F3
Lepidium draba (L.) Desv.	Bras	pe	ar	nat	13		c	acc	M	6^{190}	14	yes		Dvořáková in F3
Lepidium heterophyllum Benth.	Bras	pe	neo	cas	1		r	acc	E		3			Dvořáková in F3
Lepidium latifolium L.	Bras	pe	neo	cas	4	1900	r	del	E M					Dvořáková in F3
Lepidium perfoliatum L.	Bras	a b	neo	cas	1	1872	r	acc	E M		3			Dvořáková in F3
Lepidium ruderale L.	Bras	a b	ar	nat	13		c	acc	M	4^{211}	8			Dvořáková in F3
Lepidium sativum L.	Bras	a	neo	cas	4	17th	r	del	M Af		2			Dvořáková in F3
Lepidium virginicum L.	Bras	a b	neo	nat	8	1936	sc	acc	AmN AmC		3	yes		Hejný et al. 1973, Dvořáková in F3
Leptochloa chinensis (L.) Nees	Poac	a	neo	cas	1		r	acc	As					Grüll 1979, Kubát et al. 2002
Leptochloa fusca subsp. *fascicularis* (Lam.) N. Snow	Poac	a	neo	cas	1		r	acc	AmN & C & S					Kubát et al. 2002
Leptochloa panicea subsp. *brachiata* (Steud.) N. Snow	Poac	a	neo	cas	1	1961	r	acc	AmC AmS					Dvořák & Kühn 1966, Kubát et al. 2002
Lepyrodiclis holosteoides (C. A. Mey.) Fisch. et C. A. Mey.	Cary	a	neo	cas	1	1967	r	acc	M As					Dvořák in F2
Leucanthemella serotina (L.) Tzvelev	Aster	pe	neo	cas	1	1973	v	acc	E					Zelený in F7, Hadinec & Lustyk 2012
Levisticum officinale W. D. J. Koch	Apia	pe	ar	cas	4		r	del	M					Tomšovic in F5
Leymus arenarius (L.) Hochst.	Poac	pe	neo	cas	4		r	del	E					Dostál 1989, Kubát et al. 2002
Lilium bulbiferum L.	Lili	pe	ar	nat	9		sc	del	E		5			Hrouda in F8
Lilium candidum L.	Lili	pe	neo	cas	4		r	del	M					Hrouda in F8
Linaria arvensis (L.) Desf.	Plant	a	ar	cas	2		r	acc	M		2			Suda 1999, 2001, Grulich in F6
Linaria maroccana Hook. f.	Plant	a	neo	cas	4		r	del	M					Grulich in F6
Linaria repens (L.) Mill.	Plant	pe	neo	nat	9	1934	r	del	M		2			Grulich in F6
Linaria vulgaris Mill.	Plant	pe	ar	nat	13		c	acc	M	1^{438}	33			Grulich in F6
Lindernia dubia (L.) Pennell	Lind	a	neo	cas	1	1989	s	acc	AmN					Kurka 1990, Křísa in F6
Linum usitatissimum L.	Lili	a b	ar	cas	5		sc	del	anec		3			Hrouda in F5
Lobelia erinus L.	Camp	a	neo	cas	4		r	del	Af					Slavík in F6
Lobularia maritima (L.) Desv.	Bras	pe a	neo	cas	4	1963	r	del	M			yes		Smejkal in F3
Lolium ×*hybridum* Hausskn.	Poac	pe	neo	nat	11		r	del	anec					Kubát et al. 2002
Lolium multiflorum Lam.	Poac	pe	neo	nat	17	1883	c	del	E	3^{92}	17			Kubát et al. 2002
Lolium remotum Schrank	Poac	a	ar	cas	2		v	acc	M					Kubát et al. 2002
Lolium rigidum Gaudin subsp. *rigidum*	Poac	a	neo	cas	1		r	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Lolium rigidum subsp. *lepturoides* Sennen et Mauricio	Poac	a	neo	cas	1	1971	s+v	acc	M					Dostál 1989, Kubát et al. 2002
Lolium temulentum L.	Poac	a	ar	cas	2		v	acc	M					Kubát et al. 2002
Lonicera caprifolium L.	Capr	s	neo	nat	12	1809	sc	del	E M		13			Chrtek in F5
Lonicera periclymenum L.	Capr	s	neo	nat	11	1994	sc	del	E		7			this study
Lonicera tatarica L.	Capr	s	neo	cas	4	1872	r	del	As		5			Chrtek in F5
Lotus ornithopodioides L.	Faba	a	neo	cas	4	1996	r	del	M					this study
Lunaria annua L.	Bras	b	neo	nat	12	1819	sc	del	M		10			Dvořák in F3
Lupinus albus L.	Faba	a	neo	cas	4	1878	r	del	M					Tomšovic & Bělohlávková in F4

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Lupinus angustifolius L.	Faba	a	neo	cas	4	1900	r	del	M					Tomšovic & Bělohlávková in F4
Lupinus luteus L.	Faba	a	neo	cas	3	1880	v	del	M					Tomšovic & Bělohlávková in F4
Lupinus polyphyllus Lindl.	Faba	pe	neo	inv	18	1895	c	del	AmN	1[31]	14	yes+	yes	Tomšovic & Bělohlávková in F4
Luzula nivea (L.) DC.	Junc	pe	neo	cas	4		r	del	E					Kubát et al. 2002
Lychnis chalcedonica L.	Cary	pe	neo	cas	4		r	del	E As					Šourková in F2, Čáp in A3
Lychnis coronaria (L.) Desr.	Cary	pe	neo	nat	11	1879	r	del	E M					Šourková in F2
Lycium barbarum L.	Sola	s	neo	inv	16	1870	sc	del	E M	9[25]	11	yes		Skalická in F6
Lycium chinense Mill.	Sola	s	neo	cas	4		s	del	As					Pyšek et al. 2002
Lycopsis arvensis L.	Bora	a b	ar	nat	6		sc	acc	E	3[155]	3			Křísa in F6
Lycopsis orientalis L.	Bora	a b	neo	cas	1	1862	r	acc	E M As					Krahulec 1981, Křísa in F6, Hadinec in A8
Lycopus europaeus subsp. *menthifolius* (Mabille) Skalický	Lami	pe	neo	cas	1	1880	s+v	acc	M					Skalický 1968, Chrtek in F6
Lysimachia punctata L.	Prim	pe	neo	nat	11	1819	c	del	E M		7			Skalický in F3
Lythrum junceum Banks et Sol.	Lyth	pe	neo	cas	1	1965	s+v	acc	M					Toman & Starý 1966, Dvořáková in F5
Macleaya cordata (Willd.) R. Br.	Papa	pe	neo	cas	4		r	del	As					Kubát in F1
Madia sativa Molina	Aster	a	neo	cas	3	1965	v	del	AmC					Zelený in F7
Mahonia aquifolium (Pursh) Nutt.	Berb	s	neo	nat	12		la	del	AmN		4	yes		Zelený in F1
Malcolmia africana (L.) W. T. Aiton	Bras	a	neo	cas	1	1935	v	acc	M					Krist 1940, Dvořák in F3
Malcolmia chia (L.) DC.	Bras	a	neo	cas	4		v	del	M					Dvořák in F3
Malcolmia maritima (L.) W. T. Aiton	Bras	a	neo	cas	4	1850	r	del	M					Dvořák in F3
Malope trifida Cav.	Malv	a	neo	cas	4	1969	r	del	M					Slavík in F3
Malus baccata (L.) Borkh.	Rosa	s t	neo	cas	4		s	del	As					this study
Malus ×*dasyphylla* Borkh.	Rosa	t	ar	nat	7		sc	acc	hybrid					Dostálek in F3
Malus domestica Borkh.	Rosa	t s	ar	nat	11		sc	del	anec	2[31]	14			Dostálek in F3
Malus fusca (Raf.) C. K. Schneid.	Rosa	t	neo	cas	4	2004	s	del	AmN					Řehořek in A8
Malus pumila Mill.	Rosa	s	neo	cas	4	1974	sc	del	anec				yes	this study
Malva ×*adulterina* Wallr.	Malv	a b	ar	cas	1		r	acc	hybrid					Slavík in F3
Malva neglecta Wallr.	Malv	b pe	ar	nat	13		c	acc	M	12[245]	15			Slavík in F3
Malva parviflora L.	Malv	a	neo	cas	1	1957	v	acc	M					Slavík in F3
Malva pusilla Sm.	Malv	a	ar	nat	6		sc	acc	E As		8			Slavík in F3
Malva sylvestris L. var. *sylvestris*	Malv	b pe	ar	nat	17		sc	del	M		8			Slavík in F3
Malva sylvestris var. *mauritiana* (L.) Boiss.	Malv	b pe	ar	cas	4		r	del	anec					Slavík in F3
Malva verticillata L. var. *verticillata*	Malv	a b pe	neo	cas	4		r	del	As		7			Slavík in F3
Malva verticillata var. *crispa* L.	Malv	a	neo	cas	4	1853	r	del	As					Slavík in F3
Malva ×*zoernigii* B. Fleisch.	Malv	?	ar	cas	1		v	acc	hybrid					Slavík in F3
Marrubium ×*paniculatum* Desr.	Lami	pe	ar	cas	1		r	acc	hybrid					Hrouda in F6
Marrubium peregrinum L.	Lami	pe	ar	nat	6		r	acc	E M		2			Hrouda in F6, Danihelka in A2
Marrubium vulgare L.	Lami	pe	ar	cas	2		r	acc	M		4			Hrouda in F6
Matricaria chamomilla L.	Aster	a	ar	nat	13		c	acc	E					Kubát in F7
Matricaria discoidea DC.	Aster	a	neo	nat	13	1853	c	acc	As	4[858]	14	yes		Kubát in F7
Matricaria chamomilla × *Tripleurospermum inodorum*	Aster	a	ar	cas	1		s+v	acc	hybrid					Rohlena 1930, Kubát in F7
Matteuccia struthiopteris (L.) Tod.	Onoc	pe f	neo	nat	11	1820	r	del	E As AmN		6			Hendrych 1984, Slavík in F1
Matthiola incana (L.) W. T. Aiton subsp. *incana*	Bras	a b	neo	cas	4	1877	r	del	M					Dvořák in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Matthiola longipetala (Vent.) DC. subsp. *longipetala*	Bras	a	neo	cas	1	1924	v	acc	E M					Dvořák in F3
Matthiola longipetala subsp. *bicornis* (Sm.) P. W. Ball	Bras	a	neo	cas	4	1952	r	del	M					Dvořák in F3
Meconopsis cambrica (L.) R. Vig.	Papa	pe	neo	cas	4	2000	s	del	E					Kubát in Härtel et al. 2002, Hadinec et al. 2003
Medicago arabica (L.) Huds.	Faba	a	neo	cas	1	1936	r	acc	M					Kirschner & Štěpánek in F4
Medicago disciformis DC.	Faba	a	neo	cas	1	1963	v	acc	M					Kirschner & Štěpánek in F4
Medicago orbicularis (L.) Bartal.	Faba	a	neo	cas	1		v	acc	M					Kirschner & Štěpánek in F4
Medicago polymorpha L.	Faba	a	neo	cas	1	1880	r	acc	M					Kirschner & Štěpánek in F4
Medicago rigidula (L.) All.	Faba	a	neo	cas	1	1923	v	acc	M					Kirschner & Štěpánek in F4
Medicago sativa L.	Faba	pe	neo	nat	17	1819	c	del	anec		18	yes		Kirschner & Štěpánek in F4
Medicago ×*varia* Martyn	Faba	pe	neo	nat	17		sc	del	hybrid					Kirschner & Štěpánek in F4
Megathyrsus bivonianus (Brullo et al.) Verloove	Poac	a	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966
Melampyrum arvense L.	Orob	a p	ar	nat	6		sc	acc	M	2^{153}	12			Štech in F6
Melampyrum barbatum Willd. subsp. *barbatum*	Orob	a p	neo	cas	1	1893	v	acc	E					Štech in F6
Melica altissima L.	Poac	pe	neo	nat	11	1955	r	del	E As					Kubát et al. 2002
Melilotus albus Medik.	Faba	b a	ar	nat	17		c	del	M As	13^{274}	26			Hašková, Kirschner, Štěpánek in F4
Melilotus indicus (L.) All.	Faba	a	neo	cas	1	1913	r	acc	M As					Hašková, Kirschner, Štěpánek in F4
Melilotus siculus (Turra) Steud.	Faba	a	neo	cas	1	1929	v	acc	M					Hašková, Kirschner, Štěpánek in F4
Melilotus officinalis (L.) Lam.	Faba	b a	ar	nat	17		c	del	M As	8^{255}	24			Hašková, Kirschner, Štěpánek in F4
Melilotus sulcatus Desf.	Faba	a	neo	cas	1	1929	v	acc	M					Hašková, Kirschner, Štěpánek in F4
Melilotus wolgicus Poir.	Faba	b a	neo	cas	1	1963	v	acc	E					Hašková, Kirschner, Štěpánek in F4
Melissa officinalis (L.) Lam. subsp. *officinalis*	Lami	pe	neo	nat	12	1872	sc	del	M		3			Tomšovic in F6
Mentha ×*gracilis* Sole	Lami	pe	neo	cas	4	1855	r	del	anec					Štěpánek 1998b, Štěpánek in F6
Mentha ×*niliaca* Jacq.	Lami	pe	neo	nat	9	1976	r	del	hybrid					Štěpánek 1998b, Štěpánek in F6
Mentha ×*piperita* L. nothosubsp. *piperita*	Lami	pe	neo	cas	4	1840	sc	del	anec		7			Štěpánek 1998b, Štěpánek in F6
Mentha ×*rotundifolia* (L.) Huds.	Lami	pe	neo	nat	9	1846	c	del	anec		8			Štěpánek 1998b, Štěpánek in F6
Mentha spicata L. subsp. *spicata*	Lami	pe	neo	cas	4	1818	r	del	E					Štěpánek 1998a, Štěpánek in F6
Mentha spicata s. lat. [taxonomically unclear cultivated clones]	Lami	pe	neo	cas	4	1844	r	del	anec					Štěpánek 1998a, Štěpánek in F6
Mercurialis annua L.	Euph	a	ar	nat	13		c	acc	M	6^{113}	7			Kubát in F3
Mertensia sibirica (L.) G. Don	Bora	pe	neo	cas	4		r	del	As					Křísa in F6
Mespilus germanica L.	Rosa	t s	ar	cas	4		r	del	M		6			Kovanda in F3
Microrrhinum litorale (Willd.) Speta	Plant	a	neo	cas	1	1994	r	acc	M					Mikoláš 1997, Grulich in F6
Microrrhinum minus (L.) Fourr.	Plant	a	ar	nat	7		sc	acc	E M	1^{157}	7			Grulich in F6
Mimulus guttatus DC.	Phry	pe	neo	nat	15	1853	sc	del	AmN		4			Slavík in F6
Mimulus moschatus Lindl.	Phry	pe	neo	nat	9	1868	r	del	AmN		5			Slavík in F6, Hadinec in A1
Mirabilis jalapa L.	Nyct	a (pe)	neo	cas	4		r	del	AmN & C & S			yes		Skalický in F2
Miscanthus sacchariflorus (Maxim.) Hack.	Poac	pe	neo	cas	4	2003	r	del	As					this study
Miscanthus sinensis Andersson	Poac	pe	neo	cas	4		r	del	As					Kubát et al. 2002
Misopates orontium (L.) Rafin.	Plant	a	ar	cas	2		r	acc	M		6			Grulich in F6, Danihelka in A1
Monolepis nuttalliana (Schult.) Greene	Amara	a	neo	cas	1	1927	v	acc	As AmN					Dostálek et al. in F2

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Morus alba L.	Mora	t	neo	cas	4		r	del	As					this study
Muscari armeniacum Baker	Aspa	pe	neo	cas	4		sc	del	E					this study
Muscari botryoides (L.) Mill.	Aspa	pe	ar	cas	4		sc	del	E		9			Hrouda in F8
Myagrum perfoliatum L.	Bras	a	neo	cas	1	1855	r	acc	M					Kirschner & Sutorý in F3
Myosotis arvensis (L.) Hill subsp. *arvensis*	Bora	a	ar	nat	13		c	acc	M	2^{1343}	35	yes		Štěpánková in F6
Myosotis ×*krajinae* Domin	Bora	a	ar	cas	1		s+v	acc	hybrid					Štěpánková in F6
Myosotis ×*pseudohispida* Domin	Bora	a	ar	cas	1		r	acc	hybrid					Štěpánková in F6
Myrrhis odorata (L.) Scop.	Apia	pe	ar	nat	9		la	del	E		8	yes		Lhotská 1975, Slavík in F5
Narcissus poëticus L.	Amary	pe	neo	cas	4	1867	r	del	M		8			Bělohlávková in F8
Narcissus pseudonarcissus L.	Amary	pe	neo	cas	4	1867	r	del	M		8	yes		Bělohlávková in F8
Nemophila menziesii Hook. et Arn.	Bora	a	neo	cas	4		r	del	AmN					Kubát et al. 2002
Nepeta cataria L.	Lami	pe	ar	nat	6		sc	acc	E As		6			Štěpánek in F6
Nepeta ×*faasenii* Stearn	Lami	pe	neo	nat	11		r	del	anec					Štěpánek in F6
Nepeta grandiflora M. Bieb.	Lami	pe	neo	cas	4	1900	r	del	E					Holub 1991, Štěpánek in F6
Nepeta racemosa Lam.	Lami	pe	neo	nat	11		r	del	E M		5			Štěpánek in F6
Neslia paniculata (L.) Desv. subsp. *paniculata*	Bras	a	ar	nat	13		c	acc	M	3^{288}	5			Dvořáková in F3
Nicandra physalodes (L.) Gaertn.	Sola	a	neo	cas	4	1853	r	del	AmS		2			Tomšovic in F6
Nicotiana alata Link et Otto	Sola	a	neo	cas	4		r	del	AmS					Bělohlávková, Tomšovic in F6
Nicotiana rustica L.	Sola	a	neo	cas	4	17th	r	del	anec					Čulíková 1995a, Bělohlávková, Tomšovic in F6
Nicotiana tabacum L.	Sola	a	neo	cas	4	1891	r	del	anec					Bělohlávková, Tomšovic in F6
Nigella arvensis L.	Ranu	a	ar	cas	2		r	acc	M		3			Chrtková in F1
Nigella damascena L.	Ranu	a	neo	cas	4	1874	r	del	M		1			Chrtková in F1
Nigella sativa L.	Ranu	a	neo	cas	4		r	del	M As		1			Chrtková in F1
Noccaea kovatsii (Heuff.) F. K. Mey.	Bras	pe	neo	cas	1		s	acc	E					Dvořáková in F3
Nonea lutea (Desr.) DC.	Bora	a	neo	nat	7		r	acc	As					Sutorý in F6
Nonea rosea (M. Bieb.) Link	Bora	a	neo	cas	1	1872	r	acc	E					Sutorý in F6
Ocimum basilicum L.	Lami	a	ar	cas	4		r	del	As					Tomšovic in F6
Oenothera acutifolia Rostański	Onag	b	neo	cas	1	1975	r	acc	hybrid					Jehlík in F5
Oenothera albipercurva Hudziok	Onag	b	neo	cas	1	1899	r	acc	hybrid					Jehlík in F5
Oenothera ammophila Focke	Onag	b	neo	cas	2	1848	r	acc	hybrid					Jehlík in F5
Oenothera biennis L.	Onag	b a	neo	nat	13	1831	c	acc	E As	3^{85}		yes		Jehlík & Rostański 1980, Jehlík in F5
Oenothera canovirens E. S. Steele	Onag	b	neo	cas	1	1953	r	acc	AmN					Jehlík in F5
Oenothera coronifera Renner	Onag	b	neo	cas	1	2001	s	acc	hybrid					Pyšek et al. 2002, Mihulka et al. 2003
Oenothera depressa Greene	Onag	b	neo	nat	8	1936	r	acc	AmN					Jehlík in F5
Oenothera fallax Renner	Onag	b	neo	nat	8	1961	sc	acc	hybrid					Roubal 1972, Jehlík in F5
Oenothera flava subsp. *taraxacoides* (Wooton et Standl.) W. L. Wagner	Onag	pe	neo	cas	4	2000	s	del	AmN					Chrtek & Skočdopolová 2001, Procházka in A1
Oenothera glazioviana Micheli	Onag	b	neo	nat	12	1890	sc	del	AmN					Jehlík in F5
Oenothera hoelscheri Rostański	Onag	b	neo	cas	1	1975	r	acc	hybrid					Pyšek 1973, Jehlík in F5
Oenothera issleri Rostański	Onag	b	neo	nat	8	1949	r	acc	hybrid					Jehlík in F5

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Oenothera macrocarpa Nutt.	Onag	pe	neo	cas	4	1913	r	del	AmN					Jehlík in F5
Oenothera moravica V. Jehlík et Rostański	Onag	b	neo	cas	1	1985	r	acc	hybrid					Jehlík in F5
Oenothera oakesiana (A. Gray) S. Watson et J. M. Coult.	Onag	b	neo	cas	1	1962	s+v	acc	hybrid					Jehlík in F5
Oenothera parviflora L.	Onag	b	neo	cas	1	1914	r	acc	AmN					Jehlík in F5
Oenothera punctulata Rostański et Gutte	Onag	b	neo	cas	1	1972	s	acc	hybrid					Jehlík in F5
Oenothera pycnocarpa G. F. Atk. et Bartlett	Onag	a b	neo	nat	8	1960	r	acc	AmN					Jehlík in F5
Oenothera rubricaulis Kleb.	Onag	b	neo	nat	8	1914	sc	acc	hybrid					Roubal 1968, Jehlík in F5
Oenothera stricta Link	Onag	a b	neo	cas	1	1825	r	acc	AmS					Jehlík in F5, Pyšek et al. 2002, Mihulka et al. 2003
Oenothera subterminalis R. R. Gates	Onag	b	neo	cas	1	1967	r	acc	AmN					Jehlík in F5
Oenothera tetragona Roth	Onag	pe	neo	cas	1	1884	v	acc	AmN					Jehlík in F5
Oenothera victorinii R. R. Gates et Catches.	Onag	b	neo	cas	1	1973	r	acc	AmN					Jehlík in F5
Omphalodes verna Moench	Bora	pe	neo	cas	4		r	del	E M					Sutorý in F6
Onobrychis viciifolia Scop.	Faba	pe	neo	nat	17	1852	sc	del	E M	2^{68}	9			Chrtková in F4
Onopordum acanthium L.	Aster	b	ar	nat	13		la	acc	E M	12^{50}	10	yes		Sutorý in F7
Onopordum ×*beckianum* John	Aster	b	neo	cas	1	1906	s+v	acc	hybrid					Sutorý 2001
Opuntia phaeacantha Engelm.	Cact	pe	neo	nat	11		r	del	AmN					Kubát et al. 2002
Opuntia polyacantha Haw.	Cact	pe	neo	cas	4	ca 1990s	r	del	AmN					Hadinec & Kubát in A3
Origanum majorana L.	Lami	a b	ar	cas	4		r	del	M					Tomšovic in F6
Ornithogalum nutans L.	Aspa	pe	neo	nat	11	1809	r	del	E M		4			Hrouda in F8
Ornithopus compressus L.	Faba	a	neo	cas	1	1937	v	acc	M					Chrtková in F4
Ornithopus sativus Brot. subsp. *sativus*	Faba	a	neo	cas	4	1889	r	del	M					Chrtková in F4, Grulich in A9
Orobanche crenata Forssk.	Orob	b pe p	neo	cas	1	1896	v	acc	M					Zázvorka in F6
Orobanche gracilis Sm.	Orob	b pe p	neo	cas	2	1878	v	acc	E M					Zázvorka in F6
Orobanche hederae Duby	Orob	b pe p	neo	nat	11	1945	r	del	E M					Zázvorka in F6
Orobanche lucorum F. W. Schultz	Orob	b pe p	neo	cas	4		s	del	E					Zázvorka in F6
Orobanche minor Sm.	Orob	b pe p	ar	nat	8		r	acc	E M		3			Kropáč 1997, Jehlík 1998a, Zázvorka in F6
Othocallis amoena (L.) Trávn.	Aspa	pe	neo	cas	4	1809	r	del	As					Trávníček in F8
Othocallis siberica (Haw.) Speta	Aspa	pe	neo	cas	4	1867	sc	del	E		4			Trávníček in F8
Oxalis corniculata L. var. *corniculata*	Oxal	a b pe	neo	inv	14	1852	sc	acc	M		9			Holub in F5
Oxalis corniculata var. *repens* (Thunb.) Zucc.	Oxal	a b pe	neo	cas	4		r	del	As Au					Holub in F5
Oxalis debilis Kunth	Oxal	pe	neo	cas	1	1963	s	acc	AmS					Holub & Holubičková 1980, Jehlík 1995, 1998a, Holub in F5
Oxalis dillenii Jacq.	Oxal	a b pe	neo	inv	14		sc	acc	AmN		5			Holub in F5
Oxalis latifolia Kunth	Oxal	pe	neo	cas	1	1963	r	acc	AmN & C & S					Jehlík 1995, 1998a, Holub in F5
Oxalis pes-caprae L.	Oxal	pe	neo	cas	4	1961	r	del	Af				yes	Dvořák & Kühn 1966
Oxalis stricta L.	Oxal	pe	neo	nat	13	1852	sc	acc	AmN	1^{161}	14			Holub in F5
Oxybaphus nyctagineus (Michx.) Sweet	Nyct	pe	neo	nat	7	1843	r	acc	AmN		2			Skalický in F2, Jehlík 1998a

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Paeonia lactiflora Pall.	Paeo	pe	neo	cas	4	2011	r	del	As					this study
Paeonia officinalis L.	Paeo	pe	ar	cas	4		r	del	M					Pyšek et al. 2002
Panicum capillare L. subsp. *capillare*	Poac	a	neo	nat	11	1940	sc	del	AmN		2			Jehlík 1998a, Kubát et al. 2002
Panicum capillare subsp. *barbipulvinatum* (Nash) Tzvelev	Poac	a	neo	cas	1	1968	r	acc	AmN					Jehlík 1998a, Kubát et al. 2002
Panicum dichotomiflorum Michx.	Poac	a	neo	cas	1	1970	sc	acc	AmN					Jehlík 1998a, Kubát et al. 2002
Panicum miliaceum L. subsp. *miliaceum*	Poac	a	ar	cas	4		r	del	As		3			Kubát et al. 2002
Panicum miliaceum subsp. *agricola* H. Scholz et Mikoláš	Poac	a	neo	nat	8	1975	la	acc	As					Jehlík 1998a, Kubát et al. 2002
Panicum miliaceum subsp. *ruderale* (Kitag.) Tzvelev	Poac	a	neo	nat	8	1823	sc	acc	As					Jehlík 1998a, Kubát et al. 2002
Papaver argemone L.	Papa	a	ar	nat	13		c	acc	E M	2^{126}	6			Kubát in F1
Papaver atlanticum subsp. *mesatlanticum* (Maire) Kadereit	Papa	pe	neo	cas	4	2001	r	del	M					Pyšek et al. 2002
Papaver croceum Ledeb.	Papa	pe	neo	cas	4		r	del	As					Kubát in F1
Papaver dubium L.	Papa	a	ar	nat	7		sc	acc	M	2^{51}	12			Kubát in F1
Papaver hybridum L.	Papa	a	neo	cas	1	1865	v	acc	E M					Kubát in F1
Papaver lecoqii Lamotte	Papa	a	ar	nat	7		r	acc	E		1			Kubát in F1
Papaver pseudo-orientale (Fedde) Medw.	Papa	pe	neo	cas	4		r	del	M					Kubát in F1
Papaver rhoeas L.	Papa	a	ar	nat	13		c	acc	M	4^{717}	9			Kubát in F1
Papaver somniferum L.	Papa	a	ar	cas	5		sc	del	M		3		yes	Kubát in F1
Parapholis incurva (L.) C. E. Hubb.	Poac	a	neo	cas	1	1961	s+v	acc	E M					Dvořák & Kühn 1966
Parentucellia viscosa (L.) Caruel	Orob	a p	neo	cas	1	1882	v	acc	M					Hrouda in F6
Parietaria judaica L.	Urti	a pe	neo	cas	1		v	acc	M					Chrtek in F1
Parietaria officinalis L.	Urti	pe	ar	nat	7		sc	acc	M		7			Chrtek in F1
Parietaria pensylvanica Willd.	Urti	a	neo	cas	1	2000	r	acc	AmN					Kubát in F2, Pyšek et al. 2002
Parthenocissus inserta (A. Kern.) Fritsch	Vita	s	neo	inv	18	1900	la	del	AmN		4			Koblížek in F5
Parthenocissus quinquefolia (L.) Planch.	Vita	s	neo	nat	12		sc	del	AmN		5			Koblížek in F5
Pastinaca sativa subsp. *urens* (Godr.) Čelak.	Apia	b pe	ar	nat	7		sc	acc	M		14			Hrouda in F5
Paulownia tomentosa (Thunb.) Steud.	Paul	t	neo	cas	4		r	del	As		2			Skalická in F6
Peltaria alliacea Jacq.	Bras	pe	neo	cas	1	1993	s	acc	E M					Mandák 1995, Kubát et al. 2002
Pennisetum alopecuroides (L.) Spreng.	Poac	pe	neo	cas	4	2002	s	del	As Au					this study
Pentaglottis sempervirens (L.) L. W. Bailey	Bora	pe	neo	cas	4	1989	s	del	E					Holub 1996, Zlámalík 1996, Křísa in F6
Persicaria orientalis (L.) Spach	Poly	a	neo	cas	4		r	del	As					Chrtek in F2
Persicaria pensylvanica (L.) M. Gómez	Poly	a	neo	cas	1	1968	r	acc	As					Jehlík 1998a, Chrtek in Kubát et al. 2002, Kubát & Jehlík 2003
Petasites japonicus subsp. *giganteus* Kitam.	Aster	pe	neo	cas	4	1900s	r	del	As					Štech in F7
Petroselinum crispum (Mill.) Fuss	Apia	b	ar	cas	4		sc	del	M			yes		Tomšovic in F5
Petunia ×atkinsiana (Sweet) W. H. Baxter	Sola	a	neo	cas	4		r	del	anec		2			Bělohlávková in F6
Peucedanum altissimum (Mill.) Thell.	Apia	pe	neo	cas	1	1960	v	acc	E					Grulich in F5
Peucedanum austriacum (Jacq.) W. D. J. Koch	Apia	pe	neo	cas	1	1837	v	acc	E					Grulich in F5
Peucedanum ostruthium (L.) W. D. J. Koch	Apia	pe	neo	nat	9	1809	la	del	E		4	yes+		Kopecký 1973, Grulich in F5
Phacelia campanularia A. Gray	Bora	a	neo	cas	4		r	del	AmN					Křísa in F6

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Phacelia ciliata Benth.	Bora	a	neo	cas	4		r	del	AmN					Křísa in F6
Phacelia tanacetifolia Benth.	Bora	a	neo	cas	4	1891	r	del	AmN		3			Křísa in F6
Phalaris arundinacea 'Picta'	Poac	pe	neo	cas	4		sc	del	anec					Kubát et al. 2002
Phalaris brachystachys Link	Poac	a	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Phalaris canariensis L.	Poac	a	neo	cas	4	1867	sc	del	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Phalaris coerulescens Desf.	Poac	pe	neo	cas	1		r	acc	M					Dostál 1989, Kubát et al. 2002
Phalaris minor Retz.	Poac	a	neo	cas	1	1961	s+v	acc	M Af					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Phalaris paradoxa L.	Poac	a	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Phaseolus coccineus L.	Faba	a (pe)	neo	cas	4		s	del	AmN					Chrtková in F4
Phaseolus vulgaris L.	Faba	a	neo	cas	4		r	del	AmC AmS					Chrtková in F4
Phelipanche nana (Reuter) Soják	Orob	a b pe p	neo	cas	1	1985	v	acc	M					Zázvorka in F6
Phelipanche ramosa (L.) Pomel	Orob	a b pe p	ar	cas	2		v	acc	M		1			Jehlík 1998a, Zázvorka in F6
Philadelphus coronarius L.	Hydra	s	neo	cas	4	1819	r	del	M					Bělohlávková in F3
Phleum paniculatum Huds.	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002
Phleum subulatum (Savi) Asch. et Graebn.	Poac	a	neo	cas	1	1926	s+v	acc	M					Kubát et al. 2002
Phlox drummondii Hook.	Pole	a	neo	cas	4		r	del	AmN					Křísa in F6
Phlox paniculata L.	Pole	pe	neo	cas	4	1880	r	del	AmN					Křísa in F6
Phlox subulata L.	Pole	pe	neo	cas	4		r	del	AmN					Křísa in F6
Physalis alkekengi L. var. *alkekengi*	Sola	pe	ar	nat	11		sc	del	M		7			Hendrych 1989, Slavík in F6
Physalis alkekengi var. *franchetii* (Mast.) Makino	Sola	pe	neo	cas	4		r	del	anec					Slavík in F6
Physalis angulata L.	Sola	a	neo	cas	4	1972	s+v	del	AmN AmC AmS					Slavík in F6
Physalis peruviana L.	Sola	a (pe)	neo	cas	4		r	del	AmS					Slavík in F6
Physalis philadelphica Lam.	Sola	a	neo	cas	4	1935	r	del	AmC					Slavík in F6
Physalis pubescens L.	Sola	a	neo	cas	4	2001	s+v	del	AmN AmC AmS					Pyšek et al. 2002, Lepší 2005
Physocarpus opulifolius (L.) Maxim.	Rosa	s	neo	nat	12	1874	la	del	AmN		5			Koblížek in F3
Phytolacca americana L.	Phyt	pe	neo	cas	4	17th	r	del	AmN		5	yes		Skalický in F2
Phytolacca esculenta Van Houtte	Phyt	pe	neo	nat	12	1956	r	del	As		5			Skalický 1972, Skalický in F2
Pimpinella anisum L.	Apia	a	ar	cas	4		r	del	M					Štěpánek in F5
Pimpinella peregrina L.	Apia	pe	neo	cas	1	2011	s	acc	M			yes	yes	Nepraš et al. 2011, Nepraš in A10
Pinguicula crystallina subsp. *hirtiflora* (Ten.) Strid	Lent	pe	neo	cas	4	2006	s	del	M					this study
Pinguicula grandiflora subsp. *rosea* (Mutel) Casper	Lent	pe	neo	cas	4	2006	s	del	E					this study
Pinus nigra J. F. Arnold subsp. *nigra*	Pina	t	neo	nat	12		sc	del	E	13^{33}	16			Skalická in F1
Pinus strobus L.	Pina	t	neo	inv	18	1800	la	del	AmN		9	yes+		Skalická in F1, Hadincová et al. 1997

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Pistia stratiotes L.	Arac	a (pe) aq	neo	cas	4		v	del	Af AmS			yes	yes	Kubát et al. 2002, Koutecký in A3, Záveská Drábková in F8
Pisum sativum L.	Faba	a	ar	cas	5		r	del	anec					Chrtková in F4
Plantago afra L.	Plant	a	neo	cas	1	1851	s+v	acc	M					Chrtek in F6
Plantago alpina L.	Plant	pe	neo	cas	4	1934	v	del	E					Chrtek & Skočdopolová 1995, Chrtek in F6
Plantago coronopus L. subsp. *coronopus*	Plant	a pe	neo	cas	1	1935	v	acc	M					Chrtek in F6
Plantago gentianoides Sm.	Plant	pe	neo	cas	4		v	del	E As					Chrtek in F6
Platanus ×*hispanica* Münchh.	Plat	t	neo	cas	4		r	del	anec					Pyšek et al. 2002
Platycladus orientalis (L.) Franco	Cupr	s t	neo	cas	4	1950	r	del	As		6			Skalická in F1
Podophyllum hexandrum Royle	Berb	pe	neo	cas	4	2009	s	del	As					this study
Polycarpon tetraphyllum (L.) L.	Cary	a	neo	cas	1	1863	r	acc	E M					Smejkal in F2
Polycnemum arvense L.	Amara	a	ar	cas	2		r	acc	E M As		2			Tomšovic in F2, Lysák in A2
Polycnemum heuffelii Láng	Amara	a	ar	cas	2		v	acc	M					Tomšovic in F2
Polycnemum majus A. Braun	Amara	a	ar	nat	6		r	acc	E M		6			Tomšovic in F2, Novák 2001
Polygonatum latifolium (Mill.) Desf.	Aspa	pe	neo	cas	4	1809	r	del	E					Šída in F8
Polypogon fugax Steud.	Poac	a	neo	cas	1	1964	s+v	acc	M					Pyšek et al. 2002
Polypogon monspeliensis (L.) Desf.	Poac	a	neo	cas	1	1961	r	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Pontederia cordata L.	Pont	pe aq	neo	cas	4	2004	r	del	AmN & C & S					Kaplan in A8
Populus balsamifera L.	Sali	t	neo	nat	12	1880	r	del	AmN					Pyšek et al. 2002
Populus ×*canadensis* Moench	Sali	t	neo	inv	18		la	del	hybrid	9[44]	15	yes		Koblížek in F2, Kubát et al. 2002
Portulaca grandiflora Hook.	Port	a	neo	cas	4	1937	r	del	AmS		2			Domin 1937, Skalický & Sutorý in F2, Petřík 2001
Portulaca oleracea L. subsp. *oleracea*	Port	a	ar	inv	14		sc	acc	M	9[45]	5			Skalický & Sutorý in F2
Potentilla adscharica R. Keller	Rosa	pe	neo	cas	4	1947	s+v	del	E					Soják 2007
Potentilla intermedia L.	Rosa	b pe	neo	nat	7	1903	r	acc	E		6			Soják in F4
Potentilla radiata Lehm.	Rosa	pe	neo	cas	1	1920	s+v	acc	E M					Soják 2007
Potentilla supina subsp. *paradoxa* (Nutt.) Soják	Rosa	a pe	neo	cas	1	1921	v	acc	As AmN					Soják in F4
Primula rosea Royle	Prim	pe	neo	cas	4	2005	r	del	As					Kočí in A4
Primula vulgaris Huds. subsp. *vulgaris*	Prim	pe	neo	nat	11		r	del	E M					Kovanda in F3
Prunus armeniaca L.	Rosa	t s	ar	cas	5		r	del	As					Chrtek in F3
Prunus cerasifera Ehrh.	Rosa	t s	ar	inv	18		sc	del	M		6	yes		Chrtek in F3
Prunus cerasus L.	Rosa	t s	ar	nat	17		sc	del	anec	3[34]	12			Chrtek in F3
Prunus domestica L.	Rosa	t s	ar	nat	17		sc	del	anec	4[81]	8			Chrtek in F3
Prunus ×*eminens* Beck	Rosa	s	ar	nat	6		sc	acc	hybrid					Chrtek in F3
Prunus ×*fruticans* Weihe	Rosa	s	ar	nat	7		r	acc	hybrid		6			Chrtek in F3
Prunus insititia L.	Rosa	t s	ar	nat	17		sc	del	M	4[81]	5			Chrtek in F3
Prunus laurocerasus L.	Rosa	s	neo	cas	4	2001	r	del	M			yes		Pyšek et al. 2002
Prunus persica (L.) Batsch	Rosa	t s	ar	cas	5		r	del	As					Chrtek in F3
Prunus serotina Ehrh.	Rosa	t s	neo	inv	18		la	del	AmN		5	yes		Chrtek in F3
Prunus virginiana L.	Rosa	t s	neo	cas	4		s	del	AmN					Pyšek et al. 2002
Psephellus dealbatus (Willd.) K. Koch	Aster	pe	neo	nat	11		r	del	E		5			Štěpánek & Koutecký in F7

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Pseudofumaria alba (Mill.) Lidén subsp. *alba*	Papa	pe	neo	nat	11	1995	r	del	M		2			Dostál 1989
Pseudofumaria lutea (L.) Borkh.	Papa	pe	neo	nat	11	1886	sc	del	M		2			Cejp 1948a, Smejkal in F1
Pseudotsuga menziesii (Mirb.) Franco	Pina	t	neo	nat	11		r	del	AmN		7			Skalická in F1
Ptelea trifoliata L.	Ruta	s	neo	cas	4	1961	r	del	AmN					Opravil 1961, Skalická & Svoboda 1971
Pteris multifida Poir.	Pter	pe f	neo	cas	1	1998	s+v	acc	As					Ekrt in A9
Puccinellia gigantea (Grossh.) Grossh.	Poac	a pe	neo	cas	1		r	acc	M					Kubát et al. 2002
Puccinellia stricta (Hook. f.) Blom	Poac	pe	neo	cas	1	1961	s+v	acc	Au					Dvořák & Kühn 1966
Pulmonaria rubra Schott	Bora	pe	neo	cas	4	2011	s	del	E					Hadinec & Rydlo in A3
Pulsatilla slavica G. Reuss	Ranu	pe	neo	cas	4		s	del	E					Skalický in F1, Šuk 2001
Pulsatilla vulgaris Mill.	Ranu	pe	neo	cas	4	1852	r	del	E					Skalický in F1
Puschkinia scilloides Adams	Aspa	pe	neo	cas	4	1856	r	del	M					Bělohlávková in F8
Pyracantha coccinea M. J. Roem.	Rosa	s	neo	nat	12	2002	r	del	E As					this study
Pyrus ×amphigenea Dostálek	Rosa	t	ar	nat	7		sc	acc	hybrid					Dostálek in F3
Pyrus communis L.	Rosa	t	ar	nat	11		sc	del	anec	2^{38}	21			Dostálek in F3
Pyrus nivalis Jacq.	Rosa	t	ar	cas	3		v	del	E AS					Dostálek in F3
Quercus rubra L.	Faga	t	neo	inv	18		sc	del	AmN	3^{69}	14			Koblížek in F2
Ranunculus acris subsp. *friesianus* (Jord.) Syme	Ranu	pe	neo	nat	7	1882	r	acc	E		3			Křísa in F1
Ranunculus arvensis L.	Ranu	a	ar	nat	6		sc	acc	E M As	3^{95}	2			Křísa in F1
Raphanus raphanistrum L.	Bras	a	ar	nat	13		c	acc	M	5^{443}	11			Zelený in F3
Raphanus sativus L.	Bras	a b	ar	cas	5		r	del	anec		3			Zelený in F3
Rapistrum rugosum (L.) All. subsp. *rugosum*	Bras	a b	ar	cas	1		r	acc	M					Hejný et al. 1973, Smejkal in F3
Rapistrum rugosum subsp. *orientale* (L.) Arcang.	Bras	a b	neo	cas	1	1940	r	acc	M					Smejkal in F3
Reseda alba L. subsp. *alba*	Rese	a	neo	cas	4	1840	r	del	M					Kubát & Šourková in F3
Reseda lutea L.	Rese	pe b	ar	nat	7		sc	acc	M	1^{147}	21			Kubát & Šourková in F3
Reseda luteola L.	Rese	b	ar	nat	6		sc	acc	M		4			Kubát & Šourková in F3
Reseda odorata L.	Rese	a	neo	cas	4	1900	r	del	anec					Kubát & Šourková in F3
Reseda phyteuma L.	Rese	a b	ar	cas	2		r	acc	M		5			Hendrych 1978, Roubal 1984, Kubát & Šourková in F3, Štefánek in A5
Reynoutria ×bohemica Chrtek et Chrtková	Poly	pe	neo	inv	18	1942	c	del	hybrid			yes+		Chrtek in F2, Mandák et al. 2004
Reynoutria japonica Houtt. var. *japonica*	Poly	pe	neo	inv	18	1892	c	del	As	26^{51}	12	yes+	yes	Chrtek in F2, Mandák et al. 2004
Reynoutria japonica var. *compacta* (Hook. f.) Moldenke	Poly	pe	neo	cas	4	1995	r	del	As					Hlaváček et al. 1996, Mandák & Pyšek 1997
Reynoutria sachalinensis (F. Schmidt) Nakai	Poly	pe	neo	inv	18	1869	la	del	As		12	yes+	yes	Chrtek in F2, Mandák et al. 2004
Rhagadiolus stellatus (L.) Gaertn.	Aster	a	neo	cas	1	1929	v	acc	M					Štech in F7
Rhaponticum carthamoides (Willd.) Iljin	Aster	pe	neo	cas	4	1991	r	del	As					Řehořek in A3
Rhaponticum repens (L.) Hidalgo	Aster	pe	neo	cas	1	1945	r	acc	M			yes		Hejný et al. 1973, Jehlík 1998a, Skalická in F7
Rheum officinale Baillon	Poly	pe	neo	cas	4	1980s	r	del	As					Lepší et al. 2006, Šída in A7
Rheum ×rhabarbarum L.	Poly	pe	neo	cas	4	1967	r	del	As		2			Chrtek in F2
Rhodanthe manglesii Lindl.	Aster	a	neo	cas	4	1950	s+v	del	Au					Dostál et al. 1948-1950, Štech in F7
Rhodotypos scandens (Thunb.) Makino	Rosa	s	neo	nat	11	ca 1990	r	del	As					this study
Rhus typhina (L.) Sudw.	Anac	s t	neo	nat	12	1900	la	del	AmN		1	yes	yes	Skalická in F5
Ribes aureum Pursh	Gros	s	neo	cas	4	1900	r	del	AmN					Kirschner in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Ribes odoratum H. L. Wendl.	Gros	s	neo	cas	4		sc	del	AmN					Kirschner in F3
Ribes rubrum L.	Gros	s	neo	nat	17	1809	sc	del	E As	1[46]	15	yes		Kirschner in F3
Ribes sanguineum Pursh	Gros	s	neo	cas	4	2008	s	del	AmN			yes		Hadinec & Prach in A7
Ribes spicatum Robson	Gros	s	neo	cas	4	1885	r	del	E As					Kirschner in F3
Ricinus communis L.	Euph	a (ss s t)	neo	cas	4	1996	r	del	Af			yes	yes	Pyšek et al. 2002
Robinia pseudoacacia L.	Faba	t	neo	inv	18	1874	c	del	AmN		24	yes	yes+	Chrtková in F4
Rodgersia pinnata Franch.	Saxi	pe	neo	cas	4	2001	s	del	As					Pyšek et al. 2002, Král et al. 2004c
Rodgersia podophylla A. Graz	Saxi	pe	neo	cas	4	1930s	r	del	As					Sekerka 2009
Rosa ×*alba* L.	Rosa	s	neo	cas	5	1874	r	del	anec			yes		Větvička in F4
Rosa ×*centifolia* L.	Rosa	s	ar	cas	5		r	del	anec					Větvička in F4
Rosa foetida Herrm.	Rosa	s	neo	cas	4	1814	r	del	anec					Větvička in F4
Rosa glauca Pourr.	Rosa	s	neo	cas	4	1874	r	del	E					Větvička in F4
Rosa multiflora Thunb.	Rosa	s	neo	cas	4		r	del	As					Tichá 2004
Rosa rugosa Thunb.	Rosa	s	neo	cas	4	1950	r	del	As		3	yes	yes	Větvička in F4
Rosa villosa L.	Rosa	s	ar	nat	9		r	del	E		2			Větvička in F4
Rostraria cristata (L.) Tzvelev	Poac	a	neo	cas	1	1927	r	acc	M					Dostál 1989, Kubát et al. 2002
Rubia tinctorum L.	Rubi	pe	neo	cas	4	1800	r	del	M					Kubát in F6
Rubrivena polystachya (Meisn.) M. Král	Poly	pe	neo	nat	10		sc	del	As		2	yes		Chrtek in F2, Hadinec in A1
Rubus allegheniensis Porter	Rosa	s	neo	cas	4		r	del	AmN					Holub in F4
Rubus armeniacus Focke	Rosa	s	neo	nat	11		r	del	E			yes	yes	Holub in F4
Rubus canadensis L.	Rosa	s	neo	cas	4		r	del	AmN					Holub in F4, Holub 1999, Žíla & Chán 2001, Hadinec in A1
Rubus illecebrosus Focke	Rosa	ss	neo	cas	4		s	del	As					Holub in F4
Rubus laciniatus Willd.	Rosa	s	neo	nat	11		r	del	anec					Holub in F4
Rubus moschus Juz.	Rosa	s	neo	cas	4		s	del	E					Holub in F4
Rubus occidentalis L.	Rosa	s	neo	cas	4	1997	s	del	AmN					Holub in F4
Rubus odoratus L.	Rosa	s	neo	nat	9	1880	r	del	AmN		7			Holub in F4, Hadinec in A2
Rubus parviflorus Nutt.	Rosa	s	neo	nat	9		s	del	AmN					Holub in F4
Rubus phoenicolasius Maxim.	Rosa	s	neo	cas	4		r	del	As					Holub in F4
Rubus silvaticus Weihe et Nees	Rosa	s	neo	cas	1		s	acc	E					Holub in F4
Rubus tuberculatus Bab.	Rosa	s	neo	cas	1		s	acc	E					Holub in F4
Rubus ulmifolius Schott	Rosa	s	neo	cas	4		s	del	E					Holub in F4
Rubus xanthocarpus Bureau et Franch.	Rosa	pe	neo	nat	9	1962	s	del	As					Holub & Palek 1981, Holub in F4
Rudbeckia fulgida Aiton	Aster	pe	neo	cas	4	1989	s+v	del	AmN					Deyl & Skočdopolová-Deylová 1989
Rudbeckia hirta L.	Aster	b pe	neo	cas	4	1873	sc	del	AmN					Bělohlávková in F7
Rudbeckia laciniata L.	Aster	pe	neo	inv	18	1859	c	del	AmN		10	yes	yes	Bělohlávková in F7
Rumex acetosa × *R. thyrsiflorus*	Poly	pe	neo	cas	1		r	acc	hybrid					Kubát in F2
Rumex alpinus L.	Poly	pe	neo	inv	14	1819	la	acc	E		12	yes+		Kubát in F2, Hendrych 2001
Rumex brownii Campd.	Poly	pe	neo	cas	1	1965	s+v	acc	Au					Kubát in F2
Rumex confertus Willd.	Poly	pe	neo	cas	1	1965	r	acc	E As			yes	yes	Jehlík & Kopecký 1967, Kubát in F2
Rumex ×*corconticus* Kubát	Poly	pe	neo	cas	1	1981	v	acc	hybrid					Kubát 1985, Kubát in F2
Rumex dentatus subsp. *halacsyi* (Rech.) Rech. f.	Poly	a	neo	cas	1	1965	v	acc	M Af As					Kubát in F2

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Rumex ×hybridus Kindb.	Poly	pe	neo	cas	1	1981	r	acc	hybrid					Kubát 1985, Kubát in F2
Rumex longifolius DC. subsp. *longifolius*	Poly	pe	neo	nat	13		la	acc	E		7			Kubát in F2, Kubát et al. 2002
Rumex longifolius subsp. *sourekii* Kubát	Poly	pe	neo	inv	14	1961	la	acc	E					Kubát in F2, Kubínová & Krahulec 1997, 1999, Kubát et al. 2002
Rumex ×mezei Hausskn.	Poly	pe	neo	cas	1	1980	v	acc	hybrid					Kubát 1985, Kubát in F2
Rumex obovatus Danser	Poly	a	neo	cas	1		v	acc	AmS					Kubát in F2
Rumex patientia L. subsp. *patientia*	Poly	pe	neo	nat	9	1861	sc	del	E M		3			Kubát in F2, Grüll 1994, Jehlík 1998a
Rumex patientia × *R. tianschanicus* 'Uteuša'	Poly	pe	neo	cas	4	2005	sc	del	anec					this study
Rumex ×propinquus Aresch.	Poly	pe	neo	cas	1	1984	r	acc	hybrid					Kubát 1985, Kubát in F2
Rumex scutatus L.	Poly	pe	neo	cas	3	1818	v	del	E					Kubát in F2
Rumex thyrsiflorus Fingerh.	Poly	pe	neo	nat	13		la	acc	E As	3^{83}	16			Kubát in F2
Rumex triangulivalvis (Danser) Rech. f.	Poly	pe	neo	nat	8	1943	r	acc	AmN		4			Hejný 1949, Hejný et al. 1973, Kubát in F2, Jehlík 1998a
Ruta graveolens L.	Ruta	ss	ar	cas	4		r	del	M		1			Kovanda in F5
Sagittaria latifolia Willd.	Alis	pe aq	neo	nat	12	1945	la	del	AmN		4			Hrouda in F8
Salix acutifolia Willd.	Sali	s	neo	cas	4		r	del	E As					Chmelař & Koblížek in F2
Salix cordata Michx.	Sali	s	neo	cas	4	1960s	s	del	AmN					this study
Salix melanopsis Nutt.	Sali	s	neo	nat	11	1988	r	del	AmN					Úradníček 2004
Salix ×sepulcralis Simonk.	Sali	t	neo	cas	4	2001	s	del	anec					Pyšek et al. 2002
Salsola collina Pall.	Amara	a	neo	cas	1		r	acc	E As					Tomšovic in F2
Salvia officinalis L.	Lami	ss	ar	cas	4		r	del	M					Štěpánková in F6
Salvia reflexa Hornem.	Lami	a	neo	cas	1	1934	v	acc	AmN					Štěpánková in F6
Salvia sclarea L.	Lami	b pe	neo	cas	4	1809	r	del	M					Štěpánková in F6
Salvia spinosa L.	Lami	pe	neo	cas	1	1966	s+v	acc	M					Štěpánková 1999, Štěpánková in F6
Salvia splendens Roem. et Schult.	Lami	a	neo	cas	4		r	del	AmS					Štěpánková in F6
Salvia verbenaca L.	Lami	pe	neo	cas	1	1965	v	acc	E M					Štěpánková in F6
Salvia viridis L.	Lami	a	neo	cas	4	1908	r	del	M					Štěpánková in F6
Sambucus ebulus L.	Adox	pe	ar	nat	13		sc	acc	E M		4			Chrtek in F5
Sanguisorba minor subsp. *balearica* (Nyman) Muñoz Garm. et C. Navarro	Rosa	pe	neo	nat	7	1840	r	acc	M					Holub 1978b, Skalický in F4
Sanguisorba tenuifolia Link	Rosa	pe	neo	cas	4	1946	v	del	As					Skalický in F4
Santolina chamaecyparissus L.	Aster	ss	neo	cas	4		r	del	M					Bělohlávková in F7
Saponaria ocymoides L.	Cary	pe	neo	cas	4	1906	r	del	M					Domin 1924, Michal 1949, Šourková in F2
Saponaria officinalis L.	Cary	pe	ar	nat	11		sc	del	E M	4^{81}	13			Šourková in F2
Sarracenia purpurea L.	Sarr	pe	neo	cas	4	2010	s	del	AmN					this study
Sasa palmata 'Nebulosa'	Poac	pe	neo	nat	4	2012	s	del	anec					this study
Satureja hortensis L.	Lami	a b	ar	cas	4		r	del	M					Tomšovic in F6
Saxifraga cuneifolia L.	Saxi	pe	neo	cas	4		r	del	E					Hrouda & Šourková in F3
Saxifraga cymbalaria L.	Saxi	a b	neo	cas	4	1955	r	del	M		2			Procházka et al. 1983, Dostál 1989, Pyšek 1996
Saxifraga ×geum L.	Saxi	pe	neo	cas	4		sc	del	hybrid					Hrouda & Šourková in F3
Saxifraga hostii Tausch subsp. *hostii*	Saxi	pe	neo	nat	9	1850	s	del	E					Hrouda & Šourková in F3
Saxifraga hypnoides L.	Saxi	pe	neo	cas	4	1819	v	del	E					Hrouda & Šourková in F3

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Saxifraga rotundifolia L.	Saxi	pe	neo	cas	4	1956	v	del	E M					Hrouda & Šourková in F3
Scandix pecten-veneris L.	Apia	a	ar	cas	2		r	acc	M		1	yes		Chrtek et al. 1968, Křísa in F5, Hadinec et al. 2003
Schismus barbatus (L.) Thell.	Poac	a	neo	cas	1	1961	s+v	acc	M					Dvořák & Kühn 1966, Dostál 1989, Kubát et al. 2002
Schkuhria pinnata (Lam.) Thell.	Aster	a	neo	cas	1	1950	r	acc	AmC AmS					Chrtek 1981, Skalická in F7
Scilla forbesii (Baker) Speta	Aspa	pe	neo	cas	4	1934	r	del	M					Trávníček 2010, Trávníček in F8
Scilla luciliae (Boiss.) Speta	Aspa	pe	neo	cas	4		r	del	M		3			Trávníček in F8
Scilla sardensis (Barr et Sugden) Speta	Aspa	pe	neo	cas	4	1965	r	del	M					Král et al. 2004a, Trávníček 2010, Trávníček in F8
Scirpus pendulus Muhl.	Cype	pe	neo	cas	1		s+v	acc	AmN					Dostál 1989
Scleroblitum atriplicinum (F. Muell.) Ulbr.	Amara	a	neo	cas	1	1963	v	acc	Au					Tomšovic in F2
Sclerochloa dura (L.) P. Beauv.	Poac	a	ar	nat	6		r	acc	M	13^{75}	3			Chrtek & Žáková 1990, Kubát et al. 2002
Sclerolaena tricuspis (F. Muell.) Ulbr.	Amara	a	neo	cas	1	1966	v	acc	Au					Dvořák & Kühn 1966, Tomšovic in F2
Scolymus maculatus L.	Aster	a	neo	cas	1	1969	s+v	acc	M					this study
Scopolia carniolica Jacq.	Sola	pe	neo	nat	11	1866	r	del	E			yes		Čelakovský 1881, Pyšek et al. 2002, Hadinec in A7
Scorpiurus muricatus L.	Faba	a	neo	cas	1		r	acc	M					Chrtková in F4
Scrophularia canina L.	Scro	pe	neo	cas	1	1961	v	acc	E M					Dvořáková in F6
Scrophularia chrysantha Jaub. et Spach	Scro	b pe	neo	cas	4	1855	v	del	E M					Chrtek & Skočdopolová 1996, Dvořáková in F6
Scutellaria altissima L.	Lami	pe	neo	nat	10	1901	sc	del	E		7			Chrtek in F6
Secale cereale L.	Poac	a	ar	cas	5		r	del	anec		3			Dostál 1989, Kubát et al. 2002
Sedobassia sedoides (Schrad.) Freitag et G. Kadereit	Amara	a	neo	cas	1	1960	v	acc	E M As					Tomšovic in F2
Sedum aizoon L.	Cras	pe	neo	cas	4	1880	r	del	As					Grulich in F3
Sedum annuum L.	Cras	a b	neo	cas	4		s	del	E					Pyšek et al. 2002
Sedum hispanicum L.	Cras	a b	neo	nat	12		sc	del	M		5			Grulich in F3
Sedum hybridum L.	Cras	pe	neo	nat	11		r	del	As					Grulich in F3
Sedum ochroleucum Chaix	Cras	pe	neo	nat	11		r	del	M					Holub 1972, Grulich in F3
Sedum pallidum M. Bieb.	Cras	pe	neo	cas	4	2001	s	del	M					Pyšek et al. 2002, Hadinec & Lustyk 2008
Sedum rupestre subsp. *erectum* 't Hart	Cras	pe	neo	cas	4		sc	del	M		4			Grulich in F3
Sedum sarmentosum Bunge	Cras	pe	neo	cas	4		r	del	As					Grulich in F3
Sedum spurium M. Bieb.	Cras	pe	neo	nat	11	1879	la	del	E M		13			Grulich in F3
Sedum stoloniferum S. G. Gmel.	Cras	pe	neo	cas	4	2001	r	del	E					Pyšek et al. 2002, Král et al. 2004b
Sempervivum tectorum L.	Cras	pe	neo	nat	11	1819	r	del	E		3			Grulich in F3
Senecio ×helwingii Beger	Aster	a	neo	cas	1		r	acc	hybrid					Grulich in F7
Senecio inaequidens DC.	Aster	pe	neo	nat	8	1997	r	acc	Af		2	yes	yes	Jehlík 1998b, Špryňar in A1, Jehlík et al. 2003, Grulich in F7, Joza 2008
Senecio vernalis Waldst. et Kit.	Aster	a	neo	nat	8	1822	la	acc	M		7	yes		Dostál 1989, Grulich in F7
Senecio vulgaris L.	Aster	a	ar	nat	13		c	acc	anec	1^{259}	16			Grulich in F7
Setaria adhaerens (Forssk.) Chiov.	Poac	a	neo	cas	1		s+v	acc	Af					Kubát et al. 2002
Setaria faberi R. A. W. Herrm.	Poac	a	neo	nat	8	1961	r	acc	As		2			Jehlík 1998a, Kubát et al. 2002
Setaria italica (L.) P. Beauv. subsp. *italica*	Poac	a	ar	cas	4		r	del	anec		2			Dostál 1989, Kubát et al. 2002

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Setaria italica subsp. *moharia* (Alef.) R. A. W. Herrm.	Poac	a	ar	cas	4		r	del	anec					Kubát et al. 2002
Setaria pumila (Poir.) Roem. et Schult.	Poac	a	ar	nat	13		c	acc	M	6^{174}	13			Kubát et al. 2002
Setaria verticillata (L.) P. Beauv.	Poac	a	ar	nat	8		la	acc	M	11^{38}	2			Kubát et al. 2002
Setaria verticilliformis Dumort.	Poac	a	ar	nat	6		r	acc	hybrid					Kubát et al. 2002, Chrtek et al. in A7
Setaria viridis (L.) P. Beauv. subsp. *viridis*	Poac	a	ar	nat	13		c	acc	M	4^{221}	20			Kubát et al. 2002
Setaria viridis subsp. *pycnocoma* (Steud.) Tzvelev	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002
Sherardia arvensis L.	Rubi	a	ar	nat	13		sc	acc	E M	4^{242}	6			Kubát in F6
Sicyos angulatus L.	Cucu	a	neo	nat	9	1880	r	del	AmN		4			Chrtková in F2
Sida hermaphrodita (L.) Rusby	Malv	pe	neo	cas	4	1958	r	del	AmN					Slavík in F3
Sida rhombifolia L. subsp. *rhombifolia*	Malv	ss	neo	cas	1	1979	r	acc	AmC AmS					Slavík in F3
Sida spinosa L.	Malv	pe ss	neo	cas	1	1972	r	acc	AmN & C & S					Slavík in F3
Silene cretica L.	Cary	a	neo	cas	1	1941	v	acc	M					Šourková 1978, Šourková in F2
Silene dichotoma Ehrh. subsp. *dichotoma*	Cary	a b	ar	nat	6		sc	acc	M		4			Šourková in F2
Silene gallica L.	Cary	a b	ar	cas	2		r	acc	M		3			Šourková in F2, Lysák in A3
Silene ×*grecescui* Guşul.	Cary	pe	neo	cas	1	1972	v	acc	hybrid					Smejkal 1973, Šourková in F2
Silene ×*hampeana* Meusel et K. Werner	Cary	pe	ar	cas	1		sc	acc	hybrid					Šourková in F2
Silene latifolia subsp. *alba* (Mill.) Greuter et Burdet	Cary	pe a	ar	nat	13		c	acc	E M As	1^{279}	22			Šourková in F2
Silene noctiflora L.	Cary	a b	ar	nat	13		c	acc	E M	4^{459}	4			Šourková in F2
Silene pendula L.	Cary	a	neo	cas	4	1896	r	del	M					Šourková in F2
Silene viridiflora L.	Cary	pe	neo	cas	4	1971	s+v	del	E M					Smejkal 1973, Šourková in F2
Silphium perfoliatum L.	Aster	pe	neo	cas	4	1885	r	del	AmN					Zelený in F7
Silybum marianum (L.) Gaertn.	Aster	a	ar	cas	4		r	del	M		3			Zelený in F7
Sinapis alba L.	Bras	a	neo	cas	5	1875	sc	del	M		3			Zelený in F3
Sinapis arvensis L.	Bras	a	ar	nat	17		c	del	anec	5^{597}	7			Zelený in F3
Sinapis dissecta Lag.	Bras	a	neo	cas	1	1953	v	acc	M					Zelený in F3
Sisymbrium altissimum L.	Bras	a	neo	nat	13	1815	c	acc	M	11^{52}	5			Dvořák in F3
Sisymbrium austriacum Jacq. subsp. *austriacum*	Bras	b pe	neo	cas	1	1858	v	acc	E M					Dvořák in F3
Sisymbrium irio L.	Bras	a	neo	cas	1	1851	r	acc	M As					Dvořák 1982, Dvořák in F3
Sisymbrium loeselii L.	Bras	a	neo	inv	14	1819	c	acc	E M As	7^{139}	16	yes		Dvořák in F3
Sisymbrium officinale (L.) Scop.	Bras	a	ar	nat	13		c	acc	M	3^{239}	11			Dvořák in F3
Sisymbrium orientale subsp. *macroloma* (Pomel) H. Lindb.	Bras	a	neo	cas	1	1958	v	acc	M					Dvořák in F3
Sisymbrium polymorphum (Murray) Roth	Bras	pe	neo	cas	1	1959	v	acc	E As					Dvořák 1981, Dvořák in F3
Sisymbrium strictissimum L.	Bras	pe	neo	nat	7	1819	sc	acc	E M		13			Dvořák in F3
Sisymbrium volgense E. Fourn.	Bras	pe	neo	nat	8	1960	r	acc	E		4	yes		Jehlík 1971, 1981, 1998a, Hejný et al. 1973, Dvořák in F3
Sisyrinchium montanum Greene	Irid	pe	neo	nat	11	1853	r	del	AmN		6			Chrtek in F8
Sium sisarum L.	Apia	pe	neo	cas	4		s	del	As					Kubát et al. 2002
Smyrnium perfoliatum L.	Apia	b	neo	nat	9	1886	r	del	M		6			Křísa in F5, Hadinec in A3
Solanum americanum Mill.	Sola	a	neo	cas	1	1966	r	acc	AmN AmS					Štěpánek in F6
Solanum carolinense L.	Sola	a (pe)	neo	cas	1	1985	v	acc	AmN					Štěpánek in F6
Solanum cornutum Lam.	Sola	a (pe)	neo	cas	1	1899	r	acc	AmN					Štěpánek in F6

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Solanum decipiens Opiz	Sola	a	neo	nat	8	1819	sc	acc	M	2^{152}	13			Štěpánek in F6
Solanum linnaeanum Hepper et P.-M. L. Jaeger	Sola	a (ss s)	neo	cas	1		s	acc	Af					Štěpánek in F6
Solanum lycopersicum L.	Sola	a	neo	cas	5	1880	la	del	anec	2^{28}	4			Štěpánek in F6
Solanum melongena L.	Sola	a (pe)	neo	cas	4		r	del	anec					Štěpánek in F6
Solanum nigrum L.	Sola	a	ar	nat	13		c	acc	M	2^{152}	15			Štěpánek in F6
Solanum physalifolium Rusby	Sola	a	neo	cas	1	1975	r	acc	AmS					Štěpánek in F6, Hadinec & Lustyk 2006, Holec et al. 2006
Solanum pseudocapsicum L.	Sola	a (ss)	neo	cas	4		r	del	AmS					Štěpánek in F6
Solanum pyracanthos Lam.	Sola	a (s pe)	neo	cas	4	1940	v	del	Af					Štěpánek in F6
Solanum scabrum Mill.	Sola	a pe	neo	cas	4	1975	r	del	Af					Štěpánek in F6
Solanum sisymbriifolium Lam.	Sola	a (pe)	neo	cas	1	1935	r	acc	AmS					Štěpánek in F6
Solanum triflorum Nutt.	Sola	a (pe)	neo	cas	1	1914	v	acc	AmN					Štěpánek in F6
Solanum tuberosum L.	Sola	pe	neo	cas	5		c	del	anec		2			Štěpánek in F6
Solanum villosum Mill.	Sola	a	neo	cas	1	1850	r	acc	M		3			Štěpánek in F6
Solidago canadensis L.	Aster	pe	neo	inv	18	1838	c	del	AmN	8^{141}	14	yes		Slavík in F7
Solidago gigantea Aiton	Aster	pe	neo	inv	18	1851	c	del	AmN	17^{99}	14	yes+	yes	Slavík in F7
Solidago graminifolia (L.) Salisb.	Aster	pe	neo	cas	4		r	del	AmN			yes		Slavík in F7
Sonchus arvensis L. subsp. *arvensis*	Aster	pe	ar	nat	13		c	acc	M	3^{572}				Křísa in Slavík & Štěpánková 2003
Sonchus asper (L.) Hill	Aster	a	ar	nat	13		c	acc	M	2^{579}	19		yes	Křísa in F7
Sonchus oleraceus L.	Aster	a	ar	nat	13		c	acc	M	1^{705}	22			Křísa in F7
Sorbaria sorbifolia (L.) A. Braun	Rosa	s	neo	nat	11	1940	r	del	As			yes		Koblížek in F3
Sorbus austriaca (Beck) Prain et al.	Rosa	t	neo	cas	4	1966	r	del	E		6			Lepší et al. 2011
Sorbus domestica L.	Rosa	t	ar	cas	4		r	del	E M		4			Kovanda in F3
Sorbus latifolia (Lam.) Pers.	Rosa	t	neo	cas	4		r	del	E					Lepší et al. 2011
Sorghum bicolor (L.) Moench	Poac	a	neo	cas	4		r	del	Af					Dostál 1989, Kubát et al. 2002
Sorghum drummondii (Steud.) Millsp. et Chase	Poac	a	neo	cas	1	1960	v	acc	Af					Grüll 1979
Sorghum halepense (L.) Pers.	Poac	pe	neo	cas	1	1927	r	acc	M			yes		Jehlík 1998a, Kubát et al. 2002
Spergula arvensis L. subsp. *arvensis*	Cary	a	ar	nat	13		c	acc	E M	6^{338}	8			Dvořák in F2
Spergula arvensis subsp. *linicola* (Boreau) Janch.	Cary	a	ar	cas	2		v	acc	E M					Dvořák in F2
Spergula arvensis subsp. *maxima* (Weihe) O. Schwarz	Cary	a	ar	cas	2		v	acc	E M					Dvořák in F2
Spergula arvensis subsp. *sativa* (Boenn.) Ces.	Cary	a	ar	nat	15		sc	acc	E M					Dvořák in F2
Spinacia oleracea L.	Amara	a	ar	cas	5		r	del	anec					Dostálek et al. in F2
Spiraea alba Du Roi	Rosa	s	neo	nat	11		r	del	AmN			yes		Koblížek in F3
Spiraea ×billardii Hérincq	Rosa	s	neo	nat	11		r	del	anec					Koblížek in F3
Spiraea chamaedryfolia L.	Rosa	s	neo	nat	11	1900	r	del	E As			yes		Koblížek in F3
Spiraea douglasii Hook.	Rosa	s	neo	nat	11	1940	r	del	AmN					Koblížek in F3
Spiraea hypericifolia subsp. *obovata* (Willd.) H. Huber	Rosa	s	neo	cas	4	1889	s	del	E As					Koblížek in F3, Businský & Businská 2002
Spiraea japonica L. f.	Rosa	s	neo	cas	4	1995	r	del	As					this study
Spiraea ×macrothyrsa Dippel	Rosa	s	neo	nat	11		r	del	hybrid					Kubát et al. 2002
Sporobolus indicus (L.) R. Br.	Poac	pe	neo	cas	1	1961	s+v	acc	AmC AmS					Dvořák & Kühn 1966
Stachys affinis Bunge	Lami	pe	neo	cas	3	1924	v	del	As					Novák 1924, Chrtek 1994, Kubát et al. 2002
Stachys annua (L.) L.	Lami	a	ar	nat	6		sc	acc	M	4^{88}	3			Chrtek in F6

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Stachys arvensis (L.) L.	Lami	a	ar	cas	2		v	acc	M		1			Chrtek in F6, Chrtek in A5
Stachys byzantina K. Koch	Lami	pe	neo	cas	4		r	del	M					Chrtek in F6
Stachys setifera C. A. Mey.	Lami	pe	neo	cas	1	2007	s+v	acc	M					Řehořek et al. in A8
Stellaria pallida (Dumort.) Crép.	Cary	a	ar	inv	14		sc	acc	M		11			Dvořáková in F2, Fajmon in A6, Hadinec & Kaplan in A10
Stipa calamagrostis (L.) Wahlenb.	Poac	pe	neo	cas	1	1908	r	acc	E M					Dostál 1989, Kubát et al. 2002
Symphoricarpos albus (L.) S. F. Blake	Capr	s	neo	inv	18		sc	del	AmN		9			Chrtek in F5
Symphoricarpos orbiculatus Moench	Capr	s	neo	cas	4		r	del	AmN					Chrtek in F5
Symphyotrichum cordifolium (L.) G. L. Nesom	Aster	pe	neo	cas	4	1876	r	del	AmN					Kovanda & Kubát in F7
Symphyotrichum dumosum × *S. novi-belgii*	Aster	pe	neo	cas	4		r	del	hybrid					Kovanda & Kubát in F7
Symphyotrichum laeve (L.) A. Löve et D. Löve	Aster	pe	neo	nat	12	1851	sc	del	AmN		3			Kovanda & Kubát in F7
Symphyotrichum laeve × *S. lanceolatum*	Aster	pe	neo	cas	4		r	del	hybrid					Kovanda & Kubát in F7
Symphyotrichum lanceolatum (Willd.) G. L. Nesom	Aster	pe	neo	inv	18		c	del	AmN	6^{39}	19	yes		Kovanda & Kubát in F7
Symphyotrichum novae-angliae (L.) G. L. Nesom	Aster	pe	neo	cas	4		r	del	AmN					Kovanda & Kubát in F7
Symphyotrichum novi-belgii (L.) G. L. Nesom	Aster	pe	neo	inv	18	1850	sc	del	AmN	7^{34}	13	yes		Kovanda & Kubát in F7
Symphyotrichum ×*salignum* (Willd.) G. L. Nesom	Aster	pe	neo	inv	18	1872	sc	del	anec			yes		Kovanda & Kubát in F7
Symphyotrichum ×*versicolor* (Willd.) G. L. Nesom	Aster	pe	neo	inv	18		c	del	anec		6			Kovanda & Kubát in F7
Symphytum asperum Lepech.	Bora	pe	neo	cas	4	1941	r	del	M			yes	yes	Smejkal 1978, Slavík in F6
Symphytum ×*uplandicum* Nyman	Bora	pe	neo	nat	9	1908	r	del	anec		8	yes		Slavík in F6
Syringa vulgaris L.	Olea	s t	neo	nat	11	1809	sc	del	E	3^{28}	9	yes		Koblížek in F5
Tagetes erecta L.	Aster	a	neo	cas	4		r	del	AmN AmC					Bělohlávková in F7
Tagetes patula L.	Aster	a	neo	cas	4		r	del	AmN AmC					Bělohlávková in F7
Tagetes tenuifolia Cav.	Aster	a	neo	cas	4	2009	s	del	AmN					this study
Tanacetum balsamita L.	Aster	pe	neo	cas	4		r	del	E M		3			Zelený in F7
Tanacetum macrophyllum (Waldst. et Kit.) Sch. Bip.	Aster	pe	neo	nat	11		r	del	E M		3			Zelený in F7
Tanacetum parthenium (L.) Sch. Bip.	Aster	pe	ar	nat	11		sc	del	E M		6			Zelený in F7
Tanacetum vulgare L.	Aster	pe	ar	nat	15		c	del	E	6^{620}	39			Zelený in F7
Telekia speciosa (Schreb.) Baumg.	Aster	pe	neo	inv	16	ca 1820	sc	del	E		7	yes		Kaplan in F7
Tetragonia tetragonoides (Pall.) Kuntze	Aizo	a	neo	cas	4	1918	r	del	As AmS Au					Tomšovic & Bělohlávková in F2, Hadinec & Lustyk 2008
Teucrium polium L.	Lami	s	neo	cas	1	1960	v	acc	M					Mártonfi in F6
Thladiantha dubia Bunge	Cucu	pe	neo	cas	4	1939	r	del	As		4			Chrtková in F2
Thlaspi arvense L.	Bras	a b	ar	nat	13		c	acc	M	4^{1305}	11			Dvořáková in F3
Thuja occidentalis L.	Cupr	t	neo	cas	4	2012	r	del	AmN					this study
Thymus drucei Ronniger	Lami	pe	neo	cas	4	1974	r	del	E		2			Čáp 1982, Štěpánek & Tomšovic in F6
Thymus vulgaris L.	Lami	ss	neo	cas	4		r	del	M					Štěpánek & Tomšovic in F6
Tilia tomentosa Moench	Malv	t	neo	cas	4	2001	r	del	E					Pyšek et al. 2002
Tolpis staticifolia (All.) Sch. Bip.	Aster	pe	neo	cas	1	1873	s+v	acc	E					Štech in F7
Torilis arvensis (Huds.) Link subsp. *arvensis*	Apia	a	ar	nat	6		r	acc	M		6			Hrouda in F5
Torilis nodosa (L.) Gaertn.	Apia	a	neo	cas	1		v	acc	M					Hrouda in F5
Toxicodendron pubescens Mill.	Anac	s	neo	nat	11	1874	r	del	AmN					Skalická in F5
Trachyspermum ammi (L.) Turrill	Apia	a	neo	cas	1	1903	s+v	acc	anec					Hadinec in A10

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Tragopogon dubius Scop.	Aster	a b	ar	nat	7		sc	acc	M	1^{34}	6			Kaplan in F7
Tragopogon ×mirabilis Rouy	Aster	pe	neo	nat	7	1921	r	acc	hybrid					Kaplan in F7, Krahulec et al. 2005
Tragopogon porrifolius L. subsp. *porrifolius*	Aster	a b	neo	cas	4	1838	r	del	M					Dostál 1989, Kaplan in F7
Tragus racemosus (L.) All.	Poac	a	neo	cas	1		r	acc	M		3			Kubát et al. 2002
Tribulus terrestris L.	Zygo	a	neo	cas	1		r	acc	M		2			Jeslík 1974, Hrouda in F5, Lysák in A3
Trifolium alexandrinum L.	Faba	a	neo	cas	4	1960	v	del	anec					Kubát in F4, Grulich in A9
Trifolium alpinum L.	Faba	pe	neo	cas	4	1919	s+v	del	E					Kubát in F4
Trifolium angulatum Waldst. et Kit.	Faba	a	neo	cas	1	1976	v	acc	M					Kubát in F4
Trifolium angustifolium L.	Faba	a	neo	cas	1	1923	s+v	acc	M					Kubát in F4
Trifolium badium Schreb.	Faba	pe	neo	nat	9	ca 1900	s	del	E		1			this study
Trifolium glomeratum L.	Faba	a	neo	cas	1	1961	v	acc	M					Kubát in F4
Trifolium hybridum L. subsp. *hybridum*	Faba	b pe	neo	nat	17	1819	c	del	anec	4^{791}	28			Kubát in F4
Trifolium incarnatum L. subsp. *incarnatum*	Faba	a b	neo	cas	4	1870	sc	del	M		4			Kubát in F4
Trifolium lappaceum L.	Faba	a	neo	cas	1	1916	v	acc	M					Kubát in F4
Trifolium ornithopodioides L.	Faba	a	neo	cas	1	1960	v	acc	M					Kubát in F4
Trifolium pallidum Waldst. et Kit.	Faba	a b	neo	cas	1	1930	v	acc	M					Kubát in F4
Trifolium pannonicum Jacq.	Faba	pe	neo	nat	9	1919	r	del	M					Hendrych 1968, Kubát in F4
Trifolium pratense subsp. *americanum* (Harz) Soják	Faba	pe	neo	cas	4	1880	v	del	anec					Kubát in F4
Trifolium pratense subsp. *sativum* (Schreb.) Schübl. et G. Martens	Faba	pe	neo	cas	5		sc	del	anec					Kubát in F4
Trifolium resupinatum L.	Faba	a	neo	cas	4	1853	r	del	M		3			Kubát in F4
Trifolium squamosum L.	Faba	a	neo	cas	1	1930	v	acc	M					Kubát in F4
Trifolium subterraneum L.	Faba	a	neo	cas	1	1962	r	acc	M					Kubát in F4
Trifolium tomentosum L.	Faba	a	neo	cas	1	1961	v	acc	M					Kubát in F4
Trifolium vesiculosum Savi	Faba	a	neo	cas	4	2009	s	del	E M					Řehořek in A10
Trigonella caerulea (L.) Ser.	Faba	a	neo	cas	3	1874	v	del	M					Chrtková in F4
Trigonella foenum-graecum L.	Faba	a	neo	cas	3	1889	v	del	anec					Chrtková in F4
Tripleurospermum inodorum (L.) Sch. Bip.	Aster	a	ar	nat	13		c	acc	anec	4^{2683}	30			Kubát in F7
Triticum aestivum Aestivum Group	Poac	a	ar	cas	5		sc	del	anec		11			Dostál 1989, Kubát et al. 2002
Triticum turgidum Dicoccon Group	Poac	a	ar	cas	4		r	del	anec					Dostál 1989, Kubát et al. 2002
Triticum turgidum Polonicum Group	Poac	a	neo	cas	4		r	del	anec		2			Dostál 1989, Kubát et al. 2002
Triticum turgidum Turgidum Group	Poac	a	neo	cas	4		r	del	anec		2			Dostál 1989, Kubát et al. 2002
Tropaeolum majus L.	Trop	a	neo	cas	4		r	del	anec			yes		Bělohlávková in F5
Tulipa ×gesneriana L.	Lili	pe	neo	cas	4		sc	del	anec		3			Pyšek et al. 2002
Tulipa sylvestris L.	Lili	pe	neo	nat	11	1867	r	del	M		6			Bělohlávková in F8
Turgenia latifolia (L.) Hoffm.	Apia	a	ar	cas	2		v	acc	M					Hrouda in F5
Typha laxmannii Lepech.	Typh	pe	neo	nat	12	1968	sc	del	E		1			Kubát in A10
Ulex europaeus L.	Faba	s	neo	cas	4	1880	r	del	E					Skalická in F4
Urtica pilulifera L.	Urti	a	neo	cas	4	1872	r	del	M					Chrtek in F1
Urtica urens L.	Urti	a	ar	nat	13		c	acc	M	6^{103}	7			Chrtek in F1

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Vaccaria hispanica (Mill.) Rauschert var. *hispanica*	Cary	a	ar	cas	2		v	acc	M		1			Šourková in F2
Vaccinium corymbosum L.	Eric	s ss	neo	cas	4	2011	s	del	AmN					this study
Valerianella dentata (L.) Pollich subsp. *dentata*	Vale	a	ar	nat	6		sc	acc	M	2^{160}	5			Holub 1978c, Kirschner in F5
Valerianella dentata subsp. *eriosperma* (Wallr.) Holub	Vale	a	ar	nat	6		r	acc	M					Hadač & Chrtek 1968, Kirschner in F5
Valerianella rimosa Bastard	Vale	a	ar	nat	6		r	acc	M		2			Kirschner in F5
Vallisneria spiralis L.	Hydro	pe aq	neo	cas	4	1920s	v	del	As					Husák et al. in F8
Verbascum niveum subsp. *visianinum* (Rchb.) Murb.	Scro	b	neo	cas	1	1914	v	acc	M					Kirschner in F6
Verbena bonariensis L.	Verb	a (pe)	neo	cas	4	1983	r	del	AmS					Slavík in F6
Verbena ×*hybrida* Groenland et Rümpler	Verb	a	neo	cas	4		r	del	anec					Slavík in F6
Verbena officinalis L.	Verb	pe a	ar	nat	6		sc	acc	M	2^{44}	8			Slavík in F6
Verbena peruviana (L.) Britton	Verb	ss	neo	cas	4	1853	v	del	AmS					Slavík in F6
Verbena rigida Spreng.	Verb	a (pe)	neo	cas	4	1967	r	del	AmS					Slavík in F6
Veronica agrestis L.	Plant	a	ar	nat	6		r	acc	M	2^{71}	4			Hrouda in F6
Veronica arvensis L.	Plant	a	ar	nat	13		c	acc	M	2^{1169}	29			Hrouda in F6
Veronica filiformis Sm.	Plant	pe	neo	nat	15	1938	sc	del	M		14	yes		Jehlík 1961, 1998a, Jehlík & Slavík 1967, Hrouda in F6, Pyšek et al. 2002
Veronica hederifolia L.	Plant	a	ar	nat	13		c	acc	M	6^{290}	21			Hrouda in F6
Veronica incana L. subsp. *incana*	Plant	pe	neo	cas	4		r	del	E As					Trávníček 1998, Trávníček in F6
Veronica incana × *V. maritima*	Plant	pe	neo	cas	4	1940	s+v	del	hybrid					Trávníček in F6
Veronica opaca Fr.	Plant	a	ar	nat	6		r	acc	M	2^{36}	3			Hrouda in F6, Fajmon in A3
Veronica peregrina L. subsp. *peregrina*	Plant	a	neo	nat	6	1809	r	acc	AmN & C & S					Hrouda in F6
Veronica persica Poir.	Plant	a	neo	nat	13	1809	c	acc	M	4^{1322}	15		yes	Hrouda in F6
Veronica polita Fr.	Plant	a	ar	nat	13		c	acc	M	3^{505}	8			Hrouda in F6
Veronica triloba (Opiz) Opiz	Plant	a	ar	nat	6		r	acc	M	5^{58}	4			Hrouda in F6
Veronica triphyllos L.	Plant	a	ar	nat	13		sc	acc	M	5^{132}	11			Hrouda in F6
Viburnum rhytidophyllum Hemsl.	Adox	s	neo	cas	4		r	del	As					this study
Vicia angustifolia L.	Faba	a	ar	nat	13		c	acc	M	2^{552}	24			Chrtková in F4
Vicia articulata Hornem.	Faba	a	neo	cas	4	1874	r	del	M		3			Chrtková in F4
Vicia bithynica (L.) L.	Faba	a	neo	cas	1	1949	v	acc	M					Sutorý 1976, Chrtková in F4
Vicia ervilia (L.) Willd.	Faba	a	ar	cas	3		v	del	M					Chrtková in F4
Vicia faba L.	Faba	a	ar	cas	5		r	del	anec		2			Chrtková in F4
Vicia grandiflora Scop.	Faba	a	neo	nat	7	1877	sc	acc	E M		10			Chrtková in F4
Vicia lutea L.	Faba	a	neo	cas	1		r	acc	E M		12			Chrtková in F4
Vicia melanops Sm.	Faba	a	neo	cas	1	1900	v	acc	M					Chrtková in F4
Vicia narbonensis L.	Faba	a	neo	cas	4		r	del	M					Chrtková in F4
Vicia onobrychioides L.	Faba	pe	neo	cas	1	1980	v	acc	M					Saul 1983, Chrtková in F4
Vicia pannonica Crantz subsp. *pannonica*	Faba	a	ar	nat	9		sc	del	M					Chrtková in F4
Vicia pannonica subsp. *striata* (M. Bieb.) Nyman	Faba	a	ar	nat	7		r	acc	M					Chrtková in F4
Vicia sativa L.	Faba	a	ar	nat	17		c	del	M Af As		24			Chrtková in F4
Vicia villosa Roth subsp. *villosa*	Faba	a b	ar	nat	17		c	del	M	1^{57}	15			Chrtková in F4

Taxon	Fam	LH	Res	Inv	PG	1st	Abund	Path	Origin	Cover	Hab	IEc	IEn	Source
Vicia villosa subsp. *varia* (Host.) Corb.	Faba	a	ar	nat	17		c	del	M					Chrtková in F4
Viola canadensis var. *rugulosa* (Greene) C. L. Hitchc.	Viol	pe	neo	cas	4	1948	s+v	del	AmN					Kirschner & Štěpánek 1984, Kirschner & Skalický in F2
Viola cornuta L.	Viol	pe	neo	cas	4	1959	r	del	E					Skalický 1973, Kirschner & Skalický in F2
Viola cucullata Aiton	Viol	pe	neo	cas	4	1895	s+v	del	AmN					Kirschner & Štěpánek 1984, Kirschner & Skalický in F2
Viola ×*haynaldii* Wiesb.	Viol	pe	neo	cas	1	1886	r	acc	hybrid					Kirschner & Skalický in F2
Viola ×*hungarica* Degen et Sabr.	Viol	pe	ar	cas	1		r	acc	hybrid					Kirschner & Skalický in F2
Viola ×*kerneri* Wiesb.	Viol	pe	neo	cas	1	1904	v	acc	hybrid					Kirschner & Skalický in F2
Viola odorata L.	Viol	pe	ar	nat	17		c	del	M	2^{144}	21	yes		Kirschner & Skalický in F2
Viola ×*pluricaulis* Borbás	Viol	pe	ar	cas	1		v	acc	hybrid					Kirschner & Skalický in F2
Viola ×*poelliana* Murr	Viol	pe	ar	cas	1		r	acc	hybrid					Kirschner & Skalický in F2
Viola ×*porphyrea* R. Uechtr.	Viol	pe	ar	cas	1		sc	acc	hybrid					Kirschner & Skalický in F2
Viola ×*scabra* F. Braun	Viol	pe	ar	nat	13		sc	acc	hybrid	2^{39}				Kirschner & Skalický in F2
Viola septemloba Leconte	Viol	pe	neo	nat	9	2003	s	del	AmN					Sutorý in A7
Viola ×*sourekii* F. Proch.	Viol	b pe	neo	cas	1		r	acc	hybrid					Kirschner & Skalický in F2
Viola suavis M. Bieb. subsp. *suavis*	Viol	pe	neo	nat	9		r	del	M		11			Kirschner & Skalický in F2, Fajmon in A7
Viola tricolor L. subsp. *tricolor*	Viol	a	ar	nat	13		sc	acc	E		12			Kirschner & Skalický in F2
Viola ×*vindobonensis* Wiesb.	Viol	pe	neo	cas	1		r	acc	hybrid					Kirschner & Skalický in F2
Viola ×*wittrockiana* Nauenb. et Buttler	Viol	a b	neo	cas	4		sc	del	anec		3			Kirschner & Skalický in F2
Vitis riparia Michx.	Vita	s	neo	cas	4	1964	r	del	AmN					Koblížek in F5
Vitis vinifera L. subsp. *vinifera*	Vita	s	ar	cas	5		r	del	anec		5			Koblížek in F5
Vulpia bromoides (L.) Gray	Poac	a b	ar	nat	6		r	acc	M		4			Kubát et al. 2002
Vulpia ciliata Dumort.	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002
Vulpia ligustica (All.) Link	Poac	a	neo	cas	1		r	acc	M					Kubát et al. 2002
Vulpia myuros (L.) C. C. Gmel.	Poac	a b	ar	nat	7		sc	acc	M		4			Kubát et al. 2002
Waldsteinia geoides Willd.	Rosa	pe	neo	cas	4		s	del	E					Smejkal in F4
Waldsteinia ternata subsp. *trifolia* (W. D. J. Koch) Teppner	Rosa	pe	neo	cas	4		s	del	E					Smejkal in F4
Xanthium albinum (Widder) H. Scholz et Sukopp	Aster	a	neo	nat	8	1851	la	acc	AmN		6			Havlíček in F7
Xanthium ×*kostalii* Tocl	Aster	a	neo	cas	1	1854	r	acc	hybrid					Havlíček in F7
Xanthium orientale L.	Aster	a	neo	cas	1	1965	s	acc	AmN					Havlíček in F7
Xanthium ripicola Holub	Aster	a	neo	cas	1	1887	r	acc	E				yes	Havlíček in F7
Xanthium spinosum L.	Aster	a	neo	cas	2	1830	r	acc	AmS		2			Havlíček in F7
Xanthium strumarium L.	Aster	a	ar	cas	2		r	acc	E M		8			Havlíček in F7
Xerochrysum bracteatum (Vent.) Tzvelev	Aster	a	neo	cas	4	1991	s	del	Au					Růžička & Zlámalík 1997
Zea mays L.	Poac	a	neo	cas	5		sc	del	anec		2			Dostál 1989, Kubát et al. 2002
Zelkova serrata (Thunb.) Makino	Ulma	t	neo	cas	4	1973	s	del	As					Pyšek et al. 2002
Zinnia elegans Jacq.	Aster	a	neo	cas	4		r	del	AmS					Bělohlávková in F7